U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 70-687/82-02 50-54/82-01 License No. SNM-639 R-81 Safeguards Group I

Licensee: Union Carbide Corporation

P. O. Box 324

Tuxedo, New York 10987

REVIEWED BY: A. T. Gody (NAME) (SIGNATURE) Safeguards (CERTIFICATION) 5.4.82 (DATE)

Facility Name: Sterling Forest Research Center

Inspection At: Tuxedo, New York 10987

Inspection Conducted: March 30-31, 1982

Date of last Physical Security Inspection: May 26-29, 1981

Type of Inspection: Routine Unannounced Physical Protection

Inspectors: A. Gody for 4.29.82
G. C. Smith, Physical Protection Inspector — date

J. Dunlap 4.29.82
J. Dunlap, Physical Protection Inspector — date

date

Approved by: A. T. Gody 4.29.82
A. T. Gody, Chief, Safeguards Section, Technical Programs Branch — date

Inspection Summary:
Routine Unannounced Physical Protection Inspection March 30-31, 1982
(Combined Report Nos. 70-687/82-02 and 50-54/82-01)
Areas Inspected: General Requirements for Special Nuclear Material of Moderate Strategic Significance at fixed sites including: Security Plan; Protection of SNM; Security Organization; Access Control; Alarm Systems; Keys and Locks, Communications; Surveillance; Procedures; and Security Program Review. The inspection also included follow-up on a previous inspection finding. The inspection was begun during regular duty-hours and involved twenty-six inspector hours onsite by two region based inspectors.
Results: The licensee was found to be in compliance with NRC requirements in the areas examined.

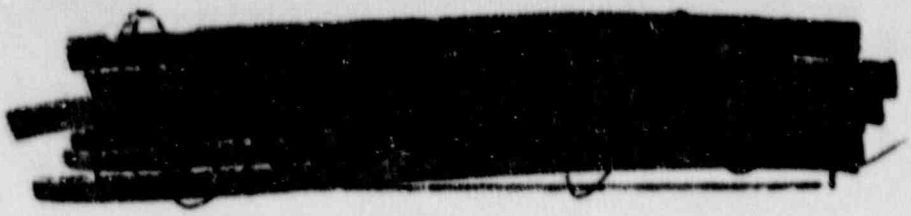
THE INFORMATION ON THIS PAGE IS DEEMED TO BE APPROPRIATE FOR PUBLIC DISCLOSURE PURSUANT TO 10 CFR 73.21
THE REPORT DETAILS CONTAIN [redacted]

S-F1-82-46
Copy 4 of 5
5 Pages

Region I Form 12
(Rev. April 1977)

[redacted]

8205170454



DETAILS

1. Key Persons Contacted

*J. McGovern, Business Manager, Radiochemicals
*M. Voth, Manager, Nuclear Operations
W. Ruzicka. Reactor Supervisor
P. Drake, Maintenance Supervisor
R. Hubbard, Manager, Maintenance Engineering

*denotes those present at exit interview.

2. 30703-Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on March 31, 1982. The inspector summarized the scope and findings of the inspection

3. 92702 - Follow-up on Previous Inspection Findings

(Closed) Violation (70-687/79-04-01) Failure of the licensee to either alarm the [redacted] The licensee has not armed the [redacted] however on 11-20-81 a procedure was implemented which requires the [redacted] which provides access to the [redacted] The above action is considered adequate to provide protection of the SNM in the [redacted]

4. 81480-General Requirements for SNM of Moderate Strategic Significance at Fixed Sites

No violations were identified. The inspection results were attained through review of the following areas.

a. Security Plan

The "Physical Security Plan for the Union Carbide Corporation Medical Products Division, Tuxedo, New York," was dated January 15, 1982. This plan was written in response to the requirements contained in 10 CFR 73.67 and covered activities and materials licensed as follows.

1. NRC License Number R-81, Docket Number 50-54.

2. NRC License Number SNM-639, Docket Number 70-687.

b. Protection of SNM

Review of the protection of SNM included:

[redacted]

1. An examination of the licensee's [redacted]

2. Verification that the [redacted] is only opened under the supervision of one or more of the individuals specified by Union Carbide Corporation (UCC) security procedures.

3. A tour of the [redacted] to determine the vulnerability of SNM in process.

c. Security Organization

Review of the security organization included:

1. Verification that the UCC employees [redacted] who perform watchmen duties are deployed and used as prescribed in the security plan.

2. Discussions with the [redacted] in order to verify their understanding of their collateral security related duties.

d. Access Controls

Review of access controls included:

1. A tour of [redacted] in order to assure the integrity of all access portals.

2. Observation of packages being searched prior to admittance to the protected area.

3. Verification that all individuals entering the protected area were issued an appropriate identification badge.

The licensee had installed [redacted]

e. Alarm Systems

Review of the alarm systems included performance testing [redacted] located at the following entrances.

Entrance No. Location

[redacted]

[redacted]

[redacted]

f. Keys and Locks

The review of the security keys and locks included:

1. A review of lock change records to verify that [redacted] there were ten lock changes made by the licensee since May 1, 1981.

2. An inventory of security related keys maintained in the [redacted]

g. Communications

Review of the communications consisted of performance testing the [redacted] assigned for security use.

h. Surveillance

The surveillance review consisted of the following:

1. A review of randomly selected [redacted]

2. Discussions with watchmen and licensee personnel regarding surveillance of SNM during regular and non-regular working hours.

i. Procedures

The procedures review included:

1. A review of security procedure RS-40-1 dated November 20, 1981 that was used to perform entrance [redacted] alarm tests.

2. A review of security procedure RM-12-3, dated September 1, 1980 that was used to implement the security plan.

[redacted]

[redacted]

3. Discussions with operations personnel and watchmen regarding response procedures and responsibilities during various hours of the day.

j. Security Program Review

The security plan requires that the site's security program be reviewed once every two years. The licensee stated that the last review was conducted in January 1982. The current plan, dated January 15, 1982 is based on the results of the Security Program Review.

[redacted]

 FREEDOM OF INFORMATION REQUEST

The Times Herald
RECORD
SUNDAY
RECORD
ORANGE COUNTY PUBLICATIONS, A DIVISION OF OTTAWAY NEWSPAPERS, INC.
40 Mulberry Street, Middletown, New York 10940 (914) 343-2181

Feb. 22, 1990

FOIA-90-97
Rec'd 3-1-90

Office of the Administrator
US Nuclear Regulatory Commission
Washington, D.C.

FREEDOM OF INFORMATION REQUEST

Dear Sir:

This is a Freedom of Information request for copies of the following:
1. Yearly reports or compilations of reports done yearly on the operations at CintiChem, which runs a 5-megawatt reactor on Long Meadow Road, Sterling Forest, Tuxedo. (We have the Jan. 23, 1990 report on inspections done in October of 1988 - Docket Nos. 50-54 70-687.) We request these reports for the past 10 years.
2. Responses by CintiChem to those reports, detailing actions the company contemplated taking in response. (We do not have a copy of CintiChem's Jan. 23, 1990 report response. We understand it has not been sent to you. But we would request it when filed.)
3. Any preliminary notification by CintiChem to the NRC about unusual events at the plant. Also, for the last 10 years.
4. Any settlements, agreements, or other legal statements in which CintiChem agrees to undertake corrective actions as a result of having been found in violation of NRC regulations.
5. A blueprint, map, or other geographic or architectural material filed with you by CintiChem showing its layout.
6. Specifically, we request a copy of the agreement or settlement of violations dated April 23,1987 in which the company was fined or agreed to pay a fine of $12,500.
We realize that some of this information may be more readily found than other parts. We request the most readily accessed as soon as possible.
Thank you for your cooperation.
If this request should be denied, please tell us who your appeals officer is so our lawyers may act quickly.

Very truly yours,

Wayne A. Hall
Special Projects Writer

9004270148 (1p)

[redacted]

UNION CARBIDE CORPORATION
MEDICAL PRODUCTS DIVISION
P.O. BOX 324, TUXEDO, NEW YORK 10987
TELEPHONE: 914-351-2131

November 10, 1981

U. S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Attn: Mr. Richard W. Starostecki, Director
Division of Resident & Project Inspection

Subj: Inspection Nos. 50-54/81-02 and 70-687/81-04
Notice of Violation

Gentlemen:

This letter is in response to the subject Notice of Violation for failing to conduct an audit of the management of the UCC Fundamental Nuclear Material Control Plan within the prescribed time schedule.

Audit assignments had been made by the Nuclear Safeguards Committee in a timely fashion however, some were assigned to persons outside of the Radiochemicals line organization. Normal follow-up procedures on the part of the Secretary of the Committee were not effective in accomplishing some audits on schedule.

S-F1-81-77
Copy___of___Copies
2 Pages

9006050180(2pp)

[redacted]

G/2

Future audits will be assigned only to employees within the Radiochemical line organization. The assigments will be made a part of the departmental project assigment schedule which is reviewed monthly for status reports to management on all projects. This follow-up procedure will provide management with the necessary control for assuring that audits are completed on time.

This new program for audit control was implemented on 10/28/81 and it should prevent a recurrence of this item of non-compliance. The management audit that was the subject of this Notice of Violation was completed.

Very truly yours,

James J. McGovern
Business Manager
Radiochemicals

JJMcG:js

cc: C. J. Konnerth
W. G. Ruzicka
M. H. Voth

STATE OF NEW YORK)
SS
COUNTY OF ORANGE)

On this 10th day of November 1981, before me personally came James J. McGovern to me known and known to me to be the individual described in and who executed the foregoing instrument and acknowledged that he executed the same.

Notary Public

[redacted]

..UCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

TIB

DEC 17 1981

50-54
Docket Nos: 70-687

Union Carbide Corporation
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Combined Inspection 50-54/81-02; 70-687/81-04

This refers to your letter dated November 10, 1981, in response to our letter dated October 16, 1981.

Thank you for informing us of the corrective and preventive actions documented in your letter. These actions will be examined during a future inspection of your licensed program.

In accordance with 10 CFR 73.21 of the NRC's regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials and your facility security measures for physical protection are deemed to be Safeguards Information. Each person who produces, receives or acquires Safeguards Information is required to ensure that it is protected against unauthorized disclosure. Therefore, the referenced letter will not be placed in the Public Document Room and will be distributed pursuant to 10 CFR 73.21(c).

Your cooperation with us is appreciated.

Sincerely,

Thomas T. Martin

Thomas T. Martin, Director
Division of Engineering and
Technical Inspection

cc:
Mr. H. Voth, Manager Nuclear Operations
W. G. Ruzicka, Reactor Project Engineer
C. J Konnerth, Health Physicist
Dr. R. E. Bollinger, Vice President, Medical Products/Division Public
Document Room (PDR) w/o cy of licensee's response
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New York

8112280333 2pp

[redacted]

G13

bcc:
Region I Docket Room (with concurrences)

[redacted]

SG

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

21 APR 1981

Docket No. 70-687

Union Carbide Corporation
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Inspection Report No. 70-687/81-02

This refers to the routine inspection conducted by Mr. P. Bissett of this office on March 16-20, 1981, of activities authorized by NRC License No. SNM-639 and to the discussions of our findings held by Mr. P. Bissett with yourself and Mr. Konnerth at the conclusion of the inspection.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were observed.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials and your facility security measures for physical protection are deemed to be commercial or financial information within the meaning of 10 CFR 9.5(a)(4) and shall be subject to disclosure only in accordance with the provisions of 10 CFR 9.12; therefore, the enclosed inspection report will not be placed in the Public Document Room and will receive limited distribution.

No reply to this letter is required; however, should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

James H. Joyner, Chief, Technical
Inspection Branch, Division of
Engineering and Technical Inspection

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 4
FOIA- 90-97

Enclosure: Office of Inspection and Enforcement Inspection
Report Number 70-687/81-02 [redacted]

8106050017 (2pp)

[redacted]

H1

cc: (w copy of report cover sheet only)
M. H. Voth, Manager Nuclear Operations
W. G. Ruzicka, Reactor Project Engineer
C. J. Konnerth, Health Physicist
Dr. R. E. Bollinger, Vice President, Medical Products Division

bcc:
IE Mail & Files (For Appropriate Distribution) (w cy of encl)
Central Files (w cy of encl)
Public Document Room (PDR) (w report cover sheet only)
Nuclear Safety Information Center (NSIC) (w report cover sheet only)
Technical Information Center (TIC) (w report cover sheet only)
REG:I Reading Room (w report cover sheet only)
State of New York (w report cover sheet only)
Chief, Operational Support Branch (w/o encl)

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

Report No. 70-687/81-02

Docket No. 70-687 License No. SNM-639 Safeguards Group I

Licensee: Union Carbide Corporation
P.O. Box 324
Tuxedo, New York

Facility Name: Sterling Forest Research Center

Inspection At: Tuxedo, New York

Inspection Conducted: March 16-20, 1981

Date of Last Material Control and Accounting Inspection: April 27, 1979

Type of Inspection: Unannounced Material Control and Accounting Inspection

Inspectors: D Bissett 4/17/81
R. Bissett, Safeguards Auditor date signed

Approved by: James H Joyner 4/17/81
James H. Joyner, Acting Chief date signed
Material Control and Accountability
Section

Inspection Summary:
Areas Inspected: Facility Organization, Facility Operation, Shipping and Receiving, Storage and Internal Control, ID and Associated LEID, Physical Inventory, and Records and Reports.

The inspection involved 28 inspector hours onsite by one regional based inspector and was begun during the regular hours.

Results: The licensee was found to be in compliance with NRC requirements in the seven areas examined during the inspection.

THE INFORMATION ON THIS PAGE IS DEEMED TO BE APPROPRIATE FOR PUBLIC DISCLOSURE PURSUANT TO 10 CFR 2.790

S-F1-81-43
Copy 1 of 1 Copi
4 Pages

THE REPORT DETAILS CONTAIN [redacted]

8104084819 (4)

[redacted]

Details

1. Persons Contacted

*J. McGovern, Business Manager, Radiochemicals
*C. Konnerth, Manager, Health, Safety and Environmental Affairs
L. Thelin, Health Physics Supervisor
G. Wright, Plating Lab Supervisor
J. Stuart, Hot Lab Technician

*denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

Previous items of noncompliance were not reviewed by the inspector.

3. Exit Interview

The inspector met with the licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on March 20, 1981. The inspector summarized the purpose and scope of the inspection and the findings.

4. Unresolved Items

There were no unresolved items resulting from this inspection.

5. Independent Inspection Effort

There was no independent inspection effort during this inspection.

6. MC85202B Facility Organization

No items of noncompliance were noted. The inspection results were attained through discussions with licensee management and review of the licensee's Fundamental Nuclear Material Control Plan (FNMCP) and operating procedures. The licensee submitted a consolidated and revised FNMC Plan, dated May 15, 1980 which was approved by the Material Control Licensing Branch on January 19, 1981.

7. MC85204B Facility Operation

No items of noncompliance were noted. The licensee's operations consist of [redacted]

[redacted]

[redacted] The inspector toured the operational areas and observed the licensee's operations and activities. There were no instances observed by the inspector for which the possession, use or location of special nuclear material (SNM) were contrary to the license.

8. MC85208 Shipping and Receiving

No items of noncompliance were noted. The licensee has established and is maintaining a program to assure that all SNM received and shipped is accurately accounted for. Also, the site accountability officer (SAO) coordinates efforts to insure that license (SNM-639) possession limits are not exceeded.

[redacted]

Until recently, all SNM shipments from the facility have consisted of small quantities of either nonirradiated waste or irradiated waste containing essentially all of the uranium in the targets (resulting from the separation of the desired radioisotopes from the irradiated targets). The licensee is now, however, shipping the majority of irradiated waste to Savannah River for recovery. Two shipments have occurred thus far but no recovery results have been received.

Material transaction reports (Form NRC-741) for all receipts were acknowledged and returned within 10 days. Material transaction reports for all shipments were prepared as required by the printed instructions for completing Form NRC-741.

9. MC85210 Storage and Internal Control

No items of noncompliance were noted. The licensee has established a system of storage and internal control which provides for current knowledge of the quantity, identity and location of all SNM within

[redacted]

the facility, in accordance with the licensee's FNMCP and applicable license conditions. The controls include the master log, subsidiary logs for each material balance area (MBA), and supporting internal transfer documents for transfers between MBAs. The licensee has the following MBAs:

MBAs	Description
1	Feed Area
2	Plating Operation
3	Reactor
4	Radiochemistry Area (Hot Cells)

The inspector selected a representative number of postings in the master log and subsidiary logs and verified that they were supported by either material transaction reports (Form NRC-741), or internal transfer documents, as applicable.

10. MC85212 Physical Inventory

No items of noncompliance were noted. The inspector reviewed the results of the licensee's last eleven inventories dating back to April 26, 1979. These inventories were conducted in accordance with approved physical inventory procedures. The inspector also determined that, for each inventory, the master log and the MBA logs were reconciled and adjusted to the inventory results within 30 days. The inspector also verified the presence of the licensee's PuBe neutron source, located in MBA-3 and authorized under this license.

11. MC85214 Inventory Difference (ID) and Its Associated Limit of Error (LEID)

No items of noncompliance were identified. The licensee's inventory difference calculation was reviewed by the inspector for each of the eleven inventory periods covering February 26, 1979 to December 30, 1980. The IDs were accurately determined. No additional loss mechanisms that could contribute to ID were identified. The licensee had been granted relief from calculating the LEID whenever the ID is less than 150 grams. However, with their submission of a revised FNMCP, as stated in paragraph 6, and its' subsequent approval, the LEID now is to be calculated if the ID exceeds 300 grams, in accordance with 10 CFR 70.51(e)(5).

12. MC85216 Records and Reports

No items of noncompliance were identified. In addition to the review of the master log, subsidiary logs, internal transfer documents, and inventory records, the inspector also reviewed all material transaction reports (Form NRC-741) and material status reports (Form NRC-742) for the three six-month reporting periods ending September 30, 1979, March 31, 1980, and September 30, 1980. These were reviewed for timeliness, accuracy, and proper signatures. The inspector discovered that the licensee had inadvertently omitted two Form-741 corrected copy receipts (ZWT-ZWN 187 cc1 and 191 cc1) from their September 30, 1980 Form NRC-742 report. This resulted in a disagreement of 1 gram Uranium and (2) grams U-235 between Form NRC-742 and the master log. The licensee agreed to correct this ommission when the March 31, 1981 Form NRC-742 report is submitted. (70-687/81-02)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

TIB

21 AUG 1981

Docket Nos. 50-54
70-687

Union Carbide Corporation
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Combined Inspection Nos. 50-54/81-01 and 70-687/81-03

This refers to the routine unannounced physical protection inspection conducted by Mr. R.H. Ladun of this office on May 26-29, 1981 of activities authorized by NRC License Nos. R-81 and SNM-639 and to the discussions of our findings held by Mr. Ladun with Mr. M. Voth of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Our inspector also verified the steps you have taken to correct the items of noncompliance brought to your attention in the enclosure to our letters dated November 2, 1979, November 14, 1978, and July 29, 1977. We have no further questions regarding your action at this time.

Within the scope of this inspection, no items of noncompliance were observed.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials and your facility security measures for physical protection are deemed to be commercial or financial information within the meaning of 10 CFR 9.5(a)(4) and shall be subject to disclosure only in accordance with the provisions

8111030163 (3pp)

H13

of 10 CFR 9.12; therefore, the enclosed inspection report will not be placed in the Public Document Room and will receive limited distribution.

No reply to this letter is required; however, should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Eldon J. Brunner, Chief, Projects
Branch #1, Division of Resident
and Project Inspection

Enclosure: Combined Office of Inspection and Enforcement Inspection Report Numbers 50-54/81-01 and 70-687/81-03 (Contains ~~2.790(a) Information~~)

cc (w/ report cover sheet only):
Mr. H. Voth, Manager Nuclear Operations
W. G. Ruzicka, Reactor Project Engineer
C. J. Konnerth, Health Physicist
Dr. R. E. Bollinger, Vice President, Medical Products Division
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New York

bcc:
Region I Docket Room (with concurrences)
Chief, Operational Support Section (w/o encl)

[redacted]
UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

OCT 16 1981

TIB

Docket Nos. 50-54
70-687

Union Carbide
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Combined Inspection Nos. 50-54/81-02 and 70-687/81-04

This refers to the routine safeguards inspection conducted by Mr. H. Zibulsky of this office on July 13-16, 1981 of activities authorized by NRC License Nos. R-81 and SNM-639 and to the discussions of our findings held by Mr. H. Zibulsky with Mr. Fred Morse of your staff at the conclusion of the inspection and to subsequent telephone discussions between Mr. J. H. Joyner of this office and yourself on July 17 and 28, 1981.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Our inspector also verified the steps you have taken to correct the item of noncompliance brought to your attention in a letter dated September 19, 1979. We have no further questions regarding your action at this time.

Based on the results of this inspection, it appears that one of your activities was not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. This item of noncompliance has been categorized into the levels described in the Federal Register Notice (45 FR 66754) dated October 7, 1980. You are required to respond to this letter and in preparing your response, you should follow the instructions in Appendix A.

The item of noncompliance in the Notice of Violation enclosed as Appendix A to this letter was identified during a previous inspection of your licensed activities on June 6-9, 1978, and was documented in the enclosure to our letter dated July 13, 1978. Your letter to this office dated August 9, 1978, indicated that an audit would be performed by October 3, 1978. During a subsequent inspection of your licensed activities on April 24-27, 1979, a

8111060528 (30)

[redacted]

H/7

deviation was identified for your failure to perform an audit by October 3, 1978, although an audit was subsequently performed. The deviation was identified in our letter dated September 19, 1979. Your letter to this office dated October 25, 1979, stated that a schedule of audits had been promulgated for all routine audits that were required under your facility license.

From our July 13-16, 1981 inspection it appears that the stated corrective actions were not effective since this item has recurred.

Recurrent and uncorrected items of noncompliance are given additional weight in the consideration and selection of appropriate enforcement action. Therefore, in your response to this letter, you should give particular attention to those actions taken or planned to ensure that identified items of noncompliance will be completely corrected and will not recur.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials and your facility security measures for physical protection are deemed to be commercial or financial information within the meaning of 10 CFR 9.5(a)(4) and shall be subject to disclosure only in accordance with the provisions of 10 CFR 9.12; therefore, the enclosures to this letter, and your response to this letter will not be placed in the Public Document Room and will receive limited distribution.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Richard W. Starostecki, Director
Division of Resident and Project
Inspection

Enclosures:
1. Appendix A, Notice of Violation ~~(Contains 2.790 Information)~~
2. Combined Office of Inspection and Enforcement Inspection Report Number 50-54/81-02 and 70-687/81-04 ~~(Contains 2.790 Information)~~

cc w/report cover sheet only:
M. H. Voth, Manager, Nuclear Operations
W. G. Ruzicka, Reactor Project Engineer
C. Konnerth, Health Physicist
R. Bollinger, Vice President, Medical Products Division
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information
State of New York

bcc
Region I Docket Room (with concurrences)(with report cover sheet only)
Chief, Operational Support Section (w/o encls)

[redacted]

APPENDIX A

NOTICE OF VIOLATION

Union Carbide Corporation
License No. SNM-639

Docket No. 70-687

As a result of the inspection conducted on July 13-16, 1981, and in accordance with the Interim Enforcement Policy, 45 FR 66754 (October 7, 1980), the following violation was identified.

Section 8.2.1 of the Union Carbide Fundamental Nuclear Material Control Plan states, in part, that at least every 12 months, the material control and accounting procedures and records will be reviewed and audited by the Nuclear Safeguards Committee, and the results of this review and audit, with recommendations, will be reported in writing.

Contrary to the above, the inspector determined, on July 15, 1981, that the nuclear material control and accounting procedures and records were not audited and reviewed by the Nuclear Safeguards Committee within the previous 12 months. The last such audit and review was performed on November 5-14, 1979 and the results were documented November 16, 1979.

This is a Severity Level V Violation (Supplement III).

Pursuant to the provisions of 10 CFR 2.201, Union Carbide Corporation, is hereby required to submit to this office, within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Under the authority of Section 182 of the Atomic Energy Act of 1954, as amended, this response shall be submitted under oath or affirmation.

The responses directed by this Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Dated OCT 16 1981

for Richard W. Starostecki, Director
Division of Resident and Project
Inspection

S-F1-81-115A
Copy 6 of 8 Copies
1 Page

9406050172 (IP)

[redacted]

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report Nos. 50-54/81-02 / 70-687/81-04 License Nos. R-81 / SNM-639 Safeguards Group 1

Licensee: Union Carbide Corporation
P.O. Box 324
Tuxedo, New York

Facility Name: Sterling Forest Research Center

Inspection at: Tuxedo, New York

Inspection Conducted: July 13-16, 1981

Date of Last Material Control and Accounting Inspection: March 16-20, 1981

Type of Inspection: Unannounced Material Control & Accounting

Inspectors: H. Zibulsky, Chemist — 9-9-81 date signed

D. J. Holody, Mathematical Statistician — 9-9-81 date signed

Approved by: James H. Joyner, Acting Chief, Material Control and Accountability Section, Technical Inspection Branch — 9/25/81 date signed

Inspection Summary:
Inspection on July 13-16, 1981 (Combined Report Nos. 50-54/81-02 and 70-687/81-04)
Areas Inspected: Routine, unannounced inspection by regional based inspectors of nuclear material control and accounting including: Action on Previous Inspection Findings; Measurement and Statistical Controls; Inventory and Inventory Verification; Records and Reports; and Management of Material Control System.

The inspection involved 53 inspector-hours onsite by two NRC regional based inspectors.

THE INFORMATION ON THIS PAGE IS DEEMED TO BE APPROPRIATE FOR PUBLIC DISCLOSURE PURSUANT TO 10 CFR 2.790

THE REPORT DETAILS CONTAIN [redacted]

S-F1-81-115
Copy 6 of 7 Co
5 Pages

9606050177 (7R)

Results: The licensee was found to be in compliance with NRC requirements in the areas examined during the inspection with the following exception: 1. Failure to perform a management review and audit of material control and accounting procedures and records within the required time frame (Paragraph 8).

[redacted]

DETAILS

1. Persons Contacted

J. McGovern, Manager, Radiochemical Production
*F. Morse, Manager, Radiochemical Process Engineering
*N. Petrillo, Manager, Quality Control, CintiChem
*R. Quackenbush, Manager, Production, CintiChem
*D. Grogan, Manager, Radiochemical Production
*M. Bordoni, Manager, Radiopharmaceutical Operations
*W. Leinheiser, Supervisor, Quality Control
*L. Thelin, Supervisor, Health Physics

The inspectors also interviewed other licensee employees associated with measurements, plant operations, and nuclear material control.

*denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance Item (70-687/79-01-01). Failure to complete the required training of personnel involved in material control and accounting requirements, as required by Section 1.3 of the licensee's Fundamental Nuclear Material Control Plan (FNMCP). The inspector reviewed the licensee's training records and determined that the required training was completed for 1980, and training for 1981 was nearly completed.

(Closed) Unresolved Item (70-687/79-01-02). Licensee's material control and accounting program required 16 hours of training, but it could not be determined if each individual received 16 hours of training since the program involved self-study rather than oral instruction. The licensee made a change to their FNMCP, deleting the 16-hour requirement, and this change was accepted by the NRC's Material Control and Accountability Licensing Branch (MCALB).

(Closed) Deviation (70-687/79-01-03) Failure to correct noncompliance item 70-687/78-01-02, by October 3, 1978 as the licensee agreed to in their response to the item. This item involved failure to perform an audit as required by Section 8.2.1 of the FNMCP. The licensee corrected the noncompliance item by performing an audit after October 3, 1978. An audit was then performed within 12 months, as required, in November 1979.

3. Exit Interview

The inspectors met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on July 16, 1981. The inspectors summarized the scope and findings of the inspection. The

[redacted]

findings of the inspection were further discussed in telephone conversations on July 17 and 28, 1981 between Mr. McGovern of Union Carbide and Mr. Joyner of Region I.

4. MC 92713B-Independent Inspection Effort

No items of noncompliance were noted.

The inspection results were attained through the inspector's observation of the licensee's adherence to their health and safety procedures within the material access area and the reactor area. The inspectors noted that personnel contamination monitors were operating and being used by employees upon exiting from the processing area.

5. MC 85206B-Measurement and Statistical Controls

a. License SNM-639

No items of noncompliance were noted.

The inspection results were attained through (1) a review of the licensee's own internal reviews of the measurement control program for 1980 and 1981; and (2) an evaluation of the licensee's Davies-Gray measurement system which was used to measure the uranium content of their feed material.

The licensee performed an internal review of their measurement control program on April 2, 1980. A more thorough review of the program was performed on January 12, 1981 which resulted in a significant number of findings. Additionally, the internal audit review indicated a serious lack of management control over the measurement control plan because of a number of organizational deficiencies. Evidence of this lack of management control was the absence of a functioning measurement control coordinator. (A measurement control coordinator was subsequently appointed on June 8, 1981). On April 6, 1981, the licensee provided the audit group with a brief response to the audit findings. The response indicated which items had been corrected, which items would require a change to the FNMCP, and which items would be corrected with the appointment of a measurement control coordinator. The response did not provide any specific detail on what was done to correct each item, nor what would specifically be done for those items not yet corrected. These matters were discussed with the licensee during the exit interview. The status of each of these internal audit findings will be reviewed during a future inspection.

The licensee analyzed the uranium content of standards that were prepared with normal uranium and certified by the New Brunswick Laboratory. One analyst using the modified Davies and Gray titration procedure performed the analyses.

The two uranyl nitrate standard solutions were as follows:

#M = 0.01670g U/g

#N = 0.01940g U/g

The uranium concentrations were not within the normal range of the material the licensee routinely analyzes. The standards were about three times the concentration the licensee analyzes.

The small aliquots necessary to be taken for analyses magnified any errors. The two uranyl nitrate standard solutions had mean relative biases of +0.58% and +2.64%, both of which were statistically significant. Since the standards analyzed were not in the range of material normally measured by the licensee, no further action is recommended at this time. Standards more representative of the licensee's uranium concentration are being prepared for Region I by the New Brunswick Laboratory. During a subsequent inspection, these standards will be analyzed by the licensee for evaluation of their uranium assay titration.

A shipment of feed material was received by the licensee during the inspection. The licensee dissolved the feed material [redacted] Four samples were taken for the licensee's laboratory and for the NRC in order to compare analytical data. The NRC samples were sent to the New Brunswick Laboratory for U and U-235 analyses. A laboratory comparison will be made and reported in a future inspection report.

b. License No. R-81

No items of noncompliance were noted.

The inspection results were attained through a review of the licensee's calculation of uranium fuel depletion and transmutation values.

The licensee utilizes a power meter, which integrates the power levels, to determine the total power output for the reactor. This information is then input into a computer program, [redacted] which updates the element and isotopic composition of each fuel element. The inspectors reviewed the thermal power records and independently calculated the uranium and uranium-235 depletion and transmutation values for the four reporting periods from April 1, 1979 to March 31, 1981. The inspector's results were in agreement with the licensee's values for the first three periods. For the fourth period, the inspector's values were in agreement with the licensee's original calculated values. However, the licensee adjusted their original reported values because some of the spent fuel was

recovered by The Department of Energy's Savannah River Plant, and the recovered values were used to adjust the depletion and transmutation values.

6. MC 85212B-Inventory and Inventory Verification

a. License R-81

No items of noncompliance were noted.

The inspection results were attained through (1) a piece count of fuel in the spent fuel pool and of the fission counters, and (2) a serial number verification of the new fuel.

b. License SNM-639

This was reviewed during Inspection No. 81-02 in March, 1981.

7. MC 85216B-Records and Reports

a. License R-81

No items of noncompliance were noted.

The inspection results were attained through (1) a review of the four Material Status Reports (NRC Forms-742) for the period April 1, 1979 - March 31, 1981, and (2) a review of all Material Transaction Reports (NRC Forms-741) for the same period.

The above mentioned forms were reviewed for accuracy, appropriate signatures, and timely dispatch. No discrepancies were noted.

b. License SNM-639

This was reviewed during Inspection No. 81-02 in March, 1981.

8. MC 85218B-Management of Material Control System

One item of noncompliance was noted.

The licensee failed to perform an audit of the material control and accounting records and procedures within the 12 months prior to the inspection, as required by Section 8.2.1 of the FNMCP.

The inspector's review of the licensee's annual audit of the material control and accounting records and procedures indicated a review was performed on November 2, 1979, within 12 months of the previous review, as required by Section 8.2.1 of the FNMCP. The review results were documented on November 16, 1979. The licensee's response to that review could not be located during the inspection. Since November 16, 1979, no

audit had been performed. Failure to perform an audit of the material control and accounting records and procedures at least once every twelve months is a Severity Level V Violation. (81-04-01)

[redacted]

NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

3 FEB 1982

Docket Nos. 70-687
50-54

Union Carbide Corporation
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Combined Inspection Nos. 70-687/81-05 and 50-54/81-03

This refers to the routine safeguards inspection conducted by Mr. H. Zibulsky of this office on October 13-16, 1981 of activities authorized by NRC License Nos. SNM-639 and R-81 and to the discussions of our findings held by Mr. Zibulsky with Mr. J. McGovern at the conclusion of the inspection.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, measurements made by the inspector, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were observed.

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials and your facility security measures for physical protection are deemed to be commercial or financial information within the meaning of 10 CFR 9.5(a)(4) and shall be subject to disclosure only in accordance with the provisions of 10 CFR 9.12; therefore, except for the report cover sheet, the enclosed inspection report will not be placed in the Public Document Room and will receive limited distribution.

No reply to this letter is required; however, should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

for James P. Joyner
Thomas T. Martin, Director
Division of Engineering and
Technical Inspection

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 82-97

[redacted]

Enclosure: Combined Office of Inspection and Enforcement Inspection Report Numbers 70-687/81-05 and 50-54/81-03 (~~Contains 2.790 Info~~)

cc (w/copy of report cover sheet only):
Mr. H. Voth, Manager Nuclear Operations
W. G. Ruzicka, Reactor Project Engineer
C. J Konnerth, Health Physicist
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New York

bcc:
Region I Docket Room (with concurrences)
Chief, Operational Support Section (w/o encl)
Director, Division of Resident and Project Inspection (w/cy of cover sheet only)

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

Report Nos. 70-687/81-05
50-54/81-03

Docket Nos. 70-687 License Nos. SNM-639
50-54 R-81 Safeguards Group 1

Licensee: Union Carbide Corp.

P. O. Box 324

Tuxedo, New York 10987

Facility Name: Sterling Forest Research Center

Inspection At: Tuxedo, New York

Inspection Conducted: October 13-16, 1981

Date of Last Material Control and Accounting Inspection: July 13-16, 1981

Type of Inspection: Announced Material Control and Accounting

Inspector: Harvey Zibulsky 2-1-82
H. Zibulsky, Chemist date

Approved by: James A Joyner 2-1-82
J. H. Joyner, Acting Chief, Material Control and Accountability Section, Technical Inspection Branch date

Inspection Summary:

Inspection on October 13-16, 1981 (Combined Report Nos. 50-54/81-03 and 70-687/81-05)

Areas Inspected: Routine, announced inspection of Special Nuclear Material Control and Accounting including: Measurement and Statistical Controls and Sampling of Raw Fission Waste.

The inspection involved 26.5 inspector-hours onsite by one NRC Regional Based Inspector.

THE INFORMATION ON THIS PAGE IS DEEMED TO BE APPROPRIATE FOR PUBLIC DISCLOSURE PURSUANT TO 10 CFR 2.790

S-F1-82-06
Copy 5 of 5 Cop
4 Pages

THE REPORT DETAILS CONTAIN [redacted]

960 045 189

Results: The licensee was found to be in compliance with NRC requirements in the areas examined.

[redacted]

DETAILS

1. Persons Contacted

*J. McGovern, Business Manager, Radiochemicals
*F. Morse, Manager, Radiochemical Process Engineer
*D. Grogan, Manager, Radiochemical Production
W. Leinheiser, Supervisor, Quality Control

The inspector also interviewed other licensee employees associated with measurements and plant operations.

*denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

Previous items of noncompliance were not reviewed by the inspector.

3. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on October 16, 1981. The inspector summarized the scope and findings of the inspection.

4. MC 92713B - Independent Inspection Effort

No items of noncompliance were noted.

During a previous material control and accounting inspection (70-687/81-04), the inspectors determined that an internal measurement control audit dated January 31, 1981, identified areas in the measurement control program that were in need of improvement. During the current inspection, the inspectors reviewed the status of licensee followup of the internal audit. An internal licensee memo dated September 16, 1981, from M. E. Bordoni to J. J. McGovern, discussed the status of these improvements. The inspectors will perform a detailed followup of the licensee's action during a future inspection.

5. MC 85206B - Measurement and Statistical Controls

a. License SNM-639

No items of noncompliance were noted.

The licensee analyzed the uranium content of standards that were prepared with normal uranium and certified by the New Brunswick Laboratory. One analyst, using the Gravimetric Davies and Gray titration procedure, performed the analyses. During inspection 70-687/81-04, the standards analyzed by the licensee were not within the normal range of the material routinely analyzed. The

[redacted]

concentrations of the new standards were within the licensee's normal operational range.

The three uranyl nitrate standard solutions were as follows:

#M = 0.004983 gu/ml
#N = 0.007111 gu/ml
#P = 0.008989 gu/ml

The three uranyl nitrate standard solutions had mean relative biases of -0.07%, -0.20%, and -0.92%. Only the bias of the last standard was statistically significant at the 2-sigma confidence level.

The results of these standards identified areas in the licensee's procedure where some errors may be reduced. The licensee will change the type of platinum and calomel electrodes used to provide a more immediate response. Also, the licensee will weigh their samples and perform a specific gravity determination on the solution in lieu of aliquoting the solutions.

The licensee's procedure, subject to some minor changes, is now "state of the art", and will be used to analyze total uranium of irradiated fuel in a hot cell.

b. License R-81

On December 18, 1979, the licensee submitted a procedure relating to the Uranium Waste Recovery Process to the NRC Advanced Fuel and Spent Fuel Licensing Branch. The plan was approved on June 27, 1980 after an April 2, 1980 revision.

[redacted]

4

[redacted]

Samples for NRC will be sent to Exxon Nuclear Idaho Company, Inc. for analysis. Licensee samples will go to Oak Ridge National Laboratory for analysis.

The analyses requested will be:

(1) Total Uranium
(2) Total Plutonium
(3) Isotopic distribution of both Uranium and Plutonium
(4) Strontium-90
(5) Cesium-137
(6) Gamma scan

[redacted]

[redacted] NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

9 JUL 1982

Docket Nos. 70-687
50-54

Union Carbide Corporation
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Inspection Nos. 70-687/82-04; 50-54/82-02

This refers to the routine safeguards inspection conducted by Mr. H. Zibulsky of this office on May 10-14, 1982 of activities authorized by NRC License Nos. SNM-639 and R-81 and to the discussions of our findings held by Mr. Zibulsky at the conclusion of the inspection.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Our inspector also verified the steps you have taken to correct the violation brought to your attention in the enclosure to our letter dated November 10, 1981. We have no further questions regarding your action at this time.

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

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials are deemed to be commercial or financial information within the meaning of 10 CFR 9.5(a)(4) and shall be subject to disclosure only in accordance with the provisions of 10 CFR 9.12; therefore, except for the report cover sheet, the enclosed inspection report will not be placed in the Public Document Room and will receive limited distribution.

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

Sincerely,

James P Joyner for

Thomas T. Martin, Director
Division of Engineering and Technical Programs

Enclosure: Combined NRC Region I Inspection Report Number 70-687/82-04 and 50-54/82-02

#18

cc w/ cy of report cover sheet only:
Mr. H. Voth, Manager Nuclear Operations
W. G. Ruzicka, Reactor Project Engineer
C. J Konnerth, Health Physicist
Dr. R. E. Bollinger, Vice President, Medical Products Division
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New York

bcc w/ cy of report cover sheet only:
Region I Docket Room (with concurrences)
Chief, Operational Support Section (w/o encl)
J. Roth, DPRP

U. S. NUCLEAR REGULATORY COMMISSION

Region I

Report Nos. 70-687/82-04
50-54/82-02

Docket Nos. 70-687
50-54

License Nos. SNM-639
R-81

Safeguards Group 1

Licensee: Union Carbide Corporation

P. O. Box 324

Tuxedo, New York 10987

Facility Name: Sterling Forest Research Center

Inspection At: Tuxedo, New York

Inspection Conducted: May 10-14, 1982

Date of Last Material Control and Accounting Inspection: January 8 and 11, 1982

Type of Inspection: Unannounced Material Control and Accounting

Inspectors: H. Zibulsky, Chemist — 6/23/82 date signed

E. Woltner, Auditor — 6/23/82 date signed

Approved By: A. Body, Chief, Safeguards Section, Technical Programs Branch — 6/24/82 date signed

Inspection Summary: Inspection on May 10-14, 1982 (Combined Report Nos. 70-687/82-04 and 50-54/82-02)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of nuclear material control and accounting including: Facility Organization and Operation; Storage and Internal Control; Records and Reports; and Management of Material Control System. The inspection involved 64 inspector-hours onsite by two NRC regional based inspectors.

Results: The licensee was in compliance with NRC requirements for the areas examined during the inspection.

THE INFORMATION ON THIS PAGE IS DEEMED TO BE APPROPRIATE FOR PUBLIC DISCLOSURE PURSUANT TO 10 CFR 2.790

THE REPORT DETAILS CONTAIN [redacted]

S-F1-82-66
Copy 5 of 6 Copies
3 Pages

8207260081 (1p)

[redacted]

DETAILS

1. Persons Contacted

*J. McGovern, Manager, Radiochemical Production
*C. Konnerth, Manager, Health, Safety, and Environmental Affairs
W. Ruzicka, Reactor Supervisor
S. Lupinski, Chief Reactor Operator and MBA-3 Custodian
C. Wright, MBA-2 Custodian
W. Leinheiser, Supervisor, Quality Control

The inspectors also interviewed other licensee employees associated with plant operations and nuclear material control.

*present at exit interview.

2. 92702 - Follow-Up on Items of Noncompliance

(Closed) Violation (70-687/81-04) Failure to perform an audit of the material control and accounting records and procedures within 12 month period. The licensee corrected the violation by performing an audit on September 24 and 25, 1981 and October 8 and 9, 1981.

3. 30703 - Exit Interview

The inspectors met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on May 14, 1982. The inspectors summarized the scope and findings.

4. 92713 - Independent Inspection Effort

No violations were identified.

The inspection results were attained through a tour of the facility and observation of the licensee's adherence to the Fundamental Nuclear Material Control Plan, material control procedures, and their health and safety procedures within the material access area and the reactor area. The inspectors noted that personnel contamination monitors were operating and being used by employees upon exiting from the processing area.

5. 85202 - Facility Organization (License SNM-639)

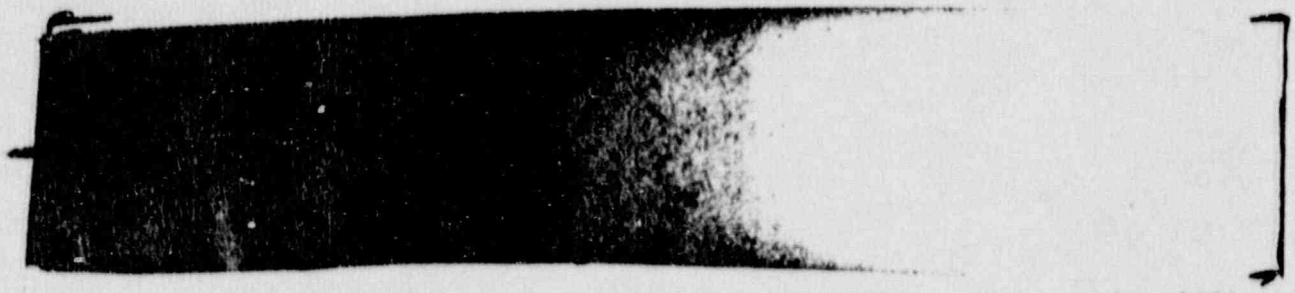
No violations were identified.

The inspection results were attained through discussions with licensee management, and review of the licensee's Fundamental Nuclear Material Control Plan (FNMCP) and operating procedures. The inspectors determined that separation of functions involved with special nuclear material existed in the organization.

[redacted]

6. 85204 - Facility Operation (License SNM-639)

No violations were identified.



The expiration date of License No. SNM-639 (70-687) was January 31, 1981, however, the license is "pending renewal" and the licensee is allowed to continue operations until a new license is issued by NMSS.

A licensee renewal request was made in a letter dated December 23, 1980, to the Director of Nuclear Material Safety and Safeguards, License Management Branch, Division of Fuel Cycle and Material Safety.

7. 85210 - Storage and Internal Control Licenses (SNM-639 and R-81)

No violations were identified.

The licensee had established a system of storage and internal control that provided for current knowledge of the quantity, identity, and location of all SNM within the facility. The controls included the master log, subsidiary logs for each material balance area (MBA), and supporting internal transfer documents for transfers between MBA's. The MBA's were:

a. SNM Feed Area

b. Plating Area

c. Reactor Area

d. Radiochemistry Area (Hot Cells)

8. 85216 - Records and Reports

a. License R-81

No violations were identified.

The inspection results were attained through a review of the two Material Status Reports (NRC Forms-742) for the period April 1, 1981 - March 31, 1982 and a review of all Material Transaction Reports (NRC Form-741) for the same period.

b. License SNM-639

No violations were identified.

The inspection results were attained through an audit of the licensee's records, reports, and underlying data for the special nuclear material (SNM) inventory reports during January 1, 1981 through April 27, 1982.

All Material Transaction Reports documenting receipts and shipments of SNM were reviewed for completion, accuracy, and proper recording, and no discrepancies were noted.

9. 85218 - Management of Materials Control System (License SNM-639)

No violations were identified.

A twelve-month management audit of the nuclear material control and accounting system was conducted between September 24 and October 9, 1981. Corrective action on improvement items was initiated by the licensee.

10. 85102 - Burn-Up - License R-81

No violations were identified.

The inspection results were attained through a review of the licensee's calculation of uranium fuel depletion and transmutation values.

The licensee utilizes a power meter, which integrates the power levels, to determine the total power output for the reactor. This information is then input into a computer program which updates the element and isotopic composition of each fuel element. The licensee also has a manual method for determining the fuel depletion and transmutation values.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

1 3 OCT 1982

Docket No. 70-687

Union Carbide Corporation
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Inspection Report No. 70-687/82-06

This refers to the routine safeguards inspection conducted by Mr. H. Zibulsky of this office on September 7-10, 1982 of activities authorized by NRC License No. SNM-639 and to the discussions of our findings held by Mr. Zibulsky with you at the conclusion of the inspection.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, measurements made by the inspector, and observations by the inspector.

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

In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials are deemed to be commercial or financial information within the meaning of 10 CFR 9.5(a)(4) and shall be subject to disclosure only in accordance with the provisions of 10 CFR 9.12; therefore, except for the report cover sheet, the enclosed inspection report will not be placed in the Public Document Room and will receive limited distribution.

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

Sincerely,

James H. Joyner for

Thomas T. Martin, Director
Division of Engineering and Technical Programs

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 90-97

Enclosure: NRC Region I Inspection Report No. 70-687/82-06 (~~Contains 2.790 Information~~)

8210220260 (2p)

cc w/ cy of report cover sheet only:
Mr. M. H. Voth, Manager Nuclear Operations
W. G. Ruzicka, Reactor Project Engineer
C. J Konnerth, Health Physicist
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New York

bcc:
Region I Docket Room (with concurrences)
Chief, Operational Support Section (w/o encl)

U. S. NUCLEAR REGULATORY COMMISSION

Region I

Report No. 70-687/82-06

Docket No. 70-687 License No. SNM-639 Safeguards Group 1

Licensee: Union Carbide Corporation

P. O. Box 324

Tuxedo, New York 10987

Facility Name: Sterling Forest Research Center

Inspection At: Tuxedo, New York

Inspection Conducted: September 7-10, 1982

Date of Last Material Control and Accounting Inspection: May 10-14, 1982

Type of Inspection: Announced Material Control and Accounting

Inspectors: _____ 10/7/82
H. Zibulsky, Chemist date signed

_____ 10/7/82
A. Della Ratta, Auditor date signed

Approved By: _____ 10.7.82
A. F. Gody, Chief, Safeguards Section, date signed
Technical Programs Branch

Inspection Summary:
Inspection on September 7-10, 1982 (Report No. 70-687/82-06)

Areas Inspected: Routine announced inspection of nuclear material control and accounting including: Measurement and Statistical Controls; Shipper-Receiver Verification; Internal Control; and Records and Reports. The inspection involved 56 inspector-hours onsite by two NRC regional based inspectors and was begun during regular hours.

Results: The licensee was in compliance with NRC requirements for the areas examined during the inspection.

THE INFORMATION ON THIS PAGE IS DEEMED TO BE APPROPRIATE FOR PUBLIC DISCLOSURE PURSUANT TO 10 CFR 2.790

THE REPORT DETAILS CONTAIN [redacted]

SS-RI-82-96
Copy 3 of 3 Cop
Pages 3

8210220264 (1p)

DETAILS

1. Persons Contacted

*J. McGovern, Manager, Radiochemical Production
*C. Konnerth, Manager, Health, Safety, and Environmental Affairs
F. Morse, Manager, Radiochemical Process Engineering
D. Grogan, Manager, Radiochemical Production
P. O'Callahan, Supervisor, Quality Control
K. George, Technical Consultant

The inspectors also interviewed other licensee employees associated with measurements. radiochemical production and nuclear material control.

*present at exit interview.

2. 30703 - Exit Interview

The inspectors met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on September 10, 1982. The inspectors summarized the scope and findings of the inspection.

3. 92713 - Independent Inspection Effort

No violations were identified.

The inspection results were attained through a tour of the facility and observation of the licensee's adherence to the Fundamental Nuclear Material Control Plan, material control procedures, and their health and safety procedures within the material access area and the reactor area. The inspectors noted that personnel contamination monitors were operating and being used by employees upon exiting from the processing area.

[redacted]

A demonstration of this new process was shown to the inspectors. Sampling and measurement points were established to ensure accountability of the uranium.

4. 85206 - Measurement and Statistical Controls

No violations were identified.

The licensee analyzed the uranium content of standards that were prepared with normal uranium and certified by the New Brunswick Laboratory. One analyst, using the Gravimetric Davies and Gray titration procedure, performed the analyses. The concentrations of the standards were within the licensee's normal operational range.

The three uranyl nitrate standard solutions were as follows:

#M = 0.004983g U/ml
#N = 0.007111g U/ml
#P = 0.008989g U/ml

The relative bias for the three standards was significant at the two-sigma confidence level, -0.23% ± 0.15%.

The control charts for August and September reflected this negative bias.

To correct the bias, the licensee was to control the laboratory temperature. Presently, the temperature at which the licensee's standard solutions were made and certified was 8 degrees warmer than the laboratory temperature where the analyses of the solutions were used for the control charts.

5. 85208 - Shipper-Receiver Verifications

No violations were identified.

The licensee had established and maintained procedures to assure that all Special Nuclear Material (SNM) received was accurately accounted for. The Site Accountability Officer (SAO) coordinated efforts to ensure that license possession limits were not exceeded.

All receipts of SNM were confirmed within 24 hours, through examination of source documentation and weight verification. Usually within 5 working days, measurement of the uranium content was confirmed. The licensee had seven receipts and two shipments of SNM since April 27, 1982, and had not experienced any significant shipper/receiver differences (S/Rs) on this material. Receipts involve only small quantities of uranium (average of 680 grams per receipt).

The NRC Form 741 forms completed for these transactions were reviewed against criteria for preparing and completing the form, timeliness of issuance and completion, correctness of data, and authorized signature. No discrepancies were noted.

6. 85210 - Internal Control

No violations were noted.

The licensee had established and was maintaining a system of written material control and accounting procedures that provided for knowledge of the quantity, identity, and location of SNM within the facility, in accordance with the licensee's Fundamental Nuclear Material Control Plan (FNMCP) and applicable license conditions. The controls included the master log, subsidiary logs for each material balance area (MBA), and supporting internal transfer documents for transfers between MBAs. The

licensee was in the process of revising certain sections of the FNMCP to reflect current practices.

7. 85216 - Records and Reports

No violations were identified.

The inspection results were attained through an audit of the licensee's records and reports for the high enriched uranium physical inventory material balance period of April 27 - June 23, 1982. All line items on the SNM inventory report were traced to source documents and cross-checked to the records maintained by the licensee and to the DOE-NMMSS computer tabulations. No discrepancies were noted.

[redacted]

JUL 29 1985

Docket Nos: 50-54
70-687

Union Carbide Corporation
ATTN: Mr. James J. McGovern
Business Manager, Radiochemicals
P. O. Box 324
Tuxedo, New York 10987

Gentlemen:

Subject: Combined Inspection Nos. 50-54/85-02 and 70-687/85-03

This refers to the routine safeguards inspection conducted by Mr. W. Madden of this office on April 24 - 26, 1985 of activities authorized by NRC License No. R-81 and SNM-639 and to the discussions of our findings held by Mr. W. Madden with you and members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

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

Sections of the enclosed inspection report contain details of your security program that have been determined to be exempt from public disclosure in accordance with either 10 CFR 73.21 (Safeguards Information) or 10 CFR 9.5(a)(4) (Commercial or Financial Information). Therefore, the sections so identified in the inspection report will not be placed in the NRC Public Document Room and will receive limited distribution. The inspection report cover sheet and the remaining portions of the inspection report will be placed in the Public Document Room, in accordance with 10 CFR 2.790(a).

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

Sincerely,

Original Signed By:
James H. Joyner

Thomas T. Martin, Director
Division of Radiation Safety
and Safeguards

[redacted]

Enclosure: Combined NRC Region I Inspection Report Nos. 50-54/85-02 and 70-687/85-03 (Paragraph 3 contains ~~Commercial or Financial Information (COFI)~~)

cc w/encl: (w/o COFI)
W. G. Ruzicka, Reactor Supervisor
D. D. Grogan, Manager, Radiochemical Production
C. J. Konnerth, Manager, Health, Safety and Environmental Affairs
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New York

bcc w/encl: (w/o COFI)
Region I Docket Room (with concurrences)
Senior Operations Officer (w/o encl)
W. Brown, NMSS (w/COFI)
J. Roth, DRSS

RI:DRSS	RI:DRSS	RI:DRSS	RI:DRSS
Madden/rw/mjd	Kelmig	Joyner	Martin
7/15/85	7/19/85	7/18/85	7/ /85

[redacted]

[redacted] date

[redacted]

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 70-687/85-03 and
50-54/85-02

Docket Nos. 70-687 License Nos. SNM-639
50-54 R-81

Licensee: Union Carbide Corporation
P.O. Box 324
Tuxedo, New York 10987

Facility Name: Sterling Forest Research Center

Inspection At: Tuxedo, New York 10987

Inspection Conducted: April 24 - 26, 1985

Date of Last Physical Security Inspection: March 30 - 31, 1982

Type of Inspection: Routine, Unannounced Physical Protection

Inspector: R. Keimig for 7-19-85
William J. Madden, date
Physical Protection Inspector

Approved by: R. Keimig 7-19-85
R. R. Keimig, Chief date
Safeguards Section, Nuclear
Materials Safety and Safeguards Branch

Inspection Summary: Routine Physical Protection Inspection (Combined Report Nos. 70-687/85-03 and 50-54/85-02).

Areas Inspected: General Requirements for Special Nuclear Material of Moderate Strategic Significance at fixed sites including: Security Plan; Protection of Special Nuclear Material (SNM); Security Organization; Records and Reports; Alarm Systems; and Communications. The inspection involved 18 hours onsite by a region based inspector.

Results: The licensee was in compliance with NRC requirements in the areas examined.

SGS-RI-85-29
Copy 1 of 6 Copies
4 Pages

[redacted]

8508150521 (4pp)

[redacted]

[redacted]

DETAILS

1. Key Persons Contacted

*J. McGovern, Business Manager, Radiochemicals
*W. Ruzicka, Reactor Supervisor
*R. Hubbard, Manager, Maintenance and Engineering
C. Konnerth, Manager, Health, Safety and Environmental Affairs
*J. Baird, Senior Reactor Operator
G. Wright, Production Control Supervisor
S. Lupinski, Chief, Reactor Operator
J. Kratochwil, Utilities Supervisor

*denotes those present at exit interview.

2. 30703 - Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on April 26, 1985, and summarized the scope and findings of the inspection. At no time during the inspection was written material provided to the licensee by the inspection.

3. 81480 - General Requirements for Special Nuclear Material of Moderate Strategic Significance at Fixed Sites

a. Security Plan: The current site security plan was approved by NRC's Office of Nuclear Reactor Regulation letter dated October 28, 1984 and by the Office of Nuclear Materials Safety and Safeguards letter dated May 26, 1983. The plan provides for the protection of SNM in storage and/or in use in contiguous facilities under NRC Reactor License No. R-81 and Hot Laboratory SNM License No. SNM-639, and for SNM in-transit. The plan addresses SNM of both of Low and Moderate Strategic Significance and implements the performance objectives of 10 CFR 73.67 and takes credit for "exempt material" categories of SNM provided for by 10 CFR 73.67(b)(1). The plan limits the total quantity of non-exempt SNM possessed under both licenses to less than a formula quantity. The inspector confirmed, by review and walk-through, that the plan and implementing procedures meet the requirements of 10 CFR 73.67.

b. Protection of SNM: (COFI) The inspector confirmed that the licensee protects SNM in authorized [redacted]

COFI - Commercial or Financial Information that is exempt from public disclosure in accordance with 10 CFR 9.5(a)(4).

[redacted]

The inspector toured the facilities and concluded that the licensee was maintaining the non-exempt SNM inventory level below the "less than 5 kg." limit as defined in paragraphs 3A and B of the approved Security Plan. Non-exempt SNM on hand, in the form of encapsulated fuel and feed material, was less than 2 kg. on April 25, 1985. (COFI)

c. Security Organization: (COFI) The security organization includes

(COFI) The inspector confirmed that all personnel involved were familiar with their specific duties and responsibilities as required by the security plan.

d. Records and Reports: The inspector reviewed the licensee's SNM inventory results of March 19, 1985 and April 12, 1985; Access Control Authorization Listing dated April 12, 1985; Alarm Test Records for January - April, 1985 and a Security Program Audit accomplished on January 18, 1984 by the Manager, Health, Safety and Environmental Affairs and dated January 24, 1984. (COFI) The audit resulted in the replacement of

Facility key control records were reviewed for the period January - April 25, 1985.

were last changed on April 12, 1985, coincidental with the favorable termination of an employee. Personnel access records for the were reviewed for the periods February and April, 1985. (COFI) All records and reports were in conformance with the Security Plan.

e. Alarm Systems: (COFI)

Successful tests of the alarm were demonstrated on April 25, 1985. The inspector found the alarm system to be in conformance with the Security Plan. Management is currently considering an improvement to the alarm system which would

Although not a requirement, this improvement would enhance alarm monitoring and response. (COFI)

[redacted]

4

f. Communications: (COFI) [redacted] are the primary means of communication. [redacted] are available for backup communications between [redacted]

[redacted] telephone numbers were available to both [redacted] The inspector confirmed the validity of these numbers by telephone contact with the dispatchers at both locations on April 25, 1985. (COFI) The inspector found communications capabilities in conformance with the approved security plan.

[redacted]

[redacted]

APR 18 1986

~~Liz Suarez~~

Docket Nos: 50-54
70-687

Cintichem, Inc.
ATTN: Mr. James J. McGovern
Plant Manager
P. O. Box 816
Tuxedo, New York 10987

Gentlemen:

Subject: Combined Inspection Nos. 50-54/86-01 and 70-687/86-02

This refers to the routine safeguards inspection conducted by Mr. A. Della Ratta of this office on February 10-14, 1986 of activities authorized by NRC License Nos. R-81 and SNM-639, and to the discussions of our findings held by Mr. Della Ratta with yourself and members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Our inspector also verified the steps you had taken to correct Violation B brought to your attention in a letter dated January 17, 1985. We have no further questions regarding the steps you took to correct that violation. We did not review your corrective actions for Violation A during this inspection.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notices of Violation, enclosed herewith as Appendices A and B. These violations have been categorized by severity level in accordance with the revised NRC Enforcement Policy (10 CFR 2, Appendix C) published in the Federal Register Notice (49 FR 8583) dated March 8, 1984. You are required to respond to this letter and in preparing your response, you should follow the instructions in Appendices A and B.

Appendix B to this letter and Paragraphs 8.a. and 8.b. in the enclosed inspection report contain details of your security program that have been determined to be exempt from public disclosure in accordance with 10 CFR 73.21, Safeguards Information. Therefore, these will not be placed in the NRC Public Document Room and will receive limited distribution. This letter, Appendix A and the remainder of Appendix B and the inspection report will be placed in the Public Document Room, in accordance with 10 CFR 2.790(a).

[redacted] - 0001.0.0

[redacted]

The responses directed by this letter and the accompanying Notices are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Your cooperation with us in this matter is appreciated.

Sincerely,

Original Signed By
James H. Joyner
Thomas T. Martin, Director
Division of Radiation Safety
and Safeguards

Enclosures:
1. Appendix A, Notice of Violation
2. Appendix B, Notice of Violation ~~(Contains Safeguards Information)~~
3. Combined NRC Region I Inspection Report Nos. 50-54/86-01 and 70-687/86-02 (Paragraphs 8.a. and 8.b. of the combined inspection report and portions ~~of Appendix B contain Safeguards Information. (SGI)~~

cc w/encls: (w/o SGI)
W. G. Ruzicka, Manager, Nuclear Operations
D. D. Grogan, Manager, Radiochemical Production
C. J. Konnerth, Manager, Health, Safety and Environmental Affairs
Public Document Room (PDR)
Nuclear Safety Information Center (NSIC)
State of New York

bcc w/encls: (w/o SGI)
Region I Docket Room (with concurrences)
Management Assistant, DRMA (w/o encls)
W. Brown, NMSS (w/SGI)
J. Roth, DRSS

RI:DRSS	RI:DRSS	RI:DRSS	RI:DRSS
Della Ratta/fl	Keimig	Joyner	Martin
03/24/86	03/27/86	04/10/86	03/ /86

APPENDIX A

NOTICE OF VIOLATION

Cintichem, Inc.
Tuxedo, New York 10987

Docket No. 70-687
License No. SNM-639

As a result of the inspection conducted on February 10-14, 1986, and in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), the following violations were identified:

A. Section 7.2, "Internal Transfers," of your NRC approved Fundamental Nuclear Material Control Plan (FNMCP) states, in part, that transfer of special nuclear material (SNM) between MBA's on site is controlled through the use of logbooks and transaction reports which detail all the transactions involving the movement of SNM from one MBA to another. In each transaction, the amount of material (element and isotope) and the date are recorded in the logbook of the issuing MBA as a transfer out of that area, and initialled by the person responsible for that MBA. The same information is transcribed into the logbook of the MBA accepting the material, and initialled by the person receiving the material. Transaction reports contain the signatures of both individuals. These entries are made promptly at the time of transfer, thus assuring timeliness and accuracy of the record systems.

Contrary to the above , on February 10, 1986, the inspector identified that the licensee had transferred and returned 319 grams of U-235 between MBA 1 and MBA 2, without the completion of an internal transaction report, or the recording of the transfers in the MBA logbooks.

This is a Severity Level V violation (Supplement III, E).

B. 10 CFR 70.51(e)(1)(i) states, in part, that the licensee shall maintain procedures for tamper-safing containers or vaults containing special nuclear material not in process, which include control of access to the devices and records of the date and time of application of each device to a container or vault.

Paragraph 2.b. of the licensee's procedure, "Security Seals for the Protection and Control of Special Nuclear Material," states, in part, that a seal will be applied immediately after the samples and data to identify and measure the contents have been taken.

Contrary to the above, on February 11, 1986, during a review of the licensee's records, the inspector found that ten barrels of waste material had been radiometrically analyzed on January 15, 1986, but had not been tamper-safed immediately after the completion of the analyses. The ten barrels of waste were not tamper-safed until January 17, 1986.

This is a Severity Level V violation (Supplement III, E).

8604210243 (2pp)

C. Section 4.2.1.4.f of the licensee's FNMCP, states, in part, that the Standard Waste Barrel will be made with waste laboratory material that has been calibrated against primary standard reference material. Standard Waste Barrels will be representative of the full range of the normal process waste barrels.

Contrary to the above, on February 11, 1986, the inspector found that, with respect to the radiometric analyses of the ten waste barrels identified in Violation B above, the licensee failed to use Standard Waste Barrels that had been calibrated and that were representative of the full range of the waste barrels being analyzed. Three waste barrels that were analyzed contained 15.01 grams U-235, 19.58 grams U-235, and 19.25 grams U-235; however, the highest concentration of the Standard Waste Barrel used for radiometric analyses was 13.99 grams U-235.

This is a Severity Level V violation (Supplement III, E).

Pursuant to the provisions of 10 CFR 2.201, Cintichem, Inc. is hereby required to submit to this office within thirty days of the date of the letter which transmitted this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending this response time.

[redacted]

APPENDIX B

NOTICE OF VIOLATION

Cintichem, Inc.
Tuxedo, New York 10987

Docket Nos. 50-54 and 70-687
License Nos. R-81 and SNM-639

As a result of the inspection conducted on February 10-14, 1986, and in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), the following violations were identified:

A. License Condition 9.1 of Safeguards Amendment SG-1, dated April 12, 1985, states that the licensee shall maintain and fully implement all provisions of the Commission approved security plan titled, "Physical Security Plan for the Union Carbide Corporation Facility at Tuxedo, New York, Revision 3 and 4," dated April 30, 1983, and May 19, 1983, respectively; and as revised in accordance with the provisions of 10 CFR 70.32 (e).

10 CFR 70.32(e) states, in part, that the licensee shall maintain records of changes to the plan made without prior Commission approval for a period of two years from the date of the change, and shall furnish to the Commission, a report containing a description of each change within two months after the change is made.

Contrary to the above, on February 13, 1986, the inspector identified that the licensee had made changes on January 31, 1985, and November 1, 1985, but had not furnished to the Commission, a report containing a description of each change within two months after the change was made. Examples of the changes made are as follows:

a. (SGI) The Receptionist's Office, at the main entrance door (normal access point) in building 2, has not been used as the normal control point to the controlled access area since January 31, 1985, as described in Section 2.2 of the NRC-approved physical security plan. (SGI)

b. (SGI) The licensee has no immediate plans to replace the receptionist, who retired, and who had, among other duties, the responsibility of holding all visitors' packages carried into the controlled access area that had not been [redacted] as described in Section 3.6 of the NRC-approved physical security plan. (SGI)

c. Job titles of certain positions, as stated on page 3.4 and page 4.1 of the Physical Security Plan, had been changed on November 1, 1985.

SGS-RI-86-21A
Copy 4 of 10 Copies
2 Pages

8604210248 (2pp)

[redacted]

From	To
Plant Manager, Radiochemicals Nuclear Facility Services Engineer Manager, Engineering and Maintenance	Plant Manger Hot Lab Operations Supervisor Manager, Engineering and Technology Sales

This is a Severity Level V violation (Supplement III, E).

B. (SGI) Section 3.6, titled "Search Policy," of the licensee's NRC approved physical security plan, states, in part, that searches of packages and vehicles leaving the controlled access area will occur at a rate of [redacted]

Contrary to the above, on February 13, 1986, the inspector found that there were no means established to demonstrate that [redacted] packages or vehicles leaving the controlled access area were being searched. (SGI)

This is a Severity Level V violation (Supplement III, E).

C. (SGI) Section 4.4, titled, "Watchman," of the licensee's NRC-approved physical security plan, states, in part, that the watchman's tour of the controlled access area is completed [redacted] at locations throughout the controlled access area. The tour covers the essential reactor equipment which includes [redacted] In the unlikely event the watchmen are unable to complete a scheduled tour of the control access area, an authorized individual, designated by the watchmen, will be notified in advance to perform the tour. The designated individual will notify [redacted]

Contrary to the above, on February 14, 1986, the inspector found that the watchmen had designated the reactor control room personnel to perform a scheduled tour that the watchmen were unable to complete on January 1, 1986, January 5, 1986, and February 11, 1986. No records were available to indicate that the tours had been completed [redacted] or that [redacted]

This is a Severity Level V violation (Supplement III, E).

Pursuant to the provisions of 10 CFR 2.201, Cintichem, Inc. is hereby required to submit to this office within thirty days of the date of the letter which transmitted this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending this response time.

[redacted]

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-54/86-01
70-687/86-02

Docket Nos. 50-54
70-687

License Nos. R-81
SNM-639

Safeguards Group: I

Licensee: Cintichem, Inc.
P. O. Box 324
Tuxedo, New York 10987

Facility Name: Sterling Forest Research Center

Inspection At: Tuxedo, New York

Inspection Conducted: February 10-14, 1986

Type of Inspection: Material Control and Accounting, and Physical Security

Date of Last Material Control and Accounting Inspection: August 19-23, 1985

Date of Last Physical Security Inspection: April 24-26, 1985

Inspector: A Della Ratta 3-24-86
A. Della Ratta, Safeguards Auditor date

Approved by: R. Keimig 3-27-86
R. R. Keimig, Chief, Safeguards Section date
Nuclear Materials Safety and Safeguards
Branch, DRSS

Inspection Summary: Inspection on February 10-14, 1986 (Combined Report Nos. 50-54/86-01 and 70-687/86-02).

Areas Inspected: Nuclear material control and accounting, and physical security, including: facility organization and management controls; facility operations and internal controls; reactor material control and accounting; and physical protection measures for special nuclear material of moderate strategic significance.

[redacted]

SGS-RI-86-21
Copy 4 of 6 Co
7 Pages

[redacted]

8604210254

Results: Five violations were identified: failure to complete internal transaction reports and the MBA logbook, (paragraph 6); failure to tamper-safe 10 waste barrels in accordance with written procedures (paragraph 6); failure to use standard waste barrels that were representative of the full range of the normal process waste barrels being radiometrically analyzed (paragraph 6); failure to notify the Commission, within two months, of changes made to the NRC-approved physical security plan (paragraph 8); and failure to maintain records to show compliance with certain requirements as specified in Sections 3.6 and Section 4.4 of the Physical Security Plan (paragraph 8).

DETAILS

1. Key Persons Contacted

*J. McGovern, Plant Manager
*C. Konnerth, Manager, Site Operations
*W. Ruzicka, Manager, Nuclear Operations
*L. Thelin, Radiation Safety Officer
J. Ditton, Health Physics Supervisor
R. Strack, Reactor Supervisor
S. Lupinski, Chief Reactor Operator
J. Kratochwil, Supervisor, Site Utilities

The inspector also interviewed other licensee employees associated with plant operations, nuclear material control, and physical security.

*present at exit interview

2. 30703 - Exit Interview

The inspector met with the licensee representatives indicated in paragraph 1 at the conclusion of the inspection on February 14, 1986, and summarized the scope and findings of the inspection.

At no time during this inspection was written material provided to the licensee by the inspector.

3. 92702-Licensee Action on Previously Identified Enforcement Item

(Closed) Violation (70-687/84-05-02): Failure to conduct the annual management audit in accordance with the requirement of Section 8.2 of the fundamental nuclear material control plan (FNMCP). The inspector's review of the last management audit, dated October 24, 1985, determined that the audit was in accordance with the requirements of the FNMCP in that all functions were audited and the audit was conducted by an individual who was independent of nuclear material control management, measurement or utilization.

4. 92704-Followup on Headquarters Requests

The inspector reviewed, and discussed with the licensee, the actions taken with regard to the NRC Commission Order of September 27, 1985, that required non-power reactor licensees to show cause why they should not be required to reduce the amount of high enriched uranium (HEU) onsite to that amount necessary to maintain a normal schedule of operations. Specifically, this Order permits the licensees to keep no more than enough fuel to (1) replace one failed element for each different type of element in the core, and (2) replace the amount of fuel depleted during a 90-day period of normal operations.

The licensee's MTR research reactor operates on a 95% duty cycle at a power level of five megawatts which corresponds to a fuel usage of 28 standard elements per year and is maintaining an inventory of not more than seven unirradiated standard fuel element assemblies. The licensee's unirradiated fuel inventory, as of February 14, 1986, was 2 standard elements and 5 control elements, which is equal to 4.5 standard elements. (A control element has one half the amount of HEU of a standard element and, therefore, is counted as one half of a standard element, for inventory purposes.)

5. 85203 - Facility Organization and Management Controls

The inspector discussed with management and reviewed the licensee's annual audit of the Fundamental Nuclear Material Control Plan (FNMCP) which was conducted during October, 1985. The results of this audit were documented on October 24, 1985.

Several minor deficiencies were noted, and some recommendations were made to management for improvements. Management took corrective actions on the deficiencies, and responded to the recommendations in a timely manner.

6. 85205 - Facility Operation and Internal Controls

This portion of the inspection included observations, discussions with licensee personnel, a review of the licensee's records and NRC-approved FNMCP.

The inspector identified that 319 grams of U-235 had been transferred from MBA 1 to MBA 2 and then returned to MBA 1 without the completion of an internal transaction report and recording the transfers in the MBA 1 and MBA 2 logbooks. The licensee stated that they did not believe the use of transaction reports was necessary, since it had been a standard practice to use a portion of the solution laboratory (MBA 2) as a part of MBA 1 when processing current receipts of feed material from a solid state to a solution. Also, the licensee stated that the MBA 1 custodian/alternate never releases possession of the material while it is being processed in MBA 2. However, the above technique for handling this material is not as described in the NRC-approved FNMCP. This technique was discussed with R. Jackson, NRC NMSS, on February 13, 1985 and February 19, 1985, who concurred with the inspector that this handling technique is not in accordance with the NRC-approved FNMCP. This was identified as a violation of Section 7.2 of the NRC-approved FNMCP (70-687/86-02-01) which requires the transaction reports and MBA logbooks to be completed promptly, at the time of transfer.

The inspector's review of the licensee's records identified that the ten barrels of waste material had been radiometrically analyzed on January 15, 1986, but had not been tamper-safed immediately after the completion of the analyses. The ten barrels of waste were tamper-safed on January 17, 1986. This was identified as a violation of 10 CFR 70.51

(e)(1)(i) and paragrpah 2.b., of the licensee's tamper safing procedure titled, "Security Seals for the Protection and Control of Special Nuclear Material" (70-687/86-02-02) which requires the tamper-safe seal to be applied immediately after the samples and data to identify and measure the contents are taken.

In conjunction with the radiometric analyses of the ten waste barrels, the inspector identified that the licensee failed to use Standard Waste Barrels that had been calibrated and that were representative of the full range of the waste barrels being analyzed. The high concentration of the Standard Waste Barrel used for the radiometric analysis was 13.99 grams U-235. However, three waste barrels that were analyzed contained 15.01 grams U-235, 19.58 grams U-235, and 19.25 grams U-235. This was identified as a violation of Section 4.2.1.4.f. of the FNMCP (70-687/86-02-03).

7. 85102 - Material Control and Accounting

a. Inventory

The inspector performed an inventory verification, on February 12, 1986, which consisted of a piece count of the fuel elements and fission counters in the spent fuel pool and storage area vaults, and a comparison of the fuel location history sheets to the reactor core and storage area schematics. No discrepancies were noted. The licensee had conducted physical inventories as required by 10 CFR 70.51 (d). The licensee's last physical inventory was performed October 2, 1985.

b. Records and Reports

The inspector reviewed the licensee's records, source data, and Material Balance Reports (DOE/NRC Form-742) submitted during the period October 1, 1982-September 30, 1985. Total uranium and U-235 fission and transmutation records were also reviewed. No discrepancies were noted.

8. 81480 - General Physical Security Requirements for SNM of Moderate Strategic Significance

The inspector reviewed the licensee's protection of special nuclear material of moderate strategic significance, for conformance to the NRC-approved physical security plan, by examining barriers and access controls, procedures, and by observations of a licensee test of alarm system features. Implementation of the physical security plan was found to meet the general performance requirements and objectives of the governing regulations except as follows:

[redacted]

a. Security Plan Changes

The inspector's review of the licensee's NRC-approved physical security plan identified that the licensee had made changes on January 31, 1985, and November 1, 1985, but had not submitted these changes to the NRC within two months after the changes were made, as required, by License Condition 9.1 of Safeguards Amendment SG-1, dated April 12, 1985, and 10 CFR 70.32 (3). Examples of the changes made are as follows:

1. (SGI) The Receptionist's Office located adjacent to the main entrance door (normal access point) in Building 2, was no longer being used as a receptionist's office since the retirement of the receptionist on January 31, 1985. (SGI)

2. (SGI) The licensee has no immediate plans to replace the retired receptionist and who had, among other duties, the responsibility of caring for all visitors' packages carried into the controlled access area that had not been [redacted] (SGI)

3. Job titles of certain positions as described on page 3.4 and page 4.1 of the Physicial Security Plan had been changed on November 1, 1985 as indicated below:

From	To
Plant Manager, Radiochemicals	Plant Manager
Nuclear Facility Services Engineer	Hot Lab Operations Supervisor
Manager, Engineering and Maintenance	Manager, Engineering and Technology Sales

Failure to submit these changes to the NRC within two months was identified as a violation (70-1100/86-02-04, and 50-54/86-01-01).

b. Procedure Policy

(SGI) Section 3.6 "Search Policy," of the licensee's physical security plan, states, in part, that searches of packages and vehicles leaving the controlled access area will occur at a rate [redacted]. The inspector's review identified that no means were established by the licensee to assure that this requirement was being carried out. (SGI)

(SGI) Additionally, the inspector identified to the licensee that Section 4.4, "Watchman," of the licensee's NRC-approved physical security plan, states, in part, that the watchman tour of the controlled access area is complete[redacted] and that [redacted] at locations throughout the controlled access area. The tour covers the essential reactor

[redacted]

[redacted]

equipment which includes [redacted]. In the unlikely event the watchmen are unable to complete a scheduled tour of the control access area, an authorized individual, designated by the watchmen, will be notified in advance to perform the tour. The designated individual [redacted]. However, the inspector's review found that watchmen had designated the reactor control room personnel to perform a scheduled tour on January 1, 1986, January 5, 1986, and February 11, 1986, that the watchmen were unable to complete but there were no records indicating that the tours had been completed [redacted] or that [redacted].

Failure to maintain records in order to show compliance with Sections 3.6 and 4.4 of the physical NRC-approved physical security plan was identified as a violation (70-687/86-02-05, and 50-54/86-01-02).

[redacted]

[redacted]

Docket Nos: 50-54; 70-687

Cintichem, Inc.
ATTN: Mr. James J. McGovern
Plant Manager
P. O. Box 324
Tuxedo, New York 10987

[redacted]

Gentlemen:

Subject: Inspection Report 50-54/86-02; 70-687/86-03

This refers to the special inspection conducted by Mr. D. Haverkamp of this office on August 6-8, 1986 of activities authorized by NRC License Nos. R-81 and SNM-639 and to the discussions of our findings held by Mr. Haverkamp with yourself and other members of your staff at the conclusion of the inspection. This also refers to subsequent telephone conversations with Mr. W. Ruzicka of your staff and with several of your licensed operators on November 14, 16, and 17, 1986, and to our telephone conversation on November 25, 1986.

Areas examined during this inspection are described in the NRC Region I Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. These violations have been categorized by severity level in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (Enforcement Policy). You are required to respond to this letter and in preparing your response, you should follow the instructions in Appendix A.

The first violation described in Appendix A (Item A) concerns inadequate control of access to the facility when NRC inspectors were afforded unescorted access without proper authorization. Since similar incidents involving your employees occurred just prior to this inspection, we are concerned that corrective actions were not effective in preventing recurrence of the violation. Therefore, in your response to Appendix A, you should particularly address those measures taken to prevent recurrence of this violation.

The second violation described in Appendix A (Item B) concerned failure to properly establish reactor building confinement prior to a reactor startup on October 8, 1984. This appears to be an isolated incident; however, we are concerned that your staff did not understand fully the requirements for establishing confinement prior to reactor operation.

Two other concerns with potential to impact safety were identified during this inspection. The first is your past practice of administrating licensed operator requalification examinations as take-home exams on an honor-system basis. Our in-

[redacted]

H/12

Cintichem, Inc. [redacted]

itial evaluation is that this practice is unacceptable for future administration of requalification exams. This matter has been referred to Mr. Robert Keller, Chief, Operator Licensing Section, NRC Region I, for formal evaluation. If you have any questions in this regard, you may contact Mr. Keller at (215) 337-5211.

The second concern pertains to a reactor startup conducted on March 7, 1986, with reactor pool visibility substantially degraded. Details of that incident are described in Paragraph 2.3 of the enclosed inspection report. As discussed during our telephone conversation on November 25, 1986, we request that you submit within 30 days a written report which addresses: (1) confirmation of our understanding of the matter as described in the enclosed inspection report, (2) your justification for permitting reactor operation with a nonvisible core including an evaluation of the safety considerations, and (3) the steps you have taken to avoid recurrence.

Sections of the enclosed Appendix A contain details of your security program that have been determined to be exempt from public disclosure in accordance with 10 CFR 73.21, Safeguards Information. The sections so identified will not be placed in the NRC Public Document Room and will receive limited distribution. The inspection report and any remaining portions of Appendix A will be placed in the Public Document Room, in accordance with 10 CFR 2.790(a).

The responses directed by this letter and the accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Your cooperation with us in this matter is appreciated.

Sincerely,

Original Signed By:

Edward C. Wenzinger, Chief
Projects Branch No. 3
Division of Reactor Projects

Enclosures:
1. Appendix A, Notice of Violation*
2. Combined NRC Region I Inspection Report 50-54/86-02; 70-687/86-03

[redacted]

cc w/encls (w/o Portions of Appendix A):*
W. G. Ruzicka, Nuclear Operations Manager
D. D. Grogan, Manager, Radiochemical Production
C. J. Konnerth, Manager, Site Operations
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
State of New York

[redacted]

Cintichem, Inc.

[redacted]

bcc w/encls (w/o Portions of Appendix A):*
Region I Docket Room (with concurrences)
Management Assistant, DRMA (w/o encls)
W. Brown, NMSS (w/SGI and/or COFI)
J. Roth, DRSS
Robert J. Bores, DRSS
D. Haverkamp, DRP
R. Keller, DRP
S. Collins, DRP

*Contains Safeguards Information

[redacted]

[redacted]

RI:DRP
Haverkamp/meo
11/19/86
21

RI:DRP
Eisasser
11/24/86

RI:DRSS
Keimig
11-21-86

RI:DRP
Wenzinger
11/25/86

OFFICIAL RECORD COPY

[redacted]

APPENDIX A

NOTICE OF VIOLATION

Cintichem, Inc.
Sterling Forest Research Reactor

Docket Nos. 50-54; 70-687
License Nos. R-81; SNM-639

During an NRC inspection conducted on August 6-8, 1986, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (Enforcement Policy 1986), the violations are listed below:

A. (SGI)Section 3.1 of the NRC-approved Security Plan requires that all personnel granted unescorted access to the controlled access area shall be screened by the controlled access area security officer. Section 3.4 requires that all authorized individuals are screened and issued picture badges, and that access to the controlled access area is controlled [redacted] at all times. Only authorized individuals are issued [redacted] to the perimeter locks.

Contrary to the above, on August 7, 1986, the inspectors were given [redacted] to the perimeter locks and were afforded unescorted access to the controlled access area prior to being screened, authorized, and issued a picture badge by the controlled access area security officer.(SGI)

This is a Severity Level IV Violation (Supplement III).

B. Technical Specification 3.5.3(4) states, in part, that at least one door of the double airlock doors shall be closed while the reactor is operating.

Contrary to the above, on October 8, 1984, a reactor startup was initiated with the inner sliding door of the double airlock doors adjacent to the transfer canal between the reactor building and the hot laboratory partially opened. The outer door was physically closed but the O-ring gasket was not inflated. In that arrangement neither door was closed as required.

This is a Severity Level IV Violation (Supplement I).

Pursuant to the provisions of 10 CFR 2.201, Cintichem, Inc. is hereby required to submit to this office within 30 days of the date of the letter transmitting this Notice, a written statement or explanation in reply, including: (1) the reason for the violations, if admitted; (2) the corrective steps which have been taken and the results achieved; (3) the corrective steps which will be taken to avoid further violations; and (4) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending this response time.

SGS-RI-86-42
COPY 1 OF 6 COPIES
1 PAGE

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-54/86-02
70-687/86-03

Docket Nos. 50-54
70-687

License Nos. R-81
SNM-639

Licensee: Cintichem, Inc.
P. O. Box 324
Tuxedo, New York 10987

Facility Name: Sterling Forest Research Reactor/Hot Laboratory

Inspection At: Tuxedo, New York

Inspection Conducted: August 6-8, 1986

Inspectors: D. Haverkamp, Project Engineer
J. Roth, Project Engineer

Approved by: D R Haverkamp
for T. C. Elsasser, Chief, Reactor Projects Section 3C 11/25/86
Date

Inspection Summary: Inspection on August 6-8, 1986 (Report Nos. 50-54/86-02; 70-687/86-03)

Areas Inspected: Special, unannounced inspection of alleged concerns regarding management followup to violations, and routine inspection of licensee activities including facility operations and Nuclear Safeguards Committee reviews.

Results: Two violations concerning failure to properly establish reactor building confinement prior to startup of the reactor (Section 2.1) and inadequate control of access to the facility (Section 2.4) were identified during the course of this inspection. The alleged concerns regarding inadequate management followup to violations of Technical Specifications and procedures generally were not substantiated, with the exception of management followup to previous licensee-identified facility access violations.

8612030279 (16pp)

DETAILS

1.0 Persons Contacted

During the course of this inspection, the following personnel were contacted or interviewed:

J. Baird, Senior Reactor Operator
D. Cagney, Senior Reactor Operator
*C. Konnerth, Manager, Site Operations
I. Kroun, Senior Reactor Operator
*J. McGovern, Plant Manager
T. Mach, Reactor Operator (Trainee)
K. Morales, Senior Reactor Operator
*W. Ruzicka, Nuclear Operations Manager
R. Saxton, Reactor Operator
L. Thelan, Radiation Safety Officer

*Present at the exit interview on August 8, 1986.

2.0 Alleged Concerns Regarding Management Followup to Violations

In early July 1986, an anonymous individual called the NRC Headquarters Duty Officer who then bridged the call to the NRC Region I Duty Officer. The caller identified several alleged concerns regarding various past practices at the Cintichem reactor facility that he considered were indicative that violations of Technical Specifications and procedures were overlooked by management. A few days later, as agreed during the initial telephone conversation, the alleger called again to provide amplifying information regarding the initial concerns as well as to discuss some additional concerns. Following these initial contacts, the alleger called during July and August 1986 to determine the NRC's plans in reviewing the concerns; however, no additional concerns or amplifying information were identified during the subsequent calls.

A total of nine separate concerns of alleged inadequate management followup or questionable practices were identified by the anonymous caller. During this inspection, interviews were conducted with a representative number of licensed reactor operators and senior reactor operators to obtain additional or clarifying information regarding the alleged concerns. The inspectors also interviewed plant operations department supervisory personnel regarding these matters and reviewed applicable Technical Specifications and procedural requirements.

Each of the concerns, as initially alleged and subsequently clarified, and the inspectors' findings regarding the concerns are discussed in the sections that follow.

2.1 Concern No. 1 - Reactor Startup Without Containment

Summary of Allegation

About six months ago (late 1985), the reactor was shut down to repair an air supply solenoid valve associated with containment ventilation. The reactor was started up with the repair unfinished and the air supply valve open, but with no containment. A senior reactor operator brought the matter to the attention of the nuclear operations manager, who forgot the whole thing. All licensed people knew about this incident and are surprised that no one did anything about it.

Clarification of Allegation

Based on discussions with licensed operators and nuclear operations department supervisors, the inspector determined that on October 8, 1984, while the reactor was operating, a boiler house air compressor malfunction occurred. The reactor was shut down and the air compressor problem corrected. However, in the process of restoring normal ventilation, a solenoid failure was detected in one of the two (hot or cold) air supply dampers. The failure caused the damper to close which resulted in a large negative pressure, possibly as high as one inch, in the reactor building. In order to gain control of the building pressure differential and to reduce the negative pressure to normal values, it was necessary to increase air flow into the building. With the unaffected (hot or cold) air supply damper open, the inner sliding door of the double air lock doors between the reactor building and the hot laboratory was partially opened. The outer door was physically closed but the O-ring gasket was not inflated. In that condition the increased air in-leakage reduced the building pressure to a balanced, smaller negative pressure.

With the partial normal air supply to the reactor building and the abnormal augmented air supply via air lock door in-leakage, a reactor startup commenced and power was held at 0.01-0.1% of rated power. About 15 minutes later the air supply damper repairs were completed. The damper was reopened, the outer door gasket was inflated, and the reactor startup was continued into the power range. The inspector noted that this abnormal operating condition during the reactor startup was not logged. In fact, one of the operators believed he would have been in trouble if this was logged, as the chief reactor operator was at the console. As a result of not logging or otherwise communicating the abnormal startup conditions, the nuclear operations manager did not become aware of the problems that had occurred until one to two weeks after the event. He assessed the Technical Specifications requirements and nuclear safety considerations, determined that no violations or adverse safety conditions occurred, and discussed the event with the chief reactor operator. In their view, although the O-ring gasket was not inflated, the door was in its closed position, which thus complied with the Technical Specifications for confinement. Furthermore, the negative pressure was being maintained.

Findings

The inspector considered that the alleged event and subsequent abnormal reactor startup was substantiated, although the problem reportedly occurred in late 1984, not in 1985. Based on the inspector's review of this event and Technical Specification (TS) 3.5.3, requirements for "Confinement," although a negative pressure in the reactor building was present during the startup, the airlock door clearly was not "closed" when its O-ring gasket was not inflated. In the event of exhaust fan or damper malfunction, there would have been no assurance of maintaining building leakage inward under accident conditions. Therefore, conducting a reactor startup without at least one door of the double airlock doors fully closed (with its gasket inflated) is considered a violation of TS 3.5.3 (54/86-02-01). Furthermore, the abnormal conditions were not identified in the operator's log and there was no feedback to operators of the nuclear operations manager's review of the event. This matter is discussed further in Paragraph 2.10.

2.2 Concern No. 2 - Violation of Startup Procedure

Summary of Allegation

During the second or third week in May 1986, the project engineer was on the console performing shift duty to maintain his license. In preparation for changing fission product molybdenum (FPM) irradiation targets, he ran the rods in too far and inadvertently shut down the reactor. Targets were then changed. Subsequently, he did a startup to 100% of rated power with no restart checks, no heat balance at 50% of rated power, and he ignored procedures. When informed, the manager - nuclear operations said, "We'll call it a long dip." The caller alleged that the above actions violated the procedure, if not the Technical Specifications.

Clarification of Allegation

Based on discussions with licensed operators, the inspector determined that the events occurred, essentially as described above, on May 1, 1986 when the nuclear project engineer, under supervision by the assistant chief reactor operator, ran the rods in to the seat. He reportedly had used the "normal" switch vice the manual run-in method.

The nuclear operations manager was informed of the abnormal reactor power reduction for changing FPM targets about one week or more after its occurrence. He then discussed the matter with the nuclear project engineer and operations management personnel including the assistant chief reactor operator, the chief reactor operator and the reactor supervisor. He did not consider the occurrence to be a major incident. The matter was treated as more of a political rather than a technical concern, due to the perception of some operators that a "double standard" existed for disciplinary actions when operating errors were caused by licensed engineers or operations supervisors as compared with mistakes made by non-

supervisory licensed operators. The plant operations manager had committed to operators to discuss the results of the operations management review of this event, but that discussion had not yet been conducted.

Findings

The inspector reviewed Technical Specifications requirements and applicable reactor operating procedures for sample (target) changes, reactor startup, and reactor restart checks. Although the rods were inserted to the seat, rather than only partially inserted as during other routine target changes, the reactor technically was still in operation, albeit subcritical, comparable to the power level of a normal partial insertion. On the other hand, more negative reactivity resulted from full insertion of the rods, as compared to the normal partial (subcritical) insertion associated with target changes. In fact, the reactor was shut down, as the Technical Specifications define "Reactor Shutdown." However, this condition lasted only a short time (15-20 minutes), before the rods were withdrawn and the reactor returned to 100% of rated full power. During the time that the rods were fully inserted, all equipment remained in a normal operating configuration. Therefore, although the abnormal rod insertion ("long dip") was substantiated, there were no apparent Technical Specifications violations, procedural violations, or adverse safety implications as a result of this event. Nonetheless, the abnormal rod manipulation for the target change was not logged or otherwise documented as an abnormal operating condition. Also, this matter had not been discussed with operators, although three months had passed since the event occurred. The inspector noted that there were no regulatory or procedural requirements for such feedback of operating experience, but in light of the sensitivity of the matter as viewed by operator's perception of a "double standard" and the operations manager's admission that this was a "political" concern, the operations management review of the event should have been done more promptly. This matter is discussed further in Paragraph 2.10.

2.3 Concern No. 3 - Unsafe Reactor Operation Due to Nonvisible Core

Summary of Allegation

At the end of April or the beginning of May 1986, heat exchanger cleaning was conducted using hydrogen peroxide, and some of the hydrogen peroxide got into the pool of the reactor. Although this had caused very poor visibility in the pool, operations personnel decided to start up the reactor. At 5MW, operators could not even see the glow from the reactor. Operators wrote a letter to management about the unsafe startup, but nothing was done.

Clarification of Allegation

Based on discussions with licensed operators and the nuclear operations manager, the inspector determined that the hydrogen peroxide intrusion to the reactor pool occurred on Thursday, March 6, 1986, generally as

summarized above. Heat exchanger cleaning is done normally on an annual frequency, generally each spring. In past years, there had been some cloudiness of the pool water, but in this case the walls of the pool were also cleaned more intensely than normal. Also, there may have been a valving error when cleaning the heat exchanger such that hydrogen peroxide entered the pool, but this is somewhat speculative and not proven. Nonetheless, the pool water had become very cloudy during this year's cleaning. With water level lowered and operators standing on the pool shelf, they observed no objects present over the core that could restrict or inhibit flow. The nuclear operations manager was aware of the extent of murkiness of the water. But having assessed the condition, the reactor was started up on the midshift on March 7, 1986. About 8:00 a.m. that morning, the plant manager, manager-site operations, and nuclear operations manager all observed the cloudiness of the water. They assessed that it was safe to continue to operate because the murkiness was due to small particulate that was being filtered. Also, based on past experience, any flow core problems caused by blockage would be detected early by the log N instrument that would become erratic and oscillate due to voids forming. However, plant management did not inform the operators on Friday of the basis for their judgement, and operator concern apparently escalated over the weekend. That is when the operators' letter of concern was written, although it was dated March 14, 1986. (That memo included the operators' statement of their hope that management develop a plan which would eliminate future situations where production schedules come before safety. During telephone conversations with several operators on November 16 and 17, 1986, the inspector verified that the operators' basis for their expressed concern was limited to the startup of March 7, 1986, and no similar situations.)

Plant management had considered the known and measurable core parameters that could predict or indicate a degrading flow condition, they had questioned the possible mechanisms for flow blockage, and they had assessed the risk of not detecting degraded flow during operation with reduced core visibility. However, their considerations were not communicated to operators. Also, the operators' concerns were not conveyed directly to plant management during the weekend. However, after receiving the operators' letter, management immediately met with the operators and met subsequently on several additional occasions to discuss this matter.

Findings

The inspector reviewed Technical Specifications for water quality and reactor operating procedures and determined that there were no violations or direct adverse safety concerns as a result of this occurrence. The Technical Specifications include no specific provisions for pool water clarity, but only for pool water quality. The pH of the pool water was maintained between 5.0 and 7.5 following the heat exchanger and pool wall cleaning operations. The pool water specific resistance fell below the

normal operating limit of 200,000 ohm-cm, to as low as 160,000 ohm-cm. This was well above the 70,000 ohm-cm Technical Specification transient limit, and the specific resistance was restored to greater than 200,000 ohm-cm on March 13, 1986, which was within the 14 days allowed by the Technical Specifications. Nevertheless, operators were clearly not comfortable operating in the abnormal condition of not having the core visible, although they did not express their concern directly to management during the weekend. It is probable that the operators would have gained the insight to monitor flow conditions using alternate methods had they expressed their concern. This matter has been reviewed by the nuclear safety committee, and the heat exchanger cleaning procedure will be reviewed and revised prior to its next use, as discussed in Paragraph 4.

The inspector determined that although the alleged clouding of the pool was substantiated, contrary to the allegation, management acted responsibly and promptly in response to the operators' written concerns. However, the decisions and performance of both operators and management before and after the startup on March 7, 1986 were questionable. Simply stated, the startup probably should not have been permitted to proceed with the pool water clarity substantially degraded. The cloudy water condition was not normal for plant startup and power operation. Furthermore, operating with the core not visible is not specifically covered by Technical Specifications and only marginally addressed in plant procedures. The NRC considers that operation with the core visible is a prudent mode of operation for the facility; and operation with the core not visible is abnormal and should have been treated as such. Operations and facility management should have better (and formally) evaluated the abnormal operating conditions, established appropriate compensatory (or backup) measures for operation, and properly informed the operators concerning their assessment and decisions. Further, the operators should have voiced and emphasized their concerns of safe operation prior to the startup on March 7, 1986. Although this is considered an isolated occurrence, the NRC is concerned that this event occurred. Further explanation of management's review of this incident has been requested in the cover letter which transmits this report.

This item is unresolved pending review of the licensee's response, including verification of actions taken to prevent recurrence, during a subsequent NRC inspection (54/86-02-02).

2.4 Concern No. 4 - Unauthorized Access to Reactor Building

Summary of Allegation

In March or April 1986, the quality control supervisor, authorized for unescorted access to the building, informed one of his workers, who was not authorized for unescorted access, how to access the building. This action gave the person access without using the access procedure. Opera-

tors were concerned about unauthorized access and the safety of individuals involved. Now operators do not challenge individuals suspected of not having authorized access, because "no one cares."

Clarification of Allegation

Based on discussions with licensed operators, the inspector determined that on two other occasions, once last winter and most recently a month ago (during July 1986), different individuals, who were not authorized access, were informed how to access Buildings 1 and 2 (the reactor building and hot laboratory). The reactor supervisor, also assigned as the designated controlled area access security officer, became aware of these or similar incidents, which, as he noted in a memorandum to all facility department heads dated July 21, 1986, "seem to indicate a lack of appreciation or understanding of our security plan." The memorandum emphasized the heavy dependence of the security system's success on the employees, and requested each group to conduct team meetings or other communications to inform employees of the importance of properly implementing the required security measures of the controlled access area. The memorandum also specifically stated certain responsibilities of people who are not authorized access to Buildings 1 and 2, as well as people who are authorized access.

Findings

Although the specific example of unauthorized access, as described in the initial allegation was not confirmed by the operators interviewed, other similar examples were described that, in effect, substantiated the alleged concern. These incidents were known by responsible licensee security management, and measures were initiated to correct the problems and prevent recurrence of past violations.

However, at or about 7:00 a.m. on August 7, 1986, another incident occurred that indicated a continuing lack of appreciation or understanding of the security plan. The inspectors were then at the entrance of Buildings 1 and 2 and desired to contact a control room operator to obtain escorted access to the facility. Seeing a telephone by the door, the inspectors asked two painters (temporary summer help), in the vicinity of the entrance, the telephone number of the control room. The painters did not know the number. The inspectors then asked how to get into the control room. The workers provided specific directions in response to this question and, if the inspectors had implemented the directions as subsequently demonstrated to the licensee, the inspectors could have accessed the buildings and the control room without authorization. Failure to properly control access is considered a violation of the security plan, for which previous corrective actions were not effective (54/86-02-03).

2.5 Concern No. 5 - Improper Administration of Requalification Examination

Summary of Allegation

The licensed operator requalification examinations have been routinely passed out and collected two weeks later. The lowest grade on the recent examinations was 89. The caller questioned whether requalification examinations are supposed to be given in a two-week period.

Clarification of Allegation

Based on discussions with licensed operators and nuclear operations department supervisors, the inspector determined that requalification examinations have been routinely administered as a take-home exam taken by operators on an honor-system basis. By letter dated May 5, 1986, the licensee provided NRC Region I a copy of the Operator Requalification Program (ORP). The ORP introduction states:

> "The purpose of this requalification program is to take into account the requirements of 10 CFR 50.54(i-1) while recognizing the problems associated with a requalification program for research reactors which have a limited training staff available. This requalification program meets these purposes while providing flexibility which enables facilities with minimum staff to complete the program biennially. This requalification program also meets the requirements of the American National Standard 15.4 - 'Selection and Training of Personnel for Research Reactors.'"

Regarding the comprehensive biennial written exam given to all licensed personnel, the ORP states, in part, "...Because of the problems associated with proper reactor staffing during periods when the examinations will be administered to operating staff members, the examinations may be given in parts and within a 2 week period."

Findings

Based on the inspector's review, the alleged requalification exam administration practices are substantiated. The ORP does not appear to prohibit administration of the requalification exam as a take-home exam to be taken on an honor-system basis. However, neither does the ORP clearly permit this practice. Further, the NRC Region I staff had not previously understood that this exam was taken home and returned for grading two weeks later. Clearly, this raises serious questions as to the integrity and validity of the requalification exam process. Based on informal discussions following this inspection and preliminary review of this matter, the NRC Region I staff's initial determination is that administration of requalification exams as a take-home exam is an unacceptable practice. However, because the ORP is not specific to addressing this practice, this matter is being referred to the Operator Licensing Section, NRC Region I for their formal assessment and evaluation. This item is unresolved (54/86-02-04).

2.6 Concern No. 6 - Potential Conflict of Interest Regarding Nuclear Safeguards Committee Staffing

Summary of Allegation

The nuclear safeguards committee consists of "business" people motivated by profit. The caller questioned whether this was a conflict (of interest), as he stated that this may be part of the general problem he perceived and alleged of violations being overlooked by management.

Clarification of Allegation

Based on interviews with licensed operators and nuclear operations department supervisors, the inspectors determined that none of the individuals shared the alleged concern. In fact, each person interviewed either had no adverse opinion or generally expressed their respect for and confidence in the motivation of nuclear safeguards committee (NSC) members. The inspector reviewed the Technical Specifications requirements for the composition and technical qualifications of NSC members and verified that these requirements were met. In addition, the inspector reviewed NSC meeting minutes (also see Paragraph 4.0) and verified that the predominant emphasis of NSC concerns was toward nuclear safety.

Findings

The alleged implied concern regarding NSC members being unduly motivated by profit was not substantiated. Although business profit is expected to be a consideration in overall facility operations, the inspector found no evidence that NSC recommendations or actions were improperly balanced toward business profit as opposed to safety of operations.

2.7 Concern No. 7 - Reactor Startup to Avoid Reporting Shutdown

Summary of Allegation

Management conducted a startup of the reactor within 23 hours of being shut down, since they knew that Technical Specifications require informing the NRC if shut down over 24 hours. The caller could not find the requirement in Technical Specifications, but he stated that it may be in 10 CFR or in procedures. He alleged further that the requirement was common knowledge among operators.

Clarification of Allegation

Based on discussions with licensed operators and nuclear operation department supervisors, none of the individuals were aware of any startup conducted within a certain time period, as described above, in order to not inform the NRC of the shutdown. Furthermore, none of the individuals were aware of any requirements in either Technical Specifications or

procedures regarding informing the NRC of being shut down over 24 hours. The inspector reviewed Technical Specifications and verified that there were no such reporting requirements.

Findings

The alleged concern was not substantiated due to the lack of specificity regarding the initial allegation, tne inability to confirm the alleged startup for the alleged reasons, and the inability to identify the alleged requirements.

2.8 Concern No. 8 - Unexplained Processing/Discharge of Contaminated Water

Summary of Allegation

Prior to the caller's arrival (employment) onsite, about 30,000 gallons of water got into duct work over a hot cell. The water then contained fission product iodine and was put in a holding tank from which it disappeared in about a week. The site evaporator has a capacity of only about 500 gallons per day.

Clarification of Findings

Based on discussions with the licensee representatives and a review of licensee records, the inspector determined that about 45,000 gallons of ground water leaked into the room containing the T-1 liquid waste storage tank during March-April 1983. The inspector verified through direct observation that there was no interconnection between this room, located under the Building 2 Isotope Laboratory, and the Hot Cell ventilation system. This water contained residual fission product activity as a result of contact with the radiologically contaminated floor and walls of the T-1 tank room. The water was transferred to a series of mall tanks, analyzed for fission product activity, and released from the facility without going through the site evaporator. Licensee records indicated that a total of 77.4 microcuries (strontium-90 equivalent) of fission products were released from the facility during April 1983. This value corresponds to an average concentration of 2.76 E-8 microcuries per cubic centimeter, which amounts to less than one percent of the 10 CFR Part 20, Appendix B, Table II, Column 2 limit for the release of soluble strontium, in water, to unrestricted areas.

Findings

The alleged improper processing or disappearance of water containing fission product iodine was not substantiated. Although the alleged concern was not entirely accurate, in that a substantial quantity of water did not get into ventilation duct work over the hot cell, the inspectors substantiated that in excess of 30,000 gallons of contaminated water was released from the facility without going through the site evaporator. However, no federal regulations or facility license conditions were

violated as a result of this release of liquid waste. Based on the inspector's review of this incident, the licensee's actions taken to process and release the water were found acceptable.

2.9 Concern No. 9 - Operator Counselled to Withhold Information from NRC

Summary of Allegation

During an NRC inspection, a lead operator was asked about the requalification program. He responded that there wasn't any but they had the books for self-study. Management later told him not to say anything if it would look bad.

Clarification of Allegation

Based on discussions with licensed operators, the inspector determined that the operators were generally dissatisfied with the requalification training program relying primarily on self-study vice formal retraining lectures/seminars. However, the inspector verified that such self-study was in conformance with Operator Requalification Program requirements. One of the operators confirmed that following an NRC inspection exit meeting, the plant manager told him not to tell the NRC about "things that are bad." The inspector noted that this recollection was a minority view, as all other operators had not recalled being given such direction. The inspector reviewed a memorandum issued by the plant manager in March 1979 which provided clear and definitive guidance regarding the method for contacting the NRC Region I office and the freedom to express individual safety concerns to the NRC. The memorandum also requested that such concerns also be identified to plant management but did not mandate such in-house notification as a prerequisite to contacting the NRC. This memorandum was included as an attachment to the operators' letter of concern regarding reactor operation with cloudy pool water after cleaning the heat exchanger (see Paragraph 2.3). Thus, this memorandum was common knowledge to all operators. As a related matter, the inspector asked each person interviewed during this inspection if he had been given any instructions as to what to say during the interview. Each of the operators said the only directions they were given were to answer the inspectors' questions honestly and completely.

Findings

The inspector determined that although the operators shared a common preference for formal requalification lectures/seminars in lieu of self-study, the ORP supported the latter. With respect to alleged management directives to not say anything to NRC inspectors if it would look bad, the prevailing view was that operators should be candid and forthright in their discussions with NRC inspectors, particularly regarding potential safety concerns. The inspector considered that management's instructions to not say anything bad was nothing more than encouragement to put one's best foot forward or to not express differing management/

employee views of established policies/practices merely in order to gain some kind of job-related benefit or advantage. Moreover, there was no evidence to substantiate that management had acted unfavorably toward an employee for expressing dissenting or differing views.

2.10 Summary and Conclusions

Although certain of the alleged concerns were substantiated fully, or in part, the inspector determined that there were no common indicators or trends that formed the bases to generally conclude either: 1) that management had taken improper corrective actions to problems brought to their attention or 2) that management would require, approve, or otherwise encourage operators to act in a manner unsafe to reactor operations. However, as a result of the forthright and direct responses to the inspector's questions by both licensed operators and facility management, certain problem areas or operating weaknesses were identified that require corrective measures. The inspector learned that a recently licensed operator was dismissed for cause based on some specific instances of conduct unacceptable to management. The reasons for the operator's dismissal were not related directly to improper performance of his licensed duties, but were associated more with indicators of overall attitude, professionalism, attention to duties, and general maturity and behavior. Nonetheless, the individual's dismissal has clearly resulted in a heightened degree of polarization and perhaps distrust between management and operators. This is a condition that must be promptly rectified to assure continued safe operation of the facility.

Lastly, some operators were of the view that nuclear operations managers and supervisors simply were not communicating effectively with each other and with operators. Although no specific instances were identified, operators felt that the personalities of some individuals did not facilitate free and candid communications of operating problems. Operators felt that one or another individual would respond to problems and solve them independently and not inform their supervisors of either that problem or the corrective action taken.

The inspector discussed these concerns with nuclear operations department and plant management. They were sensitive to some of the recent communications problems and noted that they were attempting to communicate more frequently and more openly with plant operators. They acknowledged the inspector's comments regarding the apparent need to develop a system for identification of operating problems and feedback of operating experience. The inspector stated that this area would be reviewed during future inspections (54/86-02-05).

The fundamental weakness of facility operations that requires improvement is operator/management communications. Operators need to be aware of management's bases for operating decisions and management needs to be informed promptly of operators' concerns regarding safe operation of the facility. The inspector noted that operating logs seldom describe plant

problems or abnormal conditions. Further, there is no system in place to facilitate identification of operator's perceptions of abnormal operating conditions or operating problems such that the abnormal condition is required to be evaluated and resolved by plant management, and that there is feedback of the solutions or management decisions to operating personnel.

Some of the operators believed that an operator representative should be permitted to attend meetings of the nuclear safeguards committee. This could strengthen their understanding of the technical bases for NSC recommendations and judgements. Some operators also believed that they should review NSC minutes. The inspector considered that both of the actions could strengthen operator/management communications.

3.0 Facility Operations

On several occasions during the inspection, the inspectors toured the facility with licensee representatives. During the tours, the inspectors verified the correct status of plant conditions and equipment. The inspectors also verified that the facility was manned in accordance with Technical Specifications requirements and that plant logs accurately reflected plant conditions. The inspectors found that, in general, housekeeping, radiological and security controls were adequate, with the exception of a security violation that occurred on August 7, 1986 (see Paragraph 2.4).

The reactor operated at full power during the inspection with the exception of a scheduled shutdown on August 7, 1986 to change FPM targets and to install new test and experiment equipment in the reactor pool. During that shutdown period, the inspectors observed the rigging operations, including the lift and placement, associated with the major structural assembly of the recently manufactured Neutron Transmutation Doping (NTD) Silicon Irradiation Facility. The reactor core had been moved about 15-20 feet from its normal operating position to a temporary staging position between the fuel pool/storage pool divider wall passageway, and the pool level had been lowered to permit personnel access to the fuel pool ledge to facilitate handling and placement of the NTD facility. The inspectors noted that handling operations were properly supervised and were being conducted in a controlled manner by maintenance personnel. Also, special radiation surveys were being performed by plant operations and health physics personnel to identify increased radiation levels that might result from the lowered pool level. As a result of that survey, a neutron radiation source was found exposed above the water surface, causing a localized elevated radiation area (about 100 mRem/hr). The source was lowered into the water, which reduced the radiation field to the general area background level.

The inspectors expressed concern regarding one aspect of the NTD facility handling operation. The inspectors first observation of the rigging operation occurred while the NTD structure was suspended above and being lowered into the fuel pool. After the structure was placed on the pool floor, the inspectors questioned operations personnel and management regarding lifting of the structure in relatively close proximity to the suspended core. The inspectors'

concern in this case was the possibility of damage to the reactor core or its support bridge in the event of postulated drop of the NTD structure. Although the structure was not lifted directly over the reactor core, it was large enough to possibly impact the core and core supports if it had dropped. This event did not occur, however, the inspectors stated that the licensee hazard summary for the NTD facility (see Paragraph 4.0) should have evaluated the possibility and consequences of a postulated heavy load accident as a result of dropping the NTD facility structure, or the core should have been moved further from its normal operating position, where the NTD structure was being installed. Licensee management acknowledged the inspectors' concern and later that day, when the NTD structure had to be lifted from the pool as a result of misalignment problems, the nuclear operations manager stated that the reactor core was moved further from its normal location to prevent any possible damage from the postulated drop of the NTD structure. The inspector had no further questions concerning this matter.

4.0 Nuclear Safeguards Committee Reviews

The independent review of reactor facility operations is performed by the Nuclear Safeguards Committee (NSC). The NSC is comprised of a minimum of five members who collectively are required to provide a broad spectrum of expertise in the appropriate reactor technology. During this inspection, the inspector reviewed NSC meeting minutes to verify that NSC review functions were conducted as required by Technical Specifications 6.2.3 and 6.4 The inspector's review included the minutes for NSC Meeting Nos. 117, dated August 20, 1985; 118, dated November 6, 1985; 119, dated December 21, 1985; and 120, dated May 21, 1986.

NSC Meeting No. 117 included reviews of (1) new waste storage plugs, (2) a wiring modification to the function switch of the reactor log-N amplifiers, (3) cutting reactor beam tubes, and (4) fire protection. With regard to the latter item, the consequences of two recent fires in the waste hot cell were discussed. The committee requested that a full report of the incidents be submitted to the NSC with recommendations for corrective actions. Also, the NSC requested that a subcommittee be formed to review fire protection in hot cells and that they submit recommendations to the NSC for review.

NSC Meeting No. 118 included reviews of (1) topaz irradiation, (2) cutting beam tubes, (3) the B-3 cask unload procedure, (4) wiring modification to function switch, (5) audits, (6) the fire in hot cell No. 1, and (7) formation of a three-person fire protection committee (FPC). The FPC was charged with reviewing fire protection in hot cells and reporting back to the NSC by the end of the year (1985).

NSC Meeting No. 119 included reviews of (1) audits, (2) topaz irradiation, (3) expected radiation levels from N-16 activity, and (4) the North Face Silicon Irradiation Facility polystyrene containers, reactivity analysis, and thermal analysis. The NSC requested Operations to consolidate all engineering analysis reports into a formal Hazard Summary for the new Neutron Transmutation Doping (NTD) Silicon Irradiation Facility.

NSC Meeting No. 120 included reviews of (1) the B-3 cask maintenance procedure, (2) pool duct sweep modifications, (3) a radiation safety audit, (4) topaz irradiation, (5) annual audit of the physical security program, (6) the consolidated hazard summary for the North Face NTD Silicon Irradiation Facility, (7) a modification to the ion chamber alignment shelf and to uncompensated ion chamber containment cans, and (8) heat exchanger cleaning treatment which caused the reactor pool to become cloudy and which led to operator concerns in the areas of safety and production. With respect to the last item, the NSC concluded that better communications between operators and supervisors/management could have relieved operator concerns at an earlier time and that procedures are in existence to handle such questions. Reactor Operations also committed to a review and update of the present peroxide cleaning procedure prior to its next use. This item is also discussed in Paragraph 2.3.

With respect to the hazard summary for the North Face NTD Silicon Irradiation Facility, the inspector considered that the analyses included appropriate discussions of the expected radiation hazards, reactivity effects, heat generation, interference with core components, and component installation.

Based on the inspector's review of NSC meeting minutes, the inspector determined the NSC reviews were conducted as required by Technical Specifications and to an appropriate depth of technical assessment analysis. The fire protection committee report of fire protection in the hot cells has not yet been completed due to delays caused by other priority work assigned to the committee members, but this report is still expected at a near-term NSC meeting. The inspector had no further questions concerning this matter.

5. Exit Interview

The inspector met with licensee personnel denoted in Section 1.0 at the conclusion of the inspection on August 8, 1986. The scope and findings of the inspection were discussed at that time. At no time during this inspection was written material provided to the licensee by the inspector.