

U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection No. 03038028/2010001

Docket No. 03038028

NRC License No. 09-31368-01

FL License No. FL-1136-4

EA No. EA-10-138

Licensee: Universal Engineering Sciences, Inc.  
3532 Maggie Boulevard  
Orlando, Florida 32811

Inspected Location: 1985 Cope Lane  
Pensacola, Florida 32526

Temporary Sites: Eglin Air Force Base  
Florida, 32542

Inspection Dates: April 23 through July 7, 2010

Date Follow-up Information Received: June 1, 2010

Inspector: /RA by M. Miller For/ 7/30/2010  
Scott Wilson date  
Health Physicist  
Materials Security and Industrial Branch  
Division of Nuclear Materials Safety

Approved By: /RA/ 7/30/2010  
Marie Miller, Chief date  
Materials Security and Industrial Branch  
Division of Nuclear Materials Safety

## EXECUTIVE SUMMARY

Universal Engineering Sciences, Inc.  
NRC Inspection Report No. 03038028/2010001

Universal Engineering Sciences, Inc. (UES) is an engineering firm headquartered in Orlando, Florida, with field offices located in the States of Florida, Georgia, Alabama, and Louisiana, which are NRC Agreement States. The licensee maintains NRC License No. 09-31368-01, which was issued on May 14, 2009, authorizing the use of byproduct material in portable moisture/density gauges at temporary jobsites within areas of NRC jurisdiction. UES also maintains several Florida Agreement State Materials Licenses, which authorize the use of byproduct material in portable moisture/density gauges in the State of Florida. UES's Agreement State licenses do not authorize licensed activities at jobsites that are under exclusive federal jurisdiction, unless UES was granted a general license by NRC under 10 CFR 150.20(a). The NRC licensee has a Radiation Safety Officer (RSO), and each of the field office facilities has a site Radiation Safety Officer, who is responsible for the implementation of the licensee's radiation safety program. This inspection was limited to observations of activities conducted within areas of NRC jurisdiction.

The inspection identified three apparent violations for which corrective actions were promptly taken. The first apparent violation involved the failure to file for reciprocity. NRC regulation 10 CFR 150.20 grants an NRC general license to Agreement State licensees allowing them to conduct the same licensed activities authorized by the Agreement State, in areas of exclusive federal jurisdiction, provided that the Agreement State licensee file NRC Form 241, "Report of Proposed Activities in Non-Agreement States," at least three days prior to engaging in licensed activities within NRC jurisdiction. Contrary to this regulation, on multiple dates between January 2008 and May 13, 2009, UES employees conducted licensed activities in areas of exclusive federal jurisdiction without filing Form-241. As a corrective action, the licensee filed an NRC license application and was issued a specific NRC license in May of 2009.

The second apparent violation involved the failure to comply with NRC regulation 10 CFR 71.5(a), which requires, in part, that licensees must comply with the United States Department of Transportation regulations specified in 49 CFR Part 172, Subpart H, regarding employee training. Specifically, 49 CFR 172.704 states, in part, that a hazmat employee must receive initial training within 90 days of employ, and recurrent training at least once every three years thereafter. Gauge users that transport gauges on public roads meet the definition of hazmat employees as defined in 49 CFR 171.8. Licensee records showed that three UES employees had transported gauges prior to completing the recurrent training required by 49 CFR 172.704. The licensee immediately ceased the transport of gauges by untrained individuals and conducted the required training within a few days of the issue being identified.

The third apparent violation was identified by UES and corrected prior to the inspection. NRC License Condition 20 requires, in part, that UES conduct its program in accordance with its license application. The licensee stated in its NRC license application that UES would implement the use of a utilization log. However, the NRC license was issued on May 14, 2009, and the utilization log was not implemented until April 2010. This violation is of lower safety significance, was self-identified and corrected by the licensee, and appears not to have been willful.

## **REPORT DETAILS**

### **I. Organization and Scope of the Program**

#### a. Inspection Scope

The inspection included direct observations of licensed activities at a temporary job site, an evaluation of the records at the Pensacola field office, telephone interviews with the Radiation Safety Officer (RSO) named on the NRC license, a review of records related to gauge use and hazmat employee training for its other field offices.

#### b. Observations and Findings

Universal Engineering Sciences, Inc. (UES) was an engineering firm headquartered in Orlando, Florida, with 17 field offices in the State of Florida, one in the State of Georgia, one in the State of Louisiana, and one in the State of Alabama. The company's NRC license authorized the use of Troxler Model Nos. 3401, 3411, 3411B, 3400 series, and CPN International Model MC Series portable gauging devices containing Cesium-137 (Cs-137) and Americium-241 (Am-241) sealed sources for the purpose of measuring the physical properties of materials. The license authorized gauges to be used at temporary jobsites within NRC jurisdiction. The NRC license names an RSO, who appointed an individual responsible for oversight of the NRC licensed program at each field office. The company employed 430 individuals, 150 of which were authorized portable gauge users. The Pensacola, Florida field office was managed by the Branch Manager, whom had 14 employees, including 7 authorized users (AU). The licensed program at the Pensacola field office was managed by the District CSD Manager. Portable gauges were used daily at construction sites, including military bases and other areas within exclusive federal jurisdiction. No gauges were stored within NRC jurisdiction.

#### c. Conclusions

The inspection did not identify any violations related to organization.

### **II. Material Receipt, Use, Transfer, and Control**

#### a. Inspection Scope

The inspection included an evaluation of records at the Pensacola field office including the available gauge utilization logs (April 2010), leak test results, source inventories, authorized user training records, exposure reports, operating and emergency procedures, and shipping papers for the time period since the NRC license was issued on May 14, 2009. The inspection evaluated records provided by the RSO, including records of licensed activities conducted in areas of exclusive federal jurisdiction from January 2008 to May 13, 2009. The inspection also included discussions with employees and direct observation of licensed activities at a temporary job site.

b. Observations and Findings

The inspector determined that during the period of January 2008 through May 13, 2009, UES employees had conducted licensed activities in areas of exclusive federal jurisdiction without an NRC license or without filing Form-241, "Report of Proposed Activities in Non-Agreement States" as required by 10 CFR 150.20. Specifically, licensee records indicated that on multiple occasions in 2008 and on a few occasions in 2009, licensed activities were conducted within areas of exclusive federal jurisdiction at Fort Gordon Army Base in Augusta, Georgia and the following locations in the State of Florida: Eglin Air Force Base; Cape Canaveral Air Force Station; MacDill Air Force Base; and Patrick Air Force Base. NRC records indicated that UES had filed Form 241 for reciprocity in 2007; however, UES did not file Form 241 in any subsequent year. The RSO stated that in April 2009, a military representative informed a UES representative from the Pensacola office that UES needed to file for reciprocity, because the area it was working at the Eglin Air Force Base was within exclusive federal jurisdiction. The RSO stated that UES applied for an NRC license, because it would have been difficult to control the work within exclusive federal jurisdiction, as each field office had a separate state license and management structure.

The RSO also stated to the NRC inspector that in April 2010, UES had identified a violation of its NRC License regarding use of utilization logs at its Pensacola office. License Condition 20 required the licensee to conduct its program in accordance with the statements, representations, and procedures contained in the documents supplied in the license application. The licensee stated in the license application that they would implement the use of a utilization log; however, the license was issued on May 14, 2009, and the utilization log was not implemented until April of 2010. The licensee failed to implement the use of a daily utilization log as stated in its license application, which is a violation of License Condition 20. The RSO stated that he verified that the other field offices were using the utilization logs as required by its NRC license.

The inspector observed the use of a gauge at a temporary jobsite. The gauge was transported in a locked transport case, chained to the bed of a company pickup truck and adequately secured from movement during normal transportation. The security requirements in 10 CFR 30.34(i) were met. The authorized user had current shipping papers, sealed source leak test records, and Operating and Emergency Procedures. The authorized user was familiar with the transportation and security requirements and the Operating and Emergency Procedures.

c. Conclusions

Two apparent violations were observed including: 1) conduct of licensed activities within exclusive federal jurisdiction without an NRC license or filing Form-241 as required by 10 CFR 150.20; and, 2) failure to document gauge use on a utilization log as required by License Condition 20. The licensee took the following corrective actions: 1) applied for and received NRC license 09-31368-01, authorizing the use of licensed materials in NRC jurisdiction; and, 2) implemented the use of a gauge utilization log and verified that the utilization logs were being used at the other UES field offices.

### **III. Radiation Surveys and Radiation Protection**

a. Inspection Scope

This inspection included independent measurements by the inspector and a review of the licensee's personnel dose exposure records for 2009 at the Pensacola field office. The inspector surveyed the transport case for the gauge, and discussed the use of a survey meter in under emergency conditions with authorized users.

b. Observations and Findings

Dose rates observed on the transport case and on the gauge were consistent with the sealed source and device evaluation (NC-646-D-130-S). Dosimetry records indicate that all doses were well within regulatory limits.

The licensee possessed a radiation survey instrument, which was stored at the main office in Orlando, Florida. Because of the distance between the Pensacola office and the main office, and the time that would be required to respond from the main office to the anticipated area of gauge use in the event of an emergency, the inspector recommended that the licensee provide for more timely availability of a survey instrument. The licensee agreed and entered into an agreement with their local service provider to provide access to appropriate survey instruments and to provide training on the use of the instruments to responsible licensee staff.

c. Conclusions

The inspection did not identify any violations related to radiation surveys or radiation protection.

### **IV. Transportation**

a. Inspection Scope

This inspection included a review of records at the Pensacola field office and direct observation at a temporary jobsite within areas of NRC jurisdiction. This review of selected records related to authorized users that had used and transported radioactive material in areas of exclusive federal jurisdiction.

b. Observations and Findings

Authorized users transport the licensed material in company-owned pickup trucks. The inspector observed that a gauge was transported in a locked shipping container. The container and gauge were labeled with appropriate and legible labels. The shipping papers were in order, neat, and complete. The shipping container was blocked and braced for normal shipping and security measures were adequate.

The inspector determined that authorized user training records appeared to be incomplete. The RSO contacted the appropriate field office and records were located for all but three authorized users, referred to here as employees A, B, and C. Three users did not have current hazmat employee training as required by 49 CFR 172.704(c) which states, in part, that a hazmat employee must receive initial training within 90 days of employ, and recurrent training at least once every three years.

Employee A completed training on October 14, 2004, and recurrent training was provided on April 29, 2010, a period of greater than three years. Employee B completed training on July 14, 2003, and recurrent training was not provided. Employee C completed training on March 17, 1995, and recurrent training was provided on January 30, 2010, a period of greater than three years. In each instance, recurring training was not provided at least once every three years as required. Licensee records show that employees A, B and C, conducted licensed activities in areas of exclusive federal jurisdiction on Eglin Air Force Base between January 2008 and December 4, 2009. Therefore, these employees were required to have refresher training prior to transporting the radioactive material to the temporary job site as required by 10 CFR 71.5(a) and 49 CFR 172.704(c).

c. Conclusions

An apparent violation was identified regarding the failure to meet 10 CFR 71.5(a) that requires compliance with Department of Transportation regulations specified in 49 CFR Parts 170 through 189. Specifically, 49 CFR 172.704(c) states, in part, that a hazmat employee must receive initial training within 90 days of employ, and recurrent training at least once every three years. Gauge users that transport gauges on public roads are hazmat employees as defined in 49 CFR 171.8. Licensee records showed that three employees had transported gauges prior to completing the recurring training required by 49 CFR 172.704(c). The licensee immediately ceased the transport of gauges by untrained individuals and conducted the required training within a few days of the issue being identified.

## **V. Exit Meeting**

On July 7, 2010, an exit meeting was held by telephone and the preliminary inspection findings and three apparent violations identified in this report were discussed with UES's President and the RSO named on the NRC license. The inspector discussed the apparent violations and acknowledged the licensee's corrective actions. Corrective actions taken by the licensee include: 1) the licensee applied for and received NRC license 09-31368-01 authorizing the use of licensed materials in areas of exclusive federal jurisdiction; 2) the licensee implemented the use of a gauge utilization log at the Pensacola, Florida field office; and, 3) the licensee ceased transport of gauges by those users lacking the required training and arranged and ensured that training for all employees was completed by April 29, 2010. UES's management advised that the apparent violations were due to a lack of understanding of the NRC reciprocity requirements and also by a lack of oversight from a manager at its Pensacola office. UES advised that because of this matter and other issues, the manager is no longer employed by UES.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

\*Mark Israel, P.E., President

\*Jim Lewis, RSO named on NRC license

Patsy DeSimone, District CSD Manager

William "Billy" Lawrence, Pensacola Office Branch Manager

Tom Miller, Senior Project Manager

\*denotes participation in exit meeting on July 7, 2010