U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 89-01 EA-89-102

Docket No. 030-17788 License No. 02-19495-01

Licensee: Department of Health and Human Services
Phoenix Area Indian Health Service
3738 N. 16th Street, Suite A
Phoenix, Arizona 85016

Facility Name: same

Inspection at: same

Inspection conducted: April 3, 12, and 24-25, 1989

Inspectors: David D Skov 5/10/89
David D. Skov, Radiation Specialist Date Signed

Approved by: R D Thomas 5/10/89
R. D. Thomas, Chief Date Signed
Nuclear Materials Safety Section

Summary:

Inspection of April 3, 12, and 24-25, 1989 (Report No. 03017788/89-01)

Areas Inspected:

This was a routine, unnanounced inspection of licensed activities. The areas examined included organization; training; radiation protection procedures; use and storage of materials; instruments; receipt and transfer of materials; personnel radiation protection; transportation; leak testing; physical inventories; and required postings.

Results:

Nine apparent violations were identified during the inspection. Six apparent violations were classified as Severity Level IV violations. The remaining three apparent violations were categorized as Severity Level V violations. Two of the apparent violations were repetitive from the last NRC inspection conducted on March 26, 1984. The apparent violations are summarized as follows:

A. (1) At the time of the inspection, eight gauge operators had not been designated by the Radiation Protection Officer as authorized to use portable moisture density gauges containing licensed material since September 1985 (Item 3).

(2) The Radiati rotection Officer named on the license was replaced during Febru ry 1988 by another individual who was not authorized under the license (Item 2).

(3) An employee used a gauge containing licensed material prior to completing the required manufacturer's training course in the use of the device (Item 3).

B. Facilities at four locations in Arizona utilized by the licensee for storage of gauges since 1984 were not authorized under the license (Item 6).

C. Numerous records of personnel monitoring for badged gauge operators were not maintained for the period between January 1984 and December 1988 (Item 8).

D. Leak tests of sealed radioactive sources contained in three out of four gauges used by the licensee had been conducted at intervals exceeding six months on numerous occasions since 1987. This apparent violation is repetitive from the last inspection (Item 10).

E. Physical inventories of sealed sources were not conducted at required six month intervals between January 1986 and July 1988 (Item 11).

F. Records had not been maintained of all physical inventories of sealed radioactive sources in gauges since at least 1987. This apparent violation is repetitive from the last inspection (Item 11).

G. A record was not maintained of the receipt of a gauge containing sealed radioactive sources received by the licensee during October-November, 1984 (Item 7).

H. A gauge containing licensed material was shipped by the licensee to the manufacturer without properly certifying that the hazardous material was shipped in accordance with Department of Transportation regulations (Item 12).

I. Notices and documents were not posted at all facilities used for the storage of licensed material (Item 13).

DETAILS

1. Persons Contacted

*Commander S. Bradshaw, Deputy Chief Radiation Protection Officer
D. Moore, District Engineer (Whiteriver, Arizona)

*Present at the exit conference

2. Organization

Commander John R. Hamilton, Chief of the Sanitation Facilities Construction Branch within the Phoenix Area Indian Health Service (PAIHS), has overall responsibility for licensed activities. Mr. Lloyd Spangler, named on the license as the Radiation Protection Officer (RPO), was replaced by Commander S. Bradshaw as RPO in February 1988. However, the license was never amended authorizing Commander Bradshaw as the new RPO. Although Commander Bradshaw had completed the manufacturer's training course in the use of Troxler moisture-density gauges, and appears to be qualified to function as the RPO, the failure by the licensee to obtain the required NRC approval for authorization as RPO was identified as one element of an apparent violation of License Condition 12 (see Item 3).

3. Training and Qualification of Personnel

The Inspector's review of the licensee's program for training and qualification of personnel disclosed a number of problems with verification of training and the licensee's designation of authorized users. The license (License Condition 12) requires licensed material to be used by, or under the supervision and in the physical presence of, L. Spangler, P. Johnson, D. Moore, G. Drechsler, or other persons who have completed the manufacturer's training course in the use of gauges and have been designated as authorized to use gauge material by the licensee's RPO. However, with the exception of D. Moore, the above named individuals have either terminated employment with the licensee or are no longer involved with supervising use of moisture density gauges. PAIHS should have its license amended to delete persons no longer associated with licensed activities.

According to Commander S. Bradshaw, Indian Health Service (IHS) personnel using gauges are first required to complete the training course offered by the manufacturer, Troxler Electronic Laboratories, Inc. However, several records documenting completion of the Troxler training for several gauge operators were not maintained by the RPO. Many of these training records were instead located at the various IHS "Service Unit" offices in Arizona and Nevada where personnel using gauges had worked or where gauges were stored.

The RPO does not review all training records and the licensee apparently has no system in place to verify that its employees have completed the Troxler training course prior to using moisture-density gauges. Log use records and training certificates examined by the Inspector indicated that one employee, P. Rapp, used a Troxler gauge (serial number 7359) on March 6, 1987 at Keams Canyon, Arizona before having completed the manufacturer's training (March 10, 1987).

The Inspector also determined that the licensee had no formal procedure for designating gauge operators as authorized to use licensed material. Eight such employees (E. Tewa, C. Kniffin, M. Dwiggins, R. Seanor, P. Rapp, E. Enas, P. Sahmea and R. Johnson) were identified as having used Troxler gauges since September 1984 without being designated as authorized to use gauge sources by the licensee's RPO.

The use of licensed material before completion of required training, the licensee's failure to designate individuals as authorized to use gauge material, and the failure to obtain the required NRC approval to authorize Commander S. Bradshaw as the licensee's RPO (see Item 2 above), were identified as an apparent violation.

One apparent violation was identified.

4. Radiological Protection Procedures

According to the licensee, written operating and emergency procedures relative to the use of moisture density gauges are the same as those described in the license. The Inspector recommended that PAIHS revise their emergency procedures to incorporate the name and telephone number of the designated RPO.

No apparent violations were identified.

5. Instrumentation

Radiation survey instruments are not a license requirement. However, survey meters are available to the licensee for radiation monitoring in the event of an emergency.

No apparent violations were identified.

6. Use and Storage

The licensee has four Troxler Model 3400 Series surface moisture-density gauges that are used at temporary job sites in Arizona and Nevada. When not in use, the gauges are secured in IHS warehouse or other storage facilities at various times of the year at Sparks, Nevada and at the following locations in Arizona: Phoenix, Whiteriver, Keams Canyon, San Carlos, Sacaton, and Parker. However, with the exception of Sparks, Nevada, and Phoenix and Whiteriver, Arizona, the storage facilities used are not authorized under the license. The use of unauthorized facilities for storing gauges was identified as an apparent violation of License Condition 10.

The licensee's storage facility for gauges in Phoenix, Arizona, examined by the Inspector, was generally as described in the license. Although gauges were not present at the time of inspection, the storage room appeared to be well secured with restricted key access.

One apparent violation was identified.

7. Receipt and Transfer of Material

The licensee's records of receipts and transfers for the period since the last inspection (March 26, 1984) were reviewed by the Inspector. A record documenting the receipt of licensed material in a Troxler Model 3411B gauge (serial number 11420) was not maintained as required by 10 CFR 30.51(a). The gauge was originally received by the licensee from the manufacturer sometime during October-November 1984.

One apparent violation was identified.

8. Personnel Radiation Protection - External

Whole body film badges are used by the licensee for personnel monitoring. The badges are obtained from Radiation Detection Company and exchanged quarterly as authorized by the license. However, NRC licensing policy calls for monthly exchange periods for film (due to problems with fading of film density and measurements of dose over extended times), and quarterly exchange periods for thermoluminescent dosimeters (TLD's). The licensee should change it's personnel monitoring program accordingly.

The Inspector reviewed records of personnel monitoring for the period 1984 to present. The maximum annual exposures recorded were zero millirems. However, at the time of the inspection, most personnel monitoring records were incomplete or missing and could not be reviewed by the inspector. The problem of missing personnel monitoring records was also identified during the last NRC inspection of March 26, 1984 but was not cited as a violation based on a commitment made by the licensee's management to maintain such records.

Discussions with Commander Bradshaw disclosed that the administrative responsibilities for ordering film badges, assigning badges to gauge operators, and reviewing and maintaining personnel monitoring records received from the badge supplier were assigned to the IHS Hospitals or Clinics associated with each Service Unit employing gauge operators. However, badge dosimetry records are not forwarded from either IHS Hosiptals/Clinics or from the badge supplier for review and record keeping by the licensee's RPO.

At the request of the Inspector, the licensee made arrangements to obtain copies of missing personnel dosimetry records from all seven Service Units holding the records. On April 25, 1989, Commander Bradshaw reported that dosimetry records obtained for the period between January 1984 and December 1988 were now complete with the exception of the following records which were either missing from service unit files or had not yet been forwarded to the RPO:

Phoenix, Arizona	-	Second calendar quarter 1987
Whiteriver, Arizona	-	Fourth calendar quarter 1986; First and second calendar quarters 1987
San Carlos, Arizona	-	First, second, and third calendar quarters 1985 Fourth calendar quarter 1986 First and second calendar quarters 1987 Second and third calendar quarters 1988

The Inspector also learned that Commander Bradshaw and approximately four other employees had been issued spare film badges while using licensed material on certain occasions without being identified by name or other means on badge monitoring records. Commander Bradshaw indicated that he was unable to assign recorded doses to specific personnel who had been issued temporary badges.

The licensee's failure to maintain records of personnel monitoring as required by 10 CFR 20.401(a), was identified as an apparent violation.

One apparent violation was identified.

9. Personnel Radiation Protection - Internal

This license is for the use of moisture density gauges containing sealed sources only. Consequently, internal hazards arising from use of sealed sources do not exist under the license.

No apparent violations were identified.

10. Leak Tests

The Inspector reviewed records of leak tests and logs documenting the licensee's use of Troxler gauges since 1985. The records and other information provided by the licensee indicated that sealed sources had not been leak tested within six months prior to the use of Troxler gauges on several occasions as follows:

Gauge Serial No.	Dates of Use	Dates of Leak Test
10257	7/27-28/87, 8/7/87, 10/5-6/87, 10/8/87, 10/23/87, 11/3/87, 11/6-7/87, 11/9-11/87, 5/24-28/88, 6/6-7/88, 6/9-10/88, 6/14-15/88, 6/21-24/88, 6/29-30/88, 7/6-8/88, 7/11-12/88	9/16/86, 11/12/87*, 8/24/88*
7259	1/31/89, 2/1/89, 2/15-17/89 3/1/89	6/29/88, 4/18/89*
11420	7/20/88 and 7/26/88	11/12/87, 8/24/88*

* Indicates sealed sources leak tested at intervals between eight and fourteen months compared to six months required.

The licensee's failure to perform sealed source leak tests at required six month intervals was identified as an apparent violation of License Condition 15. A similar violation was also identified during the last NRC inspection.

One apparent violation was identified.

11. Physical Inventories

Prior to June 1988, the licensee had no formal program for conducting six month physical inventories of gauges containing sealed sources. Physical inventories that occurred had been limited to those times when gauges were either leak tested or checked out for use at temporary job sites. Use logs and leak test records reviewed by the Inspector indicated that physical inventories had not been conducted at the required six-month frequency for the following gauges:

Gauge Serial No.	Dates of Physical Inventory
11420	5/20/86
	1/16/87*
	11/12/87*
	7/20/88*
10257	1/14/86
	9/16/86*
	7/27/87*

*Exceeded required six month physical inventory period

The failure by the licensee to conduct the required physical inventories was identified as an apparent violation of License Condition 16.

The licensee instituted a program during 1988 for documenting physical inventories of gauges containing sealed sources. However, the licensee had failed to continue implementing the record keeping system since records of physical inventories were not prepared or were missing following inventories conducted since 1988. The only records maintained of sealed source physical inventories were those conducted for the following gauges on the dates indicated: June 3, 1988 (serial number 7358), July 1, 1988 (serial number 7359), September 6, 1988 (serial numbers 10257 and 11420). The licensee's failure to document physical inventories was identified as an apparent violation, and is apparently repetitive from the last inspection.

Two apparent violations were identified.

12. Transportation

The predominant transportation activities conducted involve private carrier shipments of licensed materials between gauge storage facilities and temporary job sites by gauge operators. On occasion, the licensee also ships gauges to the manufacturer by common carrier for servicing or repair as occurred on February 12, 1988.

For gauge shipments to and from temporary job sites or to the manufacturer, the licensee does not prepare its own hazardous material shipping papers but instead utilizes those shipping papers prepared by the manufacturer corresponding to the original shipment of gauges sold by Troxler to the licensee. For example, the Inspector's review of the shipping paper used by the licensee for the February 12, 1988 shipment of radioactive sources (gauge serial number 7359) to Troxler was dated June 21, 1979, identified Troxler rather than the licensee as the shipper, and improperly named a Troxler representative as certifying that the radioactive package was being shipped in compliance with U. S. Department of Transportation (DOT) regulations. The licensee's improper certification was identified as an apparent violation of 10 CFR 71.5 and 49 CFR 172.204(a).

One apparent violation was identified.

13. Posting of Notices

The inspection of the licensee's gauge storage facility in Phoenix, Arizona and information obtained by the Inspector from Commander Bradshaw and the District Engineer, D. Moore disclosed that the licensee had failed to post notices and other documents in a sufficient number of places to permit observation by employees engaged in licensed activities as required by 10 CFR 19.11. Specifically, the license, 10 CFR Parts 19 and 20, and NRC Form 3 had not been posted at the following licensee facilities in Arizona: San Carlos, Keams Canyon, Sacaton, and Parker. In addition, the NRC license and 10 CFR Parts 19 and 20 had not been posted at the licensee's facilities in Sparks, Nevada; Phoenix, Arizona; and Whiteriver, Arizona. The lack of proper postings was identified as an apparent violation.

One apparent violation was identified.

14. Confirmatory Measurements

Radiation surveys of the Troxler gauge primarily maintained at the storage facility in Phoenix, Arizona were not possible, due to the licensee's use of the gauge at a temporary job site at the time of inspection on April 3, 1989.

15. Exit Meeting

An exit meeting was held with Commander Bradshaw at the conclusion of the visit on April 3, 1989. The inspector discussed and summarized the scope and findings of the inspection to date. However, the inspection findings were incomplete due in major part to the large number of missing records

concerning licensed activities. The NRC license and inspection requirements were discussed in detail with the licensee during the inspection and at the exit briefing.