

April 5, 1991

MEMORANDUM FOR: Seymour H. Weiss, Director  
Non-Power Reactor, Decommissioning and  
Environmental Project Directorate  
Division of Advanced Reactors and  
Special Projects

FROM: LeMoine J. Cunningham, Chief  
Radiation Protection Branch  
Division of Radiation Protection  
and Emergency Preparedness

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON CINTICHEM  
DECOMMISSIONING PLAN (TAC 77892)

On April 2, 1991 a conference call was held with representatives from Cintichem, Ted Michaels of your staff and Jack Hayes. The purpose of the call was to discuss the Request for Additional Information (RAI) forwarded to you on March 27, 1991. As a result of this call the RAI has been pared down to those on the enclosed. Please forward the RAI to Cintichem.

If there are any questions please contact Jack Hayes (x23167).

Thomas H. Essig for

LeMoine J. Cunningham, Chief  
Radiation Protection Branch  
Division of Radiation Protection  
and Emergency Preparedness

Enclosure: As stated

Distribution:

- FCongel
- LJCunningham
- TEssig
- JWigginton
- JHayes
- TMichaels
- ~~Central Files~~
- PRPB R/F
- PRPB Sub File (Decommissioning Citichem)

OFC	:RPB:DREP:NRR	:RPB:DREP:NRR	:C:RPB:DREP:NRR:	:	:
NAME	:JJHayes:mgc	:THEssig	:LJCunningham	:	:
DATE	:04/5/91	:04/5/91	:04/5/91	:	:

OFFICIAL RECORD COPY  
Document Name: CINTI4 RAI

**NRC FILE CENTER COPY**

## Request for Additional Information

## Comments on Cintichem Revision to Decommissioning and Dismantling Plan

1. Task 1 of the Cintichem Decommissioning and Dismantling Plan involves the removal of activated and/or contaminated reactor core components. The major items to be removed included the reactor core support tower, the core grid plate, the cooling water plenum and flapper valve assembly, the core outlet assembly at the stall operating position, the shim-rod, regulating rod, and fission chamber drive mechanisms and accessories, the pneumatic rabbit tubes, the thermal column shield assembly, the reactor bridge, and the beam tube liners. These items were originally to be performed without fuel in the reactor pool. As a result of the March 8, 1991 revision to the Plan, these items will now be removed with spent fuel in the reactor pool. In Item 1 of Attachment D in the March 8, 1991 revision to the Decommissioning and Dismantling Plan indicates that for this Task the presence of the spent fuel will not result in any additional exposure to onsite workers. It appears to the staff that the potential exists for exposures to increase since many of the activities must be planned around the fact that fuel is now in the fuel pool and that a dam will be inserted between the pool and the stall to perform various activities. Indicate the basis for your determination that onsite exposures of workers will not be increased as a result of the performance of Task 1 with the fuel onsite.
2. Justification should be provided as to why the change in the Decommissioning and Dismantling Plan to have spent fuel onsite does not necessitate the Radiation Protection Program of Section 2 of the October 1990 submittal to be amended.
3. In the January 11, 1991 response to the staff's December 21, 1990 RAI Cintichem provided the quantity of liquid effluents to be released during the decommissioning and dismantling period. Following staff review of this response, the staff requested, in a February 13, 1991 RAI that Cintichem provide the values for the decontamination factors (DF) for the various radionuclides associated with the evaporator and the ion exchange bed. The February 19, 1991 Cintichem response indicated that the DF applied depends upon the waste stream and the anticipated contaminant. As a result of an April 2, 1991 conference call with Cintichem, Cintichem indicated that liquid wastes are processed until it is determined that they are acceptable for release. Cintichem also indicated that they are limited by the State of New York's Department of Environmental Control to a release rate of 10 mCi/yr. It appears from this discussion that the latter is the limiting criterion for release of liquid effluents. Cintichem should provide its criteria for determining that a batch of liquid effluent is acceptable for release. Such criteria would probably be found in procedures. The staff is attempting to determine how they can be assured that Cintichem has not underestimated their liquid effluents and to what degree the NRC can be assured that the liquid effluents and their associated doses have not been underestimated. Therefore, Cintichem should provide the details of the determination of liquid effluents resulting from the decommissioning and dismantling effort.

4. We have reviewed the calculation of the accident X/Q values for the Decommissioning and Dismantling Plan and have noted what we believe to be several inconsistencies and potential errors in the calculations. We would request that the Cintichem generation of the accident values of X/Q be reviewed to determine if they were calculated in an appropriate manner and if they are internally consistent. The following background information is provided to illustrate these inconsistencies.

In the Cintichem decommissioning and dismantling plan, Appendix E calculated the accident dose resulting from reactor dismantling and Appendix F calculated the accident dose resulting from hot cell dismantling. Some specifics are given below.

Appendix E  
Stability Class F  
Receptor: Child  
Ground Level release  
Receptor located at the nearest residence, 457 meters

Appendix F  
Stability Class F  
Receptor: Teenager  
Ground Level release  
Receptor located at site boundary, 183 meters

Response to 12/21/90 RAI, (01/11/91 RAI response)  
Stability Class A  
Receptor: Teenager  
Elevated release = 60 meters  
Receptor located at site boundary, 259 meters

Response to 2/13/91 RAI, (2/19/91 RAI response)  
Stability Class A  
Elevated release = 60 meters  
Receptor located at site boundary, 259 meters

---

Stability Class F  
Elevated release = 60 meters  
Receptor located at site boundary, 259 meters