

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-316
 UNIT 2
 DATE 6-4-79
 COMPLETED BY W.T. Gillett
 TELEPHONE 616-465-5901

MONTH May 1979

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>1048</u>	17	<u>786</u>
2	<u>1069</u>	18	<u>1056</u>
3	<u>1051</u>	19	<u>697</u>
4	<u>1071</u>	20	<u>0</u>
5	<u>1075</u>	21	<u>0</u>
6	<u>1070</u>	22	<u>0</u>
7	<u>1069</u>	23	<u>0</u>
8	<u>1066</u>	24	<u>0</u>
9	<u>1067</u>	25	<u>0</u>
10	<u>1063</u>	26	<u>0</u>
11	<u>1058</u>	27	<u>0</u>
12	<u>1070</u>	28	<u>0</u>
13	<u>1072</u>	29	<u>0</u>
14	<u>1069</u>	30	<u>0</u>
15	<u>1067</u>	31	<u>0</u>
16	<u>478</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.

(9/77)

7906190 243



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OPERATING DATA REPORT

DOCKET NO. 50-316
 DATE 6-4-79
 COMPLETED BY W. T. Gillett
 TELEPHONE 616-465-5901

OPERATING STATUS

1. Unit Name: Donald C. Cook 2
2. Reporting Period: May 1979
3. Licensed Thermal Power (MWt): 3391
4. Nameplate Rating (Gross MWe): 1133
5. Design Electrical Rating (Net MWe): 1100
6. Maximum Dependable Capacity (Gross MWe): 1118
7. Maximum Dependable Capacity (Net MWe): 1082
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report. Give Reasons:

Notes

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

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	744	3,623	12,383
12. Number Of Hours Reactor Was Critical	436.8	3,260.4	8,491.1
13. Reactor Reserve Shutdown Hours	0	0	0
14. Hours Generator On-Line	434.1	3,203.7	7,931.3
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	1,449,347	10,558,347	23,663,454
17. Gross Electrical Energy Generated (MWH)	471,680	3,436,930	7,422,460
18. Net Electrical Energy Generated (MWH)	456,078	3,318,379	7,132,378
19. Unit Service Factor	58.3	88.4	82.3
20. Unit Availability Factor	58.3	88.4	82.3
21. Unit Capacity Factor (Using MDC Net)	56.7	84.7	74.0
22. Unit Capacity Factor (Using DER Net)	55.7	83.3	72.8
23. Unit Forced Outage Rate	41.7	13.1	9.2

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):

25. If Shut Down At End Of Report Period. Estimated Date of Startup: _____
26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____



↳

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-316
 UNIT NAME D.C.Cook-Unit 2
 DATE 6-13-79
 COMPLETED BY B.A. Svensson
 TELEPHONE (616) 465-5901

REPORT MONTH MAY, 1979

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
58	790516	F	15.4	A	3	N.A.	ZZ	ZZZZZZ	Reactor/Turbine trip due to steam flow/feedwater flow mismatch coincident with low steam generator water level while performing surveillance test on Steam Generator No. 4. The trip was caused by a momentary spike in the feedwater flow signal while the steam generator low level bi-stable was placed in the trip position. Reactor power returned to 100% 790517.
59	790519	F	294.5	B	1	79-019/01T-0	FW	PIPE XX	Unit removed from service to repair cracks in the 16 in. feedwater elbows adjacent to the feedwater elbow/steam generator nozzle welds on all four steam generators. The Unit remained out of service at the end of the month.

¹
 F: Forced
 S: Scheduled

²
 Reason:
 A-Equipment Failure (Explain)
 B-Maintenance of 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

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 completely¹. 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

¹Note 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 50 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:

- A. If a component failed, use the component directly involved.
- B. If not a component failure, use the related component: e.g., wrong valve operated through error: list valve as component.
- C. 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.

PLANT 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 completely¹. 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.

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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

¹Note 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.

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

Docket No.: 50-316
Unit Name: D. C. Cook Unit #2
Completed By: R. S. Lease
Telephone: (616) 465-5901
Date: June 11, 1979
Page: 1 of 2

MONTHLY OPERATING EXPERIENCES -- MAY, 1979

Highlights

This Unit entered the reporting period operating at 99% power. The #21 Circulating Water Pump was out of service due to bearing failure. With this pump out of service, the allowed ΔT across the Condensers was marginal.

Total electrical generation for the month was 471,680 Mwh.

Summary

- 05/04/79 -- Power was reduced to 98% for a short period to test Turbine valves. It was again returned to 99% power.
- 05/11/79 -- #21 Circulating Water Pump was returned to service at 1628 hours and Unit power increased to 100%.
- 05/12/79 -- Unit power was reduced to 99% for testing of Turbine valves. Total time below 100% power was 1.5 hours.
- 05/16/79 -- The Unit and Reactor tripped at 100% power at 1147 hours. Cause of the trip was low steam Generator level with steam flow/feed flow mismatch of #4 Steam Generator. The level was not actually low in the Steam Generator. Surveillance testing was being performed that required tripping of the low level bi-stable. While this trip was in the feedwater flow signal was spiked to cause the Unit trip.

The Reactor was returned to criticality at 2247 hours.

The Turbine was rolled, however, the Unit and Reactor tripped at 2336 hours while preparations were being made to parallel the Generator with the system. Cause of this trip was the Generator field breaker failed to close and the control switch was returned to normal.

- 05/17/79 -- The Reactor was returned to criticality at 0118 hours and the Generator paralleled with the system at 0310 hours. The Unit was loaded to 100% power by 1320 the same day.

Docket No.: 50-316
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Page: 2 of 2

05/19/79 -- Turbine valves were successfully tested at 100% power.

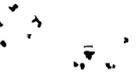
The Unit was removed from service with tripping of the Turbine at 1728 hours and tripping of the Reactor at 1730 hours. Leakage inside of Containment had started indicating 5/17/79. Early analysis indicated the leakage to be service water. By the time the decision was made to take the Unit out of service, the analysis of the water being pumped from the Containment sump had turned to indicate Condensate.

Internal inspection found feedwater leaks on the feedwater lines close to Steam Generators 1 and 4. Cool-down of the Reactor Coolant System was initiated at 1945 hours with entry into Mode 4 at 0113 hours 5/20/79 and into Mode 5 at 0856 hours the same day.

The cracks in the feedwater lines were adjacent to the weld that attaches the piping to the Steam Generator nozzles. While the cracks on Steam Generators 1 and 4 were totally through the piping, radiographs indicated there were also cracks in the same general area on Steam Generators 2 and 3 but they had not propagated clear through the wall.

The elbows that connect the feedwater piping to the steam generator are being replaced on all 4 Steam Generators. The new elbows are being modified to have a heavier wall thickness where the cracks had developed.

The Unit remains out of service for these feedwater modifications.



(S. 171. 1)

DOCKET NO.	<u>50 - 316</u>
UNIT NAME	<u>D. C. Cook - Unit No. 2</u>
DATE	<u>6-13-79</u>
COMPLETED BY	<u>B. A. Svensson</u>
TELEPHONE	<u>(616) 465-5901</u>
PAGE	<u>- 1 -</u>

MAJOR SAFETY-RELATED MAINTENANCE

MAY, 1979

- M-1 No. 3 boric acid transfer pump had excessive seal leakage. The mechanical seal was replaced. Retest following repairs was satisfactory.
- M-2 No. 3 steam generator main steam pressure instrument root valve, MPP-231-V1 was leaking. Repacked valve and replaced the body-to-bonnet gasket.
- M-3 No. 4 S/G main steam pressure test point root valve MPX-240-V1 was leaking. Replaced valve bonnet.
- M-4 No. 2 S/G main steam pressure instrument root valve MPI-221-V1 was leaking. Repacked valve, replaced one packing gland bolt and replaced body-to-bonnet gasket.
- M-5 Loop 4 letdown regulating valves, QRV-111 and 112 had packing leaks. Repacked both valves.
- M-6 No. 2 steam generator pressure instrument root valve, MPP-212-V1 had a packing leak which resulted in a steam cut in the valve. Replaced the valve stem, disc and gasket.
- M-7 Air particle radiogas detector discharge line containment isolation valve, ECR-33, failed to pass leak rate test. Valve was cleaned and new gaskets were installed. Valve tested satisfactorily.
- M-8 Service water containment isolation valves, WCR-921 and WCR-934 failed to pass leak rate test. Cleaned valve internals, lapped the seats and installed new gaskets. Valves were tested satisfactorily.
- C&I-1 Radiation Monitoring System Channel R-25, air pump failed. The low flow and high flow relays which interlock the pump were relocated to reduce the vibrations imposed on the relays. Correct operation of the R-25 Channel was verified and returned to normal operation.
- C&I-2 The CCRP inverters output frequency varied from 60.1 to 61.0 Hertz. As the inverters cabinet door was opened, the inverter returned to synchronous operation at 60.0 Hertz. The ambient air temperature of the room was measured at 98°F while the air temperature within the cabinet measured 103°F. A blower was placed in the room to reduce the air temperatures. The CCRP inverters synchronization adjustment will be performed during the next outage.

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PAGE	<u>- 2 -</u>

MAJOR SAFETY-RELATED MAINTENANCE

MAY, 1979

- C&I-3 The rod position indication system for rods P-8, F-10, K-10, K-6 indicated full scale. The signal conditioning modules for each channel were calibrated and returned to service.
- C&I-4 Main turbine stop valve B indicated an intermediate position in the control room. Three wires into the limit switches were damaged. The cable was reformed and the limit switch was replaced.

