Terracon

September 24, 2018

Michael C. Hay, Chief
Materials Licensing and Inspection Branch
U.S Nuclear Regulatory Commission
Region IV, Material Licensing Section
1600 E. Lamar Blvd.
Arlington, TX 76011-4511

RE: Response to Apparent Violations in NRC Inspection Report No. 030-32176/2018-002; EA-18-106

Dear Mr. Hay,

This letter serves as written response to apparent violations from the Nuclear Regulatory Commission special inspection report No. 030-32176/2018-002; EA-18-106.

On June 28th, 2018, Terracon Technician Tim Ellerbe reported the below incident to Justin Reynolds (Location RSO) and Cale Wilson (Office Manager). Cale Wilson communicated the incident via email and telephonic to Scott Shuey (Corporate RSO) on June 28, 2018, the day of incident.

Summary of Incident:

On June 28, 2018, an Terracon technician was working at a temporary job site in Lee's Summit, Missouri, performing asphalt compaction studies in the parking lot of a restaurant. After completing work, the technician placed the portable nuclear gauge (a Troxler Model 3430) on the lowered tailgate in the back of the pickup truck. The gauge was not placed back into its transportation case, nor was the gauge secured and properly blocked and braced in the bed of the vehicle. After placing the gauge on the tailgate next to the opened transportation case, the technician went to the cab of the vehicle to complete the paperwork for the day's activities.

After about 30 minutes of working on paperwork, the technician, apparently forgetting that the gauge was not properly prepared for transport, drove away from the site, and proceeded to take Highway 50 North, to I-470 West. Approximately 12 minutes from the project site, on I-470 westbound, at a road construction site near the Blue Ridge Boulevard Bridge, the technician was made aware that the transportation case had fallen out of the back of the truck by another driver that "flagged down" the technician.

The technician stopped the vehicle and observed that the gauge was still on the tailgate, but the Type A transportation case was missing. The technician immediately notified the office. The office instructed the technician to remain at that location until another Type A transportation container arrived. After securing the gauge in the new transport container, it was transported in accordance with NRC and DOT requirements back to the Terracon office in Lenexa, Kansas. Upon return, the gauge was tagged out-of-service, and a leak test sample was taken and sent for analysis.

James Thompson, Senior Health Physicist from the Nuclear Regulatory Commission contacted Corporate RSO Adam Maier about said incident via telephonic on July 2, 2018. During our conversation, we discussed the incident details and verified the gauge was still in our possession. Michael Hay, Chief and James Thompson, Senor Health Physicist from the NRC accompanied by Kansas Department of Health and Environment Jimmy Uhlemeyer visited Terracon's corporate office and Lenexa storage location on July 12, 2018 to conduct opening conference consisting of onsite interviews with the management team, RSOs and the employee involved in the incident.

On September 7, 2018, during the exit briefing, Terracon was informed by Mr. Hay, Chief and Mr. Thompson, Senor Health Physicist from the NRC identified four apparent violations and the violations are being considered for escalated enforcement action in accordance with NRC Enforcement Policy. The apparent violations are listed below;

1. Failure to block and brace a portable nuclear gauge during transport
2. Failure to transport a nuclear gauge in its proper shipping container
3. Failure to use a minimum of two independent physical barriers to secure a portable nuclear gauge from authorized removal when not under control and constant surveillance of the licensee
4. Failure to maintain constant surveillance of a portable nuclear gauge that is not in storage

Previous Incident:
On December 21, 2016, Terracon received a similar apparent violation (event #52453) out of the Terracon Springfield, MO location when a Troxler gauge #38373, model 3430 was struck by a steel drum roller while it was left unattended by a Terracon gauge operator. Terracon provided written notification and corrective actions to the Nuclear Regulatory Commission Region III (inspection report No. 030-32176/2017-001; EA-17-079) in a letter dated on January 10, 2017 by previous Corporate RSO Katie Gilchrist. Terracon was later contacted by Nuclear Regulatory Commission Region IV on September 19, 2017 requesting a written response to the apparent violation from December 21, 2016 incident. Adam Maier, Corporate RSO, provided a response with the corrective actions and achievement of those corrective actions in a letter dated October 10, 2017.

Under the circumstances, Terracon understands the incidents dated December 21, 2016 and June 28, 2017 are similar and we highly feel these incidents are preventable. After review of NRC Enforcement Policy ML18170A167 dated August 1st, 2018 Terracon noticed the violation severity level involving the portable gauge security requirements in Title 10 of the Code of Federal

Regulations (10 CFR) 20.1802 and 10 CFR 30.34(i), including instances where portable gauges are damaged during field operations has been reconsidered by the NRC using the graded approach which would allow the potential safety and security consequences to be cited as severity level IV and not a severity level III.

Corrective/Disciplinary Actions

The technician was consulted on June 29th, 2018 to collect the details and determine the "root causes" and "corrective actions" of the incident. It was determined the technician did not follow NRC or DOT regulatory requirements and did not follow Terracon's Incident Injury Free Rules to Live by.

- Terracon Rule 9 Violation: The technician did not secure loads using approved methods.
- Terracon Rule 12 Violation: The technician did not use a Terracon cone as required. The Terracon cone is place near the vehicle to as a reminder to walk 360 degrees around the vehicle prior to departure.
- The nuclear gauge was not under constant surveillance and control at all times.
- The gauge was not positioned in the proper shipping container after use.
- The gauge was not secured with 2 independent controls prior to departure.
- The transportation box was not blocked or braced prior to departure.

The technician was given one-week unpaid suspension and a written reprimand for the incident. The written reprimand has been filed in the technician's personnel file. The technician was also notified he was suspended from using any nuclear gauge for a period of 30 days after completion of re-training without supervision by a competent gauge operator.

After the one-week suspension, the technician participated in the following online course and quiz provided by the American Technical Institute; *Portable Nuclear Density/Moisture Gauge Use and Safety Training.* A copy of the technician's Certificate of Completion, dated August 6, 2018 is attached.

A mandatory meeting was held with all Terracon RSOs and authorized nuclear gauge users to discuss the latest Terracon incidents, review the nuclear gauge safety share and communicate the importance of nuclear gauge security when the gauge is not in use, constant surveillance at all times, two independent controls, blocking and bracing and Terracon Rule to Live By. All Terracon RSOs and management team agreed to verify these requirements are met during site safety visits.

Corrective Action(s)	Due Date	Responsibility
Discuss the importance of individual pre-task planning, gauge security, gauge control and constant surveillance, two independent controls, block and bracing and individual responsibility to avoid potential incident. Complete documented coaching in Safety Documentation & History relating to Terracon Rules R9 & R12.	07.06.2018	Cale Wilson & Justin Reynolds

Corrective Action(s)	Due Date	Responsibility
Conduct an evaluation of the task and revise Job Hazard Analysis JHA010 Nuclear Density Gauge Testing mod 0316	07.27.2018	Justin Reynolds
Evaluate the need for additional training course and or procedure for Nuclear Density Gauge Testing operations. After evaluation an annual retraining for gauge operators will be created to supplement the required ATI training.	In Process	Jim Wright & Adam Maier
Conduct a thorough review of Terracon's Radiation Safety Program and revise if needed. After reviewing it was determined that the language in the current program meets the NRC requirements for blocking and bracing, gauge transport, two independent physical barriers and constant surveillance. No changes were necessary.	08.01.2018	Adam Maier & Scott Shuey
Tim Ellerbe to receive one week off duty w/out pay for failure to follow established Terracon policies.	07.13.208	Cale Wilson
Tim Ellerbe to complete ATIs Portable Nuclear Density/Moisture Gauge Use and Safety Training.	07.06.2018	Cale Wilson
Complete hands on re-training with Tim Ellerbe on gauge operations specifically focusing on blocking and bracing, gauge transport, two independent physical barriers and constant surveillance. After retraining, Mr. Ellerbe was not allowed to use a gauge alone and required observation by a competent gauge operator for 30 days.	07.06.2018	Justin Reynolds
Communicate the incident, root causes and corrective actions to all Lenexa office staff via monthly safety meeting.	07.25.208	All Management
Communicate the incident, root causes and corrective actions to all Terracon operations via Safety Share and monthly scheduled RSO conference call.	08.06.2018	Scott Shuey

We would like to thank you for your time and your courtesy during the visit. Terracon would greatly appreciate if you would accept our response to this severity level III violation and reconsider the violation as a severity level IV. Terracon takes its radiation safety program, State, NRC and DOT regulatory requirements very seriously. If you have any questions on the responses above or require further actions, please contact the undersigned.

Thank you,

Adam Maier
Corporate Radiation Safety Officer
EOG Corporate Safety Professional

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Certificate of Completion

This is to certify that

Tim Ellerbe

has completed a course of study in

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

dated

08/06/2018

offered by

ATI

American Technical Institute, LLC

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

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

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