

OPERATING DATA REPORT

DOCKET NO. 50-348
 DATE 5/4/88
 COMPLETED BY J. D. Woodard
 TELEPHONE (205)899-5156

OPERATING STATUS

- | | | Notes |
|---|---------------------------|--|
| 1. Unit Name: | Joseph M. Farley - Unit 1 | 1) Cumulative data since 12-1-77, date of commercial operation |
| 2. Reporting Period: | April, 1988 | |
| 3. Licensed Thermal Power (Mwt): | 2,652 | |
| 4. Nameplate Rating (Gross MWe): | 860 | |
| 5. Design Electrical Rating (Net MWe): | 829 | |
| 6. Maximum Dependable Capacity (Gross MWe): | 852.6 | |
| 7. Maximum Dependable Capacity (Net MWe): | 812.6 | |
| 8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons: | N/A | |
| 9. Power Level To Which Restricted, If Any (Net MWe): | N/A | |
| 10. Reasons For Restrictions, If Any: | N/A | |

	This Month	Yr-to-Date	Cumulative
11. Hours In Reporting Period	719	2,903	91,295
12. Number Of Hours Reactor Was Critical	0.0	2,040.8	67,257.5
13. Reactor Reserve Shutdown Hours	0.0	0.0	3,650.0
14. Hours Generator On-Line	0.0	2,040.1	65,865.6
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH)	0	5,400,491	167,823,810
17. Gross Electrical Energy Generated (MWH)	0	1,763,232	53,930,770
18. Net Electrical Energy Generated (MWH)	0	1,673,430	50,842,626
19. Unit Service Factor	0.0	70.3	72.1
20. Unit Availability Factor	0.0	70.3	72.1
21. Unit Capacity Factor (Using MDC Net)	0.0	70.9	69.1
22. Unit Capacity Factor (Using DER Net)	0.0	69.5	67.2
23. Unit Forced Outage Rate	0.0	0.0	9.4
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):	N/A		

25. If Shut Down At End Of Report Period, Estimated Date of Startup:	5/14/88	
26. Units In Test Status (Prior to Commercial Operation):	Forecast	Achieved
INITIAL CRITICALITY	08/06/77	08/09/77
INITIAL ELECTRICITY	08/20/77	08/18/77
COMMERCIAL OPERATION	12/01/77	12/01/77

2614
 1/1

DOCKET NO. 50-348

UNIT 1

DATE May 4, 1988

COMPLETED BY J. D. Woodard

TELEPHONE (205)899-5156

MONTH April

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>0</u>	17	<u>0</u>
2	<u>0</u>	18	<u>0</u>
3	<u>0</u>	19	<u>0</u>
4	<u>0</u>	20	<u>0</u>
5	<u>0</u>	21	<u>0</u>
6	<u>0</u>	22	<u>0</u>
7	<u>0</u>	23	<u>0</u>
8	<u>0</u>	24	<u>0</u>
9	<u>0</u>	25	<u>0</u>
10	<u>0</u>	26	<u>0</u>
11	<u>0</u>	27	<u>0</u>
12	<u>0</u>	28	<u>0</u>
13	<u>0</u>	29	<u>0</u>
14	<u>0</u>	30	<u>0</u>
15	<u>0</u>	31	<u>0</u>
16	<u>0</u>		

INSTRUCTIONS

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

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-348
 UNIT NAME J. M. FARLEY - UNIT 1
 DATE MAY 4, 1988
 COMPLETED BY J. D. WOODARD
 TELEPHONE (205)899-5156

REPORT MONTH APRIL

NO.	DATE	TYPE ¹	DURATION (HOURS)	REASON ²	METHOD OF SHUTTING DOWN REACTOR ³	LICENSEE EVENT REPORT #	SYSTEM CODE ⁴	COMPONENT CODE ⁵	CAUSE & CORRECTIVE ACTION TO PREVENT RECURRENCE
001	880401	S	719.0	C	1	N/A	N/A	N/A	The Cycle 8-9 refueling outage continued from 3-26-88.

¹F: Forced
 S: Scheduled

²Reason:
 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)

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

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

⁵Exhibit I -Same Source

(9/77)

JOSEPH M. FARLEY NUCLEAR PLANT
ADDENDUM CONCERNING REVISION 5 TO THE
OFFSITE DOSE CALCULATION MANUAL

Revision 5 to the Offsite Dose Calculation Manual (ODCM) was approved by the PORC on April 12, 1988. This revision clarified the requirement to thoroughly mix a liquid waste batch prior to release. It was determined by the PORC that this change will not reduce the accuracy or reliability of dose calculations or setpoint determinations.

The ODCM applies to both Unit 1 and Unit 2 at Farley Nuclear Plant.

FNP-0-M-011
April 4, 1988
Revision 5

ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT
UNITS 1 AND 2

S
A
F
E
T
Y

R
E
L
A
T
E
D

OFFSITE DOSE CALCULATION MANUAL

Approved:

J. M. Farley
Technical Manager

Date Issued: 1-13-88

<u>Page</u>	<u>Rev.</u>
1,11	2
1,2	5
3-8	2
9-20,22-24,28-32,34-38	0
21,25-27,33	3
39,41,42,46,49	1
40,44,47,48	2
43,45,50,51	4

ENV ODCM/3

Dose Calculation Due to Liquid Effluents

4.11.1.1.1

4.11.1.1.2

4.11.1.1.3

4.11.1.2

4.11.1.3.1 Liquid Effluents-Dose Calculations

Prior to release, all tanks to be released as a batch are isolated from the source and recirculated two volumes to ensure adequate mixing. The batch tank is then sampled after the appropriate mixing. Recirculation time to ensure adequate mixing is calculated as follows:

$$\text{recirc duration (minutes):} = \frac{\text{tank content (gallons)} \times 2}{\text{recirc rate (gpm)}}$$

The dose contributions for the total time period $\sum_{l=1}^m \Delta t_l$

shall be determined by the following calculation and a cumulative summation of these total body and any organ doses shall be maintained for each calendar quarter. These dose contributions shall be calculated for all radionuclides measured in liquid effluents released to unrestricted area using the following expression:

$$D_{\tau} = \sum_i [A_{i\tau} \sum_{l=1}^m \Delta t_l C_{il} F_{il}]$$

where:

D_{τ} = The cumulative dose or dose commitment to the total body or an organ τ from the liquid effluents for the total time period $\sum_{l=1}^m \Delta t_l$, in mrem.

Δt_l = the length of the l^{th} time period over which C_{il} and F_i are averaged for all liquid releases, in hours.

C_{il} = the average concentration of radionuclide i in undiluted liquid effluent during time period Δt_l from any liquid release, in $\mu\text{Ci/ml}$.

$A_{i\tau}$ = the site related ingestion dose and dose commitment factor to the total body or organ τ for each identified principal gamma and beta emitter, in mrem/hr per $\mu\text{Ci/ml}$.

$$A_{i\tau} = k_o U_f B F_i D F_i$$

where:

- k_0 = unit conversion factor, 1.14×10^5 (year/hr).(ml/l).(pCi/ μ Ci).
- U_f = adult fish consumption, 21 kg/yr.
- BF_i = the bioaccumulation factor in freshwater fish for each measured radionuclide i , in pCi/kg per pCi/liter (Table 1).
- DF_i = the dose conversion factor for nuclide i for adults, in mrem/pCi (Table 2).
- F_i = the near field average dilution factor for C_{i1} during any liquid effluent release. Defined as the ratio of the maximum undiluted liquid waste flow during release to the product of the average flow from the site discharge structure to unrestricted receiving waters times 5. (5 is the site specific applicable factor for the mixing effect of the discharge structure.)

For radionuclides not determined in each batch or weekly composite, the dose contribution to the current calendar quarter cumulative summation may be approximated by assuming an average monthly concentration based on the previous monthly or quarterly composite analyses.

JOSEPH M. FARLEY NUCLEAR PLANT
UNIT 1
NARRATIVE SUMMARY OF OPERATIONS
April, 1988

The Cycle 8 - 9 refueling outage continued into the month of April.

The following major safety-related maintenance was performed in the month of April:

1. The reactor was defueled. Visual inspections of the fuel revealed defects on seven fuel assemblies (F/As). Six of these F/As were scheduled to be used in Cycle 9. Also, ultrasonic testing was performed on all off loaded F/As and selected reload candidate F/As from the spent fuel pool. Based on the ultrasonic testing, six defective rods were identified in five F/As unloaded from the core. Two of these F/As with leaking rods were scheduled to be used in Cycle 9. The core was redesigned to delete all leaking F/As and any assemblies with serious grid defects. A total of seven F/As were deleted. The fuel, including 68 fresh assemblies, was placed back in the reactor vessel.
2. Eddy current examinations were completed on all non-plugged tubes in all three steam generators. Seventeen tubes were plugged: four in the A steam generator, one in the B steam generator and twelve in the C steam generator.
3. Ten Year Inservice Inspection activities were performed.
4. Seventy-one 600 volt breakers are being inspected and repaired per NRC Bulletin 88-01.
5. Testing of motor-operated valves in response to NRC Bulletin 85-03 is in progress.
6. Miscellaneous corrective and preventive maintenance was performed on the diesel generators.

OPERATING DATA REPORT

DOCKET NO. 50-348
 DATE 5/4/88
 COMPLETED BY J. D. Woodard
 TELEPHONE (205)899-5156

OPERATING STATUS

- | | |
|--|---|
| 1. Unit Name: <u>Joseph M. Farley - Unit 1</u>
2. Reporting Period: <u>April, 1988</u>
3. Licensed Thermal Power (Mwt): <u>2,652</u>
4. Nameplate Rating (Gross MWe): <u>860</u>
5. Design Electrical Rating (Net MWe): <u>829</u>
6. Maximum Dependable Capacity (Gross MWe): <u>852.6</u>
7. Maximum Dependable Capacity (Net MWe): <u>812.6</u>
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons: <u>N/A</u>
9. Power Level To Which Restricted, If Any (Net MWe): <u>N/A</u>
10. Reasons For Restrictions, If Any: <u>N/A</u> | Notes

1) Cumulative data since 12-1-77, date of commercial operation |
|--|---|

	This Month	Yr-to-Date	Cumulative
11. Hours In Reporting Period	719	2,903	91,295
12. Number Of Hours Reactor Was Critical	0.0	2,040.8	67,257.5
13. Reactor Reserve Shutdown Hours	0.0	0.0	3,650.0
14. Hours Generator On-Line	0.0	2,040.1	65,865.6
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH)	0	5,400,491	167,823,810
17. Gross Electrical Energy Generated (MWH)	0	1,763,232	53,930,770
18. Net Electrical Energy Generated (MWH)	0	1,673,430	50,842,626
19. Unit Service Factor	0.0	70.3	72.1
20. Unit Availability Factor	0.0	70.3	72.1
21. Unit Capacity Factor (Using MDC Net)	0.0	70.9	69.1
22. Unit Capacity Factor (Using DER Net)	0.0	69.5	67.2
23. Unit Forced Outage Rate	0.0	0.0	9.4
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): <u>N/A</u>			

25. If Shut Down At End Of Report Period, Estimated Date of Startup: 5/14/88
- | | | |
|---|-----------------|-----------------|
| 26. Units In Test Status (Prior to Commercial Operation): | Forecast | Achieved |
| INITIAL CRITICALITY | <u>08/06/77</u> | <u>08/09/77</u> |
| INITIAL ELECTRICITY | <u>08/20/77</u> | <u>08/18/77</u> |
| COMMERCIAL OPERATION | <u>12/01/77</u> | <u>12/01/77</u> |

DOCKET NO. 50-348

UNIT 1

DATE May 4, 1988

COMPLETED BY J. D. Woodard

TELEPHONE (205)899-5156

MONTH April

DAY AVERAGE DAILY POWER LEVEL
(MWe-Net)

1 0

2 0

3 0

4 0

5 0

6 0

7 0

8 0

9 0

10 0

11 0

12 0

13 0

14 0

15 0

16 0

DAY AVERAGE DAILY POWER LEVEL
(MWe-Net)

17 0

18 0

19 0

20 0

21 0

22 0

23 0

24 0

25 0

26 0

27 0

28 0

29 0

30 0

31 0

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.

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-348
 UNIT NAME J. M. FARLEY - UNIT 1
 DATE MAY 4, 1988
 COMPLETED BY J. D. WOODARD
 TELEPHONE (205)899-5156

REPORT MONTH APRIL

NO.	DATE	TYPE ¹	DURATION (HOURS)	REASON ²	METHOD OF SHUTTING DOWN REACTOR ³	LICENSEE EVENT REPORT #	SYSTEM CODE ⁴	COMPONENT CODE ⁵	CAUSE & CORRECTIVE ACTION TO PREVENT RECURRENCE
001	880601	S	719.0	C	1	N/A	N/A	N/A	The Cycle 8-9 refueling outage continued from 3-26-88.

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)

JOSEPH M. FARLEY NUCLEAR PLANT
ADDENDUM CONCERNING REVISION 5 TO THE
OFFSITE DOSE CALCULATION MANUAL

Revision 5 to the Offsite Dose Calculation Manual (ODCM) was approved by the PORC on April 12, 1988. This revision clarified the requirement to thoroughly mix a liquid waste batch prior to release. It was determined by the PORC that this change will not reduce the accuracy or reliability of dose calculations or setpoint determinations.

The ODCM applies to both Unit 1 and Unit 2 at Farley Nuclear Plant.

FNP-0-M-011
April 4, 1988
Revision 5

ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT
UNITS 1 AND 2

S
A
F
E
T
Y

R
E
L
A
T
E
D

OFFSITE DOSE CALCULATION MANUAL

Approved:

J. M. Farley
Technical Manager

Date Issued: 4-15-88

Page	Rev.
1, 11	2
1, 2	5
3-8	2
9-20, 22-24, 28-32, 34-38	0
21, 25-27, 33	3
39, 41, 42, 46, 49	1
40, 44, 47, 48	2
43, 45, 50, 51	4

EW ODCM/3

Dose Calculation Due to Liquid Effluents

4.11.1.1.1

4.11.1.1.2

4.11.1.1.3

4.11.1.2

4.11.1.3.1 Liquid Effluents-Dose Calculations

Prior to release, all tanks to be released as a batch are isolated from the source and recirculated two volumes to ensure adequate mixing. The batch tank is then sampled after the appropriate mixing. Recirculation time to ensure adequate mixing is calculated as follows:

$$\text{recirc duration (minutes)} = \frac{\text{tank content (gallons)} \times 2}{\text{recirc rate (gpm)}}$$

The dose contributions for the total time period $\sum_{l=1}^m \Delta t_l$

shall be determined by the following calculation and a cumulative summation of these total body and any organ doses shall be maintained for each calendar quarter. These dose contributions shall be calculated for all radionuclides measured in liquid effluents released to unrestricted area using the following expression:

$$D_{\tau} = \sum_i [A_{i,\tau} \sum_{l=1}^m \Delta t_l C_{i,l} F_{i,l}]$$

where:

D_{τ} = The cumulative dose or dose commitment to the total body or an organ τ from the liquid effluents for the total time period $\sum_{l=1}^m \Delta t_l$, in mrem.

Δt_l = the length of the l^{th} time period over which $C_{i,l}$ and $F_{i,l}$ are averaged for all liquid releases, in hours.

$C_{i,l}$ = the average concentration of radionuclide i in undiluted liquid effluent during time period Δt_l from any liquid release, in $\mu\text{Ci/ml}$.

$A_{i,\tau}$ = the site related ingestion dose and dose commitment factor to the total body or organ τ for each identified principal gamma and beta emitter, in $\text{mrem/hr per } \mu\text{Ci/ml}$.

$$A_{i,\tau} = k_o U_{\tau} B F_i D F_i$$

where:

- k_0 = unit conversion factor, 1.14×10^5 (year/hr).(ml/l).(pCi/ μ Ci).
- U_i = adult fish consumption, 21 kg/yr.
- BF_i = the bioaccumulation factor in freshwater fish for each measured radionuclide i , in pCi/kg per pCi/liter (Table 1).
- DF_i = the dose conversion factor for nuclide i for adults, in mrem/pCi (Table 2).
- F_i = the near field average dilution factor for C_{i1} during any liquid effluent release. Defined as the ratio of the maximum undiluted liquid waste flow during release to the product of the average flow from the site discharge structure to unrestricted receiving waters times 5. (5 is the site specific applicable factor for the mixing effect of the discharge structure.)

For radionuclides not determined in each batch or weekly composite, the dose contribution to the current calendar quarter cumulative summation may be approximated by assuming an average monthly concentration based on the previous monthly or quarterly composite analyses.

Alabama Power Company
600 North 18th Street
Post Office Box 2641
Birmingham, Alabama 35291-0400
Telephone 205 250-1835

R. P. McDonald
Senior Vice President



Alabama Power
the southern electric system

May 10, 1988

Docket No. 50-348

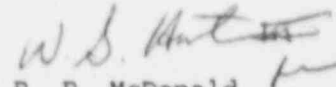
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Joseph M. Farley Nuclear Plant
Unit 1
Monthly Operating Data Report

Attached are two (2) copies of the April 1988 Monthly Operating Report for Joseph M. Farley Nuclear Plant Unit 1, required by Section 6.9.1.10 of the Technical Specifications. Also attached is Revision 5 to the Offsite Dose Calculation Manual (ODCM).

If you have any questions, please advise.

Yours very truly,


R. P. McDonald

RPM/JGS:mab/1.6

Attachments

xc: Dr. J. N. Grace

IE24
1/1

JOSEPH M. FARLEY NUCLEAR PLANT
UNIT 1
NARRATIVE SUMMARY OF OPERATIONS
April, 1988

The Cycle 8 - 9 refueling outage continued into the month of April.

The following major safety-related maintenance was performed in the month of April:

1. The reactor was defueled. Visual inspections of the fuel revealed defects on seven fuel assemblies (F/As). Six of these F/As were scheduled to be used in Cycle 9. Also, ultrasonic testing was performed on all off loaded F/As and selected reload candidate F/As from the spent fuel pool. Based on the ultrasonic testing, six defective rods were identified in five F/As unloaded from the core. Two of these F/As with leaking rods were scheduled to be used in Cycle 9. The core was redesigned to delete all leaking F/As and any assemblies with serious grid defects. A total of seven F/As were deleted. The fuel, including 68 fresh assemblies, was placed back in the reactor vessel.
2. Eddy current examinations were completed on all non-plugged tubes in all three steam generators. Seventeen tubes were plugged: four in the A steam generator, one in the B steam generator and twelve in the C steam generator.
3. Ten Year Inservice Inspection activities were performed.
4. Seventy-one 600 volt breakers are being inspected and repaired per NRC Bulletin 88-01.
5. Testing of motor-operated valves in response to NRC Bulletin 85-03 is in progress.
6. Miscellaneous corrective and preventive maintenance was performed on the diesel generators.