

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-30/87001(DRSS); 50-185/87001(DRSS)

Docket Nos. 50-30; 50-185

Licenses No. TR-3; R-93

Licensee: National Aeronautics and Space
Administration
Lewis Research Center
Plum Brook Station
Sandusky, OH 44870

Facility Name: Plum Brook Reactor Facility

Inspection At: Plum Brook Reactor Site, Sandusky, Ohio

Inspection Conducted: August 10, 1987

Inspector: *D. E. Miller*
D. E. Miller

8/17/87
Date

Approved By: *L. R. Greger*
L. R. Greger, Chief
Facilities Radiation
Protection Section

8-17-87
Date

Inspection Summary

Inspection on August 10, 1987 (Reports No. 50-30/87001(DRSS);
No. 50-185/87001(DRSS))

Areas Inspected: Routine, announced inspection of radiological protection including: status of reactor facility possess-but-not-operate licenses; organization; condition of systems and components; security and surveillance measures; facility changes; facility and environmental radiological surveys; internal audits; records and reports; and posting, labeling, and control.

Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted

*H. Pfanner, Plum Brook Reactor Facility (PBRF) Manager
H. McCune, First Alternate PBRF Manager
J. Ross, Site Manager, Teledyne Isotopes
D. Young, Manager, Technical Services, Teledyne Isotopes

*Denotes exit meeting attendance.

2. General

This inspection, which began at 8:00 a.m. on August 10, 1987, was conducted to examine compliance with license conditions for possess-but-not-operate Licenses No. TR-3 and No. R-93 for the Plum Brook Test Reactor and Plum Brook Mock-Up Reactor. No attempt was made to separate inspection activities between the two licenses.

3. Status of NRC Licenses No. TR-3 and R-93

In an amendment dated July 26, 1973, the Plum Brook Test Reactor was issued a license for Possession-Only. By letter dated March 17, 1980, as supplemented, NASA requested authorization to dismantle both the Plum Brook Test Reactor (PBTR) and Plum Brook Mock-Up Reactor (MUR), to dispose of the component parts, and to terminate Licenses No. TR-3 and No. R-93. Following review of the NASA applications, NRC issued an "Order Authorizing Dismantling of Facilities and Disposition of Component Parts," dated May 26, 1981 (the Order covered both reactors).

By application dated July 26, 1985, NASA requested that NRC rescind the Order of May 26, 1981, and reinstate the facilities to a status of Possession-Only. NASA cited budget limitations as the reason for not being able to implement the May 26, 1981 Order. By letters dated January 12, 1987, and January 28, 1987, Amendment No. 3 to License No. R-93 and Amendment No. 7 to License No. TR-3, respectively, were issued to reinstate and renew possess-but-not-operate licenses for the PBTR and the MUR. The technical specifications are revised in their entirety. The licenses expire ten years from the date of issuance.

4. Organization

Mr. H. Pfanner, current PBRF Manager, is responsible for maintaining the safe protective storage mode of the reactors. First Alternate PBRF Manager is Mr. H. McCune. Mr. S. Smith is Radiation Safety Officer.

Daily security, surveillance, and maintenance activities are performed by an onsite service contractor, Teledyne Isotopes.

5. Inspections, Tests, and Surveys

The inspector selectively reviewed records of the following inspections, tests, and surveys required by Technical Specification 2.20 of Facility License No. TR-3.

- PBS Fence Integrity Inspection
- PBRF Fence Integrity Inspection
- Building and CV Locks Inspection
- Building and CV General Condition Inspections
- Alarms Tests
- Facility Radiological Surveys
- Environmental Radiological Surveys
- Absolute Filter Inspection
- CV Integrity Test

The inspections, tests, and surveys appear to be adequately performed at the required frequency by qualified personnel. No significant problems were noted.

6. Condition of Systems and Components

The condition of systems and components vital to maintaining safe protective storage are continually reviewed by the licensee and the contractor. During 1987, several tanks were found to contain water because of rain water intrusion through small reach rod openings over the years. The water was sampled, analyzed, and planned releases were made to the stream in accordance with 10 CFR 20.105. The licensee used a deionizing column to reduce the radioactive concentration of some liquids before release. After the releases were made, the tank tops were covered with an insulation foam to prevent further water intrusion. The containment vessel, which also had been experiencing water intrusion because of a deteriorated covering, was also covered with an insulating foam; no further water intrusion has been noted.

Several building exteriors have been painted, and other appearance improvements made. The facility appears well maintained.

7. Internal Audits

Two internal audits of PBRF were conducted by the Radiation Safety Officer during 1985, and the NASA Lewis Research Center audit team conducted an audit in 1986. No findings were identified during the audits. The audits meet the requirements of Technical Specification 3.1.3 of Facility License No. TR-3.

8. PBRF Safety Committee (PSC) Meetings

The inspector reviewed the minutes of PSC meetings held in June and November 1986 and May 1987, in accordance with Technical Specification 3.1.6. Committee member qualifications, review subjects, reports, and meeting frequency comply with Technical Specification requirements. In response to committee comments, several PBRF procedures are being revised.

No violations or deviations were identified.

9. Facility Tour

The inspector toured PBRF facilities and grounds. Posting, labeling, and access controls appeared adequate. Maintenance of radiation area access control boundaries appeared good. No abnormalities were noted.

No violations or deviations were identified.

10. Exit Meeting

The inspector met with a licensee representative (denoted in Section 1) at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection. The inspector also discussed the likely information content of the inspection report with regard to documents and processes reviewed by the inspector during the inspection. The licensee identified no such documents/processes as proprietary.