

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 70-687/85-05

Docket No. 70-687

License No. SNM-639 Priority 1 Category UHBR

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

Facility Name: Hot Laboratories

Inspection At: Tuxedo, New York

Inspection Conducted: July 9 - 12, 1985

Inspector:

J. Roth
J. Roth, Project Engineer

9/5/85
date

Approved by:

R. R. Keimig
R. R. Keimig, Chief, Safeguards
Section, DRSS

9-6-85
date

Inspection Summary: Inspection on July 9-12, 1985 (Report No. 70-637/85-05)

Areas Inspected: Routine, unannounced inspection by a region-based inspector (39 hours) of: management organization and controls; operator training/retraining; criticality safety; review of operations; radiation protection; radioactive waste management; transportation of radioactive materials; non-routine events; and, licensee action on previously identified enforcement items.

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

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DETAILS

1. Persons Contacted

- *J. J. McGovern, Business Manager, Radiochemicals
- *C. J. Konnerth, Manager, **Health, Safety and Environmental Affairs**
- *L. C. Thelin, Health and Safety Supervisor
- W. G. Ruzicka, Manager, Nuclear Operations

* present at the exit interview.

2. Licensee Action on Previously Identified Enforcement Items

(Closed) Unresolved Item (687/82-05-01): Personnel having control of SNM do not work for Union Carbide and may be under the control of a foreign (Swiss) based company. By letter dated July 2, 1985, the NRC transferred License No. SNM-639 from Union Carbide Corporation to Cintichem, Inc., a subsidiary of a foreign based company. All Cintichem officers are U.S. citizens; any changes to that status must be approved by NRC. Cintichem will report to the NRC any action or law by the government of Switzerland which would affect ownership or operation of the licensed materials operation. All questions relating to the control of SNM by personnel who may be under the control of a foreign based company have been resolved.

(Closed) Inspector Follow-up Item (687/85-01-02): Establish a separate inventory log for drums located in the shipping area of the plant. The inspector verified that the licensee established and is maintaining a separate inventory log for drums located in the shipping area of the plant. Maintenance of this log will help assure that the inventory of SNM in this area will not exceed license limits.

(Closed) Violation (687/85-01-03): Failure to maintain running inventory logs of SNM in the lower level Reactor Building area. The inspector verified that the licensee is maintaining inventory logs for all SNM transferred from other areas of the plant into the quality assurance laboratories located in the lower level of the Reactor Building.

(Closed) Inspector Follow-up Item (687/85-01-05): Follow-up on results of fixed alpha surveys. Through discussions with licensee representatives and review of licensee records, the inspector determined that a fixed alpha contamination survey of the Hot Laboratory was started on November 28, 1984 and completed on December 11, 1984. Elevated areas of fixed alpha contamination (in excess of 100 dpm/100 cm sq) were cleaned up by the licensee.

(Closed) Inspector Follow-up Item (687/85-01-06): Follow-up implementation of a new procedure to control lost or out of service survey instru-

ments to assure timely calibration. The inspector reviewed licensee survey instrument calibration records and determined that the records now indicated the status of survey instruments (e.g. out of service, in repair, lost).

(Closed) Inspector Follow-up Item (687/85-01-07): Follow-up implementation of a corrective action review system to assure that licensee identified items are corrected (e.g. hood air checks, area contamination). The licensee established a corrective action review system which requires the Health and Safety supervisor to periodically review records to assure that corrective actions have been taken in a timely manner, where required. The inspector verified through a review of licensee records that the licensee is recording the results of corrective actions taken on identified items.

3. Review of Operations

The inspector examined all areas of the Hot Laboratory and reactor facilities to observe operations and activities in progress; to inspect the general state of cleanliness, housekeeping, and adherence to fire protection rules; and, to assure that all areas in which SNM is handled or stored were properly posted with radiation safety or criticality safety signs as required by NRC regulations or license conditions.

a. Unsafe Geometry Vacuum Cleaner

During examination of the solution make-up laboratory, the inspector observed that an unsafe geometry vacuum cleaner was stored on top of a glove box. Upon questioning by the inspector, licensee representatives stated that the vacuum cleaner was never used in this laboratory for the clean up of material containing uranium. The inspector confirmed this and stated that since the vacuum cleaner was never used and because it consisted of an unsafe geometry inner chamber, it should be removed prior to its inadvertent use by personnel. Licensee representatives stated that the vacuum cleaner would be removed. The inspector discussed his concern over this matter at the exit interview. This was identified as an Inspector Follow-up Item (IFI 85-05-01).

b. Housekeeping

During examination of the second floor hot cell roof area, the inspector noted that housekeeping was poor, in that the path to feed cabinet No. 2 was blocked by a work bench. The blocked pathway was immediately cleared by the licensee.

4. Nuclear Criticality Safety

a. Radiation Monitor Tests, Checks and Calibration

The inspector verified by a review of records that the licensee conducted and documented the daily operability tests and weekly alarm checks on each radiation/criticality monitor between January 9, 1985 and July 9, 1985. Corrective actions were taken and completed when inadequacies were identified. The criticality monitors were calibrated, as required, on an annual cycle on March 22, 1984 and March 19, 1985.

b. SNM Inventory

The inspector examined all areas of the plant and assured that the total inventory of unirradiated U-235 was less than that authorized by the facility licenses.

c. Facility Changes and Modifications

The inspector observed that the licensee had moved the uranium waste form processing operation from Cell 5 to Cell 3. The storage racks for U-235 were also moved with no change in spacing. All nuclear criticality safety limits associated with this operation have been retained.

d. Bi-Monthly Criticality Inspections

The initial bi-monthly inspection of all SNM criticality control areas, subsequent to the facility license renewal on October 19, 1984, was conducted by the licensee on October 29, 1984. Licensee records examined by the inspector indicated that inspections of all SNM criticality control areas had been conducted at bi-monthly intervals between October 1984 and May 1985, as required by license conditions.

5. Radiation Protection

a. Air Sampling

The inspector reviewed in-plant air sampling data for the period January 9, 1985, to July 9, 1985, and verified that NRC regulatory requirements were satisfied.

The inspector reviewed stack air sampling data for the period January 9, 1985 through July 5, 1985. The data indicated that the air concentrations were within the NRC regulatory limits specified in 10 CFR 20, Appendix B.

b. Smear Surveys

The inspector reviewed smear survey records for all areas of the Hot Laboratory and Reactor facilities for the period January 7, 1985, to July 9, 1985. When necessary, corrective actions were taken as required by license conditions.

c. Portable Instrument Calibration

The inspector reviewed records of portable survey instrument calibration conducted between March 2, 1984 and July 2, 1985. The inspector determined that the portable survey instruments were calibrated at the intervals required by license conditions, or following repair.

6. Safety Committees

a. Nuclear Safeguards Committee

The inspector examined the records of three meetings (Nos. 115-117) of the Nuclear Safeguards Committee held between January 1, 1985 and July 10, 1985. Review actions and recommendations made by the committee were adequately documented. Included in these records were supporting documents used by the committee to develop the recommendations. In addition, implementation of these recommendations was adequately documented in the committee minutes.

b. General Safety Committee

The inspector examined the records of four bi-monthly meetings of the General Safety Committee held between October 4, 1984 and June 27, 1985. This committee reviews the general safety and operational radiation safety aspects of the facility. Inspections of buildings, outside areas and vehicles are conducted for housekeeping, fire hazards, and use of safety equipment. Corrective actions were initiated or completed as required.

7. Non-routine Events

Through discussions with licensee representatives and review of licensee records, the inspector determined that there had been no reportable or non-reportable non-routine events, within the scope of this license and/or inspection, since the last inspection of this facility.

8. Transportation Activities

a. Receiving

The inspector examined the receipt records of packages containing SNM for the period January 4, 1985 through June 27, 1985. The licensee

maintained records of monitoring upon receipt of packages of radioactive material as required by 10 CFR 20.205(b)(1). No problems were identified.

b. Shipping Records

The inspector examined records of uranium waste, reclaimed uranium, LSA waste and spent fuel shipments made from January 2, 1985 to July 11, 1985. The inspector determined that radiation surveys were made and recorded, and all shipments were labeled, marked, placarded, inspected and recorded, as required.

c. Waste Form Shipment

The licensee uses NUS Barrier 55 High Integrity Containers (HIC) which have been approved by the State of South Carolina for the shipment of Class B waste to the South Carolina burial site. Each container observed by the inspector was marked "Class B", as required.

The inspector observed the licensee prepare two HIC containers of uranium waste for shipment, in two Model B-3 shipping casks, to the burial site in South Carolina. The casks were opened and placed into a loading pit located in the waste form storage building. The HIC containers were then removed from the shielded storage pit into a transfer cask, moved over the B-3 cask and lowered into the cask. The transfer cask was removed and the cask lid was replaced. This work was accomplished in accordance with established operating procedures.

The B-3 shipping cask was closed, sealed, smeared, surveyed, labeled, and placed on the transporting vehicle. The inspector observed that shipping papers were prepared and given to the driver, as required, and the vehicle was properly placarded.

The inspector examined all shipping papers and determined that all needed information was available. The inspector also examined the driver's training record to assure that he was properly trained to handle radiological emergencies. No problems were identified. However, the inspector suggested that the instructions to drivers of exclusive use shipments should be clarified by stating that the tractor-trailer combination must not be changed between the origination and destination sites. In the past, some changes of the tractor have resulted in the radiation level in occupied portions of the tractor exceeding regulatory limits. The licensee stated that the language of the driver instructions will be appropriately modified. This is an inspector follow-up item (IFI 85-05-02).

d. High Integrity Container (HIC) Cleanup

The State of South Carolina determined that the outside surface of the HIC containers received at the Chem-Nuclear Systems, Inc. burial site during April 1985, were excessively contaminated. As a result, the licensee developed a high pressure water spray decontamination system for the removal of contamination from the outside surfaces of these containers. This system was previously reviewed, in detail, during Inspection 70-687/85-04, conducted on May 15-17, 1985.

Subsequent to that inspection, the licensee determined that the removal of contamination from the surface of the containers could not be assured because of the presence of a strap holding lifting bales on the container. Therefore, the licensee decided to remove the bale and decontaminate the container surface under the bale as each container is being prepared for shipment. The lifting bale was replaced by a "throw-away" wire lifting basket which will be placed into the burial trench along with the container.

The inspector observed the licensee remove several lifting bales and conduct the rewashing and contamination survey operations in accordance with established procedures.

9. Organization

On July 2, 1985, the NRC issued Amendment No. 1 to the renewed facility license No. SNM-639. The amendment authorized transfer of the facility license from Union Carbide Corporation to Cintichem, Inc. Through discussions with licensee representative, the inspector determined that the licensee's implementation date for the transfer was August 1, 1985. As of that date, Mr. J. J. McGovern will be designated Plant Manager and Senior Vice President, instead of Business Manager-Radiochemicals. Mr. McGovern will report to the President of Cintichem, Mr. W. W. Rudley. No other changes in the facility organization were expected.

10. Training

The inspector examined training records for the time period September 1983 to July, 1985. The inspector determined that new employees were adequately trained, that adequate ongoing training for operators was conducted and that health physics technicians were being trained (ongoing) in accordance with license requirements.

11. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on July 12, 1985. The inspector summarized the scope and findings of the inspection.

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