CINTICHEM, INC.
a wholly owned subsidiary of
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50-54

December 10, 1990

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop P1-37
Washington, D.C. 20555

Dear Gentlemen,

Cintichem is in a transitional period between normal operations which ceased in February, 1990 and decommissioning which is anticipated to begin in February, 1991. While in this transitional period, with the reactor secured (ie. defuelled), it has become difficult or impossible to perform certain items required by our technical specifications.

In accordance with a phone conversation with Mr. Mike Austin (Radiation Specialist, Effluents Radiation Protection Section) on November 27, 1990, this letter serves to identify two such items. It is our understanding from the above conversation that this form of identification is sufficient, considering our current operational status, to address these matters.

ITEM #1: Cintichem's technical specifications, section 4.5.3 (confinement) (2), indicates that " The operability of the evacuation alarm and containment isolation system shall be tested, and negative pressure verified, semiannually." This test was scheduled to be performed on 7/1/90 via procedure RS-36 and requires that a water seal be present between the reactor building (Bldg. #1) and the Hot Laboratory (Bldg. #2). Shortly after the February 9th reactor shutdown the canal, which needs to be full of water to provide this seal, was drained and could not be refilled until repairs were made and Regulatory approval for refilling obtained. Once repairs were made and approval for refilling obtained, the water level was restored and shortly thereafter, on 10/29/90, the surveillance test was performed. When it was performed, the test passed standards without any problems. The basis of this confinement system (tech. specs. section 3.5.3) is to effect controlled release of gaseous activity associated with a reactor core accident which cannot occur under current facility (ie core defuelled) conditions. Cintichem plans to perform this surveillance test in the future on a semiannual basis, unless the water seal can no longer be maintained, until our decommissioning plan is approved. Tech. specs. in the decommissioning plan do not require the performance of this test.

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ITEM #2: A charcoal efficiency test, also in tech. specs. section 4.5.3, is described under (1) of this section as a surveillance being required on an annual basis. Cintichem did not perform this test on it's scheduled date of 11/17/90 and does not plan to perform this test unless the reactor is refuelled for the following reasons: (A) The charcoal filter is present to remove airborne radioactive iodine released from the reactor core in the event of hypothetical reactor accidents as described in our SAR. The reactor is presently defuelled and insufficient radioactive iodine remains (in all irradiated fuel elements currently at our facility) to warrant the use of such a filter; (B) The performance of this test requires that a radioactive iodine be injected into the system to determine iodine removal efficiency. Cintichem firstly, no longer produces radioactive iodines and secondly, as we are preparing for decommissioning, introduction of radioactive materials into facility systems is highly undesirable and counterproductive to our decommissioning goals. An analysis is provided in the attachment to this letter which is intended to justify the statement made in (A) above. The charcoal filter will remain in place until removal is authorized under our decommissioning plan, only it's efficiency test will be discontinued.

Should our direction towards decommissioning change and plans for refuelling the reactor developed, these tests will be performed and original tech. spec. conditions satisfied in advance.

Sincerely,

Robert A. Strack
Nuclear Project Engineer
/Reactor Supervisor

cc: Ted Michaels
Tom Dragoun
Mike Austin

ATTACHMENT TO 12/10/90 LETTER

A hypothetical accident is described in our technical specifications which postulates that a reactor excursion occurs while operating at 150% (7.5 MW) of licensed power. The consequences, due to radioactive iodines, of this excursion to an individual situated at our site boundary for a period of 24 hours is an 8 REM thyroid exposure. Other assumptions made were that a 10% meltdown occurs, the mixture of radioactive iodines is consistent with calculational models for our core, and that the charcoal emergency filter is only 95% efficient (ie charcoal filter reduces the iodine level exiting the reactor building by a factor of 20).

Our reactor has been shutdown since February 9, 1990 and we have 176 spent or partially spent irradiated fuel elements. The minimum number of elements we are allowed to have in a core is 30 so we can assume that 176 elements can represent, at most, 5.87 reactor cores. If we assume: (1) That all of these cores were operated at 150% licensed power on February 9, 1990; (2) That all of the radioactive iodine present in these cores is I-131 (T1/2= 8.04 days); (3) That a 100% meltdown of all these cores occurs today; and (4) That no emergency charcoal filter exists in the emergency exhaust, the resulting thyroid exposure to that same individual would then be:

$$8\text{R/hr} \times (5.87 \text{ cores}) \times \left(e^{-.693(300)/8.04} \right) \times (10 \text{ times greater meltdown}) \times (20 \text{ times greater release from the building})$$

$$= 5.53 \times 10^{-8}\text{R/hr}$$

This result is a factor of more than a 100 million below that of the SAR postulated accident and indicates that a charcoal filter in our reactor building emergency exhaust system is no longer necessary.

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