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SEP 8 1960

VANADIUM CORPORATION OF AMERICA URANIUM MILL,
DURANGO, COLORADO - DOCKET NO. 40-1712

SYMBOL: DLR:REC

The Vanadium Corporation of America has submitted to the AEC a ventilation and air cleaning plan which appears adequate to reduce airborne concentrations of radioactive material below those specified in Commission regulations.

VCA obtained the aid of specialists in the field of industrial hygiene and ventilation engineering to devise this plan. VCA's chief engineer at Cambridge, Ohio, is primarily responsible for the design and installation of the system. The Industrial Hygiene Group, University of Colorado Medical School, is conducting surveys to determine what is needed in the way of ventilation equipment. Kirk and Blum Manufacturing Company have been consulted on the hood and duct work portion of the ventilation system and U. S. Stoneware Company have been consulted with regard to the air cleaning equipment.

The crushing, grinding and milling circuits, roaster operations and the final product packaging area are the primary sources of airborne radioactivity problems in the mill. The dust problem was worsened by generally poor housekeeping practices and substandard facilities and equipment. Air effluents containing radioactive particulates were discharged from a number of points throughout the mill without passing through air cleaners. Further, no surveys had been made to determine if air effluent discharge met 10 CFR 20 requirements.

In order to eliminate sources of dust generation, conveyor discharge points in the crushing, grinding and milling circuit are being provided with well designed hoods. Rod mills and dryers are also to be provided with hoods. Roaster units are being fitted with new doors and air seals. They have been equipped with exhaust fans to maintain constant negative pressure so that the direction of air flow will be into the roasters. Unorthodox piping connections leading from the roasters will be replaced. The steam drying pan in the final product packaging

area will be enclosed and 100 FPM minimum air velocity will be maintained at the enclosure entrance. The crusher and drum filling station will be enclosed and have an air inlet velocity of 250 FPM. New materials handling equipment will be installed in the final product area to reduce the amount of contact operators will have with the product. Charging doors on the uranium fusing furnaces will be equipped with hoods if future surveys prove this necessary.

Much has already been done to improve housekeeping and general maintenance. The AEC plan evaluation group that visited the mill on August 10, 1960, noted that a separate new building had been constructed in which employees can eat, wash and change clothing away from dusty operations. A new roof had been placed over the roaster area and roadways around the mill had been improved to eliminate dust created by moving vehicles. About 13 tons of surplus equipment have been removed to facilitate housekeeping, and general clean up is in progress.

Air effluents coming off the roasters and crushing, grinding and milling circuits will pass through scrubbers for cleaning prior to discharge. The scrubbers will be equipped with thickeners, pumps and recirculating water facilities to reduce shut-down time. The exhaust from the final product drum filling operation will pass through a cloth-type dust collector.

Hood construction, roaster maintenance and housekeeping improvements are already in progress. The worst dust producing area should be under control by November 15, 1960, and the major portion of the construction and installation of the ventilation and air cleaning equipment is scheduled for completion by January 15, 1961. All work should be completed by March 15, 1961.

The plan as submitted by VCA appears satisfactory. Dr. Leslie Silverman, our consultant in this matter, has also reviewed the plan and stated that it should accomplish all that is required. In view of this, VCA will be notified that we approve of the plan; however, it should be noted that only after installation is complete and appropriate surveys made can final judgment be passed as to whether or not further steps are necessary. We do not propose to issue a new license to VCA until this evaluation can be made.

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