

ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 50-131

License No.: R-57

Report No.: 50-131/96-01

Licensee: Omaha Veterans Administration Medical Center

Facility: TRIGA Mark I Nuclear Reactor

Location: 4101 Woolworth Avenue
Omaha, Nebraska

Dates: August 26-29, 1996

Inspector: L. T. Ricketson, P.E., Senior Radiation Specialist
Plant Support Branch

Approved By: Blaine Murray, Chief, Plant Support Branch
Division of Reactor Safety

Attachment: Partial List of Persons Contacted
List of Inspection Procedures Used
List of Items Opened and Closed
List of Procedures Reviewed

EXECUTIVE SUMMARY

Omaha Veterans Administration Medical Center NRC Inspection Report 50-131/96-01

This routine, announced inspection reviewed the reactor operations, reactor maintenance, surveillance testing, experiments, reactor oversight, reporting, reactor operator requalification, radiation protection, emergency preparedness, and security programs.

Operations

- Reactor operations were conducted well. The reactor operator was knowledgeable of routine operating procedures. No safety limits or limiting conditions for operation of the reactor were exceeded. Experiments were reviewed appropriately and performed safely (Sections O1, and O4).
- Standard operating procedures generally provided adequate guidance to ensure that operations and surveillances were conducted properly and consistently. However, a violation was identified involving the lack of written standard operating procedures for some surveillance activities (Section O3).
- A Non-Cited Violation was identified involving the failure to include all required topics in the annual operating reports (Section O1).
- The operator requalification program was conducted as required (Section O5).
- Adequate oversight of reactor operations was provided by the Reactor Safeguards Committee (Section O7).

Facility Support

- Appropriate radiation protection practices were implemented. Minimal radiation hazards were present with the reactor operated as observed (Section R1).
- A good emergency preparedness program was maintained and the physical security plan was properly implemented (Sections P1 and S1).

Report Details

I. Operations

O1 Conduct of Operations

a. Scope of Inspection

The inspector interviewed a senior reactor operator and reviewed the following:

- Reactor logs
- Annual operating reports for 1993 - 1995.

b. Observations and Findings

The reactor normally operated at a steady-state power level of approximately 18 kilowatts. Reactor power levels did not exceed the limiting condition of Technical Specification 3.1. Reactor use declined steadily since 1993.

Seven unscheduled reactor shutdowns occurred in 1993, three in 1994, and two in 1995. The majority of the unscheduled shutdowns were caused by electrical noise or electrical power interruptions.

The major maintenance activity involved a repair of the pneumatic sample transfer system. A new fuel element was installed in the reactor in October 1995.

The required technical specification surveillance tests were conducted.

Four new experiments were added since the previous inspection. Experiments 94-1 through 94-4, were reviewed and approved by the Reactor Safeguards Committee, in accordance with Technical Specification 6.8. The reactivity worth of the experiments did not exceed the limit of Technical Specification 3.6. Samples which were irradiated met the requirements of Technical Specification 3.7. No unreviewed safety questions were identified.

Technical Specification 6.9.1.2 requires, in part, that each annual operating report include a brief narrative summary of major surveillance tests and inspections. The only surveillance test discussed in the 1994 and 1995 Annual Operating Reports was the fuel inspection surveillance. Other surveillances were not discussed. Technical Specification 6.9.1.2 also requires that each annual operating report include a brief description of any new or untried experiments or tests performed during the reporting period that are not described in the Safety Analysis Report. The 1994 annual report did not include a discussion of the Experiments 94-1 through 94-4. The inspector identified the omission of these items from the annual operating reports as a violation of Technical

Specification 6.9.1.2 (131/9601-01). This failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy. The licensee acknowledged the inspector's comments and stated that the requirements would be reviewed to ensure all necessary information was included.

c. Conclusions

Reactor operations were conducted well. No safety limits or limiting conditions for operation of the reactor were exceeded and required surveillances were performed. Experiments were reviewed appropriately and performed safely. The annual operating reports did not comply with all documentation requirements.

O3 Operations Procedures and Documentation

a. Inspection Scope

The procedures listed in the attachment were reviewed.

b. Observations and Findings

Procedure 16, "Conduct of Irradiations and Experiments" was the only procedure added since the previous inspection. The procedure was approved by the reactor supervisor, as required.

Technical Specification 6.7 requires, in part, that there shall be written procedures that cover the surveillance, testing, and calibration of instruments, components, and systems involving nuclear safety. The inspector identified that standard operating procedures were available to provide guidance for conducting some surveillances, but not others. Although the surveillance activities were conducted correctly at the proper frequencies, no procedures were available to provide guidance and ensure consistency for nuclear safety systems involving the measurement of scram times (required by Technical Specification 4.2.2(1)), testing of pool level channel operability (required by Technical Specification 4.2.2(2)), and verification of ventilation system operability (required by Technical Specification 4.2.4). The inspector identified the lack of written testing and surveillance procedures as a violation of Technical Specification 6.7 (131/9601-02).

c. Conclusions

Standard operating procedures generally provided adequate guidance to ensure that operations and surveillances were conducted properly and consistently. However, this was not true in all cases, and a violation was identified because standard operating procedures were not implemented to provide guidance for some surveillance activities involving nuclear safety systems.

04 Operator Knowledge and Performance

a. Inspection Scope

The inspector interviewed a senior reactor operator and observed a reactor startup and shutdown. Standard operating procedures were reviewed as the senior operator conducted reactor operations.

b. Observations and Findings

No problems were identified.

c. Conclusions

The reactor operator was knowledgeable of routine operating procedures.

05 Operator Training and Qualification

a. Inspection Scope

Documentation of the following was reviewed:

- Lectures
- Observations of manipulation of controls and understanding of operations and procedures
- Discussions of facility design, changes, procedures changes, and facility license changes
- Reviews of abnormal emergency procedures
- Annual written examinations

b. Observations and Findings

Lectures were conducted as required. Observations of operator manipulations were documented. The last observation was June 1996.

Section 3.c. of the licensee's Requalification Program for Licensed Reactor Operators stated that information should be included in on-the-job training so that each licensed operator and senior operator is cognizant of facility design changes, procedure changes, and facility license changes. There was no documentation of a discussion concerning the implementation of Standard Operating Procedure 16. The procedure was implemented

since the previous inspection. However, the senior operator was knowledgeable of the procedure, so the inspector concluded that the on-the-job training functioned appropriately.

A review of the abnormal/emergency procedures was conducted. Annual written examinations for 1994, 1995, and 1996 were given and successfully passed by the senior reactor operator.

c. Conclusions

The operator requalification program was conducted as required.

O6 Operations Organization and Administration

The inspector reviewed the licensee's organization and determined that no changes had been made in the structure of the organization, and it continued to be as described in Technical Specification 6.2. Since the previous inspection, the only personnel change involved the radiation safety officer. A new individual was hired to fill the position. The licensee had two senior reactor operators, one of whom was the reactor supervisor. There were no reactor operators.

O7 Quality Assurance in Operations

a. Scope of Inspection

Minutes of the Reactor Safeguards Committee meetings from December 22, 1993 to June 28, 1996 were reviewed.

b. Observations and Findings

The inspector verified the licensee's review and audit program implemented by the Reactor Safeguards Committee included approval for facility changes, changes in operating and maintenance procedures, and design changes as required by Technical Specification 6.5.

The Reactor Safeguards Committee met on a quarterly basis, as required by Technical Specifications. Annual audits were conducted on June 29, 1994, June 23, 1995, and July 7, 1996, by a Reactor Safeguards Committee member who was not part of the reactor staff. The audits reviewed the areas specified in the Technical Specifications. Biennial reviews of the emergency plan were conducted June 24, 1994, and July 8, 1996. A biennial review of the security plan was last conducted on May 25, 1995.

c. Conclusions

Adequate oversight of reactor operations was provided by the Reactor Safeguards Committee.

II. Maintenance

M1 Conduct of Maintenance

Other than the addition a fuel element and the repair of the pneumatic sample transfer system, there had been no major maintenance on the reactor since the previous inspection. Minor maintenance items were recorded in the reactor log.

III. Engineering

E2 Engineering Support of Facilities and Equipment

There were no reactor design changes since the previous inspection.

IV. Facility Support

R1 Radiological Protection and Chemistry (RP&C) Controls

a. Scope of Inspection

The following documents were reviewed:

- Annual review of radiation protection program
- Annual radiation dose summaries for 1993-1995.
- Radiation surveys in reactor log books
- Weekly contamination surveys
- Instrument calibration records

b. Observations and Findings

Annual reviews of the radiation protection program, in accordance with 10 CFR 20.1101(c), were performed in conjunction with the annual reviews of the medical center broad license radiation protection program.

Reactor operators used extremity monitoring in addition to whole body dosimetry. The extremity monitoring was used to record the dose accrued by the operators when they handled irradiated samples. Most dosimetry results were minimal. The limits of 10 CFR 20.1201 were not exceeded.

The inspector performed area radiation surveys and confirmed that radiation levels in unrestricted areas did not exceed the limits of 10 CFR 20.1302(a)(2) while the reactor was

operating at a power level of 18 kilowatts. The licensee had survey records and area dosimetry monitoring results as documentation of its radiation measurements. Restricted areas were posted in accordance with 10 CFR 20.1902. The licensee also performed general area contamination monitoring weekly.

Calibrations of the instruments used to perform radiation surveys were performed with radioactive sources traceable to national standards. Calibrated instruments were available at the time of inspection.

Workers were provided radiation safety instruction by the reactor supervisor in accordance with 10 CFR 19.12.

The inspector determined that the licensee had not transported radioactive materials since the previous inspection.

The inspector reviewed the licensee's program of material control and accountability to determine compliance with license conditions and 10 CFR Part 70.

The inspector reviewed material balance and inventory records and determined that the records were properly maintained in accordance with the requirements of 10 CFR Part 70 and that the licensee did not exceed the uranium-235 possession limits of License Condition 2.B.(2). There had been one receipt of fuel since the previous inspection. Receipt of the material was properly documented. The material was properly stored.

c. Conclusions

Appropriate radiation protection practices were implemented. Minimal radiation hazards were present with the reactor operated as observed.

P1 Conduct of EP Activities

a. Scope of Inspection

The following documentation was reviewed:

- Letters of agreement from local offsite support organizations
- Emergency call lists
- Training records
- Exercise and drill scenarios
- Contents of the emergency equipment cart

b. Observations and Findings

Letters of agreement with the Omaha Police Department, Omaha Fire Department, and the state of Nebraska were maintained and current.

The inspector verified that emergency call lists were accurate and provided in the proper places. Inventories of the emergency equipment located on the licensee's emergency cart were performed at the proper frequency. However, the inspector noted that the radiation survey instrument (an ion chamber) did not function. The reactor operator stated that the instrument was not routinely response tested during the equipment inventories, but this would be considered as a possible addition to the inventory.

Appropriate orientation and training were provided to onsite and offsite emergency response personnel in accordance with the emergency plan. The inspector confirmed that exercises or drills were conducted November 30, 1994 and November 21, 1995. The frequency was in accordance with the commitments of the emergency plan.

c. Conclusions

A good emergency preparedness program was maintained.

S1 Conduct of Security and Safeguards Activities

a. Inspection Scope

The inspector interviewed the head of the hospital security force and a senior reactor operator. Additionally, the inspector compared the facility and equipment with the description and commitments in the physical security plan.

b. Observations and Findings

The inspector verified that the site and facilities were as described in the security plan. There had been no revisions to the security plan since the previous inspection. The licensee stored and used material only within the controlled access area. Through interviews with licensee personnel and reviews of logs, the inspector determined that security for the facility was implemented as specified in the security plan. There had been no security problems or safeguards events since the previous inspection.

c. Conclusions

The physical security plan was properly implemented.

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to the licensee management on August 29, 1996. Licensee management acknowledged the findings presented. The licensee identified the physical security plan as proprietary information.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Claassen, Senior Reactor Operator
M. Christensen, Radiation Safety Officer
J. Phillips, Director, Veterans Affairs Medical Center
A. Pribble, Chief, Veterans Affairs Medical Center
D. Shoop, Research Chemist

LIST OF INSPECTION PROCEDURES USED

40750	Class II Research and Test Reactors Operations Procedure
81401	Plans, Procedures, and Reviews
81403	Receipt of New Fuel at Reactor Facilities
81431	Fix Site Physical Protection of Special Nuclear Material of Low Strategic Significance
85102	Material Control and Accounting - Reactors
86740	Inspection of Transportation Activities

LIST OF ITEMS OPENED AND CLOSED

Opened

131/9601-01	NCV	Annual Operating Report Omissions
131/9601-02	VIO	Lack of Standard Operating Procedures for Some Surveillances

Closed

131/9601-01	NCV	Annual Operating Report Omissions
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LIST OF PROCEDURES REVIEWED

Check Out and Calibration of Reactor Operating Instrumentation and Controls
Reactor Start Up
Reactor Shut Down
Control Rod Calibration
Emergency and Abnormal Conditions
Fuel Loading, Unloading, Storage, and Inspection
Control Rod Removal or Replacement

Maintenance Operations Which May Affect Reactor Safety
Criteria for Evaluating Experiments
Reactor Power Calibration
Radiation Monitor Calibration Procedure
Review and Approval of Changes to Procedures
Personnel Radiation Protection
Administrative Control of Operations and Maintenance
Filling Reactor Tank With Makeup Water
Conduct of Irradiations and Experiments