

ENCLOSURE 9
INSPECTION RECORD

Region I Inspection Report No. 2004-001

License No. 45-23031-01

Docket No. 030-20195

Licensee (Name and Address): **C.T.I. Consultants, Inc.**
27 Industrial Drive, Suite 1
Ruckersville, VA 22968

Location (Authorized Site) Being Inspected: **4936 Southpoint Parkway**
Fredericksburg, VA 22407

Licensee Contact: Stephen Ripplinger Telephone No. (434) 985-1975

Priority: 5 Program Code: 03121

Date of Last Inspection: November 20, 2003

Date of This Inspection: September 23 and subsequent telephone and document reviews through October 26, 2004.

Type of Inspection: () Initial () Announced (X) Unannounced
() Routine () Special

Next Inspection Date: October 2005 () Normal (X) Reduced

Justification for reducing the routine inspection interval:

Prior NOV on last inspection. Reduce interval to ensure adequacy of corrective actions company wide.

Summary of Findings and Actions:

- () No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
- () Non-cited violations (NCVs)
- () Violation(s), Form 591 issued
- (X) Violation(s), regional letter issued
- () Followup on previous violations

Inspector(s) Andy Miller
(Name(s))
/RA/
(Signature(s))

Date 11/4/04

Approved John Kinneman
(Name)
/RA/
(Signature)

Date 11/17/04

PART I-LICENSE, INSPECTION, INCIDENT/EVENT, AND ENFORCEMENT HISTORY

1. AMENDMENTS AND PROGRAM CHANGES:
(License amendments issued since last inspection, or program changes noted in the license)

<u>AMENDMENT #</u>	<u>DATE</u>	<u>SUBJECT</u>
14	10/7/04	Renewal

2. INSPECTION AND ENFORCEMENT HISTORY:
(Unresolved issues; previous and repeat violations; Confirmatory Action Letters; and orders)

November 19, 2003 - NOV \$3000 CP (ML040630081)

February 12, 2003 - Clear 591 (ML030560591)

June 7-8 2001 - NOV, PDEC and a \$3000 CP (ML022050086)

3. INCIDENT/EVENT HISTORY:
(List any incidents, or events reported to NRC since the last inspection. Citing "None" indicates that regional event logs, event files, and the licensing file have no evidence of any incidents or events since the last inspection.)

None.

PART II - INSPECTION DOCUMENTATION

1. ORGANIZATION AND SCOPE OF PROGRAM:
(Management organizational structure; authorized locations of use, including field offices and temporary job sites; type, quantity, and frequency of material use; staff size; delegation of authority)

The field office in Fredericksburg, VA was inspected. The licensee possessed seven portable gauges in a secured storage area inside the facility. Gauges are dispatched daily to local job sites during construction season. All gauges were returned to the storage area at the end of the work day. On the day of the inspection, three of the gauges were dispatched to temporary job sites. The field office RSO was not available during the inspection.

Gauge observed at the facility were the following:

<u>Licensee #</u>	<u>Serial #</u>	<u>Manufacturer</u>	<u>Model</u>
34	31989	Troxler	3430
35	32245	Troxler	3430
39	7971	Troxler	3411B
41	5251	Troxler	3411B
42	3855	Humboldt	5001
44	36596	Troxler	3411B
54	4414	Humboldt	5001

2. SCOPE OF INSPECTION:
(Identify the inspection procedure(s) used and focus areas evaluated. If records were reviewed, indicate the type of record and time periods reviewed)

Inspection Procedure(s) Used: **87124**

Focus Areas Evaluated: **02.01 - 02.07**

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:
(Areas surveyed, both restricted and unrestricted, and measurements made; comparison of data with licensee's results and regulations; and instrument type and calibration date)

Areas outside the storage room were measured with a Xetex 335B, NRC Tag No. 073473, that was calibrated on April 4, 2004. All survey meter readings were less than 2 mR/hr.

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

(State the requirement, how and when the licensee violated the requirement, and the licensee's proposed corrective action plan. For NCVs, indicate why the violation was not cited. Attach copies of all licensee documents needed to support violations.)

Two temporary job sites were visited. An untrained technician had been dispatched to a temporary job site with a portable gauge. The technician had not used the gauge when interviewed by the inspector. The technician transported the gauge to the branch office and a qualified gauge technician was dispatched to the job site. Based on discussions with the branch manager, the inspector determined that the individual had been dispatched by mistake by an employee of the company. Copies of dispatch logs and training certificates were provided by the branch manager on October 11, 2004. Based on a review of records, the inspector determined that no untrained gauge users had been dispatched to use gauges prior to the completion of required training.

The following violations were noted:

- A. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189.**

49 CFR 177.817(e) requires, in part, that the driver of a motor vehicle containing hazardous material ensure that the shipping paper is readily available to, and recognizable by, authorities in the event of accident or inspection. Specifically, (i) when the driver is at the vehicle's controls, the shipping paper shall be: (a) within his immediate reach while he is restrained by the lap belt; and (b) either readily visible to a person entering the driver's compartment or in a holder which is mounted to the inside of the door on the driver's side of the vehicle; (ii) when the driver is not at the vehicle's controls, the shipping paper shall be: (a) in a holder which is mounted to the side of the door on the driver's side of the vehicle; or (b) on the driver's seat in the vehicle.

Pursuant to 49 CFR 172.101, radioactive material is classified as a hazardous material.

Contrary to the above, on September 23, 2004, the licensee transported 8 mCi of Cesium-137 and 40 mCi of Am-241, outside the site of usage, as specified on the NRC license, or on a public highway, and the driver of the vehicle did not ensure that the shipping paper was readily available in the driver's compartment, as required. Specifically, the shipping papers were stored in the trunk of the vehicle.

- B. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189.**

49 CFR 172.301(a)(1) requires, in part, that the each person who offers for transport a hazardous material in a non-bulk packaging shall mark the package with the proper shipping name and identification number for the material as shown in 49 CFR 172.101.

Pursuant to 49 CFR 172.101, radioactive material is classified as a hazardous material.

Contrary to the above, on two separate occasions on September 23, 2004, the licensee transported two portable gauges containing cesium-137 and americium-241/beryllium, outside the site of usage, as specified on the NRC license, or on a public highway, and the package was not marked with the proper shipping name and identification number, as required. Specifically, one package transported to a temporary job site in Fredericksburg, VA had no required marking and one package transported to a field office in Richmond, VA had no required marking.

- C. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189.**

49 CFR 172.202(a)(1) requires in part, with exceptions not applicable here, that the shipping description of a hazardous material on the shipping paper include the proper shipping name prescribed for the material in 172.101

Pursuant to 49 CFR 172.101, radioactive material is classified as hazardous material.

Contrary to the above, on September 23, 2004, the licensee transported a portable gauge containing cesium-137 and americium-241/beryllium, outside the site of usage, as specified on the NRC license, or on a public highway, and the shipping description on the shipping paper that accompanied the shipment was incorrect. Specifically, the package was marked with "Radioactive Material, Type A package, special form, non-fissile or fissile excepted, 7, UN3332", while the shipping papers had a description of "Radioactive material, special form, n.o.s, UN2974."

- D. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189.**

49 CFR 172.403(g) requires, in part, that each package of radioactive material must be labeled by legible printing. Further, 49 CFR 172.407(a) requires, in part, that each label must be durable, weather resistant, and able to withstand without deterioration, a 30-day exposure to conditions incident to transportation.

Contrary to the above, on September 23, 2004, the licensee transported outside the confines of its facility, a portable gauge containing cesium-137 and americium-241/beryllium and failed to ensure the packages were labeled in compliance with the DOT requirements. Specifically, one package bore markings that were not durable and legible.

- E. 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 170 through 189.**

49 CFR 172.403 requires, in part, with exceptions not applicable here, that each package of radioactive material be labeled, as appropriate, with two RADIOACTIVE WHITE-I, RADIOACTIVE YELLOW-II, or RADIOACTIVE YELLOW-III labels on opposite sides of the package. The contents, activity, and transport index must be entered in the blank spaces on the label using a legible and durable, weather resistant means. The contents entered on the label must include the name or abbreviation (e.g., ⁹⁹Mo) of the radionuclides as taken from the listing in 49 CFR 173.435, or for mixtures of radionuclides, those nuclides determined in accordance with the provisions of 49 CFR 173.433(f), with consideration of space available on the label. The activity must be expressed in terms of the appropriate SI units (e.g., Becquerel, Terabecquerel etc...), or in terms of appropriate SI units followed by customary units (e.g., curies, millicuries, or microcuries).

Contrary to the above, on September 23, 2004, the licensee transported outside the confines of its facility, a portable gauge containing cesium-137 and americium-241/beryllium and failed to ensure the packages were labeled in compliance with the DOT requirements. Specifically, one transportation package was not labeled with two RADIOACTIVE YELLOW-II labels.

- F. License Condition 14.A. of NRC License No. 45-23031-01 requires that sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.

Contrary to the above, on two occasions, the licensee had tested sealed sources at intervals that exceeded six months. Specifically, the licensee leak tested sealed sources on December 30, 2003 and then on July 12, 2004, a period that exceeded six months. Further, the licensee leak tested sources on January 21, 2002 and then on September 6, 2002, a period that exceeded six months.

- G. 10 CFR 20.1902(e) requires that the licensee post each area or room in which certain amounts of licensed material, specified in §20.1902(e), are used or stored, with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL(S)" or "DANGER, RADIOACTIVE MATERIAL(S)."

Contrary to the above, on September 23, 2004, the gauge storage room, an area or room in which approximately 40 mCi of cesium-137 and approximately 160 mCi of americium-241/beryllium was stored, was not posted with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL(S)" or "DANGER, RADIOACTIVE MATERIAL(S)." Specifically, the room was posted with a DOT RADIOACTIVE YELLOW-II label.

The branch manager committed to obtaining replacement labels and markings for DOT shipping cases. Based on conversations with the branch manager, it was determined that the untrained gauge user observed in the field had completed required training before the end of the inspection.

5. PERSONNEL CONTACTED:

(Identify licensee personnel contacted during the inspection, including those individuals contacted by telephone.)

Use the following identification symbols:

- # Individual(s) present at entrance meeting
- * Individual(s) present at exit meeting

*Stephen Ripplinger, RSO - by telephone on October 26, 2004
#Dennis Dunnington, branch manager
Tom Whitlow, gauge technician
Ken Rogers, gauge technician
Badger Garner, gauge technician