

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH March 1985

DOCKET NO. 50-219
 UNIT NAME Oyster Creek
 DATE 4-2-85
 COMPLETED BY R. Baran
 TELEPHONE 971-4640

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
36	2-2-85	F	785.6	A	Z	NA	ZZ	ZZZZZZ	<p>Unit shutdown to correct a potential design deficiency with Core Spray System booster pump logic and to effect repairs to the EMRVs.</p> <p>NOTE: Generator on the Line 9:02 p.m. on March 4. The generator was off the line for 24.9 hours from March 17 to 18 due to a condenser tube leak with the reactor critical in hot standby (IRM Range 9 power level).</p>

8506100223 850331
 PDR ADOCK 05000219
 R PDR

1
 F: Forced
 S: Scheduled

2
 Reason:
 A-Equipment Failure (Explain)
 B-Maintenance of 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

1024
 (9/77) 4/1

At the beginning of the report period, the plant was shut down and in the process of machining pipe inlet flange surfaces for 'A', 'C', 'D' and 'E' electromatic relief valves (EMRV's). Details of EMRV repairs and additional corrective maintenance accomplished during the shutdown were provided in last month's report.

Following completion of repairs and surveillances, a reactor start-up commenced at 1111 hours on March 4; criticality was achieved at 1350 hours. Drywell inspections were conducted at 500 and 1000 psig; no EMRV flange leaks were identified. Scram times were recorded for nine (9) CRDs and the generator was put "on-line" at 2102 hours on March 5. Power output was maintained at 100 MWe for approximately 20 hours for containment inerting. On March 6 the reactor mode switch was placed in "run" and power was increased to approximately 50% thermal power, with the generator producing 297 MWe. Power was held at that level to establish xenon equilibrium to accommodate core flux profile checks.

On March 8, power was reduced to less than 40% for repairs to a steam leak on the anticipatory scram bypass switch sensing line. The only means of isolating the leak, while operating, was to close the switch isolation valve and inject it with sealant. The function of the switch, which will remain defeated until the next outage, is to bypass anticipated scrams (turbine trip and load rejection) at power levels less than 40%. In its present configuration, anticipatory scrams are not bypassed. In the interim, any turbine trip at a power level less than 40% will result in a reactor scram.

Power was increased to 510 MWe late in the day on March 8, at which time second stage reheaters were placed in-service. During the period March 9 - 11, power was gradually increased to 650 MWe. On March 11, power was decreased to 635 MWe to accommodate control rod pattern adjustments.

Late on the evening of March 11, problems were experienced with pumps associated with the Drywell Equipment Drain Tank (DWEDT). With a drywell identified leak rate in excess of 7 gpm, the pumps became vapor-bound causing the DWEDT to overflow into No. 1-8 sump. Water routed to No. 1-8 sump is recorded as unidentified leakage and has a Tech Spec limit of 5.0 gpm. When the DWEDT pumps became vapor-bound, the unidentified leak rate exceeded the Tech Spec limit, necessitating a plant shutdown. Plant shutdown commenced at 0052 hours on March 12. At approximately 200 MWe, suction and discharge valves associated with the recirculation pumps were backseated; the unidentified leak rate decreased to less than 1 gpm and the shutdown was terminated.

Problems experienced with the DWEDT have been determined to be the result of a modification performed during the last refueling outage. The modification involved relocation of the tank's heat exchanger/cooler from within the tank to the discharge of an associated pump. Cooling is provided by recycling the contents of the tank. It appears that the tank, with the new heat exchanger configuration, does not have adequate cooling capability to accommodate identified leakage in excess of 7 gpm. Tech Functions is evaluating options to resolve the problem.

Power was slowly increased to 608 MWe by the evening of March 12. A temporary decrease was required late the same day due to heavy grass accumulation in the intake canal, causing problems with the screens. The power decrease lasted approximately 1.5 hours.

Power increases at a rate of approximately 3 MWe/hr. commenced during the evening of March 13 and were interrupted because a core thermal parameter (MAPLHGR) approached the Tech Spec limit. Power was decreased to 589 MWe (86.7%) on the morning of March 14. Power was then gradually increased to 650 MWe late that day.

On March 16, power was reduced to 628 MWe because core (MAPLHGR) approached the Tech Spec limit. Power operation at the 650 MWe limit resumed later that evening.

A temporary load reduction of 7 MWe was required during the morning of March 17 to clear grass accumulated at No.'s 1 and 3 intake screens.

At 1030 hours on March 17, high conductivity alarms on 'A' north main condenser tubesheet and a subsequent alarm on 'A' north main condenser hotwell were caused by saltwater intrusion in 'A' north condenser. Repeated attempts were made to reduce leakage by backwashing condenser halves and then by isolating the 'A' north section with no apparent effect. A decision was made to remove the generator from service because of the inability to reduce conductivity and chloride levels by isolating the 'A' north condenser. The generator was taken off-line at 2044 hours, reactor power reduced to approximately 8% and mode switch placed in "start-up". Reactor pressure was reduced and maintained at 500 psig.

A significant leak was found in one (1) tube located in 'A' north condenser. The tube was plugged. On March 19 at 1314 hours, a gradual increase in reactor power commenced. The mode switch was placed in "run" and the generator placed in-service at 2106 hours producing 200 MWe. Power was increased to 435 MWe following completion of core flux profile checks.

Power was held at this level pending replacement of condensate demineralizer resin and completion of repairs to 'A' feedpump discharge check valve (hinge pin gasket leak).

Replacement of resin in No.'s 2 and 3 condensate demineralizers was completed during the period March 21-22. These beds were the ones most affected by saltwater intrusion. Remaining demineralizer resin will be replaced following resumption of full-power operation.

Initial attempts to correct the feedwater check valve leak by tightening the hinge pin flange bolts were unsuccessful. Repairs required 'A' feedwater string to be isolated and drained. Repair activities were delayed until March 20, because of isolation valve seat leakage which precluded draining the system. Repairs were completed on March 21 and the feedwater string was filled, vented and returned to service.

Power was increased to 590 MWe on March 21 and to 644 MWe the next day.

Power was reduced because of a power shape monitoring system (PSMS) computer hardware malfunction. Until the problem was corrected, power was maintained at approximately 630 MWe to ensure compliance with Technical Specifications relative to core thermal parameters. The malfunction was traced to a faulty control board which was replaced on March 29. Power was increased to 655 MWe and maintained at that level until April 1.

Corrective Maintenance performed during the report period included:

- o Repaired main and pilot valve seat leaks on 'C' and 'D' EMRV's.
- o Injected additional sealant into feedwater isolation valve V-2-11 and second stage steam reheater valve V-1-34. Thermal cycles (power changes) may disturb sealant previously injected, requiring additional injections.
- o Replaced intercooler and cooling water solenoid valve for No. 2 air compressor.
- o Replaced test valves V-9-30 and V-9-31 on fire diesels. Repaired oil leak on No. 1 fire diesel.
- o On the morning of March 15, New Radwaste feeder breaker tripped due to a ground fault on the heater elements to SL-T-14. Power was restored the same day. Necessary repairs are in progress.
- o Calibrated main steam line temperature sensors.
- o Increased reactor safety valve acoustic monitor sensitivity to compensate for failed thermocouple (back-up monitor) associated with reactor safety valves NR28A and NR28N.

- o Disabled (lifted leads) drywell equipment drain tank pump alternator. Logic circuitry malfunction allows No. 2 pump to operate continuously. In this configuration, No. 2 pump will operate only when a high-high tank level exists.
- o Repaired oil leak on Core Spray booster pump NZ03D.
- o 'C' 4160 Volt switchgear room fan was repaired and returned to service. M&C is investigating cause of a continuous Control Room alarm associated with the fan.
- o Repaired loose electrical connection in No. 1 TIP machine retraction circuitry after unit failed to retract.
- o Machined collector rings on No. 1 circulating water pump.
- o Replaced core spray system I fill pump. An investigation is in progress to determine failure mechanism.
- o Returned Makeup System mixed bed demineralizer to service following replacement of retention screen and repair of acid line leak.
- o Completed replacement of torque switches for shutdown cooling valves V-17-55, 56 and 57, satisfying a March 31 environmental qualification (EQ) commitment.

Investigations/repairs in progress at the end of the report period included:

- o Bearing replacement on Reactor Building Fan No. EF 1-6 was completed on March 29. Repairs to Fan No. EF 1-5 are in progress. Additional repairs to fan dampers are pending receipt of stiffener material.
- o A manway gasket leak on No. 2 flash tank has developed. Repairs are in progress.
- o Intake screen No. 6 remains out-of-service due to mechanical binding. Lack of available work space requires overhaul of No. 2 screen to be completed prior to commencing work on No. 6 unit.
- o Continued testing of new chemistry lab equipment.
- o A Plant Engineering Work Request was submitted to determine if a TIP can be retracted with its associated indexer ready-light burned out. The ready-light is wired in series with the logic circuit. The ready-light indicates proper indexer alignment to the selected guide tube.

- o Newly installed Control Room recorders are experiencing recurring chart drive and printing problems. The problems appear to be related to elevated temperatures inside Control Room panels. Plant Engineering will investigate and recommend corrective measures.
- o Inspection/repair of 1-1 TBCCW heat exchanger.
- o 'C' feedwater pump motor inner bearing temperatures are higher than normal. Plant Engineering is evaluating temperature data.
- o The failure of No. 1 demineralizer water pump motor is being investigated by Plant Engineering. Inspections indicate failure was a result of excessive vibration. Installation of replacement motor is complete. Replacement of pump mounting bolts is in progress.
- o IRM channels continue to respond erratically. Periodic spiking occurred following plant start-up. The problem will be addressed during the next shutdown.

NOTE NO. 1: Gross generator output for March 1985 was 325,830 MWHs.

NOTE NO. 2: At the end of the report period, drywell unidentified leak rate was steady at approximately 0.8 gpm and identified leak rate holding at 4.2 gpm.

The following Licensee Event Reports were submitted during the month of March 1985:

Licensee Event Report 50-219/85-002 - On 2/2/85, 2 containment isolation valves in a single penetration were inoperable. During a planned shutdown, reactor water cleanup system isolation valve (V-16-1) was required to be taken off its backseat. To prevent full closure of valve, an electrician manually tripped the breaker, causing the cleanup recirculation pump to trip, which in turn caused a cleanup system isolation on low flow. A second isolation valve V-16-14 failed to fully close on the system isolation signal resulting in 2 inoperable isolation valves in a single penetration. The valves were secured in the closed position.

Licensee Event Report 50-219/85-004 - The Power Shape Monitoring System (PSMS) is a new core monitoring system which is being used for the first time at Oyster Creek. During January 2-30, 1985, the Oyster Creek core was highly bottom peaked during high power/flow operation. During this period, no measured LPRM or TIP data feedback adjustments were made to the model. As a result, PSMS power distribution and thermal limits calculations were inadequately monitoring core conditions due to flux peaking. The bottom peaks violated APLHGR limits. Core thermal power was reduced and the control rod pattern was reconfigured to reduce power peaking.

Licensee Event Report 50-219/85-005 - During routine surveillance testing, pipe breakers sensors IB05A1, IB05B1, IB11A1, IB11A2, IB11B1 and IB11B2 for both isolation condensers steam and condensate lines, tripped at values greater than specified in Technical Specifications. One sensor had a defective switch actuating cam, which was replaced, and the others failed to trip due to instrument drift.

Licensee Event Report 50-219/85-006 - On 2/24/85, an automatic reactor scram occurred due to a low reactor water level during plant startup. While reactor power was being reduced to prepare for a drywell inspection, rod movement caused a level, power, and pressure transient. This led to a scram on low level despite operator attempts to stabilize the transient. In response to the scram, all controls rods fully inserted, all plant systems responded as expected and CR operators brought the plant to a shutdown condition.

REFUELING INFORMATION - March, 1985

Name of Facility: Oyster Creek Station #1

Scheduled date for next refueling shutdown: November 30, 1985

Scheduled date for restart following refueling: June 1, 1986

Will refueling or resumption of operation thereafter require a Technical Specification change or other license amendment?

Yes

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

June, 1985

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:

1. General Electric Fuel Assemblies - fuel design and performance analysis methods have been approved by the NRC. New operating procedures, if necessary, will be submitted at a later date.
2. Exxon Fuel Assemblies - no major changes have been made nor are there any anticipated.

The number of fuel assemblies (a) in the core = 560
(b) in the spent fuel storage pool = 1078

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:

Present licensed capacity: 2,600

The projected date of the last refueling that can be discharged to the spent fuel pool assuming the present licensed capacity:

Reracking of the fuel pool is in progress. Four out of ten (10) racks have been installed to date. When reracking is completed, discharge capacity to the spent fuel pool will be available until 1990 refueling outage.

AVERAGE DAILY POWER LEVEL
NET MWe

DOCKET #50-219
UNIT.Oyster Creek #1
REPORT DATEAPRIL 09, 1985
COMPILED BYWILLIAM J. EMRICH, JR.
TELEPHONE #609-971-4637

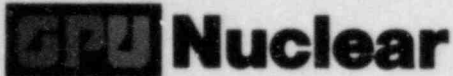
MONTH MARCH, 1985

<u>DAY</u>	<u>MW</u>	<u>DAY</u>	<u>MW</u>
1.	0	16.	617
2.	0	17.	428
3.	0	18.	10
4.	0	19.	388
5.	0	20.	386
6.	102	21.	394
7.	271	22.	604
8.	315	23.	607
9.	535	24.	623
10.	589	25.	625
11.	628	26.	618
12.	381	27.	613
13.	581	28.	607
14.	603	29.	618
15.	626	30.	628
		31.	630

OPERATING DATA REPORT
OPERATING STATUS

1. DOCKET: 50-219
2. REPORTING PERIOD: March 1985
3. UTILITY CONTACT: JOSEPH R. MOLNAR 609-971-4699
4. LICENSED THERMAL POWER (Mwt): 1930
5. NAMEPLATE RATING (GROSS MWe): $687.5 \times 0.8 = 550$
6. DESIGN ELECTRICAL RATING (NET MWe): 650
7. MAXIMUM DEPENDABLE CAPACITY (GROSS MWe): 650
8. MAXIMUM DEPENDABLE CAPACITY (NET MWe): 620
9. IF CHANGES OCCUR ABOVE SINCE LAST REPORT, GIVE REASONS: NONE
10. POWER LEVEL TO WHICH RESTRICTED, IF ANY (NET MWe): N/A
11. REASON FOR RESTRICTION, IF ANY: NONE

	<u>MONTH</u>	<u>YEAR</u>	<u>CUMULATIVE</u>
12. REPORT PERIOD HRS	744.0	2160.0	133873.0
13. HOURS RX CRITICAL	658.2	1501.0	87128.9
14. RX RESERVE SHTDWN HRS	0.0	0.0	469.7
15. HRS GENERATOR ON-LINE	627.0	1399.3	84936.0
16. UT RESERVE SHTDWN HRS	0.0	0.0	2.7
17. GROSS THERM ENER (MWH)	936500	2380940	139643269
18. GROSS ELEC ENER (MWH)	325830	827140	47210135
19. NET ELEC ENER (MWH)	313240	792045	45354610
20. UT SERVICE FACTOR	84.3	64.8	63.4
21. UT AVAIL FACTOR	84.3	64.8	63.4
22. UT CAP FACTOR (MDC NET)	67.9	59.1	54.6
23. UT CAP FACTOR (DER NET)	64.8	56.4	52.1
24. UT FORCED OUTAGE RATE	15.7	33.0	10.2
25. FORCED OUTAGE HRS	85.8	690.2	9641.3
26. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, DURATION):	N/A		
27. IF CURRENTLY SHUTDOWN ESTIMATED STARTUP TIME:	N/A		



GPU Nuclear Corporation

Post Office Box 388
Route 9 South
Forked River, New Jersey 08731-0388
609 971-4000
Writer's Direct Dial Number:

April 15, 1985

Director
Office of Management Information
U.S. Nuclear Regulatory Commission
Washington, DC 20555

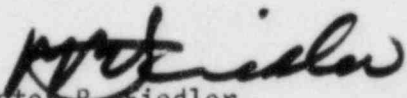
Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Monthly Operating Report

In accordance with the Oyster Creek Nuclear Generating Station Operating License No. DPR-16, Appendix A, Section 6.9.1.C, enclosed are two (2) copies of the Monthly Operating Data (gray book information) for the Oyster Creek Nuclear Generating Station.

If you should have any questions, please contact Mr. Drew Holland at (609) 971-4643.

Very truly yours,


Peter B. Fiedler
Vice President and Director
Oyster Creek

PBF:KB:dsm(0170A)
Enclosures

cc: Director (10)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dr. Thomas E. Murley, Administrator
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
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NRC Resident Inspector
Oyster Creek Nuclear Generating Station
Forked River, NJ 08731

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