

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 030-06402/91-01

License No. 42-02964-01

Licensee: Western Atlas International
Atlas Wireline Services
P.O. Box 1407
Houston, Texas 77251-1407

Facility Name: Western Atlas International

Inspection At: Western Atlas International
Yukon, Oklahoma, and Houston, Texas

Inspection Conducted: September 6, 7, and 11, 1991

Inspectors: Selvan Rajendran, Radiation Specialist
Nuclear Materials Licensing Section

Wesley L. Holley, Radiation Specialist
Nuclear Materials Licensing Section

Approved:

William L. Fisher
William L. Fisher, Chief, Nuclear Materials
Licensing Section

7/23/91
Date

Inspection Summary

Inspection Conducted September 6-7 and 11, 1991 (NRC Inspection Report 030-06402/91-01)

Areas Inspected: This was a special, announced radiation safety inspection of a byproduct material program authorizing the use of sealed sources for well logging activities. The inspection activities concerned the loss on September 5, 1991, of a 2-curie Cs-137 sealed source from the licensee's vehicle near Huntsville, Texas. The inspection included the review of organization, management, training, radiation protection, independent measurements, notification, and transportation activities.

Results: In the areas inspected, seven apparent violations were identified: failure to adequately block, brace, or secure the transport package to the transporting vehicle (paragraph 3); failure to adequately secure the radioactive sealed source in the shipping container (paragraph 3); failure to

DETAILS

1. Persons Contacted

- *Jack Wasson, Safety Manager, Eastern and Western Regions
- *Jim West, District 2, Manager
- Bill Rose, Radiation Protection Officer (RPO)
- **David Norman, Safety Director
- **Kerry Richards, Logging Supervisor/Engineer
- **Garwin Deroin, Truck Driver
- Brian Buffington, Truck Driver
- Joe Williams, Truck Driver
- **Caren S. Krochenski, Personnel Manager
- **J. Rene Casarsa, Senior Vice President, Western Hemisphere Operations
- **Jack Pittman, Regional Technical Manager
- **Tom Schabel, Regional Manager, Eastern Continental Operations
- Michael C. Vredenburg, Texas Department of Health, Radiation Control Program, Program Manager, Region IV

- *Present at exit interview on September 6, 1991, at Yukon, Oklahoma.
- **Present at exit interview on September 7, 1991, at Houston, Texas.

2. Organization, Management and Training

The licensee's RPO is responsible for licensed activities using byproduct material. The RPO's efforts are directed to the logging supervisors/engineers and their assistants via the district managers and line supervisors. The licensee's radiation program functions in conjunction with the safety organization.

The inspectors reviewed selected training records and interviewed personnel concerning radiation protection and transportation procedures. Personnel appeared to be knowledgeable in these areas.

No apparent violations or deviations were identified.

3. Transportation Activities

On September 5, 1991, at 2:30 a.m., a licensee convoy consisting of two perforating trucks and a car left the licensee's Yukon, Oklahoma, district office. The two trucks contained 23 radioactive sealed sources that were being transferred to the licensee's facility in Houston, Texas. The logging engineer/supervisor who supervised the transfer followed the trucks in the car. The convoy stopped at an Oklahoma Highway Department weigh station on Interstate 35 outside of Davis, Oklahoma, and then proceeded to the licensee's facility located at U.S. Highway 70 and Interstate 35 at Ardmore, Oklahoma, where another truck joined the convoy at approximately 4:30 a.m. In the vicinity of Corsicana, Texas, the convoy entered a severe rainstorm which continued to Houston. As the

convoy was exiting Interstate 45 at Huntsville, Texas, at approximately 10:30 a.m., one of the perforating trucks from Yukon, Oklahoma, lost a 2-curie Cs-137 sealed source, (Source No. 899, Model S3T20) used for density measurements in well logging activities. This source was in a Type A shipping container, Part No. 080729. The convoy continued to Houston, not realizing that a source had been lost until arrival at 12:10 p.m.

The licensee immediately notified the state of Texas. The licensee initiated a search for the source between 1:30 and 2 p.m. on September 5, 1991, in Yukon, Oklahoma. Personnel left the Yukon facility with a survey instrument, rode outside the vehicle window and retraced the path of the convoy to Moore, Oklahoma. They drove approximately 25 mph and specifically concentrated on the curves of the entrances and exits of the route. At 3 p.m. the licensee dispatched a vehicle from Ardmore, Oklahoma, with two survey instruments. This survey was performed at about 20 mph on Interstate 35 from Ardmore to the Oklahoma/Texas state line. A logging truck with a logging detector exposed left the Yukon, Oklahoma, facility at 3:30 p.m. and retraced the route of the convoy to Dallas, Texas, surveying for the lost source.

At approximately 5:30 p.m. on Thursday, September 5, 1991, a citizen spotted the shipping container lying on the gravel shoulder about 30 feet from the southeast corner of the intersection of the exit road and underpass road. The underpass road passes under the interstate to a service road and truck stop. The source was close to the edge of the underpass road, approximately 7 feet from the center of the road. The source evidently fell out of the truck as it was turning at the intersection and was reported to be 3-4 feet from the shipping container. A citizen notified the Huntsville Police Department, which dispatched a police officer to the scene. The police officer is believed to have held the source for about 5 seconds before dropping the source approximately 6 to 12 inches from the container. The area was closed to the public until a member of the city's emergency management services retrieved the source, using 2 knives as a handling tool, and placed it back into the shipping container at approximately 6:15 p.m. The shipping container's shield plug was missing. Licensee personnel placed the source in a complete shipping container at approximately 7:30 p.m.

The back of the perforating truck from which the source was lost was a flat steel deck with no obstructions at the rear of the truck except for a canvas cover held in place with four elastic straps. During transportation, several shipping containers were fastened on the truck bed by locks attached to the container hasp and to the 3/8-inch diameter links of a steel chain, which was attached to structural members of the truck. The chain did not surround the shipping containers, which therefore were free to move on the truck bed. Apparently, this slack allowed the shipping containers to accelerate when the vehicle turned corners, pulling the hasp out of the body of the lock and allowing the shipping container containing the 2-curie Cs-137 sealed source to fall out of the back of the truck. This is an apparent violation of

10 CFR 39.31(b)(2), which requires packages to be physically secure in the transporting vehicle to prevent accidental loss of licensed material from the vehicle.

During the inspection, it was determined that the large safety pin that is supposed to be attached to the safety bar securing the shipping container shield plug was missing. This allowed the safety bar to slide out of position, and the plug and source to come out of the shipping container. The inspectors also noted that the safety bar and safety pin were missing from another Cs-137 source shipping container. These are apparent violations of 10 CFR 71.87(b) and (c), which require, in part, that prior to each shipment of licensed material, the licensee shall ensure that the package is in unimpaired physical condition, and that each closure device of the package is properly installed and secured.

A review of the shipping papers revealed radiation levels corresponding to YELLOW-III labels. However, the containers were labelled YELLOW II. This is an apparent violation of 10 CFR 71.5 and 49 CFR 172.403(b), which require that the proper label be affixed to a shipping container based on the radiation level at the surface of the package and the transport index.

Further examination of the shipping papers for the September 5, 1991, transport of licensed material revealed that the shipping papers contained more than one page but were not consecutively numbered as required by 10 CFR 71.5 and 49 CFR 172.201(c). This is an apparent violation. Also, the shipping paper, did not contain an emergency response telephone number. This is an apparent violation of the requirements of 10 CFR 71.5 and 49 CFR 172.201(d). The shipping paper also did not contain the letters "RQ" before or after the basic description of the radioactive material being shipped. This is an apparent violation of 10 CFR 71.5 and 49 172.203(c)(2).

Six apparent violations were identified.

4. Radiation Protection

The inspectors briefly reviewed selected aspects of the radiation protection program. Personnel involved in the source shipment were found to have adequately utilized personnel dosimetry and to have followed appropriate radiation protection procedures.

The Huntsville, Texas, police officer who responded when the source was discovered might have received a dose of approximately 100 rems to his hands if, as alleged, he picked up the source for approximately 5 seconds. The state of Texas is investigating this aspect of the incident.

No apparent violations or deviations were identified.

5. Notifications and Reports

The licensee notified the state of Texas timely, but failed to notify the Department of Transportation (DOT) as required by 10 CFR 71.5 and 49 CFR 171.15(a)(2). This is an apparent violation.

One apparent violation was identified.

6. Exit Interview

The inspectors met with the licensee representatives denoted in paragraph 1 at the conclusion of the inspection on September 6 and 7, 1991, and summarized the purpose, scope, and findings of the inspection. On September 11, 1991, NRC Region IV and licensee personnel discussed certain aspects of the incident by telephone.

PROPOSED ENFORCEMENT CONFERENCE AGENDA

WESTERN ATLAS INTERNATIONAL
ATLAS WIRELINE SERVICES

OCTOBER 1, 1991

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|---|---|
| I. INTRODUCTION AND PURPOSE OF MEETING | E. J. BUTCHER |
| II. NRC DISCUSSION OF APPARENT VIOLATIONS | W. L. FISHER
S. RAJENDRAN
W. L. HOLLEY |
| III. LICENSEE COMM VTS AND RES | J. GRESHAM
B. ROSE
J. WASSON
D. NORMAN |
| IV. ENFORCEMENT POLICY | G. F. SANBORN |
| V. CLOSING COMMENTS | E. J. BUTCHER |