U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No.	03035002/2011001
Docket No.	03035002
License No.	45-25467-01
EA No.	EA-11-070
Licensee:	GeoConcepts Engineering, Inc.
Location:	19955 Highland Vista Drive, Suite 170 Ashburn, Virginia 20147
Inspection Dates:	March 14 – April 21, 2011
Dates Follow-up Information Received:	March 15, 2011, March 18, 2011, and April 1, 2011

Inspectors:

/RA/ _____ ***05/18/11*** _____
Shawn Seeley date
Health Physicist
Decommissioning Branch
Division of Nuclear Materials Safety

/RA J. A. Joustra for/ _____ ***05/19/11*** _____
Laurie A. Kauffman date
Health Physicist
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Approved By:

/RA/ _____ ***05/19/11*** _____
Judith A. Joustra, Chief date
Decommissioning Branch
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EXECUTIVE SUMMARY

GeoConcepts Engineering, Inc
NRC Inspection Report No. 03035002/2011001

An announced reactive inspection at GeoConcepts Engineering, Inc. (GCE) in Ashburn, Virginia, was conducted on March 14, 2011 and concluded on April 21, 2011. This inspection was conducted in response to a notification, made by the licensee, of a stolen portable moisture density gauge (portable gauge) on December 2, 2010 (Licensee Event Report (LER) Number 2011-001 and Nuclear Materials Event Report (NMED) Item Number 100580), and a routine safety inspection to review GCE's radiation protection program. This inspection was conducted pursuant to Inspection Manual Chapter (IMC) 2800 and Inspection Procedure (IP) 87124.

The inspection included interviews with licensee representatives, including the principal, the radiation safety officer, and the two authorized users in order to establish an understanding of the event and subsequent portable gauge recovery. The inspection also included a review of selected records relevant to compliance with NRC requirements.

Within the scope of this inspection, two apparent violations of NRC regulations were identified. The first apparent violation involved the failure to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of GCE, as required by 10 CFR Part 30.34(i). This apparent violation is being considered for escalated enforcement in accordance with the NRC's Enforcement Policy. The second apparent violation involved the failure to periodically (at least annually) review the radiation protection program content and implementation, as required by 10 CFR 20.1101(c). These findings are repeat apparent violations.

REPORT DETAILS

I. Organization and Scope of the Program

a. Inspection Scope

The inspector interviewed GCE staff to determine the current organization and the scope of GCE's possession and use of licensed materials.

b. Observations and Findings

GCE is currently authorized to possess and use Troxler Electronic Laboratories, Inc., Model No. 3400 Series and Humbolt Scientific, Inc., Model No. 5001 Series portable moisture density gauges (portable gauges) for measuring the physical properties of materials at temporary jobsites anywhere in the United States where NRC maintains jurisdiction. At the time of the inspection, GCE possessed 15 portable gauges (10 Troxler and 5 Humbolt). The gauges are frequently used, based on work load and weather conditions and when not in use, GCE stores them in an established permanent storage location. Since the previous inspection, GCE had reduced the number of authorized users (AUs) from 35 to 15 and, as of January 31, 2011, changed the Radiation Safety Officer (RSO).

c. Conclusions

The organization and scope of the program are as described in the license application. No violations were identified.

II. Management Oversight of the Program

a. Inspection Scope

The inspector reviewed the records of GCE's annual program review, and discussed the oversight of the portable gauges with licensee representatives.

b. Observations and Findings

The inspector reviewed records of the licensee's annual review of their radiation protection program performed from January 2007 through March 2011. The inspector also reviewed GCE's corrective actions regarding the four Severity Level IV (SL IV) violations and one non-cited violation (NCV) that were identified during the previous inspection. (See correspondence dated February 15, 2007, for details [ADAMS Accession Number ML070460166]). The corrective actions regarding the violation that involved the failure to periodically (at least annually) review the radiation protection program content and implementation in accordance with 10 CFR 20.1101(c), were not effective to prevent recurrence of this apparent violation.

The inspector determined that GCE, as part of their corrective actions from 2007, had conducted a program review for calendar year 2008, but did not perform a program review for calendar years 2009 and 2010. The inspector noted that the current RSO, appointed in January 2011, was unable to demonstrate a review was conducted for 2009 and 2010. GCE took immediate corrective action by performing a review of the 2010 radiation protection program on March 15, 2011. GCE submitted the program review to the NRC on March 18, 2011. The inspector evaluated the program review and determined that it was thorough and covered the content and implementation of the radiation protection program. In addition, GCE submitted a Memorandum to the NRC, dated April 1, 2011, to explain the reason for the apparent violation, the corrective actions taken and results achieved, the commitment to conduct annual audits in March of each year and updated their procedures to reflect these commitments.

c. Conclusions

One apparent violation of 10 CFR 20.1101(c) was identified. The licensee did not perform the required periodic review of the radiation protection program for calendar years 2009 and 2010. The failure of the licensee to periodically (at least annually) review the radiation protection program is an apparent violation of 10 CFR 20.1101(c).

III. Event

a. Inspection Scope

The inspector discussed the sequence of events and details of the portable gauge theft (LER Number 2011-001 (NMED Number 100580). The inspector evaluated GCE's compliance with the requirement in 10 CFR 30.34(i) to have a minimum of two physical controls that form tangible barriers to prevent unauthorized removal of licensed portable gauges.

b. Observations and Findings

On December 2, 2010, at 1400 hours, GCE discovered that one Troxler (Model No. 3430), portable moisture density gauge (portable gauge) stored at a temporary jobsite at the Fort Meade Army Base (FMAB) was removed from the site without their knowledge during a suspected theft of construction/industrial equipment. According to GCE, the portable gauge was last seen on the afternoon of November 29, 2010, secured in a temporary storage location inside a lock-box and chained to the exterior of a sea-land container on a construction site at the FMAB. Upon realizing the gauge had been stolen, GCE notified the base police to investigate the theft. On December 2, 2010, at 1625 hours, GCE reported the theft of the portable gauge to the NRC Operations Center.

On December 10, 2010, at approximately 1100 hours, GCE was notified by FMAB police they had recovered the locked portable gauge transport case with GCE's name on it. At GCE's direction, the FMAB police cut the lock and confirmed the portable gauge was in the transport case. FMAB police remained with the portable gauge until a GCE

representative arrived. GCE dispatched a field supervisor to retrieve the portable gauge and transport case. The field supervisor inspected the portable gauge and determined there was no obvious sign of damage and the trigger lock was in place. The field supervisor secured the portable gauge in the transport case and transported the portable gauge to their main office. A subsequent leak test confirmed that the source was not leaking.

On December 14, 2010, at 0948 hours, GCE notified the NRC Operations Center that the portable gauge had been recovered. GCE stated that the base police officers informed GCE that the portable gauge inside its transport case had been "dumped" back onto the jobsite.

During this inspection, GCE informed the inspector that the portable gauge had been used and stored at the Fort Meade Army Base from July 22, 2008, until the day it was apparently stolen (between November 29 and December 2, 2010). December 2, 2010, was GCE's last scheduled day for work at the base, and GCE had come to the jobsite to retrieve its equipment. GCE indicated that, at the end of each work day at this site, the portable gauge would be secured, locked in its transport case, and placed into the lock-box. The lock-box was chained to the exterior of a sea-land container through a handle located on the side of the lock-box. GCE had placed a sign containing the radiation symbol and the words "Caution, Radioactive Materials" along with their company information on the front side of the lock-box.

The inspector determined that GCE did not use a minimum of two independent physical controls that form tangible barriers to secure the portable gauge from unauthorized removal, when the portable gauge is not under the control and constant surveillance of GCE, as required by 10 CFR 30.34(i). The inspector further determined the transport case was secured with an additional lock and chain so that the case could not be opened in order to remove the gauge. In addition, the transport case was locked inside the lock-box. The lock-box was secured with a single chain placed through one handle to the exterior of a sea-land container. The inspector noted corrective actions for a similar violation in 2007 were not effective to prevent this apparent violation.

c. Conclusions

One apparent violation of 10 CFR 30.34(i) was identified. During the period from July 22, 2008 to December 2, 2010, GCE did not use a minimum of two independent physical controls that form tangible barriers to secure a portable gauge from unauthorized removal, whenever the portable gauge was not under the control and constant surveillance of GCE. Specifically, GCE stored a portable gauge in a lock-box chained to the exterior of a sea-land container, and the lock-box only had a single lock and chain on the lid to secure the portable gauge from unauthorized removal. The failure to use a minimum of two independent physical controls that form tangible barriers to secure the portable gauge from unauthorized removal, whenever the portable gauge is not under the control and constant surveillance of GCE is an apparent violation of 10 CFR 30.34(i).

IV. Notifications and Reports

a. Inspection Scope

The inspector interviewed the radiation safety officer, the authorized users, and GCE's reporting of the incident.

b. Observations and Findings

GCE notified the NRC Operations Center (HOO) at 1625 on December 2, 2010, approximately two and one-half hours after the portable gauge was discovered missing. This notification met the immediate reporting requirements of 10 CFR 20.2201(a)(i), which requires in part, that each licensee shall notify the NRC immediately after it becomes known, of any lost, stolen or missing licensed material in an aggregate quantity equal to or greater than 1,000 times the quantity specified in appendix C to Part 20.

GCE submitted an incident report to the NRC, dated December 29, 2010, regarding the details surrounding the event and the subsequent recovery of the gauge. This report met the requirements of 10 CFR 20.2201(b), which requires, in part, that each licensee who makes a report required by paragraph (a) of 10 CFR 20.2201 shall submit a follow-up report within 30 days of the initial report.

c. Conclusions

The notifications and reporting requirements were met. No violations were identified.

V. Material Receipt, Use, Transfer, and Control

a. Inspection Scope

The inspector reviewed the use and control of licensed materials through interviews with GCE staff, and a review of records.

b. Observations and Findings

GCE maintains an information binder for each portable gauge, containing the most recent use logs, leak test results, calibration certificates, shipping papers, operating procedures, emergency procedures, and other relevant information. For the portable gauge that was in use the day of the event, the use log was in the storage building and was correctly filled out by the authorized user. In addition, the use logs for the portable gauges in storage during the inspection contained all required information and were properly filled out. Documents in the information binders appeared to contain appropriate information.

c. Conclusions

The use and control of licensed materials were as described in the license application. No violations were identified.

VI. Training of Workers

a. Inspection Scope

The inspector reviewed licensee records of training.

b. Observations and Findings

All persons identified as authorized users by the GCE representative present during the inspection had been trained as described in the license application. Certificates of training were maintained with licensee records. Certificates indicated that training included use and transportation of the gauges. Certificates also indicated that the initial and annual refresher training, including the required hazardous materials (hazmat) refresher training every three years, had been conducted.

c. Conclusions

The training program was as described in the license application. No violations were identified.

VII. Radiation Protection

a. Inspection Scope

The inspector reviewed licensee dosimetry records and discussed the results with the RSO.

b. Observations and Findings

GCE provides dosimeters to measure external dose to all authorized users of the gauges. Dosimeters are exchanged at quarterly intervals. The dosimetry provider is NVLAP-approved, according to dosimetry records. No safety concerns were identified.

c. Conclusions

The dosimetry usage was as described in the license application. No violations were identified.

VIII. Exit Meeting

A preliminary exit meeting was conducted on March 14, 2011 to discuss the scope of the inspection and the inspector initial observations. Additional information was received from GCE on March 15, 2011, March 18, 2011 and April 1, 2011. On March 25, 2011, a second preliminary exit meeting was conducted by telephone with the RSO to discuss the inspector findings. An exit meeting was held by telephone to discuss the inspector final observations and findings on April 21, 2011. GCE acknowledged the inspection findings.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

#* @$ Tadeusz W. Lewis, PE, Principal Engineer
#* @$ Shawn S. Harris, Radiation Safety Officer
#* Eaton King, Field Supervisor
#* Terrance Whalen, Field Technician

Individual(s) present at entrance meeting (March 14, 2011)
* Individual(s) present at exit meeting (March 14, 2011)
@ Individuals (s) present on preliminary exit telephone call (March 25, 2011)
$ Individuals (s) present at final exit telephone call (April 21, 2011)