

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Event No. 43154

NMED Item No. 070078

Inspection No. 03012771/2007001

Docket No. 03012771

License No. 08-17447-01

Licensee: Department of Homeland Security
Border & Transportation Security Directorate
U.S. Customs & Border Protection Bureau

Address: 1300 Pennsylvania Avenue, N.W.
C/O 1400 L Street, N.W., 9th Floor
Occupational Safety & Health Division - IND
Washington, D.C. 20229

Locations Inspected: The Port of Miami, Florida; Miami International Airport (Miami Service Port), Miami, Florida; Lorton, Virginia; Alexandria, Virginia; Port of Newark, New Jersey; International Falls, Minnesota; Detroit, Michigan; Port of Laredo - World Trade Bridge, Texas; Border Patrol Checkpoint Charlie #29 - IH-35, Laredo, Texas; Columbia Bridge, Pharr, Texas; Ysleta Bridge, El Paso, Texas; Bridge of the Americas, El Paso, Texas; Columbus Bridge, New Mexico; Border Patrol Checkpoint #951 - IH-10, Las Cruces, New Mexico; Santa Teresa Bridge, New Mexico; Artesia, New Mexico; Port of Hidalgo, Texas; Otay Mesa, California; Port of San Diego, California; Tecate, California; San Ysidro, California; Calexico, California; Glynco, Georgia; and Indianapolis, Indiana

Inspection Dates: March 14, 2007; August 27 & 28, 2007; September 12, 2007; September 18 through November 29, 2007; October 31, 2007; December 6, 2007; January 22, 2008, and December 4, 2008

Team Leader: _____/RA/_____ 01/12/09 _____
Judith A. Joustra
Senior Health Physicist
NRC Region I
date

Inspectors:

Orysia Masnyk Bailey
Health Physicist
NRC Region I

George Parker
Health Physicist
NRC Region III

Rick Munzos
Health Physicist
NRC Region IV

Bryan Parker
Health Physicist
NRC Region I

Robert Gattone
Senior Health Physicist
NRC Region III

Approved By: _____/RA/_____ 1/14/09 _____
Marie Miller, Chief
Materials Security and Industrial Branch
Division of Nuclear Materials Safety
date

EXECUTIVE SUMMARY

Department of Homeland Security
Border & Transportation Security Directorate
U.S. Customs & Border Protection Bureau
NRC Inspection Report No. 03012771/2007001

The Department of Homeland Security (DHS), Border & Transportation Security Directorate, U.S. Customs & Border Protection Bureau (CBP) notified the NRC Operations Center (Event No. 43154) on February 8, 2007, that a seven millicurie, cesium-137 (Cs-137) sealed source was missing. The sealed source which had been used for training CBP staff had been in storage at the Port of Miami, Miami, Florida. DHS originally received the Cs-137 source from the manufacturer, Isotopes Products on September 27, 2004. The licensee stated that on January 11, 2007, the Cs-137 source had been shipped from the Port of Miami and was to arrive at the Los Angeles, California DHS facility on January 25, 2007. On January 31, 2007, it was determined that the Cs-137 source had not been received at the Los Angeles DHS facility. Specifically, the source was not present in its lead shielded container. A CBP Officer from the Los Angeles DHS facility notified the Port of Miami of the missing Cs-137 source. The licensee initiated an investigation which included a search of the storage safe located at the Port of Miami, surveys of the Port of Miami, interviews with employees at the Port of Miami, and conversations with the manufacturer of the source. The source could not be located.

NRC conducted an inspection on March 14, 2007, at the Port of Miami to review the circumstances surrounding the missing Cs-137 sealed source. During this inspection the Cs-137 source was located by the licensee, when another search of the storage safe was requested by the inspector. The inspection conducted at the Port of Miami on March 14, 2007, identified the following violations: 1) failure to consistently implement a sign-in and sign-out procedure for training sources located at the Port of Miami as required by application dated July 7, 2003, specified in Condition 28, of NRC License No. 08-17447-01, and 2) failure to perform a physical inventory every six months to account for all sources used for training that had been received and possessed under the license as required by Condition 16 of NRC License No. 08-17447-01. During a follow up onsite inspection conducted at the Port of Miami on August 27, 2007, the inspector verified that the licensee had implemented a procedure to inventory training sources, and a procedure to sign in and out training sources.

Upon completion of the on site inspection conducted on March 14, 2007, the NRC developed an inspection plan that included routine safety inspections to be conducted at various Ports of Entry, and other locations where the licensee possesses and uses licensed radioactive material. The first inspection was conducted at the Port of Miami and the Miami Service Port on August 27 and 28, 2007. Subsequent inspections were conducted at the following sites: Lorton, Virginia; Alexandria, Virginia; Port of Newark, New Jersey; International Falls, Minnesota; Detroit, Michigan; Port of Laredo - World Trade Bridge, Texas; Border Patrol Checkpoint Charlie #29 - IH-35, Laredo, Texas; Columbia Bridge, Pharr, Texas; Ysleta Bridge, El Paso, Texas; Bridge of the Americas, El Paso, Texas; Columbus Bridge, New Mexico; Border Patrol Checkpoint - IH-10, Las Cruces, New Mexico; Santa Teresa Bridge, New Mexico; Artesia, New Mexico; Port of Hidalgo, Texas; Otay Mesa, California; Port of San Diego, California; Tecate, California; San Ysidro, California; Calexico, California; Glynco, Georgia; and Indianapolis, Indiana. The

locations were selected based on licensed activities conducted at the location, and to provide a cross-section of geographical areas.

The inspection conducted at the Port of Miami and the Miami Service Port on August 27 and 28 2007, identified the following violations: 1) failure to maintain a record of physical inventories which include the radionuclides, quantities, manufacturer's name and model numbers, as required by Condition 16 of NRC License No. 08-17447-01; 2) failure to conduct annual refresher training for employees who are authorized to use VACIS units as required by Condition 28, of NRC License No. 08-17447-01; and 3) failure to provide recurrent HAZMAT employee training as required by 49 CFR 172.704 to all employees authorized to use VACIS units;

At the conclusion of the inspection conducted at the Port of Miami and the Miami Service Port on August 27 & 28, 2007, the licensee committed to implementing a program: to document all required information in the physical inventory record, to assure that all employees authorized to use VACIS units receive the required annual refresher training, and to assure that recurrent HAZMAT employee training is provided as required.

The inspection conducted at the Port of Newark located in New Jersey identified the following violation: The licensee failed to provide recurrent HAZMAT employee training as required by 49 CFR 172.704 to all employees authorized to use VACIS units.

The inspection conducted at various locations in California, New Mexico, and Texas identified the following violations: 1) failure to provide refresher training to VACIS users (operators) as required by Condition 28 of NRC License No. 08-17447-01 at all sites in California, Texas, and New Mexico; 2) failure to provide recurrent HAZMAT training as required by 49 CFR 172.704(c)(2) to all HAZMAT employees located at all sites in California, New Mexico, and Texas, except at the Port of Laredo and the Port of Hidalgo; 3) failure to make or cause to be made, surveys that may be necessary under the circumstances to evaluate the magnitude and extent of radiation levels and the potential radiological hazards for a potential exposure event which occurred at Calixico, California, as required by 10 CFR 20.1501; 4) failure to properly label all containers of licensed material located at the Port of Laredo, Texas, and the Port of Hidalgo, Texas, as required by 10 CFR 20.1904(a); and 5) failure to include the emergency response contact phone number on the shipping paper when transporting licensed material on a public highway as required by 49 CFR 172.201(d).

In addition, in an email from the licensee to the NRC dated October 1, 2007, the licensee informed the inspector that they were unable to locate two Campbell Security Equipment Company Model K portable gauging devices ("Busters"). Each device contained 10 microcuries of barium-133 in the form of sealed sources. These devices were initially distributed as Generally Licensed devices, and were used at the licensee's Calexico, California facility. The licensee conducted an extensive search, and established a method to improve control of these devices in the future. The licensee also issued a memorandum to all Directors of Field Operations, which emphasized the need to perform a hands-on inventory of these devices every six months and to maintain an up-to-date inventory record. Failure to properly transfer two Generally Licensed devices, as required, is a violation of 10 CFR 31.5.

The inspections conducted at licensee's facilities located in International Falls, Minnesota and Detroit, Michigan identified a violation of 10 CFR 20.1902, at each facility for failure to properly post required caution signs.

No violations were identified at the licensee's facilities located at: The Federal Law Enforcement Training Center, Glynco, Georgia; Indianapolis, Indiana; The Enforcement Technology Center, Lorton, Virginia, or The U. S. Coast Guard facility in Alexandria, Virginia.

Although a total of nine violations were identified, the licensee's has an extensive licensed program that includes many devices containing radioactive material which may be located in remote areas including nearly 350 Ports of Entry in the United States. In addition, there are many individuals who have been authorized to use licensed material, and the list of authorized individuals constantly fluctuates. Considering these facts the licensee generally maintains a reasonable level of oversight of its program and has established adequate facilities for secure storage of licensed materials.

REPORT DETAILS

I. Organization and Scope of the Program

a. Inspection Scope

The inspection included a review of DHS's activities, and organizational structure with respect to use of sealed sources by the U.S. Customs and Border Protection Bureau (CBP) at selected facilities.

b. Observations and Findings

DHS holds NRC License No. 08-17447-01, which authorizes use of sealed sources for training, calibration, and detection of contraband. The license authorizes storage of licensed radioactive material at the licensee's facilities located at various Ports of Entry into the United States, Seaports and at temporary job sites anywhere in the United States. The licensee's Radiation Safety Officer (RSO) is responsible for day-to-day oversight of the licensee's radiation safety program. The RSO reports to the licensee's Director of Safety Division for CBP. Additional oversight is also provided to CBP from the DHS, RSO, who reports to the DHS Director of Occupational Safety. While there are nearly 350 Ports of Entry into the United States, this inspection was conducted at a relatively small number of facilities as identified below.

At the time of the inspection the licensee possessed the following licensed material at the Port of Miami: several sealed sources containing millicurie quantities, per source, of various radionuclides, which are used for training purposes; Mobile VACIS units and a Pallet VACIS, containing approximately curie quantities of either cobalt-60 (Co-60) or cesium-137 (Cs-137) in the form of sealed sources; generally licensed Campbell Security Equipment Company, Model K, portable gauges containing approximately 10 microcuries of barium-33 (Ba-133) in the form of sealed sources, and several GE Ion Track and Vapor Detector systems containing approximately millicurie quantities of nickel-63 (Ni-63). The licensee also possessed the following licensed materials at the Miami Service Port: a Mobile VACIS containing approximately curie quantities of Cs-137; GE Ion Track systems containing approximately 10 millicuries of Ni-63; and several Campbell Security Equipment Company, Model K, portable gauges containing approximately 10 microcuries of Ba-133 in the form of sealed sources.

Sealed sources used for training at the Port of Miami are also periodically used at the Miami Service Port. At the time of the inspection there were a total of nine approved training source handlers and approximately 35 approved Primary VACIS operators between the Port of Miami and the Miami Service Port.

On September 30, 2007, an inspection was conducted at the licensee's Enforcement Technology Center facility located in Lorton, Virginia. This Center provides maintenance and logistics support for enforcement technology, including camera, sensors, and detection equipment. The Center is responsible for installation and maintenance of equipment, and training of individuals who are to be authorized users of devices containing licensed radioactive material. The Center also provides 24-hour "trouble

shooting” capability for individuals using devices containing radioactive material including, but not limited to, the following: VACIS II, Mobile VACIS, Pallet VACIS, Railroad VACIS, Low energy VACIS units, Rapiscan GARDS, radiation detection systems; personal radiation detection units; portal monitors; and Campbell Security Equipment Company, Model K., portable gauges.

On September 30, 2007, an inspection of the licensee’s U.S. Coast Guard facility located in Alexandria, Virginia was conducted. Several training sources are located at this facility and are used by staff from the Management Inspection Division to test search capabilities and train staff.

On October 31, 2007, an on site inspection was conducted at the Port of Newark, New Jersey. The Port of Newark includes locations in Elizabeth, New Jersey, and the New York Container Terminal located in New York. The licensee possessed approximately 48 Exploranium 135 survey instruments used for detection. The licensee also possessed eight Campbell Security Equipment Company, Model K portable gauging devices, three Mobil VACIS units, two Pallet VACIS units and one VACIS II. At the time of the inspection there were approximately 100 individuals trained as primary VACIS operators. SAIC, the manufacturer of the VACIS units has a maintenance person on site at the Port of Newark full time. The inspection included observations of a VACIS II located at the New York Container Terminal in New York, a Mobil VACIS located at the APM Terminal in Elizabeth, New Jersey, and a Pallet VACIS located at the East Coast Warehouse in Elizabeth, New Jersey.

On December 6, 2007, an inspection was conducted at the licensee’s Federal Law Enforcement Training Center located in Glynco, Georgia. The licensee conducts extensive training involving sealed sources, typically Cs-137, at this facility. The licensee possesses several instruments contains primarily Ba-133 check sources, as well as a Mobile VACIS containing Co-60. This facility conducts extensive training for new hires.

From September 18, through November 29, 2007, inspections were conducted at several licensee facilities located in New Mexico, Texas, and California. Licensed material possessed at these locations include, but are not limited to, the following: Mobile VACIS units; Railroad VACIS units; Relocatable VACIS units; Pallet VACIS units; and Portal VACIS units. The licensee also possesses exempt sealed sources of americium - 241 and iron - 55 at its facility in Artesia, New Mexico. At the time of the inspection the licensee also possessed several sealed sources used for training, at the World Trade Bridge in Laredo, Texas.

On September 12, 2007, an inspection was conducted at the licensee facility located in International Fall, Minnesota. The licensee possesses a VACIS unit and several Buster units at this facility.

On November 15, 2007, an inspection was conducted at the licensee’s facility located in Detroit Michigan. The licensee possesses VACIS units as well as “Buster” units at this facility.

On January 22, 2008, an inspection was conducted at the licensee's Indianapolis, Indiana. The licensee's RSO is located at this facility. The licensee maintains required records at this facility, possesses radioactive sources, and uses this facility as a field location for training licensee personnel.

c. Conclusions

All licensed radioactive material possessed by the licensee was secured against unauthorized removal. The inspection did not identify any violations or safety concerns regarding the licensee organization for its use of sealed sources by CBP.

II. Notification of the Event

a. Inspection Scope

The inspection included a review of event notification (Operation Center Event No. 43154), and the required 30-day report as required by 10 CFR 20.2201(a)(1)(I) and 10 CFR 20.2201(b)(1).

b. Observations and Findings

On February 8, 2007, the licensee made the following notification to the NRC Operations Center:

“On January 31, 2007, the licensee shipped a pig which was assumed to contain a training source (Cs-137 with a strength of 7 millicuries) from the Port of Miami location to Los Angeles, CA location. When the shipment arrived in Los Angeles no source could be found in the pig. The source was verified by both survey and visual inspection to not be present. The officers in Los Angeles notified the RSO and Port of Miami of the missing source. A search was conducted in the Port of Miami and Los Angeles, the source was not located. No pre-shipment survey was performed in Miami; therefore the source could not be verified, by radiation levels on the pig, to have been present when shipped. During the investigation, several officers involved in the training and that routinely use the licensee's sources at the Port of Miami, stated that they believe there was never a source in the storage pig. The licensee has contacted the source vendor, International Isotopes, to verify that a source was actually shipped in the pig to Miami. When the licensee attempted to locate the pre-shipment survey, it could not be found.”

The licensee notified the NRC by telephone within 8 days of identifying the missing source and sent a follow up written description of the event to NRC HQ on the same day in order to comply with 10 CFR 20.2201(b)(1). In addition, on March 30, 2007, 16 days after the source was located, the licensee submitted an updated written report of the event to NRC Region I.

c. Conclusions

The licensee made a timely report of the event to the NRC Operations Center (Event No. 43154) in accordance with 10 CFR 20.2201(a)(1)(ii).

The inspection did not identify any violation or safety concerns.

III. Follow-up of the Event by NRC

a. Inspection Scope

Region I conducted an inspection on March 14, 2007, at the Port of Miami to review the circumstances surrounding the missing sealed source. The inspection included a review of the circumstances surrounding the event, including the licensee's procedures for receiving and shipping packages containing licensed radioactive material, inventory procedures, signing in and out procedures for training sources, and securing licensed material at the Port of Miami.

b. Observations and Findings

The inspector interviewed employees of CBP, performed surveys of the licensee's facility including areas adjacent to the licensee's sealed source storage area. During the onsite inspection the licensee stated that they had performed a search of the storage safe and were unable to locate the missing Cs-137 source. The licensee described the procedure for receipt of radioactive material, and transportation/shipping procedures for the Port of Miami. The licensee informed the inspector that on occasion the training sources are transported to the Miami Service Port located at the Miami International Airport. The inspector reviewed the licensee's records of radiological surveys performed of the storage area, inventory log, and source sign in - sign out logs. The licensee's weekly radiological survey form indicated that surveys had been performed of the area adjacent to the source storage safe as required. The licensee's inventory log form indicated that an inventory had been performed on January 31, 2007, the date when the licensee's health physicist was notified of the missing Cs-137 source. No other inventory records were available. The licensee could not confirm whether inventories had been performed prior to the identification of the missing Cs - 137 source, as required. The licensee's source sign in - sign out log only provided an entry for March 17, 2006. At the time of the inspection the licensee could not confirm that the sign in - sign out log had been used as required. However, the licensee did confirm that sources had been removed and returned to the storage safe since March 17, 2006. The licensee originally received this source from the manufacturer in September 2004.

During the inspection the inspector requested that the licensee perform another search of the source storage safe. The licensee's health physicist proceeded to remove each lead storage container from the safe, and opened each container to verify its contents. The licensee's health physicist opened the container marked as containing

cadmium-109 (Cd-109), and noticed two sources inside the lead container. The licensee's health physicist isolated the container and its contents and performed a survey with a calibrated Exploranium GR135, Serial No. 2754CN. The health physicist downloaded the spectrum to the Laboratory Science Services (LSS) branch of DHS for identification of the radionuclides present. LSS confirmed that the second source located in the

Cd-109 container was the missing Cs-137 source. The licensee was unaware of how or when the Cs-137 source was placed in the Cd-109 container. In addition, the licensee was not able to explain why the Cs-137 source was not located during the initial search of the licensee storage safe.

c. Conclusions

The inspection identified two apparent violations.

Condition 16 of NRC License No. 08-17447-01 requires that the licensee conduct a physical inventory every six months, or at other intervals approved by the NRC, to account for all sources and/or devices received and possessed under the license. The licensee did not conduct an inventory of training sources possessed at the Miami Seaport, as required. This is a violation of Condition 16.

Condition 28 of NRC License No. 08-17447-01 requires that the licensee conduct its program in accordance with the statements, representations, and procedures contained in application dated July 7, 2003. Application dated July 17, 2003 requires implementation of a sign in - sign out procedure for sources. The licensee did not implement the required sign in - sign out procedure at the Port of Miami, as required. This is a violation of Condition 28.

IV. Facilities and Equipment

a. Inspection Scope

The inspection included a review of facilities and equipment located at various locations throughout the United States including CBP Training facilities, Ports of entry into the United States,(airports, seaports, and Border Crossings).

b. Observations and Findings

The licensee maintains centralized storage locations for licensed radioactive material at its authorized facilities. Areas have been designated at each facility for the use of VACIS units, including, but not limited to Mobile VACIS, and Pallet VACIS, and VACIS II units. Access to these areas has been restricted by the licensee. Training sources are also stored in secure locations.

c. Conclusions

The inspection did not identify any violations or safety concerns regarding the licensee's licensed material storage locations.

V. Radiation Protection

a. Inspection Scope

The inspection included a review of the licensee's radiation safety program. This included a review of personnel dosimetry records, leak test records of sealed sources, availability of operable and calibrated survey instruments, postings, periodic reviews of the licensee's radiation safety program as required by 10 CFR 20.1101(c), and VACIS unit shutter checks and operability checks.

b. Observations and Findings

The licensee possesses many survey instruments. Those instruments observed by the inspector at the Port of Miami, the Miami Service Port, and the Port of Newark were operable and calibrated as required.

The licensee maintains records of leak test results for each sealed source at the Lorton, Virginia facility. Leak test results are also accessible at the licensee's Indiana facility. Inspectors reviewed record at both facilities and determined that sealed sources are being leak tested at the required intervals either by Science Applications International Corporation or by other persons authorized to conduct leak tests as a service to other licensees.

The licensee provides personal monitoring devices (Luxel badges provided by Landauer) to individuals who handle training sources. The Luxel badges are exchanged quarterly. All VACIS operators are required to wear an alarming personnel monitoring device, which has been set to alarm at 15 micro Roentgens per hour (uR/hr). The licensee has evaluated the potential for exposure to VACIS operators during routine use of each type of VACIS unit and has determined that exposure from routine use is not likely to exceed 10% of the limits in 10 CFR 20.1201(a) in 1 year, therefore the licensee has decided not to provide individual monitoring as required in 10 CFR 20.1502. A review of personnel dosimetry records for individuals handling training sources did not indicate exposures in excess of regulatory limits.

The licensee committed to perform a periodic review as required by 10 CFR 20.1101(c) by following Appendix F of NUREG - 1556, Vol. 1. The RSO periodically visits field locations and reviews survey instrument calibration records, and conducts annual audits of the licensee's radiation safety program. The annual audit includes a review of the history of actions taken regarding the NRC license, proper implementation of newly authorized licensed activities, review of incidents, review of all results of personnel radiation dosimetry badges, a review of results of environmental radiation dosimetry badges, a review of radiation survey result records, and leak test records. In addition to the RSO's annual audit in 2006 the licensee had an independent consultant conduct an audit of the licensee's radiation safety program. Once per year, the RSO presents a summary of the status of the licensee's radiation safety program to the licensee's Radiation Safety Committee.

The inspector reviewed the licensee's actions to maintain radiation doses as low as reasonable achievable at the licensee's facility located in Calexico, California. The inspector determined that the licensee had not performed an evaluation of the radiation levels which existed adjacent to a Railroad VACIS. Specifically, the licensee did not evaluate the dose received by a VACIS operator who informed the inspector that she had walked in the open beam of the unit at least four times in 2007. During each instance the operator was investigating a repeat problem in which the shutter would remain open after the scan had been completed.

In a document submitted by the licensee dated September 15, 2008, the licensee indicated that they performed an evaluation of the event on May 14, 2008. The licensee had concluded that the individual received a dose of 50.6 mrem. Their evaluation included an interview with the VACIS operator. During the licensee's evaluation of the issue, the operator had indicated that she only walked in the open beam a total of two times. The licensee determined that the operator stood at a distance of three feet from the source for one minute each time. The licensee based their calculations on a source activity of one curie of Co-60. The licensee indicated in its letter that it is not clear whether both shutters were open or not during this event. The licensee, in performing its dose assessment, assuming both shutters were in the open position. The inspector reviewed maintenance/repair logs for the Railroad VACIS unit from August 1, 2006, through September 12, 2008, and there were no entries which indicate that both shutters had been stuck in the open position at any one time.

As stated earlier in this report the licensee had determined that VACIS operator were not likely to receive a dose in excess of 10 percent of the annual radiation dose limits specified in 10 CFR Part 20 and therefore do not require personnel dosimetry for VACIS operators. The inspector reviewed the licensee's evaluation and concluded, based on the information available that individual had received a dose less than that allowed for a member of the public. The inspector asked the licensee why an initial evaluation had not been performed prior to May 14, 2008. The licensee indicated that they only became aware of the potential exposure event during the NRC inspection conducted in November 2007. The licensee also informed the inspector that they initially assumed that any dose received by a VACIS operator in the open beam of a VACIS unit would be equal to the dose as determined by an individual who wrote an article on radiation dose received by stowaways in vehicles. The author of the article is not employed by the licensee, and the licensee had not specifically evaluated this reference for their specific potential exposure event. The inspector informed the licensee that as the licensee they are responsible for performing an evaluation of dose received. 10 CFR 20.1501 requires that a survey be performed. A survey as defined in 10 CFR Part 20 is an evaluation of the potential radiological conditions and potential hazards incident to the production, use, transfer, release, disposal or presence of radioactive material or other sources of radiation. When appropriate the evaluation may include a physical survey of the location, and measurements or calculations. The evaluation must be based specific information gathered by the licensee by interviewing the individual(s) involved. The licensee did not conduct a survey as required by 10 CFR 20.1501, in order to assure compliance with 10 CFR 20.1201.

Based on the licensee's dose assessment described in its letter to the NRC dated September 15, 2008, the VACIS operator received a dose approximately half of that allowed for a member of the general public as specified in 10 CFR 20.1301.

The inspector also verified that shutter checks are performed on VACIS units as required. The inspector interviewed several VACIS operators at the Ports located in Loredo, Texas, Ports in El Paso, Texas, and Ports in San Diego, California, concerning shutter operation and shutter checks. Many of the operators indicated that they had experienced some shutter failures either primary, secondary or both. Specifically, Railroad VACIS Unit #V200004 located at Ysleta Bridge in El Paso, Texas, Railroad VACIS unit #VR00004 located at the Calexico Bridge in California, had experienced shutter failures according to the VACIS operators that were interviewed. The inspector reviewed the licensee's repair/maintenance records from May 2004 through September 2008 for both VACIS units. In addition, the maintenance/repair log for the Relocatable VACIS unit #V200028 located at Calexico Bridge in California was reviewed. The repair/maintenance records did not identify any instances where both shutters had failed at the same time in the open position.

In addition, in the licensee's letter to the NRC dated September 15, 2008, the licensee states that walking in the exclusion zone is against CBP procedures and that all operators are trained not to walk in the established exclusion zone. During a subsequent telephone discussion with the licensee, the licensee informed the inspector that the individual involved in this event is no longer authorized with work with VACIS units. The licensee further stated that Annual refresher training will stress the proper procedure for responding to any shutter mechanism which is stuck in the open position.

During the inspection at the licensee's facility located in Lorton, Virginia, the inspector confirmed that the licensee tracks leak tests performed of radioactive sources and device containing radioactive sources. In addition, the licensee tracks the daily use of devices containing radioactive material which provides a real time inventory. Records of leak tests and physical inventories are retained at the licensee's Lorton, Virginia facility. Leak tests are performed at the required frequencies, and analysis of leak tests is performed by SAIC. This facility is also responsible for assuring that equipment, including survey meters are calibrated and provided to field locations. Training staff are also located at this facility. Training is provided at specific sites of use or at the licensee's Glynco, Georgia facility.

The inspector determined that the leak tests of all sealed sources possessed at the licensee's Glynco, Georgia facility had been performed as required. In addition, personnel dosimetry was assigned and worn as required. A review of dosimetry results confirmed that personnel had not exceeded the allowable limits as specified in 10 CFR Part 20.

The inspector determined that the licensee did not have the required cautions signs posted at a Railroad VACIS unit which operated at the licensee International Falls, Minnesota facility. Specifically, on September 12, 2007, Caution Radiation Area signs were not present in an area where members of the public might leave a local marina, and could access a Radiation Area in order to cross a railroad berm to reach a

residential area located on the other side of the railroad tracks. In addition, on November 15, 2007, the inspector determined that the licensee did have caution signs posted near personnel access doors to a building where a VACIS unit was located at the licensee's Detroit, Michigan facility, however these signs had faded and were no longer clearly visible. The licensee did post the required caution signs at the truck entrance to the building. The licensee's RSO indicated to the inspector that the required signs would be posted.

The inspector determined that in Laredo and Hidalgo, Texas VACIS unit #VR00011, VACIS unit #VR00001 and VACIS II unit #V200011 did not bear a label that identified the radionuclide or the quantity of radioactivity, nor did it otherwise bear sufficient information to permit individuals handling or using the units, or working in the vicinity of the units, to take precautions to avoid or minimize exposure. The licensee indicated that they were not aware that the labels were missing on these units. The licensee indicated to the inspector that they would contact the manufacturer and request new labels. The licensee will place the labels on either side of the source housing or outer source holder, and all CBP Ports will be inspected, by the licensee, to assure that all VACIS Units are properly labeled.

c. Conclusions

The licensee radiation protection program was generally adequate except for the violations identified below.

10 CFR 20.1501 requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present. Survey means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. The licensee did not make surveys to assure compliance with 10 CFR 20.1201. Failure to perform a survey as required is a violation of 10 CFR 20.1501.

10 CFR 20.1902(a) requires that the licensee post each radiation area with a conspicuous sign or signs bearing the radiation symbol and words "Caution, Radiation Area." Failure to post the required caution sign is an apparent violation of 10 CFR 20.1902(a).

10 CFR 20.1904(a) requires that the licensee ensure that each container of licensed material bears a durable, clearly visible label bearing the radiation symbol and the words "Caution Radioactive Material" or "Danger, Radioactive Material. The label must also provide sufficient information (such as the radionuclide(s) present, an estimate of the quantity of radioactivity, the date for which the activity is estimated, radiation levels, kinds of materials,...) to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures. Failure to have each container labeled as required is a violation of 10 CFR 20.1904(a).

VI. Materials Receipt, Use, Transfer, and Control

a. Inspection Scope

The inspection included a review of the licensee's material receipt and transfer records, access control, and physical inventories.

b. Observations and Findings

The inspector reviewed a sample of receipt records of byproduct material received at the Port of Miami as required by 10 CFR 30.51. The documents reviewed had been completed as required.

The licensee maintains storage areas for training sources at the Port of Miami and the Miami Service Port. Access to these areas is controlled and only authorized individuals have access. Sealed sources used for training may be transferred between DHS facilities. Training sources which are transferred from the Port of Miami to the Miami Service Port are rarely stored overnight at the Service Port. Training sources are usually picked up in the morning and returned to the Port of Miami at the end of the day. These sources are transported by authorized source handlers, and if applicable are packaged and labeled as excepted packages (instruments or articles) in accordance with 49 CFR 173.422(a). Common carriers are used when sources are not hand carried by an authorized source handler.

The inspector determined while inspecting the licensee VACIS units at the Port Miami, and the Miami Service Port that the licensee performs an annual physical inventory of all sources and/or devices received and possessed under their NRC license. This inventory is performed as a property management function rather than for compliance with NRC requirements. Physical inventories are required to be performed every six months, in accordance with Condition 16 of NRC License No. 08-17447-01. During an additional discussion regarding the licensee's inventory procedure with the licensee's RSO while conducting an inspection at the Port Newark, the licensee's RSO stated that the licensee performs a survey of each VACIS unit, and an operability check each day a VACIS unit is used. VACIS units are used almost daily. The survey results are downloaded to the licensee's facility in Indiana. Survey results are retained by the RSO. The RSO stated that the results serve to meet the inventory requirement. The operability check and survey reports include, among other things, an identification number assigned by the licensee for each VACIS unit; the number of times the VACIS units were used and the results of ambient radiation exposure rate surveys which are performed three times a day with the shutter(s) closed. However, these reports do not include the radionuclides, quantities, or manufacturer's name and model number. The inspector determined that all VACIS units located at the Port of Miami, and Miami Service Port had been inventoried as required. Condition 16 of NRC License No. 08-17447-01 requires that records of inventories include the radionuclide, quantities, manufacturer's name and model number, and the date of the inventory. The licensee's inventory records did not include the radionuclides, quantities, or manufacturer's name. The licensee informed the inspector that these records have been modified to include the required information.

The licensee's RSO also informed the inspector that the licensee conducts a physical inventory of the "Buster" units located at Miami, Florida locations once per year. Subsequent to the on site inspection in Miami, Florida the inspector determined that "Buster" units which are distributed with an activity of 10 microcuries of Ba-131 are distributed as generally licensed devices and are not subject to conditions of NRC License No. 08-17447-01.

At the licensee's Indianapolis, Indiana facility the licensee stores licensed material within a shielded container in a secure, low occupancy area. The inspector performed a radiation survey of the area. The maximum reading obtained during the survey, was 0.3 millirem per hour at the surface of the shielded container. The inspector used a Ludlum Model 2403, Serial No. 161600 survey meter which was last calibrated on October 15, 2007.

At the time of the inspection the inspector determined that during 2007 the licensee had possessed two sealed sources containing licensed material at its Indianapolis, Indiana facility. Specifically, the licensee had possessed a sealed source containing a nominal activity of 5 millicuries of cadmium -109 (Cd-109) and a sealed source containing a nominal activity of 20 microcuries of californium - 252 (Cf-252). The Cf-252 source was not at the Indianapolis facility at the time of the onsite inspection. However, licensed material on site at the time of the inspection was secured from unauthorized access and removal. Condition 10.B. of NRC License No. 08-17447-01 authorizes possession and storage of the Cd-109 and Cf-252 sources at several specific locations as well as field locations for training of licensee personnel. The inspector questioned the licensee regarding possession and use of these materials at the licensee's Indiana facility. The licensee indicated that the Indiana facility has been designated by the licensee as a field location used routinely to train licensee personnel. Subsequent to the inspection the licensee informed NRC that the sources in question had been transferred to another authorized location in Texas. Shortly after the licensee informed the NRC that the sources had been relocated, the licensee requested and received an amendment to its NRC license which changed Condition 10.B authorizing the used and storage of certain specified licensed materials in accordance with the licensee's letter dated May 21, 2008. The licensee's May 21, 2008, letter specifically names the Indiana facility as a place of use and storage for certain licensed material authorized on NRC License 08-17447-01, including the Cd-109 and Cf-252 sources.

The inspector reviewed the licensee's physical inventory records of VACIS units located at the Port of San Diego, California. VACIS units are used daily and the licensee generates a daily use report which includes the number of times the VACIS unit is used, and results of ambient radiation exposure rates surveys which are performed three times per day with the shutters closed.

The inspector determined that all licensed radioactive material located at the licensee's facility located in Glynco, Georgia was secure. All licensed material had been inventoried as required.

On October 1, 2007, the licensee informed the inspector that they were unable to locate two "Busters" each containing 10 microcuries of Ba-133, while performing an annual inventory of the devices. The Busters were distributed as generally licensed devices. Items 6, 7, 8 and 9 of NRC License No. 08-17447-01 authorizes Ba-133 for use in Campbell Security Equipment Company, Model K portable gauging devices, "Busters" however this refers to those devices which were distributed as specifically licensed devices and contain 100 microcuries of Ba-131. The licensee has and may still possess "Busters" which were specifically licensed. The licensee stated in its notification to the NRC that they are aware of the reporting limits in 10 CFR Part 20 for theft or loss of licensed material, and that they are well below the activity for reporting the loss. The "Busters" were assigned to the licensee's facility in Calexico, California. The licensee informed the inspector that they were conducting a through investigation into the missing "Busters." In an email from the licensee to the inspector dated September 22, 2008, the licensee stated that they believe the "Busters" were most likely left in or on a vehicle that came through the port, and the licensee indicated that they will make improvements to their method for controlling these devices. As of the licensee's September 22, 2008, email, the "Busters" have not been located by the licensee. The licensee stated that they will implement a 6 month inventory requirement for all Busters and a sign-in and sign-out procedure in order to maintain better oversight of these devices.

c. Conclusions

Condition 16 of License No. 08-17447-01 requires, in part, that records of physical inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and date of the inventory. Failure to maintain physical inventory records which include all the required information is a violation of Condition 16.

10 CFR 31.5 requires, in part, that any person who acquires, receives, possesses, uses or transfers byproduct material in a device pursuant to the general license in paragraph(a) of this section shall not abandon the device containing byproduct material; and shall transfer or dispose of the device containing byproduct material only by export as provided by paragraph (c)(7) of this section, by transfer to another general licensee as authorized in paragraph (c)(9) of this section or to a person authorized to receive the device by a specific license issued under parts 30 and 32 of this chapter, or part 30 of this chapter that authorizes waste collection, or equivalent regulations of an Agreement State, or as otherwise approved under paragraph (c)(8)(iii) of this section. Failure to properly transfer generally licensed devices, as require by 10 CFR 31.5. could result in an enforcement action being taken by the NRC. Although a violation of 10 CFR 31.5 was identified, the safety significance of the loss of the two devices is low, and because you identified and reported the violation to the NRC, and took appropriate corrective actions to address the violation and prevent recurrence of similar problems, the NRC is not taking an action in this matter in accordance with the NRC Enforcement Policy. However, any future violations of 10 CFR 31.5 may be considered for enforcement action.

VII. Training of Workers

a. Inspection Scope

The inspection included a review of training provided to licensee employees who are authorized to use VACIS units, and employees who handle training sources. This included initial training and refresher training in radiation safety for VACIS operators, as well as HAZMAT employee training.

b. Observations and Findings

The licensee has designated VACIS employees as either a primary VACIS operators or secondary VACIS operators. Secondary operators assist the primary operators and do not handle or directly use the VACIS units. The licensee described the contents of initial training provided to VACIS employees. Primary operators receive 2 weeks of initial training. This training includes one week of formal classroom training including eight hours of radiation safety and HAZMAT employee training, and one week of hands on training. Secondary operators obtain task specific training including radiation safety training.

The inspector reviewed training records for individuals who handle training sources and for employees authorized to use VACIS units located at the Port of Miami, Miami Service Port, and locations in Texas, New Mexico, and California. The inspector identified that refresher training in radiation safety had not been provided to all VACIS employees in Miami, Texas and California, as required by Condition 28, of NRC License No. 08-17447-01. In addition, the inspector determined that HAZMAT refresher training had been provided to HAZMAT employees located at the Port of Laredo and Hidalgo, but had not been provided to all HAZMAT employees located in Miami, or other location within Texas, New Mexico and California as required by 49 CFR 172.704(c)(2). The licensee informed the inspector that they have established a "virtual annual refresher training program." Supervisors will inform each employee when they are required to take the annual refresher training.

c. Conclusions

The licensee's application dated July 7, 2003, requires that the licensee conduct annual refresher training to VACIS operators. Failure to provide refresher training to VACIS operators is a violation of Condition 28 of License No. 08-17447-01.

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.

49 CFR 172.702 requires, in part, that each hazmat employer shall 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.

49 CFR 172.704(c) requires, in part, that a hazmat employee receive initial training, and recurrent training at least once every three years. Failure to provide the required hazmat training is a violation of 49 CFR 172.704.

VIII. Transportation

a. Inspection Scope

The inspection included a review of the licensee's methods for transporting licensed radioactive material, and the licensee's compliance with 10 CFR Part 71. The inspection included interviews with licensee employees, and a review of shipping papers.

b. Observations and Findings

The inspector determined that licensee Mobile VACIS operators in New Mexico, El Paso, Texas and the Ports of San Diego, including Otay Mesa, California, maintain shipping papers with each VACIS unit. However, the shipping papers were not complete, in that, when licensed material is transported outside of the site of usage as identified on its NRC license, the shipping papers did not include the required emergency response telephone number as required by 49 CFR 172.201(d). On September 18, 2007, the inspector observed the licensee transport a Mobile VACIS, containing approximately 0.75 curies of Co-60 in the form of a sealed source, and the shipping paper did not contain the required emergency response telephone number. The inspector also determined that the licensee had transported this same Mobile VACIS outside of its facilities located at: the Ports of San Diego; including Otay Mesa, California; and New Mexico several times during 2007.

c. Conclusions

49 CFR 172.201(d) requires that a shipping paper contain an emergency response telephone number, as prescribed in subpart G or 49 CFR Part 172. Failure to include an emergency response telephone number on a shipping paper when transporting licensed radioactive material outside the confines of its site of usage as identified on its NRC license is a violation of 10 CFR 71.5.

IX. Exit Meeting

On December 4, 2008, the inspector contacted the licensee by telephone and discussed the preliminary findings of the inspection. The inspector described the apparent violations that were identified during the inspection, and explained the NRC enforcement policy. The licensee stated that they did not have new information regarding the missing source.

The licensee stated that they were committed to comply fully with the regulatory requirements and described the corrective actions that have been implemented to prevent recurrence of the violations. These action include but are not limited to those actions as specified in this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Gary T. McMahan, Director, Occupational Safety and Health
Luke McCormick, Site Radiation Safety Officer
Richard Whitman, Radiation Safety Officer,

Miami, Florida

Harold Woodward, Director, Field Operations, Miami Field Office
Roderick Blanchard, Assistant Director, Border Security, Miami
Herman Duran, Operations Specialist, Miami
Joe Ramirez, Port Director, Miami Seaport
Richard Vigna, Port Director, Miami Service Port
Thomas Mattina, Assistant Port Director, Miami Service Port
Gary Nellis, Chief, Miami Seaport
Marta Blanco, Chief, Miami Service Port
Roberto Erb, Supervisor, Miami Seaport
Eric LaRochelle, Supervisor, Miami Service Port
Paul Chatfield, Supervisor, Miami Service Port

Newark, New Jersey

Russ Lobello, Supervisor, Port of Newark, Newark, New Jersey
Kevin McCabe, Enforcement ranch Chief, Port o Newark, Newark, New Jersey
Bernard C. Ollila, III, Safety Manager, U.S. Department of Homeland Security, Newark,
New Jersey

Various Licensee Facilities in Texas, New Mexico, and California

Alice Torres, Supervisor Mission Support/Training Coordinator
Luis Garcia, Director of Field Operations (DFO)
Martin O'Donnell, Commander of Operations
Anne Marie Spiess, Program Analyst
Fred Keyser, Assistant to DFO
Lis Torrez, Operations Specialist
Oscar Sanchez, Operations Specialist
Devin Cleere, Operations Specialist
Saul Oilvas, Safety Manager
Dennis Shelly, Assistant Port Director
Timothy Watts, Source Handler
Bill Neal, Assistant Port Director
Gurdit Dhillon, Director
Juan Garcia, Area Safety Manager
Andrea Granados, Supervisor Border Section
Michelle Hale, Safety Coordinator
Melvin Chickozola, Supervisor
Barbara Crayton, Training Supervisor
David Nickel, Operator
Edna Hoffman, Operator

William P. Snyder, Port Director
Carlos Silva, Branch Chief
Charles Rodriguez, Chief Inspector
Mark Lovelace, Area Safety & Occupational Health Manager
Eddie Lozano, Supervisor (Port of Columbia)
Louis Salazar, Safety Officer (Port of Laredo)
Santiago Alvares, Supervisor (ATCET-Laredo)
Charles Dickensen, Supervisor (Railroad Operations)

Lorton, Virginia

Phil Davis, Director Enforcement Technology Center
Jose Ponce, Team Leader Maintenance & Lead IT Specialist
Timothy J. Markish, Equipment Specialist

December 4, 2008, Exit Interview

Luke McCormick, RSO, Customs and Border Protection
Gary McMahan, Director Safety Division
Mickey D. McKeighan, Deputy Director Safety Division
Carl Overstreet, RSO, Department of Homeland Security
Efrain Perez, DC, Program Manager, Office of Field Operations (OFO)
Tim Markish, VA Lead Information Technology Specialist, Equipment Technology Program (ETP)
Hector Garcia, DC, Program Manager, Office of Training Development (OTD)
Rick Whitman, Former RSO, CBP