

May 2, 1996

Mr. James J. McGovern
Plant Manager
Cintichem, Inc.
P.O. Box 816
Tuxedo, NY 10987

SUBJECT: CINTICHEM LETTER DATED MARCH 26, 1995, "INTERIM SURVEY REPORT FOR INTERIOR REACTOR BUILDING, PUMP ROOM, AND ACCESS TUNNEL AREAS ON SITE"

Dear Mr. McGovern:

We completed our review of Sections 7 and 8 of the Cintichem Final Survey Plan and Report forwarded by the subject letter and request the following information and clarifications:

Section 7

- 1) Sections 7.1.2 and 7.3.1 state that the submitted data demonstrates that this portion of the site meets the criteria for unrestricted release. However, this portion of the site cannot be "released" until the status of the exposed soil and bedrock are confirmed in a separate survey. The appropriate statement is that the submitted data demonstrates compliance with Regulatory Guide 1.86 criteria for the reactor building surfaces. References to soil, e.g., section 7.3.1B should be deferred to a future survey since the NRC approved soil/bedrock criteria apply to the site in total.
- 2) Section 7.3.2. Please justify the increase in surface contamination release criteria from 13,500 (used for the HUT area) to 14,500 dpm/100cm² for the reactor building. Also, add the abundance of strontium 90 to the radionuclide mix table in this section.
- 3) Section 7.3.5 should indicated how removable H-3 contamination was determined.
- 4) Section 7.4.1 describes the formula for converting instrument readings to contamination levels in dpm/100cm² which includes a correction for instrument background. The next sentence states that the dpm/100 cm² value is further corrected for specific surface materials natural background. By doing so, it appears that the instrument background is subtracted twice from the gross count rate. Please explain.
- 5) Section 7.4.1 states that it was experimentally determined that scanning techniques can detect 92% of the guideline value with a 90% confidence. Please provide the data that supports this statement.

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6) Section 7.4.1 states that the detection sensitivity of the survey instrument and technique used for direct beta-gamma measurements was less than 3,650 dpm/100cm². In Table 7.3, the sensitivity of the Bicron Lab survey instrument ranges from 4922 (for Tc99) to 6414 (for Cl36) dpm/100cm² for a 0.2 minute count time. A 0.2 minute count time appears insufficient for gaining the necessary sensitivity. Further, 0.2 minute count time is specified in Section 7.4.2(d), yet the field data indicates 1.0 minute counts were taken, which improves the sensitivity of the instrument. Please explain or correct these apparent discrepancies.

7) Section 7.4.2(c) states that unaffected area structural surfaces will not be scanned. NUREG/CR-5849 section 4.2.3 recommends scanning a minimum of 10% of unaffected floor and lower wall surfaces. Please explain the decision not to scan.

Section 8

8) In the survey results summaries beginning on page 11, footnote (a) states that a mean site background of 6 μ rem/hr was subtracted from the gamma exposure rate. Table 7.3 lists the background for the Bicron microrem meter as 10-15 μ rem/hr. Please resolve this apparent discrepancy. Also note that the NRC guidelines for this measurement are in μ R/hr.

9) Please explain why an instrument may have more than one background value in the same survey unit. Examples include: Table 201.01-2, four background values ranging from 479.7 to 604.1 cpm; Table 200.09-2, three background values ranging from 300 to 620 cpm; and Table 208.02-2, three background values ranging from 351.4 to 573.4 cpm.

10) It appears that inappropriate background values were subtracted from the gross counts for some survey units. This is indicated by a large portion of the data points having negative values including the average beta activity values. Examples include Tables 203.04-2, 200.07-2, 205.02-2, and 206.07-2. It is also indicated in the tables that the specific surface materials natural background has not been subtracted from the data. Please explain.

11) Figures 8.31 - 8.35 (pages 376-380) appear to be exactly the same. Please explain.

12) For storage tube survey results beginning on page 500, please justify the use of 0 dpm/100 cm² for alpha swipe MDA.

13) Footnote (d) from Table 209.01-1 (page 499) should be added to Tables 209.02-1 through 209.10-1.

14) Please provide missing pages 75, 79, 735 and Table 7.4.

Mr. James J. McGovern

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In general, the submitted data appears to indicate that RG 1.86 criteria are satisfied in the reactor building. A confirmatory survey by ORISE is scheduled to begin on May 6, 1996.

Sincerely,

ORIGINAL SIGNED BY:

John R. White, Chief
Radiation Safety Branch
Division of Reactor Safety

Docket Nos. 50-54 and 70-687
License Nos. R-81 and SNM-639

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Mr. James J. McGovern

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