

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9010250359 DOC.DATE: 90/09/30 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

SUBJECT: Monthly operating rept for Sept 1990 for License DPR-49.W/
 901015 ltr.

DISTRIBUTION CODE: IE24D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 8
 TITLE: Monthly Operating Report (per Tech Specs)

NOTES:

	RECIPIENT		COPIES			RECIPIENT		COPIES	
	ID CODE/NAME		LTTR	ENCL		ID CODE/NAME		LTTR	ENCL
	PD3-3 LA		3	3		PD3-3 PD		1	1
	HALL,J.R.		1	1					
INTERNAL:	ACRS		10	10		AEOD/DOA		1	1
	AEOD/DSP/TPAB		1	1		IRM TECH ADV		2	2
	NRR/DLPQ/LPEB10		1	1		NRR/DOEA/OEAB11		1	1
	REG-FILE 01		1	1		RGN3		1	1
EXTERNAL:	EG&G BRYCE,J.H		1	1		NRC PDR		1	1
	NSIC		1	1					

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 26 ENCL 26

Iowa Electric Light and Power Company

October 15, 1990
DAEC-90-0860

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
September 1990 Monthly Operating Report

Dear Sirs:

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for September, 1990. 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 for RLH

Rick L. Hannen
Plant Superintendent - Nuclear

RLH/ht/sjo
Enclosures
File A-118d

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

Mr. J. R. Hall
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

9010250359 900930
PDR ADDCK 05000331
R PNU

000140

OPERATING DATA REPORT

DOCKET NO. 050-0331
DATE 10-15-90
COMPLETED BY Hai Tran
TELEPHONE (319) 851-7491

OPERATING STATUS

Notes

1. Unit Name: Duane Arnold Energy Center
2. Reporting Period: September 1990
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>720.0</u>	<u>6551.0</u>	<u>137303.0</u>
12. Number of Hours Reactor Was Critical	<u>394.2</u>	<u>4600.5</u>	<u>98470.1</u>
13. Reactor Reserve Shutdown Hours	<u>.0</u>	<u>.0</u>	<u>192.8</u>
14. Hours Generator On-Line	<u>307.5</u>	<u>4493.4</u>	<u>95701.4</u>
15. Unit Reserve Shutdown Hours	<u>.0</u>	<u>.0</u>	<u>.0</u>
16. Gross Thermal Energy Generated (MWH)	<u>358029.6</u>	<u>6670188.0</u>	<u>126751022.8</u>
17. Gross Electrical Energy Generated (MWH)	<u>115867.0</u>	<u>2221194.0</u>	<u>42556714.0</u>
18. Net Electrical Energy Generated (MWH)	<u>103408.8</u>	<u>2077546.2</u>	<u>39883675.9</u>
19. Unit Service Factor	<u>42.7</u>	<u>68.6</u>	<u>69.7</u>
20. Unit Availability Factor	<u>42.7</u>	<u>68.6</u>	<u>69.8</u>
21. Unit Capacity Factor (Using MDC Net)	<u>26.7</u>	<u>58.9</u>	<u>56.1</u>
22. Unit Capacity Factor (Using DER Net)	<u>26.7</u>	<u>58.9</u>	<u>54.0</u>
23. Unit Forced Outage Rate	<u>40.6</u>	<u>6.2</u>	<u>14.1</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>			

(9/77)

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 050-0331
 DATE 10-15-90
 COMPLETED BY Hai Tran
 TELEPHONE (319) 851-7491

MONTH September 1990

DAY AVERAGE DAILY POWER LEVEL
 (MWe-Net)

1	.0
2	.0
3	.0
4	.0
5	.0
6	.0
7	.0
8	.0
9	.0
10	38.0
11	.0
12	.0
13	57.0
14	37.0
15	156.0

DAY AVERAGE DAILY POWER LEVEL
 (MWe-Net)

16	228.0
17	241.0
18	2.0
19	.0
20	.0
21	.0
22	.0
23	343.0
24	444.0
25	509.0
26	492.0
27	493.0
28	397.0
29	518.0
30	510.0
31	N/A

REFUELING INFORMATION

DOCKET NO. 50-0331
DATE 10-15-90
COMPLETED BY Hai Tran
TELEPHONE (319) 851-7491

1. Name of facility.
 - a. Duane Arnold 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: September 1990

Docket No.: 050-0331
 Unit: Duane Arnold Energy Center
 Date: 10-15-90
 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	09-01-90	S	202.5	C	1	N/A	N/A	N/A	The plant was shutdown for the cycle 10/11 refuel outage since June 28, 1990, and restarted at 1430 hours on September 7, 1990.
2	09-09-90	F	19.8	A	9	N/A	TB	PMG	Reactor power was reduced to 0% due to a failure of the Permanent Magnet Generator.
3	09-10-90	F	55.3	B	3	90-014	SB	N/A	A main turbine trip led to a high pressure reactor scram. Turbine trip was due to sensed Moisture Separator Reheater (MSR) high level caused by valve mispositioning associated with an MSR level instrument.
4	09-13-90	F	18.8	A	2	90-015	LD	PSF	A manual reactor scram was inserted due to difficulties controlling reactor vessel water level. A soldered joint in an instrument air dryer inlet pipe was found failed.
5	09-18-90	F	116.1	H	3	90-016	SB	HS	A reactor scram occurred when three inboard Main Steam Isolation Valves (MSIVs) closed unexpectedly during the surveillance test.

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: 10-15-90
 Completed By: Hai Tran
 Telephone: (319) 851-7491

DATE	SYSTEM	COMPONENT	DESCRIPTION
09-01-90	Control Rod Drive (CRD) System.	CRD Hydraulic Lines	CRD line repair project was completed.
09-09-90	Main Generator	Permanent Magnet Generator (PMG)	The failed PMG was replaced with a new one.
09-11-90	Standby Gas Treatment (SBGT) System	Roughing filter	A roughing filter in 'B' SBGT train was found clogged with silica sand. The filter was replaced.
09-12-90	Containment Atmosphere Control System (CACS)	H2O2 Analyzer	The bypass flow rate was found to be higher than specified. A regulator (R2) was replaced with a new one.
09-25-90	Reactor Core Isolation Cooling (RCIC) System	Turbine	Turbine speed was found to be lower than specified. The null voltage of the speed controller was readjusted.

NARRATIVE SUMMARY OF OPERATING EXPERIENCE

DOCKET NO. 050-0331
DATE 10-15-90
COMPLETED BY Hai Tran
TELEPHONE (319) 851-7491

- 09-01-90 At the beginning of the month the plant was in cold shutdown for the cycle 10/11 refueling outage. There were five 10CFR 50.73 and one 10CFR 73.71 reportable events during the month.
- 09-06-90 A safeguard security event occurred. For more information please see LER 90-S02.
LER 90-S02
- 09-07-90 The plant was starting up from the current refuel outage. The reactor was taken critical at 1430 hours, and various startup surveillance tests were in progress.
- 09-09-90 At 0840 hours, main turbine rolling commenced. At 0911 hours, the turbine was tripped due to a report of smoke at the turbine front standard. The cause of the smoke was later determined to be a failure of the Permanent Magnetio Generator (PMG). Reactor power was reduced to 0% at 1035 hours with the reactor mode switch in startup. The main turbine was secured at 1633 hours to complete the necessary repairs.
- 09-10-90 At 0016 hours, during the reactor startup, an automatic initiation of the Group V Primary Containment Isolation System isolation logio occurred. As a result, the outboard Reactor Water Cleanup suction and discharge valves closed as designed. The initiating event was a high differential area temperature as sensed by temperature switch (TD-2743F) in the Steam Leak Detection (SLD) logic.
LER 90-013
- 09-10-90 At 0117 hours, control rods were withdrawn to increase reactor power. The turbine was rolling at 0457 hours, and a mechanical overspeed test was completed at 0535 hours. At 0621 hours, the main generator was on the grid. A second mechanical overspeed test was performed satisfactorily at 1320 hours.
- 09-10-90 At 2156 hours, a main turbine trip from 27% power led to a high pressure reactor scram. Turbine trip was due to sensed Moisture Separator Reheater (MSR) high level caused by valve mispositioning associated with an MSR level instrument.
LER 90-014
- 09-11-90 At 0636 hours, following the scram recovery, reactor startup commenced but was stopped due to the "B" train of the Standby Gas Treatment (SBGT) system failing to meet the surveillance test's vacuum requirement. A 7-day Limiting Condition for Operation (LCO) was entered.
- 09-12-90 At 1330 hours, the "B" train of the SBGT was proven to be operable and the 7-day LCO was exited. Reactor startup was started at 1408 hours, with the reactor critical at 1654 hours.
- 09-13-90 At 0513 hours, the main generator was synchronized to the grid following the startup. At 1910 hours, an Instrument Air Header low pressure alarm was received in the control room. At 1913 hours, a manual reactor scram was inserted due to difficulties controlling reactor water level. The Instrument Air Header low pressure was found to be due to a failed solder joint in an instrument air dryer inlet pipa.
LER 90-015
- 09-14-90 At 0357 hours, following the recovery of the previous manual scram, reactor restartup commenced. The reactor was taken critical at 0600 hours. The main generator was on the grid at 1401 hours.
- 09-18-90 At 0130 hours with the reactor operating at approximately 50% power, a reactor scram occurred when three inboard Main Steam Isolation valves (MSIVs) closed unexpectedly. Just prior to the MSIVs closing, the "A" side of the Main Steam Line Radiation Monitor (MSLRM) surveillance test had been satisfactorily completed with isolation signals reset. Upon initiating the "B" side test, the "B", "C", and "D" inboard MISVs closed resulting in the scram. This event had no effect on the safe operation of the plant. Safety systems responded as designed in response to the scram signal and the plant was quickly brought to a stable condition.

LER 90-016

09-20-90 With the plant in shutdown condition, a Primary Containment Isolation System (PCIS) Group V isolation occurred due to an inadvertent loss of the "B" Instrument AC bus. Investigation revealed that a voltage transient caused the Uninterruptible Inverter to attempt to swap to the Regulating Transformer to maintain the bus. However, it was unable to swap due to the Normal/Bypass switch being in Bypass for unknown reasons. Unable to swap, the Inverter attempted to handle the transient. However, the transient was too much and caused an Inverter fuse to blow. This resulted in a PCIS Group V isolation and "B" Standby Filter Unit initiation. The fuse was replaced, the isolation reset, the "B" SFU reset, and the Normal/Bypass Switch placed in Normal. Subsequent corrective action replaced the Normal/Bypass Switch with a "hard-wire" jumper to preclude this event from recurring.

LER 90-017 (pending)

09-22-90 At 0029 hours, reactor startup commenced with the reactor taken critical at 0423 hours. The main generator was placed on grid at 2135 hours.

09-25-90 The reactor was operating at approximately 95% power.

09-27-90 The reactor power was reduced to approximately 79.0% due to difficulties in completing the 10% closure surveillance test for the "D" MSIV. The valve was subsequently proven operable via a full closure test the next day and power increased to approximately 96.0%.

09-30-90 At the end of the month the plant was operating at approximately 96.4% of rated thermal power delivering 509.6 MWe-net to customers connected to the grid.