

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the matter of  
CINTICHEM, INC.

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)  
)

Docket Nos. 50-54 & 70-687

EXEMPTION

I.

Cintichem, Inc. (the Licensee) is the holder of Special Nuclear Material License No. SNM-639 and Reactor License No. R-81, which authorized the possession and use of special nuclear material and the operation of a 5 megawatt (thermal) research reactor, respectively, at their Tuxedo, New York facility. These licenses state, among other conditions, that the Licensee is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect. The Licensee is currently decommissioning the Reactor Building, Hot Laboratory Building, Waste Storage Building and property associated with the use of radioactive material at its Tuxedo, New York facility. Currently, all nuclear fuel, reactor core structures, contaminated bioshield concrete and a majority of piping and components have been dismantled and removed from the reactor facility. In the Hot Laboratory Building, the five hot cells have been decontaminated such that the exposure rate is less than 1 millirem (mrem) per hour in the hot cells. The underground exhaust duct, most of the transfer canal structure and most of the surrounding soil have been removed.

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## II.

By letter dated July 15, 1993, the Licensee requested an exemption from the requirements of 10 CFR 20.1001 - 20.2401 for the remainder of the decommissioning of its Tuxedo, New York facility. This request was made pursuant to 10 CFR 20.2301, which provides for licensees to request an exemption from the requirements of 10 CFR 20.1001 - 20.2401 if it is determined that the exemption is authorized by law and would not result in undue hazard to life or property.

The Licensee stated the following reasons for requesting an exemption from the requirements of 10 CFR 20.1001 - 20.2401:

1. The decommissioning project will be approximately 80% completed by January 1, 1994, the mandatory implementation date of 10 CFR 20.1001 - 20.2401. In addition, as of July 1993, over 93% of the radioactive material has been removed from the site, with the maximally exposed individual receiving only 1.88 rem for any 12 month period. As such, Cintichem believes that the benefits from implementing 10 CFR 20.1001 - 20.2401 will not be realized during the remainder of the decommissioning project.
2. Over 97% of the estimated worker radiation exposure will have been incurred by January 1, 1994. The remaining estimated worker radiation exposure for the project after January 1, 1994, is 8.6 person-rem (whole body) which would be received by about 50 workers. The maximum estimated annual whole body dose to any one worker after January 1, 1994, is 0.6 rem.

3. Only about 25 millicuries (mCi) of licensed radioactive material will remain at the site by January 1, 1994. The radioactive material that is estimated to be on-site will be that which is present as contamination on structural or equipment surfaces and in the soil in excess of release criteria and natural background.
4. No work involving the potential for exposure to airborne radioactivity in excess of 10% Maximum Permissible Concentration limits specified in 10 CFR 20.103(a)(1) is expected in 1994.
5. The average estimated individual occupational radiation exposure should not be greater than 0.18 rem for 1994.
6. Implementation of the 10 CFR 20.1001 - 20.2401 requirements would cost an additional 1.24 million dollars. Cintichem believes that the cost of implementing the requirements of 10 CFR 20.1001 - 20.2401 is not justified from a health and safety perspective.

Cintichem indicated that because of the current administrative worker dose limits at the facility, which are 20 percent less than the limits in 10 CFR 20.1001 - 20.2401, any of the intended benefits that would be expected from adopting the requirements of 10 CFR 20.1001 - 20.2401 would not be realized at the Cintichem facility. Cintichem estimated that the potentially worst case exposed individual (member of the public) would receive less than 53 mrem in 1993, less than the 100 mrem/yr limit in 10 CFR 20.1001 - 20.2401. However, this worst case exposure is based on very conservative assumptions

i.e., continuous occupancy at the top of the facility exhaust stack, obtaining all drinking water at the effluent discharge pipe and continuously residing at the Licensee's controlled area fence line. Monitoring data (thermoluminescent dosimeters and air and water sampling) from adjacent residential areas indicate that doses to members of the public from decommissioning operations at the Cintichem facility for 1993 will not be measurable above natural background.

### III.

By letters dated August 27, 1993, and October 1, 1993, Cintichem provided additional information to support Cintichem's request for an exemption from the requirements of 10 CFR 20.1001 - 20.2401. The staff's review and analysis of this information is documented in an Environmental Assessment and Safety Evaluation. Based on the analysis, staff concludes that sufficient basis has been presented for NRC's approval of the request for a schedular exemption, pursuant to 10 CFR 20.2301, from the requirements of 10 CFR 20.1001 - 20.1208 and 20.1501 - 20.2401.

### IV.

Based on the above evaluation the Commission has determined that pursuant to 10 CFR 20.2301, this schedular exemption is authorized by law, and does not result in an undue hazard to life or property.

Accordingly, the Commission hereby grants a schedular exemption from the requirements of 10 CFR 20.1001 - 20.1208 and 20.1501 - 20.2401. However, Cintichem will be required to comply with the requirements of 10 CFR 20.1301 and 20.1302. Instead of implementing the requirements of 10 CFR 20.1001 -

20.1208 and 20.1501 - 20.2401, Cintichem will complete the decommissioning of the Tuxedo, New York facility in accordance with the requirements of 10 CFR 20.1 - 20.104, 20.107 - 20.601 and 20.1301 - 20.1302. This schedular exemption is effective from January 1, 1994, until December 15, 1995, the expiration date of Cintichem's Special Nuclear Material (SNM) license.

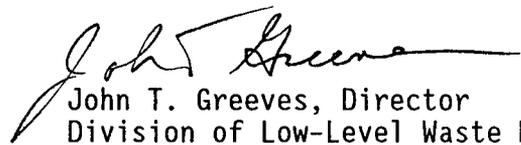
Pursuant to the requirements of 10 CFR Part 51, the Commission has prepared an Environmental Assessment for the proposed action and determined that the granting of this schedular exemption will have no significant impacts on the quality of the human environment (58 FR 66037, December 17, 1993)

A copy of the Licensee's request for exemption dated July 15, 1993, and supporting documentation dated August 27, 1993, and October 1, 1993, is available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, DC 20037.

This schedular exemption is in effect from January 1, 1994, through December 15, 1995.

Dated at Rockville, Maryland this *23* day of *December* 1993.

FOR THE NUCLEAR REGULATORY COMMISSION



John T. Greeves, Director  
Division of Low-Level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

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Pursuant to the requirements of 10 CFR Part 51, the Commission has prepared an Environmental Assessment for the proposed action and determined that the granting of this schedular exemption will have no significant impacts on the quality of the human environment (58 FR 66037, December 17, 1993)

A copy of the Licensee's request for exemption dated July 15, 1993, and supporting documentation dated August 27, 1993, and October 1, 1993, is available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, DC 20037.

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FOR THE NUCLEAR REGULATORY COMMISSION

John T. Greeves, Director  
Division of Low-Level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

OFC :	LLDR*		NRR*		OGC*		OGC*		LLWM*	
NAME:	DOrlando		TMichaels		RFonner		EReiss		MWeber	
DATE:	10/25/93		11/1 /93		11/2 /93		11/4 /93		11/4/93	

OFC :	NRR*		NRR		IMNS		LLDR*		LLWM	PHH
NAME:	SWeiss		JCunningham		CJones		JAustin		PLohaus	
DATE:	11/12/93		/ /93		/ /93		12/20/93		12/22/93	

OFC :	LLWM									
NAME:	JGreeves									
DATE:	12/23/93									

Path & File Name: G:CINIT20

OFFICIAL RECORD COPY

PDR : YES \_\_\_ NO \_\_\_  
ACNW: YES \_\_\_ NO \_\_\_  
IG: YES \_\_\_ NO \_\_\_

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

This schedular exemption is in effect from January 1, 1994, through December 15, 1995.

Dated at Rockville, Maryland this \_\_\_\_\_ day of \_\_\_\_\_ 1993  
FOR THE NUCLEAR REGULATORY COMMISSION

John T. Greeves, Director  
Division of Low-Level Waste Management  
and Decommissioning  
Office of Nuclear Material Safety  
and Safeguards

*\* See previous CONCURRENCE*

OFC :	LLDR*		NRR*		OGC*		OGC*		LLWM*	
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DATE:	10/25/93		11/1 /93		11/2 /93		11/4 /93		11/4/93	

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OFC :	LLDR	E	NRR		OGC <i>Director</i>		OGC <i>Director</i>	LLWM	e
NAME:	DOrlando		TMichaels <i>MSM</i>		R <i>Reporter</i>		EReiss	MWeber <i>W</i>	
DATE:	10/25/93	H	11/1/93		11/2/93		11/4/93	11/4/93	H

OFC :	NRR*		NRR		IMNS		LLWM		LLWM	
NAME:	SWeiss		JCunningham		CJones		PLohaus		JGreeves	
DATE:	11/1/93		/ / 93		/ / 93		/ / 93		/ / 93	

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OFC	LLDR
NAME	J.AUSTIN
DATE	/ / 93

\* SWeiss concurrence is on the concurrence page for the letter from S. Austin to S. McGovern