



Duane Arnold Energy Center
3313 DAEC Road
Palo, IA 52324-9646

Operated by Nuclear Management Company, LLC

November 15, 2001

NG-01-1305

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
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Subject: Duane Arnold Energy Center
Docket No: 50-331
Operating License: DPR-49
October 2001 Monthly Operating Report
File: A-118d

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for October 2001. 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,

Rob Anderson
Plant Manager-Nuclear

RA/RBW

Enclosures

IE24

November 15, 2001

NG-01-1305

Page 2 of 2

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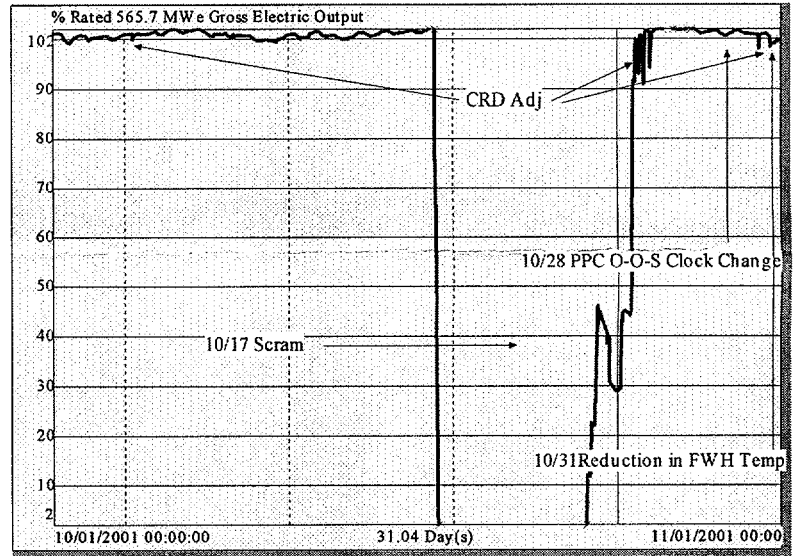
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NRC Resident Inspector
CTS Project - 212

OPERATING DATA REPORT

DOCKET NO: 50-331
 DATE: 11-15-2001
 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: October 2001
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



	Oct-01	2001	Cumulative
11. Hours in Reporting Period	745.0	7,296.0	234,480.0
12. Number of Hours Reactor Was Critical	619.0	6,135.6	184,516.6
13. Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14. Hours Generator On-Line	590.5	6,010.7	180,460.9
15. Unit Reserve Shutdown Hours	0.0	0.0	0.0
16. Gross Thermal Energy Generated (MWH)	932,247.8	9,566,239.6	261,994,742.3
17. Gross Electrical Energy Generated (MWH)	319,783.0	3,226,173.0	87,870,620.6
18. Net Electrical Energy Generated (MWH)	301,660.7	3,043,773.7	82,558,763.8
19. Unit Service Factor	79.3%	82.4%	77.0%
20. Unit Availability Factor	79.3%	82.4%	77.0%
21. Unit Capacity Factor (Using MDC Net)	77.9%	80.2%	73.8%
22. Unit Capacity Factor (Using DER Net)	75.3%	77.5%	70.7%
23. Unit Forced Outage Rate	20.7%	3.5%	8.6%

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): N/A
25. If Shutdown at End of Report Period, Estimated Date of Startup: N/A

REFUELING INFORMATION

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1. **Name of facility.** Duane Arnold Energy Center
2. **Scheduled date for next refueling shutdown.** Spring 2003
3. **Scheduled date for restart following refueling.** Spring 2003
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.** 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. **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	
Discharged from core to Spent Fuel Storage Pool	1912	
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

AVERAGE DAILY UNIT POWER LEVEL

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MONTH October 2001

Day	Average Daily Power Level (MWe-Net)
1	536.7
2	538.5
3	538.7
4	541.8
5	543.6
6	545.5
7	544.4
8	540.3
9	537.0
10	538.2
11	535.4
12	543.1
13	535.3
14	541.1
15	542.8
16	544.2
17	131.9
18	0.0
19	0.0
20	0.0
21	0.0
22	0.0
23	9.5
24	182.8
25	315.9
26	529.5
27	545.9
28	544.5
29	541.6
30	542.3
31	536.2

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UNIT SHUTDOWNS AND POWER REDUCTIONS
 REPORT MONTH: October 2001

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	Cause
10	10/17/01 06:11	1	154.5	A	2	2001-006 (pending)	The 'A' Instrument AC Inverter unexpectedly de-energized while the alternate source for the same division (reg. transformer) was out of service for planned maintenance. The loss of the instrument AC bus caused the 'A' reactor feed pump minimum flow valve to fail open resulting in a feed water pump trip. Operators manually scrammed the reactor due to the subsequent lowering reactor water level.

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 October 2001

At the beginning of October, the DAEC had operated forty-seven days since its most recent startup following the August 12th Reactor Feed Pump trip and manual scram. On October 3rd, information received from General Electric (GE) indicated that the plant process computer (PPC) real-time heat-balance calculation included an incorrect assumption that could lead to exceeding license-limited thermal power by 0.08% (1.3 MW_{th}). Specifically, the GE letter alerted DAEC to the possibility that actual moisture separator carryover steam could be drier than the 99.9% steam quality assumed in the PPC thermal power calculation. At 16:17 operations reduced power 0.12% (2 MW_{th}). On October 28th the PPC heat balance computer code was revised to assume 100.0% steam, and the 2-MW_{th} power restriction was lifted. LER 2001-005 (voluntary, pending).

For the first sixteen days of the month, the plant operated at license-limited thermal power and averaged 570.8 MW_e. At 6:10 a.m. on October 17th, plant operators inserted a manual scram in anticipation of reaching an automatic scram setpoint on low reactor pressure vessel level. The level control problem was attributed to a loss of an instrument electrical bus, which ultimately caused the "A" feedwater pump to trip. The loss of the instrument power supply bus occurred when its normal power supply, an inverter, unexpectedly de-energized while the alternate electric supply was out of service for planned maintenance. LER 2001-006 (pending).

Following recovery from the plant trip, the DAEC commenced a pre-planned forced outage to replace a degraded reactor recirculation pump seal. During the outage, personnel also replaced two intermediate range monitors and performed work on some degraded drywell coolers. After completing the outage work-scope, the reactor was taken critical at 12:14 October 22nd and synchronized to the grid at 16:41 on October 23rd. Full power was achieved October 25th at 20:00 hours. Two control rod adjustments occurred October 25th at 23:11, October 26th at 03:37, and 10:41. During the outage, the plant was off-line 154.5 hours and sub-critical 126.0 hours.

At 16:27 on October 30th, an oil leak was discovered on a threaded fitting in the High Pressure Coolant Injection System (HPCI) oil system. HPCI was declared inoperable and at 19:51 the HPCI Inoperability Surveillance was satisfactory completed. HPCI was repaired, returned to standby readiness, and declared "available" at 22:55. On October 31st at 03:04 the HPCI System Operability Test was completed satisfactorily and HPCI was declared operable. LER 2001-007 (pending).

On October 31st at 13:05 Operators observed a step change (up) in reactor thermal power, and a step change (lower) in generator MWE. The '1T-92A' Moisture Separator dump valve, CV-1057, had opened, causing a small reduction in feedwater heating (<5 degrees). Operators temporarily lowered power with recirculation flow to 1650 MW_{th}, pending further corrective actions.

Allocation of Production & Losses: October 2001			
	Electrical Output MWe	Capacity Factor % of 571 MWe (Target Output)	Full Power Equivalent Hours (FPHeq)
Capacity Losses:			
Ramp-up 10/23 16:41 thr 10/ 26 15:00 (including 3 CRD adjustments)	24.30	4.26%	31.71
5° reduction of Feedwater temperature 10/31 13:05 - 24:00	0.12	0.02%	0.16
Maintain Margin to 1658 MWth Limit	0.42	0.07%	0.55
Efficiency Losses:			
Condenser Back Pressure losses > Expected Wetbulb Losses	0.74	0.13%	0.94
Unidentified Losses	- 2.92	- 0.51%	-3.80
Average Weather losses:	0.69	0.12%	0.91
Total On-line Losses:	23.35	4.09%	30.47
Off-Line Losses: 10/17 06:11 - 10/23 16:41			
Manual Scram - Loss of instrument AC resulted in level transient	118.43	20.74%	154.50
Electric Generation:			
Plant House Loads (while on-line)	24.32	4.26%	31.73
Net Electric Output	+404.90	+70.91%	528.30
Gross Electric Generation	429.22	75.17%	560.03
Target Electric Output, Total %, Total # of clock-hours	571.00	100.00%	745.00

Licensing Action Summary:

Plant Availability:	79.3%	Unplanned Auto Scrams (while critical) this month:	0
Number of reportable events:	3	Unplanned Auto Scrams (while critical) last 12 months:	0