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DAEC Plant Support Center
Operated by Nuclear Management Company, LLC

December 14, 2001

NG-01-1385

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
November 2001 Monthly Operating Report
File: A-118d

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for November 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,

Dean Curtland for

Rob Anderson
Plant Manager-Nuclear

RA/RBW

Enclosures

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NRC Resident Inspector

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OPERATING DATA REPORT

DOCKET NO: 50-331
DATE: 12-14-2001
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: November 2001

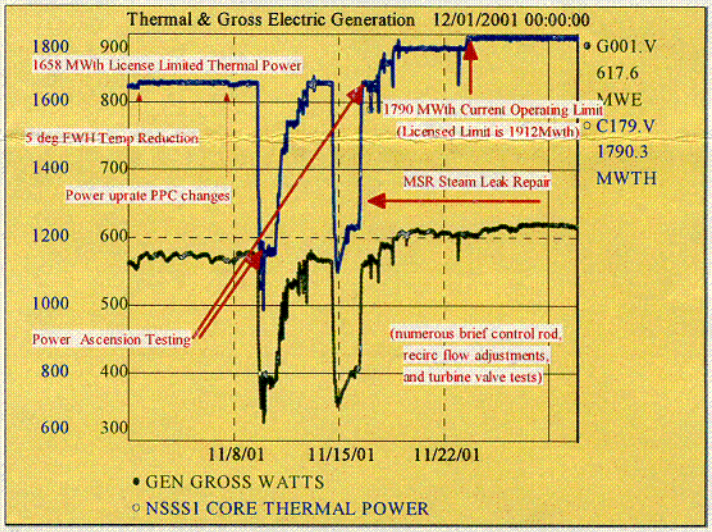
3. Licensed Thermal Power (MW_{th}): ~~1658~~ 1912
Tech. Spec. Amendment 243 and TSCR for extended power uprate was implemented November 7, 2001. Current operating thermal power, as limited by balance-of-plant equipment is 1790.

4. Nameplate Rating (Gross MW_e DER): ~~565.7 (Turbine)~~ 676.425
Current rated output, adjusted for as-built balance-of-plant conditions is 614.0

5. Design Electrical Rating (Net MW_e DER): ~~538~~ 581.4

6. Maximum Dependable Capacity (Gross MW_e MDC): ~~550~~ 593.1

7. Maximum Dependable Capacity (Net MW_e MDC): ~~520~~ 565.5



8. If Changes Occur in Capacity Ratings (Items Number 3 through 7) since the last report, give reasons: *Thermal power was increased from License Rated 1658 MW_{th} to 1790 MW_{th} following performance of a series of incremental power ascension tests conducted during the period from November 9th to November 23rd.*

9. Power Level to Which Restricted, If Any (Net MW_e): Limited to 1790 MW_{th}, Net MW_e will vary from 580 – 590.

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

		Nov-01	2001	Cumulative
11.	Hours in Reporting Period	720.0	8,016.0	235,200.0
12.	Number of Hours Reactor Was Critical	720.0	6,855.6	185,236.6
13.	Reactor Reserve Shutdown Hours	0.0	0.0	0.0
14.	Hours Generator On-Line	720.0	6,730.7	181,180.9
15.	Unit Reserve Shutdown Hours	0.0	0.0	0.0
16.	Gross Thermal Energy Generated (MWH)	1,186,057.5	10,752,297.1	263,180,799.8
17.	Gross Electrical Energy Generated (MWH)	408,192.0	3,634,365.0	88,278,812.6
18.	Net Electrical Energy Generated (MWH)	385,584.7	3,429,358.4	82,944,348.5
19.	Unit Service Factor	100.0%	84.0%	77.0%
20.	Unit Availability Factor	100.0%	84.0%	77.0%
21.	Unit Capacity Factor (Using MDC Net)	100.8%	82.3%	73.9%
22.	Unit Capacity Factor (Using DER Net)	97.6%	79.5%	70.9%
23.	Unit Forced Outage Rate	0.0%	3.2%	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

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AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO: 50-331
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MONTH: November 2001

Day	Average Daily Power Level (MWe-Net)
1	532.6
2	541.9
3	542.1
4	542.8
5	542.7
6	539.2
7	536.9
8	541.6
9	485.8
10	367.0
11	476.9
12	516.7
13	539.6
14	474.8
15	357.9
16	453.3
17	543.4
18	561.9
19	579.7
20	578.8
21	572.0
22	575.6
23	572.9
24	576.8
25	582.6
26	587.9
27	581.9
28	564.7
29	587.1
30	585.5
31	#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

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UNIT SHUTDOWNS AND POWER REDUCTIONS
REPORT MONTH: November 2001

No.	Date	Type (1)	Duration (Hours)	Reason (2)	Method of Shutting Down Reactor (3)	Licensee Event Report #	Cause
11	11/09/01	S	0 11.3 full-power-hours equivalent	B	5		Power Ascension Testing implementation of extended power uprated commenced at 69% of (then) rated Licensed 1658 MWth power.
12	11/14/01	F	0 14.1 full-power-hours equivalent	B	5		Repair of moisture-separator reheater steam leak.

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 November 2001

At the beginning of the month, operators had temporarily lowered power the previous day (October 31st) to 1650 MW_{th}. The '1T-92A' Moisture Separator dump valve, CV-1057, had opened, causing a small reduction in feedwater heating (<5 degrees). Following repair of the valve, reactor thermal power was increased with recirculation flow to rated 1658 MW_{th} at 16:51 November 1st.

On November 7th at 15:15 Technical Specification Amendment 243 and TSCR 44 for Extended Power Uprate were implemented. The new license-limited thermal power for DAEC became 1912 MW_{th}. At 17:50 reactor power was lowered via recirculation system flow in order to remove the plant process computer from service to implement power uprate related computer code changes. The computer was shutdown at 19:01 and restarted at 23:19.

At 16:15 November 9th power was lowered to 1150 MW_{th}, first by reducing recirculation flow, then by control rod insertion, in order to perform a control rod sequence exchange. Over the following two weeks power was successively incremented to 1240, 1320, 1400, 1460, 1500, 1540, 1570, 1600, 1630, 1658, 1720, 1760, and 1790 MW_{th}. During the power ascension, tests of the turbine bypass valves, stop valves, combined-intermediate valves, control valves, pressure regulator, and feedwater control system were performed and the results trended and analyzed. Testing was halted at 1790 MWth, as previously planned. If and/or when modifications to the balance-of-plant equipment are performed, further testing may be performed to allow operation at the new 1912 license-limited thermal power.

Power ascension testing was suspended November 14th to reduce power from 1658 to 1100 MWth when a steam leak was discovered at one of the gasketed joints of a flow orifice for the "A" side 2nd stage moisture separator/reheater. Both the 1st and 2nd stage MSRs were removed from service and gaskets replaced on the flow orifices of both trains.

Allocation of Production & Losses: October 2001	Electrical Output MWe	Capacity Factor % of 571* MWe (Target Output)	Full Power Equivalent Hours (FPHeq)
Capacity Losses:			
5° reduction of Feedwater temperature 10/31 24:00 - 11/01 16:44	0.37	0.07%	0.47
PPC OOS to install Uprate Software Change 11:07 17:50 - 24:00	0.11	0.02%	0.14
Power Ascension Testing @ < 1658 MWth 11/09 16:15 - 11/12 23:32	8.97	1.57%	11.31
MSR Steam Leak Repair 11/14 15:20 - 11/16 15:23	11.17	1.96%	14.09
Maintain Margin to license-limited thermal power	0.01	0.00%	0.01
(Capacity Increases), i.e., negative losses:			
Power Ascension Testing @ > 1658 MWth 11/17 17:40 - 11/23 15:07	(7.03)	(1.23%)	(8.86)
Operation @ 1790 current uprated power level 11/23 15:07 - 12/01	(10.67)	(1.87%)	(13.46)
Efficiency Losses:			
Condenser Back Pressure losses > Wetbulb Losses	2.11	0.37%	2.63
Unidentified Losses	(0.59)	(0.11%)	(0.69)
Average Weather losses:	(0.40)	0.00%	(0.51)
Total On-line Losses:	**4.05**	**0.00%**	**5.13**
Off-Line Losses: (none)	**0.00**	**0.00%**	**0.00**
Electric Generation:			
Plant House Loads (while on-line)	31.41	5.50%	39.59
Net Electric Output	**+535.54**	**+93.79%**	**675.28**
Gross Electric Generation	**566.95**	**99.29%**	**714.87**
Target Electric Output, Total %, Total # of clock-hours	**571.00**	**100.00%**	**720.00**

* Target Output increased from 571 to 614 on November 23, 2001 at 15:00

Licensing Action Summary:

Plant Availability:	100.0%		Unplanned Auto Scrams (while critical) this month:	0
Number of reportable events:	0		Unplanned Auto Scrams (while critical) last 12 months:	0