

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-316

UNIT 2

DATE 5-3-79

COMPLETED BY W.T. Gillett

TELEPHONE 616-465-5901

MONTH April 1979

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	316
2	925
3	1032
4	894
5	1079
6	943
7	520
8	0
9	374
10	1069
11	1079
12	1062
13	1057
14	1068
15	1074
16	1035

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	1074
18	1081
19	1078
20	1070
21	1079
22	1079
23	1080
24	1073
25	1064
26	1053
27	1053
28	1058
29	1070
30	1072
31	

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.

(4/77)

7905170

262

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OPERATING DATA REPORT

DOCKET NO. 50-316
 DATE 5-3-79
 COMPLETED BY W.T. Gillett
 TELEPHONE 616-465-5901

OPERATING STATUS

1. Unit Name: Donald C. Cook 2
2. Reporting Period: April 1979
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	719	2,879	11,639
12. Number Of Hours Reactor Was Critical	697.1	2,823.6	8,054.3
13. Reactor Reserve Shutdown Hours	0	0	0
14. Hours Generator On-Line	663	2,769.6	7,497.2
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,164,269	9,109,000	22,214,107
17. Gross Electrical Energy Generated (MWH)	708,420	2,965,250	6,950,780
18. Net Electrical Energy Generated (MWH)	684,209	2,862,301	6,676,300
19. Unit Service Factor	92.2	96.2	84
20. Unit Availability Factor	92.2	96.2	84
21. Unit Capacity Factor (Using MDC Net)	88.0	91.9	75.8
22. Unit Capacity Factor (Using DER Net)	86.4	90.4	74.6
23. Unit Forced Outage Rate	7.8	3.8	5.5
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

REPORT MONTH April, 1979

DOCKET NO. 50-316
 UNIT NAME D.C.Cook-Unit 2
 DATE 5-11-79
 COMPLETED BY B.A. Svensson
 TELEPHONE (616) 465-5901
Sheet 1 Of 2

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
53	790401	S	0	B	4	N.A.	ZZ	ZZZZZZ	<p>Reactor power reduced to 55% to permit removal of test flow nozzles from the main feed pump turbine condensate drain lines.</p> <p>While placing the east main feed pump back in service, the Unit tripped due to high level in the No. 1 steam generator. The Unit was returned to service the same day and loaded to 100% 790402.</p> <p>Reactor power reduced to 70% to perform N.I.S. Incore/Excore cross calibration. Reactor power returned to 100% 790404.</p>
54	790401	F	9.9	H	3	N.A.	ZZ	ZZZZZZ	
55	790403	S	0	B	4	N.A.	ZZ	ZZZZZZ	

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

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.

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH April, 1979

DOCKET NO. 50-316
 UNIT NAME D.C. Cook-Unit 2
 DATE 5-11-79
 COMPLETED BY B.A. Svensson
 TELEPHONE (616) 465-5901
Sheet 2 of 2

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
56	790406	F	0	H	4	N.A.	ZZ	ZZZZZZ	Reactor power reduced to 55% to permit removal from service of one main feed pump turbine condenser at a time for cleaning of condenser water boxes. Reactor power returned to 100% the same day.
57	790407	F	46.1	A	1	N.A.	CB	INSTRU	Unit removed from service to investigate "High" oil level alarm on the No. 1 reactor coolant pump upper oil reservoir. Cause was found to be failure of level alarm device. Alarm device was repaired. Unit returned to service 790409 and reached 100% the same day.

1
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2
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Docket No.: 50-316
Unit Name: D. C. Cook Unit #2
Completed By: R. S. Lease
Telephone: (616) 465-5901
Date: May 9, 1979
Page: (1)

MONTHLY OPERATING EXPERIENCES -- APRIL, 1979

Highlights

This Unit operated at full power the entire period except as noted in the summary.

Total electrical generation for the month was 708,420 Mwh.

Summary

- 4/01/79 -- The Unit started the month operating at 55% power. The East Main Feed Pump was out of service for removal of a Condensate Drain Flow Nozzle that had been used for Initial Performance Testing. The Unit tripped at 1140 hours as the East Main Feed Pump was being returned to service. The intention was to remove the West Main Feed Pump for drain nozzle removal. During the Feed Pump interchange, the Unit tripped due to high water level in #1 Steam Generator. The Reactor was returned to criticality at 1850 hours and the Unit paralleled to the system at 2133 hours. The Unit was loaded to 100% power by 1142 hours 4/2/79.
- 4/03/79 -- Power was reduced to 70% for Incore/Excore Nuclear Instrument Cross Calibration. Power was returned to 100% by 1425 hours 4/4/79. Total time below 100% was 18.5 hours.
- 4/05/79 -- One phase of the 69KV off-site power source failed open during a windstorm at 2130 hours. Repairs were made and the source was again available at 0957 hours 4/6/79.
- 4/06/79 -- Loading was reduced to 55% for hand cleaning of the West Main Feed Pump Condenser. After this condenser was cleaned the two Main Feed Pumps were interchanged and the East Main Feed Pump Condenser was hand cleaned. Power was returned to 100% by 1830 hours the same day. Total time below 100% was 9.5 hours.

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

4/07/79 -- Load reduction was started at 1120 hours and the Unit was removed from service at 1205 hours. Reason was that the upper lubricating oil reservoir for the #1 Reactor Coolant Pump was indicating high. Inspection found the reason to be level alarm failure rather than actual high level.

At 2330 hours both Emergency Diesel Generators started and accepted their designed load. Cause of start was a degraded system voltage actuation. At this time both Units were off the line and they were receiving auxiliary power from the normal outside source. 7 of the 8 Reactor Coolant Pumps were in operation. As the 8th pump was started, the degraded voltage actuation was initiated.

4/08/79 -- The Reactor was returned to criticality at 0313 hours.

At 0831 hours we experienced fire in the area of Steam Generator Stop Valves #2, 3 and 4. The cause of the fire was oil on the hot steam lines. Unknown at that time, the stop valves had developed hydraulic leaks upon the trip of the previous day. The normal hydraulic fluid for these valves is the fire retardant fluid and the wrong oil had been added to the system. When the hydraulic pumps were started to open the valves, it pumped the normal oil out on the hot steam lines causing the flash fires. All fires were out by 0900 hours.

The hydraulic system to the four Steam Generator Stop Valves were drained, cleaned and refilled and the valves were trip-tested prior to being declared operable at 0500 hours 4/9/79.

4/09/79 -- Turbines rolled at 0827 hours. Unit paralleled to the system at 1010 hours. The Unit was loaded to 100% power by 2300 hours.

Auxiliary Feedwater to the #2 Steam Generator through FM0-232 was inoperable for a 25 hours period starting at 1004 hours. A cracked weld had been discovered between the FM0 valve and its upstream hand isolation valve. Repairs were made. The Unit #2 Motor Driven Auxiliary Feedwater Pump was inoperable for a 10 hour period starting at 0108 hours. 4/10/79. This was required for hydrostatic testing of the weld repair.

Docket No.: 50-316
Unit Name: D. C. Cook Unit #2
Completed By: R. S. Lease
Telephone: (616) 465-5901
Date: May 9, 1979
Page: (3)

4/13/79 -- Loading was reduced to 96% power for testing of Turbine valves. Total time below 100% was 2 hours.

4/24/79 -- #21 Circulating Water Pump was removed from service at 0400 hours due to unusual noises. Inspection identified failed pump bearing. The pump remains under repair. With this pump out of service, the allowable temperature rise across the Condensers was marginal and the power has been reduced to 99%.

DOCKET NO.	50 - 316
UNIT NAME	D. C. Cook - Unit No. 2
DATE	5-11-79
COMPLETED BY	B. A. Svensson
TELEPHONE	(616) 465-5901

MAJOR SAFETY-RELATED MAINTENANCE

APRIL, 1979

- M-1 No. 4 steam generator stop valve, MRV-240, hydraulic bypass valve would not release. The bypass valve was repaired and MRV-240 retested satisfactorily.
- M-2 A 3/8" OD hydraulic tubing was replaced on all four steam generator stop valve hydraulic actuators. The hydraulic system fluid levels were restored and the valves retested satisfactorily.
- M-3 MRV-231, #3 steam generator stop trip valve leaked by. The seat ring was replaced and disc remachined. Operational retest was satisfactory.
- M-4 MRV-222, #2 steam generator trip valve leaked by. The seat was replaced and the disc machined. Retest was satisfactory.
- M-5 650' Containment airlocks interlock did not work properly. Replaced cable to outer door pawl and springs. Retest was satisfactory.
- M-6 Pinhole leak was discovered at inlet to auxiliary feedwater valve, FM0-232. Ground out a small crack in valve body and repaired by welding. Had repair examined by PT and RT. Hydrostatic test was also performed.
- M-7 No. 3 steam generator stop valve dump valve, MRV-232 was leaking by. Installed new seat ring and gaskets. Machined valve plug and re-assembled. Retested satisfactorily.
- M-8 Unit 1 west RHR pump vent valve, RH-107W, leaked excessively. Valve was replaced.
- M-9 ESW-142, essential service water check valve for 2CD diesel was not preventing backflow. Discs, seat and springs were replaced. Retest was satisfactory.
- C&I-1 The rod position indication system for rod F-10 indicated full scale. The signal conditioning modules output voltage was measured and recorded as 3.690 vdc. The module was recalibrated and returned to service.
- C&I-2 Control Bank D Low and Low-Low rod insertion alarms were received in the control room. The Bank D pulse to analog converter was manually pulsed in RPI-2 to the actual bank position.

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PAGE	- 2 -

MAJOR SAFETY-RELATED MAINTENANCE

APRIL, 1979

- C&I-3 Axial power distribution monitoring system would not display the correct Fz or print properly. The system was functionally tested with the test panel. The problem could not be reproduced and was determined to be a circuit board connector problem.
- C&I-4 The high demand fire pump logic would not reset. A low temperature on the start-up transformer 201CD deluge house caused the deluge abnormal alarm which prevented the logic from resetting. As the temperature increased, the alarm and logic cleared.
- C&I-5 The rod position indication system for rods H-10, B-8, F-10 and K-6 indicated greater than 12 steps from demand. The secondary coil voltages of the rods were measured and verified correct. The associated signal conditioning modules were calibrated to provide the correct indication.
- C&I-6 The panel meter, position indication for rod D-8, appeared to respond slower than normal. The channel was removed from service and tested for response while applying a test input signal. The panel meter responded as required to the test signal. The channel was calibrated and returned to normal service.
- C&I-7 QRV-251, the centrifugal charging pump flow control valve, position limits were incorrect and would not respond properly when operated in the automatic mode. The high and low limits were adjusted and the automatic operation of the valve functionally tested.
- C&I-8 CPS-610, stator cooling water low pressure generator trip switch, mercury switch was found blown. The mercury bulb switch of CPS-610 was replaced and the instruments calibration was performed.
- C&I-9 During surveillance testing on the Axial Power Distribution Monitoring System several problems were identified. When switching to detector number 3, the indication lights required a longer than normal time to respond. The high F(z) digital indication did not agree with the recorders printout. The part length step counter failed. The detector switching relays were not operating properly and were replaced. The F(z) digital indication was adjusted to indicate the correct value. The connector for the part length step indicator was found disconnected and reinserted.

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PAGE	- 3 -

MAJOR SAFETY-RELATED MAINTENANCE

APRIL, 1979

C&I-10

Surveillance test 2 THP 4030 STP.111, 112 and 113; pressurizer pressure protection sets I, II and III, were performed. The low pressure safety injection bistables were calibrated to trip at 1900 psig decreasing. The P-11 permissive, which allows manual blocking of the pressurizer low pressure safety injection signal, permits manual blocking below 1907 psig decreasing and automatically unblocks at 1915 psig increasing. The previous calibration of the pressurizer low pressure safety injection bistables, required the bistables to actuate at 1908 psig decreasing.