UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of

HOMESTAKE MINING COMPANY Grants, New Mexico Docket No. 40-8903 License No. SUA-1471

DEMAND FOR INFORMATION

Homestake Mining Company (Licensee) holds byproduct material license No. SUA-1471, issued by the Nuclear Regulatory Commission (NRC or Commission) pursuant to 10 CFR Part 40. The license authorizes the possession of byproduct material in the forms of uranium mill tailings and the equipment and structures associated with previous milling activities at the Grants. New Mexico, facility. The Grants Mill was initially licensed by the State of New Mexico which at the time was an agreement state. In 1986, the NRC assumed regulatory authority for the Grants mill at the request of the Governor of the State of New Mexico.

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Criterion 9 of 10 CFR 40 Appendix A requires that uranium mill licensees establish financial surety arrangements to assure that sufficient funds will be available to carry out the decontamination and decommissioning of the mill and site and for reclamation of any tailings or waste disposal areas. The amount of funds to be ensured by such surety arrangements must be based on a Commission-approved cost estimate in a Commission-approved reclamation plan. At the time regulatory authority for the Grants Mill reverted to the NRC. the licensee did not have an adequate surety to ensure that the mill would be decommissioned and reclaimed as required by 10 CFR 40. Appendix A. Therefore. one of the top priorities of the NRC was to obtain and approve a reclamation plan as a basis for determining a surety amount. Subsequently, the licensee submitted a conceptual reclamation plan on December 1, 1986. Review of the plan by NRC resulted in requests for additional information which the licensee inadequately and incompletely provided. This process of review by the NRC staff and response by the licensee continued for a period of several years with little progress toward resolution of all outstanding issues. By mid-1990, the licensee had still not addressed all of NRC's concerns.

On May 31, 1990, the licensee advised NRC that the mill was being permanently shutdown and the reclamation plan was being revised completely. Their commitment was that the plan would be submitted by September 1, 1990. Because of the urgent need for a surety, the licensee agreed to submit a preliminary cost estimate, based on a new conceptual reclamation plan. This cost estimate would be used to establish an interim surety amount pending the submittal and approval of a final reclamation plan. On October 12, 1990, the licensee submitted a revised reclamation plan and a preliminary cost estimate. The final reclamation plan and a \$20 million surety were submitted on January 31. 1991. Additional information and revisions to the final plan were submitted by the licensee on August 28, 1991, and on April 3, April 30, and December 21.

9307080236 930614 PDR ADOCK 04008903 C PDR 1992, in response to NRC letters dated July 9, 1991, February 28, 1992, and a Memorandum to Docket No. 40-8903 dated May 28, 1992.

Since submittal of the final reclamation plan, the licensee's responses to NRC requests for additional information appear to have adequately addressed most of the issues, except the design of the radon attenuation barrier. Responses on this part of the design continue to be technically inadequate. Accordingly, the NRC cannot determine that the reclamation plan meets the requirements of Criterion 9, of 10 CFR 40, Appendix A.

In a separate but related action, the NRC and the EPA entered into a Memorandum of Understanding (MOU) regarding the staying of the applicability of the clean air standards (40 CFR 61) for uranium mills. The MOU requires that the NRC complete review and approval of detailed reclamation plans for nonoperational tailings impoundments, including the Grants Mill, as soon as practicable but in no case later than September 30, 1993. The licensee is fully aware of this schedule since they were a party to settlement negotiations between the American Mining Congress and the U.S. Environmental Protection Agency that, in part, resulted in the referenced MOU.

Because the licensee has not provided sufficient information to support its design of the radon attenuation barrier, additional information is required before the Commission can provide assurance that the reclamation plan meets the requirements of 10 CFR 40 Appendix A.

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Accordingly, pursuant to sections 161c, 161o, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2,204 and 10 CFR 30.32(b), 40.31(b), 70.22(d), 110.52(b), in order for the NRC to determine whether other enforcement actions should be taken to ensure compliance with NRC regulatory requirements, the licensee is required to submit to Mr. James L. Milhoan, Regional Administrator. Region IV. 611 Ryan Plaza Drive. Suite 400, Arlington, TX 76011-8064, by July 1, 1993, the following information, in writing and under oath or affirmation:

- A revised design for the radon attenuation barrier based on the use of available materials and conservatively justified design parameters. To be acceptable to the NRC for reclamation plan approval purposes, this design must include design specifications and drawings that reflect consideration of the following:
 - o the suitability of the soil defined by the specifications.

To demonstrate the suitability of the material, discuss how the cover will control infiltration (tailings recharge); the potential for cover cracking and its effect on the attenuation design to meet the radon flux requirements; the susceptibility to and the effect of freeze thaw cycles; and the potential for animal and root intrusion into the cover and the effect on the design. The discussions are to be based on specific material information.

the accessibility of a sufficient quantity of soil that meets the proposed specifications for the radon barrier material.

o the use of reasonable and supportable long-term moisture contents for the radon barrier material and the fine tailings in the radon attenuation design.

For reclamation plan approval purposes, the NRC staff in reviewing the radon attenuation barrier design will only consider data from samples that represent accessible, suitable material that meets the proposed specifications. If the licensee determines from the exploration and testing that the proposed specifications cannot reasonably be met, the proposed radon barrier material specifications may be revised as necessary. If the licensee cannot demonstrate that the exploration and testing program is representative of the entire extent of the proposed borrow, unsupported data cannot be considered in the design. For design

Accessibility means that the material is at a depth that is practical to consider and is of sufficient thickness to warrant excavation of the overburden. For example, 4 inches of suitable material that is 4.5 feet below the surface is not considered accessible.

When determining the volume of accessible material, it is assumed that the field classifications reported on the test pit logs will be used. Classification of soils based on the limited laporatory testing program do not always agree with the field classifications. For example, test pit log TP-77 indicates that the material sampled is a mand while the summary table provided in Homestake's December 21, 1992, submittal classifies the soil as a clay. Please note that this is only an example and should not be considered a complete listing of inconsistent classifications.

When selecting parameters for the radon attenuation model, it is important to use prudent engineering judgement to select values that will result in a conservative, but reasonable, estimate of the thickness required to limit the flux rates to those defined in Criterion 6 of 10 CFR 40. Appendix A. A conservative estimate is necessary due to the 1000-year design life specified in the regulations. Reasonable and supportable infers that selection of a long term moisture content is based on review of all available data and considers all available methodologies to determine a reasonable value. For example, even though the NRC guidance document on radon attenuation indicates that the capillary moisture test can be used to model the expected long term moisture content, if the in place moisture contents and proposed placement moisture contents are less, a reasonable model would not use the results from the capillary moisture test. Comparative data from other sites in the area has resulted in selection of long-term moisture contents of 9 to 12 percent. The 19 percent value proposed by Homestake is neither justified by data nor reasonable in comparison to other similar sites.

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data for which insufficient technical basis has been developed, the design should be revised to utilize default values, or data comparable to similar data from other facilities, with an appropriate measure of conservatism.

. Documentation that demonstrates that the design of the proposed radon barrier has been reviewed by and is recommended by a party independent of the preparers of the original design. To be acceptable to the NRC, this should be done by knowledgeable technical staff from within the licensee's staff, an outside consultant, or any other party that has demonstrated technical competence in designing radon attenuation barriers that meet NRC requirements. This documentation should specifically discuss the basis for concluding that all applicable requirements of 10 CFR 40, Appendix A, have been satisfied with the proposed design.

In addition to the open items discussed above regarding the radon attenuation barrier design, the licensee must satisfactorily provide information to address the following issues still considered open in NRC's review of previously submitted information:

For the embankment toe erosion protection. NRC has concluded that the proposed rock size is adequate. Prior to approval, a drawing detailing the feature should be submitted for review and approval.

A description of a construction quality control program to ensure that the specification limiting the radioactivity of radon barrier material to a maximum of 5 pCi/gm above background is met.

4. The licensee should provide information if he wishes to justify any changes to the following proposed conditions to be included in the license condition approving the reclamation plan.

 Quality assurance and controls during construction shall be as defined in the Staff Technical Position on Testing and Inspection (January, 1989).

o The radon barrier shall not be placed on the top surface of the large tailings impoundment until the settlement has been demonstrated to be at least 90 percent of expected settlement, and the results of this determination have been reviewed and accepted by the NRC.

All the reclamation plan requirements shall be incorporated into a single comprehensive document by providing appropriate revisions to the January 31, 1991, reclamation plan including drawings, technical specifications, and a cost estimate of sufficient detail to allow the establishment of appropriate surety requirements.

 A completion report shall be provided within 6 months of the completion of construction. This report, including as-built drawings, shall verify that reclamation of the site has been performed according to the approved plan. The report shall also include summaries of results of the quality assurance and control testing, to demonstrate that approved specifications were met.

Five copies of the submitted information requested above shall also be sent to Director, Uranium Recovery Field Office, P.D. Box 25325, Denver, CO 80225.

After reviewing the licensee's response, the NRC will determine whether further action is necessary to determine compliance with regulatory requirements.

FOR THE NUCLEAR REGULATORY COMMISSION

ames L. Milhoan

Regional Administrator

Dated at Arlington, Texas this 14th day of June 1993 bcc: Docket No. 40-8903 PDR/DCS URFO r/f W. L. Brown, RIV G. F. Sanborn, RIV L. J. Callan, RIV R. L. Bangart, LLWM, 5E2 LLUR Branch, LLWM, 5E2 J. L. Milhoan, RIV

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| RIV:URFO* | DD:URFO* | D:URFO* | D:DRSS | D:LLWM/NMSS* |
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| RGonzales | EHawkins | REHa11 | LJCallan for | RLBangart |
| 6/9/93 | 6/9/93 | 6/9/93 | 6/10/93 | 6/9/93 |
| EN** / | RC WAS | DRADAA | RAM | |
| GFSANDOrn | WLBrown | JMM mery | JLMilhoun | |
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* Previously concurred

** Coordinated w/JLieberman