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March 12, 1993  
C311-93-2034

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 February 1993

Enclosed are two copies of the February 1993 Monthly Operating Report for  
Three Mile Island Nuclear Station, Unit 1.

Sincerely,

T. G. Broughton  
Vice President and Director, TMI-1

WGH

Attachments

cc: Administrator, Region I  
TMI Senior Resident Inspector

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R PDR

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GPU Nuclear Corporation is a subsidiary of General Public Utilities Corporation

## OPERATIONS SUMMARY

### February 1993

The plant entered the month operating at 100% power producing 860 MWe. It continued full power operation for the entire month of February.

On February 7 at 7:05 a.m., a site area emergency was declared when an intruder drove through the North Gate, then crashed his station wagon through a gate at the Unit 1 Protected Area and into a roll-up door on the turbine building's north wall. The intruder fled his vehicle and headed further into the turbine building. TMI Site Protection officers were assisted in response to the event by the Pennsylvania State Police, the Federal Bureau of Investigation, the U.S. Army Explosive Ordnance Disposal and the Middletown Police. At about 11:00 a.m., the intruder was found hiding beneath condenser piping in the sub basement of the turbine building. He was apprehended by Site Protection officers and turned over to the State Police. The site area emergency was terminated at 4:35 p.m., after plant operators confirmed that the plant was not damaged and Site Protection and State Police confirmed that there were no other intruders on site.

The plant continued to operate, without incident, at full power during the emergency. Operation was continued because the plant's vital areas, protected by key-card locks, were confirmed to be secure. Plant Emergency Procedures recommend that plant stability be maintained to allow better plant condition monitoring. Additionally, it was not prudent from a personnel safety aspect to dispatch plant operators into the turbine building to support a power reduction, a normal shutdown or a reactor trip.

### MAJOR SAFETY RELATED MAINTENANCE

During February, the following major safety related maintenance was performed:

#### Concentrated Waste Storage Tank WDL-T-6A

The installation of prefabricated, short, flanged sections of Concentrated Waste Storage Tank WDL-P-6A outlet piping was completed in February. The shorter, flanged sections are being used to facilitate future cleaning activities.

#### Pressurizer Water Sample Valve CA-V-3

Pressurizer Water Sample Valve, CA-V-3, was removed from service in February. After a packing adjustment was made, the motor load was found to be above acceptable levels. The packing gland nuts were relaxed but no significant decrease in the motor load resulted. The limitorque operator was removed from

the valve and disassembled for inspection. No abnormalities were found during the inspection and the operator was rebuilt using different gears to obtain the gear ratio specified by Plant Engineering. The limit torque operator will be reinstalled in March. Testing also revealed that the valve stem torque was high. The cause for the high stem torque will be determined and corrected during the 10R outage.

#### Spent Fuel Cooling Pump SF-P-1A

Thermography inspections revealed a 'Hot Spot' in the 'A' Spent Fuel Cooling Pump (SF-P-1A) breaker cubicle. A stripped bolt found on the 'C' phase connection, thought to be the cause, was replaced. Follow-up thermography will be performed during the next scheduled Preventative Maintenance cycle to verify that replacing the bolt corrected the condition.

#### Security Event Repairs

Damage caused when the intruder rammed the protected area Gate 1 and the rollup door on the north wall of the Turbine Building on February 7, 1993, was temporarily repaired by installation of fencing and concrete barriers at the location of the destroyed gate and erection of a plywood wall at the Turbine Building rollup door opening. A new gate was ordered, received and installed completing permanent repairs to the security fence. Installation of a new Turbine Building rollup door is in progress and work is expected to be completed during the first week of March.

# OPERATING DATA REPORT

## OPERATING STATUS

DOCKET NO. 50-289  
 DATE March 12, 1993  
 COMPLETED BY W G HEYSEK  
 TELEPHONE (717) 948-8191

1. UNIT NAME:	THREE MILE ISLAND UNIT 1	NOTES:
2. REPORTING PERIOD:	FEBRUARY 1993	
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	

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)	672.0	1416.0	162121.0
12. NUMBER OF HOURS REACTOR WAS CRITICAL	(HRS)	672.0	1416.0	86892.8
13. REACTOR RESERVE SHUTDOWN HOURS	(HRS)	0.0	0.0	2283.8
14. HOURS GENERATOR ON-LINE	(HRS)	672.0	1416.0	85816.1
15. UNIT RESERVE SHUTDOWN HOURS	(HRS)	0.0	0.0	0.0
16. GROSS THERMAL ENERGY GENERATED	(MWH)	1724463	3630741	209677445
17. GROSS ELECTRICAL ENERGY GENERATED	(MWH)	582601	1227565	70572639
18. NET ELECTRICAL ENERGY GENERATED	(MWH)	550279	1159430	66261737
19. UNIT SERVICE FACTOR	(%)	100.0	100.0	52.9
20. UNIT AVAILABILITY FACTOR	(%)	100.0	100.0	52.9
21. UNIT CAPACITY FACTOR (USING MDC NET)		104.2	104.2	52.0
22. UNIT CAPACITY FACTOR (USING DER NET)		100.0	100.0	49.9
23. UNIT FORCED OUTAGE RATE	(%)	0.0	0.0	41.4
UNIT FORCED OUTAGE HOURS	(HRS)	0.0	0.0	60689.7
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: \_\_\_\_\_

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-289  
 UNIT TMI-1  
 DATE March 12, 1993  
 COMPLETED BY W G HEYSEK  
 TELEPHONE (717) 948-8191

MONTH: FEBRUARY

DAY AVERAGE DAILY POWER LEVEL  
 (MWe-NET)

1	820
2	820
3	816
4	818
5	816
6	821
7	822
8	819
9	823
10	818
11	817
12	820
13	819
14	820
15	820
16	819

DAY AVERAGE DAILY POWER LEVEL  
 (MWe-NET)

17	818
18	822
19	819
20	815
21	816
22	818
23	820
24	822
25	820
26	817
27	817
28	815
29	NA
30	NA
31	NA

# UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH February 1993

DOCKET NO. 50-289  
 UNIT NAME TMI-1  
 DATE March 12, 1993  
 COMPLETED BY W. G. Heysek  
 TELEPHONE (717) 948-8191

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 ' & '	Component Code ' & '	Cause & Corrective Action to Prevent Recurrence
						NONE			

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 10, 1993 (10R)
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? YES

In general, these will be:

- a) Use of urania-gadolinia fuel and B&W Fuel Corporation (BWFC) changes in core physics methods may require change to T.S. 6.9.5.2 which lists approved analytical methods references to support the Core Operating Limits Report values to include reference to BAW-10180, Rev. 1, NEMO. Use of the gadolinium integral burnable poison may also require changes to the Reactor Core fuel descriptions in T.S. 5.3.1.
  - b) Based on higher fuel loadings planned for Cycle 10 and beyond, it was previously reported that the borated water storage requirements of T.S. 3.2 would need to be increased. BWFC preliminary boron results indicate that no change is necessary.
5. Scheduled date(s) for submitting proposed licensing action and supporting information:
    - a) The TSCR submittal schedule for use of the urania-gadolinia fuel depended on completion of the USNRC review of the BAW-10180, Rev. 1 methods addressed in 4a above. Per recent USNRC letter (Thadani to Taylor (BWFC), January 29, 1993), NEMO, Rev. 1 acceptance for referencing has been completed. A GPUN TSCR for any necessary changes to T.S. 6.9.5.2 and T.S. 5.3.1 will be submitted by April 1993.
    - b) With reference to 4b above, final BWFC boron results are expected in March 1993. Based on that date, if changes are necessary, the GPUN TSCR would be submitted in April 1993.
  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) BWFC and GPUN are now performing the fuel cycle design for cycle 10, which is scheduled for startup in October 1993. This design incorporates reload fuel that contains urania-gadolinia. Use of this type of fuel may require changes to the plant Technical Specifications as noted in 4c above. These changes would need to be supported by approval of BWFC topical reports on reload design methods revisions that account for the Gd effects in the analyses; the NEMO physics code was noted in 5 above. Approval of BAW-10184P, GDTACO is also required to support fuel thermal



analysis. To ensure that no delays occur to reload analyses, fuel manufacturing and plant startup schedules, approval of these topicals was requested for April 1, 1993. In subsequent discussions, the USNRC committed to a completion date of May 1993 with review started early enough to identify any major concerns by March.

- b) TMI-1 will use the new Mark B9 fuel assembly in the Cycle 10 reload batch. This design is an upgrade of the Mark B8 assembly used in Cycles 8 and 9. The Mark B9 provides improved fuel thermal limits (LOCA, DNBR, CFM) and repair capabilities. The Mark B9 design meets current BWFC fuel design criteria and has been used previously at other B&W 177 FA plants.
  - c) BWFC has a licensing change under USNRC review for certification of the Siemens fuel assembly shipping container design for shipment of two BWFC Mark B fuel assemblies up to 5.0 wt/o  $U^{235}$ . This change is necessary to support the TMI-1 Cycle 10 fresh fuel receipt by reducing the number of fuel shipments and fuel handling activities. The risk of fuel damage is also minimized. Based on the 12/3/93 BWFC/NRC meeting on this issue, approval is expected by March 1993. Cycle 10 fuel shipments will start in June 1993.
  - d) GPUN is in the process of withdrawing TSCR No. 200 to modify the TMI-1 Technical Specifications to permit the substitution of Zr-4 or stainless steel replacement rods for failed fuel rods, in accordance with USNRC Generic Letter 90-02, dated February 1, 1990. Generic Letter 90-02, Supplement 1 was issued on July 31, 1992, to clarify limitations on the application of currently-approved analytical methods and withdraw and replace the model TS recommended by Generic Letter 90-02. The B&W Owners Group Core Performance Committee submitted Topical Report BAW-2149, "Evaluation of Replacement Rods in BWFC Fuel Assemblies" in December 1991 and responses to NRC reviewer questions on November 2, 1992 and January 12, 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. Completion of the NRC review is expected in the first quarter of 1993. Approval of BAW-2149 will provide the basis for reconstitution repairs of BWFC Mark B assemblies which may be done under the provisions of 10 CFR 50.59 (i.e., the repair does not represent an unreviewed safety question). A new TSCR will be submitted in response to Generic Letter 90-02, Supplement 1 referencing BAW-2149 upon approval. A TSCR review completion date consistent with the next TMI-1 refueling outage in September 1993 will be requested.
7. The number of fuel assemblies (a) in the core, and (b) in the spent fuel storage pool: (a) 177 (b) 521
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 I 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.