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U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
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Washington, DC 20555-0001

Subject: Duane Arnold Energy Center
Docket No: 50-331
Operating License: DPR-49
December 1999 Monthly Operating Report
File: A-118d

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

Richard L. Anderson
Plant Manager-Nuclear

RLA/RBW

Enclosures

IE24 1/

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NRC Resident Inspector

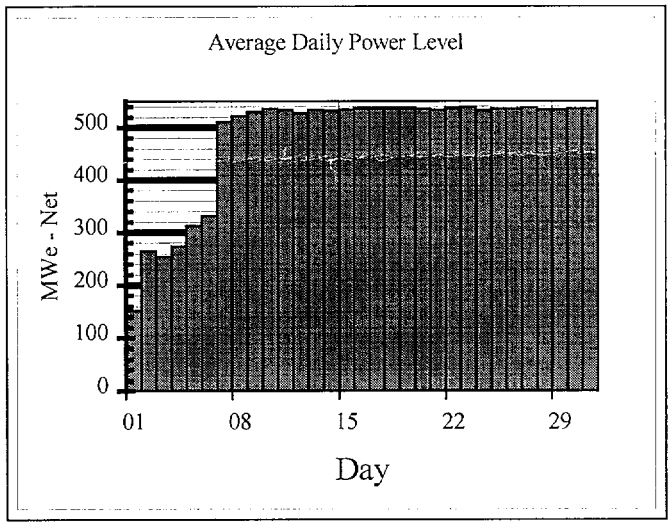
CTS Project

OPERATING DATA REPORT

DOCKET NO: 50-331
DATE: 1/14/2000
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: December 1999
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



		December-99	1999	Cumulative
11.	Hours in Reporting Period	744.0	8,760.0	218,400.0
12.	Number of Hours Reactor Was Critical	744.0	7,388.7	169,737.5
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	743.1	7,267.7	165,895.8
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,129,334.8	11,542,575.7	238,390,365.0
17.	Gross Electrical Energy Generated (MWH)	379,643.0	3,867,535.0	79,927,861.6
18.	Net Electrical Energy Generated (MWH)	358,323.5	3,649,038.6	75,059,284.1
19.	Unit Service Factor	99.9%	83.0%	76.0%
20.	Unit Availability Factor	99.9%	83.0%	76.0%
21.	Unit Capacity Factor (Using MDC Net)	92.6%	80.1%	72.3%
22.	Unit Capacity Factor (Using DER Net)	89.5%	77.4%	69.2%
23.	Unit Forced Outage Rate	0.0%	0.0%	9.1%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): None
25. If Shutdown at End of Report Period, Estimated Date of Startup: N/A

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-331
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MONTH December 1999

Day	Average Daily Power Level (MWe-Net)
1	152.3
2	265.7
3	254.8
4	274.1
5	313.3
6	331.9
7	511.3
8	521.5
9	530.0
10	535.8
11	534.1
12	527.9
13	533.9
14	532.4
15	534.5
16	536.7
17	536.8
18	536.8
19	536.6
20	536.3
21	533.9
22	536.8
23	538.6
24	533.0
25	536.3
26	535.8
27	538.0
28	535.0
29	534.8
30	535.7
31	535.6

REFUELING INFORMATION

DOCKET NO: 50-331
DATE: 1/14/2000
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.** May 1, 2001

3. **Scheduled date for restart following refueling.** June 6, 2001

4. **Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?** Yes, as part of the Extended Power Uprate Project.

5. **Scheduled date(s) for submitting proposed licensing action and supporting information.** October, 2000.

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.** General Electric 14 fuel design, Maximum Extended Load Line Limit Analysis (MELLA).

7. **Current fuel assemblies inventory**

(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)
Installed into reactor core	368	N/A
Discharged from core to Spent Fuel Storage Pool	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: December 1999

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	Cause
10	12/01/99 – 12/06/99	S	0 (72.04 Full-Power Hours equivalent)	C	4		Ramp-up to full power from Refuel Outage 16, with one cooling tower out of service

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 December 1999

At the beginning of the month the DAEC had nearly completed Refuel Outage 16, having just connected the generator to the grid to perform Turbine Overspeed Testing on November 30th at 23:45. Turbine testing was completed at 03:58 on December 1st. After fifty-six minutes off-line, the generator was again synchronized to the grid at 04:54, marking the official beginning of Fuel Cycle 17. Refuel Outage duration was 40 days 4 hours 39 minutes. Minor control rod and load line adjustments continued throughout the month.

The DAEC began Cycle 17 with the 'B' Cooling Tower and four of the twelve 'A' Cooling Tower cells out of service for repairs. Eight of the twelve 'B' Cooling Tower cells were returned to service on December 6th, and two more on December 16th. By late September it had become known that that major replacement work was going to be needed to repair both towers, regardless of the impact on the plant startup from RFO16 and plant full power production. These refurbishments will continue into Year 2000.

On December 31 the plant security staff fell below minimum manning requirements for 22 minutes due to personnel having to leave the site for a family emergency. (Security LER 99-S08, pending).

Allocation of Production & Losses:	Electrical Output MWe	Capacity Factor % of 565.7 MWe (Design Rating)	Full Power Hours Equivalent (FPHeq)
Ramp-up to power following Refueling outage	21.92	3.88%	28.83
Single Cooling Tower Operation	32.78	5.80%	43.12
Maintain Margin to 1658 MWth Limit	0.07	0.01%	0.09
Subtotal: On-line Capacity Losses	**54.78**	**9.68%**	**72.04**
Operating with out-of-service cooling tower cells	3.54	0.63%	4.66
Turbine Cycle Isolation Valve leakage, etc	0.50	0.09%	0.66
Subtotal: On-line Efficiency Losses	**4.04**	**0.71%**	**5.31**
Weather Losses i.e., weather gains (turbine exhaust pressure/condenser inlet temperature > design)	**- 4.10**	**- 0.72%**	**- 5.39**
Total On-line Losses	**54.72**	**9.67%**	**71.96**
Avg. Net Electric Output (while on-line)	482.22	85.13%	633.37
Plant Electric Loads (while on-line)	28.69	5.07%	37.73
Total Electric Generation	**510.27**	**90.20%**	**671.10**
Off-Line Losses: 12/01 03:58 - 04:54, following turbine overspeed testing	0.71	0.13%	0.93
Design Electric Rating, Total %, Total # of clock-hours	**565.70**	**100.00%**	**744.00**

Licensing Action Summary:

Plant Availability:	99.9%		Unplanned Auto Scrams (while/critical) this month:	0
Number of reportable events:	1 (10CFR 73.71)		Unplanned Auto Scrams (while/critical) last 12 months:	0
			Main Steam Safety and Relief Valve Challenges:	0