

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-315

UNIT 1

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>1032</u>
2	<u>1034</u>
3	<u>1014</u>
4	<u>1032</u>
5	<u>1032</u>
6	<u>1033</u>
7	<u>1027</u>
8	<u>1031</u>
9	<u>1042</u>
10	<u>993</u>
11	<u>1047</u>
12	<u>155</u>
13	<u>588</u>
14	<u>631</u>
15	<u>780</u>
16	<u>285</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>899</u>
18	<u>1038</u>
19	<u>1039</u>
20	<u>1042</u>
21	<u>1022</u>
22	<u>1043</u>
23	<u>1043</u>
24	<u>1021</u>
25	<u>15</u>
26	<u>0</u>
27	<u>0</u>
28	<u>0</u>
29	<u>0</u>
30	<u>0</u>
31	<u>306</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)

7901170245

OPERATING DATA REPORT

DOCKET NO. 50-315
 DATE 1-4-79
 COMPLETED BY W.T. Gillett
 TELEPHONE 616-465-5901

OPERATING STATUS

1. Unit Name: Donald C. Cook 1
2. Reporting Period: December 1978
3. Licensed Thermal Power (MWt): 3,250
4. Nameplate Rating (Gross MWe): 1,089
5. Design Electrical Rating (Net MWe): 1,054
6. Maximum Dependable Capacity (Gross MWe): 1,080
7. Maximum Dependable Capacity (Net MWe): 1,044
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>35,064</u>
12. Number Of Hours Reactor Was Critical	<u>579.8</u>	<u>6,589.0</u>	<u>27,211.7</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>463</u>
14. Hours Generator On-Line	<u>563.8</u>	<u>6,443.5</u>	<u>26,413.3</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>321</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,681,168</u>	<u>19,781,598</u>	<u>71,337,791</u>
17. Gross Electrical Energy Generated (MWH)	<u>554,150</u>	<u>6,524,570</u>	<u>23,289,660</u>
18. Net Electrical Energy Generated (MWH)	<u>533,412</u>	<u>6,286,963</u>	<u>22,337,177</u>
19. Unit Service Factor	<u>75.8</u>	<u>73.6</u>	<u>78.2</u>
20. Unit Availability Factor	<u>75.8</u>	<u>73.6</u>	<u>78.2</u>
21. Unit Capacity Factor (Using MDC Net)	<u>68.7</u>	<u>68.7</u>	<u>68.5</u>
22. Unit Capacity Factor (Using DER Net)	<u>68.0</u>	<u>68.1</u>	<u>64.4</u>
23. Unit Forced Outage Rate	<u>11.3</u>	<u>4.4</u>	<u>6.2</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	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH December, 1978

DOCKET NO. 50-315
 UNIT NAME D.C. Cook-Unit
 DATE 1-10-79
 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
140	781212	F	18.5	A	3	N/A	CH	TURBIN	Unit trip due to trip of west main feed pump turbine. Feed pump turbine trip was due to failure of shaft driven oil pump. Unit returned to service 781212.
141	781216	F	12.5	A	1	N/A	CB	MOTORX	Unit removed from service due to No. 4 R.C. Pump upper motor bearing low oil level. Unit returned to service 781216. Reactor power at 100% 781217.
142	781221	F	0	G	4	N/A	ZZ	ZZZZZZ	Rapid load reduction to 74% power due to trip of west main feed pump turbine. Feed pump turbine tripped when the associated A.C. oil pump was removed from service. Operator was not aware that shaft driven oil pump was not in service. Reactor power returned to 100% 781221.

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

(9/77)

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 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 December, 1978

DOCKET NO. 50-315
 UNIT NAME D.C. Cook-Unit
 DATE 1-10-79
 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
143	781225	S/F	S=108.3 F= 40.9	B/A	1	N/A	ZZ	ZZZZZZ	Unit removed from service for scheduled outage to perform hydraulic snubber inspection, inspection of ice condenser lower inlet doors and miscellaneous maintenance. Discontinued startup 781229 due to non-isolable steam leak on No. 3 main steam line drain valve requiring R.C.S. cooldown. Unit returned to service 781231.

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²
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 E-Operator Training & License Examination
 F-Administrative
 G-Operational Error (Explain)
 H-Other (Explain)

³
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⁴
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⁵
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(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

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

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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.: 50-315
Unit Name: D. C. Cook Unit #1
Completed By: R. S. Lease
Telephone: (616) 465-5901
Date: January 9, 1979

OPERATING EXPERIENCE -- DECEMBER, 1978

Highlights

There were three outages during this period. The first one, due to the loss of the East Main Feed Pump, lasted from 0300 hours to 2130 hours December 12, 1978. The second one was due to loss of lubricating oil in the #4 Reactor Coolant Pump and lasted from 0538 hours to 1808 hours December 16, 1978. The last one was a scheduled outage which lasted from 0124 hours December 25, 1978 until 0539 hours December 31, 1978.

Summary

12/01/78 -- The Unit entered this reporting period operating at 99% power and 1070 megawatts electrical. At this time we were experiencing a problem with Overpower/Overtemperature ΔT Indication Loop 3. This power level was held at 99% while the condition was being investigated.

The Turbine Driven Auxiliary Feed Pump was inoperable for a 6.2 hour period to repair a steam trap isolation valve. Radiation Monitors R-11 and R-12 were inoperable for a 2 hour period for installation of RFC-1375.

12/02/78 -- #3 Steam Generator Stop Valve Dump Valve MRV-232 was inoperable for one hour to repair a leak.

12/03/78 -- Power was reduced to 85% for testing of Main Turbine control valves and the Unit returned to 99%. This power ascension was over a period of 1.5 hours.

12/06/78 -- The CD Emergency Diesel Generator was inoperable for a 9 hour period to work on by-pass lube oil filters and other minor repairs.

12/07/78 -- The North half of "A" Condenser was out of service for a 6 hour period to repair tube leaks. The Engineered Safeguards Fan HV-AES-2 was out of service for a 16.75 hour period to repair rollamatic filters.

12/08/78 -- The Engineered Safeguards Fan HV-AES-1 was out of service for a 4 hour period to repair rollamatic filters.

Docket #: 50-315
Unit Name: D. C. Cook Unit #1
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Date: January 9, 1979
Page: (2)

- 12/10/78 -- The Unit load was reduced to 90%, 940 megawatts electrical, for a 13 hour period to repack #13 Circulating Water Pump. A spare temperature indicator on Reactor Loop 3 was placed in service which solved the Overpower/Overtemperature ΔT indication and the Unit was returned to 100% power, 1072 megawatts electrical.
- 12/12/78 -- The Unit tripped from 100% power at 0300 hours from low steam generator levels after the West Main Feed Pumps had tripped due to loss of oil pressure. Investigation found the shaft driven oil pump to have failed. This shaft driven pump was removed with the intent of running the Turbine on the motor driven auxiliary. The Reactor was returned to critical at 1529, the Unit paralleled at 2130 hours and power level increased to 65% until the West Feed Pump became available, 655 megawatts electrical.
- 12/15/78 -- The West Main Feed Pump was returned to service after performing overspeed tests on the Turbines. Power was increased to 100% starting at 1155 hours.
- At approximately 1800 hours the bearings reservoir low level alarm on #4 Reactor Coolant Pump started alarming. This was identified to be the upper reservoir. This level could be monitored by television. By 0300 hours on December 16, 1978, the level indicated it had dropped 0.5 inches. The Unit was started down in power at 0322 hours and tripped at 0538 hours. The #4 Reactor Coolant Pump was removed from service. The oil leak was found to be a loose fitting on the vent line between the oil cooler and the reservoir. The leak was repaired and the oil level returned to normal.
- 12/16/78 -- The Reactor was returned to critical at 1516 hours, the Unit paralleled at 1808 hours and loaded to 49% power by 2120 hours. It was held at this level due to an indicated Quadrant Power Tilt in excess of 2%.
- 12/17/78 -- At 0007 hours the Quadrant Power Tilt had diminished to less than 2% and loading of the Unit was started reaching 100% at 1730 hours.
- 12/19/78 -- The diaphragm failed on Containment Isolation Valve VCR-21. This is one of the glycol valves in the supply system to the Ice Condenser. Glycol was isolated for a period of 14 hours while repairs were made.

Docket : 50-315
Unit Name: D. C. Cook Unit #1
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Telephone: (616) 465-5901
Date: January 9, 1979
Page: (3)

- 12/21/78 -- The Unit power was rapidly reduced to 75% when the West Main Feed Pump Turbine tripped. This was the Turbine that did not have its shaft driven oil pump and the control operator had not been informed. He attempted to stop the running motor driven auxiliary oil pump. The West Main Feed Pump was returned to service and the Unit returned to 100% power by 1940 hours.
- 12/24/78 -- The Unit was started down at 2132 hours for a scheduled outage and tripped from 15% power at 0124 hours December 25, 1978. The Unit was cooled down to Mode 5. Major work accomplished during the outage was Ice Condenser Inlet Door Surveillance, snubber inspection, replacement of pressurizer relief tank rupture diaphragms and repair of a stator cooling water leak.
- 12/28/78 -- Heatup of the Unit was started and it passed into Mode 4 at 0350 hours.
- 12/29/78 -- Full temperature was obtained and the Reactor was critical at 0920 hours. The West Main Feed Pump Turbine had been repaired by replacing the shaft driven oil pump and this Turbine was speed tested. At 1344 hours cooldown of the Unit was initiated because of a severe bonnet leak on a main steam line drain valve which was upstream of the #3 Steam Generator Stop Valve. The Unit was in Mode 4 at 1924 hours.
- 12/30/78 -- The leaking valve was repaired and heatup started at 0710 hours. Mode 3 was reached at 1133 hours. Letdown divert valve QRV-303, which directs the letdown flow to the volume control tank and diverts it to CVCS holdup tanks was found to be stuck in the divert position. This valve was repaired by 0055 hours December 31, 1978.
- 12/31/78 -- Necessary dilution was made and the Reactor was critical at 0407 hours. The Unit was paralleled with the system at 0639 hours. Power level was increased to 50% by 1120 hours. At this time the Main Condenser was operating at maximum allowable temperature rise of the circulating water. Repairs to #1 Circulating Water Pump had been started during the outage and it had not yet been returned to service. At this time #12 Circulating Water Pump was giving indications of very low flow. Investigation found the discharge valve of this pump to be 10% open and the valve operator failed. The #11 Circulating Water Pump was returned to service at 1728 hours which reduced the

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Date: January 9, 1979
Page: (4)

12/31/78 --temperature rise across the Condenser to be normal
(cont.) for two pumps for two pumps operating. Unit loading
was not started at this time due to a Waste Gas
situation within the plant. The total Waste Gas
volume was at its maximum and release could not be
made due to frozen weather instrumentation. The
required dilution to load this Unit would have only
forced abnormal pressure on the Waste Gas System.

DOCKET NO.	50 - 315
UNIT NAME	D. C. Cook - Unit No. 1
DATE	1-10-79
COMPLETED BY	B. A. Svensson
TELEPHONE	(616) 465-5901

MAJOR SAFETY-RELATED MAINTENANCE

DECEMBER, 1978

- M-1 No. 3 S/G stop valve dump valve, MRV-232 was leaking by. Replaced valve gaskets and seat and retested valve.
- M-2 Governor cooling water safety valve, SV-140, for the turbine driven auxiliary feed pump leaked by. Revised piping to allow disassembly and disassembled valve. Lapped seating surface, reassembled and had valve tested.
- M-3 The blowdown regulating valve for #4 steam generator, DRV-341 had a body to bonnet leak. Replaced the gaskets and had valve retested.
- M-4 The blowdown regulating valve for #4 S/G, DRV-342 was leaking. Disassembled valve, replaced gaskets and reassembled. Retested and returned to service.
- M-5 No. 4 reactor coolant pump motor had an excessive oil leak. Located leaking fitting on upper bearing oil cooler. Tightened fitting and added oil to upper bearing reservoir.
- M-6 No. 4 steam generator blowdown control valve, DRV-341, had a bonnet leak. Bonnet gaskets were replaced and retest was satisfactory.
- M-7 QRV-111, loop 4 letdown isolation valve, developed a bonnet leak. Gaskets were replaced and bonnet face rabbet fit was dressed by filing. Operational retest was satisfactory.
- M-8 MPP-222, instrument isolation valve for #2 steam generator pressure leaking badly. A new valve bonnet was installed.
- M-9 MS-153-3, steam lead #3 drain valve, had body to bonnet leak. The valve body was repaired and a new bonnet installed.
- M-10 MPP-240, instrument isolation valve for #4 steam generator pressure developed a bonnet leak. A new bonnet was installed.
- C&I-1 During surveillance testing of pressurizer pressure protection set III, the lead/lag instrument PY-457B was found to be out of specification. The static gain of the instrument was determined to be low. Instrument calibration was performed.

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UNIT NAME	D. C. Cook - Unit No. 1
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PAGE	2

MAJOR SAFETY-RELATED MAINTENANCE

DECEMBER, 1978

- C&I-2 The cold leg RTD of ΔT -Tavg Protection Set III was removed from service and the spare RTD wired to the input of TY-431B. The resistance to voltage converter TY-431B calibration was performed based on the spare RTD calibration curve. Surveillance test procedure was performed to verify the calibration of the loop.
- C&I-3 Glycol valve VCR-021, failed to the closed position. The diaphragm of VCR-021 had failed and required replacement. Following the diaphragm replacement, the valve was stroked, limit switches adjusted and the closure time recorded as 3.2 sec.
- C&I-4 Rod position indication system for control bank D, rod H8 indicated 13 steps from the demand position. The secondary coil voltage was measured and verified correct. The signal conditioning module was adjusted to provide proper indication.
- C&I-5 During the performance of the Logic Channel Surveillance Test of Train B Solid State Protection System, most of the logic failed the test. A faulty tester card was identified and replaced. The logic was retested by performing 1 THP 4030 STP.045.
- C&I-6 ITY-412, current repeater for loop 1 ΔT Tavg-Tavg deviation alarm, failed. The filter capacitor of the modules input circuit had shorted and required replacement.
- C&I-7 The 150 foot wind speed indication failed. The failure of the wind speed transmitter was the result of ice buildup and weather conditions. The 150 foot primary transmitter began to function as the rain removed the ice. The secondary 150 foot wind speed transmitter has a cup missing and determined to be inoperable.
- C&I-8 VCR-10, glycol valve, would not close. The valve was stroked several times until correct operation was achieved. The closure time of the valve was measured and recorded.
- C&I-9 The rod position indication for part length rods F-4 and D-6 and full length control rod K-6 indicated greater than 12 steps from demand position. The secondary coil voltages were measured to verify the rod positions. The calibration of the signal conditioning modules was checked and the modules were recalibrated for correct panel indication.