



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

September 13, 2019

EA-19-079

Mr. Dennis Bittner, President  
Bittner Engineering, Inc.  
113 South 10<sup>th</sup> Street  
P.O. Box 713  
Escanaba, MI 49829

SUBJECT: NRC ROUTINE INSPECTION REPORT NO. 03030982/2019001(DNMS)  
BITTNER ENGINEERING, INC.

Dear Mr. Bittner:

On May 23, 2019, an inspector from the U.S. Nuclear Regulatory Commission (NRC) conducted a routine inspection at your Escanaba, Michigan location, with continued in-office review through August 1, 2019. The purpose of the inspection was to review activities performed under your NRC license to ensure that activities were being performed in accordance with NRC requirements. The in-office review included a review of records that were unavailable during the on-site inspection as well as telephone interviews with individuals associated with the program who were unavailable at the time of the inspection. Mr. Aaron McCraw and Mr. Jason Draper of my staff conducted a final exit meeting by telephone with you on August 15, 2019, to discuss the inspection findings. The enclosed inspection report presents the results of the inspection.

During this inspection, the NRC staff examined activities conducted under your license related to public health and safety. Additionally, the staff examined your compliance with the Commission's rules and regulations as well as 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, four apparent violations of NRC requirements were identified and are being considered for escalated enforcement action 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 apparent violations concerned the failure to: (1) ensure that the individual named on the license as Radiation Safety Officer (RSO) performed the duties and responsibilities of the RSO, as required by License Condition (LC) 12 of Amendment Number 5, of NRC License 21-26010-01 (your license); (2) perform leak tests of sealed sources every twelve months, as required by LC 13.A of your license and Certificates of Registration NC-646-D-130-S and NC-646-D-830-S; (3) provide hazmat employees with hazmat refresher training at least once every three years, as required by Title 10 of the *Code of Federal Regulations* (CFR) 71.5(a)(1)(vi) and 49 CFR 172.704(c); and (4) perform a review of the content and implementation of your radiation safety program at least annually, as required by 10 CFR 20.1101(c).

Because the NRC has not made a final determination in this matter, the NRC is not issuing a Notice of Violation for these inspection findings at this time. The circumstances surrounding these apparent violations, the significance of the issues, and the need for lasting and effective corrective actions were discussed with you during the inspection exit meeting.

Before the NRC makes its enforcement decision, we are providing you an opportunity to: (1) respond in writing to the apparent violations addressed in this inspection report within 30 days of the date of this letter; (2) request a Predecisional Enforcement Conference (PEC); or (3) request Alternative Dispute Resolution (ADR). **Please contact Aaron McCraw, Materials Inspection Branch Chief, at 630-829-9650 or [Aaron.McCraw@nrc.gov](mailto:Aaron.McCraw@nrc.gov), within 10 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 "Response to the Apparent Violations in NRC Inspection Report No. 03030982/2019001(DNMS); EA-19-079," and should include, for the apparent violations: (1) the reason for the apparent violations, or, if contested, the basis for disputing the apparent violations; (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 was or 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 violations. The guidance in NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," may be useful in preparing your response. You can find the information notice on the NRC's website at: <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1996/in96028.html>. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. Your response should be sent to the NRC's Document Control Desk, Washington, DC 20555-0001, with a copy mailed to the NRC Region III Office, 2443 Warrenville Road, Suite 210, Lisle, Illinois 60532, within 30 days of the date of this letter. 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.

If you choose to request a PEC, it will afford you the opportunity to provide your perspective on the apparent violations and any other information that you believe the NRC should take into consideration before making an enforcement decision. The topics discussed during the PEC may include the following: information to determine whether a violation occurred, information to determine the significance of a violation, information related to the identification of a violation, and information related to any corrective actions taken or planned to be taken. If a PEC is held, it will be open for public observation, and the NRC will issue a press release to announce the time and date of the conference.

In lieu of a PEC, you may also request ADR with the NRC in an attempt to resolve this issue. ADR is a general term encompassing various techniques for resolving conflicts using a neutral third party. The technique that the NRC has decided to employ is mediation. Mediation is a voluntary, informal process in which a trained neutral third party (the "mediator") works with the parties to help them reach resolution. If the parties agree to use ADR, they select a mutually agreeable neutral mediator who has no stake in the outcome and no power to make decisions. Mediation gives parties an opportunity to discuss issues, clear up misunderstandings, be creative, find areas of agreement, and reach a final resolution of the issues. Additional information concerning the NRC's program can be obtained at <http://www.nrc.gov/about-nrc/regulatory/enforcement/adr.html>. The Institute on Conflict Resolution (ICR) at Cornell University has agreed to facilitate the NRC's program as a neutral

third party. Please contact ICR at 877-733-9415 within 10 days of the date of this letter if you are interested in pursuing resolution of this issue through ADR.

Please be advised that the number and characterization of the apparent violations 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, its enclosure, and your response, will be made available electronically for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's 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 publicly available without redaction.

Please feel free to contact Mr. Draper if you have any questions regarding this inspection. Mr. Draper can be reached at (630) 829-9839.

Sincerely,

*/RA/*

David L. Pelton, Director  
Division of Nuclear Materials Safety

Docket No. 030-30982  
License No. 21-26010-01

Enclosure:  
IR No. 03030982/2019001(DNMS)

cc w/encl: State of Michigan

Letter to Dennis Bittner from David L. Pelton, dated September 13, 2019.

SUBJECT: NRC ROUTINE INSPECTION REPORT NO. 03030982/2019001(DNMS)  
BITTNER ENGINEERING, INC.

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DATE	9/4/2019		9/6/2019		9/9/2019		9/10/2019	
OFFICE	OE	C	RIII-DNMS	C				
NAME	SWoods		DPelton					
DATE	9/12/2019		9/13/2019					

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**U.S. Nuclear Regulatory Commission  
Region III**

Docket No.: 030-30982

License No.: 21-26010-01

Report No.: 03030982/2019001(DNMS)

EA No.: EA-19-079

Licensee: Bittner Engineering, Inc.

Facility: 113 South 10<sup>th</sup> Street  
P.O. Box 713  
Escanaba, MI 49829

Inspection Dates: May 23, 2019, with continued in-office  
review through August 1, 2019

Exit Meeting Date: August 15, 2019

Inspector: Jason D. Draper, Health Physicist

Approved By: Aaron T. McCraw, Chief  
Materials Inspection Branch  
Division of Nuclear Materials Safety

Enclosure

## **EXECUTIVE SUMMARY**

### **Bittner Engineering, Inc. NRC Inspection Report 03030982/2019001(DNMS)**

On May 23, 2019, with continued in-office review through August 1, 2019, an inspector from the U.S. Nuclear Regulatory Commission (NRC) conducted a routine inspection of licensed activities performed by Bittner Engineering, Inc. (licensee), located in Escanaba, Michigan. NRC Radioactive Materials License No. 21-26010-01, authorized the licensee to use Troxler Models 3411B and 3400 Series portable density gauges, containing sealed sources of cesium-137 (Cs-137) and americium-241:beryllium (Am-241), for measuring physical properties of construction materials.

During the inspection, the inspector identified apparent violations of:

- (1) License Condition (LC) 12 of Amendment Number 5, for the licensee's apparent failure to ensure that the individual named on the license as Radiation Safety Officer (RSO) performed the duties and responsibilities of the RSO. Specifically, the named RSO appeared to have not performed radiation safety oversight activities for the licensed activities since approximately 2014.
- (2) License Condition 13.A and Device Certificates of Registration NC-646-D-130-S and NC-646-D-830-S for the licensee's apparent failure to perform leak tests of sealed sources not in storage every 12 months. Specifically, the licensee last performed leak tests of its portable nuclear gauges in December 2014 – a period exceeding 12 months – and the gauges were not in storage.
- (3) Title 10 of the *Code of Federal Regulations* (CFR) 71.5(a)(1)(vi) and 49 CFR 172.704(c) for the licensee's apparent failure to provide hazmat employees with hazmat refresher training at least once every three years. Specifically, the licensee's authorized gauge users had not received hazmat refresher training since January 2014 but continued to transport portable gauges (hazardous material) from approximately January 2017 – when the previous refresher training expired – until the time of the inspection; and
- (4) Title 10 CFR 20.1101(c) for the licensee's failure to perform a review of the content and implementation of the licensee's radiation safety program at least annually. Specifically, the licensee had not performed a review of the content and implementation of their radiation safety program since at least 2014.

The licensee took immediate corrective actions to address all four of the apparent violations; however, the licensee was still developing long-term corrective actions at the time of the issuance of this inspection report. The licensee will address its long-term corrective actions in its response to this inspection report.

## **REPORT DETAILS**

### **1 Program Overview and Inspection History**

Bittner Engineering, Inc., is authorized under NRC Materials License No. 21-26010-01, 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 used the gauges occasionally (a few days a month during the construction season) for construction projects in the Upper Peninsula of Michigan. The licensee used Troxler Model 3430 and Model 3411B portable gauges, containing Cs-137 and Am-241.

During the last routine inspection in 2013, the licensee was issued a Severity Level IV violation of License Condition (LC) 13.A for the licensee's failure to perform leak tests on their nuclear gauge sealed sources every twelve months as specified in Certificates of Registration NC-646-D-130-S and NC-646-D-830-S. The previous routine inspection in 2009 did not identify any violations.

### **2 Material Access Control and Security**

#### **2.1 Inspection Scope**

The inspector reviewed the licensee's control of access to licensed material as well as its measures to prevent the loss of material and to limit radiation exposure to workers and members of the public. This review included a tour the licensee's storage facility, interviews with authorized gauge users, and a review of records including utilization logs.

#### **2.2 Observations and Findings**

The inspector found that the licensee secured the portable gauges with two independent physical controls during both storage and transport when the gauges were not under control and constant surveillance by the gauge users. The licensee maintained utilization logs to keep track of the use of the gauges. The licensee had only used only one gauge (Troxler Model 3411, Serial Number 8600) since 2016, but used the other two gauges (Troxler Model 3411, Serial Number 9019, and Troxler Model 3430, Serial Number 22116) in September 2016.

LC 13.A and Certificates of Registration NC-646-D-130-S and NC-646-D-830-S require leak tests to be performed on the respective devices on a 12-month frequency. The licensee's failure to perform leak tests since December 2014 on its gauges that cannot be considered in storage is an apparent violation of LC 13.A.

The inspector determined that the root cause of the apparent violation was a lack of oversight of the portable nuclear gauge program by the Radiation Safety Officer (RSO). As a corrective action, the licensee immediately performed leak tests of its gauges, which came back negative for leakage/contamination.

The inspector noted that the licensee was cited for a similar violation during the previous routine inspection in 2013. The inspector noted that the licensee restored compliance by leak testing the gauges in December 2013 and performed another leak test of the gauges in December 2014, but then failed to perform any more leak tests after that. As such, the inspector could not close the previous violation.

## 2.3 Conclusions

The inspector identified an apparent violation of License Condition 13.A of NRC License 21-26010-01 and Certificates of Registration NC-646-D-130-S and NC-646-D-830-S for the licensee's failure to test sealed sources for leakage and/or contamination at intervals not to exceed 12 months as specified in the Certificates of Registration.

## 3 **Comprehensive Safety Measures**

### 3.1 Inspection Scope

The inspector reviewed the licensee's comprehensive safety measures to limit other hazards from compromising the safe use and storage of licensed material. This review included touring the licensee's facility, interviewing and observing demonstrations by authorized gauge users, and reviewing records including hazmat training records.

### 3.2 Observations and Findings

Through direct observation, the inspector determined that while in storage, the licensee's gauges were adequately protected from hazards. At the time of the inspection, no gauges were being used. However, through interviews and demonstrations by gauge users, the inspector determined that the gauge users were knowledgeable of potential hazards to the gauges during transportation and job site use, as well as practices to protect the gauges from hazards, including blocking and bracing during transport.

Through interviews with licensee employees, as well as review of training records, the inspector identified that the gauge users had not received hazmat refresher training since at least January 2014, but gauge users continued to transport the gauges until the date of the inspection. The inspector identified that the three gauge users had not received hazmat refresher training since January 14, 2014, January 30, 2014, and another date around January 2014 that the licensee was unable to verify.

Title 10 of the *Code of Federal Regulations* (CFR) 71.5(a) requires, in part, NRC licensees who transport licensed material outside the site of usage or on public highways to comply with all applicable DOT regulations, including 49 CFR Part 172: Subpart H. Title 49 CFR 172.704(c) states, in part, that a hazmat employee must receive the training required by 49 CFR Part 172: Subpart H at least once every three years. The licensee's failure to provide hazmat refresher training to its gauge users, who meet the definition of hazmat employees, at least once every three years is an apparent violation of 10 CFR 71.5(a) and 49 CFR 172.704(c).

The inspector determined that the root cause of the apparent violation was a lack of oversight of the portable nuclear gauge program by the RSO. As a corrective action, the licensee provided refresher hazmat training to its gauge users.

### 3.3 Conclusions

The inspector identified an apparent violation of 10 CFR 71.5(a)(1)(vi) and 49 CFR 172.704(c) for the licensee's failure to provide its hazmat employees with hazmat refresher training at least once every three years.



## **4 Management Oversight**

### **4.1 Inspection Scope**

The inspector reviewed the licensee's management system to verify that management was maintaining awareness of the radiation safety program; that audits for ALARA practices were performed; that assessments of past performance, present conditions, and future needs are performed; and that appropriate action was taken when needed. This review included interviews with authorized gauge users, the individual named as RSO, and the licensee's president.

### **4.2 Observations and Findings**

The inspector determined that the content and implementation of the licensee's radiation safety program had not been reviewed since at least 2014. Title 10 CFR 20.1101(c) requires licensees to review the content and implementation of the radiation safety program at least annually. The licensee's failure to do so since 2014 is an apparent violation of 10 CFR 20.1101(c). The inspector determined that the root cause of the apparent violation was a lack of oversight of the portable nuclear gauge program by the RSO. As corrective actions, the licensee completed a review of the content and implementation of its radiation safety program on August 1, 2019.

Through interviews with licensee employees, the inspector determined that the individual named in LC 12, of Amendment Number 5, of the license as RSO no longer worked scheduled hours for the licensee. While the individual occasionally visited the licensee's facility, he did not perform oversight activities associated with the licensee's radiation safety program since approximately 2014. The inspector determined that this lack of oversight of the radiation safety program was the root cause of the previously aforementioned apparent violations. As such, the inspector concluded that the individual named on the license as RSO was not performing the duties and responsibilities of the RSO. LC 12 of the license requires the named individual to perform the duties and responsibilities of the RSO. The licensee's failure to ensure that the individual named on the license performed the duties and responsibilities of the RSO is an apparent violation of LC 12.

The inspector determined that the root cause of this apparent violation was a lack of management oversight of the radiation safety program. The licensee's president stated that he had intended on naming a full-time employee as RSO when the individual named on the license as RSO fully retired; however, this action was not taken due to personal circumstances. As corrective action, following the onsite inspection, the licensee appointed a new individual to serve as the RSO and submitted a license amendment request to name the new individual on the license.

### **4.3 Conclusions**

The inspector identified apparent violations of 10 CFR 20.1101(c) for the licensee's failure to perform reviews at least annually of the content and implementation of the licensee's radiation safety program at least annually and of LC 12 of the license for the failure of the individual specifically named on the license as RSO to perform the duties and responsibilities of the RSO.

## **5 Exit Meeting Summary**

The NRC inspector and the Region III Materials Inspection Branch Chief presented preliminary inspection findings resulting from the inspection via telephone on August 15, 2019. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary. The licensee acknowledged the findings presented.

### **LIST OF PERSONNEL CONTACTED**

- # Dennis Bittner, President  
Lewis Vaillencourt, RSO  
Mike Stannard, Authorized Gauge User  
Craig Bal, Authorized Gauge User
  
- # Attended exit meeting via telephone on August 15, 2019.

### **INSPECTION PROCEDURES USED**

87124: Fixed and Portable Gauge Programs