

50-54  
70-6873



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

October 17, 1994

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

Dear Mr. McGovern:

On January 16, 1992 the Nuclear Regulatory Commission issued a license amendment to Cintichem, Inc. authorizing the decommissioning of its Tuxedo, New York facility. Condition G of this license requires that Cintichem develop residual soil contamination limits that it intends to use as unrestricted release criteria at the Tuxedo facility and requires that Cintichem submit these proposed criteria to the Nuclear Regulatory Commission for approval. On October 22, 1992, Cintichem submitted proposed residual radioactive material contamination limits for 23 radionuclides that had been, or were expected to be, found at the Tuxedo facility. NRC staff approved these residual contamination criteria on August 26, 1993.

On February 1, 1994, Cintichem requested that NRC approve residual contamination criteria for five additional radionuclides that were not included in Cintichem's October 1992 request. These radionuclides were <sup>54</sup>Mn, <sup>65</sup>Zn, <sup>109</sup>Cd, <sup>154</sup>Eu, and <sup>155</sup>Eu. On March 31, 1994, Cintichem submitted additional information to support this request. Based on NRC's evaluation, the proposed limits for the five additional radionuclides result in doses of a few millirem per year to hypothetical individuals residing at the site and are As Low as Reasonably Achievable. Therefore, Cintichem's proposed criteria for these radionuclides are acceptable as proposed.

During the review of these proposed residual contamination criteria, NRC determined that potential doses to hypothetical individuals residing at the site could be in excess of a few millirem per year, from <sup>238</sup>Pu, <sup>90</sup>Sr, <sup>55</sup>Fe, <sup>63</sup>Ni, and <sup>99</sup>Tc, at the surface limits approved by NRC on August 26, 1993. The staff recognized the doses could be larger than previously estimated if certain assumptions used by NRC and Cintichem in estimating potential doses to hypothetical site residents are not realized after the site is released for unrestricted use. Specifically, if the depth of contaminated soil beneath the land surface was greater than originally assumed (15 centimeters), projected doses to potential future site residents could be greater than originally estimated. The differences have been further exacerbated by recent changes in the radionuclide transfer factors used in the RESRAD computer code. New information on potential doses from residual radioactive material has been developed by NRC staff since approving Cintichem's original request, including the use of more realistic site-specific scenarios to estimate potential doses from residual radioactive material. Based on this information, NRC staff believes that the continued use of the surface contamination criteria that were approved by NRC in 1993 will not result in doses in excess of a few millirem per year for all radionuclides, except <sup>63</sup>Ni and <sup>99</sup>Tc. Staff's rationale for this conclusion is enclosed. Therefore, Cintichem may continue to use the previously approved surface soil criteria for soil at the Tuxedo,

NK17/10

delete: ACW

9410260303 941017  
PDR ADDCK 05000054  
PDR

**NRC FILE CENTER COPY**

Mr. James J. McGovern

-2-

New York site for all radionuclides except <sup>63</sup>Ni and <sup>99</sup>Tc. In order to ensure that the potential doses to future on-site residents from residual <sup>63</sup>Ni and <sup>99</sup>Tc in the site soil remain less than a few millirem per year, NRC staff will require that Cintichem use 42,500 pCi/gm as the residual soil criterion for <sup>63</sup>Ni and 450 pCi/gm as the criterion for <sup>99</sup>Tc.

This letter has been coordinated with the staff of the New York State Departments of Environmental Conservation and Labor.

If you have any questions, please contact me at (301) 415-7297.

Sincerely,

*131*  
John H. Austin, 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

TICKET:

DISTRIBUTION: ~~Central File~~ DWM r/f MBell JSurmeier JHolonich  
MFederline NMSS r/f *TMichaels* *SWeiss*

Mark Small Boxes in Concurrence Block to Define Distribution Copy Preference  
In small Box on "OFC:" line enter: C = Cover E = Cover & Enclosure N = No Copy

Path & File Name:

OFC	LLDP		LLDP	<i>E</i>	NRR		NRR		LLDP	<i>6</i>
NAME	DOrlando		MWeber <i>B.L.B.</i>	<i>m.b.</i>	TMichaels		SWeiss		JAustin	
DATE	/ /94		10/6/94		/ /94		/ /94		10/17/94	

OFFICIAL RECORD COPY

PUBLIC: YES  NO   
ACNW: YES  NO   
IG: YES  NO

Category: Proprietary  or CF Only   
Delete file after distribution: Yes  No