

APPENDIX B

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 30-28926/89-01

License: 35-23200-01

Docket: 30-28926

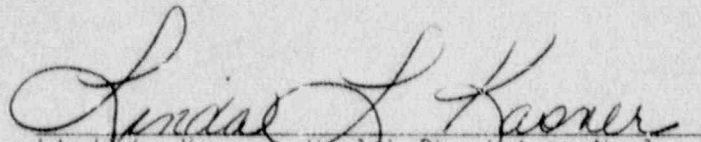
Licensee: Perforating Guns, Inc.
207 South Locust
Nowata, Oklahoma 74048

Inspection At: Perforating Guns, Inc.
Nowata, Oklahoma

Gold Perforating Company, Inc.
Dewey, Oklahoma

Victory National Bank
Nowata, Oklahoma

Inspector:


Linda L. Kasner, Health Physicist, Nuclear
Materials Inspection Section

12/6/89
Date

Approved:


Charles L. Cain, Chief, Nuclear Materials
Inspection Section

12/6/89
Date

Inspection Summary

Inspection Conducted November 1, 2, and 8, 1989 (Report 30-28926/89-01)

Areas Inspected: Routine, unannounced radiation safety inspection of byproduct materials program including byproduct material use and users, facilities and equipment, procedures, and related documents pertaining to the use of sealed sources to conduct well logging. This inspection also included interviews of the licensee's former employees, other individuals associated with the licensee, and inspection at another NRC licensee's facility to confirm the transfer and storage of this licensee's byproduct material.

Results: Approximately 2 weeks prior to this inspection, all licensed material, handling tools, and related equipment had been repossessed by a local financial institution. During this inspection, the inspector confirmed that the licensee's 3-curie americium-241 sealed source had been placed in storage

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at another NRC licensee's facility. This licensee was also authorized for possession of this source material and model number.

The inspector determined that the Radiation Protection Officer (RPO), the individual responsible for the radiation safety program, had terminated his employment in March 1988. Subsequent to the loss of the RPO, several areas of the radiation safety program were left unattended, resulting in complete programmatic breakdown. This included the failure to perform leak tests on a sealed source, failure to provide survey instruments for use while conducting licensed activities, and failure to provide personnel radiation monitoring devices for those individuals handling sealed sources. Furthermore, the licensee continued to conduct well logging activities, without the required instrumentation or monitoring devices, using the services of another authorized individual until the time when the equipment and material were removed from the licensee's possession.

Within this inspection, 13 apparent violations were identified:

1. Failure to have an authorized individual functioning as RPO (Section 4).
2. Failure to calibrate and use radiation survey instruments (Section 4).
3. Failure to leak test sealed sources (Section 4).
4. Failure to conduct physical inventories of sealed sources (Section 4).
5. Failure to maintain records of byproduct material use (Section 4).
6. Failure to maintain records of byproduct material receipt and transfer (Section 4).
7. Failure to perform annual reviews of logging supervisor's performance (Section 4).
8. Failure to provide and use personal radiation monitoring devices (Section 5).
9. Failure to perform radiation surveys while conducting licensed activities (Section 5).
10. Failure to post or maintain required documents (Section 6).
11. Failure to label radioactive materials packages during transportation (Section 7).
12. Failure to maintain special form certification records for a sealed source (Section 7).
13. Failure to maintain performance test records for a Type A shipping container (Section 7).

DETAILS

1. Persons Contacted

Dwight Knoblett, Gold Perforating Company, Inc.
Steve Knoblett
Dick Dixon, President, Gold Perforating Company, Inc.
**Gerold Allen, Vice President, Perforating Guns, Inc.
Steve Riff, Vice President, Victory National Bank
*Denver Hopkins
*Dave Monroe, State of Oklanoma
**Ben Campbell, President, Perforating Guns, Inc.

*Indicates telephonic interview.

**Indicates telephonic exit interview conducted.

2. Followup on Previous Violations

(Open) (30-28926/86-01) Violation of 10 CFR 19.11 - Required documents were not posted or otherwise made available. The inspector observed that required notices were not posted and that the license application and backup information were not available.

(Open) (30-28926/86-01) Violation of License Condition 18 - Failure to calibrate survey instruments at the required 6-month intervals. The inspector observed that survey instruments had not been calibrated at the required intervals and had been used past the 6-month calibration period.

(Open) (30-28926/86-01) Violation of 10 CFR 71.5 (49 CFR 174.476 (a)) - Failure to maintain special form certificates for sealed sources. The inspector observed that the licensee had not procured or maintained the required special form certificate.

(Open) (30-28926/86-01) Violation of 10 CFR 71.5 (49 CFR 172.415) - Failure to maintain performance test records for a Department of Transportation (DOT) 7A Type A shipping container. The inspector observed that the licensee had not obtained copies of the performance test results for the specified container.

3. Background

The original license application was submitted on October 15, 1985, and signed by an individual noted as president of Perforating Guns, Inc. The license application also specified that the same individual had been designated as Radiation Protection Officer (RPO). The application described the RPO's responsibility as overall manager for the radiation safety program, including the delegation of duties to persons assigned tasks associated with the program and general administrative procedures for the entire program. The application also describes the Radiation Safety Officer (RSO) responsibilities, which generally included completing

those tasks delegated by the RPO. An individual had also been designated this position in the application. The application requested authorization for an americium-241 sealed source to be used in neutron logging for oil or gas wells. NRC Byproduct Material License 35-23200-01 was subsequently issued on October 21, 1985. The license was later amended on April 30, 1987, to reflect a change in the licensee's business address and storage location for the truck and sealed source.

In April 1986, a safety inspection was conducted at the licensee's facility by NRC Region IV staff. The inspector interviewed the RPO and RSO during this inspection. Four violations were identified, as noted elsewhere in this report, and an NRC Form 591 was issued on the day of the inspection.

In October 1986, two individuals became involved with the licensee by providing financial assistance to the company. These individuals owned another company in Oklahoma, West Resources, LTD. This arrangement involved transfer of ownership for both the logging truck and sealed source. In May 1987, a request for amendment of NRC License 35-23200-01 was made on behalf of West Resources, LTD. The correspondence indicated that West Resources had purchased the assets of Perforating Guns, Inc., and wished to dissolve the corporation and amend the license to show West Resources, LTD., as the licensee. The two individuals previously authorized as RPO and RSO were to remain as the authorized users on the license. The required licensing fee was never submitted for this request, and the licensing action was subsequently classified as abandoned. During this same time period, the Oklahoma Corporation Commission had been notified of a change in corporate officers, and those individuals listed as officers for West Resources, LTD., were also named as officers for Perforating Guns, Inc.

In March 1988, the RPO terminated his employment with Perforating Guns, Inc., and requested that his name be removed from the license. Another individual was not designated as RPO, and the RSO continued working with the company as the single authorized user. The RSO's responsibilities during this period did not change, and overall management of the radiation safety program was left unattended.

During October 1988, another individual became involved with the company, again providing financial assistance. This individual was also serving as a business manager for the company during the latter part of 1988 through the first quarter of 1989. The RSO was still performing well logging for the company and was attending to some duties associated with the radiation safety program. However, he had not been given authority to schedule the required leak testing and survey meter calibrations that were due in October and November 1988. The RSO met with the business manager in February 1989 to discuss the services and actions required to bring the program into compliance. At that time, the single operable survey meter was taken to the licensee's vendor for calibration. This instrument was not returned to the field office, although the licensee continued to conduct well logging activities. The same vendor was also supplying

personnel radiation dosimetry and leak testing services for the company. These services were terminated by the vendor in May 1989 due to credit problems with the licensee's account. The licensee continued to perform well logging services using licensed material even though survey instruments and personal monitoring devices were no longer available.

During the latter part of 1988, the licensee had been logging one or two wells per week. Due to economic conditions related to the oil industry, this decreased to one or two wells per month during 1989. Also, during the second and third quarters of 1989, the RSO was working on an "as needed" basis, reporting to the licensee only for scheduled work.

In October 1989, the licensee was notified by a local bank of foreclosure on a loan that they had previously obtained. The truck and sealed source had been used as collateral for the loan and they were subsequently repossessed by the bank. The RSO was notified of the proposed action, by the licensee, and he subsequently contacted the former RPO, who was employed by another perforating/wire-line service company in the area. Arrangements were made to provide temporary storage at this facility until such time when the bank could sell the truck and sealed source.

4. Authorized Materials, Uses, and Users

The licensee had maintained one 3-curie americium-241 sealed source (Gulf Nuclear Model NEEI-71-1, Serial No. 259G) for use in logging oil and gas wells. The source was stored in a Type A shipping container on the logging truck.

Two individuals were authorized to perform well logging using sealed sources under this license. They were designated as RPO and RSO, as described in the license application. The RPO duties and responsibility included management and administration of the radiation safety program, while the RSO duties were described as completion of those tasks assigned by the RPO. During interviews conducted with the licensee's former employees, the inspector determined that the RPO had terminated employment with the licensee in March 1988. Another individual had not been designated as RPO or given authority as a manager of the radiation safety program. Additionally, it was noted that all required services such as leak testing and survey meter calibration had not been performed following the RPO's termination. The failure to designate an authorized individual as RPO was identified as a violation of License Condition 16, which references an application dated October 15, 1985, where these positions are described.

The licensee had maintained two survey meters (both Ludlum Model 2 instruments, Serial Nos. 31230 and 9450). During this inspection, Meter No. 31230 was observed to have been damaged and was inoperable. The licensee's RSO could not determine when this meter had been damaged, although he recalled that it hadn't been used for possibly 2 years. The inspector reviewed meter calibration records and noted that the meter had not been calibrated since April 1986. The second meter, No. 9450, had

last been calibrated in April 1988. The inspector noted that the method of calibration had been authorized and that the records indicated that the instrument met the required accuracy limits. During interviews with the licensee's RSO, the inspector determined that the meter had been used past the October 1988 calibration period. Additionally, the meter was removed from the field office in January or February 1989 to be taken for calibration. However, the meter was not returned to the field office even though the licensee continued to conduct well logging activities using the sealed source until October 1989. This was identified as a violation of 10 CFR 39.33.

The inspector reviewed leak test records for the 3-curie americium-241 (Gulf Nuclear Model NEEI-71-1, Serial No. 259G) sealed source for the period from the previous inspection in April 1986 through October 1989. The licensee had used an approved vendor to perform leak test analysis and the tests had been performed at the required 6-month intervals during the period from April 1986 through December 1987. During interviews conducted with the licensee's RSO, it was determined that the sealed source had not been leak tested since December 1987, although it had been used in well logging until October 1989. This was identified as a violation of License Condition 12.A. The inspector noted that no physical inventory records were available for the sealed source previously possessed by the licensee. During interviews with the RSO, it was determined that no physical inventory had been conducted during the period from April 1986 through October 1989. This was identified as a violation of License Condition 14.

The inspector reviewed other records related to the radiation safety program as well as those related to specific logging jobs performed during the period from April 1986 through October 1989. During this review and subsequent interviews of the licensee's former employees, contractors, and RSO, it was determined that the licensee had conducted logging activities using the sealed source during this inspection period. The RSO stated that he had use the source one or two times per week until the latter part of 1988, after which business slowed to a rate of one or two wells logged per month. The licensee was unable to locate any utilization logs during this inspection, nor could the licensee confirm that records of material use, as required and described in the regulations, had been made. This was identified as a violation of 10 CFR 39.39.

During the inspection and related interviews, the inspector determined that upon learning of the impending repossession of the sealed source, the RSO had obtained assistance from another NRC licensee to provide temporary storage for the americium-241 sealed source. The inspector confirmed that the source had been appropriately stored with a licensee authorized to possess the subject source during this inspection. The licensee was unable to locate records related to the initial receipt of the source and the inspector noted that no record of the October 18, 1989, transfer of the source had been made. This was identified as a violation of 10 CFR 30.51 (a).

During interviews conducted with the RSO, the inspector reviewed radiation safety training provided to employees. The inspector determined that both the RPO and RSO had met the training requirements as described in the license application dated October 15, 1985. The inspector reviewed annual performance review requirements with the RSO and noted that the required annual reviews of logging supervisors had not been conducted during the period from April 1986 through March 1988, during which the RPO was still employed by the licensee. This was identified as a violation of 10 CFR 39.13(d).

Six violations were identified.

5. Radiation Safety

The inspector reviewed personnel radiation dosimetry records and noted that the licensee had used an approved vendor for monthly film badge service. Records were available for the period from April 1986 through March 1988. These records satisfied the Form NRC-5 requirements and Form NRC-4 equivalents were available for this period for the two badged employees. During this inspection, the vendor was contacted to confirm that film badges had been supplied to workers for the period from March 1988 until the date of the inspection. The inspector noted that the vendor had supplied film badge service to the licensee until May 1989 when the service was terminated by the vendor. During interviews with the licensee's RSO, the inspector confirmed that the licensee had continued to conduct well logging using licensed material without the required personal radiation monitoring devices. This was identified as a violation of 10 CFR 39.65.

While interviewing the RSO, the inspector reviewed radiation surveys conducted by the licensee to ensure compliance with 10 CFR Part 20 and those required under Part 39. The inspector determined that although the source was transported when the licensee was performing bond logs as well as when using the source in logging activities, the required vehicle surveys had not been performed. Furthermore, surveys related to the use of sealed sources in well logging were not conducted after February 1989 when the licensee's survey meter was removed from the field office. The inspector confirmed during this interview that licensed material had been used and transported during the period when survey instruments were not available. This was identified as a violation of 10 CFR 39.65(b).

Two violations were identified.

6. Postings, Notices, and Reports

During this inspection, the inspector reviewed the notices, bulletins, and correspondence received from NRC by the licensee. Although all had been received during this inspection period, the inspector observed during interviews that the licensee had not read or referred to the subject documents. The inspector reviewed the purpose of these notices with the licensee and noted that several had contained information pertinent to the

licensee's situation. The inspector observed that required notices and documents related to the license were not posted. When questioned regarding their location and availability, the licensee stated that they had not been maintained as required. This was identified as a violation of 10 CFR 19.11.

One violation was identified.

7. Transportation

During this inspection, the inspector reviewed the licensee's shipping container and corresponding documents related to sealed source special form certification and container performance test records. The inspector observed that the last time the source had been transported was during the transfer made on October 18, 1989. The inspector examined the shipping container and noted that package markings and identification were legible and contained the required information. The package label, however, was not legible and the radioactive categorization, package content, and source activity could not be identified. The inspector confirmed that this label had been used during routine transportation prior to this inspection. This was identified as a violation of 49 CFR 172.403.

During interviews and an inspection conducted at the licensee's facility, the inspector determined that the special form certification record for the americium-241 sealed source had not been maintained. This was identified as a violation of 49 CFR 173.476(a). The inspector also noted that the licensee had failed to maintain the performance test records for a DOT 7A Type A container used to transport the sealed source. This was identified as a violation of 49 CFR 173.415.

Three violations were identified.

8. Exit Interview

The inspector conducted a telephonic interview with the licensee's representative to review the scope and findings of the inspection as presented in this report.