ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket: 030-30133
License: 40-26894-01

Report: 030-30133/96-01

Licensee: NJS Engineering

Facility: Spearfish, SD office

Location: Spearfish, South Dakota

Dates: October 16, 1996

Inspector: R. A. Brown, Sr. Radiation Specialist

Approved: L. L. Howell, Chief Nuclear Materials Inspection
and Fuel Cycle/Decommissioning Branch
Division of Nuclear Materials Safety

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

NJS Engineering
Spearfish, South Dakota
NRC Inspection Report 030-30133/96-01

This reactive inspection was conducted in response to the licensee's notification of an incident involving damage to a portable moisture/density gauge at a temporary job site in Sturgis, South Dakota.

Program Overview

The licensee is authorized to possess and use portable moisture/density gauges at temporary job sites where the NRC maintains jurisdiction and at the licensee's office in Spearfish, South Dakota. At the time of the inspection, the licensee possessed one portable gauge and had trained eight individuals in proper use of the gauge.

Use of Portable Moisture/Density Gauge at a Temporary Job Site

The inspection included a review of circumstances associated with an incident involving damage to a portable moisture/density gauge at a temporary job site on August 29, 1996. The inspector also visited a second temporary job site in Sturgis, South Dakota, and observed that a portable moisture/density gauge had been stored in an unlocked case in an unlocked vehicle at a construction site. The failure to maintain surveillance of licensed material left in an unrestricted area was identified as an apparent violation of 10 CFR 20.1801 and 20.1802.

Corrective Actions

The licensee stated that a review of procedures for maintaining security of gauges would be conducted with all gauge users.

Report Details

1 Program Overview

1.1 Inspection Scope (IP 87100, 83822, 87103)

The inspector reviewed the license application and supporting documents, as well as pertinent records maintained by the licensee. Collectively, these documents describe the licensee's radiation safety program. Interviews with the licensee's radiation safety officer (RSO) and other personnel concerning the August 29, 1996, incident were also conducted.

1.2 Observations and Findings

NJS Engineering (NJS) is authorized under NRC License No. 40-26894-01 to possess and use portable moisture/density gauges at temporary job sites in areas where the NRC maintains jurisdiction for regulating the use of byproduct material. The licensee's office is located in Spearfish, South Dakota, and is used as a permanent storage location.

One engineer is designated as RSO and reports directly to the president of the company. NJS has eight employees trained and authorized to use portable moisture/density gauges. At the time of the inspection, NJS possessed one portable moisture/density gauge at it's Spearfish office for use at temporary job sites in western South Dakota. A review of records indicated that all gauge users had been trained by the gauge manufacturer in accordance with the procedures submitted with the license application.

2 Use of Portable Moisture/Density Gauges at Temporary Job Sites

2.1 Inspection Scope (IP 87100, 83822)

The inspector's review included the preliminary information concerning damage to a portable moisture/density gauge reported telephonically to NRC on August 29, 1996, discussions with licensee personnel, and review of pertinent records, including the licensee's written report.

2.2 Observations and Findings

Interviews with the RSO and the gauge user indicated that on August 29, 1996, an NJS employee was using a portable moisture/density gauge at a temporary job site in Sturgis, South Dakota. The gauge was identified as a Troxler Model 3411B, Serial No. 7932, containing 8.0 millicuries of cesium-137 and 40.0 millicuries of americium-241. NJS representatives described the job site as a street reconstruction project in Sturgis, South Dakota. While performing a test with the gauge, the gauge user heard an oil distributor truck behind him. The gauge user

turned and saw the truck backing up towards him and grabbed the gauge to move out of the way. He was unable to completely remove the source rod from the hole before he had to jump clear of the truck's path. The gauge was hit by the spray bar on the truck while the source rod was extended approximately 2 inches in the ground. The gauge user stated that the only apparent damage to the gauge was the source rod was broken loose at the top where it connects to the handle.

Following emergency procedures as described in the license application, the gauge user barricaded the area and appointed one of the operators to keep the area clear and watch the gauge. The gauge user proceeded to notify the RSO who in turn notified the NRC Operations Center and the gauge manufacturer. Following instructions provided by the gauge manufacturer, the user raised the source rod into its shielded position by pulling on the top of the source rod where it connected to the handle and removed the gauge from the construction site. The gauge was returned to the Spearfish, South Dakota, office where a leak test was performed. The results of the leak test were negative, indicating the sources were not damaged.

The above information was also contained in the licensee's written report to the NRC.

Following discussions with the RSO, the inspector interviewed the gauge user at another temporary job site in Sturgis, South Dakota. At the time of the inspector's visit at the temporary job site, the user was not performing measurements with the portable gauge and had temporarily stored the gauge. When the inspector made a request to examine where the gauge was stored, the gauge user directed him to a truck parked approximately 100 feet away. The vehicle was a pickup truck with a camper top attached. When the inspector and gauge user arrived at the truck, the gauge user opened the unlocked camper top. The gauge was stored inside the bed of the truck in a transportation case. The inspector noted that a padlock was in place on the case; however, the keys were still in the lock. The inspector discussed surveillance practices with the gauge user who stated that he was aware of the need to maintain surveillance of the gauge. The user stated that he had parked and left his truck in the location observed by the inspector so that he could check on the status of construction activities.

10 CFR 20.1801 requires that a licensee shall secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas. 10 CFR 20.1802 requires that a licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage. The failure to secure or provide control and surveillance of licensed material was identified as an apparent violation of 10 CFR 20.1801 and 20.1802.

2.3 Conclusions

Based on the inspector's observations at the temporary job site, it appeared that an NJS employee had not secured a portable gauge that was temporarily stored in an unlocked vehicle parked at a construction site, an unrestricted area. Likewise, upon arrival at the construction site, the inspector noted that the gauge user did not have the gauge under his immediate control or surveillance as required by 10 CFR 20.1801 and 20.1802.

3 Corrective Actions

3.1 Inspection Scope (IP 87103)

The inspector discussed proposed corrective actions with the company president during a telephone conversation on November 1, 1996.

3.2 Observations and Findings

The inspector interviewed the RSO concerning previous training provided to gauge users. The RSO stated that all gauge users had been trained by the gauge manufacturer as required by Condition 11 of NJS's NRC license. This training included instructions in emergency procedures. Training certificates documenting the training had been maintained by the RSO. During interviews with the inspector, the gauge user stated that he had been instructed in maintaining security and surveillance of the gauge at temporary job sites, but the level of surveillance was not specified.

The licensee stated that a review of procedures for maintaining security of gauges would be conducted with all gauge users. No additional corrective actions were proposed by the RSO or president.

3.3 Conclusions

Training provided to gauge users was conducted in accordance with the license application and supporting documents.

4 Exit Meeting Summary

The inspection findings, as noted in the report, were discussed with the licensee during a telephonic exit briefing conducted on November 1, 1996. Licensee representatives acknowledged the findings as presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INSPECTION INFORMATION

INSPECTION PROCEDURES USED

IP 87100: Licensed Materials Program
IP 87103: Inspection of Incidents at Nuclear Materials Facilities
IP 83822: Radiation Protection

ITEMS OPENED

030-30133/9601-01	Failure to secure or maintain control and constant surveillance of licensed material was identified as an apparent violation of 10 CFR 20.1801/1802.

PARTIAL LIST OF PERSONS CONTACTED

James W. Parker, Radiation Safety Officer
Bradley Sudbeck, gauge user
*Neil J. Stodolski, President

*Indicates those personnel contacted by telephone only.