

OPERATING DATA REPORT

DOCKET NO. 50-316  
 DATE 11-4-81  
 COMPLETED BY A. Might  
 TELEPHONE 616-465-5901

OPERATING STATUS

1. Unit Name: Donald C. Cook Plant 2
2. Reporting Period: October 1981
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

Notes

8. If Changes Occur in Capacity Ratings (Items Number 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 Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	745	7,296	33,600
12. Number Of Hours Reactor Was Critical	103.3	4,815.9	22,561
13. Reactor Reserve Shutdown Hours	0	0	0
14. Hours Generator On-Line	97.6	4,717.4	21,757
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	284,784	15,487,474	69,107,108
17. Gross Electrical Energy Generated (MWH)	89,630	4,993,150	22,084,980
18. Net Electrical Energy Generated (MWE)	85,946	4,817,860	21,277,025
19. Unit Service Factor	13.1	64.7	69.9
20. Unit Availability Factor	13.1	64.7	69.9
21. Unit Capacity Factor (Using MDC Net)	10.7	61.0	65.0
22. Unit Capacity Factor (Using DER Net)	10.5	60.0	64.3
23. Unit Forced Outage Rate	86.9	13.4	15.0
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

(4/77)

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-316  
 UNIT 2  
 DATE 11-4-81  
 COMPLETED BY A. Might  
 TELEPHONE 616-465-5901

MONTH October 1981

DAY	AVERAGE DAILY POWER LEVEL (MWE-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1065	17	----
2	534	18	----
3	----	19	----
4	----	20	----
5	----	21	----
6	----	22	----
7	----	23	----
8	----	24	310
9	----	25	11
10	----	26	----
11	----	27	----
12	----	28	----
13	----	29	----
14	----	30	609
15	----	31	1052
16	----		

INSTRUCTIONS

In 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.

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH October, 1981

DOCKET NO. 50-316  
 UNIT NAME D.C. Cook - Unit 2  
 DATE 11-12-81  
 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
102	811002	F	525.7	A&B	1	N.A.	CC	HTEXCH	Unit removed from service due to increase in primary to secondary leakage through Steam Generator No. 21. Maximum measured leak rate was 0.292 gpm. Hydrostatic testing revealed leakage from tubes 78 and 79 in Row 1 on the cold leg side. Eddy current testing showed a defect in tube 74 in the same row. All three tubes were plugged. Outage was extended to permit completion of NUREG-0737 required design changes and other maintenance work. The unit was returned to service on 811024.
103	811025	F	121.7	A	1	N.A.	CB	VESSEL	Power ascension from the previous outage was stopped at 78% due to indication of primary leakage based on abnormally high readings on the containment atmosphere particulate radioactivity monitor. /Continued .....

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

<sup>2</sup>  
 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)

<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 (LER) File (NUREG-0161)

<sup>5</sup>  
 Exhibit I - Same Source

**UNIT SHUTDOWNS AND POWER REDUCTIONS**

REPORT MONTH October, 1981

DOCKET NO. 50-316  
 UNIT NAME D.C.Cook - Unit 2  
 DATE 11-12-81  
 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
(103 Continued)									The unit was removed from service. The suspected leak was discovered to be at the gasket joint on the pressurizer manway. Following repairs the unit was returned to service on 811030. 100% reactor power was reached at 2245 hours the same day.

<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 (LER) File (NUREG-0161)

<sup>5</sup>  
 Exhibit I - Same Source

Docket No.: 50-316  
Unit Name: D. C. Cook Unit #2  
Completed By: C. E. Murphy  
Telephone: (616) 465-5901  
Date: November 4, 1981  
Page: 1 of 2

MONTHLY OPERATING ACTIVITIES - OCTOBER, 1981

Highlights:

The Unit entered this reporting period operating at 100% power. At 0449 on Friday, October 2, the Steam Jet Air Ejector Monitor (R-15) alarmed, indicating an increase in the primary to secondary leakage in the #21 Steam Generator. The Unit was removed from service at 1352 on Friday, October 2 and was cooled down to Mode 5 by 0205 on Saturday, October 3. Two leaking tubes and one possible "leaker" on the affected Steam Generator were plugged.

During this Unit outage, a considerable amount of time was expended while the Reactor Coolant System was heated up and cooled down to allow for the proper positioning of the four Steam Generator Shim packs and to repair various other miscellaneous leaks.

At 0805, Saturday, October 24, the Reactor was made critical and the turbine/generator was paralleled at 1137. The Reactor power level was increased to 78% by 2208, Saturday. During this power increase the reading on the Containment APD Monitor (R-11) increased significantly, indicating a RCS leak in the Containment. The leak was discovered to be on the Pressurizer Manway Gasket. Cooldown and degassing was begun and the Unit was placed in Mode 5 at 1022 on Monday, October 26.

The Pressurizer Manway leak was repaired on Wednesday afternoon, October 28 and the Unit heat-up began at 0630, October 29. The Reactor was made Critical at 0123 on Friday, October 30 and the Turbine/Generator paralleled at 0307. 100% power was reached at 2243 on Friday and has been maintained at that level since that time.

Total electrical generation for this month was 89,630 mwh.

Summary:

- 10-1-81 The East Centrifugal Charging Pump was inoperable for a 3.5 hour period for Maintenance to repair the out-board Mechanical Seal Heat-Exchanger.
- 10-7-81 "AB" Emergency Diesel was out of service for a 34.5 hour period for Maintenance to inspect the Starting Air Valves.
- 10-20-81 At 1335 hours, an inadvertant S.I. signal was initiated on "Train B" only. All Safety Equipment responded as it should. The S.I. was due to C & I Technician in the S.S.P.S. cabinet performing a surveillance.

Docket No.: 50-316  
Unit Name: D. C. Cook Unit #2  
Completed By: C. E. Murphy  
Telephone: (616) 465-5901  
Date: November 4, 1981  
Page: 2 of 2

10-21-81 At 1106 hours, the No. 21 Circulating Water pump tripped. Cause of the trip was discovered to be a small fire in the motor windings, which was quickly extinguished. The damaged motor was replaced with a spare.

DOCKET NO.	50 - 316
UNIT NAME	<u>D. C. Cook - Unit No. 2</u>
DATE	<u>11-12-81</u>
COMPLETED BY	<u>B. A. Svensson</u>
TELEPHONE	<u>(616) 465-5901</u>
PAGE	<u>1 of 5</u>

MAJOR SAFETY-RELATED MAINTENANCE

OCTOBER, 1981

- M-1 No. 3 boric acid transfer pump was leaking. Replaced the mechanical seal and shaft bearing oil seal deflector. Had pump tested.
- M-2 No. 1 steam generator pressure instrument root valve, MPI-212V1 had a body-to-bonnet leak. Replaced the bonnet gasket.
- M-3 Component cooling water valve, CCW-135 was leaking by. Disassembled, cleaned internals and reassembled valve.
- M-4 RCS loop 2 RTD loop isolation valve, RC-106L2 had a body-to-bonnet leak. Replaced all 12 bonnet studs and the bonnet gasket.
- M-5 RCS loop 4 RTD loop isolation valve, RC-107L4 had a body-to-bonnet leak. Replaced 5 bonnet studs and the bonnet gasket.
- M-6 Pressurizer safety valve, SV-45C was leaking by. Tested a spare valve and installed it in place of the valve that was leaking.
- M-7 Boric acid transfer system isolation valves, CS-418-S and CS-422S were leaking by. Replaced the valve diaphragms.
- M-8 No. 2-1, steam generator had primary to secondary leakage. Inspected visually and located two leaking tubes. Eddy current testing identified a defect in a third tube. Plugged all three of the row 1 tubes.
- M-9 Pressurizer power operated relief valve, NRV-152 was leaking by. Disassembled valve and inspected. Reassembled using new seat, seat ring, plug and gaskets. Reassembled and repacked valve and had it tested.
- M-10 Pressurizer power operated relief valve, NRV-153 was leaking by. Disassembled valve and inspected. Reassembled using new plug, seat ring and gaskets. Had valve tested.
- M-11 The normal charging line check valve to loop 4, CS-329L4 had a body-to-bonnet leak. Repaired the body-to-bonnet leak and replaced the bonnet studs.
- M-12 No. 1 steam generator stop valve dump valve, MRV-211 was leaking by. Machined the plug and seat ring and had valve tested.
- M-13 The emergency boration flush valve, PW-265 was leaking. Replaced the diaphragm.

DOCKET NO.	50 - 316
UNIT NAME	D. C. Cook - Unit No. 2
DATE	11-12-81
COMPLETED BY	B. A. Svensson
TELEPHONE	(616) 465-5901
PAGE	2 of 5

MAJOR SAFETY-RELATED MAINTENANCE

OCTOBER, 1981

- M-14 The pressurizer spray control valve, NRV-163 was leaking. Replaced the bonnet and cage gaskets and one stud. Had valve tested.
- M-15 The sample isolation valve for No. 21 steam generator, DCR-301 was leaking by. Replaced the sample valve and tubing. Had necessary NDE performed and had valve tested.
- M-16 Attachment weld for the east RHR heat exchanger safety valve, SV-104E broke. Removed flange and pipe nipple and installed new. Had necessary NDE performed and completed hydrostatic test.
- M-17 An internal inspection of safety injection system check valve, SI-152S revealed that the valve disc and disc hanger were not installed. Installed a new disc and disc hanger.
- M-18 Attachment weld for the west RHR heat exchanger safety valve, SV-104W broke. Removed flange and pipe nipple and installed new. Had necessary NDE performed and completed hydrostatic test.
- M-19 Letdown heat exchanger, SV-51 was leaking by. Verified setpoint of spare safety valve and replaced SV-51.
- M-20 Blowdown sample isolation valve, BD-102-4 was leaking. Replaced the bonnet gasket, repacked the valve and replaced one packing gland stud.
- M-21 Loop 4 RCS RTD loop isolation valve, RC-103L4 had a packing leak. Repacked the valve.
- M-22 The pressurizer manway was leaking. Replaced manway gasket and two bolts which were steam cut. Leak test was performed.
- M-23 The west centrifugal charging pump seal water supply valve, QMO-226 had a packing leak. Repacked valve and had it tested.
- M-24 Reactor coolant loop 1 RTD bypass loop valve, RC-108-L1 failed. The valve disc was separated from the stem. Replaced valve and had NDE performed as required. Performed system leak test.
- M-25 Letdown orifice regulating valve, QRV-162 had an operator diaphragm air leak. Replaced diaphragm, repaired valve bonnet leak and had valve tested.



DOCKET NO.	50 - 316
UNIT NAME	D. C. Cook - Unit No. 2
DATE	11-12-81
COMPLETED BY	B. A. Svensson
TELEPHONE	(616) 465-5901
PAGE	3 of 5

MAJOR SAFETY-RELATED MAINTENANCE

OCTOBER, 1981

- C&I-1 DCR-340 when cycled required greater than 10 seconds to close. The valve was inspected and the problem identified as the packing being too tight. The packing was loosened and a retest of the valve's cycle time was performed. The measured closure time was recorded as 8.0 seconds.
- C&I-2 2PB-936AB, Containment Pressure Protection Set II indicated signs of drift during surveillance testing. The bistable was removed and a spare was installed. Following calibration of the bistable, the trip set-point was monitored for a one-week period to ensure proper operation.
- C&I-3 Circuit 71 of the Containment Fire Detection System actuated the trouble alarm on the CAS. The thermistor string terminator required replacement. The trouble alarm cleared.
- C&I-4 The rod bottom light for control rod D4 did not illuminate with the control rod at less than 20 steps. The rod bottom bistable and signal conditioning modules were recalibrated and returned to service.
- C&I-5 The red pen of MR-50, Containment Dew Point Monitor failed to the high end of scale. The detector mirror was cleaned. The system failed to balance with the mirror cleaned and the detector was replaced. During the balancing of the red pen channel, the blue pen channel's sample pump was noticed overheating. The sample pump was examined and the fan bearings were found to be galled. The pump was replaced with a spare. Normal operation of both channels was verified.
- C&I-6 NTP-241, Delta T-Tavg Protection Set IV cold leg normal RTD failed to an open circuit condition. The failed RTD was removed and a spare RTD was installed and spliced to the cable.
- C&I-7 NFA-210, Reactor Coolant Loop No. 1 RTD bypass manifold return flow alarm, low flow alarm was actuated with 325 gpm flow present. The zero of the instrument had shifted. The zero was adjusted and the calibration test points were within specifications. The alarm microswitch required replacement. The setpoint was adjusted to actuate at 283 gpm decreasing.
- C&I-8 The boron injection tank train A heater would not function properly. The bistable utilized for heater control was found failed. The bistable was replaced and the installed spare bistable was calibrated to energize the heaters at 160°F decreasing and deenergize the heaters at 170°F increasing. The entire temperature loop was tested to ensure reliability of the control system.

DOCKET NO.	50 - 316
UNIT NAME	D. C. Cook - Unit No.
DATE	11-12-81
COMPLETED BY	B. A. Svensson
TELEPHONE	(616) 465-5901
PAGE	4 of 5

MAJOR SAFETY-RELATED MAINTENANCE

OCTOBER, 1981

- C&I-9 On August 10, 1981, the Lower Containment Sump Level Channels NLA-310 and NLI-311 displayed a large deviation between channels. During the outage, the low side bellows was determined to be the cause of the problem through a static pressure test. The bellows and sensing line were replaced and the oil fill of the bellows and sensing line was accomplished with the assistance of a Barton Company Field Representative. The channel was calibrated and returned to service.
- C&I-10 The Loop 1 Delta T-Tavg Protection Set Power Level indicated at test point TP-412J, was below the other loops. The calibration of the resistance to voltage converters was tested and TY-411A was found to be out of specifications. TY-411A was recalibrated and returned to normal service.
- C&I-11 BLP-140, Steam Generator No. 4 narrow range protection set indicated a level 16% higher than the adjacent protection channels. The transmitter was isolated and the reference leg was blown down. The transmitter was valved in and correct indication was observed on the channel.
- C&I-12 On September 8, 1981, the Flux Mapping System Detector Position Switch for Detector F failed to register the correct detector position. During movement, the detector failed to stop at the bottom of core and top of core positions. Initial investigation indicated a problem with the detector drive encoder. The position encoder, power supply and several nixie display tubes were replaced. The detector channel position encoder was adjusted for the correct detector position and the system was returned to normal.
- C&I-13 The AB Emergency Diesel Temperature Recorder indicated the rear No. 5 and front No. 4 thermocouples higher than normal. The temperature indication for No. 5 rear was tested and determined to be indicating properly. The thermocouple for No. 4 front was tested and was replaced. The new thermocouple's indication returned to the 119<sup>o</sup> value.
- C&I-14 ECR-31, Containment Isolation Valve for Radiation Monitoring System Channels R-11 and R-12 would not open completely. The problem was traced to solenoid valve, XS0-631 which was found in an intermediate position. The solenoid valve was disassembled and rebuilt. The rebuilt solenoid and valve were functionally tested with the measured cycle times of 1.4 seconds opening and 2.7 seconds closing.

DOCKET NO.	<u>50 - 316</u>
UNIT NAME	<u>D. C. Cook - Unit No. 2</u>
DATE	<u>11-12-81</u>
COMPLETED BY	<u>B. A. Svensson</u>
TELEPHONE	<u>(616) 465-5901</u>
PAGE	<u>5 of 5</u>

MAJOR SAFETY-RELATED MAINTENANCE

OCTOBER, 1981

- C&I-15 The Rod Position Indication System Panel Meters all indicated a position of 25 steps with all rods on bottom. The low voltage RPI power supplies PS-2 and PS-4, supplying -13 VDC to the signal conditioning modules operational amplifiers were found defective. The supplies were replaced and the panel indicators returned to their previous zero readings.
- C&I-16 Pressurizer Spray Valve NRV-163, would drift open while the controller was indicating a closed condition. The valve's positioner was found to have a worn pilot valve stem which was allowing air leakage. The pilot stem was replaced and correct operation of the valve was verified.