



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609

April 15, 1996

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Gentlemen:

In the Matter of )  
Tennessee Valley Authority )

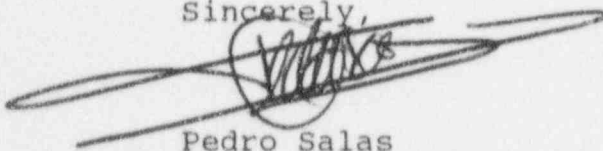
Docket Nos. 50-259  
50-260  
50-296

**BROWNS FERRY NUCLEAR PLANT (BFN) - MONTHLY OPERATING REPORT  
FOR THE MONTH OF MARCH 1996**

In accordance with the requirements of BFN Units 1, 2, and 3 Technical Specifications, Section 6.9.1.3, TVA is submitting the Monthly Operating Report for the month of March 1996 in the enclosure. Also included in the enclosure is a revised Unit 3 Shutdowns and Power Reductions page for the February 1996 Monthly Operating Report.

If you have any questions, please call me at (205) 729-2636.

Sincerely,



Pedro Salas  
Manager of Site Licensing

Enclosure  
cc: See page 2

9604230077 960331  
PDR ADDCK 05000259  
R PDR

220136

JE24

U.S. Nuclear Regulatory Commission  
Page 2  
April 15, 1996

Enclosure

cc (Enclosure):

Mr. Mark S. Lesser, Branch Chief  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Mr. Frederick J. Hebdon, Director  
Project Directorate II-4  
Division of Reactor Projects I-II  
Office of Nuclear Reactor  
Regulation, Mail 13 H3  
Washington, D.C. 20555

INPO Records Center  
Institute of Nuclear Power Operations  
700 Galleria Parkway  
Atlanta, Georgia 30339-5957

Mr. Jim Lang  
Director of Engineering and Operations  
Electric Power Research Institute  
P. O. Box 10412  
Palo Alto, California 94304

NRC Resident Inspector  
Browns Ferry Nuclear Plant  
10833 Shaw Road  
Athens, Alabama 35611

Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30323

Ms. Elizabeth Hannon  
Utility Data Institute  
1200 G Street, NW  
Washington, D.C. 20005-3802

ENCLOSURE

TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT (BFN)  
UNITS 1, 2, AND 3

MONTHLY OPERATING REPORT  
MARCH 1996

---

(SEE ATTACHED)

OPERATIONAL SUMMARY  
MARCH 1996

BROWNS FERRY 1

Unit 1 remains shutdown on administrative hold to resolve various TVA and NRC concerns. Unit 1 has been on administrative hold since June 1, 1985. As a result, TVA considers that accrual of reporting hours is suspended since the unit has a maximum dependable capacity of 0 MWe. Accordingly, TVA does not consider cumulative reporting period hours for the period beginning June 1, 1985, when calculating the operating status variables.

BROWNS FERRY 2

During the month Unit 2 operated at a capacity factor of 58.5 percent and generated 478,480 megawatt hours gross electrical power. Unit 2 shutdown at 0200 hours on March 23, 1996 for the cycle 8 refueling outage. The unit had operated continuously for 214 days. Unit 2 is scheduled to begin cycle 9 operation on April 20, 1996.

BROWNS FERRY 3

During the month Unit 3 operated at a capacity factor of 90.4 percent and generated 734,140 megawatt hours gross electrical power. The unit restarted on March 2, 1996 following a February 29, 1996 reactor scram resulting from a failed turbine speed feedback card in the EHC control system. As of March 31, 1996, Unit 3 has operated continuously for 29 days.

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-259  
UNIT: BROWNS FERRY 1  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

MONTH MARCH 1996

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

1	<u>0</u>
2	<u>0</u>
3	<u>0</u>
4	<u>0</u>
5	<u>0</u>
6	<u>0</u>
7	<u>0</u>
8	<u>0</u>
9	<u>0</u>
10	<u>0</u>
11	<u>0</u>
12	<u>0</u>
13	<u>0</u>
14	<u>0</u>
15	<u>0</u>

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

16	<u>0</u>
17	<u>0</u>
18	<u>0</u>
19	<u>0</u>
20	<u>0</u>
21	<u>0</u>
22	<u>0</u>
23	<u>0</u>
24	<u>0</u>
25	<u>0</u>
26	<u>0</u>
27	<u>0</u>
28	<u>0</u>
29	<u>0</u>
30	<u>0</u>
31	<u>0</u>

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-260  
UNIT: BROWNS FERRY 2  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

MONTH MARCH 1996

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

1	<u>1006</u>
2	<u>973</u>
3	<u>919</u>
4	<u>916</u>
5	<u>913</u>
6	<u>902</u>
7	<u>862</u>
8	<u>852</u>
9	<u>887</u>
10	<u>866</u>
11	<u>877</u>
12	<u>870</u>
13	<u>870</u>
14	<u>866</u>
15	<u>858</u>

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

16	<u>858</u>
17	<u>845</u>
18	<u>851</u>
19	<u>844</u>
20	<u>843</u>
21	<u>813</u>
22	<u>813</u>
23	<u>49</u>
24	<u>0</u>
25	<u>0</u>
26	<u>0</u>
27	<u>0</u>
28	<u>0</u>
29	<u>0</u>
30	<u>0</u>
31	<u>0</u>

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-296  
 UNIT: BROWNS FERRY 3  
 PREPARED BY: J. W. Davenport  
 TELEPHONE: (205) 729-2690

MONTH MARCH 1996

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>0</u>
2	<u>0</u>
3	<u>582</u>
4	<u>695</u>
5	<u>957</u>
6	<u>941</u>
7	<u>888</u>
8	<u>1083</u>
9	<u>1082</u>
10	<u>1038</u>
11	<u>1090</u>
12	<u>1091</u>
13	<u>1089</u>
14	<u>1087</u>
15	<u>1066</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
16	<u>878</u>
17	<u>1072</u>
18	<u>1090</u>
19	<u>1088</u>
20	<u>1090</u>
21	<u>1092</u>
22	<u>1092</u>
23	<u>1092</u>
24	<u>1064</u>
25	<u>1091</u>
26	<u>1085</u>
27	<u>1082</u>
28	<u>1091</u>
29	<u>1091</u>
30	<u>1088</u>
31	<u>1094</u>

UNIT SHUTDOWNS AND POWER REDUCTIONS  
REPORT MONTH: MARCH 1996

DOCKET NO: 50-259  
UNIT: BROWNS FERRY 1  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	License Event Report No.	System Code <sup>4</sup>	Component Code <sup>4</sup>	Cause and Corrective Action to Prevent Recurrence
1	06/01/85	S	744	F	4				Administrative hold to resolve various TVA and NRC concerns.

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

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

<sup>3</sup>Method:  
1-Manual  
2-Manual Scram  
3-Automatic Scram  
4-Continuation of Existing Outage  
5-Reduction  
9-Other

<sup>4</sup>Instructions for Preparation of Licensee  
Event Reports (NUREG-1022)

UNIT SHUTDOWNS AND POWER REDUCTIONS  
REPORT MONTH: MARCH 1996

DOCKET NO: 50-260  
UNIT: BROWNS FERRY 2  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	License Event Report No.	System Code <sup>4</sup>	Component Code <sup>4</sup>	Cause and Corrective Action to Prevent Recurrence
1	3/23/96	S	214	C	1	N/A	N/A	N/A	Unit 2 Reactor shutdown for Refueling at 0200 hours on March 23, 1996.

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

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

<sup>3</sup>Method:  
1-Manual  
2-Manual Scram  
3-Automatic Scram  
4-Continuation of Existing Outage  
5-Reduction  
9-Other

<sup>4</sup>Instructions for Preparation of Licensee  
Event Reports (NUREG-1022)

UNIT SHUTDOWNS AND POWER REDUCTIONS  
REPORT MONTH: MARCH 1996

DOCKET NO: 50-296  
UNIT: BROWNS FERRY 3  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	License Event Report No.	System Code <sup>4</sup>	Component Code <sup>4</sup>	Cause and Corrective Action to Prevent Recurrence
1	02/29/96	F	43.7	A	3	296/96001	JJ	CNV	A failed turbine speed feedback card in the Electro-Hydraulic Control system caused fluctuations in the turbine control and bypass valves. This caused a reactor pressure spike, which in turn caused an Average Power Range Monitor high flux spike that scrammed the reactor.  Note: This shutdown is a continuation of the one identified in the February 1996 report.
2	03/16/96	S	26	B	5	N/A	N/A	N/A	Reduced power to 80% for Control Rod Drive Testing

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

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

<sup>3</sup>Method:  
1-Manual  
2-Manual Scram  
3-Automatic Scram  
4-Continuation of Existing Outage  
5-Reduction  
9-Other

<sup>4</sup>Instructions for Preparation of Licensee  
Event Reports (NUREG-1022)

OPERATING DATA REPORT

DOCKET: 50-259  
UNIT: BROWNS FERRY 1  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

**OPERATING STATUS**

1. Unit Name: **BROWNS FERRY UNIT 1**
2. Reporting Period: **MARCH 1996**
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): **0**
7. Maximum Dependable Capacity (Net MWe): **0**
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reason: **N/A**
9. Power Level To Which Restricted, If Any (Net MWe): **0**
10. Reason For Restrictions, If Any: **Administrative Hold**

**THIS MONTH YEAR TO DATE CUMULATIVE\***

11. Hours in Reporting Period	0	0	95743
12. Hours Reactor Was Critical	0	0	59521
13. Reactor Reserve Shutdown Hours	0	0	6997
14. Hours Generator On Line	0	0	58267
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Generation (MWh)	0	0	168066787
17. Gross Electrical Generation (MWh)	0	0	55398130
18. Net Electrical Generation (MWh)	0	0	53796427
19. Unit Service Factor	0	0	60.9
20. Unit Availability Factor	0	0	60.9
21. Unit Capacity Factor (MDC Net)	0	0	52.8
22. Unit Capacity Factor (DER net)	0	0	52.8
23. Unit Forced Outage Rate	0	0	25.6
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): <b>N/A</b>			
25. If Shut Down At End Of Reporting Period, Estimated Date of Startup: <b>To Be Determined</b>			

\* Excludes hours under administrative hold  
(June 1, 1985 to present)

# OPERATING DATA REPORT

DOCKET: 50-260  
UNIT: BROWNS FERRY 2  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

## OPERATING STATUS

1. Unit Name: BROWNS FERRY UNIT 2
2. Reporting Period: MARCH 1996
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 Reason: N/A
9. Power Level To Which Restricted, If Any (Net MWe): N/A
10. Reason For Restrictions, If Any: N/A

## THIS MONTH YEAR TO DATE CUMULATIV\*

11. Hours in Reporting Period	744.0	2184.0	133015
12. Hours Reactor Was Critical	530.0	1970.0	92749
13. Reactor Reserve Shutdown Hours	0.0	0.0	14200
14. Hours Generator On Line	530.0	1970.0	90458
15. Unit Reserve Shutdown Hours	0.0	0.0	0
16. Gross Thermal Generation (MWh)	1462392.0	6028824	265369156
17. Gross Electrical Generation (MWh)	478480.0	1985080	88150398
18. Net Electrical Generation (MWh)	463626.0	1932741	85719612
19. Unit Service Factor	71.2	90.2	68.0
20. Unit Availability Factor	71.2	90.2	68.0
21. Unit Capacity Factor (MDC Net)	58.5	83.1	60.5
22. Unit Capacity Factor (DER net)	58.5	83.1	60.5
23. Unit Forced Outage Rate	0.0	0.0	15.7

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): U2 Cycle 8 Refueling Outage, In progress

25. If Shut Down At End Of Reporting Period, Estimated Date of Startup: April 20, 1996

\* Excludes hours under administrative hold (June 1, 1985 to May 24, 1991)

# OPERATING DATA REPORT

DOCKET: 50-296  
UNIT: BROWNS FERRY 3  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

## OPERATING STATUS

1. Unit Name: BROWNS FERRY UNIT 3
2. Reporting Period: MARCH 1996
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 Reason: N/A
9. Power Level To Which Restricted, If Any (Net MWe): N/A
10. Reason For Restrictions, If Any: N/A

## THIS MONTH YEAR TO DATE CUMULATIVE\*

11. Hours in Reporting Period	744.0	2184.0	76237
12. Hours Reactor Was Critical	706.9	2124.9	48420
13. Reactor Reserve Shutdown Hours	0.0	0	5150
14. Hours Generator On Line	700.3	2118.3	47123
15. Unit Reserve Shutdown Hours	0.0	0	0
16. Gross Thermal Generation (MWh)	2165688.0	6810552	141080833
17. Gross Electrical Generation (MWh)	734140.0	2305680	47304010
18. Net Electrical Generation (MWh)	716398.0	2250031	45128658
19. Unit Service Factor	94.1	97.0	61.8
20. Unit Availability Factor	94.1	97.0	61.8
21. Unit Capacity Factor (MDC Net)	90.4	96.7	55.6
22. Unit Capacity Factor (DER net)	90.4	96.7	55.6
23. Unit Forced Outage Rate	5.9	3.0	20.6
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):	N/A		
25. If Shut Down At End Of Reporting Period, Estimated Date of Startup:	N/A		

\* Excludes hours under administrative hold  
(June 1, 1985 to November 19, 1995)

UNIT SHUTDOWNS AND POWER REDUCTIONS  
REPORT MONTH: FEBRUARY 1996 \*

DOCKET NO: 50-296  
UNIT: BROWNS FERRY 3  
PREPARED BY: J. W. Davenport  
TELEPHONE: (205) 729-2690

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	License Event Report No.	System Code <sup>4</sup>	Component Code <sup>4</sup>	Cause and Corrective Action to Prevent Recurrence
1	02/29/96	F	22	A	3	296/96001	JJ	CNV	A failed turbine speed feedback card in the Electro-Hydraulic Control system caused fluctuations in the turbine control and bypass valves. This caused a reactor pressure spike, which in turn caused an Average Power Range Monitor high flux spike that scrammed the reactor.
									*Revised to correct Report Month from November 1996 to February 1996

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

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

<sup>3</sup>Method:  
1-Manual  
2-Manual Scram  
3-Automatic Scram  
4-Continuation of Existing Outage  
5-Reduction  
9-Other

<sup>4</sup>Instructions for Preparation of Licensee  
Event Reports (NUREG-1022)