

50-269/2709/287

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FILE NUMBER

MONTHLY REPORT

TO:  
N. R. C.

FROM:  
Duke Power Company  
Charlotte, North Carolina  
William O. Parker, Jr.

DATE OF DOCUMENT  
11/10/77

DATE RECEIVED  
11/14/77

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DESCRIPTION

Letter trans the following:

ENCLOSURE

Monthly Report for October 1977  
Plant & Component Operability & Availability.  
This Report to be used in preparing Gray Book  
by Plans & Operations.

(1-P)

(9-P)

PLANT NAME:

Oconee Units 1-2-3  
RJL 11/14/77

1 ENCL

FOR ACTION/INFORMATION

MIPC W/2 CYS FOR ACTION

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DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.  
VICE PRESIDENT  
STEAM PRODUCTION

November 10, 1977

TELEPHONE: AREA 704  
373-4083

Director  
Office of Management Information  
and Program Control  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555



RE: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287

Dear Sir:

Please find attached information concerning the performance and operating status of the Oconee Nuclear Station for the month of October, 1977.

Very truly yours,

*William O Parker Jr.*  
William O. Parker, Jr. *by WAH*

JAR:ge  
Attachment

cc: Mr. J. P. O'Reilly

UNIT Oconee Unit 1  
DATE 11/10/77  
DOCKET NO. 50-269  
PREPARED BY J. A. Reavis

OPERATING STATUS

1. REPORTING PERIOD: October 1 THROUGH October 31, 1977  
GROSS HOURS IN REPORTING PERIOD: 745
2. CURRENTLY AUTHORIZED POWER LEVEL (Mwt): 2568 NET CAPABILITY  
(MWe-Net): 860
3. POWER LEVEL TO WHICH RESTRICTED (IF ANY): (MWe-Net) \_\_\_\_\_
4. REASONS FOR RESTRICTION (IF ANY) \_\_\_\_\_
5. NUMBER OF HOURS THE REACTOR WAS CRITICAL
6. REACTOR RESERVE SHUTDOWN HOURS
7. HOURS GENERATOR ON-LINE
8. UNIT RESERVE SHUTDOWN HOURS
9. GROSS THERMAL ENERGY GENERATED (MWH)
10. GROSS ELECTRICAL ENERGY GENERATED (MWH)
11. NET ELECTRICAL ENERGY GENERATED (MWH)
12. REACTOR SERVICE FACTOR
13. REACTOR AVAILABILITY FACTOR
14. UNIT SERVICE FACTOR
15. UNIT AVILABILITY FACTOR
16. UNIT CAPACITY FACTOR (Using Net Capability)
17. UNIT CAPACITY FACTOR (Using Design Mwe)
18. UNIT FORCED OUTAGE RATE
19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE & DURATION OF EACH:)  

None
20. IF SHUTDOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP:

	<u>This Month</u>	<u>Year to Date</u>	<u>Cumulative</u>
5. NUMBER OF HOURS THE REACTOR WAS CRITICAL	407.2	4,242.6	26,358.4
6. REACTOR RESERVE SHUTDOWN HOURS	-	-	-
7. HOURS GENERATOR ON-LINE	327.0	4,104.7	24,068.7
8. UNIT RESERVE SHUTDOWN HOURS	-	-	-
9. GROSS THERMAL ENERGY GENERATED (MWH)	445,631	9,325,537	55,711,248
10. GROSS ELECTRICAL ENERGY GENERATED (MWH)	123,670	3,189,300	19,312,730
11. NET ELECTRICAL ENERGY GENERATED (MWH)	103,632	3,001,103	18,233,636
12. REACTOR SERVICE FACTOR	54.7	58.2	70.0
13. REACTOR AVAILABILITY FACTOR	43.9	58.1	66.3
14. UNIT SERVICE FACTOR	43.9	56.3	63.9
15. UNIT AVILABILITY FACTOR	43.9	56.3	64.0
16. UNIT CAPACITY FACTOR (Using Net Capability)	16.2	47.8	56.3
17. UNIT CAPACITY FACTOR (Using Design Mwe)	15.7	46.4	54.6
18. UNIT FORCED OUTAGE RATE	2.7	25.8	19.2

$$\text{REACTOR SERVICE FACTOR} = \frac{\text{HOURS REACTOR WAS CRITICAL}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{REACTOR AVAILABILITY FACTOR} = \frac{\text{HOURS REACTOR WAS AVAILABLE TO OPERATE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT SERVICE FACTOR} = \frac{\text{HOURS GENERATOR ON LINE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT AVAILABILITY FACTOR} = \frac{\text{HOURS UNIT WAS AVAILABLE TO GENERATE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT CAPACITY FACTOR} = \frac{\text{NET ELECTRICAL POWER GENERATED}}{[\text{Net Capability or Design (Mwe-Net)}] \times \text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT FORCED OUTAGE RATE} = \frac{\text{FORCED OUTAGE HOURS}}{\text{HOURS GENERATOR ON LINE} + \text{FORCED OUTAGE HOURS}} \times 100$$

**UNIT SHUTDOWNS**

DOCKET NO. 50-269  
 UNIT NAME Oconee Unit 1  
 DATE 11/10/77

REPORT MONTH October, 1977

NO.	DATE	TYPE F-FORCED S-SCHEDULED	DURATION (HOURS)	REASON (1)	METHOD OF SHUTTING DOWN THE REACTOR (2)	CORRECTIVE ACTIONS/COMMENTS
15	77/10/01	S	87.40	B	4	Continuation of outage for steam generator maintenance.
16	77/10/04	S	236.60	B	4	Outage continued to correct reactor coolant pump seal leakage.
17	77/10/14	S	85.05	B	4	Zero power physics testing
18	77/10/18	F	8.91	A	3	Loss of "A" feedwater pump caused trip.

  

<p>(1) REASON                  A-EQUIPMENT FAILURE (EXPLAIN)                  B-MAINT. OR TEST.                  C-REFUELING                  D-REGULATORY RESTRICTION                  E-OPERATOR TRAINING AND                  LICENSE EXAMINATION                  F-ADMINISTRATIVE                  G-OPERATIONAL ERROR                  (EXPLAIN)                  H-OTHER (EXPLAIN)</p>	<p>(2) METHOD                  1-MANUAL                  2-MANUAL                  SCRAM                  3-AUTOMATIC                  SCRAM                  4-Other</p>
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**SUMMARY:**

One major outage this month.

DOCKET NO. 50-269  
 UNIT Oconee Unit 1  
 DATE 11-10-77

**AVERAGE DAILY UNIT POWER LEVEL**

MONTH October, 1977

DAY	AVERAGE DAILY POWER LEVEL (MWe-net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-net)
1	-	17	-
2	-	18	61
3	-	19	293
4	-	20	309
5	-	21	287
6	-	22	217
7	-	23	208
8	-	24	212
9	-	25	286
10	-	26	290
11	-	27	296
12	-	28	318
13	-	29	579
14	-	30	625
15	-	31	627
16	-		

**DAILY UNIT POWER LEVEL FORM INSTRUCTIONS**

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

These figures will be used to plot a graph for each reporting month. Note that by using maximum dependable capacity for the net electrical rating of the unit, there may be occasions when the daily average power level exceeds the 100% line (or the restricted power level line). In such cases, the average daily unit power output sheet should be footnoted to explain the apparent anomaly.

OPERATING STATUS

1. REPORTING PERIOD: October 1 THROUGH October 31, 1977  
 GROSS HOURS IN REPORTING PERIOD: 745

2. CURRENTLY AUTHORIZED POWER LEVEL (MWt): 2568 NET CAPABILITY  
 (MWe-Net): 860

3. POWER LEVEL TO WHICH RESTRICTED (IF ANY): (MWe-Net) \_\_\_\_\_

4. REASONS FOR RESTRICTION (IF ANY) \_\_\_\_\_

	<u>This Month</u>	<u>Year to Date</u>	<u>Cumulative</u>
5. NUMBER OF HOURS THE REACTOR WAS CRITICAL	265.9	4,372.7	18,599.7
6. REACTOR RESERVE SHUTDOWN HOURS	-	-	-
7. HOURS GENERATOR ON-LINE	248.0	4,264.4	18,029.9
8. UNIT RESERVE SHUTDOWN HOURS	-	-	-
9. GROSS THERMAL ENERGY GENERATED (MWH)	415,194	10,217,804	42,979,066
10. GROSS ELECTRICAL ENERGY GENERATED (MWH)	138,120	3,459,480	14,615,086
11. NET ELECTRICAL ENERGY GENERATED (MWH)	124,827	3,279,017	13,863,140
12. REACTOR SERVICE FACTOR	35.7	59.9	67.5
13. REACTOR AVAILABILITY FACTOR	33.3	58.7	65.8
14. UNIT SERVICE FACTOR	33.3	58.5	65.4
15. UNIT AVILABILITY FACTOR	33.3	58.5	65.4
16. UNIT CAPACITY FACTOR (Using Net Capability)	19.5	52.3	58.5
17. UNIT CAPACITY FACTOR (Using Design Mwe)	18.9	50.7	56.7
18. UNIT FORCED OUTAGE RATE	66.7	17.4	23.6
19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE & DURATION OF EACH:)			

None

20. IF SHUTDOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP: \_\_\_\_\_

$$\text{REACTOR SERVICE FACTOR} = \frac{\text{HOURS REACTOR WAS CRITICAL}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{REACTOR AVAILABILITY FACTOR} = \frac{\text{HOURS REACTOR WAS AVAILABLE TO OPERATE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT SERVICE FACTOR} = \frac{\text{HOURS GENERATOR ON LINE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT AVAILABILITY FACTOR} = \frac{\text{HOURS UNIT WAS AVAILABLE TO GENERATE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT CAPACITY FACTOR} = \frac{\text{NET ELECTRICAL POWER GENERATED}}{[\text{Net Capability or Design (Mwe-Net)}] \times \text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT FORCED OUTAGE RATE} = \frac{\text{FORCED OUTAGE HOURS}}{\text{HOURS GENERATOR ON LINE} + \text{FORCED OUTAGE HOURS}} \times 100$$

**UNIT SHUTDOWNS**

DOCKET NO. 50-270  
 UNIT NAME Oconee Unit 2  
 DATE 11/10/77

REPORT MONTH October, 1977

NO.	DATE	TYPE F-FORCED S-SCHEDULED	DURATION (HOURS)	REASON (1)	METHOD OF SHUTTING DOWN THE REACTOR (2)	CORRECTIVE ACTIONS/COMMENTS
10	77/10/07	F	497.00	A	1	Shutdown to investigate indicated tube leak in "2B" steam generator.  (1) REASON A--EQUIPMENT FAILURE (EXPLAIN) B--MAINT. OR TEST. C--REFUELING D--REGULATORY RESTRICTION E--OPERATOR TRAINING AND LICENSE EXAMINATION F--ADMINISTRATIVE G--OPERATIONAL ERROR (EXPLAIN) H--OTHER (EXPLAIN)  (2) METHOD 1--MANUAL 2--MANUAL SCRAM 3--AUTOMATIC SCRAM

**SUMMARY:**

One major outage this month.

DOCKET NO. 50-270

UNIT Oconee Unit 2

DATE 11/10/77

**AVERAGE DAILY UNIT POWER LEVEL**

MONTH October, 1977

DAY	AVERAGE DAILY POWER LEVEL (MWe-net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-net)
1	<u>533</u>	17	<u>-</u>
2	<u>516</u>	18	<u>-</u>
3	<u>501</u>	19	<u>-</u>
4	<u>507</u>	20	<u>-</u>
5	<u>510</u>	21	<u>-</u>
6	<u>569</u>	22	<u>-</u>
7	<u>457</u>	23	<u>-</u>
8	<u>-</u>	24	<u>-</u>
9	<u>-</u>	25	<u>-</u>
10	<u>-</u>	26	<u>-</u>
11	<u>-</u>	27	<u>-</u>
12	<u>-</u>	28	<u>116</u>
13	<u>-</u>	29	<u>527</u>
14	<u>-</u>	30	<u>556</u>
15	<u>-</u>	31	<u>556</u>
16	<u>-</u>		

**DAILY UNIT POWER LEVEL FORM INSTRUCTIONS**

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

These figures will be used to plot a graph for each reporting month. Note that by using maximum dependable capacity for the net electrical rating of the unit, there may be occasions when the daily average power level exceeds the 100% line (or the restricted power level line). In such cases, the average daily unit power output sheet should be footnoted to explain the apparent anomaly.



UNIT Oconee Unit 3  
 DATE 11/10/77  
 DOCKET NO. 50-287  
 PREPARED BY J. A. Reavis

OPERATING STATUS

1. REPORTING PERIOD: October 1 THROUGH October 31, 1977

GROSS HOURS IN REPORTING PERIOD: 745

2. CURRENTLY AUTHORIZED POWER LEVEL (Mwt): 2568 NET CAPABILITY  
 (MWe-Net): 860

3. POWER LEVEL TO WHICH RESTRICTED (IF ANY): (MWe-Net) \_\_\_\_\_

4. REASONS FOR RESTRICTION (IF ANY) \_\_\_\_\_

	<u>This Month</u>	<u>Year to Date</u>	<u>Cumulative</u>
5. NUMBER OF HOURS THE REACTOR WAS CRITICAL	<u>506.4</u>	<u>6,137.3</u>	<u>19,540.0</u>
6. REACTOR RESERVE SHUTDOWN HOURS	<u>-</u>	<u>-</u>	<u>-</u>
7. HOURS GENERATOR ON-LINE	<u>491.0</u>	<u>6,039.5</u>	<u>19,063.0</u>
8. UNIT RESERVE SHUTDOWN HOURS	<u>-</u>	<u>-</u>	<u>-</u>
9. GROSS THERMAL ENERGY GENERATED (MWH)	<u>1,111,101</u>	<u>14,850,262</u>	<u>45,218,479</u>
10. GROSS ELECTRICAL ENERGY GENERATED (MWH)	<u>382,940</u>	<u>5,154,410</u>	<u>15,593,854</u>
11. NET ELECTRICAL ENERGY GENERATED (MWH)	<u>361.647</u>	<u>4,910,756</u>	<u>14,844,398</u>
12. REACTOR SERVICE FACTOR	<u>68.0</u>	<u>84.1</u>	<u>77.5</u>
13. REACTOR AVAILABILITY FACTOR	<u>67.2</u>	<u>83.0</u>	<u>77.6</u>
14. UNIT SERVICE FACTOR	<u>65.9</u>	<u>82.8</u>	<u>75.6</u>
15. UNIT AVAILABILITY FACTOR	<u>65.9</u>	<u>82.8</u>	<u>75.6</u>
16. UNIT CAPACITY FACTOR (Using Net Capability)	<u>56.5</u>	<u>78.3</u>	<u>68.4</u>
17. UNIT CAPACITY FACTOR (Using Design Mwe)	<u>54.7</u>	<u>75.9</u>	<u>66.4</u>
18. UNIT FORCED OUTAGE RATE	<u>1.9</u>	<u>14.4</u>	<u>14.1</u>

19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE & DURATION OF EACH:)

20. IF SHUTDOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP:

December 4, 1977

$$\text{REACTOR SERVICE FACTOR} = \frac{\text{HOURS REACTOR WAS CRITICAL}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{REACTOR AVAILABILITY FACTOR} = \frac{\text{HOURS REACTOR WAS AVAILABLE TO OPERATE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT SERVICE FACTOR} = \frac{\text{HOURS GENERATOR ON LINE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT AVAILABILITY FACTOR} = \frac{\text{HOURS UNIT WAS AVAILABLE TO GENERATE}}{\text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT CAPACITY FACTOR} = \frac{\text{NET ELECTRICAL POWER GENERATED}}{[\text{Net Capability or Design (Mwe-Net)}] \times \text{HOURS IN REPORTING PERIOD}} \times 100$$

$$\text{UNIT FORCED OUTAGE RATE} = \frac{\text{FORCED OUTAGE HOURS}}{\text{HOURS GENERATOR ON LINE} + \text{FORCED OUTAGE HOURS}} \times 100$$

UNIT SHUTDOWNS

DOCKET NO. 50-287

UNIT NAME Oconee Unit 3

DATE 11/10/77

REPORT MONTH October 1977

NO.	DATE	TYPE F-FORCED S-SCHEDULED	DURATION (HOURS)	REASON (1)	METHOD OF SHUTTING DOWN THE REACTOR (2)	CORRECTIVE ACTIONS/COMMENTS
11	77/10/13	F	9.66	A	3	Indicated loss of DC power to EHC system caused trip.
12	77/10/21	S	244.38	C	1	Started scheduled refueling outage

- |  |             |
|--|-------------|
| (1) REASON                                     | (2) METHOD  |
| A-EQUIPMENT FAILURE (EXPLAIN)                  | 1-MANUAL    |
| B-MAINT. OR TEST.                              | 2-MANUAL    |
| C-REFUELING                                    | SCRAM       |
| D-REGULATORY RESTRICTION                       | 3-AUTOMATIC |
| E-OPERATOR TRAINING AND<br>LICENSE EXAMINATION | SCRAM       |
| F-ADMINISTRATIVE                               |             |
| G-OPERATIONAL ERROR<br>(EXPLAIN)               |             |
| H-OTHER (EXPLAIN)                              |             |

SUMMARY:

Began refueling this month.

DOCKET NO. 50-287

UNIT Oconee Unit 3

DATE 11/10/77

### AVERAGE DAILY UNIT POWER LEVEL

MONTH October 1977

DAY	AVERAGE DAILY POWER LEVEL (MWe-net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-net)
1	<u>825</u>	17	<u>721</u>
2	<u>816</u>	18	<u>721</u>
3	<u>804</u>	19	<u>720</u>
4	<u>791</u>	20	<u>644</u>
5	<u>787</u>	21	<u>503</u>
6	<u>787</u>	22	<u>-</u>
7	<u>786</u>	23	<u>-</u>
8	<u>787</u>	24	<u>-</u>
9	<u>788</u>	25	<u>-</u>
10	<u>787</u>	26	<u>-</u>
11	<u>787</u>	27	<u>-</u>
12	<u>787</u>	28	<u>-</u>
13	<u>349</u>	29	<u>-</u>
14	<u>515</u>	30	<u>-</u>
15	<u>713</u>	31	<u>-</u>
16	<u>721</u>		

#### DAILY UNIT POWER LEVEL FORM INSTRUCTIONS

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

These figures will be used to plot a graph for each reporting month. Note that by using maximum dependable capacity for the net electrical rating of the unit, there may be occasions when the daily average power level exceeds the 100% line (or the restricted power level line). In such cases, the average daily unit power output sheet should be footnoted to explain the apparent anomaly.