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

REGION V

Report No. 50-224/82-01

Docket No. 50-224 License No. R-101 Safeguards Group

Licensee: University of California

Berkeley, California 94720

Facility Name: Berkeley Research Reactor (TRIGA Mark III)

Inspection at: Berkeley, California

Inspection conducted: January 7-8, 1982

Inspectors: Dennis J. Willett — Jan. 28, 1982
D. J. Willett, Reactor Inspector — Date Signed

J. P. Stewart — Jan 28, 1982
J. P. Stewart, Reactor Inspector — Date Signed

Approved by: G. Zwetzig — Jan. 28, 1982
G. Zwetzig, Chief, Reactor Project Section 1, Reactor Operations Projects — Date Signed

Summary:

Inspection on January 7-8, 1982 (Report No. 50-224/82-01)

Areas Inspected: Routine, unannounced inspection of facility organization, logs and records; requalification training; procedures; surveillances; review and audit; experiments; and independent inspection. The inspection involved 17 inspector-hours onsite by two NRC inspectors.

Results of the 8 areas inspected: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

*Professor S. Kaplan, Reactor Administrator
*Dr. T. Lim, Reactor Supervisor
*H. Braun, Chief Reactor Operator
J. Harrell, Supervisor, Electronics Shop
*G. Little, Reactor Health Physicist

*Denotes those attending the exit interview.

2. Organization, Logs and Records

The organization structure and personnel responsible for the operation and administration of the Berkeley Research Reactor were unchanged from that previously reported.

Through discussions with licensee representatives and an examination of facility records, the inspector found that the qualification levels of licensee personnel, including members of the Reactor Hazards Committee, were consistent with the Technical Specification requirements and the Safety Analysis Report.

Facility operation and maintenance logs were examined and found to document the performance of operational and maintenance activities consistent with administrative requirements. The specific records examined were as follows:

a. Maintenance Log.

b. Operations Log Books.

c. Daily Reactor Startup and Shutdown Checklist.

No items of noncompliance or deviations were identified.

3. Review and Audit

The licensee's review and audit activities since the last inspection were reviewed by the inspectors. This examination included dicussions with licensee management and a review of the following:

a. Reactor Hazards Committee (RHC) minutes.

b. Annual Report.

c. Reactor Hazards Committee Audits.

d. Reactor Supervisor Audits.

e. Technical Specifications.

f. RHC Bylaws.

Changes to the facility design and to facility procedures were found to have been completed consistent with the criteria of 10 CFR 50.59.

The inspector expressed the concern that the surveillance program was not currently one of the RHC's areas of audit and that there are no formal criteria for the RHC outlining:

a. The RHC's responsibilities and authority.

b. The subject areas to be audited and the associated schedule.

c. Criteria by which audits are conducted.

d. Resolution of audit findings.

The licensee committed to amend the RHC Bylaws to include the surveillance program as a RHC audit area and to address the RHC audit function in greater detail.

4. Experiments

The inspector examined selected irradiation requests and experiment procedures. The inspector verified by review of records and discussion with facility personnel that the experiments were reviewed and approved by the Reactor Hazards Committee as required. Limits on shutdown margin, excess reactivity, and individual/total worth of experiments were not exceeded. No new experiments have been approved.

No items of noncompliance or deviations were identified.

5. Operator Requalification Program

The licensee's operator requalification program was reviewed against the requirements of 10 CFR 55 and the approved operator requalification program.

The inspector reviewed the training files for each reactor operator and verified that the licensee had implemented the requalification program for licensed operators. The files contained records of examinations, reactivity manipulations, evaluations, and other activities as described in the requalification program.

No items of noncompliance or deviations were identified.

6. Reactor Operational Procedures

The inspection included an examination of the licensee's operating procedures for technical adequacy and for compliance with regulatory requirements. Procedures reviewed were those associated with reactor startup and steady state operation, reactor shutdown, and conduct of experiments. Except as noted below, a walk-through of selected procedure check lists verified that they would accomplish their intended purposes. The exception relates to Nuclear Engineering Reactor Laboratory Procedure No. 16 (NERL-16), "Generalized Procedure for Fuel Loading/Unloading and Control Rod Removal or Replacement," which does not appear to meet the intent of Technical Specifications Section 6.5. This is because the procedure addresses only the criticality aspects of fuel loading/unloading and control rod removal/replacement and does not provide specific information on:

(1) Approval of maintenance (authorizations).

(2) Limits and precautions (criticality considerations).

(3) References (including vendor manual).

(4) Equipment necessary (including test equipment).

(5) Step by step detailed instructions.

(6) Acceptance criteria (wear, tolerences, etc).

(7) RHC review and approval of the procedure.

The licensee has committed to a review of his procedures and to incorporate those applicable sections of the vendor manual into expanded and more detailed individual procedures by October 1, 1982. Additionally, the licensee informed the inspector of his intent to place all facility documentation on a review cycle.

7. Surveillance

The inspector examined selected surveillance activities and records to verify completion as required by technical specifications, and to determine if facility operation was consistent with limiting conditions for operation.

The inspector reviewed selected tests and inspections that are part of the surveillance program and expressed the concern that they did not:

a. Provide detailed instructions for performance of the surveillance.

b. Provide acceptance criteria (tolerances).

The inspectors concern was based on the fact that in the absence of the above items, no base-line data are available for problem trending (detection of equipment degradation). Because acceptance criteria and a detailed method for performing the activity assure a uniform method for documenting as-found conditions, the licensee has committed to upgrade his surveillance program to incorporate the above items a. and b. by October 1, 1982.

No items of noncompliance or deviations were identified.

8. Independent Inspection

The inspector walked throughout areas of the facility to inspect the general state of housekeeping and to check that monitoring instrumentation was reading or recording as necessary. No unusual fluid leaks or piping vibrations were observed.

No items of noncompliance or deviations were observed.

9. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on January 8, 1982. The scope and findings of the inspection were discussed and summarized as set forth in Paragraphs 2 through 8.