

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-602/89-03

Construction Permit: CPRR-123

Docket: 50-602

Licensee: University of Texas
College of Engineering
Department of Mechanical Engineering
Nuclear Engineering Program
Austin, Texas 78712

Facility Name: Nuclear Engineering Teaching Laboratory (NETL)
(TRIGA Mark II)

Inspection At: NETL, Balcones Research Center, Austin, Texas

Inspection Conducted: May 23-25, 1989

Inspectors:

M. E. Murphy
M. E. Murphy, Reactor Inspector, Test Programs
Section, Division of Reactor Safety

6/17/89
Date

H. F. Bundy
H. F. Bundy, Reactor Inspector, Test Programs
Section, Division of Reactor Safety

6/17/89
Date

Approved:

W. C. Seidle
W. C. Seidle, Chief, Test Programs Section
Division of Reactor Safety

6/17/89
Date

Inspection Summary

Inspection Conducted May 23-25, 1989 (Report 50-602/89-03)

Areas Inspected: Routine, announced inspection of control room console,
mechanical equipment, piping, and electrical systems installation; construction
progress; and schedule status.

Results: Within the areas inspected, no violations or deviations were identified. Final area reviews and punch list item correction were in progress. The control room console was installed and powered up with final electrical and electronic hookups in progress. The core structure is installed and beam tube alignment is completed. Some schedule slippage has occurred.

DETAILS

1. Persons Contacted

University of Texas

*T. Bauer, Assistant Director, Nuclear Engineering Teaching
Laboratory (NETL)

J. Green, Construction Inspector

M. Krause, Senior Reactor Operator

General Atomics

W. Hyde, Director, Electronic Systems TRIGA Group

J. Langford, Field Technician

*Denotes attendance at exit interview.

2. Construction Progress

The NRC inspectors toured the facility to view work in progress, review completion status, and observe general conditions. The NETL personnel have conditionally accepted the facility. The final punch list items were being completed. The control room console installation and hookup were in progress.

The core support structure installation and beam tube alignment were complete. The initial fill of the pool will commence when the electrical hookup work on the top deck is completed.

The contractor was completing the physical security work in his area of responsibility. A repair procedure for the doors, which was discussed in NRC Inspection Report 50-602/89-02, was successfully developed with vendor assistance. The "delamination" of the doors was corrected by spot welding. This eliminated the replacement of the doors. The University of Texas physical plant personnel will commence their part of the physical security installation when the contractor has corrected all deficiencies. Communications equipment installation is the responsibility of University of Texas physical plant personnel and was in progress.

The final HVAC system balancing and operations demonstration remains to be completed. Some minor deficiencies were noted in Magnehelic instruments which measure specified area pressure. These items were discussed with NETL personnel and the NRC inspectors were advised that they had been identified previously and would be corrected as part of the final system acceptance.

The physical placement of the control room console was complete. The instrumentation and control circuit hookup work were in progress. The initial power-up of the computer systems was observed during this

inspection. The individual computer diagnostic programs were run and the results indicated there was no damage or maladjustment due to shipping and handling.

3. Operational Readiness Review

This part of the inspection was to verify that the licensee is adequately prepared to load fuel and begin startup testing and routine operation. The initial review of this area included:

- Organization
- Committee Activities
- Quality Assurance
- Staffing
- Training
- Procedures
- Surveillance
- Experiments
- Technical Specifications (TS)

The organization structure remains the same as approved in the Safety Evaluation Report issued as NUREG-1135 in May 1985. Activities of the Reactor Operation Committee have continued under the charter issued for the Mark I TRIGA (Docket 50-192). This charter will require review and update for the Mark II TRIGA. The licensee's representative informed the NRC inspectors that this would be completed prior to licensing.

The quality assurance coverage continues to be provided by the resident construction inspector for the University of Texas. The continuous review and involvement by the Assistant Director, NETL, provides for independent quality assessment.

Staffing presently meets the NETL plan. Training has progressed satisfactorily for the two senior reactor operators and licensing examinations are presently scheduled to be completed on June 16, 1989.

The NRC inspectors reviewed the preliminary operating procedures. These include administrative, surveillance, and experiment operating procedures. An issue date for the final procedures has not been established. The NRC inspectors had no negative comments on the preliminary procedures.

A review of the proposed TS was conducted against the original Final Safety Analysis Report (FSAR) and the as-built condition. Several items that will require revisions were noted, such as the as-built configuration of the pool cooling and purification system, which does not agree with the FSAR diagram. It was also noted that the FSAR indicates a negative pressure for the reactor building that is considerably lower than the TS value. There are inconsistencies in the reactor modes terminology between the TS, the FSAR, and the operating procedures. These items were discussed with NETL personnel and the NRC inspectors were informed that revisions to the FSAR and TS were in progress and that these items were

already included. The revised documents will be submitted to the Project Manager, Office of Nuclear Reactor Regulation, in the near future.

4. Schedule Milestones

The milestone schedule/completion dates, as published in NRC Inspection Report 50-602/89-02, have been revised and are as follows, as of May 25, 1989:

<u>Milestones</u>	<u>Scheduled Completion Dates</u>	<u>Actual</u>
Receive control room console and mechanical components	October 1, 1988	October 1, 1988
Complete HVAC balancing	June 14, 1989	
Complete physical security elements	June 30, 1989	
Complete pool water system (installation)	March 31, 1989	April 26, 1989
Complete preoperational test procedures (including GA installation and test)	June 15, 1989	
Install control room console	May 8, 1989	May 24, 1989
Install GA mechanical components (including purification system)	May 5, 1989	May 19, 1989
Install radiation monitoring equipment (installation by GA)	June 2, 1989	
License two Senior Reactor Operators	June 16, 1989	
Complete all operating procedures	One procedure to issue and one procedure to be revised	
Receive operating license	August 15, 1989	
Load reactor fuel - achieve initial criticality	September 5, 1989*	

*Depends on cask availability and receipt of NRC operating license.

5. Exit Interview

The inspection scope and findings were discussed with the Assistant Director, NETL, at the conclusion of the inspection on May 25, 1989. The licensee did not identify, as proprietary, any of the material provided to, or reviewed by, the NRC inspectors.