



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE RD. SUITE 210  
LISLE, IL 60532-4352

December 3, 2020

EA-20-110  
EN 54765  
NMED 200272 (closed)

Mr. Jeffrey Elliott, P.E.  
Vice President, RSO  
TTL Associates, Inc.  
44265 Plymouth Oaks Boulevard  
Plymouth, MI 48170

**SUBJECT: TTL ASSOCIATES, INC. - NOTICE OF VIOLATION; NRC REACTIVE  
INSPECTION REPORT 03033903/2020001(DNMS)**

Dear Mr. Elliott:

This letter refers to the Nuclear Regulatory Commission (NRC) reactive inspection conducted on August 26 and 27, 2020, with continued in-office review through September 17, 2020, at your facility in Plymouth, Michigan, and at temporary job sites in Ann Arbor and Romulus, Michigan (Inspection Report No. 03033903/2020001(DNMS)). The purpose of the inspection was to review the circumstances, root and contributing causes, and corrective actions for an event involving a damaged portable moisture density gauge, reported to the NRC on July 7, 2020. The inspection also included a routine review of activities performed under your NRC license to ensure that these activities were being performed safely and in accordance with NRC requirements. Mr. Ryan Craffey and Mr. Luis Nieves of my staff discussed the circumstances surrounding these apparent violations, the significance of the issues, and the need for lasting and effective corrective actions with you at the inspection exit meeting on September 24, 2020. The inspection report, dated October 21, 2020, can be found in NRC's Agencywide Documents Access and Management System (ADAMS) at accession No. ML 20294A108. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

In the letter transmitting the inspection report, dated October 21, 2020, we provided you with the opportunity to address the apparent violations identified in the report by either attending a predecisional enforcement conference or by providing a written response before we made our final enforcement decision. In a letter dated November 4, 2020, you provided a response to the apparent violations.

Based on the information developed during the inspection and the information that you provided in your response to the inspection report, dated November 4, 2020, the NRC has determined that two violations of NRC requirements occurred. These violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The first violation involved the failure to maintain control and constant surveillance of licensed material not in storage in accordance with Title 10 of the *Code of Federal Regulations* (CFR) 20.1802. Specifically, on July 7, 2020, an employee from a different company struck one of your portable gauges with his vehicle while attempting to avoid a TTL Associates, Inc. gauge user who was conducting a field test on the job site in Romulus. At the time of the incident, the gauge user was about ten feet from the gauge with his back

turned to the gauge. The second violation involved the detachment of the cesium-137 (Cs-137) source from the source rod, a violation of Condition 14 of NRC License No. 21-26666-01. Specifically, in attempting to get the damaged gauge into a shielded configuration, the gauge user tried to straighten the source rod so it could be retracted. Instead, he inadvertently split open the threaded portion of the source rod end cap. The broken end cap, with the Cs-137 source still inside, was ejected by a small retaining spring and landed a few feet away on the concrete. As Radiation Safety Officer, you thereafter confirmed via surveys that the source remained inside the end cap and that there was no contamination of the jobsite. You then recovered the source and damaged gauge.

The gauge user's failure to maintain control and constant surveillance of the licensed material not in storage and the detachment of the Cs-137 source from the source rod are of significant concern to the NRC because of the increased radiological risks to the individuals attempting to shield the source and to members of the public. Therefore, each of these violations have been categorized in accordance with the NRC Enforcement Policy at Severity Level (SL) III. The root cause of the violations was the gauge user's failure to follow established operating procedures for the first violation, and emergency procedures for the second.

Because your facility has not been the subject of escalated enforcement actions within the last two inspections, the NRC considered whether credit was warranted for *Corrective Action* in accordance with the civil penalty assessment process in Section 2.3.4 of the Enforcement Policy. Immediate corrective actions included: (1) shipping the damaged gauge and its parts to the manufacturer for disposal; (2) performing a leak test to verify the gauge did not leak radioactive material; and (3) submitting the gauge user's dosimetry for analysis to verify that the dose received was low. Corrective actions to prevent recurrence included: (1) requiring all gauge users to obtain refresher training via Troxler Electronics online training course; (2) reviewing the incident with all gauge users to prevent deviations from company protocols of never handling or manipulating the source rod; (3) issuing a memorandum detailing gauge use and emergency response with a formal reply required; (4) revising the emergency procedures printed on the back of the Bill of Lading; (5) uploading TTL's Portable Nuclear Density Gauge Operating Procedures, Portable Nuclear Device Emergency Procedures, nuclear gauge operation manuals, and the Troxler Transportation Guide to each gauge user field tablet; and (6) providing continual training for all gauge users to minimize the opportunity of incurring additional incidents.

Therefore, to encourage prompt and comprehensive correction of violations, and in recognition of the absence of previous escalated enforcement action, I have been authorized, after consultation with the Director, Office of Enforcement, not to propose a civil penalty in this case. However, significant violations in the future could result in a civil penalty. In addition, issuance of these SL III violations constitutes escalated enforcement action that may subject you to increased inspection effort.

The NRC has concluded that information regarding: (1) the reason for the violations; (2) the corrective actions that have been taken and the results achieved; and (3) the date when full compliance was achieved is already adequately addressed on the docket in Inspection Report No. 03033903/2020001 and your letter dated November 4, 2020. Therefore, you are not required to respond to this letter unless the description therein 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 accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room and from the NRC's ADAMS, accessible from the NRC Web site 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.

Sincerely,

John B. Giessner  
Regional Administrator

Docket No. 030-33903  
License No. 21-26666-01

Enclosure:  
Notice of Violation

cc: State of Michigan

Letter to J. Elliott from John B. Giessner dated December 3, 2020

SUBJECT: TTL Associates, INC. - NOTICE OF VIOLATION; NRC REACTIVE INSPECTION  
REPORT NO. 03033903/2020001 (DNMS)

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OFFICE	RIII	RIII	RIII	NMSS
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DATE	11/12/2020	11/17/2020	11/17/2020	12/02/2020
OFFICE	OE	RIII	RIII	
NAME	JPeralta	JCameron	JGiessner	
DATE	12/02/2020	12/2/2020	12/3/2020	

**OFFICIAL RECORD COPY**

## NOTICE OF VIOLATION

TTL Associates, Inc.  
Plymouth, Michigan

Docket No. 030-33903  
License No. 21-26666-01  
EA-20-110

During a Nuclear Regulatory Commission (NRC) reactive inspection conducted on August 26 and 27, 2020, with continued in-office review through September 17, 2020, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

Title 10 of the *Code of Federal Regulations* (CFR), Section 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.

Contrary to the above, on July 7, 2020, the licensee failed to control and maintain constant surveillance of a Troxler Model 3430 series portable moisture density gauge, serial number 23216, containing 4.4 millicuries of cesium-137 and 40 millicuries of americium-241, located at a temporary job site in Romulus, Michigan, which is an unrestricted area.

This is a Severity Level III violation (Section 6.7.c.10(a))

Condition 14 of NRC License No. 21-26666-01, Amendment 7, dated February 7, 2017, states that sealed sources containing licensed material shall not be opened or sources removed from source holders or detached from source rods by the licensee, except as specifically authorized.

Contrary to the above, on July 7, 2020, the licensee detached a sealed source containing licensed material from the source rod without being specifically authorized to do so. Specifically, a licensee technician inadvertently detached a source containing 4.4 millicuries of cesium-137 from the source rod of a Troxler Model 3430 series portable moisture density gauge, serial number 23216.

This is a Severity Level III violation (Section 6.3.c.5).

The NRC has concluded that information regarding the reason for the violations, the corrective actions taken and planned to correct the violations and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed on the docket in Inspection Report No. 03033903/2020001(DNMS) dated October 21, 2020, the letter from licensee dated November 4, 2020, and the letter transmitting this Notice of Violation (Notice). However, you are required to submit a written statement or explanation pursuant to 10 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-20-110)," 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, 2443 Warrenville Road, Suite 210, Lisle, IL 60532 within 30 days of the date of the letter transmitting this Notice.

Enclosure

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or in the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site 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.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 3rd day of December 2020