

August 9, 2011

EA-11-070

Tadeusz W. Lewis, P.E.
Principal
GeoConcepts Engineering, Inc.
19955 Highland Vista Drive, Suite 170
Ashburn, VA 20147

SUBJECT: NOTICE OF VIOLATION AND PROPOSED CIVIL PENALTY (\$3,500)
AND RESULTS OF PRE-DECISIONAL ENFORCEMENT CONFERENCE
(NRC INSPECTION REPORT NO. 03035002/2011001)

Dear Mr. Lewis:

This letter provides you the U.S. Nuclear Regulatory Commission (NRC) enforcement decision for the apparent violations identified during the NRC inspection conducted on March 14, 2011, at the GeoConcepts Engineering, Inc. (GCE) facility in Ashburn, Virginia. The inspection consisted of an examination of GCE's licensed activities as they relate to radiation safety and to compliance with NRC regulations, and to the conditions of the GCE license. The inspection also included a review of the circumstances surrounding the loss of a radioactive gauge that occurred on December 2, 2010. In addition to the on-site review, the inspection also involved in-office review of additional information GCE provided the NRC: 1) in correspondence dated March 15, 2011, March 18, 2011, and April 1, 2011; and, 2) during a telephone conversation on March 25, 2011. The NRC discussed its findings during a telephonic exit meeting with you and Mr. Shawn Harris of your staff on April 21, 2011. The findings were also described in the NRC inspection report sent to you in a letter dated May 19, 2011.

In the NRC's May 19, 2011, letter that enclosed the inspection report, we informed GCE that two apparent violations were identified, and one of the violations, involving the failure to properly secure the gauge, was being considered for escalated enforcement action. In that letter, we also offered GCE the opportunity to attend a pre-decisional enforcement conference (PEC) or reply in writing to provide its position on the apparent violation, its significance, root cause, and GCE's corrective actions. At GCE's request, a PEC was held on June 29, 2011 at the NRC's Region I Office. During the PEC, GCE provided information to support its view that the gauge was secured in accordance with NRC requirements, and to correct two statements in the NRC inspection report which it believed were inaccurate. Nonetheless, GCE described its immediate and long term actions to prevent recurrence. The actions are documented in GCE's June 28, 2011, letter.

The NRC evaluation of the information provided by GCE at the PEC regarding the NRC inspection report and GCE's position on the adequacy of how it secured the gauge is provided in Enclosure 2. Based on the information developed during the inspection and the information that GCE provided during the PEC, the NRC has determined that two violations of NRC requirements occurred. These violations are cited in the enclosed Notice of Violation (Notice, Enclosure 1) and the circumstances surrounding them are described in detail in the subject inspection report.

The most significant violation relates to the event that occurred on December 2, 2010, when one of GCE's portable moisture density gauges (containing a cesium-137 sealed source and an americium-241 sealed source) was apparently stolen from a GCE temporary job site at the Ft. George G. Meade Army Base (Ft. Meade) in Ft. George G. Meade, Maryland. The violation involves the failure by GCE 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 was not under the control and constant surveillance of GCE. The gauge had been stored inside of its locked transport case, which was stored inside of a locked lock box at the temporary job site. The transport case was secured to an interior handle of the lock box with a lock and chain, and the lock box lid was secured by two independent locks. The lock box itself was also secured by placing a chain through the handle of the lock box and attaching it to the exterior of a sea-land container. On December 2, 2010, the lock box was apparently removed from its storage location at the temporary jobsite by an individual or individuals not authorized to do so. In order to remove the lock box, only one barrier needed to be defeated, namely, the chain securing the lock box to the exterior of the sea-land container. The transport case (with the gauge inside) was subsequently found by Ft. Meade Base Police on December 10, 2011, in a location near where the lock box had originally been stored. GCE retrieved the transport case and verified that it was still locked and that the gauge was neither damaged nor leaking.

At the PEC, GCE stated that, in its opinion, it provided the required two barriers to secure the gauge, including the lock and chain around the handle of the lock box, two independent locks on the lid of the lock box, and the locked transport case inside of the lock box. However, as discussed in Enclosure 2, the NRC maintains that GCE provided only one barrier to prevent removal of the lock box, and the lock box itself was not considered to be a second physical barrier. Therefore, the lock box could be taken by removing the one chain, which led to the gauge that was within the lock box being possessed by an individual or individuals not authorized to do so. The NRC acknowledges that it appears that the lock box, rather than the gauge, was the target of the theft, and, when found, the gauge appeared to have remained inside its locked transport container, such that no members of the public would have been exposed to radiation. However, not securing the gauge with two independent physical controls made it easier for the gauge to be removed without authorization. As a result, the potential existed for a member of the public to be exposed to radiation or to use the gauge for malevolent purposes. Therefore, in accordance with the NRC Enforcement Policy, the NRC has categorized this violation at Severity Level (SL) III.

In accordance with the NRC Enforcement Policy, a base civil penalty in the amount of \$3,500 is considered for a SL III violation involving the loss of regulated material of this amount. For such violations, the standard civil penalty assessment process, in which the NRC considers a licensee's inspection history, whether it identified the violation, and its corrective actions, does not apply. Rather, for violations involving the loss of material, the NRC typically exercises discretion to propose imposition of a civil penalty of at least the base amount, in accordance with Section 2.3.4 of the Enforcement Policy. Therefore, to emphasize the importance of maintaining security and control of regulated materials, I have been authorized, after consultation with the Director, Office of Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty (Notice) in the base amount of \$3,500 for this SL III violation. In addition, issuance of this Notice constitutes escalated enforcement action that may subject you to increased inspection effort.

The second violation, also documented in the attached Notice, has been categorized in accordance with the NRC Enforcement Policy at SL IV. This violation is being cited because it was identified by the NRC. The circumstances surrounding the violation are documented in detail in the aforementioned inspection report.

Pursuant to 10 CFR 2.201, you are required to provide a response to the enclosed Notice of Violation and Proposed Imposition of Civil Penalty identifying whether you admit or deny the violations, as well as to provide appropriate payment of the Civil Penalty. Please follow the instructions in the attached Notice when preparing your response. The NRC has concluded that information regarding the reason for the violations, the corrective actions taken and planned to correct the violations and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in Inspection Report No. 03035002/2011001, and in the information presented by GCE in its June 28, 2011 letter (ML111810105) and at the PEC. Therefore, you are not required to provide that information in your civil penalty response, unless the descriptions in the aforementioned correspondence do not accurately reflect your position.

In accordance with 10 CFR 2.390 of the NRC "Rules of Practice," a copy of this letter and its enclosures, as well as your response, will be made available electronically for public inspection in the NRC Public Document Room and from the Agencywide Document Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. The NRC also includes significant enforcement actions on its Web site, at <http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/>.

To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such information, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

Sincerely,

/RA/

William M. Dean
Regional Administrator

Docket No. 03035002
License No. 45-25467-01

Enclosures:

1. Notice of Violation and Proposed Imposition of Civil Penalty
2. NRC Evaluation of Information Provided by GeoConcepts Engineering, Inc. at the Pre-decisional Enforcement Conference
3. NUREG/BR-0254 Payment Methods

cc:

Commonwealth of Virginia
State of Maryland

T. Lewis P.E.

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cc:
Commonwealth of Virginia
State of Maryland

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ENCLOSURE 1

NOTICE OF VIOLATION
AND
PROPOSED IMPOSITION OF CIVIL PENALTY

GeoConcepts Engineering, Inc.
Ashburn, VA

Docket No. 03035002
License No. 45-25467-01
EA-11-070

Based on an NRC inspection of GeoConcepts Engineering, Inc. (GCE), violations of NRC requirements were identified. The inspection was conducted onsite on March 14, 2011, and also consisted of an in-office review of information provided to the NRC by GCE: 1) in correspondence dated March 15, 2011, March 18, 2011, and April 1, 2011; and 2) during a telephone conversation on March 25, 2011. An inspection exit was held on April 21, 2011. In accordance with the NRC Enforcement Policy, the violations are listed below:

I. VIOLATION ASSESSED A CIVIL PENALTY

10 CFR 30.34(i) requires that each portable gauge licensee shall 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 the licensee.

Contrary to the above, 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 GCE's control and constant surveillance. Specifically, GCE stored a portable gauge in its locked transport container, which was secured to the inside of a locked lock box. However, the lock box itself containing the gauge was secured from unauthorized removal with only a single independent physical control (a locked chain through the handle of the lock box secured to the exterior of a sea-land container). As a result, on December 2, 2010, the lock box (with the gauge inside) was removed from the storage location, by an individual or individuals not authorized to do so, by defeating only one barrier, namely, the locked chain.

This is a Severity Level III violation (Section 6.3).

Civil Penalty - \$ 3,500

II. VIOLATION NOT ASSESSED A CIVIL PENALTY

10 CFR 20.1101(c) requires that the licensee shall periodically (at least annually) review the radiation protection program content and implementation.

Contrary to the above, in 2009, GCE failed to perform the required periodic review of the radiation protection program.

This is a Severity Level IV violation (Section 6.3).

GCE may pay the civil penalty proposed above for the violation in Section I by using one of the payment methods described in NUREG/BR-0254. If payment is made, GCE is required to respond to this Notice by submitting to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, a statement indicating when and by what method payment was made.

Alternately, GCE may protest imposition of the civil penalty in whole or in part, by a written answer in accordance with 10 CFR 2.205 protesting the civil penalty. Such answer may request remission or mitigation of the penalty, and should be clearly marked as an "Answer to a Notice of Violation (EA-11-070)" and may: (1) deny the violations listed in this Notice, in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or, (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty. In requesting mitigation of the proposed penalty, the response should address the factors addressed in Section 2.3.4 of the Enforcement Policy. Any written answer addressing these factors pursuant to 10 CFR 2.205, should be set forth separately from the statement or explanation provided pursuant to 10 CFR 2.201, but may incorporate parts of the 10 CFR 2.201 reply by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of the Licensee is directed to the other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty.

The NRC has concluded that information regarding the reason for the violations, the actions taken and planned to correct the violations and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in Inspection Report No. 03035002/2011001, and in the information presented in a GCE letter, dated June 28, 2011 (ML111810105), and at the PEC. Therefore, GCE's civil penalty response need not address these subjects. However, if the description therein does not accurately reflect GCE's position or its corrective actions, GCE is required to submit a written statement or explanation under 10 CFR 2.201. In that case, or if GCE chooses to respond, it should clearly mark this response as a "Reply to a Notice of Violation (EA-11-070)."

Should GCE fail to answer within 30 days of the date of this Notice, the NRC will issue an order imposing the civil penalty. Upon failure to pay any civil penalty which subsequently has been determined in accordance with the applicable provisions of 10 CFR 2.205 to be due, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282c.

The responses noted above, i.e., Statement as to payment of civil penalty, Answer to a Notice of Violation, and Reply to Notice of Violation, should be addressed to: Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852-2738, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region I, 475 Allendale Road, King of Prussia, PA 19406.

GCE's response will be made available electronically for public inspection in the NRC Public Document Room and from the NRC's Agency-wide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading_rm/adams.html. To the extent possible, any response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then GCE should provide a bracketed copy of its response that identifies the

information that should be protected and a redacted copy of its response that deletes such information. If GCE requests that such material is withheld from public disclosure, GCE must specifically identify the portions of its response that it seeks to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, GCE should provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, GCE may be required to post this Notice within two working days of receipt.

Dated this 9th day of August, 2011

ENCLOSURE 2

NRC EVALUATION OF INFORMATION PROVIDED BY GEOCONCEPTS ENGINEERING, INC. AT THE PRE-DECISIONAL ENFORCEMENT CONFERENCE

On June 29, 2011, the U.S. Nuclear Regulatory Commission (NRC) conducted a pre-decisional enforcement conference (PEC) with representatives of GeoConcepts Engineering, Inc. (GCE), at GCE's request, to discuss an apparent violation identified by the NRC during an NRC inspection, for which the NRC was considering escalated enforcement action. The apparent violation involved GCE's failure to 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 GCE's control and constant surveillance.

At the PEC, GCE described what it viewed as two inaccuracies in the NRC inspection report, provided information to support its position that the gauge was secured in accordance with NRC requirements, and also described its immediate and long term corrective actions. The NRC's response to the identified inaccuracies in the NRC inspection report and the NRC evaluation of, and response to, GCE's position on the apparent violation are provided below.

A. NRC's Response to GCE-Identified Inaccuracies in Inspection Report 03035002/2011001

1. GCE indicated that it did not agree with the NRC that it was in violation of 10 CFR 30.34(i), or that such a violation was a repeat violation even though GCE was cited for a 30.34(i) violation in 2007 (NRC Inspection Report No. 03035002/2006001). GCE indicated that the 2007 violation involved a failure to secure a portable gauge with two barriers when the gauge was being temporarily stored inside of a vehicle. GCE offered that the scenario was sufficiently different from the December 2, 2010, event, since one related to transportation and the other involved storage.

NRC Response:

The NRC maintains that a violation of 10 CFR 30.34 (i) occurring as described in Section B of this enclosure. The NRC also disagrees with the GCE contention that the 2007 violation related to transportation of the gauge. The NRC and the U.S. Department of Transportation have separate regulations, specifically, 10 CFR 71.5(a) and 49 CFR 173.448(a), regarding transportation of radioactive materials. Together, those regulations require NRC licensees to secure radioactive materials to prevent shifting during normal transportation conditions. The 2007 issue involved the temporary storage of a gauge inside of a parked vehicle while the authorized user was in another area of the jobsite. In that case, the vehicle was locked, which provided one barrier, but the transport container, inside the vehicle, was unlocked. While the NRC agrees that the circumstances surrounding the violations in 2007 and 2010 are different, the NRC maintains that both instances involved temporary storage of a portable gauge, regardless of whether the gauge was being stored in a car or in a lock box at a facility.

Notwithstanding the above, the NRC notes that the repetitiveness of the violation does not factor into the NRC civil penalty assessment. The 2007 violation was assessed at SL IV.

2. GCE informed the NRC that the description of how the portable gauge was stored within the lock box was not completely accurate, in both the NRC May 19, 2011, letter and in the conclusion section of the inspection report enclosed with that letter. The NRC inspection report and letter stated that 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 on the lid to secure the portable gauge from unauthorized removal. At the PEC, GCE described the means by which the portable gauge was secured. Specifically, GCE stated that the gauge was stored inside of its locked transport case inside of the lock box. The transport case was secured to an interior handle of the lock box by a chain and lock. The lid to the lock box was secured by two separate padlocks. Additionally, the lock box itself was secured to the exterior of a sea-land container by a chain and lock.

NRC Response:

The NRC appreciates the clarification provided by GCE, that the lock box lid was secured with two padlocks. This NRC enclosure documents this correction. However, the additional padlock on the lock box lid was not sufficient to preclude this violation, in that it did not provide a second barrier to removal of the lockbox.

B. NRC's Evaluation of, and Response to, GCE's Position on the Apparent Violation

GCE contended that it did not commit a violation of 10 CFR 30.34(i) because the gauge control method described above provided both deterrence and a delay mechanism¹, thereby meeting the requirements of the regulation. At the PEC, GCE and the NRC also discussed whether the lock box itself could be considered as the second barrier due to its size and weight.

NRC Evaluation and Response

The NRC concludes that GCE did not provide compelling evidence that it met the requirements of 10 CFR 30.34(i). The NRC agrees that GCE's gauge control method provided two barriers to prevent removal of either the transport container from the lock box or removal of the gauge from the lock box. However, the NRC maintains that GCE's gauge control method did not provide two barriers to deter and delay the removal of the

¹ GCE referenced the Errata to NUREG 1556, Vol.1, Rev. 1, "Consolidated Guidance About Materials Licenses; Program-Specific Guidance About Portable Gauge Licenses," issued on June 5, 2005, which states that the objective of 10 CFR 30.34(i) guidance is to "reduce the opportunity for unauthorized removal and/or theft by providing a delay and deterrent mechanism."

lock box itself, which permitted possession of the gauge by an individual or individuals not authorized to do so.

The NRC also agrees that the lock box was a heavy and unwieldy object that one individual would likely be unable to remove from the job site. The NRC further acknowledges that 10 CFR 30.34(i) does not require licensees to completely prevent the unauthorized removal of portable gauges and that, even with two barriers, gauges are occasionally stolen. However, the Erratta to NUREG 1556, Vol. 1 states, "(t)he physical controls used must be designed and constructed of materials suitable for securing the portable gauge from unauthorized removal, and both physical controls must be defeated in order for the portable gauge to be removed. The construction and design of the physical controls used must be such that they will deter theft by requiring a more determined effort to remove the portable gauge. The security procedures used must ensure that the two physical barriers chosen clearly increase the deterrence value over that of a single barrier and the two physical barriers would make unauthorized removal of the portable gauge more difficult." GCE did not indicate that it had selected the lock box based on its construction and design with the intent to use it as the second barrier. While the lock box was large and heavy, it apparently could be lifted and moved by two or three individuals. Additionally, the lock box was located on a construction site, where tools and equipment, such as a forklift, to aid in the movement of such an object, were readily available. Because there is no indication that GCE originally intended the lock box to serve as a second barrier, and because the lock box did not serve as an effective deterrent mechanism, the NRC does not consider the lockbox itself to have provided the second barrier.