

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 150-00042
License No.: L04925 (Texas)
Report No.: 150-00042/96-08
Licensee: Robco Production Logging, Inc. (Robco)
Facility: Office in Snyder, Texas, and temporary job sites near Guymon,
Oklahoma
Location: P.O. Box 1423
1001 East Highway
Snyder, Texas
Dates: June 6 through October 11, 1996
Inspector: William H. Radcliffe
Radiation Specialist

Approved By: Linda L. Howell, Chief
Nuclear Materials Inspection and
Fuel Cycle/Decommissioning Branch

Attachment: Partial List of Persons Contacted; Inspection Procedures Used;
Items Opened, Closed and Discussed; List of Acronyms Used

EXECUTIVE SUMMARY

Robco Production Logging: Offices in Snyder, Texas, and temporary job sites near
Guymon, Oklahoma.

NRC Inspection Report 150-00042/96-08

This inspection included review of well logging activities involving use of tracer material (iodine-131) performed by Robco Production Logging, Inc., (Robco) a Texas licensee, in Oklahoma, a non-Agreement State. The inspection included review of administrative aspects of the licensee's radiation safety program, including the filing of an NRC Form-241, "Report of Proposed Activities in Non-Agreement States," interviews with licensee personnel, and observation of well logging activities at two temporary jobsites near Guymon, Oklahoma. The inspection also included review of actions taken by the licensee to correct violations identified during a previous inspection in 1992.

Filing NRC Form-241 (revised), "Report of Proposed Activities in Non-Agreement States"

- The inspector identified an apparent violation of 10 CFR 150.20(b)(1) involving a failure to file or revise an NRC Form 241 for activities performed in a non-Agreement State in 1995 and failure to file a Form 241 in 1996 prior to conducting well logging activities in Oklahoma. A violation of 10 CFR 150.20(b)(1) was also identified during a previous NRC inspection performed in 1992 (Section 2).

Training, Retraining, and Instruction to Workers

- The licensee's training program appeared to adequately cover basic radiation protection principles applicable to use of tracer material. However, training provided by the company president and radiation safety officer to logging supervisors was not consistent with written procedures incorporated in the Agreement State license (Section 3).

Area Radiation Surveys and Contamination Control

- The inspector identified two examples of an apparent violation of 10 CFR 150.20(b) which, in part, requires that individuals performing well logging activities under the general license comply with 10 CFR 39.31 through 39.77. The first example involved a failure to maintain records of each use of tracer material at temporary jobsites in non-Agreement States. The second example involved a failure to perform a radiation survey at the well site before and after each subsurface tracer study to confirm the absence of contamination and to maintain records of such surveys for a period of three years (Section 4.1).
- Two apparent violations of 10 CFR 150.20(b)(4) and Condition 18 of Texas Radioactive Material License L04925 were identified involving the failure of licensee personnel to follow written procedures specifying that any tracer material remaining in the ejector tool would be emptied into the well bore at the conclusion of a

logging operation and a failure to use vinyl gloves when handling a logging tool loaded with iodine-131. A logging supervisor's failure to follow the licensee's procedures led to contamination of his hands with tracer material and a resultant uptake of iodine-131 (Section 4.2).

Transportation of Radioactive Materials

- An apparent violation of 10 CFR 150.20(b), 10 CFR 71.5(a), 49 CFR 172.300, 49 CFR 172.400, and 49 CFR 173.475 was identified involving the failure to evaluate, mark, and label an ejector tool used to transport Type A quantities of iodine-131. A second apparent violation of 10 CFR 150.20(b), 10 CFR 71.5(a) and 49 CFR 172.202(a)(2) was identified involving a failure to indicate the appropriate hazard class on shipping papers used while transporting radioactive material by public highway (Section 5).

Followup on Corrective Actions for Violations and Deviations

- Three of the apparent violations identified during the current inspection were cited during a previous inspection conducted in 1992. Specifically, the previous inspection identified failures to: (1) submit or revise an NRC Form 241 prior to performing work in a non-Agreement State, (2) maintain records of surveys at the well site before and after each tracer injection and of the vehicle used to transport radioactive material, and (3) maintain records of each use of radioactive material in a non-Agreement State. The licensee had failed to effectively implement corrective actions for these violations (Section 6).

Report Details

1 Organization and Scope of the Licensee Program (87100)

On December 28, 1995, the state of Texas issued Radioactive Material License L04925 to Robco. The license authorizes Robco to use iodine-131 as a tracer material to perform logging activities in oil and gas wells. From 1984 to December 1995, Robco was authorized to perform similar activities under Texas Radioactive Material License L03549.

Robco is a relatively small well logging company consisting of four individuals who are authorized and actively working as logging supervisors and several other individuals who act as riggers. Only logging supervisors or logging assistants are authorized to perform licensed operations. Riggers may only work with equipment and tools not associated with radioactive material (e.g., preparing the well head for logging tool insertion). Two of the four authorized logging supervisors are also licensee management representatives. One of the management representatives is Robco's owner/president and designated radiation safety officer (RSO), and the second is the assistant manager.

2 Filing NRC Form-241, "Report of Proposed Activities in Non-Agreement States" (87100)

2.1 Inspection Scope

The inspector's review of the administrative aspects of Robco's activities in non-Agreement States included interviews with licensee personnel and a review of licensee records.

2.2 Observations and Findings

Since 1990, Robco had entered Oklahoma, a non-Agreement State, on seven occasions. Robco had entered Oklahoma to conduct licensed activities four times in 1995 and 1996. According to Robco management, Robco did not conduct licensable activities in Oklahoma in 1993 or 1994.

In 1995, Robco performed well logging activities, using tracer material, in Oklahoma on May 21-25, August 27-31, and September 24-30. However the NRC Form 241 submitted by Robco for calendar year 1995, dated May 9, 1995, indicated the proposed dates of work as May 22-31, 1995. This information was never clarified or revised by Robco personnel.

Robco's RSO stated that he was notified by a client on May 23, 1996, that Robco's services would be required for work at a well field near Guymon, Oklahoma, beginning on June 3. Although he had filed for reciprocity in the past and stated that he realized that he would need to file an NRC Form 241 again, Robco's RSO did not file the required form and fee prior to initiating work in Oklahoma. The RSO stated that he was distracted by personal problems which required his absence from the office from May 28 until June 1. During this time,

the assistant manager was left in charge of the office, and Robco personnel entered Oklahoma on June 2.

Robco personnel entered Oklahoma with approximately 40 millicuries (mCi) of iodine-131 tracer material on June 2, 1996, and began conducting well logging operations on June 3. On that date, Robco personnel loaded the tracer ejector tool with a vial of iodine-131 which was assayed and determined to be 20 mCi on May 30, 1996. From June 3-6, 1996, Robco personnel logged 6 wells, using 10-15 percent of the original iodine-131 volume (2-3 mCi) for each well. Robco personnel were still performing tracer studies using the initial vial of iodine-131 when the inspector arrived at the first temporary jobsite on June 6. Robco continued to perform tracer operations near Guymon, Oklahoma until June 12.

After prompting by the NRC, Robco notified the Region IV office of its intent to perform well logging activities in Oklahoma by facsimile transmittal of an NRC Form 241 on June 6, 1996. A completed NRC Form 241 and the associated fee was not sent to the Region IV office until June 10.

During an NRC inspection conducted on November 12, 1992, an NRC inspector determined that Robco had conducted well logging activities in Oklahoma on July 22-23 and September 3-4, 1992, without revising the NRC Form 241 filed by Robco on December 26, 1991, or filing an additional NRC Form 241 to include these dates. When asked by the inspector about Robco's failure to file revisions to the NRC Form 241 submitted by Robco in 1995 to provide notification about activities performed on dates not specified on the Form 241 and the failure to file an NRC Form 241 before conducting well logging activities in Oklahoma on June 3, 1996, Robco's RSO stated that he had forgotten to do so. The RSO further stated that he did not recall the violation cited in 1992, although he was present during the inspection, until the inspector showed him the letter dated January 6, 1993, which the RSO sent to the NRC in response to a Notice of Violation issued by the NRC in 1992.

In his 1993 letter, the RSO stated that the reason for the violation was a lack of staff knowledge of the required filing procedures. In response to the violation, the RSO stated in his letter that "all personnel have now been fully informed as to the correct procedure for Agreement State licensees conducting activities in a non-Agreement State under the reciprocity provisions." However, the RSO told the inspector he had not discussed the procedure for filing an NRC Form 241 with his staff because he believed that it was his responsibility alone to file these forms. The assistant manager confirmed the RSO's statement, indicating that he knew that something had to be filed, but although he had worked at Robco since the last inspection, he had never been instructed in which forms needed to be filed or how to fill them out.

10 CFR 150.20(b)(1) requires that any person engaging in activities in non-Agreement States under the general license provided in 10 CFR 150.20 shall, at least three days before engaging in each such activity, file four copies of NRC Form 241 and four copies of its Agreement State specific license with the Regional

Administrator of the appropriate Regional office, unless that Regional Administrator waives the requirement for filing additional forms during the remainder of the calendar year following the receipt of the initial NRC Form 241. Failure to file an additional NRC Form 241 or revisions to the initial NRC Form 241 submitted by Robco 1995 to notify the NRC of activities performed in Oklahoma on August 27-31 and September 24-30, 1995, and failure to file an NRC Form 241 in 1996 prior to conducting well logging activities using byproduct material in Oklahoma on June 3-10, 1996, was identified as an apparent violation of 10 CFR 150.20(b)(1) (150-00042/9608-01).

2.3 Conclusions

The inspector identified an apparent violation of 10 CFR 150.20(b)(1) involving a failure to file an NRC Form 241 or to revise an existing Form 241 to include all dates of proposed work in a non-Agreement State in 1995 and 1996. This violation was cited during the previous inspection and might have been prevented had the licensee implemented the corrective actions described in Robco's letter dated January 6, 1993.

3 **Training, Retraining, and Instruction to Workers (87100)**

3.1 Inspection Scope

This portion of the inspection included interviews with licensee personnel, review of licensee records, and observation of activities at a temporary jobsite.

3.2 Observations and Findings

The inspector discussed training with the logging supervisor and the rigger working at temporary jobsites in Oklahoma. The logging supervisor stated that all Robco logging supervisors completed a Texas-approved training program. The logging supervisor also stated that: (1) the RSO had provided him a copy of Robco's "Tracer Service Operating and Emergency Procedures Manual;" (2) procedures, regulations and radiation safety were discussed at least annually in safety meetings; and (3) logging supervisors were provided training by Isotech, Inc. (a tracer material supplier and consulting service) biannually. During these discussions, licensee personnel generally demonstrated adequate knowledge of basic radiation safety principles; however, as described below, the logging supervisor was not as familiar with Robco's written procedures.

The inspector also observed the logging supervisor and a rigger conduct tracer operations at a temporary jobsite in Oklahoma. The inspector noted that the rigger did not handle any tracer material, the ejector tool, or the survey meter. However, the inspector noted that the logging supervisor failed to perform certain activities in accordance with Robco's written procedures. Specifically, the logging supervisor had not ejected all of the tracer material from the ejector prior to raising the tool from the well bore; the logging supervisor used cotton rather than vinyl gloves to clean the surface of the tool after the tracer study was completed; and

during discussions with the inspector, the logging supervisor stated that he did not perform a survey of the well head prior to leaving the site unless he was certain that the final tracer study had been performed and that he would not return to the site.

During discussions with the inspector, the logging supervisor stated that he performed his duties consistent with verbal instructions given to him by the RSO and assistant manager. Based on discussions about the specifics of Robco's operating procedures, the inspector determined that the logging supervisor was not familiar with the details of the licensee's written procedures and concluded that the logging supervisor may have relied upon verbal instructions given by the RSO. This conclusion was supported by the logging supervisor's apparent surprise at the content of Section XIV, "Specific Operational Procedures," of Robco's procedure manual because the instructions provided therein did not match the verbal instructions given to the logging supervisor regarding loading and emptying the ejector tool.

Through interviews with the RSO and assistant manager, the inspector concluded that training provided to logging supervisors about use of vinyl gloves for contamination control and surveys required both before and after tracer injections was in accordance with Robco's written procedures. The RSO stated that he believed the use of vinyl gloves had been discussed during a recent safety review, and he felt that the logging supervisor had just made a mistake.

With regard to the inspector's observation that the logging supervisor had not emptied the ejector tool prior to removing it from the well bore, the RSO and assistant manager confirmed that the logging supervisor had been trained to perform operations in this manner. The RSO and assistant manager stated that they believed that loading the tool fewer times during a project was better from a radiation protection standpoint and that they train logging supervisors to empty the tool during the last tracer study prior to returning to the corporate office.

3.3 Conclusions

The training program appeared adequate in conveying basic radiation protection theory. However, training provided to logging supervisors regarding some tasks was not consistent with Robco's written procedures. In addition, a logging supervisor did not appear to be familiar with Robco's written procedures, indicating a need to focus attention to training logging supervisors in the licensee's operating procedures and implementation of written guidance while performing logging activities in the field.

4 Area Radiation Surveys and Contamination Control (83822)

4.1 Area Surveys

a. Inspection Scope

This portion of the inspection included interviews with licensee personnel, review of licensee records, and observation of activities at a temporary jobsite.

b. Observations and Findings

Through records review and side-by-side survey measurements, the inspector determined that the survey meter used by the logging supervisor was calibrated and operational. The inspector's and the licensee's instruments were used to determine background radiation levels, confirm the transportation index on the licensee's radioactive material shipping container, and conduct a post tracer study well site survey. For these measurements, both meters corresponded to within 20 percent. Neither meter detected measurable contamination at the well sites following the tracer studies.

The inspector reviewed survey and utilization records in order to verify that corrective actions had been taken for a violation cited during the last inspection involving the licensee's failure to retain certain records. The inspector confirmed that the logging supervisor was completing records documenting the use of tracer material, vehicle surveys, and well site surveys. Records relating to injection studies performed during June 2-6, 1996, appeared to contain the required information. However, the logging supervisor noted that he had performed injection profiles, using iodine-131 injections into the wells, followed by 1-hour "shut-in" and 24-hour "shut-in" tracer injections. These "shut-in" studies were not identified on the utilization logs. The logging supervisor stated that each profile study involved injection of iodine-131; however, since he used small quantities of iodine-131, he felt that the 1- and 24-hour studies didn't need to be entered on the utilization logs. Subsequent discussions with the RSO revealed that the licensee had not retained utilization and survey records for activities conducted in non-Agreement States during calendar year 1995. Thus, the inspector was unable to verify whether each use of tracer material in a non-Agreement State had been recorded during calendar year 1995.

Because evaluation of each well involved several tracer injections, the inspector questioned the logging supervisor about how pre- and post-injection surveys of the well head were performed. The logging supervisor stated that he conducted surveys upon his arrival at a particular well site and after all "profiles" (or tracer injections) were completed for any particular well. The logging supervisor further stated that he usually did not leave the well site between the initial and 1-hour "shut-in" tracer injections, but noted that the well site was normally left unattended between the 1-hour and 24-hour "shut-in" tracer injections. Following discussions with the inspector regarding NRC requirements that a survey of the well site be performed before and after each tracer injection, the logging supervisor

stated that he would survey well sites to confirm the absence of contamination after each tracer study or before he leaves the well site.

Subsequent discussions with the RSO and assistant manager revealed that they were aware of the requirement to perform a survey before and after each tracer injection and had instructed the staff accordingly. In fact, Item B.2 of Section XIV, "Specific Operational Procedures," of Robco's operating procedure manual states that the logging supervisor will "monitor the job site with survey meter (open end probe) and record in 'Before' Job Site Survey Report (Form No. 1)." Item B.8 states that the Logging Supervisor will "perform 'After' job site surveys and record in Job Site Survey Report (Form No.1)." Based on interviews of Robco personnel, it appeared that the logging supervisor's failure to perform a survey after each tracer injection was the result of his misinterpretation of Robco's procedure and NRC requirements. He felt that the "after" surveys did not need to be conducted until all tracer operations at a well were complete, whether or not it took more than a day.

10 CFR 150.20(b) requires, in part, that any person engaging in well logging activities in non-Agreement States under the general license provided in 10 CFR 150.20 must comply with 10 CFR 39.31 through 39.77, inclusive. 10 CFR 39.39 requires, in part, that a licensee maintain records for each use of licensed material and that the record be retained for a period of 3 years from the date of use. 10 CFR 39.67 requires, in part, that the licensee make a radiation survey at the temporary job site before and after each subsurface tracer study to confirm the absence of contamination and that records of these surveys be retained for a period of 3 years.

The failure to record each use of radioactive material in a non-Agreement State in 1996 and the failure to retain records of material use for 1995 was identified as an apparent violation of 10 CFR 150.20(b) and 10 CFR 39.39 (150-00042/9608-02). The inspector noted that the failure to retain records of material use was cited during the previous inspection in November 1992 (150-00042/9202-02).

The failure to perform a survey at each temporary jobsite before and after each iodine-131 subsurface tracer study conducted in 1995 and 1996, and failure to retain records of well site and vehicle surveys completed in 1995 was identified as an apparent violation of 10 CFR 150.20(b) and 10 CFR 39.67 (150-00042/9608-03). The inspector noted that the failure to retain survey records for the period required by 10 CFR 39.67 was cited during the previous inspection in November 1992 (150-00042/9202-03).

c. Conclusions

The inspector identified two apparent violations of 10 CFR 150.20(b) involving requirements specified in 10 CFR 39.39 and 39.67. The first apparent violation involved a failure to retain records of material use in non-Agreement States during 1995 as required by 10 CFR 39.39 and a failure to record each use of tracer material in a non-Agreement State in 1996. The second apparent violation

involved failures to perform a radiation survey at temporary jobsites before and after each subsurface tracer study to confirm the absence of contamination and to maintain records of these surveys for 3 years as required by 10 CFR 39.67. Based on interviews with licensee personnel, it appeared that the apparent violations noted above were the result of a lack of familiarity with Robco's written procedures and NRC requirements.

4.2 Handling and Use of Radioactive Materials

a. Inspection Scope

This portion of the inspection included interviews with licensee personnel, review of licensee records and procedures, and observation of activities at a temporary jobsite.

b. Observations and Findings

On June 6, 1996, the inspector observed well logging operations at a temporary jobsite near Guymon, Oklahoma. At the conclusion of the first tracer study after the inspector arrived at the well field, the logging supervisor offered the inspector the opportunity to inspect the logging tool. While the logging supervisor prepared the tool for a visual inspection, the inspector completed interviews of the rigging staff.

As he approached the logging supervisor, who was wiping the surface of the logging tool, the inspector noted that his survey instrument was detecting elevated radiation levels. The inspector also noted the logging supervisor was wiping off the tool with a towel and that he was wearing only cotton work gloves to protect his hands. The inspector asked the logging supervisor to step away from the tool so he could survey the logging supervisor's gloves and hands. The survey revealed that the logging supervisor's gloves were contaminated, and the inspector subsequently suggested that the logging supervisor remove them and treat them as radioactive waste. After the gloves were removed, the inspector surveyed the logging supervisor and noted that the only detectable contamination was on the logging supervisor's hands. The survey detected contamination levels of approximately 7000 counts per minute (140 times background).

During discussions about actions required in response to personnel contamination incidents, the logging supervisor stated that he didn't know whether he was required to contact the RSO in situations such as was observed on June 6 and further noted that he had been having trouble contacting his office that week anyway. The inspector then monitored the logging supervisor's decontamination. The inspector noted that Robco provided sufficient disposable towels, hand cleaner, cotton work gloves, and vinyl/latex gloves for use at temporary jobsites. The logging supervisor was able to successfully decontaminate his hands as verified by confirmatory surveys.

The inspector subsequently contacted the RSO to inform him of the incident and the RSO confirmed that a bioassay was performed for the logging supervisor and the rigger. The results indicated that the logging supervisor had an intake of approximately 0.02 microcurie (μCi) of iodine-131. This is well below 10 percent of the applicable 10 CFR Part 20 limit and half of the licensee's action level.

During observations at this temporary jobsite the inspector noted several examples of failures to comply with Robco's operating procedures. Of particular concern was the logging supervisor's failure to eject any remaining tracer material into the well bore after completing logging operations and the logging supervisor's failure to use vinyl gloves when handling the ejector tool which contained iodine-131. The failure to eject all tracer material at the conclusion of each tracer study appeared to conflict with guidance in Item B.5 of Section XIV, "Specific Operational Procedures," which states "after completing logging operations, eject all remaining radioactive material in well bore." The failure to wear gloves appeared to conflict with Item C.3 of Section XIII, "General Procedures for Handling Radioactive Isotopes on Location," which states "the Logging Supervisor will bear [sic] protective clothing.[sic] such as vinyl gloves, protective sleeves." (These issues are also discussed in Section 3.2 of this report.)

The inspector also noted that the logging supervisor failed to perform certain surveys (see Section 4.1 of this report) and that the ejector tool was used to transport tracer material in a manner that was not in compliance with Department of Transportation (DOT) requirements (see Section 5 of this report).

The inspector discussed the above noted observations with the logging supervisor at the first temporary job site. The logging supervisor stated that he was following the training given to him by the RSO and assistant manager. During subsequent interviews, the inspector confirmed that the RSO and assistant manager had trained logging supervisors not to eject all tracer material before raising the tool from the well bore as specified in Robco's procedures. Both the RSO and assistant manager stated that they had submitted the operating procedures as written to the Texas Radiation Control Program because they believed, at the time, that the process used by Robco in the field would not be approved by the Texas license reviewer.

The RSO indicated that logging supervisors were instructed to load the tool with a full vial of iodine-131 and to use the content of the ejector reservoir for several studies, until empty, because he believed that by loading the tool only once for several tracer studies, personnel exposures would be reduced. The RSO stated that handling a vial of iodine once, as opposed to several times, reduced the amount of time that personnel were exposed to the iodine-131 solution and would allow logging supervisors to complete a series of tracer studies more quickly. However, the inspector noted that a failure to fully empty the ejector tool prior to raising the tool from the well bore could increase the potential for contamination of personnel. Specifically, through discussions with the logging supervisor, the inspector discovered that the logging supervisor would normally have to contact the tool in the course of several well profiles to add water to the tool's reservoir

while iodine-131 was still in the tool. Since this logging supervisor did not consider this activity to be "handling" radioactive material, he did not wear vinyl gloves and as a result, had the potential to contaminate himself. Furthermore, the tool appeared to leak as it was raised from the well bore. The inspector easily identified removable contamination when the tool was removed from the well bore while containing iodine-131, but he found no measurable fixed or removable contamination when the tool was removed empty from the second well bore.

As discussed in Section 3.2 of this report, the inspector determined that the RSO and assistant manager had provided appropriate instructions to logging personnel regarding surveys required before and after a subsurface tracer study and the need to use appropriate gloves when handling potentially contaminated equipment.

10 CFR 150.20(b)(4) states that any person engaging in activities in non-Agreement States under the general licenses provided in 10 CFR 150.20 shall comply with all terms and conditions of the specific license issued by an Agreement State except such terms or conditions as are contrary to the requirements of 10 CFR 150.20. Robco's operating procedures were submitted with the license application dated October 23, 1995, and incorporated in Texas Radioactive Material License L04925 by reference in License Condition 18. The failure to follow the written procedures stating that the logging supervisor must wear vinyl gloves when handling radioactive tracer material was identified as an apparent violation of 10 CFR 150.20(b)(4) and License Condition 18 (150-00042/9608-04). The failure to follow written procedures stating that all remaining tracer material must be ejected into the well bore after completing logging operations is an apparent violation of 10 CFR 150.20(b)(4) and License Condition 18 (150-00042/9608-05).

c. Conclusions

The inspector identified two apparent violations of 10 CFR 150.20(b)(4) and Condition 18 of Texas Radioactive Material License L04925. The first apparent violation involved the failure of licensee personnel to follow a written procedures which states that the logging supervisor must wear vinyl gloves when handling radioactive tracer material. While observing tracer operations at a temporary jobsite on June 6, the inspector noted that a logging supervisor used cotton gloves to handle a contaminated ejector tool and as a result, his hands were contaminated. The second apparent violation involved the failure to follow a written procedure which states that all remaining tracer material must be ejected into the well bore after completing logging operations. Based on interviews with Robco logging personnel, the RSO and the assistant manager, the inspector determined that the RSO and assistant manager had instructed logging personnel to not follow the procedure and instead instructed logging personnel to empty a full vial of iodine-131 into the ejector tool and to use the reservoir content until empty.

5 Transportation of Radioactive Material (86740)

5.1 Inspection Scope

Through interviews with licensee personnel, review of licensee records, and observation and inspection of packages used to transport radioactive material, the inspector evaluated Robco's transportation program.

5.2 Observations and Findings

The inspector began his review of this program area by discussing transportation requirements with the logging supervisor. From this, the inspector concluded that his understanding was sufficient to carry out his assigned duties.

The inspector then reviewed Robco's shipping papers. The papers appeared to contain all required information with the exception of the hazard class for radioactive material (7). The shipping papers indicated that the licensee used a Type A package, as required by 49 CFR 173.431, to transport quantities of iodine-131 greater than 1.35 mCi.

The inspector also examined packages used to transport vials of iodine-131 tracer material. Robco was using a heavily shielded ammo can. It appeared to be in good condition and free of defects. Marking was appropriate, but one of the two DOT-required labels was illegible. Though not chained to the vehicle, the ammo can was stored in a locked storage compartment and appeared unlikely to move from its position if subjected to conditions incident to normal transport. The inspector compared the transportation index indicated on the package with radiation levels he measured at approximately one meter and noted that the two agreed within a 20 percent tolerance.

However, packaging used to transport iodine-131 after a vial was opened did not conform to DOT requirements. The inspector determined that the ejector tool which was loaded with approximately 20 mCi of iodine-131 tracer material at the beginning of the week was not marked, labelled, or evaluated for external radiation or contamination levels, in accordance with DOT requirements for packages containing non-excepted quantities of radioactive material. The inspector also determined that the lubricator which held the ejector tool likewise was not labeled, marked, or evaluated for external radiation or contamination levels. Further, after discussions with Robco's RSO, the inspector found that neither the ejector nor the lubricator had been evaluated against the Type A package performance criteria, even though they were being used to transport greater than 1.35 mCi of iodine-131, a non-excepted Type A quantity of radioactive material, on public roads. For reasons discussed in detail in Section 4.2 of this report, the RSO had instructed logging personnel to empty the ejector after each study. This resulted in the ejector being used as a transportation package. However, it was not clear that the RSO had considered compliance with DOT packaging requirements when this instruction was given.

10 CFR 150.20(b) states, in part, that any person engaging in activities in non-Agreement States under the general licenses provided in 10 CFR 150.20 are subject to 10 CFR Part 71. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside the site of usage, as specified in the NRC license, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the DOT in 49 CFR Parts 170 through 189.

49 CFR 172.202(a)(2) requires that the shipping description of a hazardous material on the shipping paper must include the hazard class or division prescribed for the material as shown in Column 3 of the table in 49 CFR 172.101.

Failure to indicate the hazard class for a shipment of greater than 1.35 mCi of iodine-131, a non-excepted Type A quantity of radioactive material, on the shipping paper is an apparent violation of 10 CFR 150.20(b), 10 CFR 71.5(a) and 49 CFR 172.202(a)(2) (150-00042/9608-06).

49 CFR 172.300 requires, in part, that each person who offers a hazardous material for transportation shall mark each package containing the hazardous material in the manner required by Subpart D of 49 CFR Part 172.

49 CFR 172.400 requires in part, with exceptions not applicable here, that each person who offers a hazardous material package for transportation shall label each package containing the hazardous material with the labels specified in Subpart E of 49 CFR Part 172 (e.g., Radioactive Yellow-II). 49 CFR 173.475 requires, in part, that before each shipment of any Class 7 (radioactive) material, the offeror must ensure, by examination or appropriate tests, that the packaging is proper for the contents to be shipped and that external radiation and contamination levels are within the allowable limits specified in 49 CFR Subchapter C.

Transporting greater than 1.35 mCi of iodine-131, a non-excepted Type A quantity of material, in a package (the ejector tool) which: (1) was never determined to be proper for the contents to be shipped (i.e., to meet the test requirements of 49 CFR 173.463 through 173.469), (2) was not evaluated for external radiation or contamination levels, (3) was not labelled, and (4) was not marked, was identified as an apparent violation of 10 CFR 150.20(b), 10 CFR 71.5(a), 49 CFR 172.300, 49 CFR 172.400, and 49 CFR 173.475 (150-00042/9608-07).

5.3 Conclusions

The inspector identified an apparent violation of 10 CFR 150.20(b), 10 CFR 71.5(a), 49 CFR 172.300, 49 CFR 172.400, and 49 CFR 173.475 involving the failure to evaluate, mark, and label an ejector tool containing Type A quantities of material. Although sufficiently knowledgeable of DOT requirements, licensee management directed employees to transport material in the ejector tool, which had not been evaluated as a transport package, had not been evaluated for external radiation or contamination levels, and had not been marked or labelled. In addition, the inspector identified an apparent violation of 10 CFR 150.20(b),

10 CFR 71.5(a) and 49 CFR 172.202(a)(2), involving failure to indicate hazard class (7) on shipping papers.

6 Followup on Corrective Actions for Violations and Deviations (92702)

6.1 Inspection Scope

Through interviews with licensee personnel, a review of licensee records, and observations of activities at two temporary job sites, the inspector reviewed Robco's effectiveness in implementing corrective actions. The background for the violations discussed in this section have already been discussed in detail in previous sections of this report. This section is primarily focused on the licensee's implementation of corrective actions.

6.2 Observations and Findings

a. (Open) Violation 150-00042/9202-01

During the NRC inspection conducted on November 12, 1992, the inspector identified that Robco had conducted well logging activities in Oklahoma on July 22-23 and September 3-4, 1992, without revising the NRC Form 241 filed by Robco on December 26, 1991, or filing additional NRC Form 241s in accordance with the provisions of 10 CFR 150.20 to include these dates. In response to this violation Robco responded to a Notice of Violation letter dated January 6, 1993. In this letter, the president/RSO cited the reason for the violation was lack of staff knowledge of the filing procedures. To correct the violation, the president/RSO wrote in the letter that "All personnel have now been fully informed as to the correct procedure for Agreement state licensees conducting activities in a non-agreement state under the reciprocity provisions."

Contrary to corrective actions stated in the letter, the RSO told the inspector during the inspection that he did not discuss the procedure for filing NRC Form 241s with his staff because he believed that it was his responsibility alone to file these forms. The assistant manager confirmed this by stating that he knew that something had to be filed, but although he had worked at Robco since before the last inspection, he had never been told which forms needed to be filed or how to fill them out.

b. (Open) Violation 150-00042/9202-02

During the NRC inspection conducted on November 12, 1992, the inspector identified that Robco had conducted licensable activities in Oklahoma at various times during 1992. However, Robco failed to maintain records of material use in accordance with 10 CFR 150.20(b) and 10 CFR 39.39. In his 1993 response letter, the RSO cited the reason for the violation as lack of staff knowledge. He stated that staff was under the impression that records could be discarded after inspection by after any regulatory officials. The proposed corrective action was

that all records of material use would be kept on file for 3 years after they were made.

During this inspection, the inspector confirmed that with some omissions, the logging supervisor was generating records of material use. However, contrary to the corrective actions, the 1995 material use records were discarded following an inspection by the State of Texas, even though these particular records were not reviewed by Texas inspectors.

c. (Open) Violation 150-00042/9608-01 and (Open) Violation 150-00042/9202-03

During the NRC inspection conducted on November 12, 1992, the inspector identified that Robco had conducted licensable activities in Oklahoma at various times during 1992. However, Robco failed to maintain records of job site radiation surveys in accordance with 10 CFR 150.20(b) and 10 CFR 39.67. In his 1993 response letter, the RSO cited the reason for the violation as lack of staff knowledge. He stated that staff was under the impression that records could be discarded after inspection by after any inspection by regulatory officials. The proposed corrective action was that all records of job site surveys would be kept on file for 3 years after they were made.

During this inspection, the inspector confirmed that with some omissions, the logging supervisor was generating records of job site surveys. However, contrary to the corrective actions, the 1995 job site radiation surveys were discarded following an inspection by the State of Texas, even though these particular records were not reviewed by Texas inspectors.

6.3 Conclusions

The failure to effectively implement corrective actions may indicate a failure to adequately assess the root cause of violations and to understand the significance of the violations. In addition, failure to take any of the actions stated in Robco's 1993 letter indicates a lack of appreciation on the part of management for the need to take corrective actions in a timely manner in order to prevent future violations.

Exit Meeting Summary

Region IV staff presented the inspection results to licensee management via telephone on October 11, 1996, including those apparent violations potentially subject to escalated enforcement action. The licensee acknowledged the inspector's findings and a predecisional enforcement conference was scheduled for November 15, 1996, to discuss the apparent violations.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

W. H Robinson, Owner/President/RSO
D. W. Davis, Assistant Manager
J. Dickey, Operator/Logging Supervisor
I. Borrego, Rigger

INSPECTION PROCEDURES USED

87100 Licensed Materials Programs
83822 Radiation Protection
86740 Inspection of Transportation Activities
92702 Followup on Corrective Actions for Violations and Deviations

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

150-00042/9608-01	APV	Failure to file revisions to the NRC Form 241 submitted in 1995 to notify the NRC of additional dates when licensable activities were conducted and failure to file an NRC Form 241 in 1996 before conducting well logging activities in a non-Agreement State.
150-00042/9608-02	APV	Failure to maintain records of iodine-131 tracer use include and failure to maintain any records of material use associated with well logging operations conducted in 1995.
150-00042/9608-03	APV	Failure to conduct surveys and to maintain records of these surveys for 3 years as required by 10 CFR 150.20(b) and 10 CFR 39.67.
150-00042/9608-04	APV	Failure to follow the written procedures stating that the logging supervisor will wear vinyl gloves when handling tracer material.
150-00042/9608-05	APV	Failure to follow written procedures which state that all remaining tracer material will be injected into the well bore after completing logging operations.
150-00042/9608-06	APV	Failure to indicate hazard class (7) on required DOT shipping papers.

150-00042/9608-07	APV	Failure to properly evaluate, mark, and label, an ejector tool used as a packaging to ship Type A quantities of liquid radioactive material
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Closed

None

Discussed

150-00042/9202-01	VIO	Failure to revise NRC Form 241 dated December 26, 1991 before conducting work at times and in locations not indicated on this Form 241.
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150-00042/9202-02	VIO	Failure to maintain any records of material use in accordance with 10 CFR 150.20(b) and 10 CFR 39.39.
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150-00042/9202-03	VIO	Failure to maintain any survey records in accordance with 10 CFR 150.20(b) and 10 CFR 39.67.
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LIST OF ACRONYMS USED

APV	Apparent Violation
CFR	Code of Federal Regulations
DOT	Department of Transportation
mCi	millicurie
μ Ci	microcurie
NRC	Nuclear Regulatory Commission
RSO	radiation safety officer
VIO	violation

ENCLOSURE 3

PROPOSED ENFORCEMENT CONFERENCE AGENDA

November 15, 1996, 8:30 a.m. (CT)

1. INTRODUCTIONS/OPENING REMARKS - NRC
2. ENFORCEMENT PROCESS - EO
3. APPARENT VIOLATIONS & REGULATORY CONCERNS - NRC
4. LICENSEE PRESENTATION - ROBCO PRODUCTION LOGGING, INC.
5. BREAK (10 MINUTE NRC CAUCUS IF NECESSARY)
6. RESUMPTION OF CONFERENCE
7. CLOSING REMARKS - ROBCO PRODUCTION LOGGING, INC.
8. CLOSING REMARKS - NRC