

# Process Technology North Jersey

Subsidiary of RTI Inc.

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December 15, 1989

Mr. Tom Thompson  
Nuclear Materials Safety Branch  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pa 19406

Re: License No. 29-13613-02

Dear Mr. Thompson:


Pursuant to our telephone conversation earlier today, I would like to state the following regarding contingencies in the unlikely event that a sealed source is breached during the "R & D" pool clean up:

The "R & D" pool would be isolated from the open pool using a flange cover and gasket. Procedure 9.204 "Accidental Release of Radioactive Materials to a Uncontrolled Area", 9.205 "Leaking Irradiator Source Determination", and 10.104 "Radiological Emergencies" would be utilized. Since Chem-Nuclear's 1-13-3 cask is not licensed for normal form material, and breached source would be isolated in a steel container for disposal at a later date.

If you have any further comments or concerns, please contact either myself or Mr. Paul Shapiro.

Thank you and I look forward to meeting with you on Monday.

Sincerely,

  
John D. Schlecht  
RSO

JDS:jk

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PDR FOIA  
JONES90-334 PDR

129 BORTONS ROAD  
MARLTON, NEW JERSEY 08053  
DECEMBER 23, 1989

PROCESS TECHNOLOGY OF NORTH JERSEY  
ATTN: BOARD OF DIRECTORS  
108 LAKE DENMARK ROAD  
ROCKAWAY, NEW JERSEY 07866

GENTLEMEN:

SUBJECT: INDEPENDENT RADIATION SAFETY AUDIT  
FOURTH QUARTER 1989

The subject report of the audit of activities performed under USNRC byproduct materials license 29-13613-02 is attached. This audit was performed in accordance with condition 20 of the referenced license. The audit took place on two days - October 24 and December 23, 1989 at the Lake Denmark Road facility.

Please feel free to contact me should you have any questions regarding this audit.

Sincerely,  
*M. J. Slobodien*  
Michael J. Slobodien  
CERTIFIED HEALTH PHYSICIST

cc:  
USNRC

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# INDEPENDENT RADIATION SAFETY AUDIT

FOURTH QUARTER 1989

This audit covers the period from October 1, 1989 through December 31, 1989 and was conducted in accordance with condition 20 of USNRC Byproduct Materials License 29-13613-02 Amendment number 28. The audit was performed on two separate dates - October 24 and December 23, 1989. Both on site audits are reflected in this report.

## PERSONS CONTACTED

P. Shapiro, Vice President, Quality  
J. Singleton, Operations Supervisor (Oct. 24, 1989)  
A. Friedrich, Operations Supervisor (Dec. 23, 1989)  
M. Rosa, Authorized Operator  
D. Smith, Authorized Operator  
J. Schlecht, Manager of Plant Operations and RSO

## REVIEW OF ROUTINE OPERATIONS

During both on site visits, operations logs were reviewed. I noted that Mr. Schlecht has implemented the practice of reviewing the operations log and initials the individual pages when he has made his reviews. In my review and based on discussions with the operators, I did not identify any ongoing uncorrected deficiencies with the irradiator systems.

Safety interlock testing has been performed in accordance with condition 22 of the above referenced license. There have been no significant problems associated with the interlocks. One record keeping error was identified. One record dated October 27, 1989 appears in between records dated October 18 and October 19, 1989. The interlock test was performed at 0027 hours. It appears that the time was placed in the date position since on the date of my observation (October 24, 1989), October 27, 1989 had not yet occurred.

## PREVENTATIVE MAINTENANCE

A review of the log books and based on discussions with the Operations Supervisors indicated that preventative maintenance has been performed in accordance with procedure. I noted that all required maintenance in the monthly and annual schedules have been performed as required. I noted that quarterly maintenance items were not completed as of December 23, 1989. This fact was brought to the attention of A. Friedrich at the time of the finding. Eight days remain in which to complete these maintenance items according to the proceduralized schedule.

## REVIEW OF MATERIALS CONCERNS

M. Rosa identified that the contact block used in the start up switch (Square D, Type KA2, Class 9001) experiences

radiation damage after periods of 4 - 5 weeks. He noted that a shield over the switch may reduce the frequency of replacement. I noted this observation to the Manager of Operations.

#### INSTRUMENT CALIBRATION

I observed four instruments available for use. They were one GMSM equipped with a pancake probe, one PIC 6A GMSM/ ion chamber, one GMSM equipped with a side window probe, and one Ludlum ion chamber. All were in current calibration. Batteries in each were in good order

#### SHIPMENT OF RADIOACTIVE MATERIALS

I reviewed the records pertaining to the shipment of 26100 curies of cobalt-60 pencils that had been stored in the "R&D" pool. Records included inventory, radiation and contamination surveys, a proper bill of lading, a truck transport route plan, and state and federal notifications history. No concerns were identified from the records review.

#### REVIEW OF UNUSUAL FILM BADGE RESULT

The film badge of one materials handler for the month of October 1989 indicated a dose of 180 millirem. This is well above the typical monthly dose of less than 10 millirem. An investigation was conducted and documented by the Radiation Safety Officer promptly upon receipt of the dosimetry report from the vendor.

The RSO review identified that the film badge was inadvertently left attached to an outer jacket that was left in the first leg of the cell entry maze while loading and unloading operations were being conducted. The jacket and film badge remained in the cell entry maze during one cycle of operation. The person to whom the badge was assigned was not in the maze during cell operation.

The film badge report indicated an exposure to low to medium energy photons. This is consistent with a badge in the first leg of the maze where any exposure would be by highly scattered radiation from the source rack.

I noted that another indicator that could be checked was the filter pattern on the film. A crisp pattern would be expected as it would indicate an exposure in which the badge was static with respect to the source. A "fuzzy" filter pattern would be indicative of motion during irradiation. Given the circumstances of the exposure, a crisp filter pattern would be expected.

#### CONCLUSION

Operations appear to have been conducted in a manner that is consistent with good radiation safety practice. Discussions with key personnel indicate that the emphasis for work has

been to observe safety first.

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RTI PRODUCTION INDICATOR  
SOURCE UP TIME

DATE	SOURCE UP TIME (HOURS/WEEK)
January 1, 1989	82
April 2, 1989	98
May 28, 1989	108
July 16, 1989	116
August 27, 1989	120
December, 3, 1989	142
January 1, 1990	150

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## RTI CELL KEY SWITCH REPLACEMENT

October 30, 1989

November 17, 1989

December 4, 1989

December 17, 1989

December 31, 1989

January 15, 1990

February 7, 1990