

IES UTILITIES INC.

May 13, 1994
NG-94-1860

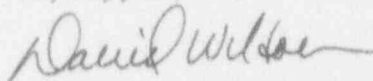
Mr. John D. Martin
Regional Administrator
Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Subject: Duane Arnold Energy Center
Docket No: 94-351
Operating License DPR-4y
April 1994 Monthly Operating Report

Dear Mr. Martin:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for April 1994. 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,



David Wilson
Plant Superintendent, Nuclear

DLW/RBW/cc
Enclosures
File A-118d
cc:

Dir. of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555 (Orig.)

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

Document Control Desk
INPO Records Center
1100 Circle 75 Parkway
Suite 1500
Atlanta, GA 30339-3064

Mr. Steve Brown
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

Mr. William Loveless
U.S. NRC
1 Whiteflint North
Mail Stop 11C14
11555 Rockville Pike
Rockville, MD 20852 (2)

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

DCRC
NRC Resident Inspector

010021

9405310336 940430
PDR ADDCK 05000331
R PDR

Duane Arnold Energy Center • 3277 DAEC Road • Palo, Iowa 52324 • 319/851-7611
An IES INDUSTRIES Company

IEJA
11

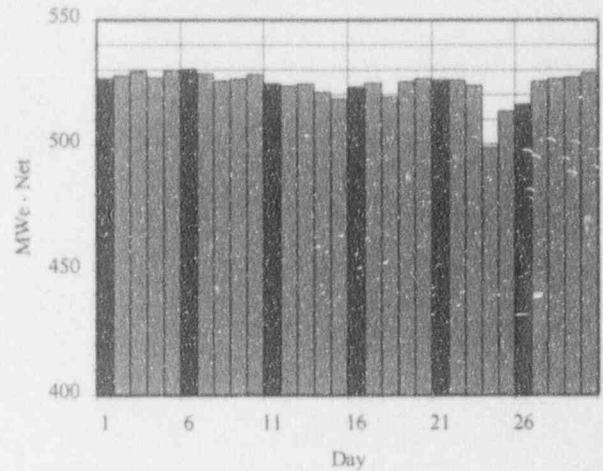
OPERATING DATA REPORT

DOCKET NO: 50-0331
 DATE: 05/13/94
 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: April 1994
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): 545
7. Maximum Dependable Capacity (Net MW_e MDC): 515
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

Average Daily Power Level



	Apr-94	Year	Cummulative
11. Hours in Reporting Period	719.0	2,879.0	168,695.0
12. Number of Hours Reactor Was Critical	719.0	2,879.0	125,823.6
13. Reactor Reserve Shutdown Hours	0.0	0.0	192.8
14. Hours Generator On-Line	719.0	2,879.0	122,657.7
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH_{th})	1,188,999.9	4,750,481.6	169,209,045.8
17. Gross Electrical Energy Generated (MWH_e)	399,249.0	1,604,184.0	56,684,569.5
18. Net Electrical Energy Generated (MWH_e)	376,689.6	1,513,148.3	53,144,811.2
19. Unit Service Factor	100.0%	100.0%	72.7%
20. Unit Availability Factor	100.0%	100.0%	72.7%
21. Unit Capacity Factor (Using MDC Net)	101.7%	102.1%	62.5%
22. Unit Capacity Factor (Using DER Net)	97.4%	97.7%	59.8%
23. Unit Forced Outage Rate	0.0%	0.0%	11.7%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): None Scheduled
25. If Shutdown at End of Report Period, Est. Date of Startup: Not Applicable

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-0331
 DATE: 05/13/94
 Unit: Duane Arnold Energy Center
 COMPLETED BY: Richard Woodward
 TELEPHONE: (319) 851-7318

MONTH April 1994

Day	Average Daily Power Level (MW _e -Net)
1	526.8
2	526.4
3	527.6
4	529.3
5	526.7
6	529.6
7	530.0
8	528.4
9	525.6
10	526.2
11	528.0
12	524.4
13	523.5
14	524.2
15	520.9

Day	Average Daily Power Level (MW _e -Net)
16	518.3
17	523.0
18	524.6
19	518.8
20	525.1
21	526.4
22	525.8
23	525.8
24	523.6
25	498.6
26	513.3
27	516.0
28	525.3
29	526.4
30	526.9
31	#N/A

DOCKET NO: 50-0331
 DATE: 05/13/94
 Unit: Duane Arnold Energy Center
 COMPLETED BY: Richard Woodward
 TELEPHONE: (319) 851-7318

UNIT SHUTDOWNS AND POWER REDUCTIONS
 REPORT MONTH: April 1994

(There were no shutdowns or day-to-day power reductions (greater than 20%) in April.)

Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	System Code (4)	Comp. Code (5)	Cause

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)

REFUELING INFORMATION

DOCKET NO: 50-0331
 DATE: 05/13/94
 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.**
February 24, 1995
3. **Scheduled date for restart following refueling.**
April 14 - 19, 1995
4. **Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?**
No
5. **Scheduled date(s) for submitting proposed licensing action and supporting information.**
Not applicable
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
currently installed in reactor core	368	n/a
previously discharged from core to Spent Fuel Storage Pool	1280	n/a
under present physical capacity of Spent Fuel Storage Pool	1898	2001
under planned capacity of Spent Fuel Storage Pool following re-racking (currently under construction)	2411	2007
under Licensed Capacity of Spent Fuel Storage Pool	3152	2014

DOCKET NO.: 50-0331
 DATE: 05/13/94
 Unit: Duane Arnold Energy Center
 COMPLETED BY: Richard Woodward
 TELEPHONE: (319) 851-7318

Monthly Operational Overview for April 1994:

As of the end of April the plant had generated the equivalent of 192.5 full-power-days during the first 200 days of Cycle 13 operation, i.e., a 96.3 % (design gross) electric capacity factor for the cycle-to-date.

Power was reduced April 14 and 15 to perform High Pressure Coolant Injection (HPCI) surveillances, and April 24 for monthly turbine valve testing. Forgone production during these downpowers totaled the equivalent of less than one full-power-hour of electric output. Although the plant continues to run well, some thermal conversion efficiency losses (noted last month) continue. See table below.*

Allocation of Production & Losses:

	Electrical Output MWe	Capacity Factor % of 565.7 MWe	Full Power Equivalent Hours
Actual Metered Gross Electric Output	555.3	98.2%	705.8
Weather (negative losses, condenser pressure less than design)	-0.7	-0.1%	-0.9
Turbine Valve Testing, Control Rod Drive Exercise 4/25/94	0.6	0.1%	0.8
Other Capacity MWe Losses (Operating at less than full thermal power)	0.9	0.2%	1.1
*Efficiency MWe Losses (thermal conversion @ less than full design output)	9.6	1.7%	12.2
Design Electric Output	<u>565.7</u>	<u>100.0%</u>	<u>719.0</u>

On April 19, while the plant was operating at 100% power, the periodic review of a surveillance test procedure (STP) concluded that one of four Rod Worth Minimizer (RWM) operability checks, required during shutdown by the Technical Specifications, had not been performed between 1989 and 1993. The cause was a misinterpretation of the Technical Specification requirements. The RWM is a backup to procedural controls for control rod selection and movement. All of the RWM operability checks were performed at all startups. There was no effect on plant safety and there are no restrictions on current operation. The Technical Specifications had previously been revised to remove misleading wording and the Surveillance Test Procedure (STP) has been revised to assure complete testing at each shutdown. Periodic procedure reviews are continuous and ongoing and are intended to detect and correct such deficiencies. LER #94-05 (pending).

On April 26, when a drain valve was opened during a tagout for maintenance on a valve on the "A" Reactor Water Cleanup (RWCU) pump discharge, a flow differential of 40 gpm in the RWCU system was reached, generating a primary containment isolation signal. The primary containment isolation signal caused the isolation valves in the RWCU system to close, terminating the flow through the system. Control room operators had noticed the increased RWCU flow and were in the process of contacting the operator who had opened the drain valve when the isolation occurred. The cause of the system isolation was flow past a manual (RWCU pump discharge) isolation valve which was not fully closed. Investigation revealed this was due to a position indicator preventing full valve closure. LER #94-06 (pending).

Licensing Action Summary:

Plant Availability:	100%	Unplanned Auto Scrams (while/critical) this month:	0
Number of reportable events:	2	Unplanned Auto Scrams (while/critical) last 12 months:	1