UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

November 9, 2006

Docket No. 03017570 License No. 37-17637-02
EA No. 06-252
Event No. 42790
NMED Item No. 060526

Edward J. Sander, P.E.
Associate Vice President
Pennoni Associates, Inc.
2041 Avenue C, Suite 100
Bethlehem, PA 18017

SUBJECT: INSPECTION REPORT NO. 03017570/2006002, PENNONI ASSOCIATES, INC., BETHLEHEM, PENNSYLVANIA

Dear Mr. Sander:

This refers to the inspection conducted on August 21, 24, and September 7, 8, 13, and 21, 2006, at your facility in Bethlehem, and temporary job sites in Rehrersburg and Chambersburg, Pennsylvania. The inspection consisted of a visit to your facility, interviews with members of your staff, and a review of selected documents. The inspection also included a review of the circumstances surrounding the loss of control of a Humboldt Scientific Model 5001 nuclear gauge that you reported to the NRC Operations Center on August 21, 2006 (Event No. 42790). The inspector discussed with you the preliminary findings of the inspection via telephone on September 21, 2006. The enclosed report presents the results of this inspection.

The inspection identified three apparent violations that are being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at www.nrc.gov; select **What We Do**, **Enforcement**, then **Enforcement Policy**." The apparent violations include: (1) failure to use a minimum of two independent physical controls to secure a portable gauge while it was not under the control and surveillance of your staff; (2) failure to control and maintain constant surveillance of licensed material that was in an unrestricted area, and (3) failure to report by telephone immediately after it became known, any lost or stolen licensed material. Since the NRC has not made a final determination in this matter, a Notice of Violation is not being issued for these inspection findings at this time. In addition, the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review.

A predecisional enforcement conference, open to public observation, to discuss these apparent violations has been scheduled for Tuesday, November 28, 2006, at 10:00 a.m., at the Region I Office in King of Prussia, Pennsylvania. The NRC announces enforcement conferences to the public by issuing a press release. The decision to hold a predecisional enforcement conference does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. This conference is being held to obtain information to enable the NRC to make an enforcement decision, such as a common understanding of the facts, root causes,

missed opportunities to identify the apparent violations sooner, corrective actions, significance of the issues, and the need for lasting and effective corrective action. In addition, this is an opportunity for you to point out any errors in our inspection report and for you to provide any information concerning your perspectives on 1) the severity of the violations, 2) the application of the factors that the NRC considers when it determines the amount of a civil penalty that may be assessed in accordance with Section VI.B.2 of the Enforcement Policy, and 3) any other application of the Enforcement Policy to this case, including the exercise of discretion in accordance with Section VII. In presenting your corrective actions, you should be aware that the promptness and comprehensiveness of your action will be considered in assessing any civil penalty for the apparent violation. The guidance in the enclosed NRC Information Notice 96-28, "SUGGESTED GUIDANCE RELATING TO DEVELOPMENT AND IMPLEMENTATION OF CORRECTIVE ACTION," may be helpful.

You will be advised by separate correspondence of the results of our deliberations on this matter. No response regarding these apparent violations is required at this time.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and the enclosed inspection report will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm.html (the Public Electronic Reading Room).

Current NRC regulations are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Medical, Industrial, and Academic Uses of Nuclear Material;** then **Toolkit Index Page.** The current Enforcement Policy is included on the NRC's website at www.nrc.gov; select **What We Do, Enforcement,** then **Enforcement Policy.** Or you may obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 9:00 p.m. EST, Monday through Friday (except Federal holidays).

Sincerely,

Original Signed by:

John D. Kinneman, Deputy Director
Division of Nuclear Materials Safety

Enclosure:
1. Inspection Report No. 03017570/2006002
2. NRC Information Notice 96-28
3. Directions to Region I Office

cc:
Charles Snyder, Radiation Safety Officer
Commonwealth of Pennsylvania

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

EA No.	**06-252**
Event No.	**42790**
NMED Item No.	**060526**
Inspection No.	**03017570/2006002**
Docket No.	**03017570**
License No.	**37-17637-02**
Licensee:	**Pennoni Associates, Inc.**
Address:	**2041 Avenue C, Suite 100** **Bethlehem, Pennsylvania 18017-2179**
Other Locations Inspected:	**Chambersburg, PA** **Rehrersburg, PA**
Inspection Dates:	**August 21, 24, and September 7, 8, 13, and 21, 2006**

Inspector: ***/RA Sattar Lodhi for/*** ***11/02/06***

Ronald G. Rolph **date**
Health Physicist

Approved By: ***/RA/*** ***11/02/06***

Sattar Lodhi, Ph.D. **Date**
Materials Security and Industrial Branch
Division of Nuclear Materials Safety

Document Name: C:\FileNet\ML063130518.wpd

EXECUTIVE SUMMARY

Pennoni Associates, Inc.
NRC Inspection Report No. 03017570/2006002

Pennoni Associates Inc. is a multi-disciplined consulting engineering firm that holds NRC License No. 37-17637-02. The license authorizes possession and use of portable gauges. The licensee possesses 14 portable moisture/density gauges which contain cesium 137 (Cs-137) and americium 241 (Am-241) sealed sources.

On August 21, 2006, the licensee notified the NRC Operations Center (Event No. 42790) that a Humboldt Scientific, Inc. Model 5001 portable gauge (Serial No. 4746) was stored in the trunk of an authorized user's (AU's) personal vehicle when he loaned the vehicle to a relative at 11 p.m. on Saturday, August 19, 2006, to perform a short errand. The notification also stated that the AU had not been able to locate the vehicle. The AU contacted the local police to report the missing vehicle. The gauge contained an 8 millicurie (mCi) Cs-137 sealed source and a 40 mCi Am-241 sealed source.

On August 21, 2006, Region I contacted the licensee and the AU, and determined that the gauge had been stored in the back seat of the vehicle when the AU loaned the vehicle to his relative. The gauge was inside its locked transport container and the container was secured to the vehicle by a locked cable. Another relative located the vehicle and returned it to the AU on August 23, 2006, but the transport container and the gauge were missing from the vehicle. The relative informed the AU that the gauge had been removed and was left off at the front porch of a residence in Bethlehem, Pennsylvania. The licensee retrieved the gauge from the porch the following morning on August 24, 2006, and returned it to the storage location in Bethlehem. The licensee reported that the lock on the container had been broken, and a handle on the container was also damaged. However, there was no damage to the gauge and the source was still locked in its shielded position.

On September 7, and 8, 2006, Region I conducted a special inspection at the licensee's facilities in Bethlehem, and at temporary job sites in Rehrersburg and Chambersburg, Pennsylvania (PA), to review the circumstances surrounding the event.

The inspection identified the following violations: 1) Failure to use a minimum of two independent physical barriers to secure a portable gauge from unauthorized removal as required by 10 CFR 30.34(i); 2) Failure to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage, as required by 10 CFR 20.1802; and 3) Failure to report by telephone immediately after its occurrence becomes known to the licensee, any lost or stolen licensed material in quantity equal to or greater than 1000 times the quantity specified in Appendix C to Part 20 under such circumstances that it appears to the licensee that an exposure could result to persons in unrestricted areas, as required by 10 CFR 20.2201(a)(1)(i).

REPORT DETAILS

I. Organization and Scope of the Program

a. Inspection Scope

The inspection included a review of licensee's organizational structure and scope of licensed activities.

b. Observations and Findings

Pennoni Associates, Inc. is a multi-disciplined consulting engineering firm. The licensee has an office in Bethlehem and another office in King of Prussia, PA, and the license authorizes storage of the gauges at these two facilities. The RSO at the Bethlehem, PA office reports to the associate vice president at that location. The licensee possesses 14 portable moisture/density gauges that contain Cs-137 and Am-241 sealed sources at this location. There are approximately 25 individuals (AUs) that are authorized to use the portable gauges.

c. Conclusions

The licensee's management structure was sufficient to support licensed activities. The inspection did not identify any violations or safety concerns.

II. Notification of the Event

a. Inspection Scope

The inspection included a review of the notification of the event (Operations Center Event No. 42790) including the timeliness of the notification, and the required 30 day written report.

b. Observations and Findings

On August 21, 2006, the licensee made the following notification to the NRC Operations Center:

> "On Saturday August 19, 2006 at approximately 11:00 p.m., an employee of Pennoni Associates loaned his private, passenger vehicle to his sister to perform a short errand. Inside the trunk, the vehicle contained a Humboldt Model 5001 moisture density gauge, serial number 4746, with 10 millicuries (mCi) of Cs-137 and 40 mCi of Am-241/Be. The employee has not seen his vehicle since and contacted the Bethlehem City Police Department. The licensee is continuing the investigation as to the whereabouts of the gauge and the vehicle. "

The inspector determined that on August 20, 2006, the licensee became aware that the gauge, a Humboldt Scientific, Inc., Model 5001, serial No. 4746, was missing. The missing gauge contained approximately 10 mCi of Cs-137 and 40 mCi of Am-241, each of which is in excess of 1000 times the respective quantities (1 microcurie and 0.001 microcurie respectively) for Cs-137 and Am-241 respectively. The licensee made a report of the missing vehicle to the Bethlehem Police Department at approximately 10 a.m. on August 20, 2006. Almost 24 hours later at 9:27 a.m. on August 21, 2006, the licensee notified the NRC Operations Center of the missing licensed material.

10 CFR 20.2201(a)(i) requires, in part, that each licensee report by telephone immediately after its occurrence becomes known to the licensee, any lost or stolen licensed material in quantity specified in Appendix C to 10 CFR Part 20 under such circumstances that it appears to the licensee that an exposure could result to persons in unrestricted areas.

On September 21, 2006, the licensee submitted a written report of the event as required by 10 CFR 20.2201(b)

c. Conclusions

The licensee became aware that licensed material in quantities in excess of 1000 times the specified quantities in Appendix C to 10 CFR Part 20 was missing on August 20, 2006, and did not make a telephone report of the missing material to the NRC Operations Center until almost 24 hours later on August 21, 2006 (Event No. 42790). The licensee became aware that an unauthorized individual had possession of the licensed material on August 19, 2006.

Failure to make an immediate notification of missing license material is an apparent violation of 10 CFR 20.2201(a)(i)

III. Follow-up of the Event by NRC

a. Inspection Scope

The inspection included a review of licensed activities at licensee's facilities located in Bethlehem, Pennsylvania, and temporary job sites in Rehrersburg and Chambersburg, Pennsylvania. The inspection also included a discussion with the AU who had loaned his vehicle to an unauthorized individual with the portable gauge stored on the back seat of the vehicle.

b. Observations and Findings

On August 21, 2006, the inspector called the licensee to discuss the event (Event No. 42790) that the licensee had reported earlier to the NRC Operations Center. The licensee was not fully aware of the details of the event and directed the inspector to contact the AU located in Chambersburg, PA, who had possession of the gauge before it was reported missing. The inspector also contacted the AU on August 21, 2006. The AU stated that on

Saturday, August 19, 2006, he used the gauge at a temporary job site in Chambersburg and at the end of the day returned to his residence in Bethlehem, PA with the gauge. The licensee's initial notification to the NRC Operations Center stated that the gauge was stored in the trunk of the vehicle, but the AU stated that the gauge was actually stored in its transportation container, and the container was stored in the back seat of his personal vehicle. The container was locked and secured in the vehicle with a cable that was also locked.

The AU stated that at approximately 11 p.m., on August 19, 2006, he gave keys to his vehicle to a relative who needed the vehicle to run an errand. Approximately 20 minutes after he had loaned the vehicle to his relative, he realized that the gauge was stored in the vehicle. He stated that he became concerned when the relative did not return the vehicle and he didn't have any means to contact the relative so he waited until the next morning. Having failed to contact the relative he reported the missing vehicle to Bethlehem Police at approximately 10 a.m. on Sunday, August 20, 2006, and later that afternoon notified his immediate supervisor at the Bethlehem Office, who in turn notified the Radiation Safety Officer (RSO). On August 21, 2006, the RSO notified the NRC Operations Center of the missing gauge.

On September 7, 2006, the inspector visited the licensee's temporary job site in Rehrersburg, PA, where another AU was using the same gauge involved in the event. The gauge was signed out to this AU for use at this location. The inspector noted that the gauge did not appear to be damaged and was properly secured in the vehicle**.**

On September 8, 2006, the inspector visited the licensee's temporary job site in Chambersburg, PA where the AU who had loaned his vehicle to a relative on August 19, 2006, was using a portable gauge. The AU stated that the gauge was signed out to him for use at the Chambersburg job site and at the end of the day on August 19, 2006, he returned with the gauge to his residence in Bethlehem at approximately 5 p.m. He was not scheduled to use the gauge on August 20, 2006.

The AU stated that the vehicle was returned to him on Wednesday, August 23, 2006, but the gauge was not in the vehicle. Later the same day he learned that the gauge had been left on the front porch of a residence in Bethlehem. On August 24, 2006, the licensee retrieved the gauge from the residence in Bethlehem and returned it to the authorized storage location in Bethlehem. The inspector determined that the gauge had been missing from August 19, to August 24, 2006. Some time during this interval the gauge was removed from the vehicle and left unattended on the porch of a residence that was an unrestricted area.

10 CFR 20.1802 requires that the licensee control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage.

The inspector noted that the licensee has an authorized storage location in Bethlehem. The AU stated that the licensee did not require the AUs to return the gauges to authorized storage location if they are assigned to a job site for an extended period. The AU was not

scheduled to use the gauge on Sunday, August 20, 2006, however, he kept the gauge in his vehicle instead of returning it to the authorized storage location. The AU stated that his residence is about a 15 minute drive from the authorized storage location.

On September 8, 2006, the inspector also visited the licensee's facility in Bethlehem and discussed the event with licensee management. The supervisor confirmed that the AUs are permitted to keep the gauges in their possession when they are assigned to use the gauges in projects for an extended period.

10 CFR 30.34(i) requires that each portable gauge licensee use a minimum of two 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 AU stated that his vehicle was locked when it was parked at his residence on August 19, 2006, and the transportation container for the gauge was also locked and was secured to the vehicle with a locked cable. From the procedure described by the AU for storing and securing the gauge in his vehicle, the inspector determined that the procedure met the requirements in 10 CFR 30.34(i) for the security of the gauge as long as the vehicle remained locked and the AU retained the key to the vehicle.

c. Conclusions

The inspection identified two violations of NRC requirements. The first violation occurred when the AU gave the keys to his vehicle to his relative, who was not an authorized user. This removed one of the two physical controls that formed tangible barriers to unauthorized removal of the gauge or its container. The gauge and its transportation container stored in the unlocked vehicle had only one physical control (the lock on the container or the locked cable securing the container) that formed a tangible barrier to unauthorized removal of the gauge or the container.

Failure to use a minimum of two physical controls that formed tangible barriers to unauthorized removal of the gauge is an apparent violation of 10 CFR 30.34(i).

The second violation occurred when the transportation container with the gauge inside was left unattended in an unrestricted area (porch of a residence) and the gauge was not under constant surveillance by the licensee.

Failure to control and maintain constant surveillance of licensed material that is in an unrestricted area is an apparent violation of 10 CFR 20.1802.

IV. Transportation

a. Inspection Scope

The inspection included a review of records related to transportation of licensed material.

b. Observations and Findings

The inspector reviewed transportation documents that the AUs had in their possession at the two temporary job sites in Rehrersburg and Chambersburg. The inspector also observed the labels on the transport containers and discussed with the AUs their procedures for transporting the gauges to temporary job sites.

c. Conclusions

The two AUs had the required documents in their possession and the transport cases were appropriately labeled. The inspection did not identify any violations or safety concerns.

V. Exit Meeting

The inspector discussed with the licensee the findings of the inspection during a telephone conversation on September 21, 2006, and summarized the three apparent violations of NRC requirements. The licensee acknowledged the inspection findings and stated that corrective actions have been taken to prevent recurrence of similar violations.

PARTIAL LIST OF PERSONS CONTACTED

Licensee
Mr. Donald Benway - Authorized User
Mr. Chase Weinhold - Authorized User
Mr. Charles Snyder - RSO * #
Mr. Andrew Pennoni - Vice President, Inspections #

* present at inspection entrance
# present at exit (via telephone)