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

Operated by Nuclear Management Company, LLC

November 10, 2000

NG-00-1887

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
October 2000 Monthly Operating Report
File: A-118d

Please find enclosed the Duane Arnold Energy Center Monthly Operating Report for October 2000. 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 11/10/00
Rob Anderson
Plant Manager-Nuclear

RA/RBW

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IE24

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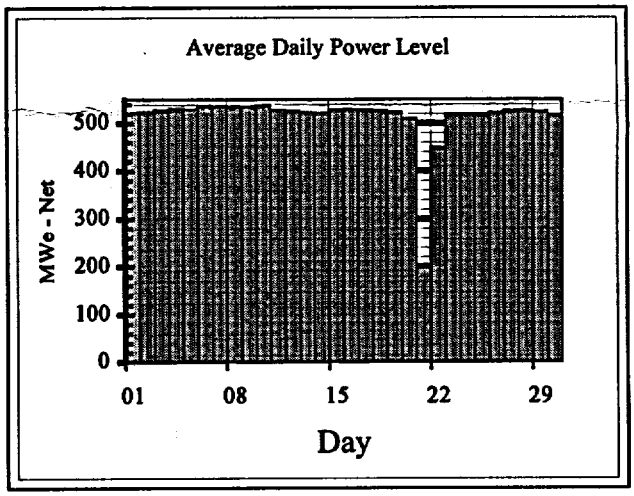
CTS Project

# OPERATING DATA REPORT

DOCKET NO: 50-331
DATE: 11/10/2000
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 2000
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




| | | October-00 | 2000 | Cumulative |
|---|---|---|---|---|
| 11. | Hours in Reporting Period | 745.0 | 7,320.0 | 225,720.0 |
| 12. | Number of Hours Reactor Was Critical | 745.0 | 7,179.6 | 176,917.0 |
| 13. | Reactor Reserve Shutdown Hours | 0.0 | 0.0 | 0.0 |
| 14. | Hours Generator On-Line | 745.0 | 7,090.4 | 172,986.2 |
| 15. | Unit Reserve Shutdown Hours | 0.0 | 0.0 | 0.0 |
| 16. | Gross Thermal Energy Generated (MWH) | 1,204,948.5 | 11,612,933.1 | 250,003,298.1 |
| 17. | Gross Electrical Energy Generated (MWH) | 404,935.0 | 3,892,468.0 | 83,820,329.6 |
| 18. | Net Electrical Energy Generated (MWH) | 382,208.7 | 3,676,516.7 | 78,735,800.8 |
| 19. | Unit Service Factor | 100.0% | 96.9% | 76.6% |
| 20. | Unit Availability Factor | 100.0% | 96.9% | 76.6% |
| 21. | Unit Capacity Factor (Using MDC Net) | 98.7% | 96.6% | 73.3% |
| 22. | Unit Capacity Factor (Using DER Net) | 95.4% | 93.4% | 70.1% |
| 23. | Unit Forced Outage Rate | 0.0% | 3.1% | 8.8% |

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of each): Refueling Outage 17, April 13, 2001, 40 days
25. If Shutdown at End of Report Period, Estimated Date of Startup: N/A

AVERAGE DAILY UNIT POWER LEVEL

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MONTH October 2000

| Day | Average Daily Power Level (MWe-Net) |
|---|---|
| 1 | 523.1 |
| 2 | 523.2 |
| 3 | 528.2 |
| 4 | 530.9 |
| 5 | 529.4 |
| 6 | 534.4 |
| 7 | 535.7 |
| 8 | 535.4 |
| 9 | 535.4 |
| 10 | 538.4 |
| 11 | 528.5 |
| 12 | 526.3 |
| 13 | 523.3 |
| 14 | 521.8 |
| 15 | 528.3 |
| 16 | 529.1 |
| 17 | 528.6 |
| 18 | 527.0 |
| 19 | 523.7 |
| 20 | 510.4 |
| 21 | 198.7 |
| 22 | 448.8 |
| 23 | 518.9 |
| 24 | 519.2 |
| 25 | 518.6 |
| 26 | 521.2 |
| 27 | 525.9 |
| 28 | 527.8 |
| 29 | 524.8 |
| 30 | 517.5 |
| 31 | 521.3 |

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UNIT SHUTDOWNS AND POWER REDUCTIONS
REPORT MONTH: October 2000

| No. | Date | Type (1) | Duration (Hours) | Reason (2) | Method of Shutting Down Reactor (3) | Licensee Event Report # | Cause |
|---|---|---|---|---|---|---|---|
| 9 | 10/20 21:09 - 10/24 10:15 | S | 0 (17.39 full-power-hours equivalent) | B | 5 | | Sequence Exchange, Turbine Valve Testing, Recirc Pump Motor Generator brush replacement |

| 1 - F: Forced<br>S: Scheduled | 2 - Reason<br>A-Equipment Failure (Explain)<br>B-Maintenance or Test<br>C-Refueling<br>D-Regulatory Restriction<br>E-Operator Training & License Examination<br>F-Administrative<br>G-Operational Error (Explain)<br>H-Other (Explain) | 3 - Method:<br>1-Manual<br>2-Manual Scram<br>3-Automatic Scram<br>4-Continued<br>5-Reduced Load<br>9-Other (Explain) |
|---|---|---|

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Monthly Operational Overview for October 2000

For the first nineteen days of the month the DAEC operated nearly continuously at 100% licensed rated power except for two brief 1% – 2% power reductions on October 6th and 12th to perform control rod drive exercises.

Beginning at 21:09 on October 20th recirculation flow was decreased to 60% power to commence a control rod sequence exchange lasting from 22:20 until 04:20 on October 21st. At 04:30 on October 21st, Main Steam Isolation Valve (MSIV) testing was performed. At 08:30 power was reduced to 35% for approximately six hours to enter into single-recirculation loop operation in order to replace brushes on the 'A' Recirculation Pump motor generator. On October 22nd, quarterly turbine valve testing and bypass valve testing were satisfactorily completed. Power was first returned to 100% at 10:14 on October 22nd, however approximately seven additional control rod and reactor recirculation pump reactivity manipulations (the last of which was completed at 10:15 on October 24th) were required to achieve the target rod pattern. In total, approximately two dozen separate reactivity manipulations were required during this evolution.

At 00:28 on October 29th power was reduced approximately 2% when the plant process computer was removed from service in order to reset its clock from daylight-savings to standard time. At 09:25 on October 30th power was again reduced approximately 17 hours to remove the plant process computer from service for planned hardware and software maintenance.

| **Allocation of Production & Losses: October 2000** | Electrical Output MWe | Capacity Factor % of 571 MWe (Target Output) | Full Power Equivalent Hours (FPHeq) |
|---|---|---|---|
| Capacity Losses: | | | |
| Rod Sequence Exchange and CRD adjustments: 10/20 21:09 - 10/24 10:15 | 13.33 | 2.33% | 17.39 |
| Control Rod Exercises: 10/06 21:06 - 22:42 & 10/14 00:15 - 01:44 | 0.02 | 0.00% | 0.03 |
| Plant Process Computer, date change and maintenance: 10/29 00:28 - 04:55 & 10/30 09:25 - 10/31 02:00 | 0.40 | 0.07% | 0.52 |
| Maintain Margin to 1658 MWth Limit | 0.25 | 0.04% | 0.33 |
| Efficiency Losses: | | | |
| Circ Water System Flow Limitation | 2.38 | 0.42% | 3.03 |
| Cooling Tower Low Flow condition | 1.42 | 0.25% | 1.86 |
| Steam Cycle Isolation Valve Losses: BV-1 | 2.30 | 0.40% | 2.98 |
| Other steam cycle isolation losses | 0.60 | 0.11% | 0.82 |
| Unidentified Losses | 0.00 | 0.00% | 0.00 |
| Average Weather Losses: | +6.77 | +1.19% | +8.87 |
| **Total On-line Losses:** | **27.47** | **4.81%** | **35.83** |
| Off-Line Losses: | 0.00 | 0.00% | 0.00 |
| Electric Generation: | | | |
| Plant House Loads (while on-line) | 30.49 | 5.34% | 39.80 |
| Net Electric Output | +513.04 | +89.85% | +669.37 |
| **Gross Electric Generation** | **543.53** | **95.19%** | **709.17** |
| Target Electric Output, Total %, Total # of clock-hours | 571.00 | 100.00% | 745.00 |

(There were no Licensee event reports.)

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: | 2 |
| | | | Main Steam Safety and Relief Valve Challenges this month: | 0 |