

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-225/85-03
Docket No. 50-225
License No. CX-22 Priority -- Category G
Licensee: Rensselaer Polytechnic Institute
Department of Nuclear Engineering and Science
Troy, New York 12181
Facility: RPI Critical Experiments Facility
Inspection At: Schenectady and Troy, New York
Inspection Conducted: October 8-9, 1985
Inspector: W. A. Cook, Resident Inspector, Ginna
Approved by: Elle McCabe 11/21/85
E. McCabe, Chief date
Reactor Projects Section 3B, DRP

Inspection Summary: Inspection on October 8-9, 1985 (Report No. 50-225/ 85-03)

Areas Inspected: Routine, unannounced inspection by a resident inspector (12 hours) of licensee action on previous inspection findings; facility operations, maintenance and surveillance; Emergency Procedures and Annual Exercise; training; and Nuclear Safety Review Board.

Results: Of the seven areas inspected, no unacceptable conditions were identified. Issues discussed included: surveillance and calibration scheduling in paragraph 3.c; improvements in emergency equipment control and testing/inspection in paragraph 4; and the development of requalification training guidance in paragraph 5.

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DETAILS1. Persons Contacted

Dr. D. R. Harris, Facility Director
Dr. F. E. Wicks, Operations Supervisor
Francisco J. Rodriguez-Vera, Teaching Assistant

2. Licensee Action on Previous Inspection Findings

(Closed) Inspector Follow-up Item (83-02-02): This item involved documentation of Nuclear Safety Review Board (NSRB) approval of Operating Procedures. The inspector reviewed the current revision to the Operating Procedures, dated March 1985, and verified documentation of NSRB review and approval.

(Closed) Inspector Follow-up Item (84-03-01): This item involved the documentation of the Nuclear Safety Review Board evaluation of the revised Manual of Experiments. The inspector discussed this item with licensee representatives and determined that a detailed review of the revised Manual of Experiments was not deemed necessary by the NSRB. No significant changes have been made to the experiments as a result of the issuance of IE Notice 83-66 Supplement 1, "Fatality at Argentine Nuclear Facility". Amplification of existing safety precautions and the inclusion of a review of the Argentine event as background information for the core loading laboratory experiment were the only revisions. In addition, the experiments performed at the facility involve only one core configuration. No significant modifications or core reconfigurations have been made to the facility in recent years. Therefore, experiment procedural changes have not been necessary and detailed NSRB reviews have not been warranted.

(Closed) Inspector Follow-up Item (84-03-02): This item involved the review of licensee measures to update system drawings to reflect actual plant conditions. The inspector reviewed the revised piping flow diagram, dated March 1985, and found no discrepancies.

3. Operations Review

A review of various operational elements was conducted as discussed below.

a. Facility Tour and Operating Records Review

Upon arrival, the inspector toured the critical facility with the Operations Supervisor and discussed system operations and experiments performed. Technical Specification required systems were identified, and their operation was explained and demonstrated for the inspector by the licensee. The inspector reviewed the facility operating log and start-up checklists and found no discrepancies.

b. Maintenance Review

From December 1984 to October 1985 the following maintenance was performed:

- Air Monitoring System-March 19, 1985, a capacitor was replaced to prevent spurious re-scale.
- Linear Power Channel-April 16, 1985, the scram circuit for Linear Power Channel No. 1 (LP1) was rebuilt.

The inspector discussed with the licensee the maintenance performed and verified adequate system retests were conducted. No deficiencies were noted.

c. Surveillance

The inspector reviewed surveillance activities to verify Technical Specification requirements were satisfied and properly documented. Semi-Annual Surveillance Checklists completed 1/30/84, 6/26/84, 1/3/85, and 8/13/85 and Annual Surveillance Checklists completed 1/30/84 and 1/3/85 were reviewed. No discrepancies were identified. However, the inspector noted that the licensee does not maintain a consolidated list of all surveillance and calibration requirements. The licensee is considering development of a complete list to make scheduling and reviewing more efficient.

4. Emergency Procedures and Annual Drill Review

The inspector reviewed the facility Emergency Response procedures, revised in May 1985, and concluded that the procedures appear to adequately address plausible facility emergencies. Although no documentation was available, the inspector determined that an emergency drill was conducted in April 1985. The inspector discussed the lack of documentation with the licensee and determined that a written summary of the drill would be made and that future drills would be formally recorded.

The inspector reviewed the status of emergency equipment and determined that fire extinguishers and emergency breathing apparatus were periodically inspected by the campus Fire Department. The inspector determined that facility personnel were trained in emergency equipment use. In addition, the inspector determined that a new commercial fire detection system was recently installed at the Test Facility.

The Test Facility Emergency Plan, revised December 1984, specifies that emergency equipment will be reviewed annually. Although periodic inspection has been properly conducted by the campus Fire Department, the inspector determined that the licensee does not maintain a list of all facility emergency equipment and their respective testing/inspection requirements. In addition, the licensee does not conduct operability testing of the fire detection system. The inspector discussed this issue

with the licensee and the licensee agreed to review the feasibility of functionally testing the fire detection system and to compile a list of emergency equipment at the facility.

The inspector will review these items in a subsequent report. (85-03-01)

5. Training

The inspector discussed licensed operator requalification training with the licensee. Currently, three individuals hold an NRC license. From the inspector's review of operating logs and discussions with the licensee, it is apparent that two operators actively use their license on a routine basis. However, the third operator is more involved with test facility administrative concerns and has limited involvement with hands-on test reactor experiments and routine operations. This operator successfully passed an NRC administered Operator Licensing Examination (reference NRC examination Report 50-225/85-02) on July 24, 1985. However the licensee does not maintain a formal requalification program. In view of third operator's limited involvement in routine operations, development of a requalification program or equivalent maintenance of proficiency guidance, as required by 10 CFR Part 55 paragraph 55.31(e) pertaining to the active use of the license, and paragraph 55.33 pertaining to license renewal conditions, will be necessary in the future.

The inspector will review this item in a subsequent report. (85-03-02)

6. Nuclear Safety Review Board (NSRB)

The inspector reviewed the minutes of NSRB meetings held on April 4, 1984, July 23, 1984 and April 19, 1985. The inspector observed that routine facility activities were reviewed and that identified problems were appropriately resolved. The inspector found no discrepancies.

7. Exit Interview

The inspector met with licensee representatives at the conclusion of the inspection on October 9, 1985. The inspector summarized the purpose and scope of the inspection and discussed the observations and conclusions.