

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-002/88001(DRSS)

Docket No. 50-002

License No. R-28

Licensee: University of Michigan

Facility Name: Ford Nuclear Reactor

Inspection Conducted: January 11-14, 1988

Inspector: K. R. Ridgway

K. R. Ridgway
1-29-88
Date

Approved By: *L. R. Greger*
L. R. Greger, Chief
Facilities Radiation
Protection Section

1-29-88
Date

Inspection Summary

Inspection on January 11-14, 1988 (Report No. 50-002/88001(DRSS))

Areas Inspected: Routine, unannounced safety inspection of records, logs, and organization; review and audit functions; requalification training; procedures; surveillance and maintenance; fuel handling activities and transportation; and quality assurance program.

Results: No violations or significant safety issues were identified in the areas inspected.

DETAILS

1. Persons Contacted

- *R. Burn, Nuclear Reactor Manager
- *G. Cook, Assistant Manager for Operations

* Indicates those present at the exit interview.

2. General

This inspection, which began on January 11, 1988, was conducted to examine the research reactor program at the University of Michigan. The facility was toured shortly after arrival. The general housekeeping of the facility remains satisfactory, as was noted in the previous inspection (Inspection Report No. 50-002/86003(DRP)).

The reactor was operated on a 10-day operational and 4-day shutdown schedule during 1987. The number of unscheduled outages (20) remained the same in 1987 with three caused by personnel error as compared to two in 1986. Nine unscheduled shutdowns in 1986 were caused by low primary coolant flow due to primary pump capacity degradation; there were no shutdowns due to this cause since a new primary pump was installed in early 1987. There was no significant increase in pool leakage, which varies with the pool water temperature and is collected and disposed of through the liquid waste system.

3. Organization, Logs and Records(IP 39745)

The facility organization was reviewed and verified to be consistent with the Technical Specifications and/or Safety Analysis Report (SAR). The minimum staffing requirements were verified to be met during reactor operation, and fuel handling or refueling operations.

The reactor logs and records were reviewed to verify that:

- a. Records were available for inspection.
- b. Required entries were made.
- c. Significant problems or incidents were documented.
- d. The facility was being maintained properly.

On June 1, 1987, the operational responsibilities for both the Ford Nuclear Reactor (FNR) and the Phoenix Memorial Laboratory (PML) were assigned to the Manager, Nuclear Reactor Laboratory, R. R. Burn. J. D. Jones, formerly the manager of the PML, was appointed Director, Radiation Control Services, replacing A. J. Solari who retired. G. M. Cook, Assistant Manager for Operations, has been assigned additional operational-maintenance responsibilities at PML, and P. A. Simpson has been assigned to a new position of Assistant Manager, Research Support Activities; he will maintain his Senior Reactor Operators License (SRO).

Four people were scheduled for license examinations the week following the inspection; three for Reactor Operator (RO) licenses and one, a former SRO, for reinstatement of his SRO license.

During a review of reactor logs, the inspector noted that in some cases the log startup data indicated that only an unlicensed person was at the console. In all these cases the shift turnover log stamp indicated that a licensed operator was present when required. The licensee stated that a new startup log data stamp would be obtained which would include both the console operator, who could be unlicensed, and the licensed operator directing the startup. All logs and records were found to be adequate.

No violations were identified.

4. Reviews and Audits (IP 40745)

The licensee's review and audit program records were examined by the inspector to verify that:

- a. Reviews of facility changes, operating and maintenance procedures, design changes, and unreviewed experiments were performed by a safety review committee as required by Technical Specifications or SAR.
- b. The review committee and/or subcommittees were composed of qualified members and that quorum requirements and frequency of meetings had been met.
- c. Required safety audits had been conducted in accordance with Technical Specification requirements and that identified problems were resolved.

Since the last inspection, three modifications have been completed; Mod. 99, the backup primary pump, Mod. 100, a computer monitoring system, and Mod. 101, a replacement linear level servo control system. All modifications were reviewed by the Safety Review Committee (SRC); however, the review of Mod. 99 did not appear to be properly documented. The initial SRC review was made by telephone poll of the members on January 15, 1987, as noted on the FNR Modification Request Form. The bylaws of the SRC have been revised and approved to permit individual polling of committee members. However, the modification was shown as being officially reviewed in the SRC meeting minutes on May 19, 1987, after the pump had been placed in use. This discrepancy in records was noted in the Annual Audit of the Reactor.

The annual audit by a qualified consultant, as required by Technical Specification 6.2(8) was conducted July 23 and 24, 1987. Other than the above discrepancy, the audit report discussed several needed Health Physics and Emergency Planning procedure changes.

A review of the SRC meetings indicated the committee was meeting all requirements.

No violations were identified.

5. Requalification Training (IP 41745)

The inspector reviewed procedures, logs, and training records and interviewed personnel to verify that the requalification training program was being carried out in conformance with the facility's approved plan and NRC regulations. There were no changes in the requalification program. Requalification examinations were successfully completed by five SROs in 1987. Two licensed ROs were exempted from examination, having received their licenses in late 1986.

The licensee has no formal lecture program but has started a program where each operator or trainee reviews specified areas and completes a quiz at the end of the training period. In 1987, the areas of security, quality assurance, and emergency protection had been completed.

No violations were identified.

6. Procedures (IP 42745)

The inspector reviewed the licensee's procedures to determine if procedures were issued, reviewed, changed or updated, and approved in accordance with Technical Specification and SAR requirements. This review also verified:

- a. That procedure content was adequate to safely operate, refuel and maintain the facility.
- b. That responsibilities were clearly defined.
- c. That required checklists and forms were used.

The licensee has incorporated all operating, administration and health physics procedures into a word processor. This has made the system easy to update and correct. Over fifty procedure changes were made in 1987.

The inspector determined that the required procedures were available to the operators and the contents of selected procedures were found adequate.

No violations were identified.

7. Surveillance (IP 61745)

The inspector reviewed procedures, surveillance test schedules and test records and discussed the surveillance and preventive maintenance program with responsible personnel to verify:

- a. That procedures were available and adequate to perform tests.
- b. That tests were completed within the required time schedule.

- c. Test records were available.

A review of the Reactor Maintenance Schedule for 1987 and individual test records indicated the licensee's surveillance program was satisfactory.

No violations were identified.

8. Experiments (IP 69745)

The inspector verified by reviewing experiment records and other reactor logs that:

- a. Experiments were conducted using approved procedures and under approved reactor conditions.
- b. New experiments or changes in experiments were properly reviewed and approved.
- c. The experiments did not involve an unreviewed safety question, i.e., 10 CFR 50.59 requirements concerning experiments were met.
- d. Experiments involving potential hazards or reactivity changes were identified in procedures.
- e. Reactivity limits were not or could not have been exceeded during an experiment.

No violations were identified.

9. Fuel Handling (IP 60745)

The facility fuel handling program was reviewed by the inspector. The review included the verification of approved procedures for fuel handling and their technical adequacy in the areas of radiation protection, criticality safety, Technical Specification and security plan requirements. The inspector determined by records review and discussions with personnel that fuel handling operations were carried out in conformance to procedures. Thirty-three fuel shuffles were made in 1987.

No violations were identified.

10. Transportation Activities (IP 86740)

The inspector reviewed the licensee's spent fuel shipping program for compliance with the requirements in Department of Transportation (DOT) and NRC regulations, 49 CFR Parts 172 & 173 and 10 CFR Part 71, respectively.

On October 5 and October 12, 1987, the licensee made spent fuel shipments to Department of Energy facilities. These shipments completed the removal of high enriched fuel from the FNR. The inspector reviewed the licensee's records of these shipments including quality assurance records. No problems were noted.

On January 3, 1986, the licensee submitted an organization change to their approved Quality Assurance Program (QAP) which expires in 1990. In addition to radioactive shipping programs, the licensee committed to following the QAP for replacement and modifications to other safety related items such as the reactor pool, the primary cooling system, and instrument systems listed in Tables 3.1 and 3.2 of the Technical Specifications.

The licensee had on hand a current copy of the BMI-1 Cask Certificate of Compliance in which they are listed as a user. The shipping records also included QA reviews of cask loading and closing procedures, crane capacity verification prior to use, escort and emergency instructions for the carrier, and prior route approval with notifications. The records review disclosed no discrepancies in carrying out these shipments.

No violations were identified.

11. Review of Periodic and Special Reports (IP 90713)

The inspector reviewed the annual report, Report on Reactor Operations-1986, for timeliness of submittal and adequacy of information submitted.

No violations were identified.

12. Exit Interview (IP 30703)

The inspector met with the licensee representatives (listed in paragraph 1) at the conclusion of the inspection on January 14, 1988, and summarized the scope and findings of the inspection. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed. The licensee did not identify any documents or processes as proprietary.

The licensee acknowledged the remark by the inspector in regard to the need to include the licensed operator who is directing a startup in the reactor log startup data stamp when a unlicensed operator is at the console (Paragraph 3).