IES Utilities Inc.
Duane Arnold Energy Center
3277 DAEC Road
Palo, IA 52324-9785

Office: 319.851.7611
Fax: 319.851.7986
www.alliant-energy.com

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NG-00-0613

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station 0-P1-17
Washington, DC 20555-0001

Subject: Duane Arnold Energy Center
Docket No: 50-331
Operating License: DPR-49
March 2000 Monthly Operating Report
File: A-118d

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for March 2000. 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

cc:

Mr. James E. Dyer
Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Ms. Barbara Lewis
McGraw-Hill, Inc.
1200 G Street NW, Suite 1100
Washington, DC 20005

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

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

Ms. Brenda Mozafari
Project Manager
1 White Flint North
Mail Stop 13D18
11555 Rockville Pike
Rockville, MD 20852

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

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

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

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

DOCU

NRC Resident Inspector

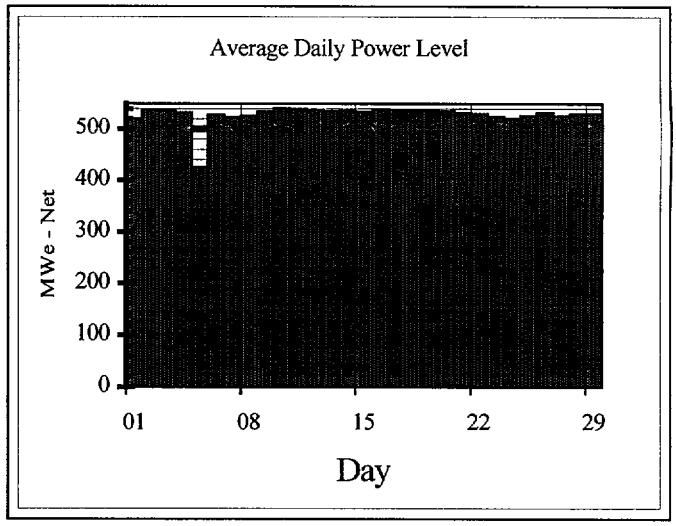
CTS Project

OPERATING DATA REPORT

DOCKET NO: 50-331
DATE: 04/10/2000
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: March 2000
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



		March-00	2000	Cumulative
11.	Hours in Reporting Period	744.0	2,184.0	220,584.0
12.	Number of Hours Reactor Was Critical	744.0	2,085.7	171,823.2
13.	Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14.	Hours Generator On-Line	744.0	2,066.5	167,962.3
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,225,761.4	3,398,082.6	241,788,447.6
17.	Gross Electrical Energy Generated (MWH)	415,861.0	1,156,759.0	81,084,620.6
18.	Net Electrical Energy Generated (MWH)	393,214.5	1,093,879.6	76,153,163.7
19.	Unit Service Factor	100.0%	94.6%	76.1%
20.	Unit Availability Factor	100.0%	94.6%	76.1%
21.	Unit Capacity Factor (Using MDC Net)	101.6%	96.3%	72.6%
22.	Unit Capacity Factor (Using DER Net)	98.2%	93.1%	69.5%
23.	Unit Forced Outage Rate	0.0%	5.4%	9.0%

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
DATE: 04/10/2000
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MONTH March 2000

Day	Average Daily Power Level (MWe-Net)
1	521.1
2	538.5
3	535.8
4	532.8
5	425.9
6	528.1
7	523.6
8	526.0
9	534.2
10	540.8
11	539.5
12	537.5
13	535.0
14	535.6
15	533.9
16	539.1
17	538.5
18	537.1
19	536.2
20	534.8
21	531.3
22	529.7
23	524.4
24	521.1
25	526.6
26	531.9
27	525.6
28	529.9
29	529.9
30	531.0
31	528.8

REFUELING INFORMATION

DOCKET NO: 50-331
DATE: 04/10/2000
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.** Spring, 2001

3. **Scheduled date for restart following refueling.** Summer, 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 (MELLLA).

7. **Current 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 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	2007
Licensed Capacity of Spent Fuel Storage Pool and Cask Pool (with reracking)	3152	2011

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UNIT SHUTDOWNS AND POWER REDUCTIONS
REPORT MONTH: March 2000

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	Cause
3	03/05/00 02:00 - 16:30	S	0 (4.61 Full-Power-Hours equivalent)	B	5	N/A	Moisture Separator Reheater manway steam leak repair

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 March 2000

At the beginning of the month the DAEC had operated 52 days since its most recent startup. Out of the 744 clock hours available during the month of March, the DAEC generated 735.15 full-power-hours equivalent. The only departures from licensed full thermal power were:

- March 5th to repair a steam leak at a moisture separator reheater (MSR) manway and to perform maintenance on the plant process computer;
- March 6th, 7th, and 31st to reduce recirculation flow to adjust control rods, and
- March 31st to perform surveillance testing of the High Pressure Coolant Injection System.

Maintenance continued on two cooling tower cells that have remained out-of-service for maintenance since September 3rd, 1999. Debris in the Low Pressure Condenser waterboxes has reduced Circulating Water System flow to 236,000 GPM (down from a normal flow of 260,000 GPM.) The combined effect of these two efficiency losses has been to reduce plant output by about 4 MWe. However, cooler weather reduced condenser inlet temperatures by enough to offset the efficiency losses.

Allocation of Production & Losses:	Electrical Output MWe	Capacity Factor % of 565.7 MWe (Design Rating)	Full Power Equivalent Hours (FPHeq)
MSR Steam Leak Repair 03/05 02:00 - 16:30	3.51	0.62%	4.61
Plant Process Computer & Feedwater Correction Factor out of service: 03/05 16:30 - 20:20	0.06	0.01%	0.07
HPCI run 03/31 00:30 - 02:30	0.00	0.00%	0.01
Rod Adjustments: 03/06/2000 10:00 - 10:45, 03/07 02:50 - 03/09/2000 21:- 22:00	0.06	0.01%	0.05
Maintain Margin to 1658 MWth Limit	0.11	0.02%	0.14
Subtotal: On-line Capacity Losses	**3.73**	**0.66%**	**4.88**
Cooling Tower Losses	2.00	0.35%	2.60
Circ Water System Flow Limitation	2.00	0.35%	2.60
(neg) Tentative Estimate of Change in Rated MWe	(5.52)	(0.49%)	(7.11)
Subtotal: On-line Efficiency Losses	**(1.52)**	**1.19%**	**(1.91)**
Weather Losses i.e., weather gains (turbine exhaust pressure/condenser inlet temperature > design)	**4.53**	**0.80%**	**5.88**
Total On-line Losses	**6.74**	**1.19%**	**8.85**
Plant Electric Loads (while on-line)	30.43	5.38%	40.06
Avg. Net Electric Output (while on-line)	528.53	93.43%	695.09
Total Electric Generation	**558.96**	**98.81%**	**735.15**
Off-Line Losses:	**0.00**	**0.00%**	**0.00**
Design Electric Rating, Total %, Total # of clock-hours	**565.70**	**100.00%**	**744.00**

(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:	1
			Main Steam Safety and Relief Valve Challenges:	0