

U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

Report Nos.: 50-54/91-07 and 70-687/91-06

Docket Nos.: 50-54 and 70-68.

License Nos.: 3-81 and SNM-639

Licensee: Cintichem, Inc.  
P. O. Box 816  
Tuxedo, New York 10987

Facility Name: Research Reactor and Radiochemical Processing Laboratory

Inspection At: Tuxedo, New York

Inspection Conducted: December 18-20, 1991

Inspectors: Thomas Dragoun 1/14/92  
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Radiation Protection Section (ERPS), Facilities  
Radiological Safety and Safeguards Branch (FRSSB)  
date

Jerome Roth 1/14/92  
Jerome Roth, Project Engineer, Facilities  
Radiation Protection Section, FRSSB  
date

Approved By: Robert J. Bores 1/14/92  
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Division of Radiation Safety and Safeguards  
date

**Areas Inspected:** Organization and staffing, decommissioning operations, radiation protection program, and low level radioactive waste shipment.

**Results:** No safety concerns or violations were identified. The licensee identified several areas for improvement in the radiation protection program and has initiated corrective action. The inspectors identified the need for improved job preplanning.

## DETAILS

### 1.0 Persons Contacted

- \*J. Adler, Manager, Health, Safety, and Environmental Affairs (TLG)
- L. Glander, Supervisor, Health Physics
- \*D. Grogan, Manager, Waste Disposal and D&D Support
- \*L. Hall, Manager, Decommissioning Health Physics (TLG)
- \*J. McGovern, Plant Manager
- \*F. Morse, Project Manager, Decommissioning
- \*R. Strack, QA Manager
- \*E. Truskowski, Manager, D&D Support and Environmental Affairs

\*present at exit interview

### 2.0 Organization and Staffing

The inspectors reviewed the licensee's decommissioning organization and staffing with respect to the requirements in Section 1.5 and Appendix A of the NRC approved Decommissioning Plan as amended (the Plan). Particular attention was given to health physics technicians and supervisory staff.

A few days prior to this inspection, the Plant Manager announced a major reorganization of the Project Management Team designed to improve performance and management oversight prior to the implementation of Phase II of the Plan. The position of Co-Project Manager was eliminated and all dismantling and decommissioning (D&D) operations were centralized under a single D&D Project Manager. The functions in the health physics division were separated into two distinct areas, D&D Support and D&D Radiation Safety. Both HP areas report to the Manager of Health, Safety, and Environmental Affairs, who has been replaced by a contractor (TLG Engineering, Inc.). A chart of the revised organization is shown in attachment A.

The new D&D Radiation Safety group will be responsible for in-field D&D work including issuing radiation work permits and providing on-the-job coverage. This group is currently understaffed. The licensee stated that the supervisory and HP technician positions will be filled by contractors with extensive experience in D&D or reactor power plant outage work. Job offers have been tendered to supervisor candidates while technician candidates are being interviewed. The licensee stated that the group will be fully staffed and trained by the end of February 1992. This matter will be reviewed during future inspections. (Follow Item 50-54/91-07-01)

The D&D Support group performs the routine HP program activities such as routine surveys, maintenance and calibration of meters, issuing personnel dosimetry and maintaining records, operation of the counting laboratory, and conduct of the environmental monitoring program. This group is composed of the permanent HP staff that was in place prior to the reorganization.

The inspectors interviewed the technicians and supervisors from both groups regarding their training and experience in health physics. All personnel appeared to be qualified to perform their assigned duties. Contractor personnel appeared very knowledgeable and experienced in the specialized areas required for D&D activities. The scope of experience of the D&D Support group personnel was limited to on-site work during reactor and hot cell operations. However, this group was confident in their ability to perform the assigned tasks and was eager to begin D&D work.

Within the scope of this review, no safety concerns were identified.

### 3.0 D&D Operations

The status of D&D operations was determined from tours of the facility and discussions with the D&D Project Manager. Shipments of reactor fuel were in progress. Various Phase I tasks were underway including hydrolazing (decontamination) of hot cell interiors, removal of the hot cell remote manipulator arms, and preparation of dry active waste for shipment. Certain Phase I tasks were completed including decommissioning of the byproduct radiochemistry laboratory, removal of class B waste from the honeycomb storage area, and installation of a large HEPA filter unit in the reactor building ventilation system.

The Project Manager stated that Phase II work, as described in Section 3.2 of the Plan, was expected to begin in a few weeks. Staffing levels in the D&D operations groups were increasing, similar to the HP groups, but were expected to be filled sooner than the HP positions. The work procedures for the first D&D tasks, as described in Section 3.3 of the Plan, had already been issued and the work scheduled. The first task will involve removal of the reactor core and systems in accordance with Detailed Work Procedure DWP-001. The inspectors reviewed the DWP series of procedures and found them to have consistent format, were concise, and provided detailed guidance for the safe conduct of D&D work.

The licensee stated that management was devoting substantial resources to ensuring effective use of procedures to control Phase II work. The procedures have been arranged in a tiered system, with Policies and Plans (POL) at the top. The next tier, the General Work Procedures (GWP), provide step-by-step instructions for repetitive work and are referenced in other procedures. The final tier is the Detailed Work Procedures (DWP) which are intended to be used in the field and are canceled when the task is completed. The inspectors commended the licensee on the quality of the procedures and methods used to promulgate the procedures.

Within the scope of this review, the inspectors determined that the licensee was properly implementing the Plan and no safety concerns were identified.

#### 4.0 Radiation Protection Program

The radiation protection program was reviewed with respect to the requirements in Section 2.1 of the Plan and 10 CFR Part 20, "Standards for Protection Against Radiation". The inspectors observed the radiological controls for work in progress, toured the HP facilities, inspected HP equipment, and interviewed selected personnel.

The licensee has placed a fence around the portion of the site and buildings to be decommissioned and provided one personnel access point and one vehicle gate. This provides a high degree of control of the area. The access point is equipped with a HP desk which issues dosimetry, protective clothing, and meters; a security guard who logs in all visitors; a lunchroom/briefing area for workers; a bulletin board showing all work in progress, the status of contaminated areas, and the name of the job coverage HP technician; and three sensitive, automatic, computer controlled body friskers to check for radioactive contamination on personnel exiting the area. An intermediate frisking station for personnel exiting the reactor/hot laboratory building has been placed in a temporary trailer and equipped with state-of-the-art hand friskers.

Each job is continuously monitored by a HP technician. The job-site has a plastic envelope containing the radiation work permit, safety work permit, detailed work procedure, and engineering instructions. Containments for the control of airborne contamination were found in use throughout the work zone. Personnel appeared knowledgeable of the protective measures required for the job.

The inventory of protective clothing, respirators, calibrated and operational portable survey meters, and air sampling equipment was reviewed. The licensee has purchased several new items and stated that additional purchases are in process. The quality and quantity of radiation protection equipment were excellent.

A recent management review of the program identified several areas requiring improvement. Action is underway on these items, such as the reorganization discussed earlier. The licensee was commended for these efforts and was advised that the NRC will monitor progress on these items.

The inspectors noted that the control of loose contamination was weak. The generally accepted practices for use of postings, warnings, and barriers were not followed. Licensee management stated that they were aware of this problem and had initiated corrective actions which included improved techniques and training of technicians in the use of the revised techniques. The licensee stated that these improvements will be completed by the end of January 1992. This matter will be reviewed in a future inspection (Follow Item 50 54/91-07-02).

The inspectors also noted that the HP procedures covered activities no longer performed and did not comprehensively address the hazards anticipated during decommissioning. Although some new procedures have been issued, the format was inconsistent and many old procedures were still in effect. The licensee indicated that management was planning to upgrade these procedures as was done with D&D operations procedures. This matter will be reviewed in future inspections.

#### 5.0 Waste Shipment

A shipment of radioactive Dry Active Waste (DAW) and Class A waste was made during this inspection. The inspectors observed the preparation and radiation surveys of the packages, loading of the vehicle, surveys of the truck, and preparation of shipper's documentation. The inspectors verified that the characterization of the waste was done as required by 10 CFR 61 and reviewed the licensee's calculation of the curie content. This calculation used waste stream data, which is an acceptable technique. Integrity testing of the packages containing Class A waste was found to be complete and appropriate records were available. All containers bore correct labels and the vehicle was properly placarded.

After loading the packages, the dose rate in the vehicle cab exceeded the DOT limit of 2 mrem/hour although all of the packages had a Transport Index less than 50. After an off-load and re-load, all dose rates were within limits. The inspectors also noted that some package labels were not filled in until after the vehicle arrived on site. There was no attempt to stage the load initially to minimize external dose rates. These weaknesses indicated a lack of preplanning by the licensee. The licensee stated that steps would be taken to improve preplanning prior to future shipments.

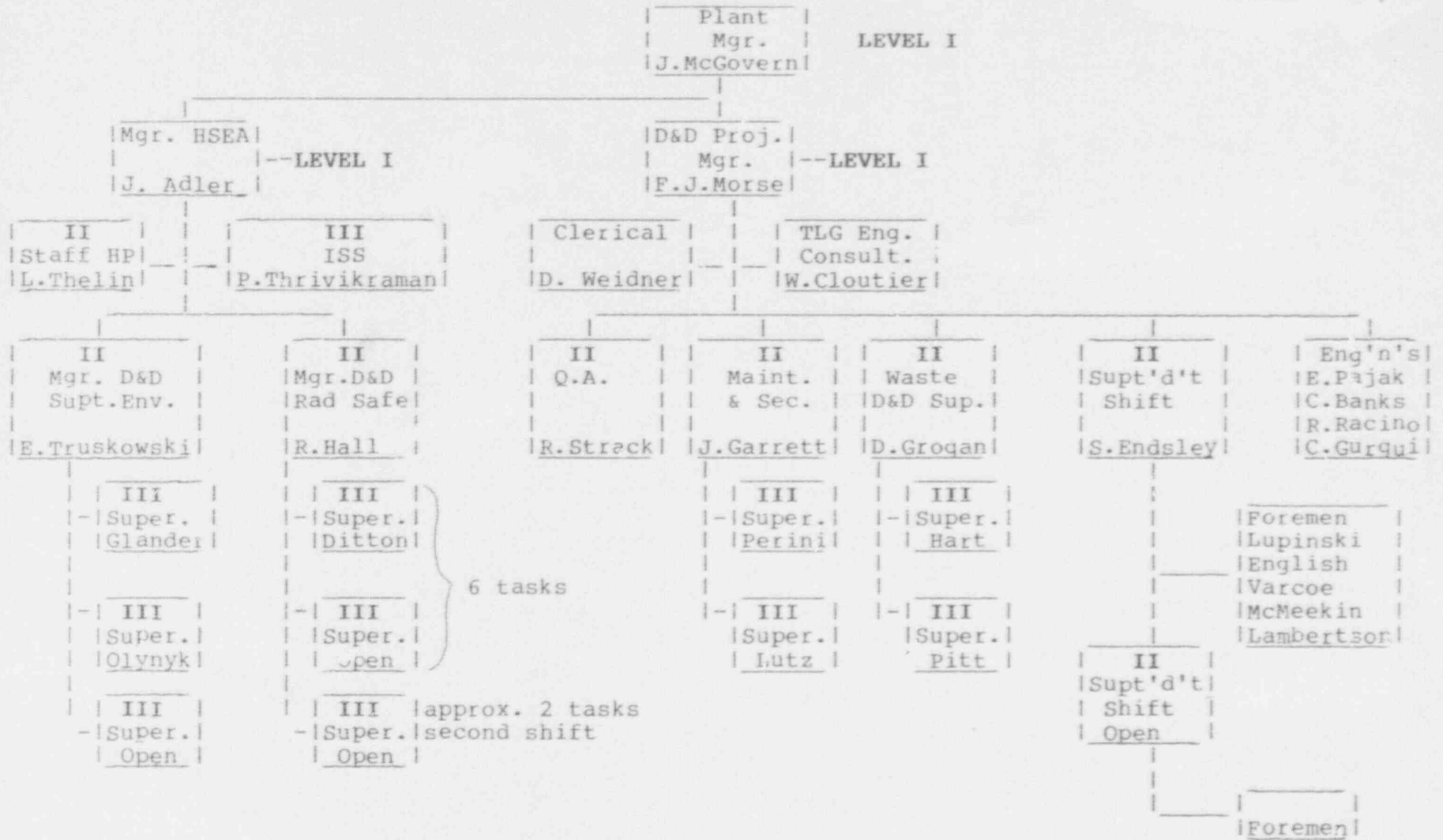
The inspectors also noted that the content of the exclusive use instructions given to the driver was adequate. However, the licensee did not explicitly identify to the driver that the instructions were "exclusive use instructions". This was corrected by the licensee.

Within the scope of this review, no safety concerns or violations were observed concerning the low level waste shipment.

#### 6.0 Exit Interview

The inspectors met with the licensee representative indicated in Section 1.0 on December 20, 1991 and summarized the scope and findings of this inspection.

PROJECT MANAGEMENT TEAM



ATTACHMENT A