

U.S. NUCLEAR REGULATORY COMMISSION

DCS No.
50289-830518

Report No. 50-289/84-15
 Docket No. 50-289
 License No. DPR-50 Priority -- Category C
 Licensee: GPU Nuclear Corporation
P.O. Box 480
Middletown, Pennsylvania 17057
 Facility: Three Mile Island Nuclear Station, Unit 1
 Inspection at: Middletown, Pennsylvania
 Inspection conducted: May 7 - June 5, 1984
 Inspectors:

<u>R. Conte</u>	<u>June 13, 1984</u>
R. Conte, Senior Resident Inspector (TMI-1)	date signed
<u>E. J. Conner for</u>	<u>6/14/84</u>
W. Baunack, Project Engineer	date signed
<u>E. J. Conner for</u>	<u>6/14/84</u>
R. Urban, Reactor Engineer	date signed
<u>F. Young</u>	<u>June 13, 1984</u>
F. Young, Resident Inspector (TMI-1)	date signed
<u>E. J. Conner</u>	<u>6/14/84</u>
E. Conner, Chief, Reactor Projects Section No. 3B, PB No. 3	date signed

Approved by:

Inspection Summary: Inspection conducted on May 7 - June 5, 1984 (Inspection Report Number 50-289/84-15)

Areas Inspected: Routine safety inspection by resident and region-based inspectors of licensee action on previous inspection findings; plant operations (shutdown mode) including licensee performance during the May 18, 1984 demonstration, hot functional testing, surveillance testing, and quality assurance interfacing, and restart valve lineups. The inspection involved 176 inspector-hours.

Results: No conditions adverse to nuclear safety or regulatory requirements were identified. Overall control and maintenance of the shutdown plant were good. The licensee was adequately prepared to peacefully handle the May 18, 1984 demonstration at the plant entrance. Surveillance and preoperational testing was conducted in a controlled manner with good interfacing with the quality assurance department. The licensee had proper system valve lineups to support system operations.

DETAILS

1. Licensee Action on Previous Inspection Findings

(Open) Inspector Follow Item (289/82-BC-12): Restart Valve Lineups. Details are addressed in paragraph 3.

(Closed) Licensee Event Report (289/83-L0-31): In-plant Review of Licensee Action for Engineered Safety Features Actuation System (ESFAS) Logic Test of Swing Pumps. Licensee Event Report (LER) 83-031/03L-0 reported a deficiency with Surveillance Procedure (SP) 1303-5.2, Loading Sequence and Component Test and High Pressure Injection Logic Channel Test; it did not test the actuation logic on "swing pumps" (e.g., MU-P-1B, NR-P-1B, NS-P-1B) that could be used in either the "A" or "B" trains. The LER indicated that the SP would be revised to include appropriate testing of the swing pumps.

The inspector verified that Revision 18 to SP 1303-5.2, dated February 8, 1984, included ESFAS logic testing for swing pumps. The inspector also witnessed a portion of this test implemented during the hot functional test sequence. The licensee obtained acceptable test results for this test data on May 25, 1984. On a sampling basis, the inspector verified that the test data for this procedure met the test acceptance criteria.

(Closed) Unresolved Item (289/83-25-03): Functional Test of the "B" Makeup (MU) Pump with "A" and "B" High Pressure Injection (HPI) Trains. The inspector previously noted that the "B" MU pump functional test or performance check (greater than or equal to 500 gpm at RCj pressure less than 600 psig) was not conducted as part of the "A" and/or "B" HPI train performance tests during the last hot functional test sequence (September 1983). The licensee committed to re-review this area.

The licensee completed its review of SP 1303-11.8, High Pressure Injection Test. The inspector verified that Revision 13 to SP 1303-11.8, dated May 9, 1984, included an appropriate functional test of the "B" MU pump as part of the "A" and "B" HPI train performance tests. Also, the inspector witnessed the implementation of a selected portion of the test on May 23, 1984. The inspector verified that the data obtained for the May 23, 1984 test met the procedure and Technical Specification (TS 4.5.2.1) acceptance criteria.

The licensee showed initiative in the timely resolution of this unresolved item in order to schedule a retest for the May 1984 Hot Functional Test (HFT) sequence. The technical resolution of this item was adequate.

2. Plant Operations During Long Term Shutdown

2.1 Routine Review

The resident inspectors periodically inspected the facility to assess compliance with general operating requirements of Section 6 of the Technical Specifications in the following areas:

- licensee review of selected plant parameters for abnormal trends;
- plant status from a maintenance/modification viewpoint including plant cleanliness;
- licensee control of ongoing and special evolutions, including control room personnel awareness of these evolutions;
- control of documents including log keeping practices;
- implementation of radiological controls; and,
- licensee implementation of the security plan including access controls/boundary integrity and badging practices.

The inspectors reviewed the following specific items:

- Random inspections of the control room during regular and back shift hours were conducted that included selected sections of the shift foreman's log and control room operator's log for the period May 7 - June 5, 1984, and selected sections of other control room daily logs for the period from midnight to the time of review;
- Inspections of areas outside the control room on May 10, 14, 22, 23, 24, 25, 26, 30, June 1, 4; and,
- Selected licensee planning meetings.

2.2 Restart Opponent's Demonstration on May 18, 1984

Approximately three weeks prior to May 18, 1984, the licensee was informed by Pennsylvania State Police that a group known as the May 18 Mobilization planned a peaceful demonstration at the plant entrance that would involve civil disobedience on the part of the demonstrators. At that time, the licensee started to review and make preparations to exercise applicable portions of their Civil Disobedience Security Procedure. Briefings were held on a weekly basis with representatives from Corporate Security and Site Security from both Units, utility licensing organization, site labor and administrative representatives, and the local legal counsel. The resident inspectors and region-based inspectors attended two of these meetings to assess the licensee's ability to handle this type of situation. Specific work lists with individuals' assigned tasks were generated. The last two meetings were used to determine the status of each work list item and to brief key licensee managers.

On May 18, 1984 at 9:11 A.M., demonstrators arrived at the North Gate and blocked the entrance. At that time, a company representative located at the north gate proceeded to Dauphin County Court and petitioned the court for a restraining order for those who blocked the right of way. The South Gate remained closed throughout the demonstration. (It was

the intention of the demonstrators to block the south gate if it were opened by the licensee). At 10:18 A.M., a Dauphin County Court Judge issued the restraining order. At 10:37, the Pennsylvania State Police began making arrests in response to the restraining order. The right of way was restored at the North Gate by 11:00 A.M. The NRC inspectors monitored events as they occurred.

In preparation for the demonstration, the licensee assured the plant staff, including contractors, that this event would be handled in a peaceful and restrained manner. They kept the resident inspectors fully informed of their plans and actions. The licensee had contingencies for a long term blockade (in excess of one shift) with respect to minimum shift manning and supplies (e.g., food, beds, etc.) for critical shift personnel. During the demonstration, the licensee implemented their actions as planned. These actions were characterized by restraint including those actions of the guard force at the north gate. No conditions adverse to safeguards requirements were noted.

2.3 Hot Functional Testing

The licensee conducted another hot functional test (HFT) sequence between May 21 and 27, 1984. Test procedures implemented were:

- TP 700/1, dated May 21, 1984, Controlling Procedure for Low Power Physics Testing (non-nuclear heat generation);
- TP 655/1, dated May 21, 1984, High Pressure Injection System Functional Test (Task RM-14);
- TP 664/1, dated October 1, 1981, PORV Flow Indication Functional Test (Task RM-10);
- TP 674/2, May 22, 1984, Reactor Coolant Coastdown Flow Test for RC-P-1B;
- TP 600/5, dated May 15, 1984, RCS Leak Rate Verification Test; and
- TP 846/1, dated April 30, 1982, Incore Thermocouple Functional Test at Power (non-nuclear heat generated portion).

The resident inspectors monitored licensee activities during the day and back-shift hours. The inspectors witnessed selected portions of the above procedures to verify proper implementation.

The inspectors found that the overall control of test activities was good. On a sampling bases, the inspectors noted that operators and test engineers had properly implemented the test procedures.

2.4 Surveillance Testing

Prior to and during the above HFT sequence, the licensee conducted numerous surveillance (test) procedures (SP) to assure equipment readiness not only for the HFT period but also for restart. The inspector witnessed selected portions of the following SP's to assure proper implementation.

- SP 1303-11.3, Revision 11, May 14, 1984, Main Steam Safety Valves.
- SP 1303-11.8, Revision 13, May 9, 1984, High Pressure Injection.
- SP 1303-1.1, Revision 13, May 22, 1984, Reactor Coolant System Leak Rate.

On a sampling basis, the inspector determined that the licensee properly implemented these procedures.

2.5 Quality Assurance Interface

During the HFT period, the inspector reviewed various aspects of the quality assurance department (QAD) interface with plant personnel. The QAD personnel continued to be present at the plan-of-the-day meetings and they did provide useful input to plant management, especially during the period of preparation for HFT. During HFT, QA shift monitors were observed in the plant implementing their responsibilities. Other operations QA monitors (Level II review) periodically inspected the facility throughout this period. Test procedures had QC witness hold points.

On June 1, 1984, the resident inspector attended QAD's annual assessment meeting with plant personnel on QA Effectiveness. Besides statistical presentation on QA findings and other problem areas, there was a good exchange of information oriented toward improving performance. An assessment report is to be issued by the licensee. This report may be reviewed during a subsequent NRC inspection.

2.6 Summary

Based on this sampling review of the various licensee activities noted above, the inspectors did not identify any conditions adverse to nuclear safety or regulatory requirements. Personnel stationed in the control room presented a posture of overall control of daily activities, including problem areas that needed resolution. The planning meetings indicated an attempt to proceed safely with daily activities and to resolve any inter-department interface problems. Licensee upper management continued their detailed involvement in site activities.

3. Restart Valve Lineups

A requirement of NUREG 0680, TMI-1 Restart Evaluation (page C2-6) is that the NRC staff will independently verify the position of safety-related valves (289/82-BC-12). On a sampling basis, inspectors with the aid of Licensee Auxiliary Operators to locate plant valves as necessary, verified the position of valves as specified by the following System Operating Procedures (OP):

- OP 1104-2, Makeup and Purification System, Revision 46, dated March 2, 1984;
- OP 1104-6, Spent Fuel Cooling, Revision 8, dated March 6, 1984;
- OP 1104-13, Decay Heat Closed Cycle Cooling System, Revision 12, dated February 9, 1984;
- OP 1104-24H, Intermediate Building [Ventilation], Revision 6, dated August 11, 1983;
- OP 1104-24M, Diesel Generator Building [Ventilation], Revision 5, dated March 8, 1983;
- OP 1104-25, Instrument and Control Air, Revision 29, dated May 14, 1983;
- OP 1104-26, "Nitrogen Supply System," Revision 9, dated March 7, 1984;
- OP 1104-30, "Nuclear Service River Water," Revision 20, dated January 21, 1984;
- OP 1104-32, "Decay Heat River Water," Revision 13, dated April 10, 1984;
- OP 1104-38, "Reactor Building Emergency Cooling System," Revision 12, dated February 24, 1984; and,
- OP 1104-47B, "Chemical Addition Nuclear," Revision 21, dated February 4, 1984.

In performing these valve lineup verifications, no major inconsistencies were noted between the position of the valves in the plant and the position called for in the checklists. The inspectors did note inconsistencies in the listing of instrumentation valves in the procedures' valve lineup lists. This was not considered to be a significant problem because Surveillance/Calibration procedures complement the Operating Procedures to assure proper valve positions.

In another instance, the inspector noted that the valves associated with the Nuclear River Closed Cooling Pump A were physically associated with the "C" pump. A modification was recently completed to this system and the operating procedure was to undergo the necessary revisions. The auxiliary operator

initiated a procedure change request to assure correction of this problem. This was considered only a nomenclature problem because the associated valves were properly lined up to support operation of each pump.

4. Inspector Follow Items

Inspector follow items are matters that warrant NRC verification of licensee completion as a result of commitments made to the NRC for restart. Inspector follow items are addressed in paragraphs 1 and 3.

5. Unresolved Items

Unresolved items are findings about which more information is needed to ascertain whether they are acceptable items, violations, or deviations. Unresolved items are discussed in paragraph 1.

6. Exit Interview

The inspectors met periodically with the licensee representatives to discuss the inspection scope and findings. At the conclusion of the inspection on June 5, 1984, the inspector summarized the inspection findings to the following attendees:

- R. Barley, Lead Mechanical Engineer, TMI-1 Division (TMI-1)
- W. County, Quality Assurance (QA) Auditor, Nuclear Assurance Division (NAD)
- T. Hawkins, Manager Startup and Test, NAD
- V. Orlandi, Lead Instrument and Control Engineer, TMI-1
- J. Pfadenhaver, Operations QA, NAD
- J. Stacey, TMI-1 Security Manager, Division of Administration
- R. Szczech, Licensing Engineer, Technical Functions Division