

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL

50-296

FILE NUMBER

Enviro

TO: Mr N C Moseley

FROM: Tennessee Valley Authority
Chattanooga, Tn
J E GillelandDATE OF DOCUMENT
2-14-77DATE RECEIVED
2-23-77☒ LETTER
☐ ORIGINAL
☒ COPY☐ NOTORIZED
☒ UNCLASSIFIED

PROP

INPUT FORM

NUMBER OF COPIES RECEIVED

1cc

DESCRIPTION

Ltr trans the following:

1p

PLANT NAME: Browns Ferry #3

ENCLOSURE

Licensee Event Report (RO# 771) on 2-3-77
which concerns Appendix B violation with
regard to reservoir water temperature exceeding
tech specs limitations.....

5p

DO NOT REMOVE

ACKNOWLEDGED

SAFETY

FOR ACTION/INFORMATION

ENVIRO 2-25-77 ehf

ASSIGNED AD:

BRANCH CHIEF:

PROJECT MANAGER:

LIC. ASST. :

ASSIGNED AD:

BRANCH CHIEF:

PROJECT MANAGER:

LIC. ASST. :

INTERNAL DISTRIBUTION

REG-FILE

NRC PDR

I & E (2)

OELD

GOSSICK & STAFF

MIPC

CASE

HANAUER

HARLESS

SYSTEMS SAFETY

HEINEMAN

SCHROEDER

ENGINEERING

MACARRY

BOSNAK

SIHWEIL

PAWLICKI

PLANT SYSTEMS

TEDESCO

BENAROYA

LAINAS

IPPOLITO

KIRKWOOD

OPERATING REACTORS

STELLO

SITE SAFETY &

ENVIRO ANALYSIS

DENTON & MULLER

ENVIRO TECH.

ERNST

BALLARD

SPANGLER

SITE TECH.

GAMMILL

STAPP

HULMAN

SITE ANALYSIS

VOLLMER

BUNCH

J. COLLINS

KREGER

PROJECT MANAGEMENT

BOYD

P. COLLINS

HOUSTON

PETERSON

MELTZ

HELTAMES

SKOVHOLT

REACTOR SAFETY

ROSS

NOVAK

ROSZTOCZY

CHECK

AT & I

SALTZMAN

RUTBERG

OPERATING TECH.

EISENHUT

SHAO

BAER

BUTLER

GRIMES

EXTERNAL DISTRIBUTION

LPDR: Athens, Ala

TIC:

NSIC:

ASLB:

ACRS | CYS HOLDING/SENT AS CAT B

NAT. LAB:

REG V.IE

LA PDR

CONSULTANTS:

BROOKHAVEN NAT. LAB.

ULRIKSON (ORNL)

CONTROL NUMBER

1868

10-10-60

10-10-60

10-10-60

10-10-60

10-10-60

10-10-60

10-10-60

10-10-60

10-10-60 (10-10-60) 10-10-60 10-10-60
10-10-60 10-10-60 10-10-60 10-10-60
10-10-60 10-10-60 10-10-60 10-10-60
10-10-60 10-10-60 10-10-60 10-10-60

10-10-60 10-10-60 10-10-60 10-10-60

10-10-60 10-10-60 10-10-60 10-10-60

35

10-10-60 10-10-60 10-10-60 10-10-60

10-10-60 10-10-60 10-10-60 10-10-60

10-10-60 10-10-60 10-10-60 10-10-60

10-10-60 10-10-60 10-10-60 10-10-60

830 Power Building

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

February 14, 1977

Mr. Norman C. Moseley, Director
U.S. Nuclear Regulatory Commission
Region II
230 Peachtree Street, NW., Suite 1217
Atlanta, Georgia 30303

Regulatory Docket File

Dear Mr. Moseley:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 1 -
DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - ENVIRON-
MENTAL REPORTABLE OCCURRENCE BFERO-50-259/771

The enclosed report is to provide details concerning the reservoir water temperature exceeding the maximum temperature rise of 5 degrees F on February 3, 1977. This report supplements our telecopy to you on February 3, 1977, from H. J. Green. This report is submitted in accordance with Browns Ferry Technical Specification 5.6.3b. This event occurred on Browns Ferry Nuclear Plant unit 1.

Very truly yours,

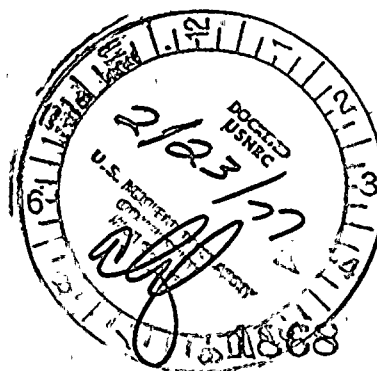
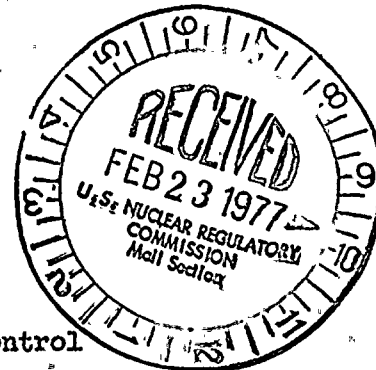
J. E. Gilleland
Assistant Manager of Power

Enclosure (3)
CC (Enclosure):

Director
Division of Operating Reactors
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Director (3)
Office of Management Information and Program Control
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Director (40)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555





100

2

(PLEASE PRINT ALL REQUIRED INFORMATION)

EVENT DESCRIPTION		
02	Attachment	80
03		80
04		80
05		80
06		80

CAUSE DESCRIPTION		
09	Attachment	
09		80
09		60
10		60

PERSONNEL EXPOSURES										
NUMBER			TYPE	DESCRIPTION						
13	0	0	0	2	NA					
8	9		11	12	13	60				

OFFSITE CONSEQUENCES

15	N A
----	-----

89 80

PUBLCITY	
17	NA
89	80

89

Report No.: BFERO-50-259/771

Report Date: February 14, 1977

Occurrence Date: February 3, 1977

Facility: Browns Ferry Nuclear Plant

EVENT DESCRIPTION

On February 3, 1977, from 0929 to 1129 hours, the reservoir water temperature exceeded the maximum temperature rise of 5 degrees F. The maximum value was 6.2 degrees F occurring at 1029 hours. The maximum downstream temperature was 43 degrees F. (BFERO-50-259/771)

CAUSE DESCRIPTION

A computer program, which is run daily, calculates for the next 24-hour period hourly values of maximum temperature and temperature rise in the reservoir as a function of scheduled nuclear and hydro plant generation levels and recommends to the Browns Ferry plant operator the most economical combination of condenser cooling at the plant.

Releases from Guntersville and Wheeler Hydro Plants had been fairly steady from 1800 hours until 2300 hours on February 2 at rates that produced river flows in excess of 20,000 cfs. The hydro discharges were then reduced at 2400 hours and held at very low flows until 0500 hours on February 3. The computer program was not updated to reflect a change in hydro plant generation or the plant notified of this change. As a result, the river temperature rise exceeded 5 degrees F before appropriate action at Browns Ferry could be taken to avoid it. Water temperature at the time of the streamflow reduction was 40.5 degrees F downstream with an indicated Delta T of 3.3 degrees F.

622

The Browns Ferry plant condenser cooling operating mode is scheduled in advance by the computer calculation. When the February 3 schedule was developed on February 2, river flows were predicted to be adequate for condenser cooling at Browns Ferry. However, the Guntersville and Wheeler Hydro Plants were shut down during the night of February 2, resulting in greatly reduced river flows. Browns Ferry personnel were not notified of this situation, so Browns Ferry continued to operate at the predicted load.

The temperature increase was detected by the downstream monitors after the river flow was reestablished.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE

River flow was not maintained according to the predicted schedule. When the change was made, Browns Ferry personnel were not notified.

CORRECTIVE ACTION

When the plant superintendent noticed the rapid increase in the river temperature rise, he called the assistant chief load dispatcher in Chattanooga to request more river flow. He was then informed of the decreased river flow that had occurred a few hours earlier and was advised that river flow had already been increased to a level that should assist in maintaining temperatures less than the 5 degrees F limit. Therefore, plant load was not reduced.

In order to prevent future occurrences of this type, the plant operator will be notified immediately by the load coordinator of significant deviations from the predicted river flow as required by existing procedures. Using this information, the plant operating personnel will select the optimum

1-2-3

condenser cooling modes to ensure compliance with the technical specifications. The importance of following this procedure has been reemphasized to the plant operators and the Power System Load Coordinator.

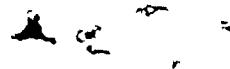


Table 1

ANALYSIS OF RIVER WATER TEMPERATURE DATA
BEFORE AND FOLLOWING OCCURRENCE

<u>Date and Time</u> CST	<u>Temperature</u> <u>Downstream</u> °F	<u>Delta T</u> °F	<u>Guntersville</u> <u>Discharge</u> 100 CFS	<u>Wheeler</u> <u>Discharge</u> 100 CFS
2/2/77, 1900 Hrs.	-	-	443	419
2000	-	-	332	303
2100	-	-	322	300
2200	-	-	212	272
2300	-	-	175	233
2400	-	-	112	111
2/3/77, 0100	40.5	3.3	26	14
0200	40.3	3.0	0	0
0300	40.3	2.9	0	0
0400	40.2	3.0	90	83
0500	40.3	3.5	214	178
0600	40.7	4.2	214	178
0700	41.0	4.6	442	461
0800	40.8	4.3	491	586
0829	41.0	4.4	-	-
0900	41.4	4.8	488	592
0914	41.7	5.0	-	-
0929	41.9	5.2	-	-
0944	42.1	5.4	-	-
0959	42.4	5.7	501	583
1014	42.8	6.0	-	-
1029	43.0	6.2	-	-
1044	42.9	6.1	-	-
1059	42.7	5.9	512	536
1114	42.3	5.4	-	-
1129	41.8	4.9	-	-
1144	41.3	4.4	-	-
1159	40.9	4.0	507	561
1214	40.5	3.5	-	-
1229	40.0	3.0	-	-