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April 14, 1994
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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Three Mile Island Nuclear Station, Unit I (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
Monthly Operating Report for March 1994

Enclosed are two copies of the March 1994 Monthly Operating Report for Three Mile Island Nuclear Station, Unit 1.

Sincerely,

T. G. Broughton
Vice President and Director, TMI

WGH

Attachments
cc: Administrator, Region I
TMI Senior Resident Inspector

IE24

OPERATIONS SUMMARY
March 1994

The plant entered the month of March operating at approximately 100% power. On March 7, 1994 power was reduced to approximately 75% due to Pressurizer Spray Valve, RC-V-1, body-to-bonnet gasket leakage. RC-V-1 was isolated on March 7 and power was escalated to approximately 82.5% on March 10, 1994. Attempts to stop the RC-V-1 leakage failed. The unit was taken off-line on March 17 to begin an unscheduled outage repair the spray valved. It was maintained in a hot shutdown condition. The outage was extended when several control rod drop times exceeded the Technical Specification 1.66 second maximum trip insertion time from full to 3/4 insertion. The control rod insertion trip time test was performed to satisfy an internal commitment. All rods met the acceptance criterion after repeated exercise. The unit was restarted and returned to 100% power on March 26 following an agreement with the NRC to shutdown and measure control rod drop times within three months of startup. The unit finished out the month operating at full power and the electrical output averaged approximately 511 MWe during the period.

MAJOR SAFETY RELATED MAINTENANCE

The following is a summary of major safety related maintenance items and outage related items accomplished during the month.

Pressurizer Spray Valve RC-V-1

On March 6, a body-to-bonnet gasket leak was observed on Pressurizer Spray Valve, RC-V-1, via a remote camera. An attempt to re-torque the bonnet studs to stop the leakage was made by a maintenance team and was unsuccessful. Plant power was then reduced to 75% and RC-V-1 was isolated. During another attempt to re-torque, one of the eight bonnet studs was found broken. Further inspection revealed that three additional studs had severe thread degradation. Plant power was escalated to approximately 82% while plant shutdown procedures were changed to allow shutdown with RC-V-1 isolated. On March 17 the plant began an unscheduled outage to repair RC-V-1 and to inspect additional RCS pressure boundary valve bonnet studs. Repairs to RC-V-1 included removal of the bonnet to allow cleaning the gasket surfaces, replacement of the bonnet gasket, reinstallation of the bonnet with new bonnet studs and nuts.

The bonnet to body studs on an additional 76 valves were inspected. One additional valve, MU-V-113, the Letdown Isolation Valve, was found to have 3 of 8 bonnet studs degraded. The degraded studs and two additional studs were replaced.

RC-V-1 Outage Repair Work Items

Maintenance on the following equipment was performed during the RC-V-1 outage:

- verified CRDM stator positions,
- measured Reactor Coolant Pump Power Monitor bistable resistance and burnished contacts on RCP-M-1A/B/C/D and RCP-M-2A/B/C/D,
- replaced Reactor Coolant Pump Power Monitor relays on RCP-M-1A/B/D and RCP-M-2A/B/C/D,
- replaced Tave Temperature Indicator RC12TAI,
- checked ICS resistor input of the Tave integral and replaced the summing resistors on module 3-6-3,
- checked ICS resistors at the input of the ratio integral for change in resistance values and replaced the summing resistors on module 8-6-3,
- performed fuse size verification on FW-V-5B, MS-V-8A/B, MU-V-1B, NR-V-1A, RR-V-1A/B, DO-P-1A/B, and on the Pressurizer Heaters,
- replaced the oscillator board on the 1C Inverter,
- replaced ESAS Actuation Relays 62-1/RC1A, 62-2/RC1A, and 62-3/RC1A,
- performed Control Rod Drop Testing.

Diesel Fire Pump FS-P-3

River Water Diesel Driven Fire Pump FS-P-3 was removed from service because of corroded relay sockets. Twenty three new relay sockets were installed. Test results were satisfactory and FS-P-3 returned to service.

Miscellaneous Waste Evaporator Distillate Pump WDL-P-21

Miscellaneous Waste Evaporator Distillate Pump WDL-P-21 was removed from service because of a ground in the motor. The pump and motor unit was removed and unit was installed. Post maintenance testing was satisfactory and WDL-P-21 returned to service.

Radiation Monitor Pump RM-A-9

Radiation Monitor RM-A-9 sample pump was removed from service. After inspection revealed that the pump was seized, it was removed and rebuilt with a new rotor and bearings before being reinstalled. Post maintenance testing of the pump was satisfactory and RM-A-9 was returned to service.

Reactor Coolant Sample Valve CA-V-110

Reactor Coolant Sample Valve CA-V-110 was found to be clogged. A new disc stack was installed along with new o-rings and thrust washers. CA-V-110 was then returned to service.

SBO Diesel Jacket Coolant Pump EG-P-16

Station Blackout Diesel Jacket Coolant Standby pump EG-P-16 was replaced with a spare pump and motor assembly because of noisy motor bearings. Post maintenance test results were satisfactory and EG-P-16 returned to service.

OPERATING DATA REPORT

DOCKET NO. 50-289
DATE April 14, 1994
COMPLETED BY W G HEYSEK
TELEPHONE (717) 948-8191

OPERATING STATUS

1. UNIT NAME: THREE MILE ISLAND UNIT 1
2. REPORTING PERIOD: MARCH 1994
3. LICENSED THERMAL POWER: 2568
4. NAMEPLATE RATING (GROSS MWe): 871
5. DESIGN ELECTRICAL RATING (NET MWe): 819
6. MAXIMUM DEPENDABLE CAPACITY (GROSS MWe): 834
7. MAXIMUM DEPENDABLE CAPACITY (NET MWe): 786

NOTES:

8. IF CHANGES OCCUR IN (ITEMS 3-7) 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	CUMMULATIVE
11.	HOURS IN REPORTING PERIOD	(HRS)	744.0	2160.0	171625.0
12.	NUMBER OF HOURS REACTOR WAS CRITICAL	(HRS)	532.2	1948.2	95174.4
13.	REACTOR RESERVE SHUTDOWN HOURS	(HRS)	0.0	0.0	2283.8
14.	HOURS GENERATOR ON-LINE	(HRS)	528.9	1944.9	94049.6
15.	UNIT RESERVE SHUTDOWN HOURS	(HRS)	0.0	0.0	0.0
16.	GROSS THERMAL ENERGY GENERATED	(MWH)	1225244	4857834	229724486
17.	GROSS ELECTRICAL ENERGY GENERATED	(MWH)	414446	1638172	77324955
18.	NET ELECTRICAL ENERGY GENERATED	(MWH)	380266	1535471	72599990
19.	UNIT SERVICE FACTOR	(%)	71.1	90.0	54.8
20.	UNIT AVAILABILITY FACTOR	(%)	71.1	90.0	54.8
21.	UNIT CAPACITY FACTOR	(USING MDC NET)	65.0	90.4	53.8
22.	UNIT CAPACITY FACTOR	(USING DER NET)	62.4	86.8	51.7
23.	UNIT FORCED OUTAGE RATE	(%)	0.0	0.0	39.2
	UNIT FORCED OUTAGE HOURS	(HRS)	0.0	0.0	60759.4

24. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, & DURATION OF EACH):

▸ Scheduled - June 1, 1994 - 1-15 days - CRD drop time testing & possible maintenance

25. IF SHUT DOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP: _____

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-289
UNIT TMI-1
DATE April 14, 1994
COMPLETED BY W G HEYSEK
TELEPHONE (717) 948-8191

MONTH: MARCH

DAY	AVERAGE DAILY POWER LEVEL (MWe-NET)	DAY	AVERAGE DAILY POWER LEVEL (MWe-NET)
1	814	17	454
2	815	18	-40
3	815	19	-39
4	815	20	-39
5	814	21	-41
6	817	22	-39
7	749	23	-41
8	600	24	-44
9	615	25	-45
10	628	26	108
11	677	27	817
12	677	28	816
13	676	29	817
14	672	30	817
15	671	31	817
16	670		

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH MARCH 1994

DOCKET NO. 50-289
UNIT NAME TMI-1
DATE April 14, 1994
COMPLETED BY W. G. Heysek
TELEPHONE (717) 948-8191

No.	Date	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	Licensee Event Report#	System Code "&"	Component Code "&"	Cause & Corrective Action to Prevent Recurrence
94-02	03-07-94	F	0	A	4	None	AB	FCV	Body-to-bonnet leakage on the pressurizer spray valve led to the isolation of the valve and a precautionary plant power reduction to 75-82% until shutting down for repairs.
94-03	03-17-94	F	215	A	1	94-001	AB	FCV	The plant was maintained in a hot shutdown condition for repair of the pressurizer spray valve. Future maintenance on this type valve will not allow reuse of the body-to-bonnet torque studs.
						94-002	AB	AA	During performance of a control rod insertion trip time test to satisfy an internal committment, 12 rods exceeded the allowed drop times. All rods met the acceptance criterion after exercise. Subsequent testing to be performed within three months.

1
F Forced
S Scheduled

2
Reason
A-Equipment Failure (Explain)
B-Maintenance or Test
C-Refueling
D-Regulatory Restriction
E-Operator Training & Licensing 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 1 same source

6 Actually used exhibits F & II NUREG 0161

REFUELING INFORMATION REQUEST

1. Name of Facility: **Three Mile Island Nuclear Station, Unit 1**

2. Scheduled date for next refueling shutdown: **September 8, 1995**

3. Scheduled date for restart following current refueling: **NA**

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: **NA**

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) GPUN will continue to improve the review process by submittal of Technical Specification Change Requests (TSCR) concerning the reload-related areas of fuel assembly reconstitution and removal of cycle-dependent core limits to the Core Operating Limits Report (COLR).

      1) The B&W Owners Group Topical Report BAW-2149, "Evaluation of Replacement Rods in BWFC Fuel Assemblies", December 1991, was approved in April 1993. This report justifies the use of up to ten replacement stainless steel rods located anywhere in a single fuel assembly based on currently-approved methodology. BAW-2149 provides the basis for reconstitution repairs of BWFC Mark B assemblies to be done under the provisions of 10 CFR 50.59 (i.e., the repair does not represent an unreviewed safety question). TSCR 232 was submitted in August 1993 in response to Generic Letter 90-02, Supplement 1 referencing BAW-2149 and approved by Amendment 183 on March 15, 1994.

      2) TSCR 234 was submitted in November 1993 consistent with GL 88-16 and the BAW-10179P "Safety Criteria and Methodology for Acceptable Cycle Reload Analyses" Safety Evaluation (March 16, 1993) for the removal of cycle-specific protective and maximum allowable setpoint limits for axial power imbalance and other applicable cycle-dependent limits.

7. The number of fuel assemblies (a) in the core, and (b) in the spent fuel storage pool: (a) 177 (b) 601

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:

   The present licensed capacity is 1990. Phase 1 of the reracking project to increase spent fuel pool storage capacity permits storage of 1342 assemblies. Upon completion of Phase II of the reracking project, the full licensed capacity will be attained.

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

Completion of Phase I of the reracking project permits full core off load (177 fuel assemblies) through the end of Cycle 14 and on completion of the rerack project full core off-load is assured through the end of the current operating license and beyond.