UNITED STATES NUCLEAR REGULATORY COMMISSION

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

REGARDING TERMINATION OF FACILITY LICENSE NO. R-81

CINTICHEM, INC. RESEARCH REACTOR

DOCKET NO. 50-54

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an Order terminating Facility License No. R-81 for the Cintichem, Inc. (the licensee) Research Reactor located in Tuxedo, New York.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

By application dated October 19, 1990, as supplemented January 11, 14, 28, February 19, March 8, April 24, May 21, June 25, July 17, August 6, and October 2, 1991, the licensee requested authorization to dismantle the 5 Megawatt Research Reactor, dispose of the component parts in accordance with the proposed decommissioning plan, and terminate Facility License No. R-81. An "Order Authorizing Dismantling of Facility and Disposition of Component Parts," dated November 21, 1991, was published in the Federal Register on November 27, 1991 (56 F.R. 60124). In addition, NRC required Cintichem to develop residual soil contamination criteria for use as unrestricted release criteria for the facility. These were submitted on October 22, 1992, and approved on August 26, 1993. On February 1, 1994, Cintichem requested approval of residual contamination criteria for five additional radionuclides that were not included in the original submittal. NRC approved the criteria for the five additional radionuclides on October 17, 1994. Unrestricted release criteria for surfaces were those described in NRC Regulatory Guide 1.86. These criteria were modified in October 1994 to increase the limits for tritium (H-3) and iron-55 (Fe-55) in

accordance with NRC guidance. Cintichem was also required to demonstrate that the dose to a critical member of the public from all residual radioactive material on site did not exceed 10 millirem per year. In addition, the dose via the water pathway alone could not exceed 4 millirem per year.

Due to the large geographical size of the site and the considerable number of radiation survey data points recorded, the final radiation surveys were divided into five sequential phases. For each phase, Cintichem conducted radiation surveys using techniques recommended in NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination", to show that unconditional release criteria were satisfied. The licensee completed the dismantlement and submitted final survey reports and addenda for the five phases dated January 26, 1995, March 3, 1995, March 26, April 19 and June 7, 1996, June 6 and 27, 1997, July 3 and 30, 1997, and September 22, 1997.

Representatives of the Oak Ridge Institute for Science and Education (ORISE), under contract to NRC, conducted five surveys of the Cintichem facility during the period April 1995 through August 1997. The surveys are documented in the following ORISE reports.

1. Confirmation Survey of the Exterior Areas of Buildings 1 and 2, May 1995
2. Confirmation Survey of the Phase 2 Areas of the Reactor Building, September 1996
3. Confirmation Survey of the Unaffected Land Areas, September 1996
4. Confirmation Survey of the Phase 4 Areas, May 1997
5. Confirmation Survey of the Phase 5 Areas, April 1998

In addition, an Addendum to the Phase 5 Confirmatory Survey Report, "Bedrock Dose Assessment Report", was submitted to the NRC on June 2, 1998.

NRC finds that the ORISE reports support the data developed in the licensee's final survey report, and that all measurements indicate the remaining facilities are suitable for unconditional release.

On May 27, 1998, Cintichem affirmed that all radioactive material stored on site had been removed from the facility. This was confirmed by inspection of the site by NRC and the State of New York on June 15, 1998.

The Need for Proposed Action:

The proposed action is to release the facility for unrestricted access and use, and Facility License No. R-81 must be terminated.

Environmental Impact of License Termination:

Results of Cintichem's surveys and the ORISE confirmatory surveys demonstrate that the facility meets the criteria for unrestricted use prescribed in the approved decommissioning plan as supplemented. The NRC finds that since these criteria have been met there is no significant impact on the environment and the facility can be released for unrestricted use.

Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action. Denial of the application would result in no change in environmental impacts and would deny release of the site for unrestricted use and require continuance of facility license. The environmental impacts of the proposed action and the alternative action are similar. Since the reactor and component parts have been dismantled and disposed of in accordance with NRC regulations and guidelines, there is no viable alternative to termination of Facility License No. R-81.

Agencies and Persons Consulted:

The NRC staff consulted with the Director, Bureau of Pesticides and Radiation, Division of Solid and Hazardous Materials, New York State Department of Environmental Conservation regarding the proposed action, and the official had no comments.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the environmental assessment, the Commission concludes that the issuance of the Order will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to this proposed action, see the licensee's submittal on decommissioning the facility, dated October 19, 1990 as supplemented. These documents are available for public inspection at the Commission's Public Document Room, 2120 L Street, NW, Washington, DC 20003-1527.

Dated at Rockville, Maryland this 13th day of August 1998.

FOR THE NUCLEAR REGULATORY COMMISSION

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