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40-8903/PJG/88/01/05/0

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URFO: PJG
 Docket File No. 40-8903

Homestake Mining Company
 ATTN: Mr. Edward Kennedy
 P.O. Box 98
 Grants, New Mexico 87020

Gentlemen:

We are in receipt of your letter dated December 16, 1987, in response to the Notice of Violation (NOV) and Notice of Deviation (NOD) accompanying NRC Inspection Report 40-8903/87-001 dated November 24, 1987. The corrective actions taken by Homestake should be adequate to prevent a recurrence of the violations and deviations cited in the NOV and NOD. However, we would like to comment on several statements made in your response.

Violation A.(1.)(a) concerned the sampling periods which were used to determine airborne concentrations of radioactive materials for the purpose of calculating internal exposures. Homestake's response includes a statement that the program in effect at Homestake had been approved by the NRC. We wish to clarify this point.

The program approved by the NRC, entitled "Occupational and Environmental Monitoring and Surveillance Program," was submitted by letter dated June 19, 1987. Page 9 and Table 2 of the program indicate that the proposed sampling period of 24 hours is approximate, depending on yellowcake production periods. The NRC reviewer interpreted this statement to mean that if production is ongoing for 8 hours, the sample would be collected for no more than 8 hours, etc. This interpretation is especially critical with regard to yellowcake packaging operations, which have a potential for generation of large amounts of yellowcake dust (as indicated in the inspection report, the yellowcake packaging area is not effectively isolated from the rest of the mill, thereby contributing to general air concentrations during periods when packaging operations are conducted). It was also assumed that the samples would be collected when workers were present so as to be representative of the workers' exposure.

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These interpretations of your commitments would represent good health physics practice. However, the longer sampling periods utilized by Homestake were technically in accordance with the statements in the procedure. Therefore, a violation of 10 CFR 20.103(a)(3), which requires suitable measurements of concentrations of radioactive materials in air, was cited rather than a violation of the procedure. The NRC staff did not believe it was approving 24 hour sampling periods when operations are conducted for 8 hours.

Violation A.(2.) concerned the licensee's failure to calculate employee exposures for time spent in the ore crushing building. Your reply indicates that this practice was well documented in Homestake's program, referenced above, and had been discussed with Mr. Garcia of my staff. We also wish to clarify this point.

Page 10 of Homestake's program states that "Current production rates and concentrations of airborne dust observed do not warrant exposure calculations for employees in the crusher building." 10 CFR 20.103(a)(3) includes an exemption for the assessment of intakes less than the specified amount (2 MPC-hours per day or 10 MPC-hours per week), although the entire amount must be included for any assessment in excess of the amounts. Mr. Garcia's understanding, based on discussions with Homestake personnel and the approved program, was that exposures were not calculated for time spent in the crusher building because the airborne concentrations and exposure periods resulted in intakes less than the specified amount, which would have been in accordance with the regulations. However, a review of data during the inspection indicated that airborne concentrations routinely exceeded 50 percent of MPC and employees were in the building four to six hours during crushing operations. Further, assessment of employee intakes was necessary since the crusher operators often functioned also as yellowcake operators. The regulations in no way allow completely ignoring the exposures incurred in the crusher building.

Violation A.(3.) involves the failure to use measurements of radioactivity excreted from the body for the assessment of individual intakes during RWP work performed inside the vanadium roaster. Homestake states that the approved bioassay program and Regulatory Guide 8.22 state that bioassays should be performed if there is any reason to suspect an inhalation exposure to yellowcake exceeding $40 \text{ E-10 } \mu\text{Ci-hr/ml}$ in one week, and that the radiation safety staff had no reason to suspect such an inhalation.

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The RWP work involved in the citation consisted of welding work inside the vanadium roaster. Although general air samples were collected during the work, lapel samples truly representative of worker exposure were not collected. The air sample collected by Homestake indicated that the 40 MPC-hour exposure limit had not been exceeded. The inspectors concluded that a urine sample should have been collected due to the very high potential of the job to create yellowcake dust and the failure to perform lapel sampling. During a job such as this, it is practically impossible to collect general air samples which are truly representative of worker exposure. A urine sample should be collected as a good radiation safety practice. The need for a sample should not be based on the results of an air sample which is of questionable representativeness, but rather on the specific job being performed and the resulting potential for exposure.

We hope the above discussion serves to clarify our understanding of Homestake commitments and prevent a recurrence of the violations cited. As stated previously, the corrective actions implemented should be adequate to correct the deficiencies noted. We will review the implementation of the corrective actions during our next inspection.

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Harry J. Pettengill, Chief
Licensing Branch 2
Uranium Recovery Field Office
Region IV

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