

TENNESSEE VALLEY AUTHORITY  
DIVISION OF POWER PRODUCTION  
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT

October 1, 1981 - October 31, 1981

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

Submitted By: D. T. Jones

Plant Superintendent

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Operations Summary

October 1981

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

There were 28 reportable occurrences and four revisions to previous reportable occurrences reported to the NRC during the month of October.

Unit 1

There were four scrams on the unit during the month. On October 1, the reactor scrammed after receiving a MSIV's not fully open signal caused by main steam line low header pressure due to the opening of additional BPV's for unknown reasons. The reactor scrammed on October 3 when the turbine tripped on low condenser vacuum which was caused by an inleakage of air to a high pressure heater during an attempt to drain the heater for leak checking. On October 5, the reactor scrammed from low reactor water level when a short cycle valve opened due to installation error and caused a condensate booster pump and a reactor feedwater pump to trip resulting in a partial loss of feedwater flow. The reactor was manually scrammed on October 12 in order to remove a loose weld backing plate which was used to align a horizontal weld on the "A" phase bus duct valves. The backing plate was apparently left in by mistake.

Unit 2

There were no scrams on the unit during the month.

Unit 3

There was one scram on the unit during the month. On October 30, the reactor was manually scrammed to begin the unit's EOC-4 refueling outage.

Operations Summary (Continued)

October 1981

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 | 0.00521             | 0.00422       | 0.00362       |
| Feedwater nozzle    | 0.24937             | 0.18080       | 0.14108       |
| Closure studs       | 0.20492             | 0.14260       | 0.10682       |

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

Common System

Approximately  $6.41\text{E}+05$  gallons of waste liquid were discharged containing approximately  $5.63\text{E}-01$  curies of activities.

Operations Summary (Continued)

October 1981

Refueling InformationUnit 1

Unit 1 is scheduled for its fifth refueling beginning on or about March 1, 1983, with a scheduled restart date of June 6, 1983. This refueling will involve loading 8 X 8R (retrofit) fuel assemblies into the core, finishing the torus modifications, turbine inspection, and finishing TMI-2 modifications. Unit 1 ended its EOC-4 refueling outage when it was synchronized to the system October 1, 1981.

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. Because of modification work to increase spent fuel pool capacity to 3471 assemblies, present available capacity is limited to 1200 locations.

Unit 2

Unit 2 is scheduled for its fourth refueling beginning on or about August 1, 1982, with a scheduled restart date of December 30, 1982. This refueling outage will involve completing relief valve modifications, torus modifications, "A" low pressure turbine inspection, MG set installation for LPCI modification, and loading additional 8 X 8 fuel assemblies into the core.

There are 764 fuel assemblies in the reactor vessel. At the end of the month there were 352 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 1979 refueling was the last refueling that could be discharged to the spent fuel pool without exceeding that capacity and maintaining full core discharge

Operations Summary (Continued)

October 1981

Refueling InformationUnit 2 (Continued)

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, with a scheduled restart date of March 7, 1982. This refueling involves loading additional 8 X 8 R (retrofit) assemblies into the core, relief valve modification, turbine inspection, generator breaker and unit station transformer tie-in, and torus modifications.

There are 764 fuel assemblies presently in the reactor vessel. There are 124 EOC-3 fuel assemblies, 144 EOC-2 fuel assemblies, 208 EOC-1 fuel assemblies, and 288 new 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   |
|----------|------|---|
| 10/01/81 | 0017 | Rolled T/G.   |
|          | 0316 | Synchronized generator, commenced power ascension.  |
|          | 0616 | Reactor thermal power at 19%, holding for turbine overspeed trip test.  |
|          | 0622 | Turbine overspeed trip test complete.   |
|          | 0625 | Reactor Scram No. 142 from 19% thermal power when MSIV's isolated on low pressure.  |
|          | 1205 | Commenced rod withdrawal for startup.   |
|          | 1230 | Main turbine tripped - PMG burned up on EDC control.  |
|          | 1410 | Reactor Critical No. 163.   |
|          | 1945 | Reset main turbine.   |
| 10/02/81 | 0136 | Rolled T/G.   |
|          | 0214 | Synchronized generator, commenced power ascension.  |
|          | 0535 | Opened ACB 214 - generator offline, reactor thermal power at 15%.   |
|          | 0556 | Turbine overspeed trip test complete.   |
|          | 0604 | Synchronized generator, commenced power ascension.  |
|          | 0700 | Reactor thermal power at 23%, holding for startup RTI's.  |
|          | 2022 | Commenced power ascension from 23% thermal power.   |
|          | 2130 | Reactor thermal power at 28%, holding for startup RTI's.  |
| 10/03/81 | 0005 | Commenced power ascension from 28% thermal power.   |
|          | 0115 | Reactor thermal power at 38%, holding for scram testing control rods (1)  |
|          | 1112 | Reactor Scram No. 143 from 38% thermal power from condenser low vacuum while attempting to vent "B" high pressure heater string into condenser. |
|          | 1622 | Commenced rod withdrawal for startup.   |
|          | 1811 | Stopped rod withdrawal CRD 14-15 will not withdraw (repair in progress).  |
| 10/04/81 | 0322 | Maintenance on CRD 14-15 complete, commenced rod withdrawal for startup.  |
|          | 0437 | Reactor Critical No. 164.   |
|          | 1100 | Holding due to instrumentation problems on TR 47-20.  |
|          | 1150 | Problem resolved on TR 47-20.   |
|          | 1220 | Rolled T/G.   |
|          | 1238 | Oil tripped turbine.  |
|          | 1248 | Synchronized generator, commenced power ascension.  |
|          | 1336 | Turbine tripped due to high level in C-2 moisture separator. Reactor thermal power at 20%.  |
|          | 1425 | Rolled T/G.   |

Significant Operational Events

## Unit 1

| Date     | Time | Event  |
|----------|------|--|
| 10/04/81 | 1439 | Synchronized generator, commenced power ascension from 28% thermal power.  |
|          | 2000 | Reactor thermal power at 37% for scram testing control rods.   |
| 10/05/81 | 0700 | Reactor thermal power at 35% holding for scram testing control rods.   |
|          | 0816 | Reactor Scram No. 144 <sup>(2)</sup> from 35% thermal power, reactor scrammed on low reactor water level when FCV-2-29A (short-cycle valve) cycled open as instrument mechanics were removing test gear. This caused a spike in condensate flow which caused a trip of "C" condensate booster pump and "B" RFWP. |
| 10/06/81 | 0400 | Commenced rod withdrawal for startup.  |
|          | 0602 | Reactor Critical No. 165.  |
|          | 0810 | Reset main turbine.  |
|          | 1050 | Rolled T/G.  |
|          | 1246 | Synchronized generator, commenced power ascension.   |
|          | 1422 | Reactor thermal power at 38%, holding for scram testing control rods.  |
|          | 1710 | Scram testing of control rods complete, commenced power ascension.   |
|          | 2145 | Reactor thermal power at 53%, holding for 12 hour soak.  |
| 10/07/81 | 0700 | Reactor thermal power at 50%, holding for 12 hour soak.  |
|          | 0945 | 12 hour fuel soak complete, holding at 50% thermal power for RTI's.  |
|          | 1110 | Commenced power ascension from 50% thermal power.  |
|          | 2100 | Commenced PCIOMR from 67% thermal power (sequence "B").  |
| 10/08/81 | 0600 | Reactor thermal power at 73%, holding; startup RTI's in progress.  |
| 10/09/81 | 2040 | Commenced reducing thermal power for control rod sequence exchange from "B" to "A".  |
|          | 2143 | Reactor thermal power at 46%, control rod sequence exchange in progress.   |
| 10/10/81 | 0037 | Control rod sequence exchange complete, commenced power ascension.   |
|          | 0700 | Commenced PCIOMR from 66% thermal power (sequence "A").  |
| 10/12/81 | 0035 | Reactor thermal power at 99%, maximum flow, rod limited.   |



Significant Operational Events

## Unit 1

| Date     | Time | Event  |
|----------|------|--|
| 10/12/81 | 1101 | Commenced reducing thermal power for maintenance shutdown on generator ACB bus duct.   |
|          | 1203 | Reactor Scram (manual) No. 145 from 40% thermal power to accommodate maintenance to generator bus duct.  |
| 10/14/81 | 2240 | Commenced rod withdrawal for startup.  |
| 10/15/81 | 0102 | Reactor Critical No. 166.  |
|          | 0425 | Stopped pulling rods due to settle bus timer malfunction.  |
|          | 0830 | Settle bus timer repaired, commenced rod withdrawal for startup.   |
|          | 1301 | Rolled T/G.  |
|          | 1326 | Synchronized generator, commenced power ascension.   |
|          | 1440 | Reactor thermal power at 35%, holding for turbine vibration check.   |
|          | 1600 | Commenced power ascension from 35% thermal power.  |
| 10/16/81 | 0600 | Commenced PCIOMR from 75% thermal power (sequence "A").  |
|          | 2113 | Stopped PCIOMR for turbine vibration checks, reactor thermal power at 95%.   |
| 10/17/81 | 0005 | Commenced reducing thermal power for turbine control valve tests and SI's.   |
|          | 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 "A").  |
|          | 1000 | Reactor thermal power at 93%, maximum flow, rod limited.   |
|          | 1500 | Reactor thermal power at 91%, maximum flow, rod limited.   |
| 10/18/81 | 0700 | Reactor thermal power at 90%, maximum flow, rod limited.   |
|          | 1945 | Reactor thermal power at 90%, holding due to three-element reactor water level controller being out of service.                                      |
| 10/20/81 | 0700 | The three-element reactor water level controller has been repaired and returned to service, reactor thermal power at 90%, holding for RTI-13 and 18. |
|          | 2030 | Commenced reducing thermal power for control rod pattern adjustment.   |

Significant Operational Events

## Unit 1

| Date     | Time | Event   |
|----------|------|---|
| 10/20/81 | 2130 | Reactor thermal power at 70%, control rod pattern adjustment in progress.   |
|          | 2255 | Control rod pattern adjustment complete, commenced power ascension.   |
| 10/21/81 | 0030 | Commenced PCIOMR from 75% thermal power (sequence "A").   |
|          | 0035 | Commenced reducing thermal power from 76% due to loss of C1 and C2 heaters.   |
|          | 0140 | Reactor thermal power at 65%, holding due to C1 and C2 heater isolation (maintenance on steam valve 1-513).                 |
|          | 0210 | Commenced power ascension from 65% thermal power.   |
|          | 0500 | Commenced PCIOMR from 79% thermal power (sequence "A").   |
|          | 1645 | Reactor thermal power at 90%, holding for "C" string high pressure heater maintenance.                                      |
| 10/22/81 | 0700 | Commenced PCIOMR from 90% thermal power (sequence "A"). Maintenance on C1 high pressure heater steam valve 1-513 continues. |
|          | 2200 | Reactor thermal power at 99%, maximum flow, rod limited.  |
| 10/23/81 | 0100 | Commenced reducing thermal power due to problems with E-TIP machine.  |
|          | 0600 | Reactor thermal power at 96%, holding for maintenance on E-TIP machine.   |
|          | 0605 | "C1" high pressure heater steam valve repaired.   |
|          | 0815 | Commenced power ascension from 96% thermal power.   |
|          | 1000 | Reactor thermal power at 99%, maximum flow, rod limited.  |
| 10/24/81 | 0001 | Commenced reducing thermal power for turbine control valve tests and SI's.  |
|          | 0100 | Reactor thermal power at 88%, holding for turbine control valve tests and SI's.   |
|          | 0130 | Turbine control valve tests and SI's completed, commenced PCIOMR (sequence "A").  |
|          | 0830 | Reactor thermal power at 99%, maximum flow, rod limited.  |
| 10/25/81 | 0504 | Commenced reducing thermal power for RTI-21 (feed water control system) and RTI-32 (recirculation control system).          |
|          | 05   | Reactor thermal power at 69%, holding for RTI-21 and 32.  |

Significant Operational Events

## Unit 1

| Date     | Time | Event   |
|----------|------|---|
| 10/25/81 | 1500 | Reactor thermal power at 73%, holding for RTI 23.   |
|          | 2300 | Reactor thermal power at 76%, holding for RTI 23.   |
| 10/26/81 | 0600 | Reactor thermal power at 78%, holding due to problems with 1A, 1B and 1C RFWPs. RTI 23 on hold. |
|          | 1500 | Reactor thermal power at 73%, holding for maintenance on RFWP's.                                |
| 10/27/81 | 2015 | All RFWP's back in service, commenced power ascension.  |
|          | 2050 | Reactor thermal power at 92%, commenced PCIOMR (sequence "A").                                  |
| 10/28/81 | 0700 | Reactor thermal power at 99%, maximum flow, rod limited.  |
|          | 2200 | Commenced reducing thermal power for RTI-23A.   |
|          | 2235 | Reactor thermal power at 74%, RTI-23A on "C" RFWP in progress.                                  |
|          | 2335 | "C" RFWP out of service for maintenance, reactor thermal power at 73%.                          |
| 10/29/81 | 1500 | Reactor thermal power at 75%, holding for adjustments on "C" RFWP.                              |
|          | 2300 | Reactor thermal power at 77%, holding for adjustments to "C" RFWP.                              |
|          | 2345 | 1C RFWP in service for RTI-23A, reactor thermal power at 77%.                                   |
| 10/30/81 | 0100 | Commenced power ascension from 77% thermal power.   |
|          | 0230 | Commenced PCIOMR from 97% thermal power (sequence "A").   |
|          | 0400 | Reactor thermal power at 99%, maximum flow, rod limited.  |
|          | 0940 | Commenced reducing thermal power from 99% for removal of "A" RFWP from service.                 |
|          | 1035 | Reactor thermal power at 73%, holding for adjustments to "A" RFWP.                              |
|          | 1230 | "A" RFWP in service, holding at 73% power for adjustments to "C" RFWP.                          |
|          | 1305 | "C" RFWP in service, commenced power ascension.   |
|          | 1615 | Reactor thermal power at 77%, holding for RTI-23.   |
| 10/31/81 | 0700 | Reactor thermal power at 71%, holding for RTI-23.   |
|          | 1430 | RTI-23 complete, commenced power ascension.   |
|          | 1920 | Reactor thermal power at 75%, RTI-32 in progress.   |
|          | 2100 | RTI-32 complete, reactor power at 55%, commenced power ascension.                               |
|          | 2400 | Commenced PCIOMR from 85% thermal power (sequence "A").   |

Significant Operational Events

## Unit 2

| Date     | Time | Event  |
|----------|------|--|
| 10/01/81 | 0001 | Reactor thermal power at 99%, maximum flow, rod limited.   |
| 10/02/81 | 2333 | Commenced reducing thermal power for turbine control valve tests and SI's.                       |
| 10/03/81 | 0001 | Reactor thermal power at 86%, holding for turbine control valve tests and SI's.                  |
|          | 0030 | Turbine control valve tests and SI's complete, commenced power ascension.                        |
|          | 0500 | Reactor thermal power at 99%, maximum flow, rod limited.   |
| 10/06/81 | 2300 | Reactor thermal power at >99%, maximum flow, rod limited.  |
| 10/10/81 | 1920 | Commenced reducing thermal power for control rod pattern adjustment and scram time testing.      |
|          | 2135 | Reactor thermal power at 42%, holding for control rod pattern adjustment and scram time testing. |
| 10/11/81 | 0340 | Scram time testing complete, commenced power ascension with rod pattern adjustment in progress.  |
| 10/12/81 | 0100 | Commenced PCIOMR from 74% thermal power (sequence "B").  |
| 10/13/81 | 0500 | Reactor thermal power at 98%, maximum flow, rod limited.   |
|          | 0700 | Reactor thermal power at 96%, maximum flow, rod limited.   |
|          | 1500 | Reactor thermal power at 95%, maximum flow, rod limited.   |
|          | 2200 | Commenced reducing thermal power for control rod pattern adjustment.                             |
|          | 2333 | Reactor thermal power at 70%, control rod pattern adjustment in progress.                        |
| 10/14/81 | 0030 | Control rod pattern adjustment complete, commenced PCIOMR (sequence "B").                        |
|          | 1830 | Reactor thermal power at 99%, maximum flow, rod limited.   |
| 10/17/81 | 0246 | Commenced reducing thermal power for turbine control valve tests and SI's.                       |
|          | 0256 | Reactor thermal power at 88%, holding for turbine control valve tests and SI's.                  |
|          | 0531 | Turbine control valve tests and SI's complete, commenced power ascension.                        |
|          | 1630 | Reactor thermal power at 99%, maximum flow, rod limited.   |

Significant Operational Events

## Unit 2

| Date     | Time | Event   |
|----------|------|---|
| 10/24/81 | 1515 | Reduced thermal power to 91% thermal power due to a heater leak.  |
|          | 1545 | Commenced power ascension from 91% thermal power.   |
|          | 1630 | Reactor thermal power at 99%, maximum flow, rod limited.  |
|          | 2318 | Commenced reducing thermal power for turbine control valve tests and SI's.  |
| 10/25/81 | 0001 | Reactor thermal power at 82%, holding for turbine control valve tests and SI's.   |
|          | 0050 | Turbine control valve tests and SI's complete, commenced power ascension.   |
|          | 0200 | Commenced PCICMR from 92% thermal power (sequence "B").   |
|          | 1230 | Reactor thermal power at 99%, maximum flow, rod limited.  |
| 10/29/81 | 2105 | Commenced reducing thermal power to remove "C" string high pressure heaters from service.   |
|          | 2115 | Reactor thermal power at 92%, holding due to "C" string high pressure heater isolation.   |
| 10/30/81 | 0730 | Reactor thermal power at 90%, holding for maintenance on "C" string high pressure heaters (broken hangers on drain line C1 to C2).. |
| 10/31/81 | 1507 | Commenced reducing thermal power to satisfy operating requirements for one full string of heaters out of service.                   |
|          | 1545 | Reactor thermal power at 88%, holding for operating requirements on feedwater heaters.  |
|          | 2230 | Commenced reducing thermal power for control rod pattern adjustment.  |
|          | 2255 | Reactor thermal power at 67%, holding for control rod pattern adjustment.   |
|          | 2400 | Reactor thermal power at 67%, holding for control rod pattern adjustment.   |

Significant Operational Events

## Unit 3

| Date     | Time | Event   |
|----------|------|---|
| 10/01/81 | 0001 | Reactor thermal power at 95%, maximum flow, EOC-4 coastdown.                    |
| 10/03/81 | 0035 | Commenced reducing thermal power for turbine control valve tests and SI's.      |
|          | 0045 | Reactor thermal power at 87%, holding for turbine control valve tests and SI's. |
|          | 0100 | Turbine control valve tests and SI's complete, commenced power ascension.       |
|          | 0200 | Reactor thermal power at 95%, maximum flow, EOC-4 coastdown.                    |
|          | 2300 | Reactor thermal power at 94%, maximum flow, EOC-4 coastdown.                    |
| 10/06/81 | 0700 | Reactor thermal power at 93%, maximum flow, EOC-4 coastdown.                    |
| 10/09/81 | 0700 | Reactor thermal power at 92%, maximum flow, EOC-4 coastdown.                    |
| 10/12/81 | 0700 | Reactor thermal power at 91%, maximum flow, EOC-4 coastdown.                    |
| 10/15/81 | 2300 | Reactor thermal power at 90%, maximum flow, EOC-4 coastdown.                    |
| 10/17/81 | 0125 | Commenced reducing thermal power for turbine control valve tests and SI's.      |
|          | 0143 | Reactor thermal power at 85%, holding for turbine control valve tests and SI's. |
|          | 0345 | Turbine control valve tests and SI's complete, commenced power ascension.       |
|          | 0500 | Reactor thermal power at 90%, maximum flow, EOC-4 coastdown.                    |
|          | 2300 | Reactor thermal power at 89%, maximum flow, EOC-4 coastdown.                    |
| 10/18/81 | 0800 | Reactor thermal power at 88%, maximum flow, EOC-4 coastdown.                    |
| 10/24/81 | 0740 | Reactor thermal power at 87%, maximum flow, EOC-4 coastdown.                    |
| 10/26/81 | 2300 | Reactor thermal power at 86%, maximum flow, EOC-4 coastdown.                    |

Significant Operational Events

## Unit 3

| Date     | Time         | Event   |
|----------|--------------|---|
| 10/27/81 | 2205<br>2240 | Commenced reducing thermal power for CRD testing.<br>Reactor thermal power at 64%, holding for CRD testing. |
| 10/28/81 | 2335         | CRD testing complete, commenced power ascension.  |
| 10/29/81 | 0200         | Reactor thermal power at 92%, maximum flow, EOC-4 coastdown.  |
|          | 0900         | Reactor thermal power at 90%, maximum flow, EOC-4 coastdown.  |
|          | 1500         | Reactor thermal power at 89%, maximum flow, rod limited.  |
|          | 1700         | Reactor thermal power at 88%, maximum flow, EOC-4 coastdown.  |
|          | 2000         | Reactor thermal power at 87%, maximum flow, EOC-4 coastdown.  |
| 10/30/81 | 2212         | Commenced reducing thermal power for shutdown for EOC-4 refuel outage.                                      |
|          | 2345         | Reactor Scram Manual No. 104 from 40% thermal power to accommodate EOC-4 refuel outage.                     |
| 10/31/81 | 2400         | EOC-4 refuel outage.  |

- (1) Equipment malfunction  
 (2) Installation error

Significant Operational Events

## Unit 3

| Date     | Time | Event  |
|----------|------|--|
| 10/27/81 | 2205 | Commenced reducing thermal power for CRD testing.  |
|          | 2240 | Reactor thermal power at 64%, holding for CRD testing.   |
| 10/28/81 | 2335 | CRD testing complete, commenced power ascension.   |
| 10/29/81 | 0100 | Reactor thermal power at 92%, maximum flow, EOC-4 coastdown.   |
|          | 0900 | Reactor thermal power at 90%, maximum flow, EOC-4 coastdown.   |
|          | 1500 | Reactor thermal power at 89%, maximum flow, rod limited.   |
|          | 1700 | Reactor thermal power at 88%, maximum flow, EOC-4 coastdown.   |
|          | 2000 | Reactor thermal power at 87%, maximum flow, EOC-4 coastdown.   |
| 10/30/81 | 2212 | Commenced reducing thermal power for shutdown for EOC-4 refuel outage.                                 |
|          | 2345 | Reactor Scram Manual No. 104 <sup>(1)</sup> from 40% thermal power to accommodate EOC-4 refuel outage. |
| 10/31/81 | 2400 | EOC-4 refuel outage.   |

(1) Equipment malfunction

(2) Personnel error



## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259  
 UNIT Browns Ferry - 1  
 DATE 11-1-81  
 COMPLETED BY Ted Thom  
 TELEPHONE 205 729 6846

MONTH October 1981

| DAY | AVERAGE DAILY POWER LEVEL<br>(MWe-Net) | DAY | AVERAGE DAILY POWER LEVEL<br>(MWe-Net) |
|-----|--|-----|--|
| 1   | 14                                     | 17  | 962                                    |
| 2   | 148                                    | 18  | 938                                    |
| 3   | 127                                    | 19  | 943                                    |
| 4   | 105                                    | 20  | 910                                    |
| 5   | 95                                     | 21  | 874                                    |
| 6   | 161                                    | 22  | 992                                    |
| 7   | 558                                    | 23  | 1037                                   |
| 8   | 763                                    | 24  | 1043                                   |
| 9   | 711                                    | 25  | 833*                                   |
| 10  | 709                                    | 26  | 777                                    |
| 11  | 952                                    | 27  | 809                                    |
| 12  | 513                                    | 28  | 1026                                   |
| 13  | -12                                    | 29  | 771                                    |
| 14  | -13                                    | 30  | 877                                    |
| 15  | 207                                    | 31  | 733                                    |
| 16  | 853                                    |     |  |

## 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.

\*October 25 (25 hours) CDST to CST

(9/77)

## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260  
 UNIT Browns Ferry - 2  
 DATE 11-1-81  
 COMPLETED BY Ted Thom  
 TELEPHONE 205 729 6846

MONTH October 1981

| DAY | AVERAGE DAILY POWER LEVEL<br>(MWe-Net) | DAY | AVERAGE DAILY POWER LEVEL<br>(MWe-Net) |
|-----|--|-----|--|
| 1   | <u>1076</u>                            | 17  | <u>1042</u>                            |
| 2   | <u>1064</u>                            | 18  | <u>1066</u>                            |
| 3   | <u>1059</u>                            | 19  | <u>1066</u>                            |
| 4   | <u>1072</u>                            | 20  | <u>1069</u>                            |
| 5   | <u>1076</u>                            | 21  | <u>1069</u>                            |
| 6   | <u>1072</u>                            | 22  | <u>1066</u>                            |
| 7   | <u>1072</u>                            | 23  | <u>1068</u>                            |
| 8   | <u>1072</u>                            | 24  | <u>1071</u>                            |
| 9   | <u>1067</u>                            | 25  | <u>1035*</u>                           |
| 10  | <u>984</u>                             | 26  | <u>1066</u>                            |
| 11  | <u>668</u>                             | 27  | <u>1065</u>                            |
| 12  | <u>899</u>                             | 28  | <u>1059</u>                            |
| 13  | <u>1000</u>                            | 29  | <u>1048</u>                            |
| 14  | <u>971</u>                             | 30  | <u>952</u>                             |
| 15  | <u>1070</u>                            | 31  | <u>916</u>                             |
| 16  | <u>1074</u>                            |     |  |

## INSTRUCTIONS

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

\*October 25 (25 hours) CDST to CST

## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296  
 UNIT Browns Ferry - 3  
 DATE 11-1-81  
 COMPLETED BY Ted Thom  
 TELEPHONE 205 729 6846

MONTH October 1981

| DAY | AVERAGE DAILY POWER LEVEL<br>(MWe-Net) | DAY | AVERAGE DAILY POWER LEVEL<br>(MWe-Net) |
|-----|--|-----|--|
| 1   | 1007                                   | 17  | 938                                    |
| 2   | 1001                                   | 18  | 941                                    |
| 3   | 1000                                   | 19  | 938                                    |
| 4   | 1000                                   | 20  | 935                                    |
| 5   | 997                                    | 21  | 930                                    |
| 6   | 988                                    | 22  | 923                                    |
| 7   | 983                                    | 23  | 919                                    |
| 8   | 979                                    | 24  | 924                                    |
| 9   | 975                                    | 25  | 916*                                   |
| 10  | 976                                    | 26  | 913                                    |
| 11  | 972                                    | 27  | 896                                    |
| 12  | 967                                    | 28  | 668                                    |
| 13  | 962                                    | 29  | 940                                    |
| 14  | 965                                    | 30  | 866                                    |
| 15  | 958                                    | 31  | -10                                    |
| 16  | 953                                    |     |  |

## INSTRUCTIONS

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

\*October 25 (25 hours) CDST to CST

## OPERATING DATA REPORT

DOCKET NO. 50-259  
 DATE 11-1-81  
 COMPLETED BY Michael Chapman  
 TELEPHONE 205 729 6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 1  
 2. Reporting Period: October 1981  
 3. Licensed Thermal Power (MWt): 3293  
 4. Nameplate Rating (Gross MWe): 1152  
 5. Design Electrical Rating (Net MWe): 1065  
 6. Maximum Dependable Capacity (Gross MWe): 1098.4  
 7. Maximum Dependable Capacity (Net MWe): 1065  
 8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
NA

Notes

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

|  | This Month       | Yr.-to-Date      | Cumulative         |
|--|------------------|------------------|--------------------|
| 11. Hours In Reporting Period  | <u>745</u>       | <u>7,296</u>     | <u>63,578</u>      |
| 12. Number Of Hours Reactor Was Critical                                       | <u>637.08</u>    | <u>3044.23</u>   | <u>37,850.80</u>   |
| 13. Reactor Reserve Shutdown Hours   | <u>98.74</u>     | <u>116.33</u>    | <u>5,215.20</u>    |
| 14. Hours Generator On-Line  | <u>592.58</u>    | <u>2,973.35</u>  | <u>36,966.17</u>   |
| 15. Unit Reserve Shutdown Hours  | <u>0</u>         | <u>0</u>         | <u>0</u>           |
| 16. Gross Thermal Energy Generated (MWH)                                       | <u>1,427,186</u> | <u>8,852,681</u> | <u>102,145,042</u> |
| 17. Gross Electrical Energy Generated (MWH)                                    | <u>478,070</u>   | <u>2,952,270</u> | <u>33,715,560</u>  |
| 18. Net Electrical Energy Generated (MWH)                                      | <u>462,672</u>   | <u>2,870,521</u> | <u>32,734,338</u>  |
| 19. Unit Service Factor  | <u>79.5</u>      | <u>40.8</u>      | <u>58.1</u>        |
| 20. Unit Availability Factor   | <u>79.5</u>      | <u>40.8</u>      | <u>58.1</u>        |
| 21. Unit Capacity Factor (Using MDC Net)                                       | <u>58.3</u>      | <u>36.9</u>      | <u>48.3</u>        |
| 22. Unit Capacity Factor (Using DER Net)                                       | <u>58.3</u>      | <u>36.9</u>      | <u>48.3</u>        |
| 23. Unit Forced Outage Rate  | <u>20.0</u>      | <u>5.4</u>       | <u>27.9</u>        |
| 24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): |                  |                  |                    |

25. If Shut Down At End Of Report Period, Estimated Date of Startup: \_\_\_\_\_

26. Units In Test Status (Prior to Commercial Operation):

Forecast

Achieved

INITIAL CRITICALITY  
 INITIAL ELECTRICITY  
 COMMERCIAL OPERATION

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## OPERATING DATA REPORT

DOCKET NO. 50-260  
 DATE 11-1-81  
 COMPLETED BY M. Chapman  
 TELEPHONE 205-729-6846

OPERATING STATUS

|  |   |
|--|---|
| 1. Unit Name: <u>Browns Ferry - 2</u><br>2. Reporting Period: <u>October 1981</u><br>3. Licensed Thermal Power (MWt): <u>34</u><br>4. Nameplate Rating (Gross MWe): <u>1152</u><br>5. Design Electrical Rating (Net MWe): <u>1065</u><br>6. Maximum Dependable Capacity (Gross MWe): <u>1098.4</u><br>7. Maximum Dependable Capacity (Net MWe): <u>1065</u><br>8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:<br><u>NA</u><br><hr/> 9. Power Level To Which Restricted, If Any (Net MWe): <u>NA</u><br>10. Reasons For Restrictions, If Any: <u>NA</u><br><hr/> | Notes<br><br><br><br><br><br><br><br><br><br> |
|--|---|

|  | This Month | Yr.-to-Date | Cumulative  |
|--|------------|-------------|-------------|
| 11. Hours In Reporting Period  | 745        | 7,296       | 58,519      |
| 12. Number Of Hours Reactor Was Critical   | 745        | 6,302.05    | 37,045.66   |
| 13. Reactor Reserve Shutdown Hours   | 0          | 965.58      | 13,419.06   |
| 14. Hours Generator On-Line  | 745        | 6,054.83    | 35,795.79   |
| 15. Unit Reserve Shutdown Hours  | 0          | 0           | 0           |
| 16. Gross Thermal Energy Generated (MWH)   | 2,374,466  | 18,645,073  | 102,215,721 |
| 17. Gross Electrical Energy Generated (MWH)  | 788,350    | 6,200,410   | 33,937,598  |
| 18. Net Electrical Energy Generated (MWH)  | 767,800    | 6,017,303   | 32,967,610  |
| 19. Unit Service Factor  | 100.0      | 83.0        | 61.2        |
| 20. Unit Availability Factor   | 100.0      | 83.0        | 61.2        |
| 21. Unit Capacity Factor (Using MDC Net)   | 96.8       | 77.4        | 52.9        |
| 22. Unit Capacity Factor (Using DER Net)   | 96.8       | 77.4        | 52.9        |
| 23. Unit Forced Outage Rate  | 0          | 10.8        | 29.9        |
| 24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):<br><u>Refuel outage August 1982</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 11-1-81  
 COMPLETED BY M. Chapman  
 TELEPHONE 205 729 6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 3
2. Reporting Period: October 1981
3. Licensed Thermal Power (MWt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
NA
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  | <u>745</u>       | <u>7,296</u>      | <u>40,944</u>     |
| 12. Number Of Hours Reactor Was Critical                                       | <u>720.75</u>    | <u>6,495.71</u>   | <u>32,466.98</u>  |
| 13. Reactor Reserve Shutdown Hours   | <u>10.50</u>     | <u>330.64</u>     | <u>2,141.53</u>   |
| 14. Hours Generator On-Line  | <u>720.75</u>    | <u>6,360.78</u>   | <u>31,750.78</u>  |
| 15. Unit Reserve Shutdown Hours  | <u>0</u>         | <u>0</u>          | <u>0</u>          |
| 16. Gross Thermal Energy Generated (MWH)                                       | <u>2,106,382</u> | <u>19,493,592</u> | <u>93,858,620</u> |
| 17. Gross Electrical Energy Generated (MWH)                                    | <u>701,320</u>   | <u>6,459,160</u>  | <u>30,998,190</u> |
| 18. Net Electrical Energy Generated (MWH)                                      | <u>680,071</u>   | <u>6,264,623</u>  | <u>30,088,946</u> |
| 19. Unit Service Factor  | <u>96.7</u>      | <u>87.2</u>       | <u>77.5</u>       |
| 20. Unit Availability Factor   | <u>96.7</u>      | <u>87.2</u>       | <u>77.5</u>       |
| 21. Unit Capacity Factor (Using MDC Net)                                       | <u>85.7</u>      | <u>80.6</u>       | <u>69.0</u>       |
| 22. Unit Capacity Factor (Using DER Net)                                       | <u>85.7</u>      | <u>80.6</u>       | <u>69.0</u>       |
| 23. Unit Forced Outage Rate  | <u>0</u>         | <u>7.1</u>        | <u>9.2</u>        |
| 24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): |                  |                   |                   |

25. If Shut Down At End Of Report Period, Estimated Date of Startup:

26. Units In Test Status (Prior to Commercial Operation):

Forecast

Achieved

INITIAL CRITICALITY

INITIAL ELECTRICITY

COMMERCIAL OPERATION



# UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH October

DOCKET NO. 50-259  
 UNIT NAME Browns Ferry - 1  
 DATE 11-1-81  
 COMPLETED BY Ted Thom  
 TELEPHONE 205 729 6846

| No. | Date     | Type <sup>1</sup> | Duration (Hours) | Reason <sup>2</sup> | Method of Shutting Down Reactor <sup>3</sup> | Licensee Event Report # | System Code <sup>4</sup> | Component Code <sup>5</sup> | Cause & Corrective Action to Prevent Recurrence  |
|-----|----------|-------------------|------------------|---------------------|--|-------------------------|--------------------------|-----------------------------|--|
| 173 | 10/01/81 | F                 | 6.08             | A                   | 3  |                         |                          |                             | Reactor scram when MSIV's isolated on low pressure during turbine over-speed trip test.                          |
| 174 | 10/01/81 | F                 | 13.73            | A                   | 3  |                         |                          |                             | Unit remained down - EHC control system permanent magnet generator burned up.                                    |
| 175 | 10/02/81 | S                 | 0.48             | B                   |  |                         |                          |                             | Generator offline for turbine over-speed trip test - no reactor scram  |
| 176 | 10/03/81 | F                 | 6.98             | A                   | 3  |                         |                          |                             | Reactor scram from condenser low vacuum while attempting to vent "B" high pressure heater string into condenser. |
| 177 | 10/03/81 | F                 | 16.82            | A                   |  |                         |                          |                             | Unit remained down - CRD 14-15 would not withdraw.   |
| 178 | 10/04/81 | F                 | 1.63             | A                   |  |                         |                          |                             | Unit remained down due to instrumentation problems on TR 47-20.  |
| 179 | 10/04/81 | S                 | 0.17             | B                   |  |                         |                          |                             | Oil tripped turbine test.  |

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

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

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

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

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

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH OctoberDOCKET NO. 50-259UNIT NAME Browns Ferry - 1 (Con't)DATE 11-1-81COMPLETED BY Ted ThomTELEPHONE 205-729-6846

| No. | Date     | Type <sup>1</sup> | Duration<br>(Hours) | Reason <sup>2</sup> | Method of<br>Shutting<br>Down Reactor <sup>3</sup> | Licensee<br>Event<br>Report # | System<br>Code <sup>4</sup> | Component<br>Code <sup>5</sup> | Cause & Corrective<br>Action to<br>Prevent Recurrence   |
|-----|----------|-------------------|---------------------|---------------------|--|-------------------------------|-----------------------------|--------------------------------|---|
| 180 | 10/04/81 | F                 | 1.22                | A                   |  |                               |                             |                                | Turbine tripped due to high level in C2 moisture separator - no reactor scram   |
| 181 | 10/09/81 | F                 | 28.50               | A                   | 3  |                               |                             |                                | Reactor scram on low water level due to condensate short cycle valve opening as test instrumentation was disconnected. "1C" condensate booster pump tripped which caused "1B" reactor feedpump to trip. |
| 182 | 10/09/81 | S                 |                     | H                   |  |                               |                             |                                | Derated for control rod sequence change.  |
| 183 | 10/12/81 | F                 | 64.37               | A                   | 2  |                               |                             |                                | Reactor scram to accommodate maintenance on generator bus duct.   |
| 184 | 10/15/81 | F                 | 9.02                | A                   |  |                               |                             |                                | Unit remained down due to settle bus timer malfunction.   |
| 185 | 10/20/81 | S                 |                     | H                   |  |                               |                             |                                | Derated for control rod pattern adjustment.   |
| 186 | 10/25/81 | S                 |                     | B                   |  |                               |                             |                                | Derated for RTI-23 and RTI-32.  |

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 October

DOCKET NO. 50-259  
 UNIT NAME Browns Ferry - 1 (Con't)  
 DATE 11-1-81  
 COMPLETED BY Ted Thom  
 TELEPHONE 205 729 6846

| No. | Date     | Type <sup>1</sup> | Duration<br>(Hours) | Reason <sup>2</sup> | Method of<br>Shutting<br>Down Reactor <sup>3</sup> | Licensee<br>Event<br>Report # | System<br>Code <sup>4</sup> | Component<br>Code <sup>5</sup> | Cause & Corrective<br>Action to<br>Prevent Recurrence             |
|-----|----------|-------------------|---------------------|---------------------|--|-------------------------------|-----------------------------|--------------------------------|---|
| 187 | 10/28/81 | S                 |                     | B                   |  |                               |                             |                                | Derated for RTI-23A.  |
| 188 | 10/30/81 | F                 |                     | B                   |  |                               |                             |                                | Derated for maintenance on "A" and<br>"C" reactor feedwater pump. |
| 189 | 10/31/81 | S                 |                     | B                   |  |                               |                             |                                | Derated for RTI-32.   |

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

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

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

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

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

(9/77)

# UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH October

DOCKET NO. 50-260  
 UNIT NAME Browns Ferry - 2  
 DATE 11-1-81  
 COMPLETED BY Ted Thom  
 TELEPHONE 205 729 6846

| No. | Date     | Type <sup>1</sup> | Duration<br>(Hours) | Reason <sup>2</sup> | Method of<br>Shutting<br>Down Reactor <sup>3</sup> | Licensee<br>Event<br>Report # | System<br>Code <sup>4</sup> | Component<br>Code <sup>5</sup> | Cause & Corrective<br>Action to<br>Prevent Recurrence              |
|-----|----------|-------------------|---------------------|---------------------|--|-------------------------------|-----------------------------|--------------------------------|--|
| 210 | 10/10/81 | S                 |                     | H                   |  |                               |                             |                                | Derated for control rod pattern adjustment and scram time testing. |
| 211 | 10/13/81 | S                 |                     | H                   |  |                               |                             |                                | Derated for control rod pattern adjustment                         |
| 212 | 10/31/81 | S                 |                     | H                   |  |                               |                             |                                | Derated for control rod pattern adjustment.                        |
|     |          |                   |                     |                     |  |                               |                             |                                |  |

1  
 F: Forced  
 S: Scheduled

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

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

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

5 Exhibit I - Same Source

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH October

DOCKET NO. 50-296  
UNIT NAME Browns Ferry - 3  
DATE 11-1-81  
COMPLETED BY Ted Thom  
TELEPHONE 205 729 6846

[illegible]

F: Forced  
S: Scheduled

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)

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 1 - Same Source

(9/77)

## CSSC EQUIPMENT

BROWNS FERRY NUCLEAR PLANT UNIT 1

## ELECTRICAL MAINTENANCE SUMMARY

FOR THE MONTH OF October 19 81

| Date    | System                        | Component   | Nature of Maintenance                                   | Effect on Safe Operation of The Reactor | Cause of Malfunction                              | Results of Malfunction  | Action Taken To Preclude Recurrence  |
|---------|-------------------------------|---|---|---|---|---|--|
| 10/2/81 | Neutron Monitoring            | "F" IRM   | IRM will not retract from core                          | None                                    | Coil for relay 7C-K 7K burned up                  | IRM will not retract from core  | Replaced coil. Tested OK.<br>TR #224958  |
| 10/3/81 | Fire Protection               | XS-39-2J  | Intermittent alarm                                      | None                                    | Detector operating on intermittent basis          | Intermittent alarm  | Replaced detector. tested per SI 4.11.C.1 & 5.<br>TR #182969                     |
| 10/4/81 | H <sub>2</sub> O <sub>2</sub> | H <sub>2</sub> O <sub>2</sub> sample return pump 1A | Motor failed  | None                                    | Motor fan came loose causing motor winding damage | Sample return pump inoperable   | Replaced complete pump and motor assembly.<br>TR #241750<br>LER BFRO-50-259/8157 |
| 10/5/81 | CRD                           | HS-85-48  | Stop plate broken                                       | None                                    | Stop plate broken                                 | Switch not operating properly   | Replaced stop plate. Switch operated OK.<br>TR #224764<br>TR #224816             |
| 10/8/81 | Diesel Generator              | D/G 1 & 2A Relay ESTD                               | Relay would not time correctly during annual inspection | None                                    | Bad time delay relay                              | Relay did not operate properly. However, this did not effect D/G operability. | Replaced and timed relay per SI 4.9.1.1.d.<br>TR #250779                         |

BROWNS FERRY NUCLEAR PLANT UNIT 1

## ELECTRICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF October 19 81

| Date     | System                        | Component   | Nature of Maintenance                        | Effect on Safe Operation of The Reactor | Cause of Malfunction           | Results of Malfunction  | Action Taken To Preclude Recurrence   |
|----------|-------------------------------|---|--|---|--------------------------------|---|---|
| 10/9/81  | HPCI                          | Vibration recorder                                  | Cable damaged                                | None                                    | Damaged cable                  | Vibration recorder inoperable   | Replaced cable.<br>TR #250741   |
| 10/10/81 | Diesel Generator              | D/G 1 & 2C  | D/G stopped from idle for no apparent reason | None                                    | No apparent cause found        | D/G shutdown prior to completion of shutdown sequence. Did not effect D/G operability | Investigated but no cause determined.<br>TR #203612<br>LER BFRO-50-259/8161 |
| 10/11/81 | PCIS                          | FC064-41  | Damper showing red and green light           | None                                    | Limit switch out of adjustment | Unable to determine actual damper position by use of indicating lights                | Adjusted limit switches. Tested OK.<br>TR #227001                           |
| 10/13/81 | RBCCW                         | Damper 70-65  | Damper position not indicating full open     | None                                    | Limit switch out of adjustment | Position indication incorrect   | Adjusted limit switch. Tested OK.<br>TR #226918                             |
| 10/16/81 | H <sub>2</sub> O <sub>2</sub> | H <sub>2</sub> O <sub>2</sub> sample return pump 1B | Pump and motor assembly noisy                | None                                    | Undetermined                   | Pump was operable when removed from service   | Replaced pump and motor assembly.<br>TR #241486<br>LER BFRO-50-259/8162     |

BROWNS FERRY NUCLEAR PLANT UNIT 1

## ELECTRICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF October 19 81

| Date     | System                        | Component                              | Nature of Maintenance              | Effect on Safe Operation of The Reactor | Cause of Malfunction    | Results of Malfunction                      | Action Taken To Preclude Recurrence           |
|----------|-------------------------------|--|------------------------------------|---|-------------------------|---|---|
| 10/18/81 | Diesel Generator              | D/G 1 & 2C                             | D/G C running alarm will not clear | None                                    | Bad relay on point card | Alarm would not clear                       | Replaced relay.<br>Tested OK<br>TR #279764    |
| 10/20/81 | Reactor Manual Control System | Relay 3A-K42                           | Coil bad                           | None                                    | Bad coil                | Relay 3A-K42 failed                         | Replaced coil.<br>Tested OK<br>TR #203986     |
| 10/22/81 | Reactor Building Ventilation  | 1A reactor building exhaust fan damper | Solenoid coil bad                  | None                                    | Bad coil                | Damper inoperable.                          | Replaced coil.<br>TR #267611                  |
| 10/25/81 | PCIS                          | Relay 16A-K40                          | Bad relay coil                     | None                                    | Bad coil                | Fuse failure alarm received                 | Replaced coil.<br>Tested OK.<br>TR #224772    |
| 10/26/81 | Fuel Pool Cooling System      | Fuel pool cooling pump motor 1A        | Bad bearing                        | None                                    | Bearing bad             | Removed from service prior to motor failure | Replaced bearing.<br>Checked OK<br>TR #250442 |
| 10/26/81 | CRD                           | HS-35-48                               | Stop broken                        | None                                    | Broken stop             | Switch not operating properly               | Replaced stop.<br>Tested OK<br>TR #280336     |



## CSSC EQUIPMENT

BROWNS FERRY NUCLEAR PLANT UNIT 1  
 ELECTRICAL MAINTENANCE SUMMARY  
 FOR THE MONTH OF October 19 81

| Date     | System   | Component                                  | Nature of Maintenance                              | Effect on Safe Operation of The Reactor | Cause of Malfunction                                   | Results of Malfunction                             | Action Taken To Preclude Recurrence   |
|----------|--|--|--|---|--|--|---|
| 10/27/81 | RPS  | 1B RPS MG set                              | K1 relay bad                                       | None                                    | K1 relay bad   | Tripped 1B RPS MG set causing $\frac{1}{2}$ -scram | Replaced relay. Tested OK<br>TR #226828                                       |
| 10/29/81 | Control Bay Heating, Ventilation and A.C. System | 1A control bay chiller                     | Breaker will not close in normal operation or test | None                                    | Wire loose on close circuit of 480 volt feeder breaker | 1A control bay chiller inoperable                  | Replaced wire. Tested OK<br>TR #250610  |
| 10/30/81 | Diesel Generator                                 | D/G 1 & 2C annunciator panel on Pnl 9-23-8 | Annunciator panel inoperable                       | None                                    | Bad inverter   | Loss of annunciation for D/G 1&2C in control room  | Repaired inverter. Tested OK<br>TR #239291                                    |
| 10/31/81 | Annunciator                                      | XA-55-8B and 8C                            | Annunciator panels inoperable                      | None                                    | Bad inverter   | Loss of annunciator panel XA-55-8B and 8C          | Replaced inverter card. Returned annunciator panels to service.<br>TR #203972 |

## ELECTRICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF October 19 81

| Date      | System                        | Component   | Nature of Maintenance        | Effect on Safe Operation of The Reactor | Cause of Malfunction             | Results of Malfunction | Action Taken To Preclude Recurrence   |
|-----------|-------------------------------|---|------------------------------|---|----------------------------------|------------------------|---|
| 10/10/81  | H <sub>2</sub> O <sub>2</sub> | 2B H <sub>2</sub> O <sub>2</sub> sample return pump | Pump tripping intermittently | None                                    | Undetermined                     | Pump tripping          | Investigated trouble. Adjusted thermal overloads problem cleared.<br>TR #279841<br>LER BFRO-50-260/8154 |
| 10/29 '81 | Fire Protection               | Smoke detector XS-39-87WD                           | Alarming intermittently      | None                                    | Detector alarming intermittently | Intermittent alarm     | Replaced detector and tested per SI 4.11.C.1 & 5<br>TR #239286<br>TR #239287                            |



BROWNS FERRY NUCLEAR PLANT UNIT 3

## ELECTRICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF October 19 81

| Date     | System           | Component             | Nature of Maintenance                         | Effect on Safe Operation of The Reactor | Cause of Malfunction                  | Results of Malfunction                 | Action Taken To Preclude Recurrence   |
|----------|------------------|-----------------------|---|---|---------------------------------------|--|---|
| 10/8/81  | Diesel Generator | D/G 3E                | D/G started when alarm reset button was reset | None                                    | Defective diodes on annunciator relay | Spurious start of D/G                  | Replaced diodes. Tested OK<br>TR #235980<br>LER BFRO-50-296/8158                  |
| 10/9/81  | Diesel Generator | Time delay relay PFD1 | Timer out of tolerance                        | None                                    | Timer appears to be drifting          | Timer out of tolerance                 | Replaced timer and tested per SI 4.9.A.1.d.<br>TR #235971<br>LER BFRO-50-296/8162 |
| 10/11/81 | HPCI             | HS-73-30A             | Hand switch will not open valve               | None                                    | Bad hand switch                       | Unable to open valve from control room | Replaced switch per EMI-23.<br>TR #227747   |
| 10/12/81 | RCIC             | FCV-71-34             | Valve will not close electrically             | None                                    | Arc shield binding contactor          | Valve not closing electrically         | Freed contactor cycled valve several times.<br>TR #203663<br>LER BFRO-50-296/8159 |
| 10/14/81 | RPS              | 5A-K14C               | Relay not working                             | None                                    | Coil smoking and over heating         | Scram relay failed in safe direction   | Replaced coil. Tested OK<br>TR #280267  |

BROWNS FERRY NUCLEAR PLANT UNIT 3

## ELECTRICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF October 19 81

| Date     | System                                   | Component                        | Nature of Maintenance                   | Effect on Safe Operation of The Reactor | Cause of Malfunction              | Results of Malfunction  | Action Taken To Preclude Recurrence  |
|----------|--|----------------------------------|---|---|-----------------------------------|---|--|
| 10/16/81 | RPS                                      | 5A-K14C                          | Relay will not pick up everytime        | None                                    | Coil and iron damaged             | Relay would not energize all the time                               | This relates to the problem of 10/14/81 above. The iron and coil were replaced and no additional problems have been experienced.<br>TR #227788 |
| 10/19/81 | Ventilation                              | Shutdown bd. room exhaust fan 3A | Fan won't start locally                 | None                                    | Motor and overloads bad           | Exhaust fan inoperable  | Replaced motor and overloads. Tested OK<br>TR #280265  |
| 10/25/81 | Fire Protection                          | Pnl 25-287                       | Cell dead in battery                    | None                                    | Bad cell in battery               | Battery power not available for panel. However, panel was operable. | Changed out battery.<br>TR #250765   |
| 10/28/81 | Control Bay Heating Ventilation and A.C. | 3A control bay chiller           | Suction and discharge pressure swinging | None                                    | Expansion valve out of adjustment | Suction and discharge pressure swinging                             | Adjusted expansion valve.<br>TR #227792  |

## CSSC EQUIPMENT

For the Month of October 19 81

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## MECHANICAL MAINTENANCE SUMMARY

CSSC EQUIPMENTFor the Month of October 19 81

| DATE     | SYSTEM                | COMPONENT               | NATURE OF MAINTENANCE | EFFECT ON SAFE OPERATION OF THE REACTOR | CAUSE OF MALFUNCTION           | RESULTS OF MALFUNCTION                                | ACTION TAKEN TO PRECLUDE RECURRENCE  |
|----------|-----------------------|-------------------------|-----------------------|---|--------------------------------|---|--|
| 9-21-81  | CRD                   | CRD Pump 2A             | Water Leak            | None                                    | Nipple broken on flange        | Leak  | Changed nipple<br>TR# 279919   |
| 10-15-81 | CRD                   | 2-85-590                | Valve Handles missing | None                                    | Unknown                        | Unknown   | Replaced Valve handles.<br>TR# 279822  |
| 9-23-81  | Cond Demin            | "W"-Valve<br>"J"-Vessel | Water Leak            | None                                    | Faulty Valve                   | Leakage   | Replaced W Valve<br>TR# 279725   |
| 9-30-81  | Secondary Containment | Door 240                | Broken door           | None                                    | Unknown                        | Foot bolt, retaining plate, hinges & air seals broken | Drilled 1/4" holes indoor & installed pins. Welded, straightened hinges & reworked air seals<br>TR# 190097 |
| 9-26-81  | CRD                   | CRD Pump "A"            | Faulty press. gauge   | None                                    | Bad pressure gauge             | Broken pressure gauge                                 | Replace pressure gauge<br>TR# 279801   |
| 9-17-81  | Primary Containmnt    | Sample return pump      | Noisey Pump.          | None                                    | Bad bearings                   | Pump running noisey                                   | Installed new bearings<br>TR# 239259   |
| 10-26-81 | CRD                   | 370 Scram Pilot Valves  | Air Leak              | None                                    | Cap nuts losse on all valves   | Air leaking around cap o'rings                        | Tighten to 100 in. lbs. on all 370 vlv's<br>TR# 182334   |
| 10-28-81 | Rx Bld Vent           | 2B Refuel Exh Fan Floor | Damper Not Closing    | None                                    | Damper not closing all the way | Operator working improperly                           | Installed new operator<br>TR# 235048   |

## MECHANICAL MAINTENANCE SUMMARY

CSSC EQUIPMENTFor the Month of October 1981

| DATE     | SYSTEM                | COMPONENT               | NATURE OF MAINTENANCE            | EFFECT ON SAFE OPERATION OF THE REACTOR | CAUSE OF MALFUNCTION   | RESULTS OF MALFUNCTION     | ACTION TAKEN TO PRECLUDE RECURRENCE                                     |
|----------|-----------------------|-------------------------|----------------------------------|---|------------------------|----------------------------|---|
| 10-4-81  | RHR                   | LPCI 3EA MG Set         | Worn Bearings                    | None                                    | Bad bearings           | Unknown                    | Installed new bearing TR# 235012  |
| 10-3-81  | RHR                   | LPCI 3EA MG Set         | Gen. out of alignment (coupling) | None                                    | Bad bearings           | High vibration             | Align coupling & grease bearing TR# 203655                              |
| 9-29-81  | Fire Prot.            | 26-1133                 | Faulty Valve                     | None                                    | Valve needed servicing | Valve binding              | Clean valve seat & lubricated TR# 203714                                |
| 10-13-81 | Secondary Containment | Door 721                | Door will not close              | None                                    | Worn parts             | Door dragging on threshold | Shimmed hinges to adjust door to frame Adjust closure & lub. TR# 234594 |
| 10-23-81 | D/G                   | "C"-1 DG Air Compressor | Casing Leaking                   | None                                    | Faulty Valve           | Air Leak                   | Replaced check valve TR# 280224   |

BROWNS FERRY NUCLEAR PLANT UNIT 1, 2 & 3

## INSTRUMENT MAINTENANCE SUMMARY

FOR THE MONTH OF October 19 81CSSC EQUIPMENT

| DATE   | SYSTEM | COMPONENT   | NATURE<br>OF<br>MAINTENANCE | EFFECT ON SAFE<br>OPERATION OF<br>THE REACTOR | CAUSE<br>OF<br>MALFUNCTION       | RESULTS OF<br>MALFUNCTION                  | ACTION TAKEN<br>TO PRECLUDE<br>RECURRENCE |
|--------|--------|-------------|-----------------------------|---|----------------------------------|--|---|
| Unit 1 |        |             |                             |   |                                  |  |   |
| 10-2   | 75     | PDIS-75-28  | Replace                     | None  | Faulty Switch                    | Switch Did Not Reset<br>at Proper Pressure | None                                      |
| 10-9   | 68     | PDT-68-21   | Replace                     | None  | Transmitter Failed               | Instrument Indicated<br>Upscale            | None                                      |
| 10-11  | 46     | FT-46-4     | Replace                     | None  | Transmitter<br>Erratic           | Erratic Indication                         | None                                      |
| Unit 2 |        |             |                             |   |                                  |  |   |
| 10-6   | 76     | FR/PR-76-14 | Repair                      | None  | Amplifier Failed                 | Loss of Indication                         | None                                      |
| 10-12  | 90     | RM-90-251   | Calibrate                   | None  | Instrument Drift                 | Incorrect Indication                       | None                                      |
| Unit 3 |        |             |                             |   |                                  |  |   |
| 10-8   | 67     | FT-67-6A    | Calibrate                   | None  | Instrument Drift                 | Incorrect Indication                       | None                                      |
| 10-9   | 1      | PS-1-81A    | Replace                     | None  | Instrument Drift                 | Incorrect Setpoint                         | None                                      |
| 10-21  | 85     | TRS-85-7B   | Repair                      | None  | Stepping Switch<br>Failed        | Loss of Indication                         | None                                      |
| 10-27  | 92     | IRM "F"     | Repair                      | None  | Meter and DC<br>Amplifier Failed | Loss of Indication                         | None                                      |

FIELD SERVICES SUMMARY

October 1981

The unit 1 EOC-4 refueling outage was completed October 1 at 0316 hours.

Preparations for the unit 3 EOC-4 refueling outage continued through the remainder of the month. Major prefabrication efforts included torus modifications (principally shopwork), mechanical/structural preparations for generator breakers and unit station service transformer, setup of C-zone and maintenance areas as well as refuel floor and turbine floor arrangements and laydown areas.

Final planning efforts and preparation of procedures and revisions continued during the month. The list of modifications to be performed this outage was being finalized at the close of this report period. A major work activity that has been deleted from the schedule is replacement of the jet pump hold down beams (at present this work is deferred to the unit 3 EOC-5 refueling outage).

Unit 3 EOC-4 refueling/torus outage started October 30 at 2345 hours for a scheduled 127 day duration. Return to service date is currently projected for March 7, 1981.

Quadrex personnel for torus scrap steel decontamination returned onsite October 13. Work on the turbine building decontamination room was finished on October 19 and Quadrex began preparations for setting up the electropolishing equipment. The duct work for the exhaust fumes has been routed to the SJAE room of unit 3. Final equipment setup and decontamination of unit 1 scrap torus steel is expected to start the first week in November.