

# N.R.C. OPERATING DATA REPORT

DOCKET NO. 50-316  
 DATE 8/1/85  
 COMPLETED BY CLIMER  
 TELEPHONE 616-465-5901

## OPERATING STATUS

1. Unit Name D. C. Cook Unit 2  
 2. Reporting Period JUL 85 Inotes  
 3. Licensed Thermal Power (MWt) 3411  
 4. Name Plate Rating (Gross MWe) 1133  
 5. Design Electrical Rating (Net MWe) 1100  
 6. Maximum Dependable Capacity (GROSS MWe) 1100  
 7. Maximum Dependable Capacity (Net MWe) 1060  
 8. If Changes Occur in Capacity Ratings (Items no. 3 through 7) Since Last Report Give Reasons

9. Power Level To Which Restricted. If Any (Net MWe)  
 10. Reasons For Restrictions. If Any:

	This Mo.	Yr. to Date	Cumm.
11. Hours in Reporting Period	744.0	5087.0	66455.0
12. No. of Hrs. Reactor Was Critical	357.2	4409.2	47489.2
13. Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14. Hours Generator on Line	357.0	4390.5	46389.1
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Therm. Energy Gen. (MWH)	1049002	14576673	147654734
17. Gross Elect. Energy Gen. (MWH)	318510	4758440	48543870
18. Net Elect. Energy Gen. (MWH)	305215	4592984	46810718
19. Unit Service Factor	48.0	86.3	72.6
20. Unit Availability Factor	48.0	86.3	72.6
21. Unit Capacity Factor (MDC Net)	38.7	85.2	69.1
22. Unit Capacity Factor (DER Net)	37.3	82.1	67.7
23. Unit Forced Outage Rate	52.0	12.6	12.7
24. Shutdowns Scheduled over Next Six Months (Type, Date, and Duration): 1985 Refueling Outage estimated start date late November 1985. Estimated duration 100 days.			
25. If Shut Down At End of Report Period, Estimated Date of Startup: STARTUP IN PROGRESS-8/1/85			
26. Units in Test Status (Prior to Commercial Operation):			
	Forecast	Achieved	

INITIAL CRITICALITY  
 INITIAL ELECTRICITY  
 COMMERCIAL OPERATION

8510010493 850731  
 PDR ADOCK 05000316  
 R PDR

IE24  
 111

# AVERAGE DAILY POWER LEVEL (MWe-Net)

DOCKET NO. 50-316  
UNIT TWO  
DATE 8/1/85  
COMPLETED BY CLIMER  
TELEPHONE 616-465-5901

MONTH JUL 85

DAY	AVERAGE DAILY POWER LEVEL	DAY	AVERAGE DAILY POWER LEVEL
1	1051	17	0
2	1031	18	0
3	712	19	0
4	388	20	0
5	383	21	0
6	426	22	0
7	968	23	0
8	993	24	0
9	990	25	0
10	1013	26	0
11	1013	27	0
12	1011	28	0
13	1007	29	0
14	1002	30	0
15	729	31	0
16	0		

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH July, 1985

DOCKET NO. 50-316  
 UNIT NAME D.C. Cook Unit 2  
 DATE 8-9-85  
 COMPLETED BY B.A. Svensson  
 TELEPHONE 616/465-5901  
 PAGE 1 of 2

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
161	850703	F	0	A&D	4	N.A.	RB	INSTRU	Reactor power was reduced to 47% due to an indicated misaligned group of rods in Control Bank D. The misalignment was found to be caused by rod control problems. While at the reduced power, the main feed pump turbine condensers were checked for condenser tube leaks. Reactor power was returned to 100% on 850708.
162	850715	F	387.0	A	1	N.A.	CC	HTEXCH	The Unit was removed from service at 2100 hours on 850715 due to an increase in the calculated steam generator primary to secondary leak rate. One leaking tube was identified and eddy current testing identified one tube with 94% degradation. Both tubes were mechanically plugged. At the end of the reporting period the reactor coolant system was in

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

## UNIT SHUTDOWNS AND POWER REDUCTIONS

### INSTRUCTIONS

This report should describe all plant shutdowns during the report period. In addition, it should be the source of explanation of significant dips in average power levels. Each significant reduction in power level (greater than 20% reduction in average daily power level for the preceding 24 hours) should be noted, even though the unit may not have been shut down completely<sup>1</sup>. For such reductions in power level, the duration should be listed as zero, the method of reduction should be listed as 4 (Other), and the Cause and Corrective Action to Prevent Recurrence column should explain. The Cause and Corrective Action to Prevent Recurrence column should be used to provide any needed explanation to fully describe the circumstances of the outage or power reduction.

**NUMBER.** This column should indicate the sequential number assigned to each shutdown or significant reduction in power for that calendar year. When a shutdown or significant power reduction begins in one report period and ends in another, an entry should be made for both report periods to be sure all shutdowns or significant power reductions are reported. Until a unit has achieved its first power generation, no number should be assigned to each entry.

**DATE.** This column should indicate the date of the start of each shutdown or significant power reduction. Report as year, month, and day. August 14, 1977 would be reported as 770814. When a shutdown or significant power reduction begins in one report period and ends in another, an entry should be made for both report periods to be sure all shutdowns or significant power reductions are reported.

**TYPE.** Use "F" or "S" to indicate either "Forced" or "Scheduled," respectively, for each shutdown or significant power reduction. Forced shutdowns include those required to be initiated by no later than the weekend following discovery of an off-normal condition. It is recognized that some judgment is required in categorizing shutdowns in this way. In general, a forced shutdown is one that would not have been completed in the absence of the condition for which corrective action was taken.

**DURATION.** Self-explanatory. When a shutdown extends beyond the end of a report period, count only the time to the end of the report period and pick up the ensuing down time in the following report periods. Report duration of outages rounded to the nearest tenth of an hour to facilitate summation. The sum of the total outage hours plus the hours the generator was on line should equal the gross hours in the reporting period.

**REASON.** Categorize by letter designation in accordance with the table appearing on the report form. If category H must be used, supply brief comments.

**METHOD OF SHUTTING DOWN THE REACTOR OR REDUCING POWER.** Categorize by number designation

<sup>1</sup>Note that this differs from the Edison Electric Institute (EEI) definitions of "Forced Partial Outage" and "Scheduled Partial Outage." For these terms, EEI uses a change of 30 MW as the break point. For larger power reactors, 30 MW is too small a change to warrant explanation.

in accordance with the table appearing on the report form. If category 4 must be used, supply brief comments.

**LICENSEE EVENT REPORT #.** Reference the applicable reportable occurrence pertaining to the outage or power reduction. Enter the first four parts (event year, sequential report number, occurrence code and report type) of the five part designation as described in Item 17 of Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161). This information may not be immediately evident for all such shutdowns, of course, since further investigation may be required to ascertain whether or not a reportable occurrence was involved. If the outage or power reduction will not result in a reportable occurrence, the positive indication of this lack of correlation should be noted as not applicable (N/A).

**SYSTEM CODE.** The system in which the outage or power reduction originated should be noted by the two digit code of Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161).

Systems that do not fit any existing code should be designated XX. The code ZZ should be used for those events where a system is not applicable.

**COMPONENT CODE.** Select the most appropriate component from Exhibit I - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161), using the following criteria:

- If a component failed, use the component directly involved.
- If not a component failure, use the related component: e.g., wrong valve operated through error; list valve as component.
- If a chain of failures occurs, the first component to malfunction should be listed. The sequence of events, including the other components which fail, should be described under the Cause and Corrective Action to Prevent Recurrence column.

Components that do not fit any existing code should be designated XXXXXX. The code ZZZZZZ should be used for events where a component designation is not applicable.

**CAUSE & CORRECTIVE ACTION TO PREVENT RECURRENCE.** Use the column in a narrative fashion to amplify or explain the circumstances of the shutdown or power reduction. The column should include the specific cause for each shutdown or significant power reduction and the immediate and contemplated long term corrective action taken, if appropriate. This column should also be used for a description of the major safety-related corrective maintenance performed during the outage or power reduction including an identification of the critical path activity and a report of any single release of radioactivity or single radiation exposure specifically associated with the outage which accounts for more than 10 percent of the allowable annual values.

For long textual reports continue narrative on separate paper and reference the shutdown or power reduction for this narrative.

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH July, 1985

DOCKET NO. 50-316  
 UNIT NAME D.C. Cook Unit 2  
 DATE 8-9-85  
 COMPLETED BY B.A. Svensson  
 TELEPHONE 616/465-5901  
 PAGE 2 of 2

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
162 (Continued)									Mode 3, Hot Standby, at rated pressure and temperature and preparations for reactor startup in progress.

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

<sup>2</sup>  
 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)

<sup>3</sup>  
 Method:  
 1-Manual  
 2-Manual Scram.  
 3-Automatic Scram.  
 4-Other (Explain)

<sup>4</sup>  
 Exhibit G- Instructions  
 for Preparation of Data  
 Entry Sheets for Licensee  
 Event Report (I ER) File (NUREG-  
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<sup>5</sup>  
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(9/77)



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Docket No.: 50-316  
Unit Name: D.C. Cook Unit 2  
Completed By: A. S. Puplis  
Telephone: (616) 465-5901  
Date: August 12, 1985  
Page: 1 of 3

MONTHLY OPERATING ACTIVITIES - JULY, 1985

HIGHLIGHTS:

The reporting period began with the Unit at 100% power. One major power reduction to 47% occurred due to a control rod misalignment problem. The Unit was removed from service on July 15, 1985 due to an increase in the calculated steam generator primary to secondary leak rated. At the end of the reporting period the reactor coolant system was Mode 3, Hot Standby, at rated pressure and temperature.

Gross electrical generation for the month of July was 318,510 MWH.

SUMMARY:

- 7-02-85 At 0850, a power decrease to 98% was started to perform surveillance testing. Power reached 98% at 0858.
- At 1452, a power increase to 100% was started. Reactor power reached 100% at 1510.
- 7-03-85 At 1100, a power decrease to less than 50% was started due to indicated misaligned group of rods in Control Bank D.
- At 1208, Control Bank D Rods: D4, D12, M12, and M4, indicated greater than 12 steps below the group demand.
- At 1405, the West Main Feed Pump was removed from service to check for tube leaks in the feed pump turbine condenser.
- At 1412, reactor power was at 47% to satisfy Technical Specification 3.1.3.1.
- 7-06-85 At 1937, a reactor power increase was started to 98% power based upon an allowable limit of 100.6%.
- 7-07-85 At 0447, the power increase was stopped at 98% due to allowable power limit considerations.
- 7-08-85 At 1203, reactor power was increased to 100%, which was reached at 1244.

Docket No.: 50-316  
Unit Name: D.C. Cook Unit 2  
Completed By: A. S. Puplis  
Telephone: (616) 465-5901  
Date: August 12, 1985  
Page: 2 of 3

7-09-85 At 0600, a power decrease to 98% to perform surveillance testing was started. Power reached 98% at 0632.

At 1514, as a result of surveillance testing being completed started increasing reactor power to 100%, which was reached at 1618.

7-14-85 At 0227, No. 4 Boric Acid Transfer Pump was declared Inoperable due to pump casing leaks. The No. 3 Boric Acid Pump is operable. The No. 4 pump was declared operable at 0515 on 7-21-85.

At 0338, Boric Acid Storage Tank flowpath was inoperable from 0227 to 0238 due to taking No. 4 Boric Acid Transfer Pump out of service. The No. 3 pump was on recirculation back to the Middle Boric Acid Storage Tank.

At 2000, started decreasing reactor power for Moderator Temperature Coefficient (MTC) Testing.

7-15-85 At 0400, the Unit was at 95% power for MTC testing.

At 1640, the primary to secondary leak rate was .219 gpm.

At 1741, a reactor shutdown was commenced because of the primary-to-secondary leak.

At 2030, plant auxiliaries were transferred to reserve supply.

At 2100, the Unit entered Mode 2.

At 2136, the reactor trip breaker were opened, and Mode 3 was entered.

7-16-84 At 0335, the Unit entered Mode 4.

At 2050, the Unit entered Mode 5.

7-19-85 At 0840, degassing of the Reactor Coolant System had been completed.

7-23-85 At 0130, the Reactor Coolant System was at half loop.



Docket No.: 50-316  
Unit Name: D.C. Cook Unit 2  
Completed By: A. S. Puplis  
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Date: August 12, 1985  
Page: 3 of 3

7-27-85 At 0650, while in Mode 5, after "bumping" the second reactor coolant pump for the first time pressurizer pressure increased to the lower limit of the power operated relief valve setpoint, causing the relief valve to lift.

AT 2240, started bubble formation in pressurizer.

7-30-85 At 1700, the Unit entered Mode 4.

7-31-85 At 0427, the Unit entered Mode 3.

The Control Room Cable Vault Halon System remains inoperable as of 1707 on 4-14-83. The backup CO<sub>2</sub> System for the Control Room Cable Vault was inoperable for personnel entry at the end of the reporting period.

DOCKET NO.	<u>50 - 316</u>
UNIT NAME	<u>D. C. Cook - Unit No. 2</u>
DATE	<u>8-9-85</u>
COMPLETED BY	<u>B. A. Svensson</u>

MAJOR SAFETY-RELATED MAINTENANCE

JULY, 1985

M-1

No. 4 boric acid transfer pump was removed from service for repairs of a mechanical seal leak. Impeller, shaft, bearings and mechanical seal were replaced. Pump was tested for operability.



**INDIANA & MICHIGAN ELECTRIC COMPANY**

Donald C. Cook Nuclear Plant  
P.O. Box 458, Bridgman, Michigan 49106

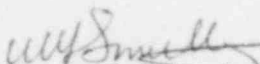
August 9, 1985

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

Gentlemen:

Pursuant to the requirements of Donald C. Cook Nuclear Plant Unit 2  
Technical Specification 6.9.1.6, the attached Monthly Operating  
Report for the Month of July, 1985 is submitted.

Sincerely,

  
W. G. Smith, Jr.  
Plant Manager

WGS:ab

Attachments

cc: J. E. Dolan  
M. P. Alexich  
R. W. Jurgensen  
NRC Region III  
B. L. Jorgensen  
R. O. Bruggee  
R. C. Callen  
S. J. Mierzwa  
F. S. VanPelt, Jr.  
P. D. Rennix  
D. R. Hahn  
Z. Cordero  
J. J. Markowsky  
S. R. Khalil  
J. F. Stietzel  
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