

September 3, 2010

EA 10-163

Mr. William B. Kremer, P.E.
Radiation Safety Officer
Shannon and Wilson, Inc
2043 Westport Center Drive
St. Louis, MO 63146-9660

SUBJECT: NRC INSPECTION REPORT NO. 030-37136/2010-001(DNMS) AND
NOTICE OF VIOLATION – SHANNON AND WILSON, INC.

Dear Mr. Kremer:

On August 4, 2010, the U.S. Nuclear Regulatory Commission (NRC) conducted a routine inspection of your facility located in St. Louis, Missouri. The purpose of the inspection was to determine whether activities authorized under your license were conducted safely and in accordance with NRC requirements. The enclosed report presents the results of this inspection, which were discussed with you during the exit meeting held on August 4, 2010.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has determined that a Severity Level IV violation of the NRC requirements occurred. The violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's website at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>. The violation involved the failure to have the current Radiation Safety Officer (RSO) specified on the licensee. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it is described in detail in the subject inspection report. The violation is being cited in the Notice because the NRC inspector identified the violation.

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence is already adequately addressed on the docket in the Inspection Report No. 030-37136/2010-001(DNMS). Therefore, you are not required to respond to this letter unless the description herein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In addition, an apparent violation was identified and is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The apparent violation involved the 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 as identified in Title 10 Code of Federal Regulations (CFR) 30.34(i). Since the NRC has not made a final determination in this matter, no Notice of Violation is being issued for this inspection finding at this time.

Before the NRC makes its enforcement decision, we are providing you an opportunity to either: (1) respond to the apparent violations addressed in this inspection report within 30 days of the date of this letter; or (2) request a Predecisional Enforcement Conference (PEC). If a conference is held, it will be open for public observation. Please contact Tamara E. Bloomer at 630-829-9627 within seven days of the date of this letter to notify the NRC of your intended response.

If you choose to provide a written response, it should be clearly marked as a Response to the Apparent Violation in Inspection Report No. 030-37136/2010-001(DNMS); EA-10-163 and should include for the apparent violation: (1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation(s); (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. In presenting your corrective actions, you should be aware that the promptness and comprehensiveness of your actions will be considered in assessing any civil penalty for the apparent violation. The guidance in NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," may be helpful. You can find the information notice on the NRC website at: <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1996/in96028.html>. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate response is not received within the time specified or an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision or schedule a PEC.

In addition, since your facility has not been the subject of escalated enforcement actions within the last two inspections, and based on our understanding of your corrective action, a civil penalty may not be warranted in accordance with Section VI.C.2 of the Enforcement Policy. The final decision will be based on your confirming on the license docket that the corrective actions previously described to the staff have been or are being taken.

Please be advised that the number and characterization of the apparent violation(s) described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and your response, if you choose to provide one, will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

W. Kremer

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Patrick L. Loudon, Acting Director
Division of Nuclear Materials and Safety

Docket No. 030-37136
License No. 24-18839-02

Enclosure(s):

1. Notice of Violation
2. Inspection Report No. 030-37136/2010-001(DNMS)

cc w/encl: State of Missouri

W. Kremer

-3-

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Patrick L. Loudon, Acting Director
Division of Nuclear Materials and Safety

Docket No.: 030-37136
License No.: 24-18839-02

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cc w/encl: State of Missouri

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NOTICE OF VIOLATION

Shannon and Wilson, Inc.
St. Louis, Missouri

Docket No. 030-37136
License No.: 24-18839-02
EA-10-163

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted on August 4, 2010, one violation of the NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

License Condition 11 of NRC License No. 24-18839-02 named a specific individual as Radiation Safety Officer (RSO).

Contrary to the above, as of August 4, 2010, the specific individual named on the license was not the RSO. Specifically, the named individual had left the company in 2008, and the license was not amended to name the new RSO.

This is a Severity Level IV violation (Supplement VI).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to be taken to correct the violation and prevent recurrence, and the date when full compliance will be achieved, is already adequately addressed on the docket in Inspection Report No. 030-37136/2010-001(DNMS). However, you are required to submit a written statement or explanation pursuant to Title 10 Code of Federal Regulations (CFR) 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation EA-10-163," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region III, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, and Washington, DC 20555-0001.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21. In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 3rd day of September 2010.

U.S. Nuclear Regulatory Commission
Region III

Docket No. 030-37136

License No. 24-18839-02

Report No. 030-37136/2010-001(DNMS)

EA No. 10-163

Licensee: Shannon and Wilson, Inc.

Location: St. Louis, Missouri

Date: August 4, 2010

Inspector: Edward L. Kulzer, Health Physicist

Approved By: Tamara E. Bloomer, Chief
Nuclear Materials Inspection Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Shannon and Wilson, Inc. NRC Inspection Report 030-37136/2010-001(DNMS)

This was a routine inspection of licensed activities involving the use of byproduct material (cesium-137 and americium-241) for measuring physical properties of materials with portable nuclear gauging devices. Inspection items identified include one violation and one apparent violation listed below:

Shannon and Wilson, Inc. is an engineering company located in St. Louis, Missouri. The Shannon and Wilson U.S. Nuclear Regulatory Commission (NRC) License No. 24-18839-02 authorized the use of Troxler Model No. 3400 Series portable density gauges for measuring physical properties of materials. Shannon and Wilson, Inc. had six Troxler Model moisture density gauges used to evaluate soil compaction on construction sites in and around the St. Louis, Missouri area.

As of August 4, 2010, the licensee failed to comply with Condition 11, of NRC License No. 24-18839-02, which states that a specific individual is the Radiation Safety Officer (RSO) for the licensee.

The root cause of this violation was the licensee's failure to follow-up on their amendment request to replace the RSO on November 3, 2008. As corrective action for this violation, the licensee immediately submitted the appropriate paperwork required for the NRC to review and approve the replacement RSO, which was approved by the NRC on August 4, 2010. Additional corrective action will be to phone the NRC if amendment requests need to be expedited in the future.

Additionally, an apparent violation was identified where the licensee failed to use a minimum of two independent physical controls that form tangible barriers to secure a portable gauge, when the gauge was not under the control and constant surveillance of the licensee. The single lock securing the gauge case lid did not meet the requirement for a second independent physical control of Title 10 Code of Federal Regulations (CFR) 30.34(i) to prevent removal of the gauge in its case. The inspector determined that there were three examples of this violation.

The inspector determined that the root cause of the second violation was that the licensee personnel misunderstood the requirements in 10 CFR 30.34(i). The inspector explained that the single lock securing the gauge in storage (not two as required) both at the licensed facility and at the temporary job site, constituted only one barrier to removal of the gauge. The licensee believed that the gauges were adequately secured.

The licensee's corrective actions were: to rearrange the chains through both the top and side handles of the gauge case, to place a second hasp and lock on each gauge cabinet door at the licensee's facility, and to place a hasp and lock on the room door inside the shed at the temporary job site (Valley View dam), respectively. An additional corrective action was to train all authorized gauge users in properly securing the portable gauges when in the field.

Report Details

1 Program Overview

Shannon and Wilson, Inc. is authorized under Materials License No. 24-18839-02 to use licensed material for measuring physical properties of materials with nuclear gauging devices. 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 throughout the St. Louis, Missouri area. The licensee's RSO manages the radiation safety program. The licensee uses a total of six Troxler gauges, each containing cesium-137 and americium-241.

2 Radiation Safety Program

2.1 Inspection Scope

This was a routine inspection of the radiation safety program for NRC License No. 24-18839-02 conducted on August 4, 2010. The inspector requested the individual listed as the RSO, to review selected records, gauges storage and transportation issues, and interview selected licensee staff.

2.2 Observations and Findings

Radiation Safety Officer

Upon arriving at the facility, the inspector was informed that the individual listed on the license as the RSO had left the company in 2008. The inspector was informed that Shannon and Wilson had requested a license amendment from the NRC on November 3, 2008. The inspector informed the acting RSO that the licensee's request to amend the license to replace the former RSO had never been processed. The inspector reviewed training records and found that the proposed RSO received training from Troxler as an authorized user. The acting RSO provided the inspector with a letter from the licensee to NRC Region III dated November 3, 2008, requesting a license amendment to replace the RSO, which was never received by the NRC. The licensee's failure to ensure that License Condition 11 of NRC License No. 24-18839-02 was amended to specify the name of the current RSO is a violation of NRC license No. 24-18839-02.

The root cause of this violation was the licensee's failure to follow-up on their amendment request to replace the RSO on November 3, 2008. As corrective action for this violation, the licensee immediately submitted the appropriate paperwork required for the NRC to review and approve the replacement RSO, which was approved by the NRC on August 4, 2010. An additional corrective action to prevent this from happening in the future will be to follow up an amendment request with a phone call to the NRC if the amendment request needs to be expedited.

Physical Inventories

The inspector found that the licensee had maintained operational logs for the six gauges during construction season, and had physical inventory records for all of the gauges. The inspector had no findings in this area.

Leak Tests

On August 4, 2010, the inspector reviewed the elements of licensee's radiation safety program including the following: records of the physical inventories, leak tests, and dosimetry records. The inspector determined that the licensee had completed the required the leak tests on the portable gauges every six months. The inspector had no findings in this area.

Dosimetry

NRC License No. 24-18839-02 requires all nuclear gauge operators to wear a personnel-monitoring device (dosimeter) to measure radiation exposure when using or transporting gauges. The dosimeter badges shall be exchanged at intervals not exceeding 3-months. The inspector identified no overexposures.

2.3 Conclusions

The inspector identified an apparent violation for failure to have the current RSO on the NRC License. The inspector identified no findings in the other areas.

3 Security of Portable Gauges

3.1 Inspection Scope

The inspector observed the licensee's method of securing portable gauges in storage, in use, and in transport and by interviewing the authorized users and requesting these authorized users to demonstrate how they used and transported the gauges.

3.2 Observations and Findings

Two Lock/Two Chains

During the routine inspection on August 4, 2010, the inspector observed that the licensee failed to use a minimum of two independent physical controls that form tangible barriers to secure a portable gauge, when the gauge was not under the control and constant surveillance of the licensee. The inspector determined that there were three examples:

- a. At a temporary job site, the licensee was transporting a Troxler gauge in an open bed pick-up truck with one lock and one chain through each handle of the Troxler gauge case and only one lock securing the gauge case lid when the gauge was not under the control and constant surveillance of the licensee. The single lock securing the gauge case lid did not meet the requirement for a second independent physical control of 10 CFR 30.34(i) to prevent removal of the gauge in its case by defeating only a single barrier.
- b. The licensee was storing Troxler gauges in locked cabinets in a room in the licensee's facility with only one lock securing the cabinet door when the gauges were not under the control and constant surveillance of the licensee, and the building was unlocked during normal business hours. The single lock securing the gauges in storage did not meet the requirement for two independent physical controls of to prevent unauthorized removal of the gauge. The storage room was

at the rear of the facility but had no one at the reception desk or in the immediate area to provide control and constant surveillance.

- c. Prior to August 4, 2010, the licensee stored a Troxler gauge in locked metal cabinet at a temporary job site with only one lock securing the metal cabinet when the gauge was not under the control and constant surveillance of the licensee. The cabinet was in a room inside of a large shed that typically was open and used by other construction workers. The single lock securing the gauge in storage did not meet the requirement for two independent physical controls to prevent unauthorized removal of the gauge in its case.

The licensee's corrective actions were: to rearrange the chains through both the top and side handles of the gauge case, to place a second hasp and lock on each gauge cabinet door at the licensee's facility, and to place a hasp and lock on the room door inside the shed at the temporary job site (Valley View dam), respectively. An additional corrective action was to train all authorized gauge users in properly securing the portable gauges when in field.

3.3 Conclusions

The inspector identified an apparent violation of 10 CFR 30.34(i) in which the licensee failed to use a minimum of two independent physical controls that form tangible barriers to secure a portable gauge, when the gauge was not under the control and constant surveillance of the licensee.

4.0 **Exit Meeting Summary**

The NRC inspectors presented preliminary inspection findings following the on-site inspection on August 4, 2010. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary. The licensee acknowledged the findings presented.

PARTIAL LIST OF PERSONNEL CONTACTED

*William B. Kremer, P.E. – Radiation Safety Officer
Joe Brewen, Senior Field Technician

*Attended the exit meeting on August 4, 2010

INSPECTION PROCEDURES USED

IP87124	Fixed and Portable Gauges
IP86740	Transportation