

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-289/84-35

Docket No. 50-289

License No. DPR-50 Priority -- Category C

Licensee: GPU Nuclear Corporation

Post Office Box 480

Middletown, Pennsylvania 17057

Facility Name: Three Mile Island Nuclear Station, Unit 1

Inspection At: Middletown, Pennsylvania

Inspection Conducted: November 7-9, 1984

Inspectors: J. R. White
J. R. White, Senior Radiation Specialist

12/6/84
date

Approved by: M. M. Shanbaky
M. M. Shanbaky, Chief
PWR Radiation Safety Section

12/10/84
date

Inspection Summary:

Inspection Conducted on November 7-9, 1984 (Report No. 50-289/84-35)

Areas Inspected: Routine, unannounced inspection of the licensee's actions and status relative to open items identified in previous inspections. The inspection involved 24 hours on-site by one region-based inspector.

Results: Of the eight items reviewed, five were verified as completed. No violations were identified.

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DETAILS

1. Persons Contacted

During the course of this inspection the following personnel were contacted or interviewed:_____

- *R. Knight, Licensing Engineer, TMI-1
- *J. Whitehead, Emergency Planner
- *G. Baker, Manager - Environmental Controls
- *B. Good, Radiological Programs Manager
- *J. Byrne, Manager, TMI-2 Licensing
- *J. Auwer, Licensing Engineer, TMI-2

*Denotes attendance at the Exit Interview on November 9, 1984.

Other members of the licensee's staff and GPU Nuclear Corporation were also contacted during this inspection.

2. Purpose

The purpose of this inspection was to verify the licensee's completion of various open items identified in previous inspections and to determine the status of those items yet to be completed.

3. Status of Previously Identified Items

- 3.1 (Open) Inspector Follow-up Item (289/83-20-03): Evaluation of the effect of a temperature increase on the response of the RM-L-10 turbine building sump radiation monitor.

Since the licensee has not yet qualified or quantified the effect of temperature on the monitoring device, efforts were initiated to review the operating procedure and reduce the alarm set point sufficiently to offset instrument abnormalities that may be due to sump temperature. The licensee committed to complete the action by December 15, 1984. Further, the licensee committed to collect and analyze sump temperature data for six months following plant start-up to verify that sump temperatures did not exceed the instrument's performance specifications. This item will remain open until sufficient information is available to conclude that the instrument will perform acceptably in the normal turbine sump environment.

- 3.2 (Open) Inspector Follow-up Item (289/84-03-01): Provide the capability to obtain an RCS sample under all accident conditions and modes of operation.

The licensee is in the process of completing system modification to permit sampling from the Decay Heat System. Modifications were expected to be completed by November 17, 1984, followed by pre-operational and start-up testing in the following six weeks. This item

will remain open until the start-up testing program for the modification has been successfully completed.

- 3.3 (Closed) Inspector Follow-up Item (289/84-03-02): Modify Containment Atmosphere Sampling (CAS) System to permit sampling after containment isolation; evaluate sample representativeness and make provisions to assure that temperature and pressure corrections are considered.

EPIP 1004.31, "Post Accident Atmospheric Sampling" has been revised to address design changes in the CAS System and includes consideration of temperature and pressure in the evaluation of sample results. The CAS system has been modified to enable the acquisition of a more reliable and representative sample. The licensee has verified system operability. Override capability is provided to enable sample acquisition if required following automatic containment isolation. This item is considered closed.

- 3.4 (Closed) Inspector Follow-up Item (289/84-03-05): Provide results of demonstration of chemical analysis capability for chloride, boron and pH using the intended post accident instrumentation and procedures.

The licensee's submittal dated February 29, 1984 provided the results of a demonstration of ability to analyze a post accident standard test matrix solution. While most chemical parameter results were acceptable, it was identified that the use of the Fluoroborate Specific Ion Electrode technique, Procedure CP-N1904.1, provided unacceptably high errors for boron concentrations greater than 500 ppm. In order to assure acceptable results, the licensee's program now relies on the Mannitol Boron technique, Procedure CP-N1904, for concentrations greater than 500 ppm. Procedure CP-N1901.1 is only used for concentrations less than 500 ppm boron.

Additionally, the licensee's Emergency Plan Implementing Procedure 1004.33, Revision 7, "Post Accident Sample Analysis", now addresses the analysis of fission gases stripped from the coolant sample and incorporates the information into the core damage estimation. TDR No. 494, Revision 2, "Post Accident Sampling Radiological Analysis", addresses the personnel exposure due to acquisition of the stripped gas sample.

This item is considered closed.

- 3.5 (Open) Inspector Follow-up Item (289/84-16-01): Test and balance Auxiliary and Fuel Handling Building Ventilation upon completion of system modifications.

System modifications are not expected to be completed until April 1, 1985. This item will remain open until test and balance data has been reviewed.

- 3.6 (Closed) Inspector Follow-up Item (289/84-16-02): Review process control procedure to assure that the requirements of 10 CFR 61.55 and 61.56 are sufficiently addressed.

It was verified that Procedures 1104-28A and 1104-28I are both being implemented and subject to audit by the quality assurance group. Quality Assurance Monitoring Reports Nos. SLS-0335-84, DMW-288-84, SJH-1015-84, DHW-308-84 and SCD-1254-84 were reviewed and substantiate that the requirements of 10 CFR 61.55 and 61.56 are being implemented in the process control program.

- 3.7 (Closed) Inspector Follow-up Item (289/84-16-03): Review licensee's response to IE Report 50-320/84-04 relative to ALARA effectiveness.

This item is closed with respect to Unit-1. The licensee's response will be evaluated relative to Unit-2 ALARA effectiveness.

- 3.8 (Closed) Inspector Follow-up Item (289/84-03-07): Develop procedures for the collection of representative plant effluent samples including provisions for handling and analyzing high dose rate samples.

In order to reduce dose effect on personnel, the licensee modified the existing MAP-5 system by not initially loading Channel #1 with charcoal and particulate filters. Following confirmation of the extent of activity from the fractional collectors (channels #2 and #3), it will be determined if Channel #1 may be used as the primary sample collector.

Applicable procedures, such as EPIP 1004.31 "Post Accident Atmospheric Sampling", and associated N1990 Chemistry procedures have been revised as necessary to accommodate the acquisition and analysis of the sample. Special sample geometrics have been established for counting equipment and the capability has been established for pulse pile-up rejection (PUR) circuits in the associated MCAs. The PUR circuit permits high count rate pulses to be resolved with correction to dead time, and minimal increase in the counting error. This item is considered closed.

4. Exit Interview

The inspectors met with the licensee's representative (denoted in section 1.0) at the conclusion of the inspection on November 9, 1984. The inspector summarized the purpose and scope of the inspection and identified findings as described in this report.

At no time during the inspection was written material provided to the licensee by the inspectors.