

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE
37401



October 1, 1974



Mr. Edson G. Case
Acting Director of Licensing
Office of Regulation
U.S. Atomic Energy Commission
Washington, DC 20545

Dear Mr. Case:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 1 -
DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - ABNORMAL
OCCURRENCE REPORT BFEAO-7421W

The enclosed report provides details concerning the temporary loss of river temperature record because of a component failure in the environmental data collection system. This event occurred on Browns Ferry Nuclear Plant unit 1 on September 21-22, 1974, and is reported in accordance with Appendix A to Regulatory Guide 1.16, Revision 1, October 1973.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

E. F. Thomas
for E. F. Thomas
Director of Power Production

Enclosure
CC (Enclosure):

Mr. Norman C. Moseley, Director
Region II Regulatory Operations Office, USAEC
230 Peachtree Street, NW., Suite 818
Atlanta, Georgia 30303

8308300214 741001
PDR ADOCK 05000259
S PDR

50-259
incident

10357

COPY SENT REGION II

ABNORMAL OCCURRENCE REPORT

Report No. BFEAO-7421W

Report Date: October 1, 1974

Occurrence Date: September 21-22, 1974

Facility: Browns Ferry Nuclear Plant Unit 1

Identification of Occurrence

Water temperatures in Wheeler Reservoir were not recorded during the period 2000 hrs CDT September 21 to 0430 hrs CDT September 22, 1974.

Conditions Prior to Occurrence

Unit 1 was in cold shutdown. Unit 2 load held constant at about 430 MWe. River flow was 37,000 cfs at 2000 hrs CDT, decreasing to 2000 cfs at 2400 hrs CDT and remaining there until 0800 hrs CDT, September 22. At 0900 hrs CDT it increased to 15,000 cfs and varied to 26,000 cfs during the period to 1600 hrs CDT. Water temperature at the time of occurrence was 76.9 degrees F. at the downstream monitor and 76.9 degrees F. at the upstream monitor.

Description of Occurrence

The last valid record of river water temperatures was made at 2000 hrs CDT on September 21, 1974. At 2300 hrs CDT, calls were made to notify the environmental data collection system maintenance supervisor who was on call. At 0230 hrs CDT on September 22, water temperatures were obtained from a boat on the reservoir at points upstream and downstream of the plant. At 0340 hrs CDT, the maintenance supervisor was reached and maintenance personnel were dispatched to the plant. They arrived at 0415 hrs CDT and began a manual reporting of reservoir water temperatures at 0430 hrs CDT. These reports continued at hourly intervals from 0700 hrs CDT until the environmental data collection system was restored to normal operation at 1600 hrs CDT, September 22.

Designation of Apparent Cause of Occurrence

River water temperatures were not recorded because of a component failure in the computer controlling the collection of these data.

Analysis of Occurrence

An analysis of all river water temperature data available prior to, during, and following this occurrence indicates that the environmental technical specification limits regarding temperature and temperature increases were not exceeded during the occurrence. These data are tabulated below:

<u>Date and Time (CDT)</u>	<u>Temperature Upstream</u>	<u>Temperature Downstream</u>	<u>Delta T</u>	<u>River Flow (cubic feet per second)</u>
9/21/74 2000 hrs	76.9° F.	76.9° F.	0.0° F.	37,000
2200 hrs				25,000
2400				2,000
9/22/74 0230 hrs	76	76	0	2,000
0430 hrs	76.4	76.3	-0.1	2,000
0700 hrs	76.1	75.7	-0.4	2,000
0800 hrs	76.1	75.7	-0.4	2,000
0900 hrs	76.2	75.7	-0.5	15,000
1000 hrs	76.2	75.7	-0.5	20,000
1100 hrs	76.3	75.8	-0.5	26,000
1200 hrs	76.3	75.9	-0.4	24,000
1300 hrs	76.4	75.9	-0.5	24,000
1400 hrs	76.3	76.6	0.3	22,000
1500 hrs	76.5	76.7	0.2	19,000

Corrective Action

Upon arrival of the environmental data collection system maintenance personnel, standard diagnostic procedures were initiated to locate the source of the system malfunction. It was determined that a computer circuit board had failed. A standby computer and spare circuit boards were dispatched to the environmental data station, the defective circuit board was replaced, the software program was reinserted into the computer, and normal operations were resumed.

Manual interrogation of the water temperature monitoring stations was begun while repairs were being made, and these data were reported to the plant control room by telephone. Additional temperatures were obtained from a boat on the river during this period.

A standby computer and complete set of spare assemblies and circuit boards will be maintained at the environmental data station for ready access. Existing procedures regarding "on-call" maintenance personnel will be reviewed to determine if changes are necessary to minimize loss of record during occurrences of this type.

Failure Data

There have been no previous failures of circuit boards in the computer controlling collection of river water temperatures. The automatic reporting of these data to the plant control room has been interrupted previously by software failures resulting from a.c. power outages at the environmental data station. Software improvements have been made and operation is now considered to be normal.

The component which failed was identified as a 4K memory circuit board, NOVA Minicomputer, Data General Corporation, Southboro, Massachusetts, Part No. 35600.