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New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Langdon Marsh
Commissioner

February 2, 1995

Mr. Dominick Orlando
US Nuclear Regulatory Commission
1 White Flint North
11555 Rockville Pike
Rockville, MD 20852

Dear Mr. Orlando:

Re: Cintichem, Inc. Decommissioning
Proposed Bedrock Criteria

We received a copy of Mr. McGovern's January 6, 1995 letter to the NRC regarding Cintichem's proposed decontamination criteria for bedrock. Mr. McGovern's letter transmitted a document entitled, "Analysis Summary of Hypothetically Projected Dose Due to Bedrock Contamination."

We have reviewed both the letter and the Analysis Summary and offer the following comments for your consideration:

1. In the transmittal letter, Mr. McGovern writes,

> This pro-forma calculation is presented to demonstrate the proposed methodology that will be used for determining the acceptance criteria for any bedrock as necessary. . . . Final criteria will be different and will depend on the actual characteristics of the bedrock that are found at the time of the final survey. (underlining added)

This implies that the proposed calculations will be done after the bedrock decontamination is completed. However, Section 5.6 of the Analysis Summary appears to contradict that statement:

> The surface contamination limits that were derived along with the bedrock concentration limits will be used for go-nogo screening during remaining D&D work before final rock sampling is performed.

Cintichem should clearly explain when the actual limits will be derived and applied.

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2. In Section 5.6, Cintichem proposes to use the derived surface limits for screening bedrock. It is very doubtful that surface radiation readings would correlate with either the total activity or the concentration of radionuclides in cracks that extend more than a foot into bedrock, particularly when the orientation of the cracks appears to be unpredictable. Unless the surfaces of the cracks are exposed, a surface survey will not provide any reliable information about material buried in the rock. The only relevant measure is the concentration of radioactive material in the rock.

Cintichem should characterize the contamination that currently remains in the bedrock. If the concentrations and total activity are sufficiently low that plausible uses of this material would not result in a significant dose, it should be left where it is. In order to answer this question, cores should be taken from the areas of highest suspected contamination. To determine the concentration profile, the cores should be broken into one-foot segments for analysis. (It may not be necessary to analyze each segment. For example, every third core could be analyzed initially, and others analyzed as needed to complete the profile.)

3. The Analysis Summary contains references to preliminary core data. Cintichem should include that data in the Summary or provide it separately to DEC.

4. The industrial intruder scenario is assumed to last only six months, and it ends with loading the bedrock for sale. Cintichem should evaluate the potential doses due to reasonable uses of the crushed rock after it is sold. For example, if the rock were used for a driveway, the time of exposure would be longer than six months. The doses may not be significant, but this should be confirmed.

If you have any questions, please call Barbara Youngberg or John Kadlecek of this Bureau (518-457-2225).

Sincerely yours,

Paul J. Merges

Paul J. Merges, Ph.D.
Chief, Bureau of Radiation
Division of Hazardous Substances
Regulation

cc: J. McGovern, Cintichem
T. Dragoun, NRC Region I