

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

IE Inspection Report No. 50-72/79-01

Docket No. 50-72

License No. R-25

Licensee: University of Utah  
College of Engineering  
Salt Lake City, Utah 84112

Facility Name: University of Utah AGN-201

Inspection At: University of Utah, Salt Lake City, Utah

Inspection Conducted: January 23-26, 1979

Inspectors:	<u>E. H. Johnson For</u>	<u>2/8/79</u>
	M. W. Dickerson, Reactor Inspector	Date
	<u>G. H. Verduzco</u>	<u>2/7/79</u>
	G. H. Verduzco, Reactor Inspector (Training)	Date
Reviewed By:	<u>E. H. Johnson For</u>	<u>2/8/79</u>
	G. L. Madsen, Chief, Reactor Operations and Nuclear Support Branch	Date

Inspection Summary

Inspection on January 23-26, 1979 (Report No. 50-72/79-01)

Areas Inspected Routine, unannounced inspection of: Organizations, Logs and Records; Review and Audit; Requalification Training; Surveillance; Procedures and Experiments; Radiation Control; Emergency Planning; and Followup on Items of Noncompliance. The inspection involved 29 inspector-hours on-site by two (2) NRC inspectors.

Results: Of the eleven (11) areas inspected, no items of noncompliance were found in nine (9) areas. Two apparent items of noncompliance were identified in the remaining areas (Infraction - Failure to follow procedures, paragraph 4; and a Deficiency - Failure to maintain proper records, paragraph 4).

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DETAILS

1. Persons Contacted

- \*Dr. R. E. Turley, Reactor Administrator
- \*Dr. G. M. Sandquist, Reactor Supervisor
- Dr. R. C. Pendleton, Radiation Safety Officer
- \*C. Jensen, Reactor Engineer
- \*T. R. Downard, Assistant Radiological Health Officer
- D. Finerfrock, Radiation Physicist

\*Denotes those attending exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance, Operator Training (IE Inspection Report 50-72/77-01). Annual examinations were administered February 14, 1977 and October 10, 1977 and the ongoing annual requirement for such is recognized by the licensee. This matter is considered closed.

3. Organization

The inspector observed that the facility's organization is consistent with TS requirements. Additionally, the inspector examined the Reactor Safety Committee meeting minutes for the period January 21, 1977 through December 7, 1978 and found them to be in consonance with TS requirements for composition, quorum, and frequency of meetings.

4. Logs and Records

The following logs and records for the period February 2, 1977 through January 23, 1979 were reviewed:

- a. Reactor Operations Log
- b. Maintenance Log
- c. AGN-201 Neutron Monitoring Recorder Chart (February 25, 1976 through February 7, 1978)

Section 12.2(5) of the Operations Manual specifies that radiation surveys be conducted around the thermal column seal, the manhole seal, the control rod access door, and the reactor console. Contrary to this requirement, surveys were not conducted around the thermal column seal and the manhole seal during the period February 2, 1977 through January 23, 1979.

Review of the reactor operation log revealed that numerous log entries did not include a concomitant time entry. Section 12.1(7) of the Operations Manual requires that changes in reactivity, glory hole loading, etc., be recorded in the reactor operations log. While the requirement for a time entry is not specifically stated, it is clearly an implicit requirement of this section.

Section 12.8.2 of the Procedures Manual requires that a monthly inspection of the reactor be conducted, including verification of proper functioning of the shield water temperature interlock, the earthquake switch, and rod drives. Contrary to this requirement, this inspection was not conducted in February 1978. The reactor was operated February 7 and 14, 1978.

The violations addressed in the three preceding paragraphs collectively constitute an apparent violation of TS 6.2 in that written procedures were not followed. This is an infraction.

TS 6.3.1(e) requires that records of tests and measurements performed pursuant to the TS be prepared and retained at the facility for five years. Contrary to the above, substantiating data for reactivity measurements made pursuant to TS 5.2, and reported in the 1977 annual operating report, could not be provided the inspector by licensee representatives. This is a deficiency.

In reviewing the AGN-201 neutron monitoring chart, the inspector noted that the chart had been used with the TRIGA on February 25, 1976, and subsequent to that with the AGN-201. During virtually all periods of operation, the chart had no annotations other than date. The absence of channel number notation is a significant omission. This coupled with log deficiencies noted earlier make it difficult to reconstruct previous reactor operations. The inspector pointed out that this is not considered good engineering practice. This is an open item and will be re-examined on subsequent inspections.

## 5. Procedures and Experiments

The procedures contained in the "Nuclear Engineering Laboratory Operations Manual" were reviewed for technical content and overall consistency with Technical Specifications. No items of noncompliance were identified. The inspector noted, however, that a copy of the Operations Manual was not kept at the reactor console, readily available to the operator.

Experimental limitations are delineated in TS 4.1 - 4.3. Experiments conducted February 2, 1977 through January 23, 1979 were approved experiments, contained in Section 2.8.1 of the Operations Manual. Licensee records indicate that no experimental limitations were exceeded.

6. Surveillance

Technical Specifications 5.1 - 5.4 contain surveillance requirements for the AGN-201. With the exception of the deficiency noted in paragraph 4, all surveillance requirements were completed and recorded as specified in the Technical Specifications.

7. Radiation Control and Environmental

The facility was examined to verify compliance with applicable portions of 10 CFR, Parts 19 and 20, concerning posting and labeling. No discrepancies were noted.

The "Radiation Dose Log" for the period January 26, 1977 through January 25, 1979 was reviewed and found to be in consonance with the requirements of 10 CFR, Part 20.401.

The facility's visitor control activities were observed to be in accordance with requirements of Section 4.1.2(a) of the Operations Manual.

Monthly reports of whole body exposure to beta, gamma, and neutron for the period April through October 1978 were examined. Exposures were within the limits of 10 CFR, Part 20.101.

Personnel exposure records required by 10 CFR, Part 20.102 (Form NRC-4) concerning accumulated occupational doses were reviewed. No discrepancies or exposure excesses were noted.

Radiation surveys pursuant to facility Radiation Health Department programs were conducted within the reactor lab, and both on and off campus. Reactor lab surveys conducted in August, September, October and December 1978 were examined. Additionally, a demonstration reactor lab survey was conducted by radiation health personnel and observed by the inspectors. No discrepancies were noted. Licensee representatives indicated that there were no liquid or gaseous effluents.

Results of campus environmental surveys of April 28, 1977 and November 1977 were examined. No discrepancies were noted.

The inspector noted that the organization of records within the radiation health department was such that retrieval of information was somewhat difficult.

8. Emergency Plan

The inspector reviewed the facility's emergency planning (Section 5 of the Nuclear Engineering Laboratory Operations Manual) and held discussions with key individuals who may be involved in an emergency. Alarm response time for Campus Security is checked monthly. Radiological Health receipt of the alarm is checked at the same time and fire alarms are checked periodically. Additionally, briefings on the emergency plan are conducted for the firemen on a periodic basis by the Radiological Health Department.

No items of noncompliance or deviations were identified.

9. IE Circular No. 77-04

IE Circular 77-04 dealing with inadequate lock inspections was reviewed by Region IV security personnel during their inspection of the facility January 25, 1978. This item is considered closed.

10. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) on January 26, 1979. At this meeting, the inspectors summarized the scope and findings of the inspection.