



State of New Jersey
Department of Environmental Protection and Energy
Office of Policy and Planning

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Scott A. Weiner
Commissioner

Richard V. Sinding
Director

May 13, 1992

Thomas T. Martin, Regional Administrator
U.S. Nuclear Regulatory Commission
Region I
King of Prussia, Pennsylvania 19406

Dear Mr. Martin:

I want to bring to your attention two issues of concern to the State of New Jersey regarding the jurisdiction over, and cleanup standards for, the Heritage Minerals site in Lakehurst, New Jersey.

The first issue involves affixing the proper governmental responsibility for the clean-up of the Heritage Minerals facility and, potentially, of other sites with similar histories. At Heritage, prior operations at the facility produced a monazite waste stream containing uranium and/or thorium above source material concentrations which should have been, and eventually were, regulated by the Nuclear Regulatory Commission (NRC). Prior to licensing, these monazite wastes were combined with other tailings and placed on the combined tailings pile, thereby contaminating that pile. It is our position that all of these contaminated areas should be under NRC jurisdiction, in addition to the operational plant and monazite pile. Therefore, any expenditure of public funds that might be required in the clean-up of this site should be borne by the federal government, not the state.

Our rationale for this position was provided to the NRC Region I office on September 20, 1991, in a request for reconsideration of the initial licensing decision (Enclosure 1). The response forwarded to us on this issue (Enclosure 2) was brief, did not address the specific points raised in our letter, and did not provide any substantive reasoning to warrant changing our view.

Our second area of concern is the final clean-up criteria employed by the NRC for this and other clean-ups involving technologically enhanced uranium and thorium levels. The NRC's current Branch Technical Position on clean-up criteria for disposal of residual thorium or uranium allows unrestricted use of a property at residual contamination levels less than 10 picocuries per gram (pCi/gm). Our experience with Superfund clean-up efforts in Montclair, New Jersey, involving similarly contaminated soils, leads us to believe that

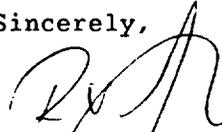
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average concentrations in the soil below 5 pCi/gm are necessary to protect against elevated radon levels in residences that might eventually be built on the property. Any NRC-approved disposal plan for the monazite pile at Heritage Minerals involving mixing with clean soils to reduce the average concentration to only 10 pCi/gm could result in the need for further remediation in the future. Clearly, this is not an optimum approach to the use of either private or public funds. Therefore, I recommend that the NRC review and appropriately revise its Branch Technical Position in light of the experiences at Montclair and other relevant clean-ups.

I would appreciate your review of our concerns and look forward to hearing from you. Cooperation between our offices on these matters can only be mutually beneficial to both our agencies. If you would like to discuss this further, please call Dr. Jill Lipoti, Assistant Director for Radiation Protection, at (609) - 987-6389.

Sincerely,



Richard V. Sinding
Assistant Commissioner
Policy and Planning

Enclosures

c: The Honorable H. James Saxton, HR
The Honorable William Bradley, Senator
The Honorable Frank R. Lautenberg, Senator
Richard Sullivan, Chairman, Pinelands Commission
Jane C. Cameron, Mayor, Manchester Twp.

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITYCN 415
Trenton, N.J. 08625-0415
(609) 987-6402
Fax (609) 987-6390*Jill Lipoti, Ph.D., Assistant Director
Radiation Protection Programs***ENCLOSURE 1**

September 20, 1991

John D. Kinneman
Section Chief - Nuclear Materials
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Kinneman,

Thank you for your letter dated June 6, 1991. We have reviewed the NRC's rationale for not licensing various areas and materials on the Heritage Minerals, Inc. (HMI) property and other historical information including material provided by Jack Lord, Vice President of HMI, on materials processing at the site.

Based on this review we conclude that the remaining estimated 600,000 tons of combined tailings from Mineral Recovery, Inc. (MRI) and HMI Phase I operations were contaminated radioactively by the mixing of source material with what was otherwise clean material from a radiation standpoint. You state in your June 6 letter that the NRC staff has concluded that it should regulate "the monazite rich waste stream since it contains 0.05% source material by weight and the areas around the plant which are contaminated by this material" (underlining added). Consequently it appears that your Agency has erred in its rationale for not accepting regulatory jurisdiction over the combined tailings. We are, therefore, requesting that you review your prior decision, and accept that responsibility.

Zircon Separation / Monazite Generation

As you stated in the June 6 letter, it is true that a primary activity of HMI is the separation of minerals such as rutile and ilmenite from sand. Your letter, however, does not address HMI's other major activity; the separation of zircon from sand.

As you know, MRI, HMI Phase I and HMI Phase II operations employed the same physical mineral separation processes, differing only in the source of new feed and in the location and disposition of the monazite waste. Generally, new feed entered the

wet mill where zircon, leucoxene, rutile, and monazite were concentrated (see Attachment 1). In the dry mill, the conductors (leucoxene and rutile) were separated from the non-conductors (zircon and monazite). The rationale which you provided to us only addresses the process stream for conductors, which does not contain monazite. We address below the process stream for non-conductors in which monazite is separated from zircon.

During MRI and HMI Phase I operations (November 1986 - March 1990) at the point where zircon was magnetically separated from monazite in the dry mill, the monazite waste stream, at licensable source material concentration, was sent to a hopper where it was combined with tailings from the wet mill. These combined tailings were then pumped to the combined tailings pile. Perkins and Cole, attorneys retained by HMI, in their September 27, 1990 letter to you stated that "... monazite waste at source material concentrations was re-combined with other materials and placed in the area marked in blue on the site map [the combined tailings pile]..." HMI did not possess an NRC license for any portion of Phase I operations. As documented in NRC Inspection Report Number 99990001/89-001, HMI "possessed and used ... monazite waste in which the concentrations of source material were greater than 0.05% by weight without being authorized to do so by an NRC license..."

During HMI Phase II operations (April 1990 - July 1990) at the point where zircon was magnetically separated from monazite in the dry mill, the monazite waste stream was stockpiled on the current monazite pile instead of being recombined with other tailings. HMI did not possess an NRC license for any portion of Phase II operations, and yet accumulated approximately 695 cubic yards of monazite in a pile. HMI's current NRC Materials License SMB-1541 (issued January 2, 1991), allows the company to possess, package, store and transfer this "monazite-rich product."

It is clear that, during MRI and HMI Phase I operations, radioactively clean wet mill tailings were contaminated by a monazite waste stream exceeding the threshold for classification as source material before being stockpiled on the combined tailings pile. Furthermore, during Phase II operations, HMI stockpiled a "monazite-rich product" in an unregulated pile. During both phases of operation HMI concentrated monazite, containing licensable amounts of uranium and thorium, without an NRC license.

Tailings Piles

The June 6 letter discusses areas on the HMI property known as the "original new feed area", the "salvage storage area", and the "recycle tailings area". The "original new feed area" contains mill tailings from the ASARCO process; the recovery of ilmenite from sand. The "salvage storage area" is where old machinery and equipment is currently stored on site. The "recycle tailings area", or combined tailings pile, contains the monazite-contaminated tailings from MRI and HMI Phase I operations. As documented in NRC Inspection Report Number 99990001/89-001, approximately 62 tons each of uranium and thorium in the form of monazite was combined with wet mill tailings, and placed on the combined tailings pile.

The letter also states that "many of these areas were generated at a time when Heritage was using a process which did not produce a monazite-rich waste stream." Based on our review of the process description provided by Mr. Lord, on information in NRC Inspection Report Number 99990001/89-001, and on historical descriptions contained in HMI's July 25, 1990 letter to you, it seems that a monazite-rich waste stream was always produced during MRI, HMI Phase I, and HMI Phase II operations and, as discussed above, was the source of the radioactive contamination of the combined tailings piles.

Conclusions

The June 6 letter concludes that the NRC "can regulate only the monazite-rich waste stream since it contains 0.05% source material by weight and the areas in and around the plant which are contaminated by this material." We agree, and contend that HMI operations produced a monazite waste stream at source material concentrations which should have been regulated by the NRC, and that these monazite wastes were combined with other tailings and placed on the combined tailings pile, thereby contaminating that pile. The conditions of HMI's current Materials License SMB-1541 state that only the interior of all plant buildings where source material is produced, and the outside monazite storage pile shall be decontaminated to meet the unrestricted use criteria described in the Branch Technical Position "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations." We believe that, for the reasons discussed above, the scope of NRC authority should be expanded to include the recycled tailings pile and any other piles or areas on the HMI site which were contaminated with the monazite waste stream.

Please provide a response by October 11, 1991 as to whether the NRC intends to review its previous decision on this matter.

Sincerely,

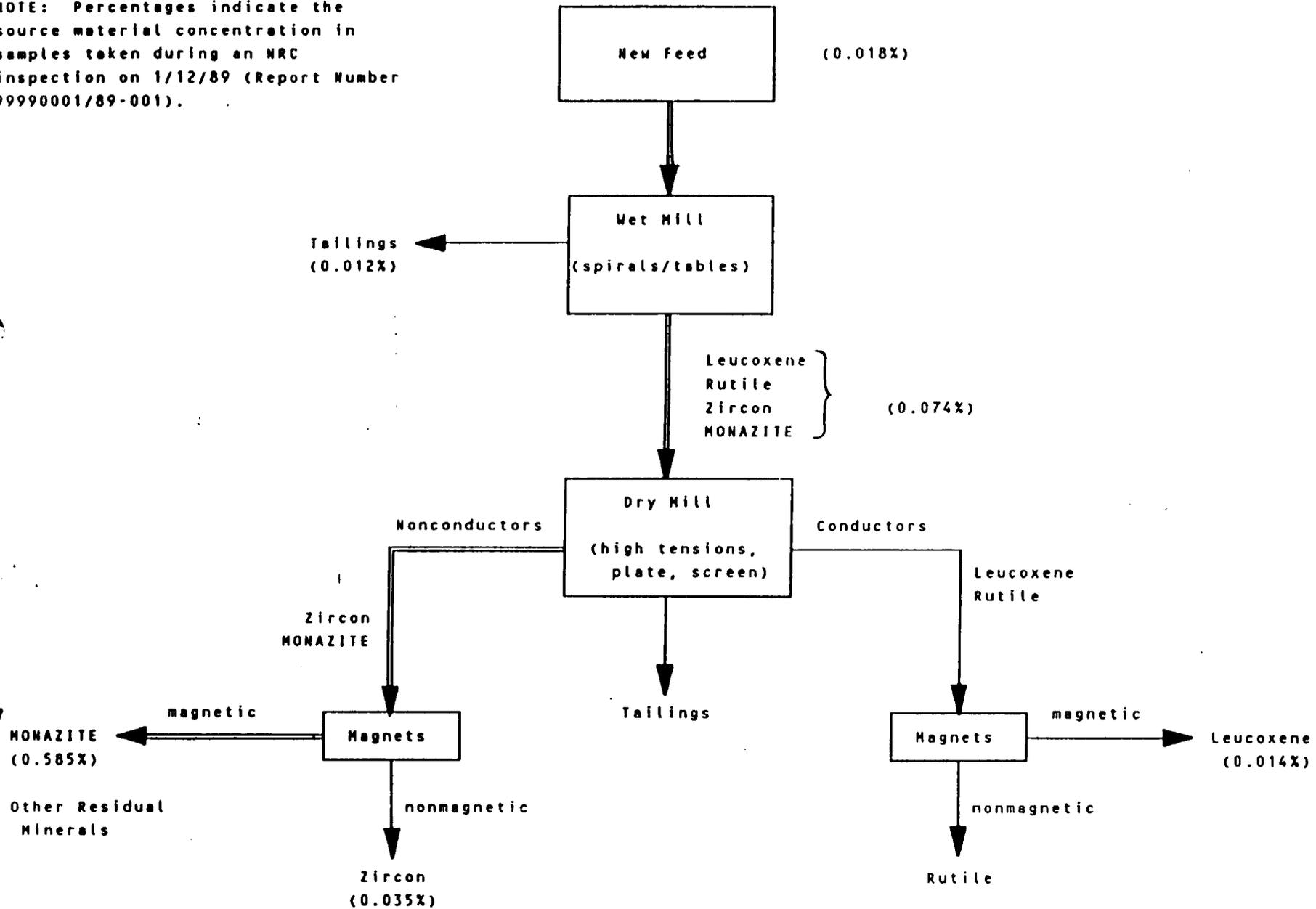


Robert Stern, Ph.D., Chief
Bureau of Environmental Radiation

Attachment

c: Malcolm R. Knapp, NRC
Ronald R. Bellamy, NRC
Marie Miller, NRC
Jill Lipoti, DEQ
Linda Grayson, DHWM
Patricia Gardner, Supervisor, REAS
Maryanne Quinn, REAS

NOTE: Percentages indicate the source material concentration in samples taken during an MRC inspection on 1/12/89 (Report Number 99990001/89-001).





UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

DEC 13 1991

License No. SMB-1541

Docket No. 040-08980

State of New Jersey
ATTN: Robert Stern, Ph.D., Chief
Bureau of Environmental Radiation
CN 415
Trenton, New Jersey 08625-6390

Dear Dr. Stern:

SUBJECT: Heritage Minerals, Inc.

This refers to your letter dated September 20, 1991, regarding the Heritage Minerals, Inc. facility in Lakehurst, New Jersey. As you requested, we have reviewed our decisions concerning NRC jurisdiction over the various areas at the Heritage Minerals, Inc. site known as the "original new feed area", the "recycled tailings area", and the "salvage storage area".

Based on this review, we have concluded that our decisions in this area were based on both policy and legal considerations and that our previous decision is still the proper course. The NRC is not extending license authority at Heritage Minerals to any site areas beyond the operational plant and the monazite pile.

We appreciate your interest in this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read "John D. Kinneman".

John D. Kinneman, Chief
Research, Development &
Decommissioning Section
Division of Radiation Safety
and Safeguards