OPERATING DATA REPORT

DOCKET NO. 050-0331
DATE 4-13-79
COMPLETED BY J. Van Sickel
TELEPHONE 319-851-5611

OPERATING STATUS

1. Unit Name: Duane Arnold Energy Center
2. Reporting Period: March, 1979
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

Notes

8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:

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	744	2160	36480
12. Number Of Hours Reactor Was Critical	555.8	563.3	24,176.1
13. Reactor Reserve Shutdown Hours	0	0	0
14. Hours Generator On-Line	497.9	497.9	23,484.9
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	517,584	517,584	28,579,224
17. Gross Electrical Energy Generated (MWH)	169,291	169,291	9,506,720
18. Net Electrical Energy Generated (MWH)	157,552	157,552	8,873,852
19. Unit Service Factor	66.9%	23.1%	64.4%
20. Unit Availability Factor	66.9%	23.1%	64.4%
21. Unit Capacity Factor (Using MDC Net)	41.1%	14.2%	47.2%
22. Unit Capacity Factor (Using DER Net)	39.4%	13.6%	45.2%
23. Unit Forced Outage Rate	33.1%	76.9%	24.5%

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

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MONTH March, 1979

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	0	17	311
2	0	18	378
3	0	19	441
4	0	20	304
5	0	21	404
6	0	22	452
7	0	23	468
8	0	24	400
9	0	25	442
10	13	26	483
11	66	27	490
12	65	28	484
13	61	29	509
14	62	30	478
15	61	31	0
16	185		

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.

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UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH March, 1979

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No.	Date	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	Licensee Event Report #	System Code[4]	Component Code[5]	Cause & Corrective Action to Prevent Recurrence
1	780617	F	223.5	A	3	78-030 78-031	CB	PIPEXX	Continuation of previous shutdown in which the recirculation system inlet nozzle safe ends were replaced. Start up was delayed while a flow restriction was removed from the N2B riser (See LER 79-001).
2	790320	S	0	A	4				Power reduction to complete repairs to "B" reactor feed pump
3	790331	F	22.6	A	1	Pending	CG	PIPEXX	Shutdown to repair RWCU system isolation valve and to replace a section of RWCU system pipe

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

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REFUELING INFORMATION

1. Name of facility.
   A. Duane Arnold Energy Center

2. Scheduled date for next refueling shutdown.
   A. February 9, 1980

3. Scheduled date for restart following refueling.
   A. May 3, 1980

4. Will refueling or resumption of operation thereafter require a technical specification change or other license amendment?

   A. MCPR and MAPLHGR operating limits as derived from transient and accident analyses.

5. Scheduled date(s) for submitting proposed licensing action and supporting information.

   A. Unknown.

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. The reload will consist of up to 92 8 x 8 2 water rod bundles.

7. The number of fuel assemblies (a) in the core and (b) in the spent fuel storage pool.

   A. a) 368 b) 276

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

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NARRATIVE SUMMARY OF OPERATING EXPERIENCES

3-1 At the beginning of the report period the reactor was in the cold shutdown condition with reactor vessel and containment reassembly in progress. The reactor vessel head stud tensioning was completed and the insulation head installed. The RHR pumps were secured and the A and B recirculation pumps were started. The drywell head was installed and bolt tensioning was begun.

3-2 Tensioning of the drywell head bolts was completed. The reactor cavity shield plugs were installed.

3-3 The "A" reactor water cleanup system pump was placed in service.

3-5 Preparations for plant startup were begun.

3-6 Plant start up was begun. The reactor was made critical. The circulating water system was placed in service. "A" reactor feed pump was placed in service.

3-6 During a design review of containment purging requirements and controls it was determined that containment purge valves CVs 4300, 4301, 4302, 4303, 4306, 4307 and 4308 were not designed to close from the full open position against the differential pressure resulting from a design basis LOCA.

RO Report 79-2

3-7 Rod scram time testing was begun. Reactor was at hydrostatic test pressure and was manually scrammed from less than 5% power at 1424 hours.

3-8 The plant was placed in the cold shutdown condition and the recirculation pumps were secured.

3-9 Plant startup was begun. Both recirculation pumps were started. The reactor was made critical at 0350 hours.

3-9 During daily surveillance testing, it was determined the reactor building stack flow monitors for "A" and "C" stacks were not functioning properly.

ETSV Report 79-1

3-10 The mode switch was placed in run and the main turbine was rolled. The unit was placed on the line at 0732 hours thus ending the recirculation system safe end repalcement outage. Reactor power was increased to approximately 20%.

3-11 During plant startup the suppression chamber oxygen concentration was not reduced to less than 4% within 24 hours of placing the mode switch in run.

RO Report 79-3

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3-11 During plant startup a 1.3 PSID drywell to suppression chamber differential was not established within 24 hours of placing the mode switch in run.

RO Report 79-4

3-13 Control rod scram time testing was completed.

3-16 A reactor power increase was begun at 0056 hours.

3-17 The desired control rod pattern was set. A fuel preconditioning ramp was begun.

3-19 The plant was at 483 MWe. A power decrease was begun in order to complete repairs to the "B" reactor feed pump.

3-20 A control rod pattern change was made. The "B" RFP was placed back in service and a power increase was begun. A fuel preconditioning ramp was begun.

3-21 During surveillance testing, emergency service water strainers 1S-89A and 1S-89B became plugged causing both emergency service water systems to become inoperable.

RO Report 79-5

3-21 During normal operation drywell equipment drain sump integrator was found to be not working properly.

RO Report pending

3-23 The plant was at 507 MWe. A power decrease was begun to do control rod exercise.

3-24 Control rod exercise was completed and a power increase was begun. Power was decreased to make control rod adjustments and a fuel preconditioning ramp was begun.

3-26 During testing RWCU system isolation valve MOV 2700 did not close on an isolation signal due to contact misalignment in a logic relay.

RO Report 79-6

3-26 A pinhole leak was discovered in an elbow to pipe weld in an isolatable section of reactor water cleanup system line in the RWCU system heat exchanger room.

RO pending

3-27 The plant was at 524 MWe.

"A" ESW pump was taken out of service for maintenance.

3-28 Following a RWCU system isolation, isolation valve MOV 2700 could not be opened. The RWCU system was therefore inoperable until MOV 2700 could be repaired.

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3-29 The plant was at 546 MWe.

3-30 A load decrease was begun in preparation for a plant outage to repair MOV 2700 and to replace a section of RWCU system pipe found leaking on 3-26-79.

3-31 The unit was removed from the line at 0125 hours and the reactor was shutdown by 0340 hours. Both recirc pumps were secured at 0800 hours. The reactor was in the cold shutdown condition at 0915 hours.

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MAJOR SAFETY RELATED MAINTENANCE

DATE	SYSTEM	COMPONENT	DESCRIPTION
3-1-79	Reactor Protection	TIS 4444, TIS 4445 and TIS 4446	Replaced two capacitors in the power supply for each switch.
3-2-79	Reactor Protection	TIS 4443	Replaced two capacitors in the switch power supply.
3-3-79	RHR	PI-1947	Replaced meter
3-3-79	Neutron Monitoring	LPRM 32-25C	Replaced cable connector
3-3-79	Fuel Handling	Refuel bridge grapple	Replaced grapple pneumatic hoses.
3-3-79	Drywell radiation monitors	D/W monitors, rack 1C-219A	Pulled heavier cable to 1C-219A and replaced two solenoids on sample point valves.
3-5-79	Primary containment	D/W head and shield plugs	D/W head and shield plugs were removed and reinstalled.
3-6-79	HPCI	1S-201	HPCI turbine reversing chambers and retaining bolts were replaced.
3-6-79	Neutron monitoring	IRM B	Replaced input relay.
3-6-79	Containment Atmosphere Control	RR 4379A	Replaced all three amp circuit boards with new type
3-8-79	Drywell radiation monitors	SV 8115A, SV 8102A	Replaced solenoid coil
3-8-79	Nuclear boiler	Vessel head, dryer and separator	Components were removed and reinstalled.
3-8-79	Control rod drive-electrical	Rod 34-11	Replaced position indicating probe.
3-9-79	Control rod drive-electrical	Rod 26-23	Replaced position indicating probe.
3-13-79	Control rod drive-electrical	Rod 22-31	Replaced scram solenoid valves.

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MAJOR SAFETY RELATED MAINTENANCE

DATE	SYSTEM	COMPONENT	DESCRIPTION
3-14-79	Primary Containment H & V	ΔP Compressors, CV 4307	Adjusted CV 4307 seal system, clean compressor suction filters
3-16-79	Neutron monitoring	Rod block monitor channel A	Replaced resistor in relay mondule
3-21-79	ESW	1S-89A and 1S-89B	Cleaned strainers
3-21-79	Drywell radiation monitors	RM 4379A	Replaced power supply circuit breaker
3-22-79	Radwaste sumps	TIS 3724, Drywell equipment drain sump	Replaced logic relay.
3-26-79	Reactor Water Cleanup	Relay A71-K26	Straightened relay contacts
3-29-79	RHR Service water	1S-90B	Replaced strainer
3-29-79	ESW	1S-89B	Cleaned strainer
3-30-79	ESW	1P-99A	Inspected pump and replaced shaft bearings, shaft sleeve, head shaft and bowl assembly.
3-31-79	Reactor Protection	PS-4549	Replaced micro switch.