



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report No.: 47-23035-01/85-01

Licensee: West Virginia University
Morgantown, WV 26505

Docket No.: 30-20199

License No.: 47-23035-01

Facility Name: West Virginia University

Inspection Conducted: October 23-24, 1985

Inspectors:	<u>C. A. Rowe</u>	<u>12/31/85</u>
	C. A. Rowe	Date Signed
	<u>L. A. Franklin</u>	<u>11/15/85</u>
	L. A. Franklin	Date Signed
Approved by:	<u>John Potter</u>	<u>11/15/85</u>
	John Potter, Section Chief	Date Signed
	Division of Radiation Safety and Safeguards	

SUMMARY

Scope: This routine, unannounced inspection involved 28 inspector-hours on site in the areas of bioassay, personnel monitoring, surveys, ALARA, instrument calibrations, leak tests, inventories, Radiation Safety Committee meetings, and survey documentation.

Results: Of the nine areas inspected, apparent violations were found in all areas, totalling nine violations.

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REPORT DETAILS

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1. Licensee Employees

R. A. DeVaul, M.D., Dean, School of Medicine
S. T. Slack, Ph.D., Radiation Safety Officer
S. M. Miles, Associate Administrator, Hospital
J. Freeman, Manager Radiological Department

Other licensee employees contacted included technicians, office personnel, authorized users, and students.

2. Exit Interview

The inspection scope and findings were summarized on October 24, 1985, with those persons indicated in paragraph 1 above.

3. Personnel Protection-External

The inspectors reviewed the personnel monitoring program and determined that film badges are exchanged on a monthly basis. The licensee posts the vendor supplied badge results on an equivalent NRC Form-5. A review of records maintained since the previous inspection showed all quarterly exposures below 1.250 rem for personnel using by-product material.

The Radiation Safety officer stated that extremity dosimetry was provided only if requested by an individual user. The inspectors discussed, with the RSO, the need for a system to identify individuals who performed procedures involving the use of Phosphorus-32 with millicurie activity and assure that they were provided with extremity dosimetry to evaluate hand exposure.

A review of receipt records indicated that several users had received Phosphorus-32 in millicurie quantities. On October 24, 1985, during a laboratory tour, the inspectors identified an individual who received 15 millicuries of P-32 and used about 4.8 millicuries of this activity in his current procedure. He acknowledged that he had not worn an extremity dosimeter for about two years. Prior to this period he had worn an extremity dosimeter.

Failure to provide extremity dosimetry to evaluate hand exposure for individuals using large activities of Phosphorus-32 to assure they do not receive exposure to the hands in excess of 10 CFR 20.101 limits, is a violation of 10 CFR 20.201(b).

4. Personnel Protection-Internal

The inspectors reviewed the licensee's program for use of Iodine-125 in the performance of iodinations and discussed the program with licensee representatives. The inspectors determined from the discussions and review of

records that iodinations were routinely performed in the Physiology Department and Agricultural Science Department. The Radiation Safety Officer stated that there was no effective system to identify the individuals who actually performed the iodination procedure and to assure that they received a baseline thyroid scan prior to iodinating and a thyroid scan (bioassay) within 6 to 48 hours after completion of an iodination procedure.

The review of records of thyroid scan results indicated that only one baseline thyroid scan had been performed in 1985 prior to this inspection. The licensee had not performed any other thyroid scans during the period from August 1984, to the date of the inspection, a period in excess of one year. The Physiology Department possessed I-125 activity of 16.5 millicuries during the fourth quarter of 1984 and 14 millicuries during the first quarter of 1985. The Animal Science Department possessed 12 millicuries activity of I-125 during the fourth quarter of 1984.

The inspectors requested the licensee to perform thyroid scans of individuals in the Physiology and Animal Science Departments during a tour on October 23, 1985. Four individuals were identified who had performed iodinations for periods of two years and had never received a thyroid scan. Thyroid scans performed during this tour revealed no measurable iodine uptakes.

Failure to perform baseline and post-exposure thyroid scans on individuals in a department that possesses I-125 of activity greater than 10 millicuries in a quarter is a violation of License Condition 24.

5. Surveys

10 CFR 20.201(b) requires that each licensee shall make or cause to be made such surveys as may be necessary for the licensee to comply with the regulations in Part 20 and are reasonable to indicate the extent of radiation hazards that may be present. In addition, the licensee's Radiation Safety Manual, a document that is a part of License Condition 24, requires that surveys be performed either daily or following an experiment. The inspector while examining survey records determined that the most recent survey performed in Laboratory 3063 was performed April 19, 1985. Iodinations were performed in this laboratory after this date and as recently as October 17, 1985. A check of survey records was made for Laboratory 3101 and records indicate that only monthly surveys are being performed in this laboratory and that no surveys were performed during October and December 1983, and March, May, and November 1984. In conversation with licensee representatives it was admitted that no additional surveys have been performed while working with radioactive materials.

This is a violation of License Condition 24, incorporating by reference, Radiation Safety Manual, Sections 4.02.6 and 9.7.4.1.

6. ALARA

The licensee has an ALARA program that is an Appendix to the Radiation Safety Manual. The ALARA program, Section 3, requires that the Radiation Safety Officer perform quarterly an annual review of the Radiation Safety program. The inspectors requested that the Radiation Safety Officer (RSO) produce a record of these audits for examination by the inspectors. The RSO stated that the ALARA program was somewhat fragmented. The inspector asked the same question of the RSO again and was told that ALARA audits had not been performed for 1983, 1984, and up to the dates of inspection.

This is a violation of License Condition 24.

7. Survey Instrument Calibration

Item eleven of the licensee's application dated May 22, 1984, requires that portable survey instruments be calibrated quarterly. The survey instruments are calibrated by the Radiation Safety Office.

On October 24, 1985, during a tour of the licensee's facility, the inspectors identified portable radiation survey instruments in use in Laboratories 3101 and 3113 that were last calibrated on February 20, 1985 and in Laboratory G013 that was last calibrated on August 20, 1984.

Failure to calibrate portable radiation survey instruments at quarterly intervals is a violation of License Condition 24.

8. Sealed Source Leak Test

The licensee is required to leak test sealed sources containing licensed material with a half-life greater than thirty days for leakage and/or contamination every six months. A review of records indicated that two sealed Nickel-63 sources (15 mCi) had never been leak tested, and one sealed Nickel-63 source (15 mCi) was last tested in December 1983. A Cobalt-60 sealed source (5.6 mCi) was last tested in December 1983, and a Cesium-137 source had never been leak tested. The radiation safety technician stated that some of the tests had been performed but not recorded.

Failure to perform leak tests of sealed sources at six month intervals is a violation of License Condition 14.C.

9. Byproduct Material Inventories

The licensee is required to conduct a physical inventory every six months to account for all licensed material received and possessed under the license and maintain records of the inventory that includes the quantities and kinds of licensed materials, location of sources and date of the inventory for two years.

The Radiation Safety Officer receives feeder reports from authorized users and compiles an inventory report based on the feeder reports that are received quarterly.

A review of the records of inventories indicated that a compiled inventory report had not been prepared from January 1985 to the date of the inspection. Inventory reports did not include licensed material contained in sealed sources and radioactive waste storage areas. The Radiation Safety Officer acknowledged that sealed sources and radioactive waste in storage areas were not included in the physical inventory.

Failure to perform a physical inventory to account for all licensed material received and possessed under the license is a violation of License Condition 20.

10. Radiation Safety Committee Meetings

The Radiation Safety Manual, Section 3.5 a document that is a part of License Condition 24, requires that the Radiation Research Committee meet at least quarterly. The inspectors reviewed the minutes of these meetings and found no records of meetings between November 15, 1983, and June 4, 1985. A licensee representative stated that meetings have been missed but that he thought some meetings between the dates shown above had been conducted. He could not however present any evidence of these meetings.

This is a violation of License Condition 24.

11. Survey Records

10 CFR 20.401(b) requires a licensee to maintain records showing the results of surveys required by 10 CFR 20.201(b). 10 CFR 20.201(b) requires a licensee to make such surveys as may be necessary for the licensee to comply with the regulations 10 CFR 20. The inspectors while examining survey records for Laboratory 3113 could find no records of surveys after May 14, 1985. The inspectors in a conversation with a licensee representative determined that some surveys were being performed in this laboratory but no documentation had been recorded.

This is a violation of 10 CFR 20.401(b).



UNITED STATES NUCLEAR REGULATORY COMMISSION

OFFICE OF PUBLIC AFFAIRS, REGION II
101 Marietta Street, N.W., ATLANTA, GEORGIA 30303

II-86-08

Contact: Ken Clark or Joe Gilliland

Telephone: 404/331-4503

FOR IMMEDIATE RELEASE

(Wednesday, January 29, 1986)

NRC STAFF PROPOSES TO FINE WEST VIRGINIA UNIVERSITY \$1,250

The Nuclear Regulatory Commission staff has proposed a \$1,250 civil penalty against West Virginia University (WVU), Morgantown, West Virginia, for alleged violations of NRC health physics requirements in the WVU research program.

NRC is taking this action as the result of an inspection conducted at the university October 23-24, 1985. That inspection found a number of violations in the use of radioactive materials, including failure to survey work areas, calibrate and test laboratory instruments, take inventories of licensed materials, and hold required meetings of the radiation research committee. The inspection also found that the university, in some instances, had not performed required bioassays to check the amount of radioactive exposure by researchers and student laboratory workers.

In a letter to the university, Dr. J. Nelson Grace, NRC Regional Administrator in Atlanta, said the violations "demonstrate the need for improvements in the administration and control of your program to ensure the safe performance of licensed activities and adherence to NRC requirements." He added, however, that the base civil penalty of \$2,500 for a violation of this sort was reduced 50 percent because of WVU's "prior good performance in the general area of concern."

The university has 30 days to pay the civil penalty or to protest it, in whole or in part.

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