



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

June 14, 2005

Docket No. 03036239

License No. 37-30804-02

Luke Trauger  
Irradiation Services Manager  
CFC Logistics  
4000 AM Drive  
Quakertown, PA 18951

SUBJECT: INSPECTION 03036239/2005002, CFC LOGISTICS, QUAKERTOWN,  
PENNSYLVANIA SITE

Dear Mr. Trauger:

On May 17, 18, and June 10, 2005, Judith A. Joustra of this office conducted a safety inspection at the above address of activities authorized by the above listed NRC license. The inspection was limited to a review of circumstances surrounding the removal of cobalt-60 sources from your facility. The findings of the inspection were discussed with you at the conclusion of the inspection. The enclosed report presents the results of this inspection.

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

Current NRC regulations and the General Policy and Procedure for NRC Enforcement Actions are available at the NRC web site at <http://www.nrc.gov/materials/miau/mat-toolkits.html> and <http://www.nrc.gov/what-we-do/regulatory/enforcement> or by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 9:00 p.m. EST, Monday through Friday (except Federal holidays).

No reply to this letter is required. Your cooperation with us is appreciated.

Sincerely,

***Original signed by John D. Kinneman***

John D. Kinneman, Chief  
Security and Industrial Branch  
Division of Nuclear Materials Safety

Enclosure:  
Inspection Report No. 03036239/2005002

cc:  
Commonwealth of Pennsylvania

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DATE	06/14/05		06/14/05				

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection No. 03036239/2005002  
Docket No. 03036239  
License No. 37-30804-02  
Licensee: CFC Logistics  
Location: 4000 AM Drive  
Quakertown, PA 18951  
Inspection Dates: May 17 & 18 and June 10, 2005

Inspector: \_\_\_\_\_ /RA/ \_\_\_\_\_ 6/14/05 \_\_\_\_\_  
Judith A. Joustra date  
Senior Health Physicist

Approved By: \_\_\_\_\_ /RA/ \_\_\_\_\_ 6/14/05 \_\_\_\_\_  
John D. Kinneman, Chief date  
Security and Industrial Branch  
Division of Nuclear Materials Safety

## **EXECUTIVE SUMMARY**

CFC Logistics  
NRC Inspection Report No. 03036239/2005002

An on site inspection was conducted on May 17, 18 and June 10, 2005, at the licensee's facility located in Quakertown, Pennsylvania. The inspection consisted of a review of the circumstances surrounding the removal of approximately 938,300 curies of cobalt-60 in the form of sealed sources from the licensee's irradiator source plenum and storage pool. The inspection included observations of the removal of the sources from the plenum, transportation, transfer of control, and the performance of radiation surveys. The licensee contracted with MDS Nordion to remove, package and transport the sealed sources to its facility in Canada. No violations were identified.

## REPORT DETAILS

### **I. Organization and Scope of the Program**

a. Inspection Scope

The licensee's program for the removal of 82 cobalt-60 sealed sources was reviewed.

b. Observations and Findings

The licensee contracted with MDS Nordion to remove all the sources from the plenum and subsequently from the storage pool. The entire removal process was conducted under MDS Nordion's NRC license, License No. 54-28275-01. CFC's Radiation Safety Officer was on site during the removal process as well as a representative of the irradiator manufacturer. By May 18, 2005, the entire inventory of cobalt-60 sources had been removed from the storage pool and loaded into shipping casks. On May 19, 2005, the sources were transported to the MDS Nordion in Canada.

c. Conclusions

No safety significant issues or violations were identified.

### **II. Facilities and Equipment**

a. Inspection Scope

The licensee's facilities and equipment were used to irradiate product and remove radioactive sources were reviewed.

b. Observations and Findings

The licensee was authorized to possess a total of 1,000,000 curies of cobalt-60 to irradiate materials other than explosives, flammables, or corrosives. The licensee informed the NRC in a letter dated April 21, 2005, of their intent to discontinue irradiation of product. The last shipment of cobalt-60 received by the licensee was November 11, 2004.

The inspector discussed with the licensee's RSO the disposition of the handling tools used to remove the sources from the irradiator. The RSO indicated that the handling tools will be returned to the original manufacturer, CHL Systems. It was noted during the inspection that the licensee had removed the product carriers (bells) and the plenum, and drained the pool water. The pool water had been drained after the licensee received water sample analysis results from MDS Nordion, and air and water filter sample analysis from RSO, Inc. which indicated no detectable activity.

c. Conclusions

No safety significant issues or violations were identified.

### **III. Material Accountability and Transfer**

a. Inspection Scope

The process followed for accountability and transfer of the cobalt-60 were reviewed.

b. Observations and Findings

The licensee verified source inventory by using two separate documents, the Gray\*Star, Inc. source loading pattern, which identified the location of each source in the source plenum, and the Reviss inventory documents from both source loadings, which identified the serial number of each source. MDS Nordion also documented the placement of each source in its respective F168 Source Carrier prior to placing the carrier into a shipping cask. All cobalt-60 in the licensee's possession was accounted for prior to shipment. A total of 5 F168 shipping casks were used, and two tractor trailer trucks were used to transport the casks containing the cobalt-60 to the MDS Nordion facility.

c. Conclusions

No safety significant issues or violations were identified.

### **IV. Radiation Surveys**

a. Inspection Scope

Procedures for conducting radiation surveys during the removal of the cobalt-60 were reviewed. Radiation surveys were also performed by the inspector.

b. Observations and Findings

The inspector observed surveys being performed during the cobalt-60 source removal process. A Bicron 2000 survey was available during the process and was used to survey each empty source module removed from the storage pool. In addition, a wipe sample was obtained from each source module when removed from the storage pool. Each wipe was also counted with another Bicron 2000 survey meter with a "pancake probe" attached. The wipe tests did not reveal any removable contamination.

The inspector observed MDS Nordion obtain three water samples from the storage pool for analysis at their facility in Canada. Samples were taken from different depths within the storage pool, the top of the pool, the middle of the pool, and at the bottom of the pool. In addition, the inspector observed MDS Nordion take an area wipe from the surface of the pool floor for analysis at their facility in Canada. The licensee provided documentation of all survey results to the NRC along with their request to terminate the licensee in a letter dated June 6, 2005.

On May 17 and 18, 2005, the inspector performed area surveys with a Ludlum 14 C survey meter, serial number 23174G, which had been calibrated on December 13, 2004. The inspector surveyed the area above the storage pool during source manipulation, and the area adjacent to the shipping casks containing cobalt-60 sources. The survey meter reading above the storage pool did not exceed 2 mR/hr, and the maximum reading observed at approximately 10 to 12 feet from the shipping casks was 3 mR/hr.

On June 10, 2005, the inspector performed a confirmatory survey of the storage pool, the area adjacent to the storage pool, the route taken on May 19, 2005, while removing the casks containing the cobalt-60 sources to the transport trucks. The survey indicated a maximum reading of 0.04 mR/hr which was consistent with normal background in the area.

c. Conclusions

No safety significant issues or violations were observed.

**V. Compliance with Order issued June 6, 2003**

The inspector discussed with the licensee actions to be taken by the licensee during the source removal process to assure the security of licensed material. Actions proposed by the licensee appeared reasonable, and complied with the Order. The inspector also discussed actions the licensee must take to be relieved from the Order.

**VI. Exit Meeting**

The results of the inspection were discussed with the licensee's RSO at the conclusion of the inspection.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

Jim Wood, President  
Luke Trauger, Irradiation Services Manager, RSO

### CHL Irradiator Manufacturer

Mike White

### MDS Nordion

Sandy Pallister  
George Duncan