ARCO

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RETURN ORIGINAL TO PDR, HQ.

December 13, 1993

Mr. Ramon Hall
United States Nuclear Regulatory Commission
Uranium Recovery Field Office, Region IV
730 Simms Street
Suite 100
Golden, Colorado 80401

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**Re: Material License SUA-1470**
**Docket No. 40-8902**
**Final Radon Barrier Design, Main Tailings Pile**

Dear Mr. Hall:

Enclosed are five copies of the report "Final Radon Barrier Design, ARCO Bluewater Main Tailings Pile". This report includes a comprehensive program for main tailings characterization that was used to develop the final radon barrier design. As indicated in the report, which was previewed to you on November 16, 1993, the final design considers the contribution of the thick layer of very low activity off-pile material that functions as a radon barrier over the Slimes and Mixed Areas. This, along with the high compactions achieved for the materials, resulted in a much thinner radon barrier requirement. The final design proposed in this report exceeds the minimum design requirement, resulting in a long term average radon flux of 12 pCi/m²s compared to the limit of 20 pCi/m²s. Consequently, Atlantic Richfield Company (ARCO) hereby requests your timely approval of this final radon barrier design, as we are currently in the process of retaining a contractor to complete radon barrier placement on schedule by the December 28, 1994 license deadline.

As you are aware, this report was made possible by the fact that ARCO has completed the excavation and placement of off-pile materials on the Main Tailings Pile (MTP). The off-pile material was place primarily on the Slimes Area as a loading layer for slimes consolidation. This completes the top surface configuration of the MTP. In addition, a 2.4 feet thick radon barrier cover has been placed on the Sands Area of the MTP.

At the completion of the placement of off-pile material on the MTP, the volume of material was considerably larger than predicted. This amounted to approximately 700,000 cubic yards, or 43 percent above the amount in the original design. The thickness of the material overlying the Slimes and a portion of the Mixed Area necessarily increased, resulting in a significant change in the radiological source term.

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Certified By Mary A. Hood

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The changes led ARCO to conclude that a final design based on as-built data was necessary. In addition, the revised regulations (10 CFR 40 and 40 CFR 192) require that we verify the performance, through testing and analysis, that the cover meets the emission limits. ARCO therefore took this opportunity to gather final design data as well as data to calibrate the RAECOM model to the MTP.

Regarding final radon barrier construction activities, ARCO has one evaporation pond remaining to collect the runoff from the MTP and water from the decontamination of construction equipment. After the MTP has been covered with a clean soil layer and all contaminated material has been consolidated on the Acid Tailings Pile, ARCO will decommission the evaporation pond and consolidate the material with the Acid Tailings. This should occur about midsummer. Only at that time can the radiological source term be measured and the final design for the Acid Tailings pile be developed.

The erosion protection planned for the surface of the MTP and other tailings area will remain unchanged with any modifications to the final radon barrier. There will be slight variations in quantities of the rock material due to elevation changes, however, all surface configuration grades will be maintained similar to those indicated in ARCO's NRC approved Reclamation Plan.

Finally, in order for us to meet our deadline for completion of the placement of radon barrier by December 28, 1994, we propose to characterize the Acid Tailings Pile along with a small extension to the Carbonate Tailings Pile using the same protocol as contained in this report. This will avoid the necessary delay for regulatory review and allow us to proceed with the construction and complete the work on time. This protocol is included in section 5.0 of this report for your review and approval.

Your timely approval of the final radon barrier design for MTP and design protocol for other tailings areas will be appreciated. Should you have any questions regarding this submittal, please do not hesitate to contact me or Natver Patel of my staff.

Sincerely,

R. S. Ziegler
Project Manager

/jmn

Enclosures (5)

pc: N. Patel
S. Purdy
C. Sanchez

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