

INSPECTION RECORD

Region: III

Inspection Report No. 2017001

License No. 24-32098-01

Docket No. 030-34750

Licensee: Chester Bross Construction  
P.O. Box 430  
Hannibal, MO 63401

Location Inspected: 6811 Construction Lane, Palmyra, Missouri

Licensee Contact: Chris Stroud, RSO

Telephone No. 573-406-2820

Program Code: 03121 Priority: 5

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

Last Inspection Date: 11/26/12

Date of This Inspection: 10/13/17, with in-office review through 10/19/17

Next Inspection Date: 10/13/2022

(X) Normal ( ) Reduced

Justification for reducing the routine inspection interval: N/A

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) Violation(s), regional letter issued
- ( ) Follow-up on previous violations

Inspector: Robert G. Gattone, Jr., Senior Health Physicist

/RA/  
Signature

Date: 11/02/2017

Approved: Aaron T. McCraw, Chief, MIB

/RA/  
Signature

Date: 11/03/2017

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

### 1. AMENDMENTS AND PROGRAM CHANGES SINCE LAST INSPECTION:

<u>AMENDMENT #</u>	<u>DATE</u>	<u>SUBJECT</u>
07	2/4/14	Added: (1) that leak tests shall be kept in units of microcuries and shall be maintained for 3 years; and (2) a storage location to include 6811 Construction Lane, Palmyra, Missouri.

The licensee is aware of the impending expiration of their NRC license, and is planning to submit an application for renewal in a timely manner.

### 2. INSPECTION AND ENFORCEMENT HISTORY:

The last inspection of this licensee was on 11/26/12. No violations of NRC requirements were identified.

The previous inspection of this licensee was on 8/14/08. No violations of NRC requirements were identified.

### 3. INCIDENT/EVENT HISTORY:

There were no open items or events since the last routine inspection.

## **PART II – INSPECTION DOCUMENTATION**

### 1. ORGANIZATION AND SCOPE OF PROGRAM:

Chester Bross Construction is authorized under NRC Materials License No. 24-32098-01 to use licensed material for measuring physical properties of materials with nuclear gauging devices. The licensee possessed 11 Troxler portable gauges, containing cesium-137 and americium-241, including Models 3440, 4640-B, and 3241-C. Licensed material is authorized to be used anywhere in the United States in areas of NRC jurisdiction. The licensee uses the gauges on a daily basis for construction engineering projects, mostly in Missouri.

### 2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: All

The location inspected was the licensee's main location that included gauge storage and dispatch of gauges. Since about 2013, the licensee had not stored or used gauges at the 2564 Market St., Hannibal, Missouri facility. For about the last 9 years, the licensee had not stored or used gauges at the Central Stone, Highway DD, Huntington, Missouri facility. During the onsite inspection, there were no temporary jobsites within a reasonable distance from the inspection location; therefore, the inspector did not have an opportunity to inspect at a temporary jobsite.

The inspector sampled authorized gauge users and verified that they had timely HAZMAT training and Authorized User training.

The RSO stated that there were no losses of licensed material, theft of licensed material, damage to licensed material/gauges, fires involving gauges, flooding involving gauges, or overexposures to individuals.

The RSO stated that the licensee has not removed or detached gauge sources, and has Troxler do the gauge maintenance and calibrations.

The licensee had not transferred gauges since the last inspection.

The licensee conducted leak test sampling using Troxler leak test kits. The RSO stated that there have been no leaking sources. The inspector reviewed a sample of leak test records and there were no concerns.

The inspector reviewed the licensee's dosimeter dose results since the last inspection. The highest, annual whole body dose to an authorized gauge user was 538 millirems in 2012.

The inspector reviewed the licensee's records of its annual radiation protection program audits for 2012 through 2016 and there were no concerns.

The inspector reviewed selected physical inventory records and there were no concerns.

The inspector noted that the licensee's shipping paper was as required.

The inspector noted that the two stored gauges' packages were marked as required.

The inspector observed a selected authorized gauge user demonstrate how he had used gauges at temporary jobsites. As a result, the inspector noted that the individual: (1) used a utilization log; (2) secured gauges in an open bed pickup in accordance with 10 CFR 30.34(i); (3) safely used the gauge during density and moisture measurements; (4) and stowed a proper shipping paper in the vehicle as required.

The inspector observed a selected authorized gauge user demonstrate how he would respond to a crushed gauge at a temporary jobsite, based on a scenario posed by the inspector. As a result, the inspector noted that the individual: (1) would immediately call the RSO for response; (2) clear the area near the damaged gauge; and (3) keep people away from the damaged gauge until the gauge is recovered safely with help from the RSO.

### 3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

The inspector conducted independent surveys at the location inspected using an NRC owned survey meter that was in calibration. The inspector measured a maximum of: (1) 0.02 milliRoentgens per hour (mR/hr) at the exterior wall of the storage room containing two Troxler Model 3440 gauges (Serial Numbers 61743 and 38578); (2) 0.7 mR/hr at the surfaces of the two gauge packages that contained the gauges;

(3) 7 mR/hr at the surface of the cesium-137 (Cs-137) source shutter (Serial Number 61743); and (4) 7.5 mR/hr at the surface of the cesium-137 (Cs-137) source shutter (Serial Number 38578).

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

Survey Instrument

From approximately 1998 through October 13, 2017, the licensee failed to possess and use, or have access to and use, a radiation survey meter.

Condition 21 of Amendment No. 07 of NRC License No. 24-32098-01 states, in part, that the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in documents, including any enclosures as listed. One of the enclosures is a letter dated July 15, 2008, which states, in part, "We will either possess and use, or have access to and use, a radiation survey meter that meets the Criteria in the section entitled, 'Radiation Safety Program – Instruments' in NUREG-1556, Vol. 1, Rev. 1, dated November 2001."

The licensee's failure to possess and use, or have access to and use, a radiation survey meter is a violation of Condition 21 of Amendment No. 07 of NRC License No. 24-32098-01.

The cause of the violation was licensee oversight that resulted in never having one purchased for the company. As immediate corrective action, the licensee purchased a survey meter that meets the required criteria on, or about October 19, 2017. The licensee also added a "Radiation Survey Instruments" section to their annual audit form to include verification that the survey meter meets the required criteria, determining if the survey meter needs non-routine maintenance and/or calibration as per 10 CFR 20.1501, and maintenance of the survey meter calibration records as per 10 CFR 20.2103.

Package Labeling

On October 3 and 11, 2017, the licensee transported outside the confines of its plant, on public highways, approximately 6 millicuries of cesium-137 (Cs-137) and approximately 39 millicuries of americium-241 (Am-241) with only one RADIOACTIVE YELLOW-II label on the package.

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 in 49 CFR Parts 107, 171-180, and 390-397.

Title 49 CFR 172.403 requires, in part, with exceptions not applicable here, that each package of radioactive material be labeled, as appropriate, with two RADIOACTIVE WHITE-I, RADIOACTIVE YELLOW-II, or RADIOACTIVE YELLOW-III labels on opposite sides of the package. The licensee's failure to label a package of radioactive material with two RADIOACTIVE YELLOW-II labels on opposite sides of the package is a violation of 10 CFR 71.5(a) and 49 CFR 172.403.

The cause of the violation was licensee oversight. Specifically, the licensee did not notice that the package had only one RADIOACTIVE YELLOW-II label until the inspector identified it during the onsite inspection. As corrective action, the licensee committed to retrain gauge users on where to put the labels on the packages. In addition, the licensee committed to place pictures in the gauge storage room showing the required labels to use and the location the labels need to be placed on the packages.

### Gauge Security

The exterior doors of the licensee's facility that contained the gauge storage room were locked during non-business hours and unlocked during business hours. Only the gauge users had access to the exterior doors of the licensee's facility that contained the gauge storage room. The inspector noted that there were only a few licensee employees in the facility during the onsite inspection. The licensee's gauge storage room was posted with "Caution Radioactive Material" and NRC Form 3.

The licensee's means of securing gauges in the gauge storage room was as follows. The gauge storage room had one door that was locked, with access limited to the RSO. Inside of the gauge storage room, the gauges were stored inside of their packages on a robust, wooden shelving unit. Each gauge had a cable that was threaded through an eyelet bolted to a robust wooden shelving beam and the cable was also threaded through one of the package handles to provide a second barrier to prevent the package containing the gauge from being removed from the gauge storage room. In addition, each package that contained a gauge had a padlock on a hasp on the package lid to provide a second barrier to prevent the gauge from being removed from its package in the gauge storage room.

The onsite inspection was done during business hours on October 13, 2017, and the exterior doors of the licensee's facility that contained the gauge storage room were unlocked. The inspector observed that two gauges were stored in their packages in the locked gauge storage room. One of the gauges was secured as described above. The other gauge had a cable that was threaded through an eyelet bolted to a robust wooden shelving beam and the cable was also threaded through one of the package handles to provide a second barrier to prevent the package containing the gauge from being removed from the gauge storage room; however, the package did not have a padlock on a hasp on the package lid to provide a second barrier to prevent the gauge from being removed from its package in the gauge storage room. As a result, the locked door of the room containing the gauge was the only independent physical control that formed a tangible barrier to secure the gauge from unauthorized removal, when the portable gauge was not under the control and constant surveillance of the licensee.

Title 10 CFR 30.34(i) 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 control and constant surveillance of the licensee. The licensee's failure to 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 is a violation of 10 CFR 30.34(i).

The cause of the violation was oversight. Specifically, on October 12, 2017, an authorized licensee employee forgot to padlock a hasp on the package lid, resulting in a

violation of 10 CFR 30.34(i). As corrective action on October 13, 2017, the RSO immediately padlocked the hasp on the lid of a package containing a portable gauge in the presence of the inspector. As corrective action on October 19, 2017, the licensee had implemented a daily check of the gauge storage location to make sure that all of the gauges are properly secured per 10 CFR 30.34(i) before the work shift is over. In addition, the licensee moved the keys, pertinent to compliance of 10 CFR 30.34(i) limited to gauge storage on vehicles, to a more secure location.

5. PERSONNEL CONTACTED:

# Calvin Stroud, RSO  
Jim Evans, Authorized Gauge User

# Participated in a telephonic exit meeting on October 19, 2017