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Dr. N.A. Wogman  
Radiological & Inorganic Chemistry Section  
Battelle Pacific Northwest Laboratories  
Post Office Box 999  
Richland, Washington 99352

Dear Dr. Wogman:

I have reviewed your monthly report for the Edgemont Cleanup Action Program (B2217) for December, 1982, and have the following comments:

1) You should continue to give priority to preparation of engineering assessment reports on those properties where the presence of residual radioactive materials have been verified. The comments contained in the enclosure should be incorporated in the final reports. Final engineering assessment reports should be completed for the eleven properties previously surveyed by ARIX for BPNL and submitted for receipt by the NRC no later than March 10, 1983 as agreed to during telecons between Pete Jackson and myself on February 17 and 23.

2) Preparation of reports should be scheduled with the following prioritization:

A. The eleven properties as identified above.

B. Properties with significantly large deposits around and/or under the residence and with working level failures.

C. Other properties which are geographically clustered around those in categories A and B.

D. Properties where only windblown tailings are present should be given the lowest priority.

3) Final engineering assessment reports should be submitted in groups of about fifty reports by April 1, April 15, and April 29. Final reports on remaining properties should be submitted as soon as possible thereafter. This schedule of report submittals was discussed with Pete Jackson on February 17 and 24, 1983.

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4) The reports identified in the above comments should be considered "requested informal reports" as identified in item five (5) of section six (6) of Form 189 entitled "Edgemont Remedial Action Program" and dated July, 1982 (B+R 50-19-03-03).

5) A schedule for residences needing long term radon progeny monitoring should be prepared and submitted to the NRC with the February, 1983 monthly report or under separate cover if available earlier. Priority of scheduling should be determined by the possibility of the presence of residual radioactive material. A brief statement should indicate what evidence exists at each property for the presence of residual radioactive materials. Those residences with no evidence of radioactive materials should be put in a separate category. Residences where RPISU measurements may not be possible or practicable should be so indicated. The second RPISU measurement in the series of six measurements should not be started until cleared by the NRC project manager.

6) The summary table which is normally included in the 'accomplishments' section of the monthly report may be deleted from all future monthly reports.

7) The names and addresses of all owners refusing a survey or not responding should be submitted with the next monthly report.

8) Your financial statement is acceptable.

All other aspects of your December 1982 report were adequate. The actions taken by this letter are considered to be within the scope of the current contract (B-2217). No changes to costs or final delivery of contracted products are authorized. Please notify me immediately if you believe this letter would result in changes to costs or final delivery of contract products.

Sincerely,

Original Signed By

Claude A. Flory, Project Manager  
Low-Level Waste Licensing Branch

Enclosure: Comments on Draft BPNL  
Edgemont Engineering Assessment Reports

cc: J. Baublitz, DOE

OFFICE :	WMLL	CAF	WMLL	:	:	:	:	:
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Enclosure

Comments on Draft BPNL Edgemont Engineering Assessment Reports

1. The term "Engineering Assessment Report" on the cover and page one should be changed to "Radiological Assessment Reports."
2. A section entitled "Significance of Findings" should replace the "Engineering Assessment Conclusions" section. This section should briefly identify which radiological measurements indicate radioactive materials in excess of the final EPA standards (40 CFR 192) and whether or not the results can be attributed to the presence of residual radioactive materials. Attachment one to this enclosure is a typical example of a Significance of Findings. Contrary to this example, reference to NRC guidelines in 10 CFR 20 need not be included. Attachment two to this enclosure is copy of the final EPA standards in 40 CFR 192 for the cleanup of buildings and lands. This will help clarify the differences in the final standards as compared to the interim standards which were used in determining action levels in the Edgemont survey program. In particular, the final standards specify that Ra-226 contamination in soil should be averaged over 100 square meters. Data in the report should be sufficient to establish this 100 square meter average in those properties where this is the failing criteria. Special attention in this regard should be given to borderline situations.
3. In those cases where reported data may not represent actual field data, a clear statement should be included on how the reported data was derived and/or its functional relationship to the field data.

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## SIGNIFICANCE OF FINDINGS

A summary of the outdoor measurement results of the radiological survey conducted at the property SL037 is provided in Table 8. The summary of indoor measurement results is presented in Table 9. These results establish that radioactive contamination from the  $^{238}\text{U}$  decay chain is present outdoors on the property. Although the contamination exists throughout the entire property, it is less concentrated toward the southern, rear portion. Elevated radiation levels were measured within the residence, however, these values were attributable to the presence of outdoor contamination

Outdoors on the property, the average external gamma exposure rate at 1 m above the ground (24  $\mu\text{R}/\text{h}$ ) was 3 times background and more than one-third of the NRC guideline for continuous exposure (10 CFR 20.105). All of the measured values of external gamma radiation outdoors were above the background level for the Salt Lake City area with a maximum value of approximately a factor of five above normal background levels. Maximum concentrations of  $^{226}\text{Ra}$  in the soil exceeded background levels by a factor of 37. This concentration of  $^{226}\text{Ra}$  exceeds applicable EPA guidelines by a factor of more than 11 (40 CFR 192.12).

Inside the house, external gamma exposure rates at 1 m above the floor ranged from 12 to 25  $\mu\text{R}/\text{h}$  and averaged 16  $\mu\text{R}/\text{h}$ , a value well within the EPA criteria of 20  $\mu\text{R}/\text{h}$  above background (40 CFR 192.12). Gamma scanning of indoor surfaces indicated that there was no contamination present beneath the floor or foundation of this structure. All elevated measurements (up to 28  $\mu\text{R}/\text{h}$ ) were due to the presence of contaminated material outside the residence.

An instantaneous radon sample was taken inside the house. The radon concentration was determined to be 1.1 pCi/L. This value was below background levels and well below the NRC guideline of 3.0 pCi/L (10 CFR 20.103).

The total volume of contaminated material on this property is estimated to be approximately 380  $\text{m}^3$ . This estimate is based on an average depth of 0.3 m over the entire property. This figure does not include the soil beneath the house. The contaminated area is shown on Fig. 8, and Table 10 summarizes the radiological conditions in this area.

192.12 Standards

Remedial actions shall be conducted so as to provide reasonable assurance that, as a result of residual radioactive materials from any designated processing site:

(a) the concentration of radium-226 in land averaged over any area of 100 square meters shall not exceed the background level by more than --

(1) .5 pCi/g, averaged over the first 15 cm of soil below the surface, and

(2) 15 pCi/g, averaged over 15 cm thick layers of soil more than 15 cm below the surface.

(b) in any occupied or habitable building --

(1) the objective of remedial action shall be, and reasonable effort shall be made to achieve, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL. In any case, the radon decay product concentration (including background) shall not exceed 0.03 WL, and

(2) the level of gamma radiation shall not exceed the background level by more than 20 microroentgens per hour.