70-687
50-54

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

October 29, 1996

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

Dear Mr. McGovern:

This is in response to Jay Adler's letter to Thomas Dragoun, dated July 3, 1996, in which Cintichem summarized the radiological status of bedrock at its Tuxedo, New York, facility, and proposed that the radiological status of the groundwater at one point at the site be determined using the results from the analysis of groundwater collected from the deeper of two wells located near the foundation of the hot lab building. The results from the deeper well, MW-2D, indicate that the groundwater meets the Environmental Protection Agency's (EPA's) drinking water standard for ^{90}Sr in 40 CFR 141.16, while the results from the shallower of the two wells, MW-2S, indicate that the groundwater in this well exceeds the EPA's current standard for ^{90}Sr. Cintichem used the limited flow from the shallower well as the rationale for excluding it from consideration as an appropriate location for evaluating the radiological status of the groundwater at the site.

NRC staff has reviewed Mr. Adler's letter and has concluded that the assessment of the radiological status of the bedrock is acceptable as submitted. However, the NRC staff does not agree with your rationale for excluding MW-2S as an appropriate location from which to determine the radiological status of the groundwater at the site. Based on NRC staff discussions with staff of the EPA's Region II office, the Cintichem facility is located in the Ramapo River Basin Sole Source Aquifer (see enclosed letter from Paul A. Giardina to Dominick A. Orlando, dated September 25, 1996). EPA considers all groundwater in a Sole Source Aquifer, and therefore all groundwater at the Cintichem facility, as a potential source of drinking water. The New York State Department of Environmental Conservation (NYSDEC) also considers all groundwater at the Cintichem site a potential source of drinking water. Therefore, unless Cintichem can demonstrate to the NRC staff that both EPA and NYSDEC have concluded that MW-2S is not an appropriate sampling location for the Sole Source Aquifer, the NRC staff would consider both MW-2S and MW-2D as appropriate sampling locations for evaluating the status of groundwater at the facility.

Mr. Adler's letter also stated that ^{90}Sr concentrations in groundwater obtained from MW-2S during the past year (June 1995 to June 1996) have ranged from 10 picocuries per liter (pCi/l) to 79 pCi/l, with a mean of 38 pCi/l. The EPA drinking water standard in 40 CFR 141.16 for ^{90}Sr is 8 pCi/l. A concentration limit of 8 pCi/l for ^{90}Sr was included in Cintichem's proposed residual radioactive material limits that were submitted to NRC staff in July 1992, and approved by NRC staff in August 1993. In mid-1991, EPA published proposed drinking water standards for radionuclides. These proposed drinking water standards, although keeping the same dose basis as the current standard (4 mrem/yr), were converted to effective dose equivalents. This is

NL17

Delete: ACNW

consistent with NRC's dose calculation methodology and changes the drinking water standard for ^{90}Sr from 8 pCi/l to 42 pCi/l. Recently, the NRC staff has used EPA's proposed drinking water standard of 42 pCi/l for ^{90}Sr in determining whether sites are suitable for unrestricted use. Requiring Cintichem to meet this standard also satisfies the requirements outlined in NYSDEC's Technical Administrative Guidance Memorandum entitled "Cleanup Guideline for Soils Contaminated with Radioactive Materials," September 1993, provided the total effective dose equivalent due to all residual radioactive material will not exceed 10 millirem per year (above background). In their recent letter to NRC staff, EPA Region II also indicated that potential doses to the public from groundwater at the site should be evaluated against a total effective dose equivalent of 4 mRem/year. However, please note that EPA has specified that the groundwater sample used to determine the concentration of radioactive material should not be filtered prior to analysis. Therefore, the NRC staff has concluded that 42 pCi/l for ^{90}Sr, as determined using an unfiltered groundwater sample, is the applicable standard for groundwater at the Cintichem site and will be used by the NRC staff in determining whether the residual radioactive material at Cintichem's Tuxedo, New York, facility meets NRC's criteria for unrestricted use and termination of the NRC license.

If you have any questions concerning the staff's review of Mr. Adler's letter, please contact Nick Orlando at (301) 415-6749. Development of this letter has been coordinated with the staff of NYSDEC.

Sincerely,

Michael F. Weber

Michael F. Weber, Chief
Low-Level Waste and Decommissioning
Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

License Nos. SNM-639
R-81

Docket Nos. 70-687
50-54

Enclosure: As stated

cc: Cintichem dist. list

consistent with NRC's dose calculation methodology and changes the drinking water standard for ^{90}Sr from 8 pCi/l to 42 pCi/l. Recently, the NRC staff has used EPA's proposed drinking water standard of 42 pCi/l for ^{90}Sr in determining whether sites are suitable for unrestricted use. Requiring Cintichem to meet this standard also satisfies the requirements outlined in NYSDEC's Technical Administrative Guidance Memorandum entitled "Cleanup Guideline for Soils Contaminated with Radioactive Materials," September 1993, provided the total effective dose equivalent due to all residual radioactive material will not exceed 10 millirem per year (above background). In their recent letter to NRC staff, EPA Region II also indicated that potential doses to the public from groundwater at the site should be evaluated against a total effective dose equivalent of 4 mRem/year. However, please note that EPA has specified that the groundwater sample used to determine the concentration of radioactive material should not be filtered prior to analysis. Therefore, the NRC staff has concluded that 42 pCi/l for ^{90}Sr, as determined using an unfiltered groundwater sample, is the applicable standard for groundwater at the Cintichem site and will be used by the NRC staff in determining whether the residual radioactive material at Cintichem's Tuxedo, New York, facility meets NRC's criteria for unrestricted use and termination of the NRC license.

If you have any questions concerning the staff's review of Mr. Adler's letter, please contact Nick Orlando at (301) 415-6749. Development of this letter has been coordinated with the staff of NYSDEC.

Sincerely,
[ORIGINAL SIGNED BY:]
Michael F. Weber, Chief
Low-Level Waste and Decommissioning
Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

License Nos. SNM-639
R-81
Docket Nos. 70-687
50-54
Attachment: As stated
cc: Cintichem dist list

TICKET: All w/ Enclosure
DISTRIBUTION: Central File LLDP r/f ~~DWM r/f~~ NMSS r/f PUBLIC
JDavis TDragoun/RI SWeiss MBell JAustin R Bellamy
~~JHolonich~~ LBell TCJohnson JGreeves M Federline

To receive a copy of this document in small box on "OFC:" line enter: "C" = Copy without attachment/enclosure; "E" = Copy with attachment/enclosure; "N" = No copy

* See previous concurrence

Path & File Name: s:\dwm\lldp\dao\cntiho

OFC	LLDP*		LLDP*		OGC*		LLDP*		NRR*		LLDP			
NAME	NOrlando/bg		JCopeland		RFonner		RNelson		TMichaels		MWeber			
DATE	10/10/96		10/8/96		10/17/96		10/8/96		10/28/96		10/29/96			

OFFICIAL RECORD COPY

ACNW: YES ___ NO ✓ Category: Proprietary ___ or CF Only ___
IG : YES ___ NO ✓
LSS : YES ___ NO ✓ Delete file after distribution: Yes ✓ No ___
(30 days)