



Duane Arnold Energy Center  
3277 DAEC Road  
Palo, IA 52324  
Telephone 319 851 7611  
Fax 319 851 7611

October 15, 1996  
NG-96-2166

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  
September 1996 Monthly Operating Report  
File: A-118d

Dear Mr. Beach:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for September 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,

A handwritten signature in cursive script that reads "Gary VanMiddlesworth".

Gary VanMiddlesworth  
Plant Manager-Nuclear

GDV/RBW

Enclosures

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Mr. A. Bill Beach  
NG-96-1713  
October 15, 1996  
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cc:

Jim McNight 301 415 2070  
U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-37  
Washington, DC 20555-0001 (Orig.)

Mr. Glenn Kelly  
Project Manager  
1 Whiteflint North  
Mail Stop 13E21  
11555 Rockville Pike  
Rockville, MD 20852

Document Control Desk  
INPO Records Center  
700 Galleria Parkway  
Atlanta, GA 30339-5957

Ms. Lisa Stump  
Iowa State Utilities Board  
Lucas State Office Building  
Des Moines, IA 50319

Mr. Fred Yost  
Director, Research Services  
Utility Data Institute  
1700 K St. NW, Suite 400  
Washington, DC 20006

Mr. Dennis Murdock  
Central Iowa Power Cooperative  
Box 2517  
Cedar Rapids, IA 52406

Dr. William A. Jacobs, Jr.  
GDS Associates, Inc.  
Suite 720  
1850 Parkway Place  
Marietta, GA 30068-8237

Mr. Dale Arends  
Corn Belt Power Cooperative  
1300 13th Street North  
Humboldt, IA 50548

DOCU

NRC Resident Inspector

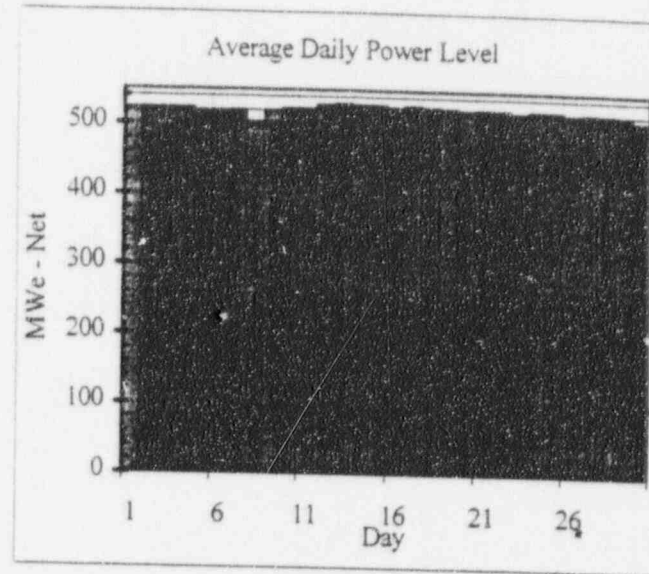
Mr. Al Gutterman  
Morgan, Lewis, Bockius  
1800 M St. NW  
Washington, DC 20036-5859

# OPERATING DATA REPORT

DOCKET NO: 50-0331  
 DATE: 10/15/96  
 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: September 1996
3. Licensed Thermal Power (Mw<sub>th</sub>): 1658
4. Nameplate Rating (Gross MW<sub>e</sub> DER): 565.7 (Turbine)
5. Design Electrical Rating (Net MW<sub>e</sub> DER): 538
6. Maximum Dependable Capacity (Gross MW<sub>e</sub> MDC): 550
7. Maximum Dependable Capacity (Net MW<sub>e</sub> 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<sub>e</sub>): Coast-down from 100% September 25 to 97% at end of month
10. Reasons for Restrictions, If Any: End of fuel cycle reduction in full thermal power capability



		September-96	1996	Cumulative
11.	Hours in Reporting Period	720.0	6,575.0	189,911.0
12.	Number of Hours Reactor Was Critical	720.0	6,575.0	145,100.8
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	720.0	6,575.0	141,688.8
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,184,630.7	10,439,672.4	199,700,886.8
17.	Gross Electrical Energy Generated (MWH)	398,098.0	3,517,569.0	66,929,539.6
18.	Net Electrical Energy Generated (MWH)	375,755.8	3,318,067.5	62,795,082.1
19.	Unit Service Factor	100.0%	100.0%	74.6%
20.	Unit Availability Factor	100.0%	100.0%	74.6%
21.	Unit Capacity Factor (Using MDC Net)	100.4%	97.0%	69.7%
22.	Unit Capacity Factor (Using DER Net)	97.0%	93.8%	66.8%
23.	Unit Forced Outage Rate	0.0%	0.0%	10.3%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): Refueling, 10/11/96, 36 days

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

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-0331

DATE: 10/15/96

Unit: Duane Arnold Energy Center

COMPLETED BY: Richard Woodward

TELEPHONE: (319) 851-7318

MONTH September 1996

Day	Average Daily Power Level (MWe-Net)
1	522.3
2	522.3
3	523.3
4	522.2
5	516.9
6	519.4
7	519.8
8	493.5
9	519.9
10	522.9
11	522.9
12	529.0
13	530.8
14	528.9
15	529.2
16	526.1
17	528.3
18	526.6
19	524.6
20	522.8
21	524.3
22	523.6
23	520.2
24	523.7
25	522.4
26	519.0
27	520.7
28	519.7
29	519.5
30	512.1

# REFUELING INFORMATION

DOCKET NO: 50-0331  
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**1. Name of facility.**

Duane Arnold Energy Center

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

Refuel Outage 14 (began) October 11, 1996.

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

November 17, 1996

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

All received

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

N/A

**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 (after allowing margin for maintenance of continuous full-core discharge capability)
Installed in reactor core (following refueling)	368	n/a
Previously discharged from core to Spent Fuel Storage Pool	1408	n/a
Discharged from core to Spent Fuel Storage Pool (following Fall 1996 refueling)	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: September 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
11	September 7 - 8	S	0 (1.3 full- power- hours equivalent)	B	5	n/a	n/a	n/a	Turbine Control Valve testing Control Rod Exercises

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 I (Same Source)



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# Monthly Operational Overview for September 1996:

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

- on September 7-8, to perform scheduled Scram Time Testing, Turbine Control Valve Testing, and Control Rod Drive manipulations: 1.3 full-power-hours (equivalent) lost.
- on September 4, 16, and 23 to lock recirculation flow to perform Primary Containment testing (Group III isolations): 0.2 full-power-hours (equivalent) lost.
- on September 14, to reduce recirculation flow to fully withdraw the last control rod: 0.2 full-power-hours (equivalent) lost.
- on September 18 - 25 to reduce power to maintain margin to thermal limits (MAPRAT) : 1.4 full-power-hours (equivalent) lost.
- on September 25 - 30, commencing fuel "coast-down" (maximum recirculation flow and all control rods fully withdrawn): 2.1 full-power-hours (equivalent) lost.
- normal capacity losses (maintenance of margin to licensed 1658 MWth thermal power) totaled 0.5 full-power-hours.

Normal weather-related losses were 7.0 full-power-hours, and other efficiency losses totaled 2.6 full-power-hours. These (balance-of-plant) losses occurred during operation at licensed thermal capacity. Total forgone production was the equivalent of 16.7 full-power hours of operation.

At the end of the month the Duane Arnold Energy Center had operated 483 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	521.9	92.3%	664.2
Actual Metered Plant Electric Loads	31.0	5.5%	39.5
Excluded losses: (Load Following or Coast Down): 9/25 - 30: Coast-down	1.7	0.3%	2.1
Off-Line	0.0	0.0%	0.0
Weather losses, ie., condenser pressure >2.75 In Hg / Circ Water Temp > 74.5 °F	5.5	1.0%	7.0
Planned Capacity Losses: 9/ 7-8: Turbine Test, 11: RCIC, 14: Rod Adj, 9/4, 16, & 23: Group 3 Isolation	1.4	0.2%	1.8
Unplanned Capacity Losses: 9/ 18 - 25: maintain margin to thermal limits	1.0	0.1%	1.3
Normal Capacity Losses (Avg MWth < 1658)	0.4	0.1%	0.5
Metering Losses (Avg indic MWe - Avg MWHe)	1.8	0.3%	2.3
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>720.0</b>

There were no Licensee Event Reports.

## Licensing Action Summary:

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