UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

September 16, 1982

Report No. 70-824/82-05

Licensee: Babcock and Wilcox Company
Lynchburg Research Center
Lynchburg, VA 24505

Facility Name: Lynchburg Research Center

Docket No. 70-824

License No. SNM-778

Inspection at Lynchburg, Virginia

Inspector: J. B. Kahle — 9/15/82
J. B. Kahle — Date Signed

Accompanying Personnel: J. R. Metzger, IE HQ

Approved by: K. Barr — 9/15/82
K. Barr, Section Chief — Date Signed
Technical Inspection Branch
Division of Engineering and Technical Programs

SUMMARY

Inspection on September 1-3, 1982

Areas Inspected

This routine, unannounced inspection involved 15 inspector-hours on site in the areas of health physics procedures, external radiation control, internal radiation control, contamination surveys, source leak testing, radiation work permits, posting, instrument calibrations and records and reports.

Results

Of the nine areas inspected, no violations were identified.

REPORT DETAILS

1. Persons Contacted

   Licensee Employees

   *T. Engelder, Laboratory Director
   *C. Bell, Facilities Manager
   *A. Olsen, License Administrator
   *J. Cure, III, Health and Safety Supervisor
   *S. Pennington, Health Physics Engineer

   Other licensee employees contacted included two technicians.

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on September 3, 1982, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters

   Not inspected.

4. Unresolved Items

   Unresolved items were not identified during this inspection.

5. Health Physics Organization and Personnel

   Since the previous inspection the HP technician force has been reduced from four to two because of an overall reduction in activities and manpower at the laboratory. The inspector expressed his concern regarding the manpower reduction in the health and safety area. Management stated that they had fully evaluated this impact at the time the manpower adjustments were made. They concluded that adequate health and safety support was available for the safe operation of the laboratory but stated that they plan to continue their management evaluation to assure adequate radiation safety at the laboratory. The inspector stated that NRC would continue to review this area in their subsequent inspection program. The inspector had no further questions.

6. External Exposure Control

   a. The inspector examined the monthly film badge reports from October 1981 to July 1982. It was apparent that the radiation exposures to individual workers were within the limits specified in 10CFR20.101. No violations were identified.

b. An examination of the files showed that radiation surveys were made to monitor and control radiation exposure to individuals. The inspector had no further questions.

7. Internal Radiation Control

a. Urinalysis

An examination of the urine records since July 1981 showed that the uranium concentration in the urine of the workers was less that five micrograms per liter. All plutonium results were 0.0 ± 5 to 19 dpm per sample. The inspector had no further questions.

b. In-vivo

Body count results showed no internal deposition of fission, corrosion or activation products. Lung counts for uranium showed no positive results. The inspector had no further questions.

c. Air Sampling

An examination of the air sample records showed that the radioactive airborne concentrations ranged from a fraction to a few percent of the 10CFR20 MPC concentrations. The inspector verified that the alarm settings on the continuous air monitors were set within the limits specified in the license conditions. No violations were identified.

d. Respiratory Protection

The inspector discussed the respiratory protection program with licensee representatives. Testing for proper fit is performed each time a device is used. The individuals who may be required to wear respiratory protection devices are given a physical at least every 12 months. The inspector had no further questions.

8. Source Leak Testing

An examination of the records showed that the sealed sources had been leak tested every six months as required by the conditions of the license. The inspector had no further questions.

9. Contamination Surveys

An examination of the survey records showed that contamination surveys were performed at a frequency as required by the license and that surface contamination was not spread to uncontrolled areas. The inspector had no further questions.

10. Radiation Work Permits

The inspector examined the radiation work permit files. It was apparent that proper safety measures were required for work with radioactive materials. An examination of the bulletin board in the change area revealed that a copy of the radiation work permits were posted for work being performed in the cask handling area. An examination of the posted permits showed that proper radiation monitoring devices, respiratory devices, protective clothing, lapel sampling and surveillance were required. The inspector had no further questions.

11. Posting

Observations by the inspector revealed that radiation areas, airborne radioactivity areas and radioactive material areas were posted as required by 10 CFR 20.203. It was observed that notices to workers were posted pursuant to 10 CFR 19.11. No violations were identified.

12. Records and Reports

The inspector verified that records were maintained pursuant to 10CFR20.401 and that reports were submitted pursuant to 10CFR19.13, 10CFR20.407, 10CFR20.408 and 10CFR70.59. No violations were identified.

13. Surveys

From an examination of the daily and weekly survey files the inspector verified that the hood face velocities and building air flow measurements were made as required by license conditions. The inspector had no further questions.

14. Stack Samples

A licensee representative stated that plans are being formulated to modify the stack air sampling probe to meet the principles in American National Standard, ANSI N13.1-1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities. The inspector informed licensee representatives that the design of the sample line regarding flow velocity with respect to diffussion losses and inertia impaction and impingement should be considered. Reference was made to Nuclear Air Cleaning Handbook, ERDA 76-21 for optimum sampling line diameter. Licensee representatives were informed that the representative sampling of the stack would be identified as an inspector followup item, IFI, 82-05-01. The inspector had no further questions.