

February 24, 1995

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING FINAL STATUS SURVEY  
PLAN AND INTERIM SURVEY REPORT

Dear Mr. McGovern:

This refers to your letter dated December 5, 1994, "Cintichem Final Survey Plan" and the supplement dated January 26, 1995, "Cintichem Interim Survey Report for HUT and 5K Tank Areas on Site". We and representatives of our contractor, the Oak Ridge Institute for Science and Education, have reviewed the documents. We need the following information or corrections to continue our review:

- 1) Revise table 5.1 to reflect the soil release criteria approved by the NRC in a letter dated October 17, 1994. Also confirm that the modified surface contamination limits for iron 55 and tritium approved by the NRC on October 3, 1994 were incorporated into the release criteria in the final status survey report as appropriate.
- 2) Table 5.2 is marked "draft". Please provide the final version.
- 3) Provide details in the report regarding the headings used on the survey results spreadsheets. For example, provide a definition and determination of the terms: total contaminated area and weighted average beta fixed.
- 4) Table 5.3 MDA values were based on 0.2 minute counts, however, 1 minute counts were performed in the field. Please correct.
- 5) Table 5.3 states that the nominal background for the surface activity beta measurements is 540 cpm. Background values reported throughout the data tables range from less than 400 cpm to greater than 1,000 cpm. Please explain.
- 6) Certain areas were deleted from the scope of the interim survey plan and/or failed to meet release criteria. How will these areas be dispositioned?
- 7) Page 19 - The report states that a leak was discovered in the southwest corner of the HUT. However, figure 3.4 shows the leak located in the southeast corner. Which is correct?

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- 8) Page 30, A.4 - It is recommended that the last sentence be changed to "...will not exceed 10  $\mu\text{R/h}$  above background at one meter."
- 9) Page 31 - Reference is made to "Attachment D". Please provide a copy.
- 10) Page 35 - The MDA equation does not express that the square root of the background term is needed.
- 11) Page 35 - Please present further data to support the statement that scanning techniques can detect 82% of the guideline value with a 90% confidence level.
- 12) Page 38 - At the top of the page it is stated that unaffected areas structural surfaces will not be scanned. However, on page 37, the report refers to "unaffected areas identified by scans..." Please explain this apparent discrepancy. You should plan on conducting scanning in the unaffected interior areas, per NUREG/CR-5849.
- 13) Page 40 - While the background exposure rate (6  $\mu\text{R/h}$ ) was reasonable for the majority of the outdoor areas, it is not representative of the HUT excavation. You should either: (1) select a similar area of exposed bedrock to obtain a representative exposure rate background for the HUT, or (2) report the measured exposure rate in the HUT excavation without comparing to the 6  $\mu\text{R/h}$  background.
- 14) Page 40 - What is the basis for the selection of Cs-137 background concentration corresponding to the 90th percentile? This approach for selecting background may result in a nonrepresentative value of Cs-137 concentration in background soil samples. A review of the data presented in Table 8.5-2 (Grounds South of Reactor Building) and Table 12.1-3 (5K Mall Landfill Area) show that only 3 soil samples out of 108 exhibit Cs-137 concentrations in excess of 1.25 pCi/g. One possible explanation for this is that the Cs-137 from fallout may only be distributed over a thin surface layer, while many of the samples are collected at sufficient depths to preclude significant contribution from fallout Cs-137. It is recommended that a more representative value be selected for the Cs-137 background concentration.
- 15) Page 45 - The results of the in-situ gamma analysis should be included in the report. Were the MDAs for the reactor mixture below their respective guidelines?
- 16) Page 44 - Please provide further explanation for the footnote (b) "without subtraction of radioactivity due to natural radioactive content." It appears that background was subtracted in each of the data tables in the calculation of surface activities.
- 17) It is recommended that Table 1.2-1 for the HUT concrete cores be explained in more detail (similar to comment #3). Specifically, what do the identification numbers refer to and were the backgrounds selected specific to concrete?

- 18) Page 50 - It is stated in the report that the reactor building roof survey consisted of four survey units, yet only three are presented. Please provide an explanation for this apparent discrepancy.
- 19) Page 50 - Where were the background measurements collected that were used to determine net surface activities for the reactor building roof?
- 20) Page 54 - Is the tar covering on the roof 0.33 m (one foot) thick or is this a typographical error?
- 21) Page 56 - Same comments apply here as comment #15.
- 22) Table 5.2-2 - Many of the pre-remediation surface activity results appear to meet the guidelines. Why were these locations re-surveyed?
- 23) Table 6.1-2 - Please provide an explanation why some of the grid locations that exhibited surface activities below the average guideline failed the average test.
- 24) Page 69 - The conclusions made on this page appear to contradict the data in Table 8.1-2. Specifically, the sum of the fractions results for a sample is reported on page 69 as 0.56 and in the table as 0.856. A similar discrepancy is noted for page 82 and Table 11.2-1.
- 25) It is recommended that a figure be added to show the sampling locations on the grounds east of the asphalt driveway (survey unit 8.6). It is very difficult to determine these locations from Figure 8.1.
- 26) Figure 11.1 - The 8 biased samples from the cooling tower survey unit are not shown in this figure.
- 27) Table 11.2-1 is incorrectly labeled as area 11.1.
- 28) Page 83 - It is recommended that this comment section discuss the sample at location #23 that exceeds the soil guideline (Table 11.2-1 reports this sample exhibits a sum of fractions value of 1.08).
- 29) Page 83 - Figure 12.2 does not provide measurement locations on the 5K tank foundation pad as stated in the text.
- 30) Page 85 and 86 - The general statements made concerning the omission of certain radionuclides in soil analytical results should be presented when the soil results are first discussed (page 68?), assuming that these statements are applicable to all soil results.

J. J. McGovern

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Mr. McGovern

Your cooperation with us is appreciated.

Sincerely,

**Original Signed By:**  
**James H. Joyner**

James H. Joyner, Chief  
Facilities Radiological Safety  
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Division of Radiation Safety  
and Safeguards

Docket Nos. 50-54; 70-687

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