



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

JAN 6 8 1992

MEMORANDUM FOR: Geoffrey Grant, Regional Coordinator/Program Engineer
Office of Executive Director for Operations

FROM: Ronald R. Bellamy, Chief, Nuclear Materials Safety Branch

SUBJECT: BACKGROUND INFORMATION ON PROCESS TECHNOLOGY OF
NORTH JERSEY FOR COMMISSIONER DE PLANQUE.

Enclosed is the background information paper for Commissioner de Planque's visit to
Process Technology of North Jersey on January 13, 1992.

If you have any questions, please contact me on FTS 346-5200.


Ronald R. Bellamy, Chief
Nuclear Materials Safety Branch
Division of Radiation Safety and
Safeguards

Enclosure: As stated

cc w/encls:
Regional Coordinator, EDO
Regional Administrator (Chairman's Package Only)
J. Glenn, NMSS
M. Lamastra, NMSS
R. Cooper, RI
P. Swetland, RI

B/37

**Background Information for Commissioner de Planque's Visit
to the Process Technology of North Jersey Facility of
RTI, Incorporated**

1. **Name and location (street address) of facility -**

Process Technology of North Jersey (PTNJ)
108 Lake Denmark Road
Rockaway, New Jersey 07866

2. **Agenda - Site visit, facility tour and management discussion from
2:00 to 5:00 p.m. on Monday, January 13, 1992.**

3. **Licensee name and organizational structure -**

RTI, Inc. (formerly Radiation Technology Inc.) owns and operates three large irradiator facilities (two in NJ and one in North Carolina).

The PTNJ facility is an operating division of South Jersey Process Technology, Inc. (SJPT), a wholly owned subsidiary of RTI, Inc.

John Scandalios, Chief Executive Officer and President, RTI; President, SJPT

Paul Shapiro, Vice-President; Corporate Radiation Safety Officer (RSO), RTI

John Schlecht, Plant Manager and Plant RSO, PTNJ

4. **Designated licensee contact for visit - Paul Shapiro (201-625-8400)**

5. **Brief description of the licensed activity -**

Facility: Process Technology of North Jersey (PTNJ)

Location: 108 Lake Denmark Road, Rockaway, New Jersey

Docket No.: 030-07022

License No.: 29-13613-02

Type of Facility: Large Service Irradiator, Wet Storage of up to 3.0 Million Curies of Cobalt-60. Primarily used for sterilization of medical and industrial products.

Operational Date: November 1970

Workforce: 1 Plant Manager
1 Operations Manager
4 Operators
12 to 15 Material Handlers

NRC Responsibility: Region I, King of Prussia, Pennsylvania

Thomas T. Martin, Regional Administrator

Malcolm R. Knapp, Director
 Richard W. Cooper II, Deputy Director
 Division of Radiation Safety and Safeguards
 (FTS 346-5283)

Ronald R. Bellamy, Chief
 Nuclear Materials Safety Branch
 (FTS 346-5200)

Paul D. Swetland, Chief
 Industrial Applications Safety Section
 (FTS 346-5102)

NRC Program Office: NMSS/IMAB
 Michael Lamastra, Chief
 Industrial Applications Section
 (FTS 964-3416)

6. **Historical Perspective -**

There has been much NRC concern regarding the safety of activities conducted by this licensee. The inspection and enforcement history reflected systematic disregard of safe operating practices, personnel overexposure to radiation, surreptitious burial/dumping of radioactive waste, and most significantly management deception in representing these issues to NRC representatives. As a result, from 1986 to 1988 NRC and DOJ successfully prosecuted the licensee and several employees including the President. These individuals were removed from licensed activities and the President also served a jail sentence. After Commission level review of the circumstances, the license for this facility was renewed in 1988 for a two year probationary period. The management in place today took over in 1989. There was another escalated enforcement case stemming from NRC's 1989 identification of an incident where safety interlocks were compromised and licensee employees misrepresented the facts to NRC inspectors and investigators. This case was particularly egregious because the licensee clearly should have known better as a result of its previous history. Facility operations following this event and enforcement have significantly improved as evidenced by both NRC inspection and independent quarterly assessment of the operation required by license condition. Following another Commission level review of the licensee's progress, the license was again renewed in 1991 for another two year probationary period. This facility was on the NRC list of problem facilities, and was regularly reviewed as part of the NRC's Senior Management Meeting process, until it was removed from this list in 1991.

The burial/dumping of radioactive materials, as well as other toxic substances, remains an open concern at this facility. This site has been included in the NRC's Site Decommissioning Management Program (SDMP). Some radioactive materials have been excavated and removed from the site. Negotiations continue regarding the completeness of the current site

characterization and the proper value of the site decommissioning fund. Currently \$75,000 have been posted for this purpose. This site as well as the property across the street owned by this company have been designated as an EPA SuperFund site due to the dumping of toxic chemicals and the subsequent contamination of the local ground water. NRC maintains interface with the EPA and the State of New Jersey regarding this program. Ongoing activities include continuing site monitoring and characterization, and establishment of legal responsibility for site remediation. EPA and the State have asserted that the location of buried liquid storage tanks from the previous owner's rocket test facility makes the previous owner, Morton-Thiokol, co-responsible for the EPA site remediation. The matter is in litigation.

7. **Licensing and inspection status -**

The PTNJ license is currently active. There are three outstanding licensing actions for this facility. Two involve the establishment of the proper financial assurance for site decommissioning. The licensee posted a \$75,000 trust for the irradiator facility and contends that the rest of the site (buried/dumped material) has been remediated. NRC has not yet been able to confirm that all material has been removed based on the current submittals. Negotiations continue under the SDMP process. The third open licensing action involves relaxation of license conditions to allow the licensee to change certain procedures without NRC approval and to extend the frequency of quarterly independent assessments to semi-annually. This action is currently being reviewed and will be acted upon following the Spring 1992 NRC inspection of the facility.

The last two NRC inspections of this facility were conducted in December 1990 and May 1991. There were no significant negative findings and the inspectors confirmed the apparent improving trend in the licensee's performance.

8. **Enforcement history (last 2 years;) - Clear**

9. **Current issues -**

Licensee specific issues

The licensee owns an idle irradiator facility separately licensed by NRC in Salem, New Jersey. This facility was conceived with the expectation of moving into the business of food irradiation. The licensee has recently expressed interest in restoring the facility to operational status, perhaps in anticipation to a revival of interest in food irradiation. The licensee must formally announce to NRC their intention to start irradiations at Salem. Such activities would be carefully inspected by NRC Region I.

The former RTI CEO has been released from jail and is now involved in consulting work on irradiator technology with a new company, Alpha Omega Technology (AOT). He has inquired from NRC as to whether his current ban from licensed activity with RTI applies to AOT and whether his ban at RTI could be lifted. NRC's position is that we cannot provide a specific answer in the absence of a formal request, and that his previous performance would be a factor considered in his qualification to conduct or oversee licensed activities. The current RTI management does not

desire to request removal of the current license condition banning previous offenders from licensed activities.

Generic issues for this type of facility

The NRC is nearing completion on a rulemaking (10CFR36) to formalize requirements for large irradiators. This rulemaking will have certain backfitting implications to this licensee. Similarly, the implementation date for the new 10CFR20 requirements (1/93) will impact on this licensee.

Other items of interest

RTI recently reorganized to minimize financial costs associated with the company. Previously, there were three separate, wholly owned subsidiaries of RTI each operating a separate irradiator facility. Under the reorganization, there is only one subsidiary, South Jersey Process Technology Inc., which operates the three facilities as separate operating divisions. Since there was no change in personnel and all assets have before and after been under the RTI name, NRC did not object to the reorganization. Both NRC licenses, however, were amended to reflect RTI as the legal entity responsible for these facilities.

10. State and Federal coordination -

The State of New Jersey has keen interest in this facility because of its SuperFund status. The State, EPA and NRC cooperate in moving toward site remediation. For further details see Appendix D.

11. Public interest in facility -

Interest has been low recently. However, there was considerable interest prior to and during the criminal proceedings.

Appendices

- A. License
- B. Most recent inspection report
- C. Most recent quarterly independent assessment of plant activities
- D. Background information on State of New Jersey coordination

MATERIALS LICENSE

Amendment No. 31

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

1. RTI, Inc.
Process Technology of North Jersey Facility
2. 108 Lake Denmark Road
Rockaway, New Jersey 07866

In accordance with application dated December 23, 1991,
3. License number 29-13613-02 is amended in its entirety to read as follows:

4. Expiration date March 31, 1993

5. Docket or Reference No 030-07022

6. Byproduct, source, and/or special nuclear material

7. Chemical and/or physical form

8. Maximum amount that licensee may possess at any one time under this license

A. Cobalt 60

A. Sealed Sources - as authorized by Condition 12 of this license

A. As specified in Condition 12; not to exceed 3,000,000 curies total activity

B. Cobalt 60

B. Sealed Source

B. 320 curies

C. Strontium 90

C. Sealed Source

C. 30 microcuries

D. Strontium 90

D. Sealed Source

D. 120 millicuries

E. Cobalt 60

E. Contamination in any form

E. 10 millicuries

9. Authorized use

- A. For use in the Radiation Technology Model No. RT-2102-B Irradiator for service irradiation. For storage, inspection of sources, and preparation for transfer in the R&D pool irradiator. Irradiation of material is not authorized in the R&D pool irradiator.
- B. For storage only in the self-contained AMERAY Irradiator (Dwg. AM-1862-1).
- C. For use in instrument calibrations.
- D. and E. For storage only.

CONDITIONS

10. Licensed material shall be used only at the licensee's facility on Lake Denmark Road, Rockaway, New Jersey.
11. A. Licensed material specified in item 6.A. shall be used by, or under the supervision of, individuals who have completed the training and examination described in application dated February 2, 1990 and who have been approved in writing by the Radiation Safety Officer.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

29-13613-02

Docket or Reference number

030-07022

Amendment No. 31

(11. Continued)

CONDITIONS

- B. At least one individual qualified under Condition 11.A: shall be physically present at the authorized place of use whenever licensed material is being used.
- C. Licensed material specified in items 6.B., 6.C., 6.D. and 6.E. shall be used by, or under the supervision of, individuals approved in writing by the Radiation Safety Officer.
- D. The Radiation Safety Officer for this license is John Schlecht.
- E. Neither Martin Welt, Ph.D., William Jouris, nor Thomas Powell shall perform any services for the licensee, as an officer, employee or consultant and the licensee, must comply with the other conditions regarding Dr. Welt described in Item A on pages 2 and 3 of Radiation Technology's July 18, 1986 Answer To Immediately Effective Order Suspending Licenses.

12. The licensee is authorized to use the following sealed sources in the irradiator:

| <u>Manufacturer</u> | <u>Model No.</u> | <u>Maximum Activity per Source (curies)</u> |
|---------------------|---|---|
| AECL | C-188, Types 1, 2, 3 or 4 | 13,000 |
| Neutron Products | 12-S-3, NPI 12-C-3, 10-C-3, 10-S-3, 12-C-3, 11-S-2, 11-C-2, 12-CC-5, 24-CC-5, NPI-77-351 thru NPI-77-358, NPI-77-361 thru NPI-77-364, 353, 752, 853, Model Drawing 200243, Rev. D | 12,000 |
| General Electric | GEP-186, GEPR-183, GE-SR-187 | 12,000 |

- 13. A. The ion exchange resin filter beds shall be monitored as specified in letter dated July 16, 1990. Whenever an apparent increase in radiation levels twice that caused by normal background at the beds is detected, the licensee shall immediately cease operations and determine the cause of the increase.
- B. If the increase is caused by a leaking source, the source shall be removed from the pool and repaired or disposed in accordance with Commission regulations prior to resuming operations. If the increase is caused by another source of radiation or radioactivity, then that cause shall be removed and the pool water decontaminated, if necessary, prior to resuming operations. If the apparent increase was caused by an instrument fault, the fault shall be corrected and the instrument appropriately recalibrated prior to resuming operations.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

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(13. Continued)

CONDITIONS

- C. For each actual increase in radioactivity in pool water causing an increase in radiation levels twice that caused by normal background at the ion exchange resin filter beds, a report shall be filed within 5 days of the increase with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406, describing the results of the determination required by Condition 13.A above, the schedule for removal and disposal of the source of the radioactivity, and the procedures followed or to be followed for the decontamination of the pool water, and the results achieved to date.
14. A. (1) Each sealed source specified in Items 6.B. and 6.D. shall be tested for leakage and/or contamination at intervals not to exceed 6 months. Any source received from another person which is not accompanied by a certificate indicating that a leak test was performed within 6 months before the transfer shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. Any sealed source in storage and not being used need not be tested. However, no sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination. When a sealed source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.
- C. The leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed, within 5 days of the date the leak test result is known, with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

29-13613-02

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030-07022

Amendment No. 31

(Continued)

CONDITIONS

15. After installation of additional Cobalt 60 source(s) greater than the quantity for which a previous radiation survey has been conducted, and prior to initiation of the irradiation program, a radiation survey shall be conducted to determine the maximum radiation levels in each area adjoining the irradiation room. A detailed report in duplicate of the results of the surveys shall be sent to the U. S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406, not later than thirty (30) days following installation of the source(s).
16. Sealed sources containing licensed material shall not be opened by the licensee.
17. The licensee shall conduct a physical inventory every 6 months to account for all sealed sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory.
18. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material".
19. Irradiation and distribution of foods for human consumption shall be in accordance with rules and regulations of the Food and Drug Administration, U.S. Department of Health and Human Services.
20. A. During each three-month period, an individual listed in Condition 20.B. shall visit the facility at least once without prior notice to the staff or management and spend a total of at least eight hours observing operations, auditing compliance with Commission regulations and license conditions and inspecting the condition of equipment important to safe operation of the facility. A written report of the findings during each period shall be prepared and simultaneously submitted to the Board of Directors of RTI, Inc. and the U.S. Nuclear Regulatory Commission, 475 Allendale Road, King of Prussia, Pennsylvania 19406 within five working days following the end of the audit. Within ten working days of the filing of each report the licensee shall provide the Commission, at the above address, and the Board of Directors of RTI, Inc., a written description of any corrective actions in response to the audit findings. Each audit shall include a review of any corrective actions for previous findings.

B. The audits described in Condition 20.A. shall be performed by Michael Slobodien, James Nicolosi, Jerry McAlpin or other individuals who have been approved in writing by the U.S. Nuclear Regulatory Commission.
21. Except as specified in Condition 22, the licensee is authorized to modify the procedures included in Appendix A of application dated February 2, 1990 in accordance with the procedure described in Section 10.2 of that application.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

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030-07022

Amendment No. 31

(Continued)

CONDITIONS

22. The licensee shall follow the written instructions contained in the procedures named in this condition. All changes to these procedures must be approved, prior to implementation, by the U. S. Nuclear Regulatory Commission. A copy of each of these procedures shall be made available to each individual using, or having responsibility for the use of, licensed material.
- a. Procedure 9.100 (REV E) "Auto Run Mode Irradiator Start-up" (included with letter dated July 16, 1990)
 - b. Procedure 9.102 (REV C) "Irradiator Interlock Testing" (included with application dated February 2, 1990)
 - c. Procedure 12.100 (Original) "Preventative Maintenance System" (included with application dated February 2, 1990)
23. This license does not authorize the transfer of licensed material to individuals generally licensed or exempt from licensing.
24. A. The licensee shall not transfer or otherwise release for unrestricted use Areas A, B, C and D described in the licensee's letter dated August 30, 1990, without prior written authorization of the Commission.
- B. The licensee shall notify U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406 immediately, when soil contamination not previously identified is found to exceed the following thresholds:
- (i) 8 picocuries per gram, or
 - (ii) radiation levels one meter above the ground, due to soil contamination, exceed background radiation levels by greater than 10 microrems per hour.
- C. The licensee shall notify U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406 immediately, when any object or artifact contaminated in excess of background radiation levels is uncovered or identified.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

29-13613-02

Docket or Reference number

030-07022

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(Continued)

CONDITIONS

25. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated February 2, 1990
- B. Letter dated July 16, 1990
- C. Letter dated July 25, 1990
- D. Letter dated August 21, 1990
- E. Letter dated August 30, 1990
- F. Letter dated November 2, 1990
- G. Letter dated March 27, 1991

Date DEC 31 1991

For the U.S. Nuclear Regulatory Commission

Original Signed By:

By Francis M. Costello

Nuclear Materials Safety Branch
Region I

King of Prussia, Pennsylvania 19406

JUN 07 1991

Docket No. 030-07022

License No. 29-13613-02

Process Technology of North Jersey
ATTN: Mr. John Scandalios
President
108 Lake Denmark Road
Rockaway, New Jersey 07866

Dear Mr. Scandalios:

Subject: Routine Inspection No. 030-07022/91-001

On May 22, 1991, Francis M. Costello of this office conducted a routine safety inspection at the above address of activities authorized by the above listed NRC license. The inspection was an examination of your licensed activities as they relate to radiation safety and to compliance with the Commission's regulations and the license conditions. The inspection consisted of observations by the inspector, interviews with personnel, and a selective examination of representative records. The findings of the inspection were discussed with you and John Schlecht at the conclusion of the inspection.

Based on discussions at the conclusion of the inspection, we understand that you plan to replace the check source at the entrance to the irradiator cell to ensure an adequate response by the survey meter carried during irradiator cell entries. We further understand that, in accordance with your existing internal procedures, you will develop detailed instruction sheets for the maintenance items included in your Procedure 12.100. We will review these matters during the next inspection.

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

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter will be placed in the Public Document Room. No reply to this letter is required.

Your cooperation with us is appreciated.

Sincerely,

Original Signed By:
Paul D. Swetland

Paul D. Swetland, Chief
Nuclear Materials Safety Section C
Division of Radiation Safety
and Safeguards

MICHAEL J. SLOBODIEN
CERTIFIED HEALTH PHYSICIST

129 BORTON'S ROAD
MARLTON, NEW JERSEY 08053
609 - 767-3455

Board of Directors
PTI, Inc.
108 Lake Denmark Road
Rockaway, New Jersey 07866

12/26/91

Subject: Radiation Safety Audit Fourth Quarter 1991

Gentlemen:

Enclosed herein please find the fourth quarter 1991 radiation safety audit of the facility at Rockaway, New Jersey. This audit has been performed to comply with license condition 20 of USNRC license 29-13613-02.

Please do not hesitate to contact me should you have any questions or comments in this matter.

Sincerely

Michael J. Slobodien
Michael J. Slobodien, CHP

cc: P. Shapiro, RTI
President, RTI
USNRC, Region I

1.0 SUMMARY

A routine independent quarterly audit was performed in compliance with condition 20 of NRC Materials License 29-13613-02, Amendment 30, on December 9 and 19, 1991. The audit was performed during the day shift on December 9 and on the second shift on December 19. No deficiencies were observed in the areas reviewed. Operations activities were taking place during this audit. Significant activities included long dwell irradiations of product. The number of persons working in restricted areas varied from two to five.

2.0 PERSONS CONTACTED

- o John Schlecht, Plant Manager, RSO
- o Robert Keim, Certified Operator
- o Mike Homeiger, Certified Operator
- o Andy Friedrich, Operations Manager
- o John Scandalios, President

3.0 RADIOACTIVE MATERIALS INVENTORY

Radioactive materials inventories were reviewed and found to be up to date. The last full inventory of sealed sources used in the cell irradiator was completed in July 1991.

No deficiencies were noted.

4.0 WATER TREATMENT SYSTEM

The pool water treatment system is referenced in the NRC license and specific actions are discussed in item 14 of PTI letters to the NRC dated July 16 and November 2, 1990.

The July 16, 1990 letter commits to a monthly check of the proper functioning of the water treatment system by making radiation measurements at the resin bed. The acceptance criterion is a radiation level over background of 0.2 mR/hour.

Records demonstrated that the required testing has been performed.

5.0 RADIATION SAFETY AUDITS

I reviewed the radiation safety audit conducted on September 25, 1991. It is noteworthy that the most recent safety and compliance audit resulted in a 100 percent compliance rating. Plant personnel contacted were clearly proud of this accomplishment. The attitudes expressed are indicative of an appropriately high level of concern for safety issues. The committee has concerned itself with the issues raised by the requirements of the new 10 CFR 20 scheduled for implementation on or before January 1, 1993.

6.0 RADIATION SAFETY COMMITTEE MEETINGS

Records of the meetings held on August 23, September 27, October 30, and November 25, 1991 were reviewed. All demonstrated attention by senior most management. I noted that one of the actions to be taken is the use of thermoluminescent dosimetry for plant personnel. This action is appropriate since TLDs have a wider range than does film which has been used for many years. Although the radiation exposures are of a minimal level typically, the TLD does offer the ability to record doses that might arise in accident situations.

7.0 INTERLOCK TESTING

Records indicate timely performance of interlock testing as required by plant procedures. No deficiencies were noted in the testing. One problem developed with the radiation monitoring system used to insure that the sources have retracted into a safe, shielded condition prior to allowing the access door to the radiation cell to be opened. The radiation monitor exhibited symptoms of a very long time constant or residual fields long after shutdown had occurred. Up scale radiation reading persisted for as long as three minutes according to one log entry. The operator on duty contacted the Radiation Safety Officer and subsequently the Corporate Radiation Safety Officer who responded. The instrument was replaced. The nature of the operator actions demonstrates that safety concerns have been properly placed above production interests.

8.0 PREVENTATIVE MAINTENANCE (PM) ACTIVITIES

PM activities are to be performed on a regular basis according to procedure 12.100. Records indicate that the conduct of weekly, monthly, and quarterly PMs have been performed on schedule. A parts replacement log is being maintained so that trends can be observed. As of the date of these audits, no trending is apparent.

9.0 RADIATION MONITORING INSTRUMENTATION

Appropriate low range and high range instruments were available at the operations console and in the laboratory to serve facility needs. Pocket dosimeters were calibrated in June of this year.

10.0 REVIEW OF RADIATION EXPOSURES

I reviewed the radiation exposure reports through the month of September 1991. Most doses are below the minimum detectable (10 millirem). No one received more than 40 millirem in a month. These doses are in accordance with the ALARA principle.

11.0 KEY PROCEDURES

Condition 22 of the license is explicit regarding which versions of procedures 9.100, 9.102, and 12.100 may be used. The Control Room binder reflects the versions specified in the license.

12.0 CONFIRMATORY MEASUREMENTS

I made measurements of radiation levels inside the work areas except for the irradiator cell itself, and ground level areas outside the facility. All measurements were within plus or minus 20 percent of those made by the staff.

13.0 CLEAN UP OF THE "R&D" POOL

I observed activities for cleaning of the empty R&D pool. Plant personnel were in the process of removing sludge, small hardware and the like from the pool.

Water clarity was excellent. This activity was undertaken as part of a general plant housekeeping effort. The work was being performed safely. I reviewed the plans for removal of items from the pool and learned that all lifts of pool contents are thoroughly surveyed to insure that no unacceptable radiation levels are encountered.

14.0 CONCLUSIONS

No deficiencies were identified among the areas reviewed. The attitudes of the staff are positive with respect to adherence to procedures and NRC rules and regulations. Operations of the facility are in accord with the ALARA principle and good health physics practices.

APPENDIX D

BACKGROUND INFORMATION ON NRC INVOLVEMENT WITH NEW JERSEY FOR COMMISSIONER DE PLANQUE JANUARY 13, 1992 TOUR

NRC Region I recommended that Commissioner de Planque consider inviting the New Jersey State Liaison Officer (SLO) to accompany her during the January 13, 1992 tours to Stepan Chemical and RTI/Process Technology of North Jersey. New Jersey has great interest in both of these facilities because of political concerns resulting from delays in removing the low level contaminated soil at Stepan, and because of technical concerns regarding onsite disposal at RTI.

New Jersey was invited by the RSLO on behalf of Commissioner de Planque on January 9, 1992. Jill Lipoti most likely will be the NJ representative. The SLO for New Jersey is Scott Weiner, Commissioner, Department of Environmental Protection and Energy (DEPE), and the Deputy State Liaison Officer is Jill Lipoti, Ph.D., Assistant Director, Radiation Protection Programs, DEPE.

AGREEMENT STATE STATUS

New Jersey is not an Agreement State

Memoranda of Understanding and Letter of Agreement

NJ has requested an MOU with NRC to perform inspections, for and on NRC behalf, of licensees' low level radioactive waste storage facilities, until a disposal capability is available for the NJ waste generators (approximately 100 generators.) NRC and NJ DEPE staff have developed a draft MOU, in accordance with the Commission Policy Statement on State Cooperation. The Storage Inspection MOU has been reviewed by NRC Program Offices and is awaiting approval by NJ Commissioner Weiner before being submitted to the Commission for approval.

NJ has also requested an MOU with NRC for access to the Emergency Response Data System (ERDS). Since the first such MOU was recently approved for Michigan, NRC staff expects to have an ERDS MOU with NJ within the first quarter of 1992.

NRC and NJ DEPE signed an informal letter agreement (July 13, 1987), which established a protocol for coordinating NJ attendance at NRC activities, including inspection and enforcement meetings. It also addresses communication exchange and notification commitments. The letter agreement was signed prior to development of a Commission Policy Statement on State Cooperation.

ORGANIZATION

NRC staff routinely communicates with staff of the DEPE, primarily with those offices involved with permitting and monitoring radiological activities.

Gerald Nicholls, Ph.D., Administrator, Env. Safety, Health and Analytical Programs
Jill Lipoti, Ph.D., Assistant Director, Radiation Protection Programs
Robert Stern, Ph.D., Chief, Bureau of Environmental Radiation
Kent Tosch, Chief, Bureau of Nuclear Engineering

New Jersey and Connecticut are the two member states of the Northeast Interstate Low Level Radioactive Waste Compact. Each state is in the process of siting a disposal facility. NJ does not expect to submit a license application for a disposal facility until late 1994/early 1995. Richard Sullivan, who was a former Commission of NJ DEP, is the current Chairman of the Northeast Compact. Sam Penza, is the Executive Director of the NJ Low Level Radioactive Waste Siting Board.

SIGNIFICANT ISSUES

Surveillance of Nuclear Power Facilities

The Bureau of Nuclear Engineering has a nuclear engineer assigned to each nuclear power facility. This individual meets with the NRC Senior Resident approximately once per month to discuss ongoing issues. The State has observed to a limited extent, reactive team inspections at both Oyster Creek and Salem. The State is concerned about the possibility of plant license extension (PLEX), because of plant aging and design reconstitution problems. They observed the recent NRC workshop on generic environmental impact statement in support of PLEX.

New Jersey maintains a continuous air sampling and radiation monitoring system around Oyster Creek, Salem and Hope Creek. From time to time, NJ has raised questions regarding elevated radiation readings, as being a result of releases from Oyster Creek. NRC staff have worked with the Bureau of Nuclear Engineering to assist in their analysis of this suspect data. There are no outstanding issues in this area at this time.

NJ DEP, Division of Water Resources issued an Administrative Consent Order not to renew the liquid discharge permit for Salem, unless a cooling tower was constructed. The licensee appealed this Order, by showing the temperature of their discharges does not affect certain small species of fish. A decision by DEPE is expected this quarter. Discharges are being made under conditions of the expired permit.

Involvement with Byproduct and Source Material Licensees

The Bureau of Environmental Protection permits all companies that use radioactive material. Their staff have accompanied NRC inspectors at both routine and reactive inspections of byproduct and source material licensees. They have also retrieved radioactive sources that were not properly disposed, and they maintain an NRC license to support this public service.

New Jersey has an active program to clean-up the environment. Besides the sites that NJ is directly responsible for remediation, this Bureau also reviews NRC activities and observes NRC inspection activities at facilities, such as Stepan Chemical and RTI. NRC staff have been in communication with NJ throughout the last year on two other sites, namely, Heritage Minerals, Inc., and Shieldalloy Metallurgical Company where NJ believes that non-regulated material has been cross-contaminated with NRC licensed material.

Heritage in Lakehurst, has an NRC license for an operational plant and for a monazite pile (695 cubic yards). It also has an original feed area, a recycled tailings area and a salvage storage area that comprises 102,500 cubic yards of processed sand that is not regulated by the NRC because of policy and legal considerations. NJ has requested that the Office of Nuclear Materials Safety and Safeguards review this decision and accept jurisdiction over these processed sands. This issue is under staff review.

Shieldalloy Metallurgical Company in Newfield, has an NRC source material license for its processing of ferrocolumbium ores. NJ has requested that we regulate the slag from the ferrovanadium processing. NJ believes it becomes contaminated by the NRC licensed ferrocolumbium, because the same equipment is used. NRC staff recognizes that the incoming ferrovanadium ores contain small concentrations of uranium and thorium, and that some evaluation is needed to assure the two slag piles do not become mixed after processing. Each pile is about 20' x 20' x 30'. This issue is also under staff review.

CHRONOLOGY - MAYWOOD/STEPAN

1898 Maywood Chemical Works founded

1916 Thorium processing begins at Maywood Chemical Works

4/1/54 License R-103 issued to Maywood Chemical Works

1956 Maywood Chemical Works stops thorium processing

1959 Stepan Chemical Company buys Maywood Chemical Works

3/7/61 License STC-130 issued to Stepan Chemical Company. Authorizes possession for resale only, no processing

8/30/63 AEC inspection - identifies residues and tailings behind dikes as "slurry piles"

9/4/63 licensee begins cleanup of slurry piles.

3/12/64 Licensee responds to AEC request for information and includes discussion of radiation levels on west side of Route 17

" ~~11-12/66~~ Waste moved from area east of Route 17 to Burial Pit No. 1 (lawn) (8,358 cubic yards)

7 ~~7-8/67~~ Waste moved from area east of route 17 to Burial Pit No. 2 (parking lot) (2053 cubic yards)

10/18/67 AEC inspection - licensee cited for unauthorized burials in Burial Pits 1 and 2.

2/28/68 Licensee requests permission to relocate additional waste

3/19/68 AEC grants permission to relocate wastes

6 ~~6-7/68~~ Waste moved from South Dike to third burial site (8,600 cubic yards)

8/15/68 Licensee requests that certain areas be released for unrestricted use

9/4/68 AEC conducts closeout survey

9/6/68 AEC releases two areas for unrestricted use including the South Dike

5/31/72 License STC-130 expired

4/4/78 License No. 1333 (current license) issued to Stepan Chemical Company.

9/29/80 New Jersey State Department of Environmental Protection (NJ DEP) received a letter from a private citizen reporting that he had found radioactive contamination in an area near Route 17, west of the Stepan Chemical Company. New Jersey DEP surveyed the area to confirm the presence of contamination.

11/5/80 EPA notifies NRC Region 1 of contamination in vicinity of Stepan property.

11/7/80 NRC receives an anonymous mailing of a memorandum prepared on October 15, 1980 by two attorneys apparently working for Stepan. The memorandum contains a number of assertions regarding the existence of a third burial site that is not authorized by License No. STC-1333.

11-12/80 ~~11/13/80~~ ~~1/6/81~~ Region 1 conducted a special announced inspection (No. 40-8610/80-01). During this inspection, the presence of the third burial site was confirmed and elevated radiation levels in unrestricted areas were identified.

12/80 NRC presents radiation survey information to mayors of Maywood and Rochelle Park, local press, and holds public meetings in Rochelle Park and Maywood.

1/16/81 Congresswoman Roukema met with representatives of NRC in her office.

1/26/81 Aerial radiological survey of Maywood/Rochelle Park area performed by EG&G.

4/29/81 Based on the results of Inspection No. 40-8610/80-01 a Notice of Violation was issued to Stepan Chemical Company. Two violations were identified:

1. License No. STC-1333 required that all licensed material be buried at two specific sites (Burial Pits 1 and 2). Contrary to this requirement, a third burial pit was identified.

2. Contrary to 10 CFR 20.105(b) radiation levels in unrestricted areas were found to exceed 2 mrem/hr. and 100 mrem in any seven consecutive days.

5/1-5/81 NRC performs ground contamination surveys in areas identified by the aerial survey. Contamination is found in a residential area, an empty lot, and an industrial area.

5/7/81 NRC Region 1 Office presents survey information to NRC headquarters staff. Representatives from Congresswomen Roukema's staff and EPA were present.

1/7/82 Amendment No.1 to License STC-1333, authorizing the storage of thorium residues in Burial Pit No.3.. is issued to Stepan Chemical Company

3/12/82 Amendment No.2 to License STC-1333 is issued to Stepan Chemical Company. Amendment No.2 authorized the movement of the contaminated residues, detected on former Stepan property, to a fourth burial pit on the Stepan property. However, the material was never moved.

9/1/83 Stepan Chemical Company added to the EPA National Priorities List, with a rank of 157, based solely on the presence of radioactive contamination.

~~1984~~ ¹⁹⁸³ DOE given legal authority for the "Maywood Site" (Stepan Chemical Company) and vicinity properties through the Energy and Water Development Appropriations Act for Fiscal Year 1984 Pub. L. 98-50. This act appropriated two million dollars for a decontamination research and development project at Stepan. ~~The act~~ was subsequently added to the FUSRAP site list. ^{STEPAN}

1985 DOE and Stepan Chemical enter into a cooperative agreement to decontaminate the Stepan property. Under the cooperative agreement, Stepan will maintain the existing NRC license for the storage of radioactive material in the three burial pits. After a waste disposal option is selected DOE will take title to the material in the burial pits. The NRC license will be terminated subject to approval by NRC.

11/5/87 Amendment No. 3 to License STC-1333 issued to Stepan Chemical Company. Amendment No. 3 extended the expiration date of the license to April 30, 1992.

4/22/91 A Federal Facilities Agreement between DOE and EPA for the cleanup of the Stepan site, was finalized.