



ALLIANT ENERGY.

November 10, 1999

NG 99-1573

Mr. James E. Dyer  
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  
October 1999 Monthly Operating Report  
File: A-118d

Dear Mr. Dyer:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for October 1999. The report has been prepared in accordance with the guidelines of NRC Generic Letter 97-02: Revised Contents Of The Monthly Operating Report, and distribution has been made in accordance with DAEC Technical Specifications, Section 5.6.4.

Very truly yours,

Richard L. Anderson  
Plant Manager-Nuclear

RLA/RBW

Enclosures

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10/31/99

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Mr. James E. Dyer  
NG 99-1573

November 10, 1999  
Page 2 of 2

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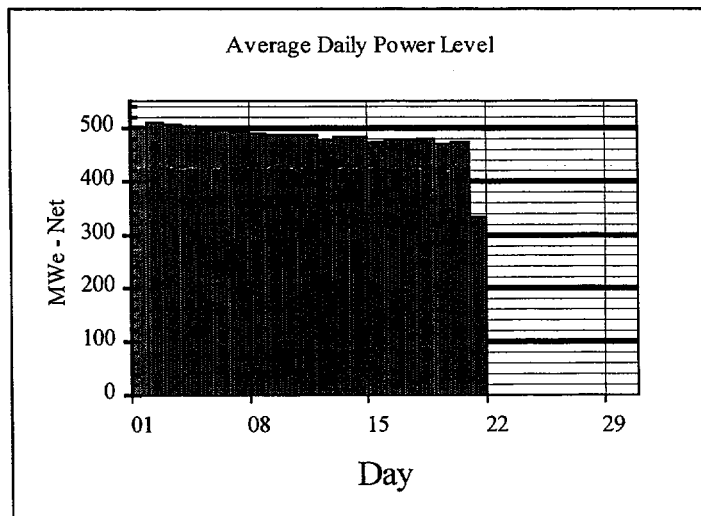
CTS Project

## OPERATING DATA REPORT

DOCKET NO: 50-331  
 DATE: 11/10/99  
 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: October 1999
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>):  
October 1: 97% to October 22: 90% (uniform decrease)
10. Reasons for Restrictions, If Any: End-of-Cycle Fuel Coastdown



		October-99	1999	Cumulative
11.	Hours in Reporting Period	745.0	7,296.0	216,936.0
12.	Number of Hours Reactor Was Critical	513.0	6,597.0	168,945.8
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	505.3	6,524.3	165,152.5
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	764,773.2	10,402,081.8	237,249,871.1
17.	Gross Electrical Energy Generated (MWH)	257,135.0	3,487,887.0	79,548,213.6
18.	Net Electrical Energy Generated (MWH)	241,760.1	3,290,714.2	74,700,959.7
19.	Unit Service Factor	67.8%	89.4%	76.1%
20.	Unit Availability Factor	67.8%	89.4%	76.1%
21.	Unit Capacity Factor (Using MDC Net)	62.4%	86.7%	72.3%
22.	Unit Capacity Factor (Using DER Net)	60.3%	83.8%	69.3%
23.	Unit Forced Outage Rate	0.0%	0.0%	9.1%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): Refuel, began 10/22/99, 36 days
25. If Shutdown at End of Report Period, Estimated Date of Startup: Refuel Outage Planned Startup: 11/27/99

AVERAGE DAILY UNIT POWER LEVEL

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MONTH October 1999

Day	Average Daily Power Level (MWe-Net)
1	499.3
2	508.9
3	507.6
4	503.3
5	497.7
6	496.4
7	491.8
8	489.0
9	487.2
10	485.2
11	485.5
12	477.8
13	483.3
14	481.9
15	472.0
16	474.8
17	477.7
18	478.1
19	470.8
20	471.6
21	333.2
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0
31	0.0

## REFUELING INFORMATION

DOCKET NO: 50-331  
 DATE: 11/10/99  
 Unit: Duane Arnold Energy Center  
 COMPLETED BY: Richard Woodward  
 TELEPHONE: (319) 851-7318

1. **Name of facility.** Duane Arnold Energy Center
2. **Scheduled date for next refueling shutdown.** Current refuel outage began October 22, 1999
3. **Scheduled date for restart following refueling.** November 27, 1999
4. **Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?** Yes - Technical Specification change to support next fuel reload with GE12 fuel design.
5. **Scheduled date(s) for submitting proposed licensing action and supporting information.** Technical Specification change for GE12 fuel storage submitted January 22, 1999. (Approved June 8, implemented July 16.)

Updated Technical Specification change for GE12 fuel operation submitted July 16, 1999. (Approved October 20, to be implemented November 12.)

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.** See items 4 & 5 above
7. **Current and projected fuel assemblies inventory (as of Beginning-of-Cycle 17):**

(Fuel shuffle currently in progress)	Number of Fuel Assemblies	Projected date of last refueling that can be discharged (after allowing margin for maintenance of continuous full-core discharge capability)
New fuel to be loaded into the reactor core	128	
Carry-over fuel from Cycle 16, i.e., previously loaded into reactor core	240	N/A
Discharged from core to Spent Fuel Storage Pool (as of Beginning-of-Cycle 17)	1776	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: October 1999							
No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	Cause
10	10/22/99 01:15 - (end of month)	S	239.75 (247.29 FPHeq)	C	1		Refuel Outage 16 Shutdown

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)
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Monthly Operational Overview for October 1999

At the beginning of the month the DAEC was ascending in power following performance of control rod drive scram-time testing the evening of September 30<sup>th</sup>. Maximum available thermal power was 97% (the end-of-Cycle 16-full-power-capability having been reached eight days earlier). Thermal power capability steadily declined to 90% until, at 12:00 on October 21<sup>st</sup>, operators commenced an orderly shutdown to start Refueling Outage 16. The generator was disconnected from the grid at 01:15 October 22<sup>nd</sup>, and the reactor was manually scrammed at 08:58. DAEC had operated 129 days since its most recent shutdown. The shutdown occurred 518 days since the beginning of Cycle 16 on May 22, 1998.

Of the 745 clock-hours during the month of October, DAEC produced the equivalent of 454.58 full-power-hours-equivalent FPH<sub>eq</sub> (Gross Electric Capacity factor: 61.0%). The DAEC was off-line 239.75 FPH<sub>eq</sub>. On-line capacity losses were 44.82 FPH<sub>eq</sub>, efficiency losses were 5.85 FPH<sub>eq</sub>, and hot weather-related circ-water/condenser/cooling tower losses were 0.00.

Following is the allocation of Production & Losses:

	Electrical Output MWe	Capacity Factor % of 565.7 MWe (Design Rating)	Full Power Equivalent Hours (FPH <sub>eq</sub> )
Scram-time testing 09/30 21:33 - 10/01 09:00	0.68	0.12%	0.88
Power reduction in preparation for shutdown 10/21 12:00 - 10/22 01:15	5.71	1.01%	7.54
Coastdown 09/22 - 10/22	27.66	4.89%	36.40
Maintain margin to 1658 MWth limit	0.00	0.00%	0.00
<b>Subtotal: On-line Capacity Losses</b>	<b>34.06</b>	<b>6.02%</b>	<b>44.82</b>

<b>Subtotal: On-line Efficiency Losses</b>	<b>4.41</b>	<b>0.78%</b>	<b>5.85</b>
<b>Weather Losses i.e., weather gains (turbine exhaust pressure/condenser inlet temperature &gt; design)</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00</b>

<b>Total On-line Losses</b>	<b>38.47</b>	<b>6.80%</b>	<b>50.67</b>
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Avg. Net Electric Output	324.15	57.30%	426.88
Plant Electric Loads	21.04	3.72%	27.70
<b>Total Electric Generation</b>	<b>345.19</b>	<b>61.02%</b>	<b>454.58</b>

<b>Off-line Losses: 10/22 01:15 – (end of month)</b>	<b>182.04</b>	<b>32.18%</b>	<b>239.75</b>
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<b>Design Electric Rating, Total %, Total # of clock-hours</b>	<b>565.70</b>	<b>100.00%</b>	<b>745.00</b>
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At 0245 on October 29<sup>th</sup>, the control room received alarms for automatic start of the 'A' Standby Diesel Generator (SBDG). Operators confirmed that the SBDG had started satisfactorily and confirmed with the System Operation Center that lightning strikes in the area had been causing breaker operations. Operators then performed a running checklist to verify that the auto-start had not been caused by other possible problems, and then secured the diesel generator. (LER #1999 - 005, pending)

Refueling Outage 16 workscope includes replacement of 128 thrice-burned fuel, 165 surveillance tests, 155 in-service inspections, 1083 separate maintenance actions, and overhaul of the "B" Low Pressure Turbine. Projected Cycle 17 startup is November 27.

Licensing Action Summary:

Plant Availability:	67.8%	Unplanned Auto Scrams (while/critical) this month:	0
Number of reportable events:	1	Unplanned Auto Scrams (while/critical) last 12 months:	0
		Main Steam Safety and Relief Valve Challenges:	0