

ENCLOSURE 6

INSPECTION RECORD

Region III Inspection Report No. 12-01

License No. 13-24480-01

Docket No. 030-28612

Licensee K&S Engineers, Inc.  
9715 Kennedy Ave.  
Highland, Indiana 46322

Licensee Contact: Dibakar Sundi, P.E., RSO

Telephone No.: (219) 924-5231

Priority: 5 Program Code: 03121

Date of Last Inspection: March 5, 2008 Date of This Inspection: June 28, 2012

Type of Inspection: ( ) Initial ( ) Announced (X) Unannounced  
(X) Routine ( ) Special

Next Inspection Date: June 28, 2017 (X) Normal ( ) Reduced

Summary of Findings and Actions:

- ( ) No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
- ( ) Non-cited violations (NCVs)
- ( ) Violation(s), Form 591 issued
- (X) **Violations**, regional letter issued from the RIII Office
- (X) Followup on previous violations

Inspector(s): Aaron T. McCraw, Senior Health Physicist

Date: 7/17/12

  
(Signature)

Approved: Tamara E. Bloomer, Chief, MIB

Date: 7/12/12

  
(Signature)

## PART I-LICENSE, INSPECTION, INCIDENT/EVENT, AND ENFORCEMENT HISTORY

### 1. AMENDMENTS AND PROGRAM CHANGES:

<u>AMENDMENT #</u>	<u>DATE</u>	<u>SUBJECT</u>
7	March 2, 2012	Renewal; Removal of Troxler 4640 authorization
6	October 21, 2008	Addition of Beech Grove, IN location of use

### 2. INSPECTION AND ENFORCEMENT HISTORY:

Three Severity Level IV Violations were identified during the previous inspection on March 5, 2008.

The first violation related to Title 10 of the Code of Federal Regulations (CFR) 30.34(i), which requires that each portable gauge licensee 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 constant control and surveillance of the licensee. Contrary to the requirement, the licensee failed to use two independent physical controls that form tangible barriers in that, while the gauge was not under constant control and surveillance, the gauge was stored in the trunk of the authorized user's vehicle with only one independent lock (trunk lock).

This violation was reviewed during the current inspection. To address the violation, the licensee purchased chains and locks for each portable gauge. The licensee advised all authorized users that they must chain and lock the portable gauges to the inside of their vehicle's trunk whenever the gauges were not in their physical control. This violation is considered closed.

The second violation related to 49 CFR 177.817(e)(2)(i), which requires, in part, that the driver of a motor vehicle containing hazardous material ensure that the shipping paper required by 49 CFR 177.817(a) is readily available to, and recognizable by, authorities in the event of accident or inspection. Specifically, (i) when the driver is at the vehicle's controls, the shipping paper shall be: (A) within his immediate reach while he is restrained by the lap belt; and (B) either readily visible to a person entering the driver's compartment or in a holder which is mounted to the inside of the door on the driver's side of the vehicle; (ii) when the driver is not at the vehicle's controls, the shipping paper shall be: (A) in a holder which is mounted to the side of the door on the driver's side of the vehicle; or (B) on the driver's seat in the vehicle. Pursuant to 49 CFR 172.101, radioactive material is classified as a hazardous material. Contrary to the requirement, the authorized user stored the shipping paper on the passenger's seat of the vehicle when the driver was not at the vehicle's controls.

This violation was reviewed during the current inspection. To address the violation, the licensee instructed all authorized users to place the provided laminated shipping papers in the holders mounted to the inside of the door on the driver's side of each respective vehicle.

The third violation related to Condition 21.A of NRC License No.13-24480-01, which requires, in part, the licensee to conduct its program with the statements, representations, and procedures contained in the application dated August 16, 2001. Item 10 of the application, Section 2.B.3 states that when using the equipment, individuals will wear personnel monitoring devices. When individuals are not using the equipment, the monitoring device will be stored in the radiation free area that has been designated in the office. Contrary to the commitment, on March 5, 2008, an individual who used the equipment (portable gauge) did not wear his personnel monitoring device. Specifically, the individual left his monitoring device at his residence.

This violation was reviewed during the current inspection. To address the violation, the licensee reminded all authorized users that the use of personnel monitoring devices is a condition of the NRC license. This violation is considered closed.

3. INCIDENT/EVENT HISTORY:

None.

**PART II - INSPECTION DOCUMENTATION**

1. ORGANIZATION AND SCOPE OF PROGRAM:

This was a routine inspection of a small soil testing and engineering firm. The licensee possessed a total of 14 Troxler 3400 Series gauges: 11 at its Highland, Indiana facility; 3 at its Beech Grove, Indiana facility; and 1 at its Lombard, Illinois facility (under an Agreement State license). Five of the gauges at the Highland facility are no longer used and are in permanent storage since newer gauges were obtained in 2007. The gauges are used on a daily basis during the construction season (mid-May through October or November).

The Radiation Safety Officer (RSO) is also the president of the company. The RSO has delegated a number of his duties to an authorized user (Zeljko "Zack" Novakovich). The delegated duties include performing leak tests, tracking gauge locations, and training.

Performance Observations:

The inspector observed the gauge storage area at the main facility in Highland, Indiana. The inspector reviewed dosimetry records, leak test records, audit records, training records, and utilization logs. The inspector observed all gauge users, as well as other staff working in the vicinity of the gauges, wearing appropriate dosimetry. During a review of dosimetry records, the inspector noted readings that were routinely above what would be expected of a typical portable gauge user. No readings were in excess of regulatory limits; however, some readings were over 100 millirem in a quarter. The inspector inquired about the licensee's investigations of the higher-than-expected readings, but no investigations had been conducted. The inspector did not identify any issues in how the badges were worn or stored based on observations and licensee personnel interviews. The inspector indicated that the readings are indicative of the badges not being stored or used appropriately or of the gauges not being handled appropriately. The inspector reminded the licensee of its obligations to ensure that badge reading are representative of actual doses and to try to keep worker doses as low as is reasonably achievable either through administrative or engineering controls or

reasonably achievable either through administrative or engineering controls or through process/procedure adherence. Corrective actions appeared sufficient to prevent recurrence of the previously cited violation.

The inspector also noted that the utilization logs were not adequately completed by all gauge users when checking out gauges. The authorized user that has been delegated many of the RSO's duties was knowledgeable of the whereabouts of each gauge despite the incomplete utilization log. The inspector identified three individuals whose hazmat certification training had lapsed. One of the individuals was observed transporting a gauge, and the inspector cited the license of failure to ensure that all gauge users that transport gauges have current hazmat training.

The licensee maintains a survey instrument for emergency purposes. The inspector noted that the survey instrument was out of calibration. The inspector had the licensee verify that the survey instrument provided a visual and audible response to a gauge in a transportation case. The inspector relayed to the licensee that the survey instrument should be calibrated annually in order to accurately detect radiation levels, but the main purpose of the instrument is to identify that the gauge's radioactive sources are still intact or easily located following an incident with the gauge. The inspector verified that no other gauge licensees in the area rely on this licensee's gauge for emergency purposes. The licensee committed to getting the survey instrument calibrated in the near future and ensuring that the calibration remains current.

The inspector observed eight portable gauges at the permanent storage location, one portable gauge at a temporary jobsite, and one gauge in a vehicle as it arrived at the facility. The remaining gauges were either under constant control and surveillance or were adequately secured using two independent physical controls. Although the licensee was in compliance, the inspector recognized that the licensee did not fully understand the intent of this requirement. For example, the inspector observed a gauge at a temporary jobsite at the Gary-Chicago International Airport. The gauge was not being used at the time of the inspection and was under constant control and surveillance of the authorized user. However, the gauge was chained in the locked back compartment of the authorized user's vehicle (minivan), but the chain was attached to a removable headrest. The inspector indicated that the chain did not form a tangible barrier because the chain could be defeated without being cut by removing the headrest. The authorized user located a metal loop welded to the frame of the vehicle and wrapped the chain around that instead. As another example, at the permanent storage location, the licensee relies on constant surveillance during normal business hours. All gauge transportation cases were secured by one chain from unauthorized removal, but all doors leading to the storage area remain unlocked during business hours. The inspector indicated that if the assigned individual steps away from the area the licensee would be in violation of this requirement.

The inspector also identified a violation regarding the location of the shipping papers. During this inspection, at the temporary jobsite, the inspector observed the shipping paper sitting on the passenger's seat of the vehicle when the driver was not at the vehicle's controls. The inspector cited the licensee again for failure to comply with this requirement. This violation was similar to a previously cited violation.

The authorized user was proficient in the proper and safe use of portable gauges. The authorized user was knowledgeable of operating and emergency procedures. The authorized user was wearing appropriate dosimetry.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: IP 87124

Focus Areas Evaluated: All

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

The inspector performed radiation surveys of various areas where radioactive materials were used or stored. Ambient radiation surveys indicated measurements that were within regulatory limits. The inspector did not perform a side-by-side comparison with the licensee's survey instrument because, as previously stated, the licensee's survey instrument was out of calibration.

NRC Instrument used:

Ludlum model 2403, serial number 161609, calibration due 10/10/2012

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

Two SL IV Violations were identified as follows:

- A. Title 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189.

Title 49 CFR 172.702 requires that each hazmat employer ensure that each hazmat employee is trained and tested, and that no hazmat employee performs any function subject to the requirements of 49 CFR Parts 171-177 unless trained, in accordance with Subpart H of 49 CFR Part 172. The terms Hazmat Employer and Hazmat Employee are defined in 49 CFR 171.8.

Title 49 CFR 172.704(a) specifies the elements of hazmat employee training as: (1) general awareness/familiarization training; (2) function-specific training; and (3) safety training. Title 49 CFR 172.704(c) requires, in part, that a hazmat employee receive initial training, and recurrent training at least once every three years.

Contrary to the above, as of June 28, 2012, the licensee did not provide training for its hazmat employees that satisfied the requirements in Subpart H to 49 CFR Part 172, in that recurrent training had not been completed at least once every three years for all of its employees who transport hazardous materials, and the licensee otherwise meets the definition of a hazmat employer in 49 CFR 171.8.

This is a Severity Level IV violation (Section 6.3.d.4).

- B. Title 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189.

Title 49 177.817(e)(2)(i) requires, in part, that the driver of a motor vehicle containing hazardous material ensure that the shipping paper required by 49 CFR 177.817(a) is readily available to, and recognizable by, authorities in the event of accident or inspection. Specifically, (i) when the driver is at the vehicle's controls, the shipping paper shall be: (A) within his immediate reach while he is restrained by the lap belt; and (B) either readily visible to a person entering the driver's compartment or in a holder which is mounted to the inside of the door on the driver's side of the vehicle; (ii) when the driver is not at the vehicle's controls, the shipping paper shall be: (A) in a holder which is mounted to the side of the door on the driver's side of the vehicle; or (B) on the driver's seat in the vehicle. Pursuant to 49 CFR 172.101, radioactive material is classified as a hazardous material.

Contrary to the above, on June 28, 2012, the licensee transported radioactive material outside the site of usage as specified on the NRC license and on a public highway, and the driver of the vehicle did not ensure that the shipping paper was readily available in the driver's compartment, as required. Specifically, the shipping paper was stored on the passenger's seat when the driver was not at the vehicle's controls.

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

5. PERSONNEL CONTACTED:

(Identify licensee personnel contacted during the inspection, including those individuals contacted by telephone.)

Use the following identification symbols:

- \* Individual(s) present at exit meeting
  
- \* Dibakar Sundi, P.E., President and RSO
- \* Zeljko "Zack" Novakovich, Authorized User
- Various Authorized Users