U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos.: 50-54/92-03 and 70-687/92-02

Docket Nos.: 50-54 and 70-687

License Nos.: R-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: May 5-7, 1992

Inspectors: _____ 5/21/92
Thomas Dragoun, Project Scientist, Effluents date
Radiation Protection Section (ERPS), Facilities
Radiological Safety and Safeguards Branch (FRSSB)

_____ 5/21/92
Stephen Holmes, Radiation Specialist, ERPS, FRSSB date

Approved By: _____ 5/21/92
Robert J. Bores, Chief, ERPS, FRSSB, date
Division of Radiation Safety and Safeguards

Areas Inspected: Use of the RESRAD computer code, control of liquid effluents, and implementation of the radiation protection program during decommissioning.

Results. No safety concerns or violations were identified. Improvements in the radiation protection program were noted.

DETAILS

1.0 Persons Contacted

*J. Adler, Manager, Health, Safety, and Environmental Affairs (TLG)
*R. Hall, Manager, D&D Radiation Protection (TLG)
J. McGovern, Plant Manager
*F. Morse, Project Manager, Decommissioning
*E. Troskoski, Manager, HP Support and Environmental Monitoring

*Attended the exit interview on 5/7/92. Other licensee personnel were interviewed during the course of the inspection.

2.0 Use of RESRAD

Condition G of Amendment No. 6 to License SNM-639 required the licensee to develop residual soil contamination limits for the unrestricted release of the site after decommissioning. The licensee proposed using the computer code RESRAD to derive these limits. The NRC accepted this approach. Recently, representatives from New York State (NYS) agencies questioned the applicability of RESRAD to the geological conditions at the site. The licensee retained one of the authors of RESRAD to respond to the questions. The licensee concluded that no changes were required and that RESRAD will continue to be used to establish residual contamination limits for areas occupied by the buildings as originally planned. Alternate techniques may be used for the other, undisturbed soil areas on site. The inspector had no further questions.

3.0 Site Liquid Effluents

The licensee reported that strontium-90 was detected in well samples taken on January 27. Strontium was not previously included in the routine laboratory analyses of effluents but was estimated from known abundance relative to other gamma emitters in the effluent stream. Strontium levels were elevated but within discharge limits. As a precaution, all run-off water from storm drain S-4 was processed through ion exchange resins to remove the strontium prior to discharge. The licensee has also increased the sampling frequency and is reanalyzing historical samples for strontium. All strontium analysis is done by a contractor who uses a technique that requires a minimum of two weeks to get a result and has a backlog that adds to the delays. The licensee is attempting to develop an in-house capability to measure strontium and provide quicker results. These efforts are expected to continue for several weeks. The inspector requested the licensee to expedite the analysis of the historical samples and will review this matter in a future inspection.

The inspector discussed with the licensee the discharge limits used for effluent from the retention pond. The licensee stated that all applicable NYS and NRC limits are being followed during decommissioning. After the decommissioning is complete, the licensee

will apply the new EPA drinking water standards to the groundwater on site and run-off from the site.

4.0 Radiation Protection Program

4.1 Workplace Tour

The inspector toured the areas where decommissioning work was in progress. The use of warning signs and physical barriers in work areas has significantly improved since the last inspection. Several workers and job foremen were interviewed and found to be knowledgeable of the radiological conditions in the area and the required safety precautions. Use of engineering controls for protection against airborne contamination was good. One or more Health Physics technicians (HP techs) were providing continuous coverage for each job, including those observed on backshift. Management oversight of HP activities was good. A HP Coordinator (foreman) provided oversight of HP techs in the field. The HP Shift Supervisor held informal but effective coordinating meetings at the beginning and end of the shift. Cooperation and coordination between the work groups and HP personnel appeared to be good. Attention to industrial hazards was excellent.

4.2 HP Staffing

The licensee made minor changes to the HP organization and increased staffing to support work on the second shift. The HP organization is fully staffed with 16 D&D HP techs, two D&D supervisors, 10 Support HP techs, and two Support supervisors. The inspector interviewed selected HP techs in the field and found them to be well experienced and knowledgeable. The inspector noted that the HP staffing was good for the amount of work in progress.

4.3 Radiation Work Permits

The inspector reviewed work in progress for compliance with requirements specified in the radiation work permit (RWP). No deficiencies were noted. The inspector reviewed the format of the RWP and determined that additional information should be included. Examples are detailed radiological conditions, ALARA requirements, and a list of workers authorized to perform the work. The licensee stated that the small size of the organization and close working relationship between HP and the trades groups allowed this information to be exchanged informally. However, a new RWP procedure had been drafted and would be promulgated by May 15. The inspector reviewed the draft procedure and found it to be adequate. This matter will be reviewed in a future inspection. (50-54/92-03-01 and 70-687/92-02-01)

4.4 HP Procedure

The inspector reviewed the following HP procedures.

HPDP-001, "ALARA Job Reviews", effective 3/5/92.
HPDP-002, "Radiological Incident Report", effective 3/5/92.
HPDP-003, "Health Physics Work Instructions", effective 2/28/92.
HPDP-007, "Radioactive Spill Response", effective 4/21/92.

The procedures were found to be of good quality, adequately detailed, and providing generally accepted HP practices and techniques.

4.5 Unconditional Release of Material On Site

The inspector toured the special area used to perform the unconditional release of material and interviewed the Support HP tech and supervisor responsible for this activity. Within the scope of this review, the inspector determined that the licensee was complying with Section 8.1 of the Decommissioning Plan. The licensee has lowered certain limits relative to the values given in Tables 8.1 and 8.2 of the Plan. This is acceptable.

4.6 Routine HP Surveys

In addition to specific job surveys, the licensee is required by 10CFR20.201 to perform routine surveys to evaluate the radiation hazards in general access areas. The inspector reviewed the procedures and records of the monthly and daily smear, radiation area , and air sampling surveys being performed. The health physics supervisor and two randomly picked technicians who perform these surveys were interviewed concerning their knowledge and understanding of these procedures and surveys. The supervisor and technicians were sufficiently knowledgeable to adequately conduct the surveys and review the data to ensure that radiation signs and postings were correct. The health physics procedures provide minimal guidance, however, the resulting surveys were adequate. The inspector determined that the routine survey program was adequate.

5.0 Exit Interview

The inspector met with the licensee representatives indicated in Section 1.0 on May 7, 1992 and summarized the scope and findings of this inspection.