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ACCESSION NBR:9102260061      DOC.DATE: 91/01/31      NOTARIZED: NO      DOCKET #  
 FACIL:50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow      05000331  
 AUTH.NAME                      AUTHOR AFFILIATION  
 TRAN,H.                      Iowa Electric Light & Power Co.  
 HANNEN,R.L.                  Iowa Electric Light & Power Co.  
 RECIP.NAME                  RECIPIENT AFFILIATION

DAVIS,A.B.                      Region 3 (Post 820201)

SUBJECT: Monthly operating rept for Jan 1991 for Duane Arnold Energy Ctr.W/910215 ltr.

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Iowa Electric Light and Power Company

February 15, 1991

DAEC-91-0095

Mr. A. Bert Davis  
Regional Administrator  
Region III  
U. S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Subject: Duane Arnold Energy Center  
Docket No: 50-331  
Op. License DPR-49  
January 1991 Monthly Operating Report

Dear Sirs:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for January 1991. 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,

*Rick L. Hannen* 2-15-91  
Rick L. Hannen  
Plant Superintendent - Nuclear

RLH/ht/pwj  
Enclosures  
File A-118d

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

Mr. S. P. Sands  
Project Manager  
1 Whiteflint North  
Mail Stop 13E21  
11555 Rockville Pike  
Rockville, MD 20852

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. William Loveless  
U. S. NRC  
Maryland National Bank Building  
Mail Stop 7602  
Washington, D.C. 20555 (2)

NRC Resident Inspector

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

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

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

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OPERATING DATA REPORT

DOCKET NO. 050-0331  
 DATE 02-15-91  
 COMPLETED BY Hai Tran  
 TELEPHONE (319) 851-7491

OPERATING STATUS

Notes

1. Unit Name: Duane Arnold Energy Center
2. Reporting Period: January 1991
3. Licensed Thermal Power (MWt): 1658
4. Nameplate Rating (Gross MWe): 565 (Turbine)
5. Design Electrical Rating (Net MWe): 538
6. Maximum Dependable Capacity (Gross MWe): 565
7. Maximum Dependable Capacity (Net MWe): 538
8. If Changes Occur in Capacity Ratings (Items Number 3 through 7) Since the Last Report, Give Reasons: N/A
9. Power Level to Which Restricted, If Any (Net MWe): N/A
10. Reasons for Restrictions, If Any: N/A

	This Month	Yr-to-Date	Cumulative
11. Hours in Reporting Period	<u>744.0</u>	<u>744.0</u>	<u>140256.0</u>
12. Number of Hours Reactor Was Critical	<u>562.4</u>	<u>562.4</u>	<u>101073.2</u>
13. Reactor Reserve Shutdown Hours	<u>.0</u>	<u>.0</u>	<u>192.8</u>
14. Hours Generator On-Line	<u>519.5</u>	<u>519.5</u>	<u>98227.7</u>
15. Unit Reserve Shutdown Hours	<u>.0</u>	<u>.0</u>	<u>.0</u>
16. Gross Thermal Energy Generated (MWH)	<u>834129.6</u>	<u>834129.6</u>	<u>130555363.6</u>
17. Gross Electrical Energy Generated (MWH)	<u>278775.0</u>	<u>278775.0</u>	<u>43832666.0</u>
18. Net Electrical Energy Generated (MWH)	<u>260291.5</u>	<u>260291.5</u>	<u>41077992.7</u>
19. Unit Service Factor	<u>69.8</u>	<u>69.8</u>	<u>70.0</u>
20. Unit Availability Factor	<u>69.8</u>	<u>69.8</u>	<u>70.2</u>
21. Unit Capacity Factor (Using MDC Net)	<u>65.0</u>	<u>65.0</u>	<u>56.5</u>
22. Unit Capacity Factor (Using DER Net)	<u>65.0</u>	<u>65.0</u>	<u>54.4</u>
23. Unit Forced Outage Rate	<u>8.6</u>	<u>8.6</u>	<u>13.8</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): <u>N/A</u>			
25. If Shutdown at End of Report Period, Est. Date of Startup: <u>N/A</u>			

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 050-0331  
DATE 02-15-91  
COMPLETED BY Hai Tran  
TELEPHONE (319) 851-7491

MONTH January 1991

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

1	<u>523.0</u>
2	<u>525.0</u>
3	<u>524.0</u>
4	<u>521.0</u>
5	<u>394.0</u>
6	<u>222.0</u>
7	<u>0.0</u>
8	<u>52.0</u>
9	<u>400.0</u>
10	<u>511.0</u>
11	<u>519.0</u>
12	<u>520.0</u>
13	<u>502.0</u>
14	<u>525.0</u>
15	<u>488.0</u>

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

16	<u>13.0</u>
17	<u>0.0</u>
18	<u>0.0</u>
19	<u>0.0</u>
20	<u>0.0</u>
21	<u>0.0</u>
22	<u>65.0</u>
23	<u>449.0</u>
24	<u>511.0</u>
25	<u>529.0</u>
26	<u>519.0</u>
27	<u>494.0</u>
28	<u>522.0</u>
29	<u>524.0</u>
30	<u>525.0</u>
31	<u>522.0</u>

REFUELING INFORMATION

DOCKET NO. 50-0331  
DATE 02-15-91  
COMPLETED BY Hai Tran  
TELEPHONE (319) 851-7491

1. Name of facility.
  - a. Duane Arneid Energy Center
  
2. Scheduled date for next refueling shutdown.
  - a. March 1, 1992
  
3. Scheduled date for restart following refueling.
  - a. May 1, 1992
  
4. Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?  
  
N/A
  
5. Scheduled date(s) for submitting proposed licensing action and supporting information.  
  
N/A
  
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.  
  
N/A
  
7. The number of fuel assemblies (a) in the core and (b) in the spent fuel storage pool.
  - a. 368            b. 1048
  
8. The present licensed spent fuel pool storage capacity and the size of any increase in licensed storage capacity that has been requested or is planned, in number of fuel assemblies.
  - a. 2050 - Licensed Capacity or
  - b. 1898 under the presently installed storage rack capacity.
  
9. The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity.
  - a. 2000 - Licensed Capacity or
  - b. 1997 under the presently installed storage rack capacity.

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH: January 1991

Docket No.: 050-0331

Unit: Duane Arnold Energy Center

Date: 02-15-91

Completed By: Hai Tran

Telephone: (319) 851-7491

No.	Date	Type(1)	Duration (Hours)	Reason(2)	Method of Shutting (3) Down Reactor	Licensee Event Report #	System Code (4)	Comp. Code (5)	Cause
1.	01-06-91	F	49.1	A	2	91-001	SE	PSP	The plant was manually scrammed due to a steam leak discovered in the heater bay. The break occurred in a two inch extraction steam drain line just below the welded joint which attaches the drain line to a twelve inch extraction steam line.
2.	01-15-91	S	175.4	B	1	N/A	N/A	N/A	The plant was shutdown for planned maintenance activities on extraction steam drain lines in various systems.

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 1-  
Same Source

MAJOR/SAFETY RELATED MAINTENANCE

Docket No.: 050-0331  
 Unit: Duane Arnold Energy Center  
 Date: 02-15-91  
 Completed By: Hai Tran  
 Telephone: (319) 851-7491

DATE	SYSTEM	COMPONENT	DESCRIPTION
01-05-91	Feedwater Control Valve	Valve Operating Mechanism	The Moore valve positioner was replaced and calibrated.
01-07-91	Steam Extraction System	Piping	A steam leak was found on a two inch extraction steam drain line. A new, modified drain line was installed.
01-08-91	High Pressure Coolant Injection (HPCI) System	Differential Pressure Switch	A small leak was found on the low pressure inlet connection. The fittings were retightened.
01-26-91	Standby Diesel Generator	Lube Oil Heater	The lube oil heater breaker tripped. The heater element was found bad and replaced.
01-29-91	Post Accident Sampling Station	Solenoid Valve	Metal shavings were found plugged in the inlet orifice on the solenoid valve inlet line. The orifice was cleaned and the inlet line filter was replaced.

NARRATIVE SUMMARY OF OPERATING EXPERIENCE

DOCKET NO. 050-0331  
DATE 02-15-91  
COMPLETED BY Hai Tran  
TELEPHONE (319) 851-7491

- 01-01-91 The plant was operating at 99.6% of rated thermal power delivering 523.0 NWe to the grid. There were two 10 CFR 50.73 reportable events during the month.
- 01-05-91 At 0454 hours, reactor power was reduced to approximately 60% to allow maintenance to be performed on the 'B' feedwater control valve instrumentation. Following the maintenance, the valve was controlling properly. Reactor power increases began at 1215 hours and reached 97% power at 1703 hours on the same day.
- 01-06-91 With the plant operating at 95% power, a controlled reactor shutdown was initiated due to a steam leak in the heater bay. At 1107 hours, operators rapidly reduced recirculation flow to minimum in preparation for insertion of a manual scram. The decision to manually scram was conservatively made to ensure heater bay temperatures would not challenge the Main Steam Line isolation setpoint of 200 degrees F. At 1113 hours, with reactor power at approximately 60%, a manual scram was inserted. The intermediate cause of this event was a break in a two inch extraction steam drain line just below the welded joint which attaches the drain line to a twelve inch extraction steam line. The cause for the break in the pipe was cyclic fatigue due to the relative movement of the two inch and twelve inch pipe during plant operation. The section of two inch pipe, where the break occurred, was replaced with a new pipe. The new pipe was constructed with an expansion loop to compensate for relative movement between the twelve and two inch pipes. This event had no effect on the safe operation of the plant. Following the scram the plant was quickly brought to a stable condition.
- LER 91-001
- 01-08-91 At 0354 hours, reactor startup commenced and the reactor was taken critical at 0533 hours. The main generator was connected to the grid at 1221 hours.
- 01-15-91 At 1900 hours, reactor shutdown commenced for planned maintenance activities on extraction steam drain lines in various systems. The main generator was taken off line at 0551 hours and the reactor was manually shutdown at 0657 hours the next day.
- 01-21-91 At 2207 hours, reactor startup commenced. The reactor was taken critical at 0212 hours and the main generator was connected to the grid on 1315 hours on 1-22-91.
- 01-22-91 During reactor startup, reactor heatup rate (100 degrees F per hour) was exceeded by 5 degrees F. Analysis of thermally induced stresses indicates they were well within acceptable values. Further investigation on root causes and corrective actions are continuing.
- LER 91-002 (pending)
- 01-31-91 The plant was operating at 99.6% of rated thermal power delivering 522.0 MWe to the grid.