



Duane Arnold Energy Center
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August 15, 1996
NG-96-1713

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
July 1996 Monthly Operating Report
File: A-118d

Dear Mr. Beach:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for July 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 Van Middlesworth".

Gary Van Middlesworth
Plant Manager-Nuclear

GDV/RBW

Enclosures

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Mr. A. Bill Beach
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cc:

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NRC Resident Inspector

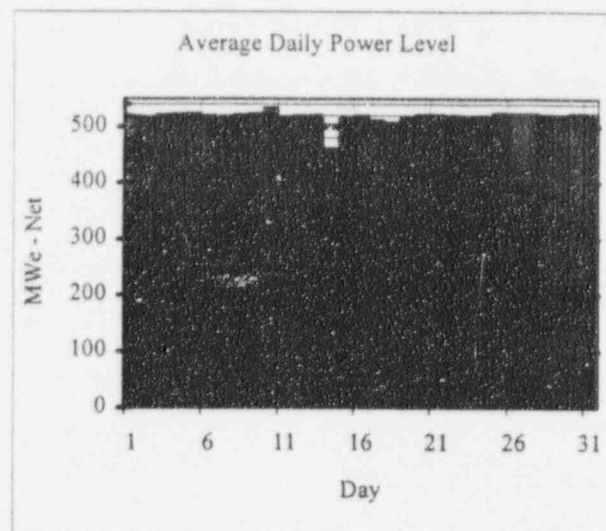
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OPERATING DATA REPORT

DOCKET NO: 50-0331
 DATE: 08/15/96
 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: July 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



		July-96	1996	Cummulative
11.	Hours in Reporting Period	744.0	5,111.0	188,447.0
12.	Number of Hours Reactor Was Critical	744.0	5,111.0	143,636.8
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	744.0	5,111.0	140,224.8
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,227,449.0	8,030,063.7	197,291,278.0
17.	Gross Electrical Energy Generated (MWH)	409,100.0	2,711,846.0	66,123,816.6
18.	Net Electrical Energy Generated (MWH)	386,194.3	2,557,739.6	62,034,754.2
19.	Unit Service Factor	100.0%	100.0%	74.4%
20.	Unit Availability Factor	100.0%	100.0%	74.4%
21.	Unit Capacity Factor (Using MDC Net)	99.8%	96.2%	69.4%
22.	Unit Capacity Factor (Using DER Net)	96.5%	93.0%	66.5%
23.	Unit Forced Outage Rate	0.0%	0.0%	10.4%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): Refueling, 10/11/96, 30 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: 08/15/96

Unit: Duane Arnold Energy Center

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TELEPHONE: (319) 851-7318

MONTH July 1996

Day	Average Daily Power Level (MWe-Net)
1	520.1
2	518.4
3	521.9
4	523.4
5	524.4
6	520.2
7	519.3
8	521.9
9	523.9
10	534.8
11	516.1
12	520.6
13	521.7
14	461.7
15	515.4
16	520.5
17	511.9
18	507.8
19	516.2
20	522.1
21	522.1
22	520.7
23	520.1
24	520.5
25	525.4
26	524.6
27	524.0
28	521.9
29	521.7
30	524.7
31	523.6

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 11, 1996.

3. Scheduled date for restart following refueling.

November 11, 1996

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

Yes

RTS 269, T.S. 3.7, "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	3152	2014

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UNIT SHUTDOWNS AND POWER REDUCTIONS
 REPORT MONTH: July 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
9	July 14	S	0 (3.9 full- power- hours equivalent)	B	5	n/a	n/a	n/a	Turbine Control Valve testing Control Rod Sequence 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 July 1996:

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

- on July 2, to perform feedwater flow measurement calibration.
- on July 13-16, to perform scheduled Scram Time Testing, Turbine Control Valve Testing, and Control Rod Drive manipulations: 3.9 full-power-hours (equivalent) lost.
- on July 17-18, to clear a high condenser back-pressure alarm due to high ambient wet-bulb temperatures.
- on July 4, 19, 24 and 29, to reduce recirculation flow to withdraw a control rod.

Total forgone production was the equivalent of 20.8 full-power hours of operation.

At the end of the month the Duane Arnold Energy Center had operated 422 consecutive days, its best-ever continuous operating run.

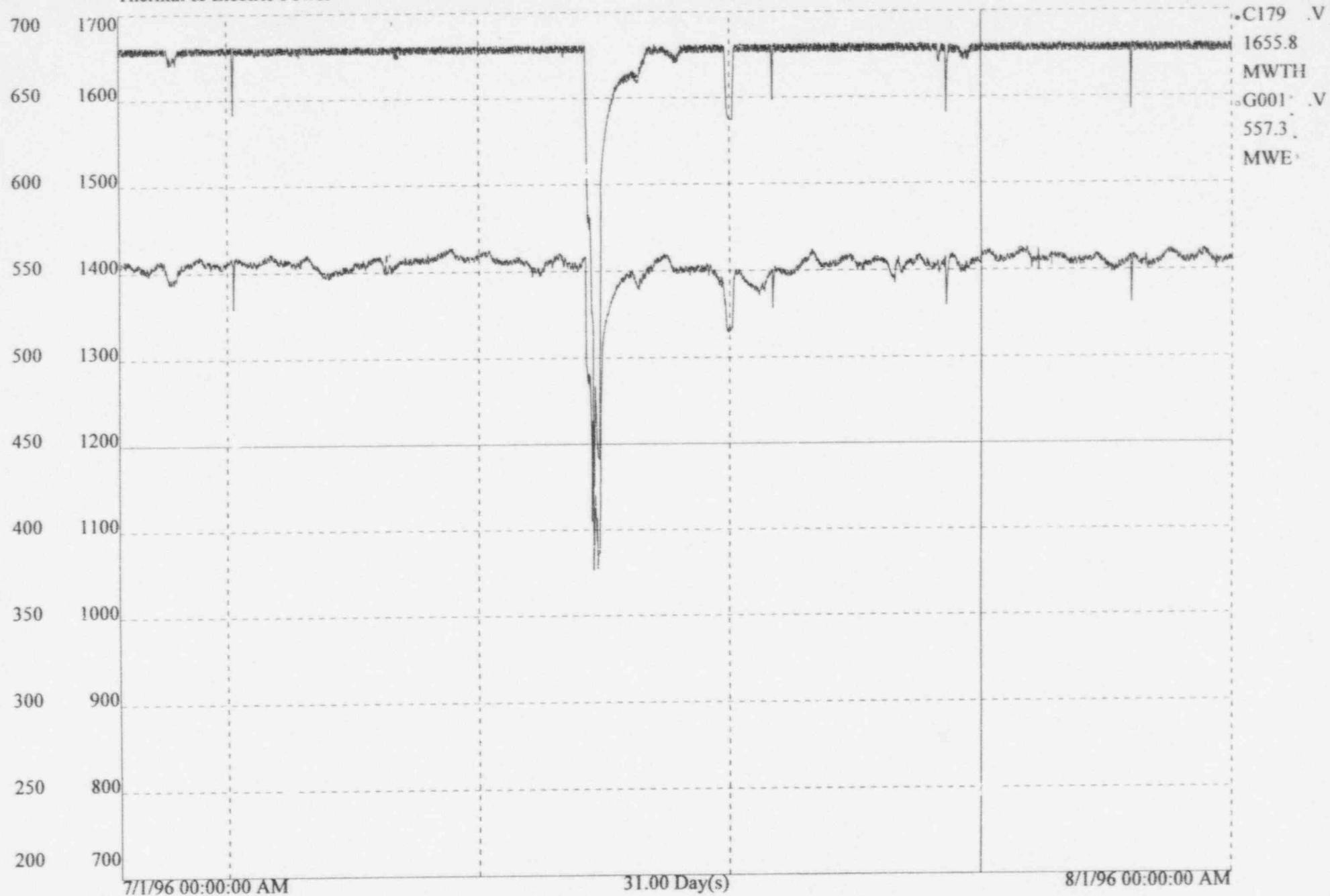
Allocation of Production & Losses:	Electrical Output MWe	Capacity Factor % of 565.7 MWe (Design Gross Rating)	Full Power Equivalent Hours
Actual Metered Net Electric Output	519.1	91.8%	682.7
Actual Metered Plant Electric Loads	30.8	5.4%	40.5
Load Following	0.0	0.0%	0.0
Off-Line	0.0	0.0%	0.0
Weather losses, ie., condenser pressure >2.75 In Hg / Circ Water Temp > 74.5 °F	6.4	1.1%	8.5
Planned Capacity Losses: July 2, 4, 13-16, 24, & 29	3.5	0.6%	4.6
Unplanned Capacity Losses: July 17 - 18	0.4	0.0%	0.5
Normal Capacity Losses (Avg MWth < 1658)	0.9	0.2%	1.2
Metering Losses (Avg indic MWe - Avg MWHe)	2.0	0.4%	2.6
Efficiency Losses (Weather-Norm-Full-Power-MWe < 565.7)	2.6	0.5%	3.4
Design Gross Electric Output	565.7	100.0%	744.0

On July 16, 1996 an Electrical Protection Assembly (EPA) breaker tripped on undervoltage, de-energizing the "A" Reactor Protection System (RPS) bus which powers the "A" side sensors for the Primary Containment Isolation System (PCIS). PCIS Groups 1 - 5 isolations then occurred (except main steam isolation valves). All automatic actions were completed satisfactorily, and all systems functioned as required. Extensive troubleshooting following the event did not conclusively determine a root cause for the EPA breaker undervoltage trip, but some sub-components in one of the "A" Average Power Range Monitor (APRM) power supplies were found degraded and replaced. Monitoring equipment was installed on the "A" RPS MG set and on the "A" APRM to obtain operational data to support future troubleshooting. The event had no effect on the safe operation of the plant. (LER #96-003)

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: 0

Thermal & Electric Power



•NSSS1 CORE THERMAL POWER •GEN GROSS WATTS