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

Operated by Nuclear Management Company, LLC

April 10, 2002

NG-02-0284

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 2002 Monthly Operating Report
File: A-118d

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for March 2002. 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

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IE24

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CTS Project

OPERATING DATA REPORT

DOCKET NO: 50-331
DATE: 04-10-2002
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 2002

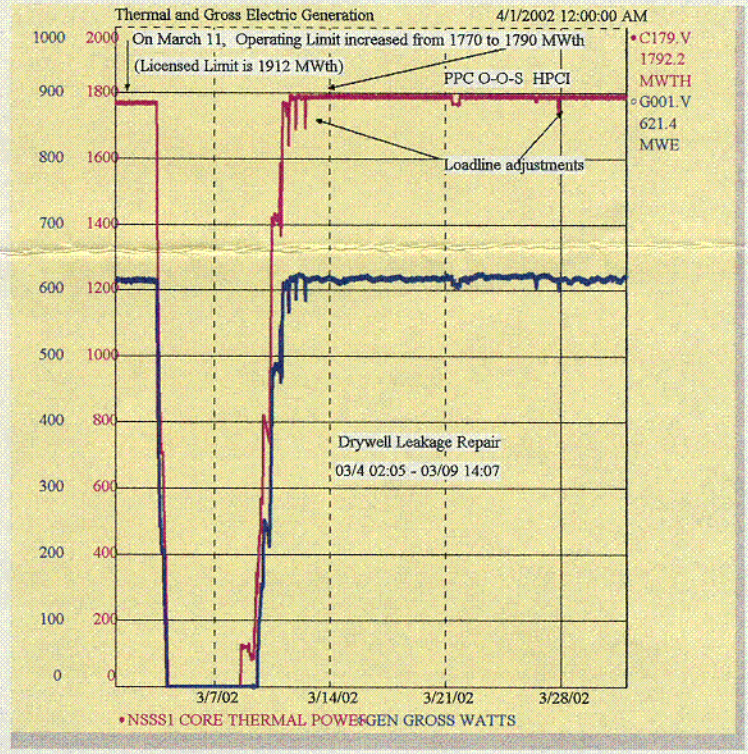
3. Licensed Thermal Power (MW_{th}): 1912
Tech. Spec. Amendment 243 and TSCR for extended power uprate was implemented November 7, 2001. Current operating thermal power, as limited by balance-of-plant equipment, is ~~1770~~ 1790.

4. Nameplate Rating (Gross MW_e DER): 676.425
Current rated output, adjusted for as-built balance-of-plant conditions is ~~607.0~~ 614.0

5. Design Electrical Rating (Net MW_e DER): ~~574.4~~ 581.4

6. Maximum Dependable Capacity (Gross MW_e MDC): ~~586.1~~ 593.1

7. Maximum Dependable Capacity (Net MW_e MDC): ~~558.5~~ 565.5



8. If Changes Occur in Capacity Ratings (Items Number 3 through 7) since the last report, give reasons: Modifications were performed March 4-8 on the Feed Regulating Valve to permit increasing thermal power from 1770 to 1790 MWth. The capacity factor computations below are based on pro-rated average ratings (before and after March 11th).

9. Power Level to Which Restricted, If Any (Net MW_e): N/A

10. Reasons for Restrictions, If Any: N/A

		Mar-02	2002	Cumulative
11.	Hours in Reporting Period	744.0	2,160.0	238,104.0
12.	Number of Hours Reactor Was Critical	638.0	2,054.0	188,034.6
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator On-Line	612.0	2,028.0	183,952.9
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,053,537.6	3,522,573.7	268,021,203.5
17.	Gross Electrical Energy Generated (MWH)	362,058.0	1,215,991.0	89,950,208.6
18.	Net Electrical Energy Generated (MWH)	342,664.2	1,151,005.2	84,526,631.2
19.	Unit Service Factor	82.3%	93.9%	77.3%
20.	Unit Availability Factor	82.3%	93.9%	77.3%
21.	Unit Capacity Factor (Using MDC Net)	81.8%	95.4%	69.8%
22.	Unit Capacity Factor (Using DER Net)	79.6%	92.8%	66.9%
23.	Unit Forced Outage Rate	0.0%	0.0%	8.5%

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

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AVERAGE DAILY UNIT POWER LEVEL

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MONTH March 2002

Day	Average Daily Power Level (MWe-Net)
1	582.8
2	583.2
3	413.2
4	0.0
5	0.0
6	0.0
7	0.0
8	0.0
9	37.6
10	348.5
11	565.7
12	586.6
13	585.5
14	582.9
15	586.7
16	586.9
17	586.5
18	586.4
19	586.2
20	587.1
21	583.8
22	587.1
23	589.8
24	589.5
25	590.3
26	588.5
27	587.2
28	584.5
29	584.1
30	585.9
31	586.7

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 re-racking)	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 2002

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	Cause
2	03/04 02:05 - 03/09 14:07	S	132.0 (156.7 Effective--full-power-hours-equivalent, including ramp-down & ramp-up)	B	1		Identify and repair the source of leakage into the drywell

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 2002

At the beginning of March the DAEC was operating at its 1770 MWth administrative thermal power limit. Unidentified drywell leakage was continuing at approximately 0.8 - 0.9 GPM. (Ref. January and February 2002 NRC Monthly Operating Reports. The DAEC Technical Specification Limit for drywell leakage is 5 GPM unidentified, 25 GPM total, and 2 GPM increase within previous 24 hours.) A scheduled shutdown to identify and repair the source of the leakage commenced at 12:00 on March 3rd, and at 02:05 March 4th the generator was taken off-line. A reactor scram was inserted at 03:40 March 4th.

At 04:22 on March 8th, while shut down (in Mode 4), it was determined that for six minutes beginning at 03:13, reactor bulk coolant temperature had reached 212 °F, resulting in an unplanned change to Mode 3. While removing Shutdown Cooling from service in preparation for plant startup, an operator reported that a loose gearbox cover appeared to be preventing the RHR Cross-tie valve (V19-0048) from being throttled fully open. Initially, it was thought that the valve could operate in the open direction, but it was later discovered that a dislodged valve-retaining nut blocked the valve from fully opening. Before Shutdown Cooling could be restored to service, reactor temperature had exceeded 212 °F. With the Plant in Mode 3, and LPCI inoperable (due to the inability to open V19-0048), the Plant had inadvertently entered into a Condition Prohibited by Technical Specifications [10CFR50.73(a)(2)(i)(B)]. The condition was exited when Shutdown Cooling was restarted at 03:19. (LER 2002-001 pending.)

Also, during the outage, a modification was performed on the Feed Regulating Valve (FRV) to allow operation at 20 MWth increased thermal power (1790 MWth).

Following completion of all repairs, the reactor was taken critical at 13:42 March 8th, and the generator synchronized to the grid at 14:07 March 9th. For the month, the DAEC reactor was critical 638.0 hours, and the generator on-line 612. Following the ramp-up to full power, 1790 MWth was achieved March 11th at 13:19.

The DAEC operated at full power for the remainder of the month except for the following brief, small power reductions:

- to perform maintenance on the plant process computer 03/21
- to perform a HPCI surveillance March 26th, and
- to adjust load-line 03/11, 03/12 and 03/27.

Allocation of Production & Losses:	Electrical Output MWe	Capacity Factor % Of 611.5* MWe (Target Output)	Full Power Equivalent Hours (FPHeq)
Net Electric Generation	460.58	75.32%	560.37
Plant House Loads (while on-line)	+26.05	+4.26%	+31.71
Subtotal: Gross Electric Generation	486.63	79.58%	592.08
Capacity Losses (i.e., departures from full thermal power): Loadline Adjustments: 03/11 (2), 03/12, & 03/27	0.08	0.01%	0.10
HPCI Surveillance 03/26	0.02	0.00%	0.03
Plant Process Computer O-O-S 03/21	0.16	0.03%	0.20
Drywell Leak Repair ramp-down 03/03 - 04 & ramp-up 03/09 - 11	21.76	3.56%	26.48
Maintain Margin to 1790 Administrative MWth Limit	0.12	0.02%	0.14
Efficiency Losses (which occur even at full thermal power):	0.31	0.05%	0.37
-/+ Seasonal Effects (negative losses, i.e., cold weather increases)	+(6.12)	+(1.00%)	+(7.44)
Subtotal: On-line Losses (Capacity, Efficiency, and Weather):	16.33	2.67%	19.88
Off-Line Losses: Drywell Leak Repair 03/04 02:05 - 03/09 14:07	108.54	17.75%	132.04
Totals: Target Electric Output, %, # of clock-hours	611.50	100.00%	744.00
* Pro-rated average. FRV Modification allowed Target Output to be increased from 607 back to 614 on March 11, 2002.			

Licensing Action Summary:

Plant Availability:	82.3%		Unplanned Auto Scrams (while critical) this month:	0
Number of reportable events:	1		Unplanned Auto Scrams (while critical) last 12	0

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