IES UTILITIES

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June 13, 1997
NG-97-1033

Mr. A. Bill Beach
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
May 1997 Monthly Operating Report
File: A-118d

Dear Mr. Beach:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for May 1997. 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 VanMiddlesworth
Plant Manager-Nuclear

GDV/RBW

Enclosures

170043

IE24

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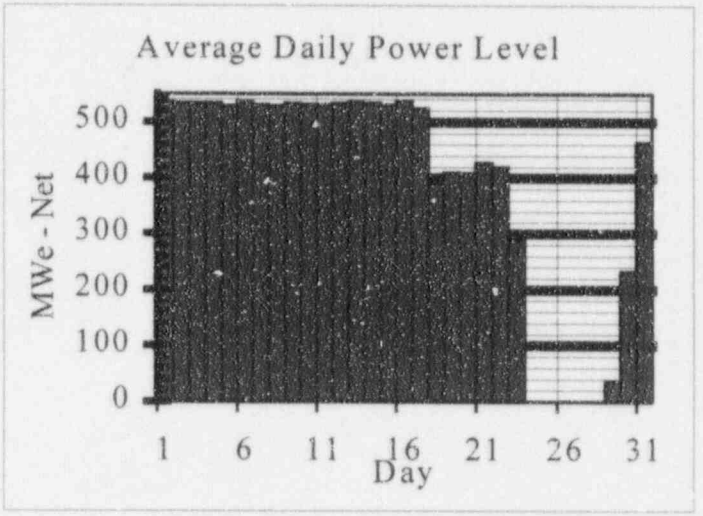
NRC Resident Inspector

OPERATING DATA REPORT

DOCKET NO: 50-0331
DATE: 06/13/97
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: May 1997
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): 550
7. Maximum Dependable Capacity (Net MW_e MDC): 520
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): N/A
10. Reasons for Restrictions, If Any: N/A

		May-97	1997	Cumulative
11.	Hours in Reporting Period	744.0	3,623.0	195,743.0
12.	Number of Hours Reactor Was Critical	655.7	3,334.3	149,828.4
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	617.7	3,222.9	146,244.0
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	922,730.4	5,089,371.9	206,742,483.0
17.	Gross Electrical Energy Generated (MWH)	309,073.0	1,727,538.0	69,316,584.6
18.	Net Electrical Energy Generated (MWH)	290,989.6	1,629,809.5	65,045,368.5
19.	Unit Service Factor	83.0%	89.0%	74.7%
20.	Unit Availability Factor	83.0%	89.0%	74.7%
21.	Unit Capacity Factor (Using MDC Net)	75.2%	86.5%	70.0%
22.	Unit Capacity Factor (Using DER Net)	72.7%	83.6%	67.1%
23.	Unit Forced Outage Rate	0.0%	0.0%	10.0%

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 May 1997

Day	Average Daily Power Level (MWe-Net)
1	535.0
2	533.4
3	533.6
4	533.3
5	527.9
6	535.3
7	530.3
8	528.2
9	532.7
10	531.1
11	530.6
12	532.9
13	535.3
14	533.5
15	529.7
16	536.8
17	523.8
18	391.9
19	409.9
20	409.2
21	427.4
22	419.6
23	288.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	35.8
30	232.3
31	463.4

REFUELING INFORMATION

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1. **Name of facility.**

   Duane Arnold Energy Center

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

   March 1998

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

   April 1998

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

   No. (Improved Technical Specifications (ITS) approval needed for refueling outage planning.)

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

   N/A. (ITS submitted October 30, 1996.)

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.**

   N/A

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

	Number of Fuel Assemblies	Projected date of last refueling that can be discharged (after allowing margin for maintenance of continuous full-core discharge capability)
Installed in reactor core (following refueling)	368	n/a
Discharged from core to Spent Fuel Storage Pool	1528	n/a
Installed Capacity of Spent Fuel Storage Pool	2411	2001
Licensed Capacity of Spent Fuel Storage Pool (with reracking)	2829	2006
Licensed Capacity of Spent Fuel Storage Pool and Cask Pool (with reracking)	3152	2010

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UNIT SHUTDOWNS AND POWER REDUCTIONS
REPORT MONTH: May 1997

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	System Code (4)	Comp. Code (5)	Cause
4	05/17/97	F	0 (66.8 full-power-hours equivalent)	A	5		SB Main/Reheat Steam System	33 Position Switch	At 0400 May 18, during performance of surveillance testing of the Main Steam Isolation Valves, the "C" Inboard MSIV would not indicate full closed. It was declared inoperable and the outboard MSIV closed to comply with Tech Specs. The plant was taken off line at 2243 on May 23 to inspect and repair the MSIV.
5	05/23/97	S	87.2	B	1		BF Containment Vacuum Relief System	33 Position Switch	During the shutdown to fix the MSIV, the position switch indication on one of the torus-to-drywell vacuum breakers was subsequently discovered to also have problems with its indication lights. This repair required the plant to proceed to cold shutdown.
6	05/27/97	S	39.1	B	1		SB Main/Reheat Steam System	ISV Isolation Valve	During the startup, after the plant had been taken critical May 26 at 2034, a main steam drain isolation valve was found to have a bad packing leak.

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 May 1997:

The plant continuously operated at licensed thermal power (except brief down-powers for control rod drive exercises) until reducing power May 17 at 2230 to perform a control rod pattern adjustment to improve margins to thermal limits.

At 0446 the following morning, during performance of the quarterly Main Steam Isolation Valve (MSIV) Trip/Closure test, the valve position indication on the "C" Inboard MSIV failed to indicate FULL CLOSED. The valve was declared inoperable and the outboard valve was closed to comply with Technical Specifications. The plant was taken off line at 2243 on May 23 (and the reactor taken subcritical at 0051 May 24) to inspect the MSIV to determine why there was no indication for the valve being closed.

Original plans were to hold the reactor at 400 pounds pressure and fix the suspected MSIV indication problem. However, during the shutdown it was discovered that the position switch indication on one of the torus-to-drywell vacuum breakers was also not functioning correctly, so the decision was made on the morning of May 24 to proceed to cold shutdown. During the 400 pound inspection, a leak on the 'A' Recirculation discharge chemical decontamination flange was also found. While the plant was shut down, work was also performed on the 'A' Circulation Pump, various cooling tower valves, various Balance-Of-Plant valves, a switchyard transformer, and two Control Rod Drive Hydraulic Control Units.

During the startup 400 pound inspection, after the plant had been taken critical May 26 at 2034, a main steam drain isolation valve was found to have a bad packing leak. The repair required closing the MSIVs to isolate this and taking the reactor subcritical at 14:55 May 27. Repairs were completed early the morning of May 28 and the reactor taken critical (the second time) at 1128 May 28. Power ascension continued and the generator was synchronized to the grid at 0600 May 29. The plant returned to full licensed thermal power May 31 at 2312.

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	391.0	69.2%	514.2
Actual Metered Plant Electric Loads	24.4	4.3%	32.1
Excluded losses: (Load Following or Coast Down):	0.0	0.0%	0.0
Off-Line: 5/23 23:42 - 5/29 06:00	96.0	17.0%	126.3
Unplanned On-Line Capacity Losses	50.8	8.9%	66.8
(Negative) Weather losses, ie., gains -- condenser pressure <2.75 In Hg / Circ Water Temp < 74.5 °F	0.0	0.0%	0.0
Planned On-Line Capacity Losses	1.6	0.3%	2.1
Normal Capacity Losses (Avg."Full Power" MWth < 1658)	0.2	0.0%	0.3
Metering Losses (Avg indic MWe - Avg MWHe)	1.9	0.3%	2.5
(Negative) Efficiency Losses (Weather-Norm-Full-Power-MWe > 565.7 Design)	-0.2	0.0%	-0.3
Design Gross Electric Output	565.7	100.0%	744.0

During review of the surveillance procedure used to perform High Pressure Coolant Injection (HPCI) Suppression Pool Steam Leak Detection (SLD) testing, it was discovered that the procedure did not adequately functionally test the HPCI Leak Detection Time-Delay, as required by the Technical Specifications. The SLD logic was immediately declared inoperable, the testing procedure revised, and the SLD logic proven operable. A Root Cause Evaluation is ongoing. (LER #97-06, pending)

Licensing Action Summary:

Plant Availability: 83.0%
Number of reportable events: 1
Unplanned Auto Scrams (while/critical) this month: 0
Unplanned Auto Scrams (while/critical) last 12 months: 0