

# OPERATING DATA REPORT

DOCKET NO. 050-0331  
 DATE July 14, 1981  
 COMPLETED BY J. Van Sickle  
 TELEPHONE 319-851-5611

## OPERATING STATUS

1. Unit Name: Duane Arnold Energy Center
2. Reporting Period: June, 1981
3. Licensed Thermal Power (MWt): 1658
- \* 4. Nameplate Rating (Gross MWe): 565 (Turbine Rating)
5. Design Electrical Rating (Net MWe): 538
6. Maximum Dependable Capacity (Gross MWe): 545
7. Maximum Dependable Capacity (Net MWe): 515
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

Notes

9. Power Level To Which Restricted, If Any (Net MWe):
10. Reasons For Restrictions, If Any:

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	720	4343	56,207
12. Number Of Hours Reactor Was Critical	571.5	2515.6	39,682.3
13. Reactor Reserve Shutdown Hours	0	0	0
14. Hours Generator On-Line	522.5	2380.9	38,657.9
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	503,820	4,239,446	49,238,084
17. Gross Electrical Energy Generated (MWH)	167,510	1,098,699	16,501,386
18. Net Electrical Energy Generated (MWH)	155,257	1,043,154	15,445,192
19. Unit Service Factor	72.6%	54.8%	68.8%
20. Unit Availability Factor	72.6%	54.8%	68.8%
21. Unit Capacity Factor (Using MDC Net)	41.9%	46.6%	53.4%
22. Unit Capacity Factor (Using DER Net)	40.1%	44.6%	51.1%
23. Unit Forced Outage Rate	18.7%	7.0%	18.4%
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

25. If Shut Down At End Of Report Period, Estimated Date of Startup:

\* Turbine Rating: 565.7 MWe  
 Generator Rating: 663.5 (MVA) x .90 (Power Factor) = 597 MWe

# AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 050-0331

UNIT Duane Arnold Energy Ctr

DATE July 14, 1981

COMPLETED BY J. Van Sickle

TELEPHONE 319-351-5611

MONTH June, 1981

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>0</u>
2	<u>64</u>
3	<u>8</u>
4	<u>0</u>
5	<u>0</u>
6	<u>91</u>
7	<u>182</u>
8	<u>299</u>
9	<u>81</u>
10	<u>271</u>
11	<u>337</u>
12	<u>402</u>
13	<u>420</u>
14	<u>242</u>
15	<u>5</u>
16	<u>0</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>0</u>
18	<u>176</u>
19	<u>259</u>
20	<u>253</u>
21	<u>339</u>
22	<u>388</u>
23	<u>380</u>
24	<u>319</u>
25	<u>323</u>
26	<u>334</u>
27	<u>297</u>
28	<u>319</u>
29	<u>381</u>
30	<u>272</u>
31	<u></u>

## INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH June, 1981DOCKET NO. 000-0331UNIT NAME Duane Arnold Energy CtrDATE July 14, 1981COMPLETED BY J. Van SickleTELEPHONE 319-831-5611

Seq.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
7.	810531	F.	27.2	A	1,3	81-021	SA	VALVOP	Continuation of previous shutdown to replace a relief valve pilot assembly
8.	810603	F	75.4	A	1,3				Power was reduced and the unit taken off line due to problems with a drywell to torus vacuum breaker. Reactor scrammed in the IRM range.
9.	810608	S	0	H	4				Power was reduced to perform control rod withdrawals
10.	810609	F	17.4	A	3				Reactor scrammed from a trip of the "B" RPS M-G set
11.	810614	S	0	F	4				Power was reduced to perform special test procedure #91, R/V tests

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-Other (Explain)

4  
Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

5  
Exhibit I - Same Source

# UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH June, 1981

DOCKET NO. 050-0331  
 UNIT NAME Duane Arnold Energy Ctr  
 DATE July 14, 1981  
 COMPLETED BY J. Van Sickle  
 TELEPHONE 319-851-5611

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
12.	810615	S	77.5	F	1,3				Unit was taken off line for a drywell inspection following SpTP #91. Reactor scrammed in the IRM range
13.	810630	S	0	F	4				Power was reduced due to lack of system demand

<sup>1</sup>  
 F: Forced  
 S: Scheduled

<sup>2</sup>  
 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)

<sup>3</sup>  
 Method:  
 1-Manual  
 2-Manual Scram.  
 3-Automatic Scram.  
 4-Other (Explain)

<sup>4</sup>  
 Exhibit G - instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

<sup>5</sup>  
 Exhibit I - Same Source

REFUELING INFORMATION

Docket No. 050-0331  
Unit Duane Arnold Energy Center  
Date July 14, 1981  
Completed by J. Van Sickle  
Telephone 319-851-5611

1. Name of facility.  
A. Duane Arnold Energy Center
2. Scheduled date for next refueling shutdown.  
A. Fall, 1982
3. Scheduled date for restart following refueling.  
A. Unknown
4. Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?  
A. Yes. New MAPLHGR tables will have to be included in Technical Specifications.
5. Scheduled date(s) for submitting proposed licensing action and supporting information.  
A. Unknown at this time.
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.  
A. New fuel assemblies to be placed in the reactor will be more highly enriched than those currently in use.
7. The number of fuel assemblies (a) in the core and (b) in the spent fuel storage pool.  
A. a) 368      b) 448
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
9. The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity.  
A. 1998



### NARRATIVE SUMMARY OF OPERATING EXPERIENCE

- 6-1 At the beginning of the report period the plant was in cold shutdown to allow replacement of the pilot assembly on relief valve PSV-4406.

Work was completed and a reactor startup was begun. The reactor was critical at 1454 hours.

- 6-2 The main generator was placed on the line at C312 hours.

During reactor startup suppression chamber to drywell vacuum breaker, CV-4327H, did not close after torus inerting.

#### RO Report 81-021

- 6-3 Due to the problem with CV-4327H a plant shutdown was begun. The generator was removed from the line at 0332 hours. A reactor scram occurred at 0503 hours while ranging IRM switches.

The reactor was in cold shutdown at 1135 hours. Repairs were completed and reactor startup was begun at 2155 hours.

- 6-4 The reactor was critical at 0205 hours. During a drywell inspection the pilot assembly on relief valve PSV 4406 was found leaking steam. A reactor shutdown was begun. All control rods were inserted by 1325 hours. The reactor was in cold shutdown at 1655 hours.

- 6-5 Reactor startup was begun. The reactor was critical at 2015 hours.

- 6-6 The main generator was placed on the line at 0655 hours.

- 6-7 During surveillance testing the RCIC turbine repeatedly tripped due to overspeed on fast starts.

#### RO Report 81-022

A control rod sequence exchange was completed between 1645 and 1750 hours.

- 6-9 Power was reduced in order to perform control rod withdrawals. Rod withdrawals were completed at 0300 hours and a power increase begun.

- 6-9 A reactor scram occurred at 0757 hours due to the trip of the "B" RPS M-G set. A drywell entry was made in an effort to find the source of a nitrogen leak in the drywell. The leak was found on the actuator for the "A" feedwater checkvalve. The leak was repaired and preparations for plant startup were begun. The reactor was critical at 2123 hours.

- 6-10 The main generator was placed on the line at 0123 hours and a power increase was begun.

NARRATIVE SUMMARY OF OPERATING EXPERIENCE

- 6-11 During surveillance testing RCIC steam line high flow PDIS 2442 tripped at 100 inches of water. The required setpoint is  $110 \pm 5$  inches.

RO Report 81-023

- 6-13 The plant was operating at 448 MWe at 2235 hours.

- 6-14 Power was reduced in preparation for performance of Special Test Procedure (SpTP) #91.

SpTP #91 was begun at 0300 hours. The test involved cycling a main steam relief valve several times and measuring the resulting suppression chamber loading.

- 6-15 SpTP #91 was completed at 0007 hours. A plant shutdown for inspection of the drywell was in progress. The generator was removed from the line at 0307 hours. A reactor scram occurred at 0342 hours. The reactor was in cold shutdown at 0850 hours.

While the plant was shutdown it was determined that the "B" containment radiation monitor was running with no sample point selected. In addition the "A" containment particulate radiation element, RE-8101A, was inoperable.

RO Report 81-026

- 6-16 During surveillance testing, drywell equipment drain line (containment isolation) valve CV-3729 did not give a fully closed indication.

RO Report 81-024

During surveillance testing the "B" RHR service water pump, 1P-22B, did not develop the required discharge pressure at rated flow.

RO Report 81-025

Plant startup was delayed when an inspection revealed a leak in the body of RCIC test valve MOV 2515.

- 6-17 An engineering evaluation of MOV-2515 determined the valve was acceptable for plant operation as long as the valve was maintained in the closed position. Plans for replacing the valve were initiated.

Reactor startup was begun at 2302 hours.

- 6-18 The reactor was critical at 0002 hours. The main generator was placed on the line at 0858 hours and a power increase begun. Power was held at approximately 50% to allow for work on a flange leak on the "B" reactor feed pump.

NARRATIVE SUMMARY OF OPERATING EXPERIENCE

6-20 During normal operation off gas system radiation monitor RM 4101A failed upscale.

RO Report Pending

Repairs to the "B" reactor feed pump were completed and a power increase was begun.

6-23 The plant was operating at 426 MWe. Power changes were being made in response to system power demands.

6-30 The plant was operating at 338 MWe at 2230 hours and following load as directed by the system control center.



MAJOR SAFETY RELATED MAINTENANCE

Docket No. 050-0331  
 Unit Duane Arnold Energy Center  
 Date July 14, 1981  
 Completed by J. Van Sickle  
 Telephone 319-851-5611

DATE	SYSTEM	COMPONENT	DESCRIPTION
6-1-81	RHR	PS-1925B	Replaced actuating lever
6-7-81	CRD Hydraulic	Control Rod 26-15, 38-27, 26-31, 34-23	Replaced drive
6-8-81	CRD Hydraulic	Control Rod 14-15, 22-39, 10-27, 10-35, 02-23	Replaced drive
6-8-81	Containment Atmosphere Control	AN-8181B	Installed new chemicals
6-11-81	Main Steam Isolations and ADS	PSV-4406	Replaced pilot assembly
6-15-81	Control Building Area Rad Monitor	RE-6101A	Installed new detector
6-15-81	Containment Atmospheric Control	AN-8181A	Installed new chemicals
6-17-81	Primary Containment	SV-3729	Replaced solenoid valve
6-18-81	Neutron Monitoring	IRM "C"	Replaced detector
6-18-81	Main Steam Isolation & ADS	PSV 4405	Replaced pilot assembly
6-22-81	Containment Atmospheric Control	AN-8181B	Installed new chemicals
6-22-81	Drywell Radiation Monitors	RE-8101B	Replaced detector
6-22-81	CRD-Electrical	Relay C11-K1	Replaced relay
6-26-81	Containment Atmospheric Control	AN-8181A	Installed new chemicals