



Duane Arnold Energy Center
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January 10, 1996
NG-96-0021

Mr. Hubert J. Miller
Regional Administrator
Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Subject: Duane Arnold Energy Center
Docket No: 50-331
Operating License DPR-49
December 1995 Monthly Operating Report

Dear Mr. Miller:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for December 1995. The report has been prepared in accordance with the guidelines of NUREG-0020 and distribution has been made in accordance with DAEC Technical Specifications, Section 6.11.1.c.

Very truly yours,

Gary Van Middlesworth
Plant Manager, Nuclear

GDV/RBW
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File A-118d
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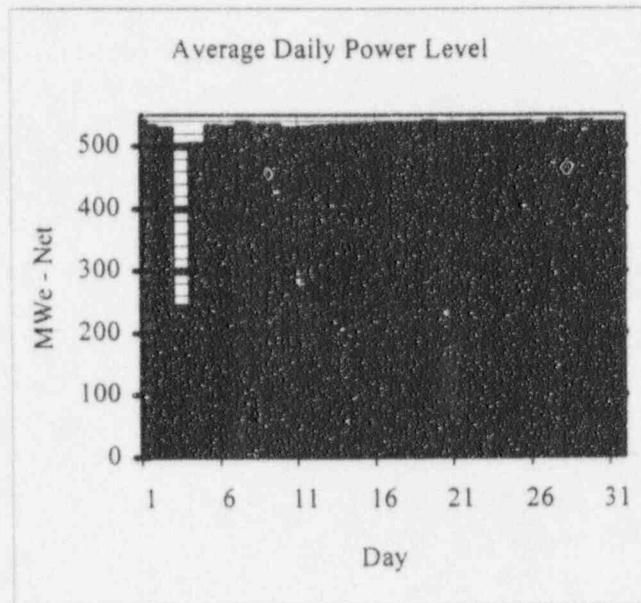
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OPERATING DATA REPORT

DOCKET NO: 50-0331
 DATE: 01/10/96
 Unit: Duane Arnold Energy Center
 COMPLETED BY: Richard Woodward
 TELEPHONE: (319) 851-7318

OPERATING STATUS

1. Unit Name: Duane Arnold Energy Center
2. Reporting Period: December 1995
3. Licensed Thermal Power (MW_{th}): 1658
4. Nameplate Rating (Gross MW_e DER): 565.7 (Turbine)
5. Design Electrical Rating (Net MW_e DER): 538
6. Maximum Dependable Capacity (Gross MW_e MDC): 545
7. Maximum Dependable Capacity (Net MW_e MDC): 515
8. If Changes Occur in Capacity Ratings (Items Number 3 through 7) since the last report, Give Reasons: Not Applicable
9. Power Level to Which Restricted, If Any (Net MW_e): Not Applicable
10. Reasons for Restrictions, If Any: Not Applicable



	December-95	1995	Cummulative
11. Hours in Reporting Period	744.0	8,760.0	183,336.0
12. Number of Hours Reactor Was Critical	744.0	7,345.2	138,525.8
13. Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14. Hours Generator On-Line	744.0	7,254.7	135,113.8
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH)	1,211,082.4	11,732,854.7	189,261,214.4
17. Gross Electrical Energy Generated (MWH)	414,352.0	3,964,084.1	63,411,970.6
18. Net Electrical Energy Generated (MWH)	391,321.6	3,736,970.3	59,477,014.6
19. Unit Service Factor	100.0%	82.8%	73.7%
20. Unit Availability Factor	100.0%	82.8%	73.7%
21. Unit Capacity Factor (Using MDC Net)	102.1%	82.8%	68.5%
22. Unit Capacity Factor (Using DER Net)	97.8%	79.3%	65.6%
23. Unit Forced Outage Rate	0.0%	1.1%	10.8%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): N/A

25. If Shutdown at End of Report Period, Estimated Date of Startup: N/A

AVERAGE DAILY UNIT POWER LEVEL

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MONTH December 1995

Day	Average Daily Power Level (MWe-Net)
1	534.2
2	529.2
3	245.3
4	504.4
5	534.0
6	531.9
7	539.4
8	534.9
9	534.9
10	529.2
11	531.1
12	533.0
13	534.5
14	535.3
15	535.9
16	537.4
17	537.7
18	537.7
19	541.1
20	535.7
21	537.8
22	540.0
23	537.5
24	538.2
25	539.9
26	534.6
27	543.2
28	539.3
29	541.3
30	538.7
31	537.9

REFUELING INFORMATION

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1. **Name of facility.**

Duane Arnold Energy Center

2. **Scheduled date for next refueling shutdown.**

Refuel Outage XIV to begin October 10, 1996.

3. **Actual date for restart following refueling.**

November 14, 1996

4. **Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?**

No

5. **Scheduled date(s) for submitting proposed licensing action and supporting information.**

Not applicable

6. **Important licensing considerations associated with refueling, e.g., new or different fuel design or supplier, unreviewed design or performance analysis methods, significant changes in fuel design, new operating procedures.**

No

7. **Current and projected fuel assemblies inventory:**

	Number of Fuel Assemblies	Projected date of last refueling that can be discharged
installed in reactor core (following refueling)	368	n/a
previously discharged from core to Spent Fuel Storage Pool (following refueling)	1408	n/a
under present physical capacity of Spent Fuel Storage Pool	2411	2007
under Licensed Capacity of Spent Fuel Storage Pool	3152	2014

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UNIT SHUTDOWNS AND POWER REDUCTIONS
 REPORT MONTH: December 1995

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	System Code (4)	Comp. Code (5)	Cause
8	Dec. 2-4	S	0 (14 full power hours equivalent)	B	5	n/a	SJ Feedwater System	PDCV Valve, Control, Differential, Pressure	To replace the 'B' Feedwater Regulating Valve Actuator, to repair a steam leak on one of the MSR Drain Tank instrument isolation valves, to stop additional leaks into the turbine building equipment drain sump, to perform turbine control valve testing and to perform a control rod sequence exchange.

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-Continued
 5-Reduced Load
 9-Other (Explain)

4 - Exhibit G- Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)
 5 - Exhibit 1 (Same Source)

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Monthly Operational Overview for December 1995:

The DAEC operated at full thermal power throughout the month except December 2-4 to:

- replace the 'B' Feedwater Regulating Valve Actuator
- repair a steam leak on one of the MSR Drain Tank instrument isolation valves
- stop additional leaks into the turbine building equipment drain sump
- perform scheduled turbine control valve surveillance testing
- perform control rod sequence exchange.

Forgone production was 14.1 full-power-equivalent-hours.

Allocation of Production & Losses:	Electrical Output MWe	Capacity Factor % of 565.7 MWe (Design Gross Rating)	Full Power Equivalent Hours
Actual Metered Net Electric Output	526.0	93.0%	691.7
Actual Metered Plant Electric Loads	31.0	5.7%	40.7
Load Following	0.0	0.0%	0.0
Off-Line	0.0	0.0%	0.0
(-)Weather losses, ie., condenser pressure < 2.75 In Hg / Circ Water Temp < 74.5 °F	-5.9	-1.0%	-7.8
Planned Capacity Losses: Turbine Control Valve Testing, Feed Reg valve repair 12/2	10.7	1.9%	14.1
Control Rod Drive Exercises	0.0	0.0%	0.0
Unplanned Capacity Loss:	0.0	0.0%	0.0
Normal Capacity Losses (Avg MWth < 1658)	0.2	0.0%	0.3
Metering Losses (Avg indic MWe - Avg MWHe)	2.4	0.4%	3.2
Efficiency Losses (Weather-Norm-Full-Power-MWe < 565.7)	1.4	0.2%	1.8
Design Gross Electric Output	565.7	100.0%	744.0

At the end of December, the DAEC had operated continuously for 208 consecutive days, its fifth longest operating run. DAEC's end-of-year capability factor was 80.4%, its best ever for a refuel-outage-year. The three-year average 1992-95 capability factor is 81%. Unplanned Capability Losses for 1995 were 3.2%. The three-year average is 3.8%.

On December 12, during the performance of the "High Pressure Coolant Injection System (HPCI) Quarterly Operability Test", HPCI pump flow dropped unexpectedly and the "LO FLOW" alarm was received. At that time the HPCI turbine was tripped by the operator and the system declared inoperable. Extensive troubleshooting failed to conclusively determine a cause for the event. Following a temporary modification to lower the overall contact resistance of a low-current/low-voltage turbine control system relay, the test was successfully completed on December 15. Monitoring equipment was installed on the HPCI control system and a schedule of increased operability testing (every ten days) was initiated. The HPCI turbine has since been operated three times, with no recurrence of the problem. The event had no effect on the safe operation of the plant. (LER # 95-12).

On December 21 water was found in the HPCI turbine exhaust line. The source of the water was unknown, and its effect on HPCI operability was also unknown. HPCI was therefore conservatively declared inoperable. The exhaust line was drained and a preliminary determination, based on engineering judgment, concluded that HPCI was operable. It was declared operable December 22. Further investigations are in progress. (LER # 95-13, pending).

Licensing Action Summary:

Plant Availability: 100.0% Unplanned Auto Scrams (while/critical) this month: 0
 Number of reportable events: 2 Unplanned Auto Scrams (while/critical) last 12 months: 1