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Formerly Utilized Sites Remedial Action Program (FUSRAP)

ADMINISTRATIVE RECORD

for Maywood, New Jersey



U.S. Department of Energy



RADIOACTIVE WASTE MANAGEMENT ASSOCIATES

January 26, 1995

Bruce Venner, Bureau Chief
 Bureau of Federal Case Management
 NJ Department of Environmental Protection
 Trenton, NJ

FEB 1 1 50 PM '95

Re: Maywood Thorium Remediation

Dear Mr. Venner:

Thank you for your January 17 response to Mr. Nolan's letter. We are encouraged that the State of New Jersey is taking the issue of clean-up criteria, the so-called 5/15 controversy, seriously. As you are aware, neither Concerned Citizens of Maywood, nor the Town Council and Mayor, want a clean up to commercial standards since the MISS is located in a primarily residential area. In the New York City area, the trend appears to be towards denser residential housing and away from industry. In the future, it is likely that present homes and businesses will be replaced with denser housing, including high-rise apartment buildings. Therefore any clean-up should anticipate these likely developments since we don't wish to revisit this issue each time new housing construction takes place. It is for this reason that local residents believe that the 5 pCi/g limit should be the applicable criteria.

Your letter discussed thoron and that "suggested sampling in undisturbed areas may not be warranted." I think there is a misunderstanding of the issue by you and the local region of the EPA, to whom I am sending a copy of this letter, as well. This issue has been well studied by EPA Region V, who have commissioned studies. I have enclosed a paper on the subject for your study.

By way of background, we examined this issue of thoron decaying to lead-212 particulates at several locations: W Chicago, Illinois (thorium wastes) and Brookhaven, Mississippi (NORM wastes from the oil industry) and also a legal case involving a lens polisher using thorium-contaminated polishing powder. In terms of environmental impact, the West Chicago site is almost identical to Maywood. The process of extracting thorium from monazite sands and the resultant isotopic mix were virtually identical. Just so we understand each other, the issue in West Chicago was not resuspension of particulates of thorium-232 and its decay products. With the Kerr-McGee plant idle, little material is disturbed and the dose from this pathway is minor. As in Maywood, the primary exposures are due to gamma radiation and the inhalation of lead-212 particulates from the decay of thoron. As a loose rule of thumb, about 5% of the thoron near the surface

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emanates from the pile. In Reed-Keppler Park, a public park near the Kerr-McGee site in West Chicago where thorium waste was dumped, thoron levels were up to 56 pCi/l at the fence post. The resultant radiation doses to the public in Reed-Keppler Park due to lead-212 were much higher than from direct gamma because the dump area was fenced off and the public could not be directly exposed unless they trespassed onto the dump area. But thoron gas could emanate from the pile and expose persons downwind, in the form of lead-212 particulates.

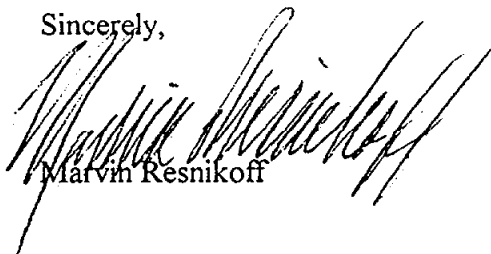
As you point out in your letter, because of its short half-life, thoron will not enter basements through concrete flooring. You would not expect elevated thoron or lead-212 levels in homes. But we are concerned with any locations where thorium-232 is near the surface, so that thoron could emanate and be inhaled as lead-212. There are several locations in the Maywood area where this is possible.

The Department of Energy is not properly monitoring for thoron gas. The enclosed paper discusses the proper procedures. Essentially, a sample of thoron and radon must be drawn through a filter into a container. Shorter-lived radionuclides should be allowed to decay over a five-hour period and the sample must then be measured for lead-212. As far as we can determine, the Department of Energy through its contractors has not taken samples of thoron gas at locations where it may be present, and has not properly measured thoron in samples. Further, the RESRAD computer program does not account for thoron emanation and lead-212 particulate radiation dose.

We would be happy to provide further information on this public health issue and encourage you to request the DOE to carry out this sampling. Without specific information on thoron and lead-212 particulate dose, the Baseline Risk Assessment, Feasibility Study and proposed plan will be deficient.

enc.
cc: A Carpenter
S Cange
N Marton
M Nolan

Sincerely,



Marvin Resnikoff