

EDO Principal Correspondence Control

FROM: DUE: 08/08/07

EDO CONTROL: G20070528

DOC DT: 07/25/07

FINAL REPLY:

William F. Troxler, Jr.,  
Troxler Electronic Laboratories, Inc.

TO:

Chairman Klein

FOR SIGNATURE OF :

\*\* PRI \*\*

CRC NO: 07-0502

Chairman Klein

DESC:

ROUTING:

Moisture-Density Gauges - July 12, 2007 Hearing  
on Dirty Bomb Vulnerabilities

Reyes  
Virgilio  
Kane  
Ash  
Ordaz  
Cyr/Burns  
Zimmerman, NSIR  
Schmidt, OCA  
Kunowski, OEDO  
Rakovan, OEDO

DATE: 07/30/07

ASSIGNED TO:

CONTACT:

FSME

Miller

SPECIAL INSTRUCTIONS OR REMARKS:

# EDATS

Electronic Document and Action Tracking System

**EDATS Number:** SECY-2007-0259

**Initiating Office:** SECY

## General Information

**Assigned To:** FSME

**OEDO Due Date:** 8/8/2007 5:00 PM

**Other Assignees:**

**SECY Due Date:** 8/10/2007 5:00 PM

**Subject:** Moisture-Density Gauges - July 12, 2007 Hearing on Dirty Bomb Vulnerabilities

**Description:**

**CC Routing:** NSIR

**ADAMS Accession Numbers - Incoming:** NONE

**Response/Package:** NONE

## Other Information

**Cross Reference Number:** G20070528, LTR-07-0502

**Staff Initiated:** NO

**Related Task:**

**Recurring Item:** NO

**File Routing:** EDATS

**Agency Lesson Learned:** NO

## Process Information

**Action Type:** Letter

**Priority:** Medium

**Signature Level:** Chairman Klein

**Sensitivity:** None

**Urgency:** NO

**OEDO Concurrence:** YES

**OCM Concurrence:** NO

**OCA Concurrence:** NO

**Special Instructions:**

## Document Information

**Originator Name:** William F. Troxler, Jr.

**Date of Incoming:** 7/25/2007

**Originating Organization:** Troxler Electronic Laboratories, Inc.

**Document Received by SECY Date:** 7/30/2007

**Addressee:** Chairman Klein

**Date Response Requested by Originator:** NONE

**Incoming Task Received:** Letter



July 25, 2007

The Honorable Dale E. Klein  
Chairman, U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
MS O16C1

Dear Chairman Klein,

Troxler Electronic Laboratories, Inc is the largest and most recognized manufacturer of nuclear surface moisture-density gauges. We attended the hearing on July 12, 2007 of the Senate Committee on Homeland Security and Governmental Affairs, Permanent Subcommittee on Investigations. For your information, we have sent the attached letter to the Subcommittee to put our story on record.

The hearing highlighted a number of issues that I believe can be resolved through improved communications between the regulator (NRC and Agreement States) and moisture-density gauge manufacturers and distributors. As a first step, on Monday July 16 we met with North Carolina Radiation Protection Division personnel to begin exploring ideas we have on how to address some of the issues raised by the GAO investigation. As you may know, Troxler manufactures and distributes gauges under a North Carolina Agreement State license. We both believe that these suggestions have the potential to address the short term need for added security and accountability within the licensing process and ownership of portable nuclear gauges. I have listed some of the very preliminary suggestions in this letter for your consideration. One of my concerns with a requirement for an NRC visit to any and all applicants for a license is that the cost of obtaining a license will increase, thus increasing the cost of owning a portable nuclear gauge. Licensing and training costs are already an issue within the industry.

#### Verification of Potential Licensees

This category can be divided up into known and unknown applicants. In situations where the application lists Troxler gauges, the NRC can email the application or send the necessary information for us to qualify the applicant. We can advise what we know about the applicant; such as if they are a current customer, types of equipment purchased from Troxler, location of headquarters and branches, etc. If the applicant is a new customer, we will advise what we know and the NRC can decide what additional information they need to obtain. Most likely, if the license lists Troxler equipment then our direct sales force has visited the customer's location and we can supply that verification to the NRC. At that point the NRC can determine if a site visit is necessary.

#### **Troxler Electronic Laboratories, Inc.**

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07 JUL 25 AM 11:35  
COMMUNICATIONS SECTION

### Falsification of License after Issue

The supplier is currently required to verify the license prior to shipment by obtaining the information from the licensee. The potential for falsification exists because the information comes from the licensee instead of from the NRC or Agreement State.

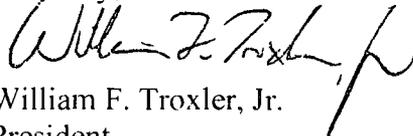
1. One method discussed with North Carolina is for the licensing agency to send Troxler an electronically scanned copy of any license that references Troxler equipment at the time the license is issued or amended. This will give Troxler the capability of comparing the licensee supplied information with an official copy from the State. This same idea would work with the NRC in the short term until such time as the secure database is available for manufacturer access. From an NRC manpower standpoint, the scanning and emailing of the license can be just one step added into the license process.
2. A different short-term approach could be for the manufacturer to email to the NRC or Agreement State critical license information referenced by license number that is provided by a customer, or for the manufacturer to scan and email the supplied license in total. The NRC or Agreement State would then have the ability to review and if a problem is uncovered, to contact the licensee and alert the manufacturer.

### Knowledge of quantity obtained from a license

As a manufacturer, we are required to verify a license before shipping a product containing radioactivity. One issue from the hearing was the concern that a licensee could use the same license with different manufacturers to obtain more gauges than the license allows. It is true that we do not have visibility of any prior purchases on a license, but rely on the licensee to self govern their actions. A short term method to address this issue is to use option 2 above to allow the licensing agency to monitor how often a license is used. Otherwise the manufacturer can supply certain information to the licensing agency by email. The NRC then has the opportunity to notice if a license is being overused and inquire of the manufacturer for details, or take corrective actions such as visiting or notifying the licensee of a required amendment. When the NRC has their database online, then perhaps the manufacturer can access a secured web site to supply needed data. The NRC or agreement state could then compile and receive alerts electronically.

We are continuing to meet with our North Carolina Agreement State licensing folks to brainstorm ideas and put something into practice as soon as possible. I would welcome the opportunity to discuss these and other ideas with you.

Sincerely,



William F. Troxler, Jr.  
President

cc: Commissioner Edward McGaffigan, Jr.

COPY

July 20, 2007

The Honorable Carl Levin  
Chairman, Permanent Subcommittee on Investigations  
Committee on Homeland Security and Governmental Affairs  
United States Senate  
Washington, D.C. 20510

Dear Chairman Levin,

Troxler Electronic Laboratories, Inc. is a small family-owned business located in the Research Triangle Park, North Carolina, and the largest and most recognized manufacturer of surface moisture-density gauges. We have been in business for almost 50 years inventing, designing and manufacturing technology equipment that incorporates radioactive sources for use in business and industry. Our equipment provides real solutions for difficult problems such as: measurements for agricultural research to improve crop yields, arid and semi arid crop studies; measurements of snow-cap melt rate to determine future water availability; measurement of roof leaks; measurement of soil moisture and density; and measurement of the compaction of highway materials.

As the Chairman and President of Troxler Electronic Laboratories, I have followed with interest the July 12, 2007 hearings entitled "Dirty Bomb Vulnerabilities: Fake Companies, Fake Licenses, Real Consequences." It is unclear why the GAO investigators decided not to include mention of Troxler's actions with respect to their investigation, and as such we request that our comments contained herein be included in the official record to correct the inaccuracies of the current information.

It should be understood that Troxler was never contacted directly by the GAO investigators and asked for a quote. Instead, the investigators contacted by fax a very small, husband and wife run service company and requested "written confirmation... that you can provide us with five (5) Troxler model 3440-12" nuclear gauges for delivery in August 2007." They go on to say that this is required to confirm a forthcoming bid, and that they also would like the same information "for twenty five (25) of the same Troxler model 3440-12" gauges for the same bid process." Because this company was not a distributor of new Troxler gauges, the request was forwarded to Troxler.

Troxler viewed this request as unconventional and attempted to contact the company, Fairfax Surveys, Inc., to establish a relationship and confirm the need. The investigators did eventually return our salesman's call and upon due diligence performed by our company, we informed them Troxler would NOT accept their request and declined to quote in writing or otherwise.

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On the morning of July 12, 2007, Troxler's Regional Manager attended your subcommittee hearing. Assertions were made that "two suppliers from the industry" had agreed to provide products. In actuality, only one manufacturer and a distributor for that same manufacturer had potentially agreed to supply product to the Fairfax Surveys, Inc. Of the four moisture-density gauge manufacturers, it appears that the GAO contacted two. While one may have agreed it could supply the product, the other manufacturer, Troxler (the largest), uncovered the fake company and did NOT agree to supply product. We strongly urge that the subcommittee not make industry determinations based on such a limited sample as reported by the GAO.

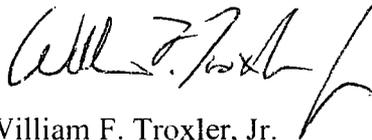
It is also our firm belief that had the process been allowed to play out to the point of an actual order, the manufacturer/supplier involved in their normal course of business would have discovered that they were dealing with a fake company prior to delivery of any product.

Troxler Electronic Laboratories has always placed utmost importance on the safety of our employees, users of our product, and the general public. Our long history of cooperation with the NRC and the Agreement States demonstrates a company that does what is right. While in this instance Troxler's process of due diligence and verification worked perfectly, all processes can be improved. Within hours of the adjournment of your subcommittee hearing, as a leader in this industry and the largest supplier of this type of equipment, we were in contact with our regulatory authorities offering our assistance and ideas to address the issues of concern that were identified.

Thank you for giving me the opportunity to present my remarks.

I respectfully request that this letter be entered into the permanent record of the July 12, 2007 Hearing of the Permanent Subcommittee on Investigations, Senate Committee on Homeland Security and Governmental Affairs. I would be glad to discuss this matter with you and am available to answer any questions you may have.

Sincerely,



William F. Troxler, Jr.  
Chairman and President

Attachment: As stated

cc: Senator Norm Coleman  
Ranking Minority Member  
Permanent Subcommittee on Investigations

## **The Need for Nuclear Surface Moisture-Density Gauges**

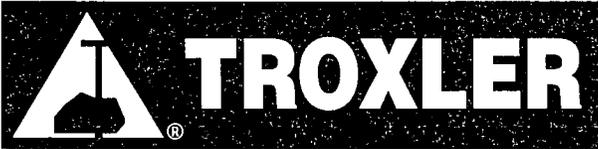
On behalf of the construction-related testing industry, Troxler believes it is important for the Subcommittee to understand the need for the nuclear surface moisture-density gauge. Before a road is built, it is designed to withstand the expected traffic type and volume. Key to this design is the moisture content and density (or compaction) of both the sub-base (the soil and stone mixture beneath the asphalt pavement) and the wear surface (the asphalt pavement layer.) The density parameter is so important that it is a major component of the "pay factor determination" for the road construction industry. If the compaction of both the sub-base and pavement layers is inadequate, then potholes and broken pavement can result. Working in Washington, you are undoubtedly very familiar with the trouble potholes and broken pavements create for commuters and businesses.

The nuclear moisture-density gauge is used to measure both the density and moisture of pavement sub-base and the density of the asphalt wear surface. When working on the sub-base, both a density determination *and* a moisture determination can be made quickly and accurately with a nuclear gauge. Both quantities are required to determine whether the optimum compaction has been reached. Older, alternate measurement techniques are more laborious and time-consuming, requiring digging out a sample for weighing and oven drying, and then filling the hole with calibrated sand to determine the volume before calculating the density.

When paving the wearing surface, the testing agency has a choice of either drilling multiple six-inch diameter cores from the pavement and sending them to a laboratory for density determination, or using a nuclear moisture-density gauge for non-destructive and nearly instantaneous density readings on the job site. The gauge can determine the density *while the asphalt is still hot*. If the nuclear gauge tests indicate that the pavement needs additional compaction, that task can be accomplished before the pavement cools. If one relies on drilled cores, however, it is too late for any remedial action, and the costly steps of road closure, material removal, and re-paving may have to be undertaken.

Troxler also manufactures and sells non-nuclear pavement testers that base density readings on the electrical properties of the asphalt pavement, so we are unbiased in our assessments and comparisons of different technologies. Of non-destructive methods, the nuclear moisture-density gauge is still the best, most accurate method to measure density and moisture of pavement materials. The nuclear method measures the actual density and water content of the material under test rather than the peripheral electrical properties of the material. In addition, Troxler sells substantially more nuclear gauges than non-nuclear devices, indicative of the preference of the contractors and testing agencies whose livelihoods depend on the results of these tests and measurements.

By using non-destructive nuclear gauges, more intensive, accurate, and representative testing can be conducted in a shorter period of time, thereby improving the quality control of roads and opening them faster. The alternative would be fewer tests and a correspondingly higher likelihood of pavement failure, or longer construction times. It is conceivable that a greater percentage of the highway funds would be used for maintenance and repair, and less towards the building of new infrastructure capacity resulting in congestion of our transportation system.



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