



State of New Jersey

Department of Environmental Protection

Richard J. Codey  
Acting Governor

Bradley M. Campbell  
Commissioner  
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REGION 1

Radiation Protection and Release Prevention Programs  
PO Box 415  
Trenton, NJ 08625-0415  
Phone (609) 984-5405  
Fax (609) 984-5595

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July 12, 2005

George Pangburn, Director  
Division of Materials Safety  
US Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

SMB-1541  
04002980

Dear Mr. Pangburn:

Thank you for agreeing to met with us on July 19, 2005 at our offices. Marjorie McLaughlin has been very helpful in providing members of my staff with information. Outlined below are the issues we would like to discuss.

1. There is no coherent post remediation map with consistent labeling for the outside land area. We would like you to provide us with an accurate, scaled map labeled with both the sample identification numbers and the concentrations of nuclides, both total thorium and total uranium.
2. It appears that there was not a final status survey performed according to NUREG 5849 for the land area as noticed in the federal register (64 Federal Register 47872-47877). The final status survey plan that was approved included 1 sample every 100 m<sup>2</sup> and comparison to background as per NUREG 1505. We have not seen any of these calculations, nor any elevated measurement comparisons as per NUREG 5849.
3. NRC seems to have ignored the concentration of natural uranium on the site, which when combined with thorium exceeds 0.05% by weight at total natural thorium activity concentrations below 116 pCi/g. An example at this site is a total uranium concentration of 107 pCi/g and total thorium concentration of 89.2 pCi/g (Sample 5/6 in the ORISE 2003 report).

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NRC/REGNI MATERIALS-002

We believe this equates to greater than 0.05% by weight, yet the site was not required to remediate this spot.

4. As you know, fundamentally, we are in disagreement with the remediation level of 10 pCi/g of thorium-232, which this site is allowed to meet because it was grandfathered as per 10 CFR 20.1401(b). Because our remediation standards are lower, we met with the NRC Region staff in 1998 to try to come to an agreement regarding unrestricted use of this section of the property. Our discussions back then were based on the assumption that our standards would be met with the application of the ALARA criteria. The NRC area not only is far from ALARA, there are areas that do not even meet the 10 pCi/g cleanup criteria. If the NRC intends to release the NRC area (red area) for unrestricted use, it should at least demonstrate that it meets the NRC's cleanup criteria of 10 pCi/g.
5. We were pleased to learn that NRC headquarters is conducting a dose assessment that includes the contribution from "unimportant quantities" (concentrations below 116 pCi/g of natural thorium). We have performed a dose assessment assuming a house is built in the area of the monazite pile and our result was 120 mrem per year. Because there is not one map with post remediation data, we reconstructed the concentrations in this area from the best available information that we had. A dose of 120 mrem/y for unrestricted use should not be acceptable to you.
6. For the decision on whether Heritage should dispose of the stockpiled waste materials from decontamination of the site mill structures and equipment (average activity of 25 pCi/g total thorium and 23 pCi/g total uranium), the NRC stated to Heritage "Although you assert the material did not result from licensed operations, it did originate from the decontamination of buildings and equipment involved in licensed operations (i.e. the wet and dry mills) and must therefore be considered licensed material." Based on this statement, we believe that the NRC can designate all the material in the NRC red area as licensed material and that it should be remediated to the branch technical position cleanup level of 10 pCi/g of natural thorium, with application of the ALARA principle.
7. There is an underground pipe between the wet mill and dry mill that was used to transport the slurry from the wet mill to the dry mill. We could not locate any reference to decontaminating and decommissioning this pipe.

8. Finally, we adopted revised regulations on May 16, 2005 and the licensing criteria for technologically enhanced naturally occurring radioactive materials is now greater than or equal to 5 pCi/g of radium-226 plus radium-228. At its current concentrations, parts of the NRC area will meet the criteria to require a State radioactive materials license.

At this point, we cannot in good conscience agree with the Environmental Assessment, and we believe we are obligated to point out our disagreements at the public meeting that the Region is planning to hold. Hopefully we can come to a mutually agreeable solution at our meeting on Tuesday.

Sincerely,

A handwritten signature in black ink, appearing to read "Jill Lipoti". The signature is written in a cursive, flowing style.

Jill Lipoti, Ph.D., Assistant Director

c: George Pangburn, NRC Region I  
Marjorie McLaughlin, NRC Region I