U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 50-284/80-02 License No. R-110

Licensee: Idaho State University (ISU) Docket No. 50-284
Pocatello, Idaho

Facility: AGN-201 Reactor (5 watts) Category H

Inspection Conducted: July 24-25, 1980

Inspector: _____ 8/15/80
Steve Dean, Reactor Inspector Date

Reviewed by: _____ 8/15/80
E. Gagliardo, Chief, Nuclear Support Section Date

Approved by: _____ 8/15/80
G. L. Madsen, Chief, Reactor Operations and Nuclear Support Branch Date

Inspection Summary

Inspection on July 24-25, 1980 (Report No. 50-284/80-02)

Areas Inspected: Routine, unannounced inspection of the licensee's organization, operations and maintenance logs, licensee's internal review and audit program, operator requalification program, operating procedures, surveillance requirements, experiment review, radiation protection, environmental protection, and emergency planning programs. The inspection involved 12 on-site inspection hours by one (1) NRC inspector.

Results: Of the ten areas inspected no items of noncompliance were identified in eight areas. Two (2) items of noncompliance were identified in the remaining areas. (Infraction: Failure to administer annual requalification exams to licensed SRO's - paragraph 6; Infraction: Failure to prepare written safety evaluation of a facility design change, paragraph 9).

DETAILS

1. Persons Contacted

*Dr. Ken Faler, Associate Dean, College of Liberal Arts
Frank Just, Chairman, Reactor Safety Committee
*Dr. Tal Neill, Professor of Engineering, Member Reactor Safety Committee
Gerald F. Ramsey, Ex-Reactor Supervisor
*Terry Smith, Reactor Supervisor (Prospective)
*Dr. Albert E. Wilson, Dean School of Engineering, Reactor Administrator

*Denotes those present during the exit interview.

2. Status of Previously Reported Items

(Closed) Unresolved Item (76/01-1), Experiment Approval. This item was discussed in IE Inspection Report No. 50-284/76-01 and involved approval of experiments prior to placement in the reactor. The licensee established a set of approved experiments which was reviewed by the Reactor Safety Committee on May 3, 1979. The licensee's records indicate that only approved experiments have been performed since May 3, 1979.

3. Licensee Action on IE Bulletin

The inspector reviewed the licensee's response and actions taken as a result of IE Bulletin No. 79-19, dated August 10, 1979. The licensee's letter dated August 20, 1979 provided the information as requested by the bulletin.

The licensee had not implemented the following recommendations of the bulletin:

a. Establish detailed instructions and operating procedures for all personnel involved in the transfer, packaging, and transport of low-level radioactive material.

b. Establish a training and periodic retraining program in DOT and NRC regulatory requirements, the waste burial license requirements, and in these instructions and operating procedures.

c. Establish training records of training, dates, attendees, and subject material.

d. Establish and implement a management controlled audit of all transfer, packaging, and transfer activities to ensure safety and compliance with regulatory requirements.

The licensee stated that there has been no shipment of low level radioactive material since 1978. Prior to the next shipment these recommendation would be reviewed in light of their program needs.

4. Scope of Inspection

The purpose of this inspection was to review the operating history of the reactor for the period March 14, 1978 through July 23, 1980. The reactor was primarily used during experiments associated with the Nuclear Engineering Education Program. These experiments involved sample irradiation, approach to critical, reactivity measurements, period measurements, neutron temperature measurements, power calibration, and flux distribution. The reactor was also operated for demonstration purposes.

5. Organization

The inspector reviewed the operational and administrative organization of the reactor facility to determine compliance with Technical Specification 5.0 requirements. Such items as membership and meetings of the Reactor Safety Committee, minimum staffing composition for operation, and supervision of the reactor facility were examined.

IE Inspection Report No. 50-284/78-02 identified at the last inspection an "Operating Organization" consisting singularly of Dr. Albert E. Wilson as licensed operator, Reactor Supervisor, and Reactor Administrator. An individual was then hired by the licensee to fill the position of Reactor Supervisor. He did obtain a senior reactor operators license on November 3, 1978 and functioned as Reactor Supervisor till his departure in May of 1980.

It was noted that Dr. Wilson was again functioning as the sole Reactor Operator, Reactor Administrator, and Reactor Supervisor. However, the licensee had hired an individual to assume the duties of Reactor Supervisor. The prospective Reactor Supervisor was engaged in a training program which was being supervised by the Reactor Administrator and the Reactor Safety Committee. This item will be reviewed during the next inspection.

No items of noncompliance or deviations were noted.

6. Logs and Records

The inspector reviewed the operations and maintenance logs to determine that activities had been conducted properly as required by Technical Specifications and licensee procedures. It was noted by records review and discussions held with licensee representatives that the shield tank low level trip, a float switch, was replaced on January 4, 1979 with a new design switch. During discussions held with licensee personnel it was learned that the replacement switch design was reviewed as required by T.S. 6.4.2 and 50.59 prior to replacement. However, a written safety evaluation had not been prepared by the facility staff and reviewed by the Reactor Safety Committee.

Technical Specification 6.4.2.a states in part that, the Reactor Safety Committee shall review safety evaluations for changes to equipment or systems conducted without NRC approval under the provision of 10 CFR 50 paragraph 59, 10 CFR 50.59 states in part that the licensee shall maintain records of changes and these records shall include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

The licensee's failure to prepare a written safety evaluation of a design change constitutes an apparent item of noncompliance at the deficiency level. (284/80-02-02)

7. Facility Tour

The inspector toured the facility on July 24, 1980. Attention was given to the following:

Conditions within the facility

Access Control

Posting and Labeling

Availability of radiation survey equipment

Emergency equipment

No items of noncompliance or deviations were noted.

8. Review and Audit

The inspector examined the results of audits and reviews performed by the licensee. The minutes of the Reactor Safety Committee were examined to establish that the Committee had met and performed its functions as required by Technical Specification section 6.4. The Committee met semi-annually since the last inspection and had routinely made the following reviews:

Experiments

Maintenance and Operating Logs

Reactor Operation

No items of noncompliance or deviations were noted.

9. Operator Requalification Program

The inspector reviewed activities conducted under the licensee's "Operator Requalification Program" which was approved by the NRC on August 28, 1974. Dr. Wilson was the only licensed operator currently a member of the facility staff. His senior reactor operator's license was renewed by the NRC on June 18, 1980.

The senior reactor operators license for the previous Reactor Supervisor was issued on November 3, 1978 and was maintained until his departure in May 1980.

By record review and discussion held with licensee representatives the following was determined.

a. An annual examination was not given to a senior reactor operator in 1978.

b. An annual examination was not given to a senior reactor operator in 1979.

The licensee's "Operator Requalification Program," section 4.a, Evaluation, states that, "An annual written examination covering the entire area of reactor operations for the AGN-201 reactor will be administered to all operators and senior operators by the Reactor Safety Committee at Idaho State University. This written examination will cover all areas of normal and abnormal operation of the AGN-201 reactor including manipulation of all controls and operation of all instrumentation."

Technical Specification 6.4 requires that all licensed operators shall participate in requalification training as set forth in 10 CFR 55.

10 CFR 55, Appendix A, paragraph 4, Evaluation, requires that, the requalification program include annual written examinations which determine areas in which retraining is needed to upgrade licensed operator and senior operator knowledge.

This is an apparent item of noncompliance at the infraction level. (50-284/80-02-01)

10. Procedures

The inspector reviewed operating and maintenance procedures to ensure compliance with Technical Specification requirements. Technical Specification section 6.6 states in part that:

"There shall be written procedures that cover the following activities:

-Preventative or corrective maintenance which could affect the safety of the reactor.

-Surveillance, testing, and calibration of instruments, components, and systems.

The above listed procedures shall be approved by the Dean of the School of Engineering and the Reactor Safety Committee."

The licensee had instituted a program by which procedures were being established as required by the above requirement. This program was instituted with the issuance of the new TS on August 30, 1979; however, all of these procedures had not yet been implemented. The licensee committed to preparing and issuing these procedures by January 1, 1981. This is an open item pending completion of those procedures required by Technical Specification 6.6. (Unresolved item 80-02-03).

11. Surveillance

The inspector reviewed Technical Specification requirements for surveillance tests, reactor core limits, and control and instrumentation systems. The licensee's records indicated that limits regarding excess reactivity, safety rod worths, core tank, scram and safety systems were not exceeded. The inspector did not identify any surveillance tests which were not performed as required by Technical Specification 4.0. The surveillance test results did not indicate any unusual conditions. Surveillance test procedures were performed utilizing the manufactures recommended operating manual.

No items of noncompliance or deviations were noted.

12. Experiments

The inspector examined records of experiments placed in the reactor to determine compliance with Technical Specification section 6.7. The licensee's records indicated that no new experiments have been placed in the reactor since the previous inspection.

No items of noncompliance or deviation were identified.

13. Radiological Control

The inspector examined the licensee's program to determine compliance with 10 CFR 20 requirements. The inspector performed a radiation survey utilizing the licensee's LUDLUM, model 14A, geiger counter. All readings were background.

It was noted that the licensee had established a formal program for calibration and response testing of portable survey meters, area monitors and laboratory counting equipment. The program scheduled each meter for semiannual calibration and/or response testing.

No items of noncompliance or deviation were identified.

14. Environmental Protection

The licensee did not maintain a detailed environmental surveillance program (e.g., collection and analysis of water, soil, vegetation samples). There are no specific license requirements that such a program be implemented.

A licensee respresentative stated that no liquid releases had been made since the previous inspection. Reactor operations data indicated that airborne effluents had been within 10 CFR 20 limits.

No items of noncompliance or deviations were noted.

15. Emergency Planning

An emergency call list including emergency instructions was posted in the reactor facility. A test of the emergency alarm had been conducted annually.

No items of noncompliance or deviations were noted.

16. Exit Interview

An exit interview was held with representatives of the licensee on July 25, 1980 at the conclusion of this inspection. The findings noted in the previous paragraphs were discussed with and acknowledged by these representatives.