



Duane Arnold Energy Center  
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May 10, 1996  
NG-96-1055

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  
April 1996 Monthly Operating Report

Dear Mr. Miller:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for April 1996. 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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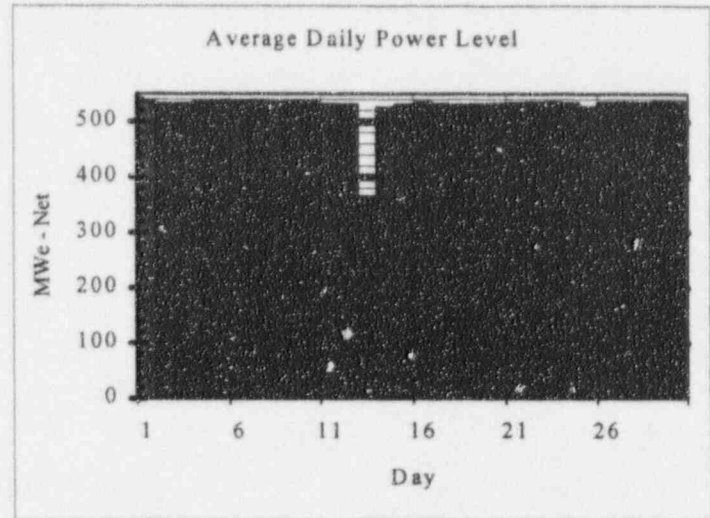
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# OPERATING DATA REPORT

DOCKET NO: 50-0331  
 DATE: 05/10/96  
 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: April 1996
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  $MW_e$ ): Not Applicable
10. Reasons for Restrictions, If Any: Not Applicable



		April-96	1996	Cumulative
11.	Hours in Reporting Period	719.0	2,903.0	186,239.0
12.	Number of Hours Reactor Was Critical	719.0	2,903.0	141,428.8
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	719.0	2,903.0	138,016.8
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,178,598.1	4,578,992.2	193,840,206.6
17.	Gross Electrical Energy Generated (MWH)	401,834.0	1,561,020.0	64,972,990.6
18.	Net Electrical Energy Generated (MWH)	379,614.2	1,472,776.4	60,949,791.0
19.	Unit Service Factor	100.0%	100.0%	74.1%
20.	Unit Availability Factor	100.0%	100.0%	74.1%
21.	Unit Capacity Factor (Using MDC Net)	101.5%	97.6%	69.1%
22.	Unit Capacity Factor (Using DER Net)	98.1%	94.3%	66.1%
23.	Unit Forced Outage Rate	0.0%	0.0%	10.6%

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

DOCKET NO: 50-0331

DATE: 05/10/96

Unit: Duane Arnold Energy Center

COMPLETED BY: Richard Woodward

TELEPHONE: (319) 851-7318

MONTH April 1996

Day	Average Daily Power Level (MWe-Net)
1	536.5
2	532.5
3	532.2
4	535.9
5	536.6
6	537.4
7	538.2
8	535.4
9	536.9
10	536.0
11	531.1
12	530.2
13	365.5
14	525.1
15	530.3
16	535.2
17	531.6
18	529.9
19	531.3
20	532.3
21	533.5
22	534.8
23	535.3
24	533.6
25	526.3
26	534.9
27	535.6
28	534.0
29	536.1
30	535.4

# REFUELING INFORMATION

DOCKET NO: 50-0331  
 DATE: 05/10/96  
 Unit: Duane Arnold Energy Center  
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 TELEPHONE: (319) 851-7318

**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?**

Yes

RTS 269, T.S. 3.2, "Plant Containment Systems"

RTS 288, T.S. 2.1, 3.2, "Reactor Water Clean-up Systems Vessel Level Isolation Set-Point Change"

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

RTS 269, submitted December 22, 1995

RTS 288, submitted January 18, 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.**

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	3112	2014

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UNIT SHUTDOWNS AND POWER REDUCTIONS  
 REPORT MONTH: April 1996

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	System Code (4)	Comp. Code (5)	Cause
5	April 13	S	0 (7.9 full- power- hours equivalent)	B	5	n/a	n/a	n/a	Turbine Valve Testing and 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 April 1996 :

The DAEC operated at full thermal power throughout the month except:

- on April 13 - 16, to perform scheduled Turbine Control Valve (TCV) surveillance testing and Control Rod Sequence Exchange, 7.9 full-power-hours (equivalent) lost.

Total forgone production (including other small planned losses) was the equivalent of 13.0 full-power hours of operation.

At the end of the month the Duane Arnold Energy Center had operated 330 consecutive days, its best-ever continuous operating run.

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	528.0	93.3%	671.1
Actual Metered Plant Electric Loads	31.0	5.5%	39.5
Load Following	0.0	0.0%	0.0
Off-Line	0.0	0.0%	0.0
(-)Weather losses, i.e., condenser pressure < 2.75 In Hg / Circ Water Temp < 74.5 °F	-3.6	-0.6%	-4.6
Planned Capacity Losses: Turb Valve Testing & CR Seq Exchg 4/13 and Rod pull 4/8, 14-16, 26	6.4	1.1%	8.1
Unplanned Capacity Losses:	0.0	0.0%	0.0
Normal Capacity Losses (Avg MWth < 1658)	0.4	0.1%	0.5
Metering Losses (Avg indic MWe - Avg MWHe)	2.5	0.4%	3.1
Efficiency Losses (Weather-Norm-Full-Power-MWe < 565.7)	1.0	0.2%	1.3
<b>Design Gross Electric Output</b>	<b>565.7</b>	<b>100.0%</b>	<b>719.0</b>

On April 8, with the plant operating at 100% power, a Primary Containment Isolation System (PCIS) Group III ('E' side) isolation occurred along with initiation of the 'B' Standby Gas Treatment System. Investigation determined that a fuse in the Offgas Stack Vent Pipe 'B' radiation monitor had blown, causing the monitor (Group III PCIS input) to fail downscale and default to the tripped condition. All automatic actions (primary and secondary containment isolations) were completed satisfactorily, and all systems functioned as required. The fuse was replaced, the radiation monitor was tested, and the isolation was reset. The fuse blew during planned maintenance on the radiation monitor located directly above the Offgas Stack Vent Pipe B radiation monitor. While disconnecting the cables from the monitor being removed for maintenance, one of the cables dropped down onto the electrical contacts in the Offgas Stack Vent Pipe B radiation monitor, causing the fuse to blow. This event has been reviewed with maintenance technicians to reinforce the need to secure loose cables during such maintenance activities. This event had no effect on the safe operation of the plant. (LER #96-02)

## Licensing Action Summary:

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