

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-316

UNIT 2

DATE 1-3-79

COMPLETED BY W.T. Gillett

TELEPHONE 616-465-5901

MONTH December 1978

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>948</u>
2	<u>1070</u>
3	<u>944</u>
4	<u>1078</u>
5	<u>1078</u>
6	<u>1070</u>
7	<u>1070</u>
8	<u>1085</u>
9	<u>1064</u>
10	<u>1090</u>
11	<u>1088</u>
12	<u>1088</u>
13	<u>1082</u>
14	<u>1087</u>
15	<u>1091</u>
16	<u>1065</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>1092</u>
18	<u>1088</u>
19	<u>1077</u>
20	<u>1083</u>
21	<u>1090</u>
22	<u>1088</u>
23	<u>1071</u>
24	<u>1092</u>
25	<u>1094</u>
26	<u>1085</u>
27	<u>1075</u>
28	<u>937</u>
29	<u>969</u>
30	<u>1068</u>
31	<u>1088</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)

7901170271

OPERATING DATA REPORT

DOCKET NO. 50-316
 DATE 1-4-79
 COMPLETED BY W.T. Gillett
 TELEPHONE 616-465-5901

OPERATING STATUS

1. Unit Name: Donald C. Cook 2
2. Reporting Period: December 1978
3. Licensed Thermal Power (MWt): 3,391
4. Nameplate Rating (Gross MWe): 1,133
5. Design Electrical Rating (Net MWe): 1,100
6. Maximum Dependable Capacity (Gross MWe): 1,118
7. Maximum Dependable Capacity (Net MWe): 1,082
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	<u>744</u>	<u>8,760</u>	<u>8,760</u>
12. Number Of Hours Reactor Was Critical	<u>744</u>	<u>5,230.7</u>	<u>5,230.7</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
14. Hours Generator On-Line	<u>744</u>	<u>4,727.6</u>	<u>4,727.6</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,476,056</u>	<u>13,105,107</u>	<u>13,105,107</u>
17. Gross Electrical Energy Generated (MWH)	<u>819,710</u>	<u>3,985,530</u>	<u>3,985,530</u>
18. Net Electrical Energy Generated (MWH)	<u>791,895</u>	<u>3,813,999</u>	<u>3,813,999</u>
19. Unit Service Factor	<u>100</u>	<u>77.2</u>	<u>77.2</u>
20. Unit Availability Factor	<u>100</u>	<u>77.2</u>	<u>77.2</u>
21. Unit Capacity Factor (Using MDC Net)	<u>98.4</u>	<u>65.3</u>	<u>65.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>96.8</u>	<u>64.3</u>	<u>64.3</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>6.9</u>	<u>6.9</u>
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	<u>3/1/78</u>	<u>3/10/78</u>
INITIAL ELECTRICITY	<u>3/15/78</u>	<u>3/22/78</u>
COMMERCIAL OPERATION	<u>6/1/78</u>	<u>7/1/78</u>

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH December, 1978

DOCKET NO. 50-316
 UNIT NAME D.C. Cook-Unit 2
 DATE 1-10-79
 COMPLETED BY B.A. Svensson
 TELEPHONE 616 - 465-5901

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
44	781228	S	0	B	4	N/A	ZZ	ZZZZZZ	Reactor power reduced to 70% to perform N.I.S. Incore/Excore cross calibration. Power returned to 100% 781229.

¹
 F: Forced
 S: Scheduled

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

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 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:

- 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.

Docket No.: 50-316
Unit Name: D. C. Cook Unit #2
Completed By: R. S. Lease
Telephone: (616) 465-5901
Date: January 9, 1979

OPERATING EXPERIENCE -- DECEMBER, 1978

Highlights

The Unit has operated at power the entire reporting period. Most of this time has been at 100% power. There have been short term power reductions to as low as 70%.

Summary

12/01/78 -- The Unit entered this reporting period operating at 90% power and 970 megawatts electrical. Loading is limited due to the "A" string of high pressure heaters being out of service to repair a manhead leak on the #5 heater. The "A" string of high pressure heaters was returned to service at 2115 and the Unit was loaded to 100% power, 1170 megawatts electrical, by 2340 hours.

12/02/78 -- Unit loading was reduced to 90% power, 970 megawatts electrical, between 2200 and 2300 hours to remove the "B" string of high pressure heaters from service to repair a leak on the manhead of 5B heater. These heaters were returned to service by 2000 hours and the Unit was loaded to 100% power, 1170 megawatts electrical, by 2330 hours.

The Control Room Cable Vault Halon Fire Protection System was inadvertently discharged at 1202 hours. This was caused by the operator pushing the actuation button on the control panel rather than the reset button. These two buttons look alike and are mounted close together on the same panel. The Halon bottles were replaced and the system returned to normal at 2210 hours December 4, 1978.

12/04/78 -- At 1810 hours, both Main Feed Pump Turbines were placed on reheat steam operation. This is the first that both of these turbines operated on reheat steam at the same time. The reheat steam pressure is still marginal.

Radiation Monitors R-11 and R-12 were inoperable for a 15 hour period while the pump supplying both of these monitors was repaired.

Docket #: 50-316
Unit Name: D. C. Cook Unit #2
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Telephone: (616) 465-5901
Date: January 9, 1979
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12/06/78 -- Unit power was reduced to 90%, 970 megawatts electrical, between 2144 and 2205 hours because of fluctuating feedwater heater levels. The heater drain system was stabilized and the Unit reloaded to 100% power between 2225 and 2400 hours, 1170 megawatts electrical.

12/07/78 -- Electrical generation slipped off to 1100 megawatts electrical due to degraded Condenser vacuum. "A" Condenser vacuum breaker valve was found to be leaking through. This is a water sealed valve and an additional supply was rigged to the valve and the vacuum returned to normal.

Emergency safeguards exhaust fan HV-AES-02 was out of service for a period of 2 hours to repair the rolla-matic filters.

Radiation Monitors R-25 and R-26 were out of service for a period of 2 hours to repair the pump that supplies both monitors.

12/08/78 -- Power was reduced to 90%, 970 megawatts electrical, at 2240 hours for testing of Turbine valves. Power was returned to 100% power by 0300 hours December 9, 1978.

12/09/78 -- Power was reduced to 88%, 950 megawatts electrical, at 1153 hours due to decreasing condenser vacuum. The additional water supply is no longer sufficient to the "A" Condenser vacuum breaker. This vacuum breaker was blanked off and power was returned to 99%. On the previous transient, emergency boration had been used to get back within the axial flux target band. When power was almost 100%, a small boration was required, however, the emergency boration valve had been left open and power was again reduced to 85%. Power was returned to 100%, 1170 megawatts electrical, at 1410 hours.

12/15/78 -- Power was reduced to 90% at 2130 hours for testing of Turbine valves and was returned to 100%, 1170 megawatts electrical, by 0215 hours December 16, 1978.

Turbine Driven Auxiliary Feed Pump was out of service for an 8.5 hour period to repair a steam leak.

12/17/78 -- At 2127 hours, the air pump for Radiation Monitors R-11 and R-12 tripped due to high air flow when the filter paper ran out. The paper was renewed and the pump and monitors were returned to service at 2142 hours.

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- 12/19/78 -- The North half of "A" Condenser was out of service for a period of 12 hours for plugging of 3 leaking tubes.
- 12/20/78 -- The South half of "B" Condenser was out of service for a 9.7 hour period. No leaking tubes were identified.
- 12/22/78 -- Unit loading was reduced to 90% starting at 2313 hours for testing of Turbine Valves and returned to 100% power, 1170 megawatts electrical, by 0300 hours December 23, 1978.
- 12/23/78 -- The Fire Protection Spray System operated on the charcoal filters in the Control Room pressurization fan system. Both pressurization fans were found to be inoperable at 1445 hours. The trouble was found to be water had seeped into the fire spray actuation control box. This control box was dried out and one fan was operable at 1541 hours and the other fan operable at 1547 hours.
- 12/25/78 -- The North half of "A" Condenser was out of service for a 10.25 hour period for plugging of 3 leaking tubes.
- 12/27/78 -- The South half of "B" Condenser was out of service for a period of 13.25 hours. No leaking tubes were identified.
- 12/28/78 -- Unit power was reduced to 70%, 770 megawatts electrical, between 1430 hours and 1625 hours for incore/excore nuclear instrumentation cross calibration. The Unit was reloaded to 100% power, 1170 megawatts electrical, between 0412 hours and 0950 hours, December 29, 1978.
- 12/29/78 -- Unit loading was reduced to 90% power starting at 2313 hours for testing of Turbine valves and was returned to 100% power, 1170 megawatts electrical, by 0212 hours December 30, 1978.
- 12/30/78 -- #21 Circulating Water Pump started making noises. This pump was removed from service and adjustments were made. Two re-runs of the pump were made and it was still noisy. This pump was left out of service at 2252 hours.

With only 3 Circulating Water Pumps operating rather than the normal 4, we were operating near the maximum allowed temperature rise of the circulating water through the condenser.

DOCKET NO.	50 - 316
UNIT NAME	D. C. Cook - Unit No. 2
DATE	1-10-79
COMPLETED BY	B. A. Svensson
TELEPHONE	(616) 465-5901

MAJOR SAFETY-RELATED MAINTENANCE

DECEMBER 1978

- M-1 Motor operated auxiliary feed isolation valve to #3 S/G, FM0-232 would not operate properly. Investigation located a broken internal jumper wire. Valve was repaired and retested.
- M-2 No. 2 S/G stop valve dump valve, MRV-221 was leaking by. Disassembled valve, replaced plug, stem, seat and all gaskets. Reassembled and had valve functionally tested.
- C&I-1 PPP-301, lower containment pressure protection channel ITT, indication on recorder 2MR-035 failed low. The instrument protection set panel indication was verified as correct. The recorder was calibrated and returned to service.
- C&I-2 ΔT /Auctioneered ΔT Lo Alarms Annunciator Drops 36, 37, 38 and 39, were inoperable. The wires on DB12-1 and 12-2 rack 24 were found loose resulting in an incorrect voltage at the input of TY-411J (current repeater). The wire terminators were tightened and the loop returned to service.
- C&I-3 Radiation Monitoring System, Channel R-32, failed to respond to the check source. The detector tube required replacement. Surveillance test was performed for verification of correct operation.
- C&I-4 The reactor protection safeguards train in test alarm was received and the alarm light in the safeguards Train B cabinet was illuminated. A loose terminal connection on relay K801 allowed the wire lug on the terminal to short to an adjacent contact and energizing relay K815. Relay K815 produced the alarm. The lug was repositioned and tightened.
- C&I-5 The control room pressurization fan would not start as required. The remote start-stop pushbutton was found filled with water. The water was removed and the contacts of the switches cleaned. The correct starting of the fan was verified.

