



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

August 9, 2007

Docket No. 99990001

John Toth
Owner
Kantner Iron & Steel, Inc.
365 Bassett Road
Hooversville, PA 15936

SUBJECT: INSPECTION 99990001/2007014, KANTNER IRON & STEEL, INC., SCRAP
YARD, KANTNER, PENNSYLVANIA

Dear Mr. Toth:

On May 25, 2007, Kathy Modes of this office conducted a safety inspection at the scrap yard, located at the intersection of Routes 30 and 403 in Kantner, Pennsylvania. The inspection focused on the fixed gauge you had in your possession as a result of one of your vendors bringing it to your scrap yard. The inspection consisted of observations by the inspector, interviews with you, your health physics consultant, representatives of the Pennsylvania Department of Environmental Protection and a representative of the Conference of Radiation Control Program Directors (CRCPD), and a selected examination of your consultant's written report. Additional information provided by CRCPD on July 11, 2007 was also examined as part of the inspection. The findings of the inspection were discussed with you on July 23, 2007. The enclosed report presents the results of this inspection.

Within the scope of this inspection, no violations were identified.

Current NRC regulations are included on the NRC's website at www.nrc.gov; select **Nuclear Materials; Medical, Academic, and Industrial Uses of Nuclear Material**; then **Regulations, Guidance, and Communications**. The current NRC Enforcement Policy is included on the NRC's website at www.nrc.gov; select **About NRC; Organization & Functions; Office of Enforcement; About Enforcement**; then **Enforcement Policy**. You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 7:00 a.m. to 8:00 p.m. EST, Monday through Friday (except Federal holidays).

J. Toth
Kantner Iron & Steel, Inc.

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No reply to this letter is required. Please contact Kathy Modes at (610) 337-5251 if you have any questions regarding this matter.

Sincerely,

Original signed by Randolph C. Ragland, Jr.

Marie Miller, Chief
Security and Industrial Branch
Division of Nuclear Materials Safety

Enclosure:
Inspection Report No. 99990001/2007014

cc:
Commonwealth of Pennsylvania

J. Toth
Kantner Iron & Steel, Inc.

2

No reply to this letter is required. Please contact Kathy Modes at (610) 337-5251 if you have any questions regarding this matter.

Sincerely,

Original signed by Randolph C. Ragland, Jr.

Marie Miller, Chief
Security and Industrial Branch
Division of Nuclear Materials Safety

Enclosure:
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cc:
Commonwealth of Pennsylvania

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SUNSI Review Complete: KModes

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DATE	7/23/2007		07/23/07				

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 99990001/2007014
Docket No. 99990001
Company: Kantner Iron & Steel, Inc.
Address: 365 Bassett Road
Hooversville, PA 15936
Location Inspected: Scrap yard
Intersection of Routes 30 and 403
Kantner, PA 15548
Inspection Dates: May 25, 2007
Additional Information
Received: July 11, 2007

Inspector:	/RA/	07/23/07
	_____ Kathy Dolce Modes Health Physicist	_____ date

Approved By:	/RA/	08/08/07
	_____ Marie Miller, Chief Materials Security and Industrial Branch Division of Nuclear Materials Safety	_____ date

EXECUTIVE SUMMARY

Kantner Iron & Steel, Inc.
NRC Inspection Report No. 99990001/2007014

On March 14, 2007, a truck delivering scrap metal to a steel mill in Koppel, Pennsylvania was rejected because the scrap metal load contained a radioactive source. The load was returned to the originating scrap yard in Kantner, Pennsylvania. The owner of the radioactive source could not be located. Following the protocol of the NRC's orphan source recovery program and the guidance contained in a cooperative agreement with the Conference of Radiation Control Program Directors, the source was safely transferred to an authorized recipient. The attached inspection report provides details about the discovery, storage and disposition of the orphan source. No violations or safety concerns were identified.

REPORT DETAILS

I. March 14, 2007 Event: Fixed Gauge Found in Public Domain

a. Inspection Scope

Review the circumstances that led to the discovery of the fixed gauge and its ultimate disposition.

b. Observations and Findings

On March 14, 2007, a truck delivering scrap metal from the Kantner Iron and Steel scrap yard in Kantner, Pennsylvania to the Koppel Steel plant in Koppel, Pennsylvania was rejected because the scrap metal load contained a radioactive source. The Exploranium detectors at the Koppel, Pennsylvania site alarmed when the truck passed by them indicating the presence of radiation. Inspectors from the Pennsylvania Department of Environmental Protection (PADEP) responded to a call from Koppel Steel reporting the alarm. A PADEP representative reviewed the Exploranium printout and determined the source to be cesium-137 (Cs-137). The truck, with its original load, returned to the Kantner Iron and Steel scrap yard in Kantner, Pennsylvania. The owner of the scrap yard contacted a local health physics consultant to perform a survey and leak test, verify the isotope and activity, identify the manufacturer, model and serial number of the device, ensure proper shielding, and place the device in secure storage.

On March 15, 2007, the consultant arrived at the scrap yard and noted that the label on the device indicated that it contained 200 millicuries of Cs-137 as of June 1977. Based on Cs-137's half-life of 30 years, the current activity is approximately 100 millicuries. The leak test indicated that the source was not leaking. The consultant determined the device to be a fixed gauge manufactured by Texas Nuclear, Model No. 5191 (serial number B927), a company no longer operating under that name. This particular model of fixed gauge does not have a shutter. A radiation survey at the exit port indicated 400mR/hr at the surface. The consultant used lead shielding to cover the exit port and reduced the dose rate at the surface of the shielding to 25 mR/hr and to 2 mR/hr at 30 centimeters. The consultant placed the device along with its lead shielding in a drum which was placed inside a locked steel container. The owner of the scrap yard retained the key to the lock on the container.

Based on a review of the Sealed Source and Device Registry, Texas Nuclear was acquired by TN Technologies who later was acquired by ThermoMeasure Tech, a current valid company in Texas. A search of the Sealed Source and Device Registry identified two registrations for a Model 5191: TX-572-D-103-U and TX-634-D-105-B.

The scrap yard's health physics consultant contacted ThermoMeasure Tech in order to try and locate the original owner of this device. Based on sales records, this device was sold as generally licensed material to a company by the name of RAPCO, Inc. of Kingsport, Tennessee. The NRC attempted to locate this company by an Internet search and by contacting the Tennessee Agreement State personnel. There were no records of a company, by that name, working in area that would require a fixed gauge.

As a consequence the Cs-137 became an orphaned source. The term "orphan source" generally refers to a sealed source of radioactive material contained in a small volume – but not radioactively contaminated soils and bulk metals – in any one or more of the following conditions:

- * In an uncontrolled condition that requires removal to protect public health and safety from a radiological threat; or
- * Controlled or uncontrolled, but for which a responsible party cannot be readily identified; or
- * Controlled, but the material's continued security cannot be assured. If held by a licensee, the licensee has few or no options for, or is incapable of providing for, the safe disposition of the material; or
- * In the possession of a person, not licensed to possess the material, who did not seek to possess the material; or
- * In the possession of a State radiological protection program for the sole purpose of mitigating a radiological threat because the orphan source is in one of the conditions described in one of the first four bullets and for which the State does not have a means to provide for the material's appropriate disposition.

The Cs-137 orphaned source was in a controlled environment, but the responsible party could not be identified. Kantner Iron and Steel scrap yard in Kantner, Pennsylvania has been unable to determine the vendor that delivered the Cs-137 source to the scrap yard. The owner of the scrap yard indicated that he has approximately 70-80 routine vendors that bring in scrap on a regular basis. The vendor would enter the yard and dump their load anywhere. Vendors use roll-off boxes, pickup trucks, and one ton dump trucks to transport their scrap metal to the scrap yard. Therefore it was indiscernible as to who brought in which load. The owner of the scrap yard indicated that western Pennsylvania has many abandoned mines and some of his vendors have been known to bring metal from these sites to his scrap yard.

Realizing the complexities in this case, Kantner Iron and Steel scrap yard subsequently purchased and installed Ludlum detectors and has all vendors now drive in between the Ludlum detectors to minimize the likely hood of radioactive material entering the scrap yard. This detection system cost the Kantner Iron and Steel scrap yard approximately \$60,000 and was operational on May 23, 2007.

On May 25, 2007, a NRC Region I inspector, accompanied by a PADEP representative, visited the scrap yard to ensure that the device was properly secured and to review the above details with the scrap yard owner.

Because the device is considered an orphaned source, it is eligible for the orphan source recovery program managed by the Conference of Radiation Control Program Directors (CRCPD), a group of State radiation protection officials. The NRC has a cooperative agreement with CRCPD regarding their Orphan Radioactive Material Disposition Program. The cooperative agreement provides a working relationship between the NRC and CRCPD where the NRC provides the funding to the CRCPD for the safe disposition of unwanted orphaned radioactive materials. CRCPD finds a company that is willing to accept the source and works with brokers to ensure safe and proper transport of the source. This cooperative agreement ensures the needed support for a national program safely dealing with orphaned or unwanted radioactive materials. Over the last ten years orphaned sources have been found in measuring and controlling devices that were improperly disposed as scrap metal and taken to metal recyclers. Radioactive material used with gauges in industrial processes, and in road and building construction, found by the side of a road or near a river, have also caused authorities difficulties. This is why the orphan source program was developed and this case is an example of how this program has been effective in the source recovery operation.

CRCPD was able to negotiate a broker to package the source for transport and was able to find a company that was willing to accept the source. Bids were reviewed and accepted. On July 6, 2007 the source was shipped to an authorized recipient. On July 10, 2007, the source was received by the end recipient. A material transfer report was received by the NRC on July 11, 2007.

c. Conclusions

Radiation detectors at a steel mill alarmed indicating the presence of radioactive material in the back of a dump truck. Had that load of scrap metal not been scanned, it would have contaminated the steel mill and would have been extremely costly to cleanup. Personnel responded to the alarms, engaged the appropriate agencies, identified the radioactive material, secured the radioactive material in safe storage, and worked together to properly disposition the radioactive material.

PARTIAL LIST OF PERSONS CONTACTED

May 18, 2007 via telephone:

Todd Mobley, Director, Applied Health Physics

May 25, 2007:

John Toth, Owner, Kantner Iron & Steel

Dwight Shearer, Pennsylvania Department of Environmental Protection

May-June 2007 via telephone:

Terry Devine, CRCPD