



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

50-54
70-687

OCT 06 1993

MEMORANDUM FOR: Michael F. Weber, Section Leader
Regulatory Issues Section
Decommissioning and Regulatory
Issues Branch
Division of Low-Level Waste Management
and Decommissioning

FROM: Dominick A. Orlando, Project Manager
Regulatory Issues Section
Decommissioning and Regulatory
Issues Branch
Division of Low-Level Waste Management
and Decommissioning

SUBJECT: TRIP REPORT - INSPECTION OF THE CINTICHEM FACILITY, TUXEDO,
NEW YORK, SEPTEMBER 22 & 23, 1993

On September 22 and 23, 1993, I accompanied Nuclear Regulatory Commission Region I inspectors Thomas Dragoun and Robert Bores on an announced inspection of the Cintichem facility (license numbers R-81 and SNM-639) in Tuxedo, New York. I had several purposes in accompanying the inspectors. The first was to assist the Region I inspectors in their review of the radiation safety program at the facility and to observed the status of the decommissioning of the reactor and hot laboratory buildings. The second was to attend a meeting of the Tuxedo Town Board on the evening of September 22, 1993. The third reason was to discuss with the licensee Cintichem's July 15, 1993 request for an exemption from the requirements of 10 CFR Parts 20.1001 - 20.2401. The inspection, Town Board meeting and discussions with Cintichem are summarized below.

Inspection Findings and Status of Decommissioning of the Facility

Based on the results of the inspection, which included discussions with Cintichem staff, a review of the decommissioning records, and observations of the decommissioning operations, the Region I inspectors stated that they had not observed any violations of NRC's regulations or Cintichem's license conditions at the facility. NRC inspectors were accompanied during much of their inspection by Barbara Youngberg of the New York State Department of Environmental Conservation (NYSDEC). The results of the inspection were discussed with the licensee at the exit interview on September 23, 1993.

In general, the decommissioning is progressing well, although slower than expected by the licensee and NRC (enclosure 1 includes a slide used by Cintichem at the Town Board Meeting to illustrate the status of the decommissioning project). I discussed the impact that delays on the completion of the decommissioning project could have on the conditions in Cintichem's license with Mr. James J. McGovern, Cintichem President and Plant Manager. I reminded him that as soon as delays in the completion of the

11/17
NRC

9310150111 931006
PDR ADOCK 05000054
PDR
Q

NRC FILE CENTER COPY

delete: ACNW

decommissioning were expected, he should inform NRC, because license amendment condition H required that decommissioning be completed by January 1995. He indicated that he would officially inform NRC as soon as it was clear how much of a delay would be expected. He indicated that the delay is the result of the discovery of radiologically contaminated soil under the hot cells in Building 2. Cintichem originally believed that the hot cells were located on bedrock and only recently discovered that contaminated soil was present under these hot cells. Cintichem indicated that accessing and removing this soil could delay the completion of the decommissioning project by 7 - 8 months.

In order to gain access to the contaminated soil beneath the hot cells, Cintichem plans to completely remove the hot cell walls and floors. Several of the hot cell walls contain structural support columns for the building roof. As these supports will be removed along with the hot cell walls, Cintichem plans to support the roof by installing supporting columns on the exterior of the building. Because Cintichem was not aware that the hot cells were located on soil instead of bedrock, they did not include a description of the exterior shoring and removal of the hot cells as a unique task in their decommissioning plan. However, the licensee did discuss, in sections 3.3.1.21 and 3.3.1.35 of their decommissioning plan, the removal of the hot cell floors and potentially contaminated soil beneath the building walls and footings. Because the exterior shoring of the building was not discussed in the decommissioning plan, I raised the question whether this could require an amendment to the decommissioning plan.

Cintichem indicated that it had evaluated the planned operation as outlined in Condition E (i.e., preparation of a safety evaluation, with review and approval by the Cintichem Nuclear Safety Committee and, as appropriate, the Radiation Safety and ALARA Committees) of their license and determined that an amendment was not needed to their decommissioning plan because the shoring did not pose an unreviewed safety issue. Cintichem's conclusion was based on the following: 1) the licensee has routinely been shoring other areas at the facility, such as the walls adjacent to the underground exhaust duct, as a normal consequence of removing contaminated material and these operations were not discussed in the decommissioning plan; 2) although on a larger scale than previous shoring operations, this was only a modification of the existing building support; 3) it was being done to provide double HEPA filtration and containment to prevent fugitive dust emission from the facility per commitments made in the decommissioning plan and; 4) failure to provide double containment would present an unreviewed safety question (see condition E-1 of license amendment No. 6 dated, January 1, 1992). Cintichem stated their construction of exterior shoring was now the critical milestone for completing the decommissioning project and that failure to start this operation quickly may result in Cintichem halting the decommissioning operations and requesting that they be allowed to resume operations only after adequate radioactive waste disposal capacity is available.

I discussed Cintichem's rationale for not believing that this action required an amendment to the decommissioning plan with the Region I staff and we concluded that Cintichem's rationale appeared to be valid. I informed Cintichem of this, but cautioned that I would raise the issue with my supervisors on September 24, 1993. I also informed Cintichem that I would

telephone them with the results of my discussion with my supervisors. I discussed this issue with John Austin, Chief, Decommissioning and Regulatory Issues Branch on September 24, 1993 and he agreed that the licensee could proceed with the planned operation without submitting a request to amend their decommissioning plan. I informed Cintichem of this decision by telephone on September 24, 1993.

A few days before our inspection, Cintichem was informed that the low-level radioactive waste disposal facility operated by Envirocare of Utah would not be able to accept some of the contaminated soil from the Cintichem facility. Cintichem indicated that Envirocare had not included all of the radionuclides present in the Cintichem soil in Envirocare's amendment request to the State of Utah. This amendment request was to allow the disposal of waste containing additional radionuclides at Envirocare's Clive, Utah facility. Cintichem stated that they believed that all the radionuclides found at the Cintichem facility had been included in Envirocare's request. Cintichem indicated that it was currently evaluating how this would impact the decommissioning project.

Town Board Meeting

The Tuxedo Town Board requested that Cintichem, NRC and NYSDEC staff attend this meeting and provide the Town Board with an update of the status of the decommissioning of the Cintichem facility. NRC, NYSDEC and Cintichem periodically have provided the Board with these updates in the past. The meeting began at 7:30 p.m. and consisted of an update of the status of the decommissioning by Cintichem followed by Cintichem, NRC, and NYSDEC answering questions from the Board and local citizens. The meeting was attended by approximately 30 individuals. Enclosure 1 is a copy of the slides used by Cintichem.

Most of the questions from the local citizens centered around concerns over potential radiological contamination of the Indian Kill reservoir. NRC, NYSDEC and Cintichem indicated that, to date, little or no radioactive material from the Cintichem operations has been detected in the reservoir. A few questions pertained to the unrestricted release criteria and residual soil contamination that would be allowed to remain at the site. NRC and Cintichem discussed the unrestricted release limits for contaminated surfaces and the development of the unrestricted release criteria for the soil at the site. In addition, a slide listing the soil criteria was shown to the Board and local citizens. It appeared that most of the citizens were satisfied with the responses made by Cintichem, NRC and NYSDEC. The Board thanked NRC, Cintichem and NYSDEC for providing the update and answering their questions. We left the meeting at approximately 8:30 p.m.

Part 20 Exemption Request

On July 15, 1993, Cintichem requested an exemption from the requirements of 10 CFR parts 20.1001 - 20.2401. Compliance with 10 CFR Parts 20.1001 - 20.2401 is mandatory for all NRC licensees on January 1, 1994, unless an exemption is granted by NRC. If NRC grants Cintichem's request for an exemption the licensee would be required to comply with the requirements of 10 CFR Parts 20.1 - 20.601 for the remainder of the decommissioning project.

Enclosure 2 lists the additional information required by NRC to evaluate Cintichem's request. I provided Cintichem with a copy of Enclosure 2 and discussed the additional information needs with Cintichem. Two issues that required additional clarification were the calculated off-site dose to the nearest adjacent community (<26 mrem/year) and the estimated cost for implementing the requirements of 10 CFR Parts 20.1001 - 20.2401 (\$1.24 million). Cintichem stated that it used the results of their thermoluminescent dosimeters (TLDs) located at the nearest community to derive the potential maximum dose to members of the public in this community. Cintichem's air and water effluents analysis indicated that these pathways contributed less than 5 mrem/yr to the total off-site dose. As such, it was not clear how the "< 26 mrem/yr" estimate was derived. It appears that this estimated dose may be the result of an underestimation by Cintichem of the locally high background at the TLD locations. Cintichem indicated that it would re-evaluate the estimate. Cintichem indicated that the largest contribution to the cost of implementing 10 CFR Parts 20.1001 - 20.2401 (about \$900,000) came from "project delay, scheduling extension due to start-up inefficiencies and management diversion." It was not clear to NRC staff how this cost estimate was developed, the basis for the cost estimate, or if it had already been included in Cintichem's cost calculations. Cintichem indicated that it had some recent experience with the implementation of new Occupational Safety and Health Administration regulations and had based their estimate on the cost of implementing these regulations. The licensee indicated that they would provide NRC with additional justification for their cost estimates. NRC Region I and NYSDEC will be inspecting Cintichem's environmental monitoring operations in November 1993. I believe it would be beneficial for me to participate in this inspection as soil sampling and analysis will be the last major task Cintichem will have to perform prior to requesting NRC confirmation of soil residual radioactivity levels, termination of the NRC licenses and release of the facility. In addition, it will give me the opportunity to evaluate Cintichem's effluents monitoring data to confirm the potential contribution to off-site doses and is related to a request for modification to the effluent monitoring program recently approved by NYSDEC.

If you have any questions please contact me at 504-2566.

151 (Original Signed by _____)
 Dominick A. Orlando, Project Manager
 Regulatory Issues Section
 Decommissioning and Regulatory
 Issues Branch
 Division of Low-Level Waste Management
 and Decommissioning

Enclosures: As stated
 SUBJECT ABSTRACT: TRIP REPORT - INSPECTION OF THE CINTICHEM FACILITY, TUXEDO, NEW YORK,
 SEPTEMBER 22 & 23, 1993

OFC :	LLDR	C	LLDR	E						
NAME:	DOrlando		MWeber							
DATE:	10/6/93	H	10/6/93	H						

Path & File Name: P:CINTISEP OFFICIAL RECORD COPY

PDR : YES NO Category: Proprietary ___ or CF Only ___

ACNW: YES ___ NO Delete file after distribution Yes ___ No ___

IG: YES ___ NO

DISTRIBUTION:

TJohnson
TDragoun,RI

Central File
JSurmeir
RBores,RI

NMSS r/f
LBell
JAustin

JGreeves
LLWM r/f

PLohaus
TMichaels

MBell
SWeiss

AGENDA FOR DECOMMISSIONING PROJECT STATUS REPORT

TO

TUXEDO TOWN BOARD

SEPTEMBER 22, 1993

INTRODUCTION

Review of Project Milestones

PROJECT STATUS

Review of Major Tasks

Current Schedule

Waste Disposal Status

AGENDA FOR PRESENTING DECOMMISSIONING PROJECT STATUS**TO****TUXEDO TOWN BOARD****7:30 PM - SEPTEMBER 22, 1993****I. INTRODUCTION****Project Milestones**

- February 1990 - Cintichem Ceased Radiochemical Production Operations
- April 1990 - Commenced Decontamination Work Under Operating Licenses
- October 1990 - Decommissioning Plan Submitted to USNRC Per 10 CFR Pt. 50 & 70
- Feb. - Mar. 1991 - NRC/NYSDEC Cooperative Agreement
- November 1991 - Approval to Decommission Reactor Under 10 CFR Pt. 50
- November 1991 - Approval to Ship Reactor Fuel
- January 1992 - Approval to Decommission SNM Facilities Under 10 CFR Pt. 70
- February 1992 - Fuel Shipment Complete. Commenced D&D
- July 1992 - Residual Soil Acceptance Criteria Submitted to NRC Per D&D Plan License Condition G
- July 1993 - Residual Soil Criteria Approved By NRC

**CINTICHEM DECOMMISSIONING
PROJECT STATUS**

**TASKS
COMPLETE**

Core/Systems
Storage Tubes
Thermal Column
Misc. Piping Pool/Stall
Activated Concrete
Beam Tubes
Decon Pump Room
Decon Hot Cells
Underground HVAC Phase I
Remove Exhaust Vent System
Remove Storage Tank
Remove Hold-Up Tank
Remove Hold-Up Tank Soil

Project Percent Complete

Radioactivity Removed

Start of Final Survey

**TASKS
IN-PROGRESS**

Primary/Secondary Systems - 13%
Thermal Column Liner - 43%
Embedded Piping - 5%
Decon Pool - 52%
Decon Building (Rx Bldg) - 42%
Remove HVAC - 86%
*Remove Filter Room - 28%
Underground HVAC Phase II - 6%
Decon Hot Lab Building - 41%
*D&D Tl/Evaporator Room - 9%
Remove Canal - 63%
Remove Canal Fill - 47%
Remove Storage Tank Soil - 10%
Remove Manholes - 24%
Remove Yard Piping - 33%
Remove Building Structures - 4%
*Remove Hot Cells & Soil - 2%

70%

98.7%

August 1, 1994

**TASKS
NOT STARTED**

Decon Storage Wells
Remove 5K Tanks
Remove Exhaust Stack
Remove Footings
Remove Soil

001 20 00 11:03 1000

P04

**WASTE SHIPMENTS
PROJECT STATUS**

Original Estimate	104,000 ft³
Current Estimate	144,000 ft³ (shipped quantity)
Project-To-Date Shipped	54,466 ft³ (45,000 ft³ disposed)
Balance To Ship	89,534 ft³ (70,000 ft³ disposed)
Last Shipment	June 30, 1994

SEP 28 '93 11:10 1505

P05



BOX 725, TUXEDO PARK, NEW YORK 10987

AGENDA

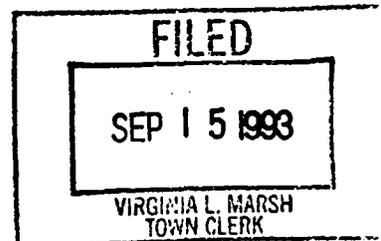
Tuxedo Town Board
Tuxedo Town Hall
Temple Drive and Hospital Road
Wednesday, September, 22nd, 1993
Community Room/Board Room
7:30 PM

Call to Order
Pledge to the Flag
Minutes
Public Comments concerning anything on the Agenda

1. The staff and agencies in charge of the decommissioning of the Cintichem reactor will give the Town an update.
2. Vote to authorize the Supervisor to sign the ammended contract with Monroe for the trial period of 3 months for Dial-A-Bus.
3. Vote on the ammended 911 numbering of buildings and property law.
4. Vote to authorize the Highway Department to order new street signs to replace signs where name changes have been made.
5. Resolution to address campaign signs and exemption of deposit for the sign permits.

Any other business as may come before this board after this agenda is posted.

- Public Comments
- Vouchers
- Adjournment



AREA CODE 914

SUPERVISOR — 351-2265
RECREATION — 351-5598
TOWN CLERK'S FAX NUMBER — 351-5593

TOWN CLERK — 351-4411
BUILDING DEPT. HIGHWAY DEPT. — 351-4421

TOWN COURT — 351-5655

ASSESSOR — 351-5602
HIGHWAY GARAGE — 351-2594
SUPERVISOR'S FAX NUMBER — 351-2190

ADDITIONAL INFORMATION NEEDED
TO EVALUATE CINTICHEM'S JULY 15, 1993 REQUEST FOR
AN EXEMPTION FROM 10 CFR PARTS 20.1001-2401

1. Do the radiation exposures outlined in Cintichem's July 15, 1993 request refer to whole body radiation exposures or are the exposures expressed in total effective dose equivalent (TEDE)?
2. Cintichem indicated that as of January 1, 1994 only 0.0006% or about 25 mCi of radioactive material would remain on-site. It is not clear if this is a fraction of the licensed possession limit or some other total activity. Please clarify this statement.
3. Cintichem indicated that as of January 1, 1993 97% of the estimated worker radiation exposure would have been incurred and that the estimated worker radiation exposure would equal approximately 8.6 person-rem. What is the estimated maximum dose to any one worker ?
4. The fifth bullet of the enclosure to the July 15, 1993 letter indicates that no work involving the potential for exposure to airborne radioactivity in excess of 10% of the limits is expected in 1994. It is unclear which limits Cintichem is referring to in this statement. Please clarify which limits this statement refers to.
5. How was the 26 millrem estimate exposure for the adjacent residential area derived? Is this does reported as a whole body does or in TEDE? Please provide information to support that this dose is ALARA.
6. Please clarify the how Cintichem determined the \$907,000 for "project delay, schedule extension due to start-up inefficiencies and management diversion" listed as a cost factor in your August 27, 1993 letter.
7. Please clarify that if NRC grants Cintichem an exemption from 10 CFR Parts 20.1001 - 20.2401 Cintichem will maintain radioactive material in effluents in accordance with Parts 20.1 - 20.601.
8. Please clarify the statement that to date, 93% of the radioactivity has been decontaminated and/or dismantled. Staff is unsure if this means that 93% of the structures and soils have been removed or decontaminated or if 93% of the radioactive contamination has been removed from the site.