Good morning Mr. Youree –

As we discussed by phone today, the NRC needs some additional items in order to complete the inspection at Kruger Technologies, Inc. I have copied the list from our conversation into the e-mail below. Please reply to this e-mail with the following items (and any necessary attachments) by **Wednesday, June 11, 2014**.

Mr. Bramnik

Please see my responses below.

Security of Portable Gauge

1. **What was the root cause of the apparent violation? What was the reason that Mike left the gauge in the unsecured condition?**

Mike was trained in 2006 when we had an RSO in the Knob Noster office and one in the Lenexa office. We had two RSOs until 2011. Each RSO was responsible for training in their area and there was no overlap in audits. When I took over the position of RSO in 2012, there were no procedures in place for auditing the Knob office. I made a few visits to the Knob office but had not observed Mike performing in the field. I had made the assumption that his training was the same as the training we performed in Lenexa. It appears that Mike was not trained correctly and was under the impression that the lock placed on the chain securing the gauge to the vehicle counted for one of the required two locks. He always reported using two locks but the proper use was never verified in the field.

During the NRC inspection it was observed that the one lock Mike had on his gauge case was opened while the in the vehicle and was unattended. According to Mike the lock he was using had recently began sticking and not fully engaging. He had cleaned the lock and found that there was significant debris that was interfering with its function. After cleaning it appeared to work properly and was put back into service. Apparently it was not working properly. The lock in question has been discarded.

2. **In your e-mail dated May 30, 2014, you stated that Mike and Orren are now using two chains and two locks in compliance with the two barrier rule. What was the date when those actions were completed?**

Mike and Orren were in compliance beginning on May 26th 2014.

3. **What long term corrective action(s) will KTI propose and implement to prevent this issue from happening again in the future? What is the estimated completion date for those action(s)?**

All employees will be reminded of proper transportation and security procedures.

All employees will be interviewed and observed in the field within the month to verify compliance and then annually to verify that they remain in compliance.

All employees will be required to report any issues with safety or security equipment (locks, chains). Any defective items will be replaced immediately, and all items will be replaced on a two year basis regardless.

Training of Portable Gauge Users

1. **Confirm that Orren has completed the two required courses by sending a copy of each completion certificate:**
    a. **Portable gauge radiation safety training**
    Completed August 17th 2009 (see attached)
    b. **DOT Hazmat safety training**
    Completed June 5th, 2014 (see attached)

2. **Provide the NRC with the following dates to help understand the scope of Orren's work with KTI:**
    a. **The date when Orren joined KTI**
    April 8th, 2014
    b. **The date(s) when Orren independently transported and/or used a portable gauge in Missouri**
    April 9th, 17th
    May 7th, 12th, 27th

3. **What was the root cause of the apparent violation? What was the reason that Orren was allowed to transport and work with a portable gauge when he joined the company?**
    a. **Provide a copy of any documentation Orren provided or referenced as part of his application to use portable gauges with KTI.**

Orren was previously employed by APAC inc. He was employed with APAC from 2009 to 2013. His duties at APAC were primarily performing nuclear density testing in the field. When he was hired he said he did not have copies of his training records but would be able to provide them. During his training he demonstrated knowledge of gauge operation and safety. With his experience and his demonstrated knowledge, he was allowed to transport and use the gauge with the understanding that he would provide the required documentation. The documentation was not provided and I did not perform the necessary follow up.

After the NRC inspection APAC was contacted and was able to provide Orren's 2009 portable gauge radiation safety training record but did not have a current DOT Hazmat safety training certificate.

4. **What long term corrective action(s) will KTI propose and implement to prevent this issue from happening again in the future? What is the estimated completion date for those action(s)?**

It is KTI's current policy that all new employees be place through the Portable gauge radiation safety training and the DOT Hazmat safety training coarse typically on their second day of employment. This requirement has been strictly followed for all other employees. This was not performed with Orren because of the reasons listed above. To correct this in the future, in the event that we do hire someone who has previous experience we will require proof of training prior to allowing them to use a gauge.

Dosimetry
The calculations you provided via e-mail on June 5, 2014, appear to adequately demonstrate unmonitored individuals are not likely to exceed 10% of the occupational worker dose limits in 10 CFR Part 20 (the calculations do not exceed 500 mrem out of the annual limit of 5000 mrem per year). As a reminder, per the license application submitted by KTI, you committed to maintain, for inspection by NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10 percent of the allowable limits in 10 CFR Part 20, or provide dosimetry to the staff.

Annual Audits
During the on-site inspection, you committed to complete an annual audit of the KTI radiation safety program by June 13, 2014. During our call today, you stated that is still the target date, and that you will likely utilize the Sample Audit Checklist found in NUREG 1556 Vol. 1, Rev. 1. Please verify any long term corrective action(s) KTI will propose and implement to prevent this issue from happening again in the future.

Thank you again for your time and assistance.

Certificate of Completion

This is to certify that

Orren Hilty

has completed a course of study in

101 - Portable Nuclear Density/Moisture Gauge Use and Safety Training

dated

August 17, 2009

offered by

American Technical Institute

Website: www.ati.coursehost.com

The course subject matter covers radiation basics, gauge safety, NRC regulations, gauge usage and US DOT 49 CFR 172 .
Course meets the NRC requirements and is accepted by the Radiological Department of NV

Signature of Licensee's RSO
(Verification of closed book test & hands on training)

American Technical Institute
5130 S. Ft. Apache Rd. #215-245
Las Vegas, Nevada 89148

Missouri
Department
of Transportation

Pete K. Rahn, Director

105 West Capitol Avenue
P.O. Box 270
Jefferson City, MO 65102
(573) 751-2551
Fax (573) 751-6555
www.modot.org

August 4, 2009

Orren Hilty
190 NW 251 Rd
Clinton MO 64735

Orren Hilty

This letter is to notify you that on **Soils Density Certification** you have:

PASSED

FAILED

$\geq$ 60% (on test)

< 60% (on test)

Proficiency

A temporary card is attached for completion of this course, cut along outside dotted lines, fold, and carry at all times. Please use this temporary card as proof of certification. Permanent cards will be issued by July 15, 2009. Delay of issuing permanent cards is to accommodate those who attend more than one training session.

FIRST TIME CERTIFICATION:
For 1st time certification "Failed" indicated above means that you did not achieve the necessary 85% to pass. You are eligible for a re-test that must be completed within 60 days, but it can not be done today. Please see your instructor for additional information.

RENEWAL:
If you have a Failed letter, with a score of 60% or greater, you may reschedule at a future dates to retake the renewal; at no additional cost. **Please bring this letter with you, the day of the retake to prevent being charged again.** If you fail the second test, you will be required to take the entire course; at the regular price.

If you have a failed letter, with a score of less then 60%, you are required to re-take the entire course at the regular price.

Sincerely,

Jeffrey L. Huffman
Technician Certification Program
1617 Missouri Blvd.
Jefferson City, Missouri
Phone: 573-522-2742

Sincerely,

Gary L. Anderson, P.E.
Director Material and Safety Institute
Linn State Technical College
Linn, Missouri
Phone: 573-897-5254

MoDOT Technician Certification
Temporary Card

This is to certify that:

Orren Hilty

August 4, 2009

Has completed training and demonstrated knowledge and proficiency in the following areas:

Soils Density

Temporary card void one year after issuance.

MoDOT

To verify the validity of this card contact:

Technician Certification Program

P.O. Box 270, Jefferson City, MO 65012

(573) 522-2742

Valid card bears MoDOT logo above

Note: All areas indicated in audit notes may not be applicable to every license and may not need to be addressed during each audit.

Licensee's name: Kruger Technologies Inc. License No. 15-35082-01

Auditor: Seth Youree Date of Audit 6-10-14 Telephone No. 913-498-1114

____

(Signature)

1. AUDIT HISTORY

a. Last audit of this location conducted on (date) Unknown.

b. Were previous audits conducted yearly? [10 CFR 20.1101] Unknown

c. Were records of previous audits maintained? [10 CFR 20.2102] Unknown

d. Were any deficiencies identified during the last two audits or two years, whichever is longer? Unknown

e. Were corrective actions taken? (Look for repeated deficiencies). Unknown

2. ORGANIZATION AND SCOPE OF PROGRAM

a. If the mailing address or places of use changed, was the license amended? Yes

b. If ownership changed or bankruptcy was filed, was prior NRC consent obtained or was NRC notified? Yes

c. If the RSO was changed, was the license amended? Does the new RSO meet NRC training requirements? Yes

d. If the designated contact person for NRC changed, was NRC notified? Yes

e. Does the license authorize all of the NRC-regulated radionuclides contained in the gauges possessed? Yes

f. Are the gauges as they are described in the Sealed Source and Device (SSD) Registration Certificate or Sheet? Are copies of (or access to) SSD Certificates available? Does the licensee have the manufacturers' manuals for operation and maintenance? [10 CFR 32.210] Yes

g. Are the actual uses of gauges consistent with the authorized uses listed on the license? Yes

h. Is the RSO fulfilling his/her duties? Not Fully, audits were not performed.

3. TRAINING AND INSTRUCTIONS TO WORKERS

a. Were all workers who are likely to exceed 100 mrem/yr instructed per 10 CFR 19.12? Was refresher training provided, as needed? Yes

b. Did each gauge operator attend an approved course before using the gauges? Yes

c. Are training records maintained for each gauge operator? Yes

d. Did interviews with operators reveal that they know the emergency procedures? Yes

e. Did this audit include observation of operators using the gauge in a field situation? Operating gauge? Performing routine cleaning and lubrication? Transporting gauge? Storing gauge? Yes

f. Did the operator demonstrate safe handling and security during transportation, use, and storage? Yes

g. Was HAZMAT training (required at least once every three years) provided as required? [49 CFR 172.700, 49 CFR 172.701, CFR 172.702, 49 CFR 172.703, 49 CFR 172.704] Yes

4. RADIATION SURVEY INSTRUMENTS

a. If the licensee possesses its own survey meter, does the survey meter meet NRC's criteria? Yes

b. If the licensee does not possess a survey meter, are specific plans made to have one available? We possess a Survey Meter

c. Is the survey meter needed for non-routine maintenance calibrated as required? [10 CFR 20.1501] Yes

d. Are calibration records maintained? [10 CFR 20.2103(a)] Yes

5. GAUGE INVENTORY

a. Is a record kept showing the receipt of each gauge? [10 CFR 30.51(a)(1)] Yes

b. Are all gauges received physically inventoried every 6 months? Yes

c. Are records of inventory results with appropriate information maintained? Yes

6. PERSONNEL RADIATION PROTECTION

a. Are ALARA considerations incorporated into the radiation protection program? [10 CFR 20.1101(b)] Yes

b. Is documentation kept showing that unmonitored users receive less than 10 percent of limit? Yes

c. Did unmonitored users' activities change during the year which could put them over 10 percent of limit? No

d. If yes to c. above, was a new evaluation performed? N/A

e. Is external dosimetry required (user receiving greater than 10 percent of limit)? Is dosimetry provided to users? The calculations do not indicate a dose rate higher than 10% s

i. Is the dosimetry supplier NVLAP-approved? [10 CFR 20.1501(c)] dosimetry is not currently in use. If the calculations change,

ii. Are the dosimeters exchanged monthly for film badges and at the industry-recommended frequency for TLDs? dosimetry will be required/provided and the proper documentation will be maintained.

iii. Are dosimetry reports reviewed by the RSO when they are received?

iv. Are the records NRC forms or equivalent? [10 CFR 20.2104(d), 10 CFR 20.2106(c)]

- NRC-4 "Cumulative Occupational Exposure History" completed?
- NRC-5 "Occupational Exposure Record for a Monitoring Period" completed?

v. If a worker declared her pregnancy, did licensee comply with 10 CFR 20.1208? Were records kept of embryo/fetus dose per 10 CFR 20.2106(e)?

f. Are records of exposures, surveys, monitoring, and evaluations maintained? [10 CFR 102, 10 CFR 20.2103, 10 CFR 20.2106]

7. PUBLIC DOSE

a. Are gauges stored in a manner to keep doses below 100 mrem in a year? Yes [10 CFR 1301(a)(1)]

b. Has a survey or evaluation been performed per 10 CFR 20.1501(a)? Have there been any Yes additions or changes to the storage, security, or use of surrounding areas that would necessitate a new survey or evaluation? No

c. Do unrestricted area radiation levels exceed 2 mrem in any one hour? [10 CFR 0.1301(a)(2)] No

d. Are gauges being stored in a manner that would prevent unauthorized use or removal? [10 CFR 20.1801] Yes

e. Are records maintained? [10 CFR 20.2103, 10 CFR 20.2107] Yes

8. OPERATING AND EMERGENCY PROCEDURES

a. Have operating and emergency procedures been developed? Yes

b. Do they contain the required elements? Yes

c. Does each operator have a current copy of the operating and emergency procedures, including current telephone numbers? Emergency Procedures are included in the travel document package

9. LEAK TESTS

a. Was each sealed source leak tested every 6 months or at other prescribed intervals? Yes

b. Was the leak test performed as described in correspondence with NRC and according to the license? Yes

c. Are records of results retained with the appropriate information included? Yes

d. Were any sources found leaking and if yes, was NRC notified? No sources were found to be leaking

10. MAINTENANCE OF GAUGES

a. Are manufacturer's procedures followed for routine cleaning and lubrication of the gauge? Yes

b. Does the source or source rod remain attached to the gauge during cleaning? Yes

c. Is non-routine maintenance performed where the source or source rod is detached from the gauge? If yes, was it performed according to license requirements (e.g., extent of work, individuals performing the work, procedures, dosimetry, survey instrument, compliance with 10 CFR 20.1301 limits)? Yes

11. TRANSPORTATION

a. Were DOT-7A or other authorized packages used? [49 CFR 173.415, 49 CFR 173.416(b)] Yes

b. Are package performance test records on file? Yes

c. Are special form sources documented? [49 CFR 173.476(a)] Yes

d. Did the package have 2 labels (ex. Yellow-II) with TI, Nuclide, Activity, and Hazard Class? [49 CFR 172.403, 49 CFR 173.441] Yes

e. Was the package properly marked? [49 CFR 172.301, 49 CFR 172.304, 49 CFR 172.310, 49 CFR 172.324] Yes

f. Was the package closed and sealed during transport? [49 CFR 173.475(f)] Yes

g. Were shipping papers prepared and used? [49 CFR 172.200(a)] Yes

h. Did the shipping papers contain proper entries (Shipping name, Hazard Class, Identification Number (UN Number), Total Quantity, Package Type, Nuclide, RQ, Radioactive Material, Physical and Chemical Form, Activity, category of label, TI, Shipper's Name, Certification and Signature, Emergency Response Phone Number, Cargo Aircraft Only [if applicable])? [49 CFR 172.200, 49 CFR 72.201, 49 CFR 172.202, 49 CFR 172.203, 49 CFR 172.204, 49 CFR 172.604] Yes

i. Were the shipping papers within the driver's reach and readily accessible during transport? [49 CFR 177. 817(e)] Yes

j. Was the package secured against movement? [49 CFR 177. 834] Yes

k. Was the vehicle placarded, if needed? [49 CFR 172.504] Yes

l. Were overpacks, if needed, used properly? [49 CFR 173.25] Yes

m. Were any incidents reported to DOT? [49 CFR 171.15, 16] No Incidents

12. AUDITOR'S INDEPENDENT SURVEY MEASUREMENTS (IF MADE)

a. Describe the type, location, and results of measurements. Do any radiation levels exceed regulatory limits? None Made

13. NOTIFICATION AND REPORTS

a. Was any radioactive material lost or stolen? Were reports made? [10 CFR 20.2201, 10 CFR 30.50] None Lost or Stolen

b. Did any reportable incidents occur? Were reports made? [10 CFR 20.2202, 10 CFR 30.50] No

c. Did any overexposures and high radiation levels occur? Were they reported? [10 CFR 20.2203, 10 CFR 30.50] No

d. If any events (as described in items a through c above) did occur, what was the root cause? Were the corrective actions appropriate? No events occured

e. Is the licensee aware of the telephone number for the NRC Emergency Operations Center? [(301) 816-5100] Yes

14. POSTING AND LABELING

a. Is NRC-3 "Notice to Workers" posted? [10 CFR 19.11] Yes

b. Are NRC regulations and license documents posted or is a notice posted stating where these documents are located? [10 CFR 19.11, 10 CFR 21.6] Yes

c. Is there any other posting and labeling? [10 CFR 20.1902, 10 CFR 20.1904] No

15. RECORDKEEPING FOR DECOMMISSIONING

a. Are records kept of information important to decommissioning? [10 CFR 30.35(g)] Yes

b. Do records include all information outlined? [10 CFR 30.35(g)] Yes

16. BULLETINS AND INFORMATION NOTICES

a. Are NRC bulletins, NRC Information Notices, and NMSS Newsletters, received? Yes

b. Is appropriate training and action taken in response? Yes

17. SPECIAL LICENSE CONDITIONS OR ISSUES

a. Did the auditor review special license conditions or other issues (e.g., non-routine maintenance)? Not at this time

18. DEFICIENCIES IDENTIFIED IN AUDIT; CORRECTIVE ACTIONS

a. Summarize problems and/or deficiencies identified during the audit.

This audit was performed following an inspection by the NRC. There were several deficiencies identified during the inspection that were addressed but there were no additional deficiencies identified during this self audit.

b. If problems and/or deficiencies were identified in this audit, describe the corrective actions planned or taken. Are corrective actions planned or taken at ALL licensed locations (not just location audited)? Annual audits will be conducted

c. Provide any other recommendations for improvement. More frequent field and lab checks for compliance

19. EVALUATION OF OTHER FACTORS

a. Is senior licensee management appropriately involved with the radiation protection program and/or RSO oversight? Yes

b. Does RSO have sufficient time to perform his/her radiation safety duties? Yes

c. Does licensee have sufficient staff to support the radiation protection program? Yes

Certificate of Completion

This is to certify that

Orren Hilty

has completed a course of study in

102 - Hazardous Materials D.O.T. Training - Portable Nuclear Gauge

dated

June 5, 2014

offered by

American Technical Institute

Training satisfies US DOT training requirements of 49 CFR 172 and IATA including:

- Emergency Procedures
- Methods and procedures for avoiding accidents
- Hazardous materials identification and recognition
- Self-protection measures
- Regulations applicable to job function
- Security

Certification expiration: DOT - 3 years from date listed above

Company RSO Signature

American Technical Institute
10161 Park Run Drive, Suite 150
Las Vegas, Nevada 89145

From: Seth Youree
To: Bramnik, Andrew
Subject: RE: NRC Inspection at KTI
Date: Wednesday, June 11, 2014 11:40:44 AM
Attachments: 6-11-14 Nuc responces.pdf
June 2014 KTI Nuc Audit.pdf
Hilty, Orren Training 2009.pdf
Orren DOT 2014.pdf

Mr. Bramnik

Attached are the responses to your email, the My audit, and training records for Orren.

Please let me know if there are any questions.

Seth Youree, P.E.
Project Manager
KTI
Kruger Technologies, Inc.
14705 W. 114th Terrace
Lenexa, KS 66215
ph: (913) 498-1114
fx: (913) 498-1116
syouree@ktionline.com

From: Bramnik, Andrew [mailto:Andrew.Bramnik@nrc.gov]
Sent: Monday, June 09, 2014 10:33 AM
To: Seth Youree
Subject: NRC Inspection at KTI

Good morning Mr. Youree –

As we discussed by phone today, the NRC needs some additional items in order to complete the inspection at Kruger Technologies, Inc. I have copied the list from our conversation into the e-mail below. Please reply to this e-mail with the following items (and any necessary attachments) by **Wednesday, June 11, 2014**.

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1. What was the root cause of the apparent violation? What was the reason that Mike left the gauge in the unsecured condition?
2. In your e-mail dated May 30, 2014, you stated that Mike and Orren are now using two chains and two locks in compliance with the two barrier rule. What was the date when those actions were completed?
3. What long term corrective action(s) will KTI propose and implement to prevent this issue from happening again in the future? What is the estimated completion date for those action(s)?

Training of Portable Gauge Users

1. Confirm that Orren has completed the two required courses by sending a copy of each completion certificate:
    a. Portable gauge radiation safety training
    b. DOT Hazmat safety training
2. Provide the NRC with the following dates to help understand the scope of Orren's work with KTI:
    a. The date when Orren joined KTI
    b. The date(s) when Orren independently transported and/or used a portable gauge in Missouri
3. What was the root cause of the apparent violation? What was the reason that Orren was allowed to transport and work with a portable gauge when he joined the company?
    a. Provide a copy of any documentation Orren provided or referenced as part of his application to use portable gauges with KTI
4. What long term corrective action(s) will KTI propose and implement to prevent this issue from happening again in the future? What is the estimated completion date for those action(s)?

Dosimetry

The calculations you provided via e-mail on June 5, 2014, appear to adequately demonstrate unmonitored individuals are not likely to exceed 10% of the occupational worker dose limits in 10 CFR Part 20 (the calculations do not exceed 500 mrem out of the annual limit of 5000 mrem per year). As a reminder, per the license application submitted by KTI, you committed to maintain, for inspection by NRC, documentation demonstrating that unmonitored individuals are not likely to receive a radiation dose in excess of 10 percent of the allowable limits in 10 CFR Part 20, or provide dosimetry to the staff.

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Thank you again for your time and assistance.

Andrew M. Bramnik
Health Physicist (Inspector)
U.S. Nuclear Regulatory Commission, Region III
Work: 630-829-9543 | Fax: 630-515-1259
E-Mail: andrew.bramnik@nrc.gov