Introduction

By letter dated January 18, 1989, Umetco Minerals Corporation (Umetco) requested amendment of Source Material License SUA-1358 for the White Mesa Mill to authorize plant testing of alternate feed materials received from Teledyne Wah Chang Albany (TWCA). The alternate feed material consists of a sludge from the V-2 process wastewater storage pond at the TWCA facility in Albany, Oregon. The sludge is licensed as source material under Oregon Source Material License ORE-OOD1-5.

As a result of the initial review of the application, the staff requested additional information from Umetco by letter dated April 10, 1989. This letter also transmitted to Umetco the results of analyses performed by Oak Ridge National Laboratory on samples collected by NRC inspectors during an inspection on January 12 and 13, 1989. Umetco provided responses to this information request by letters dated April 24, May 1, and September 7, 1989. The staff review of Umetco's license amendment request is discussed below.

Background

The TWCA facility in Albany, Oregon extracts precious metals, especially zirconium, from ore. The V-2 process wastewater storage pond was constructed in 1960 and utilized for treatment of process liquids until 1979. The resulting sludges contain more than 0.05 percent uranium, and are therefore licensed as source material by the State of Oregon.

At the time of the January 18, 1989, application, Umetco had received 600 wet tons of the source material, or approximately 10 percent of the total available. Umetco then suspended further shipments of the source material pending NRC approval of the application. The average grade of the 600 tons received by Umetco is 0.143 percent. Umetco expects the overall grade of the
material to average 0.15 percent. Umetco proposes to test the amenability of the material to uranium recovery by conducting plant tests to determine how the material may be most effectively introduced into the mill circuit.

10 CFR 40.4 defines byproduct material as the wastes produced by the extraction of uranium from any ore processed primarily for its source material content. However, only "unrefined and unprocessed ore" is defined in 10 CFR 40.4. As the source material from TWCA is clearly not an "unrefined and unprocessed ore," the URFO staff requested guidance from the Office of Nuclear Material Safety and Safeguards (NMSS) regarding the application. The generic guidance formulated by NMSS has not been finalized. However, due to the length of time since the request, NMSS has decided to pursue resolution of this request independently using draft generic guidance as provided in SECY-91-347 which was published in the Federal Register on May 13, 1992. The staff review of the amendment application using the draft guidance is discussed below.

Discussion

The draft guidance prepared by NMSS consists of three items which must be addressed. The first item states that the proposed feed materials must meet a new definition of ore as follows:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

The TWCA source material clearly would meet the second part of the new definition, as uranium source material would be extracted in a licensed uranium mill.

The second item which must be addressed is whether the feed materials are classified as hazardous or mixed waste subject to EPA regulation under the Resource Conservation and Recovery Act (RCRA). Umetco's April 24, May 1, and September 7, 1989, responses address this issue. The April 24 letter contains a report entitled "Characterization of V-2 Pond Contents," prepared by TWCA on June 3, 1987. Additional information from TWCA was provided in Umetco's May 1 letter.

The information provided by Umetco indicates that the sludge material is not a hazardous waste as defined in RCRA. This conclusion is based on the assertion that the material does not meet the definition of "Characteristic Wastes" and does not contain a listed hazardous substance. The conclusion regarding "Characteristic Wastes" is based on the statement that the material is not ignitable, corrosive, or reactive as defined in 40 CFR 261 and did not fail the EP Toxicity Test.

Regarding the hazardous substances, TWCA states that no hazardous substances were ever placed in the ponds. Trace amounts of certain substances shown on the list of hazardous materials were noted to be present in the sludge material. However, TWCA states that the substances are present as "manufacturing process waste," which is specifically excluded from the
definition of a hazardous material. As evidence of this conclusion, TWCA notes that the waste streams are still being generated and are considered industrial wastewater streams by the EPA and the Oregon Department of Environmental Quality (ODEQ) and regulated under a Wastewater Discharge Permit issued jointly by the EPA and ODEQ.

The September 7 letter transmitted a September 1 letter from the ODEQ to TWCA which confirms that the ODEQ does not consider the sludge material to be a hazardous waste as defined in 40 CFR 261 or in corresponding state regulations. This was confirmed via a March 25, 1992, telecon between Dana Ward of URFO and William Dana of ODEQ, author of the September 7 letter. Mr. Dana also indicated that the ODEQ was responsible for administration of the EPA Hazardous Waste Program in the State of Oregon.

The last item discussed in the draft guidance addresses the issue of whether the ore is being processed primarily for its source material content. Two options are provided for addressing this issue. One of the options requires that the licensee certify under oath or affirmation that the feed material:

1. Is being reclaimed or recycled in accord with RCRA, or does not contain RCRA hazardous waste; and

2. Is to be processed primarily for the recovery of uranium and for no other primary purpose.

This certification was requested by the staff in a March 30, 1992, letter to Umetco. Umetco provided the requested certification by letter dated April 1, 1992.

The staff reviewed a comparison of the chemical constituents of the TWCA source material and tailings solution at the Umetco site. The information was provided as an attachment to the April 24 submittal. Several organics were detected in the TWCA material which are not present in the tailings solution. However, based on the relatively small amount of TWCA material to be processed at the mill, Umetco concluded that the addition of all the TWCA material to the tailings cells at the White Mesa Mill would result in concentrations below the detection limit for each organic. Of the inorganics, only the levels of zirconium in the tailings cells would increase significantly as a result of the addition of the TWCA materials.

The tailings cells at the Umetco site are synthetically lined and include leak detection systems. No evidence of leakage from the cells has been detected. Leakage would be quickly detected by the rise of water levels in the detection system. The staff therefore concludes that changes to the environmental monitoring program at the White Mesa Mill are not necessary.

Conclusion

The staff has completed its review of Umetco's January 18, 1989, amendment application and supporting submittals. The staff concludes that the feed
materials proposed for test processing at the White Mesa Mill meet the criteria listed in the draft guidance provided by NMSS. The staff therefore recommends that Source Material License SUA-1358 be amended to authorize the test processing by adding License Condition No. 54 to read as follows:

54. The licensee is authorized to conduct plant testing of source materials from the Teledyne Wah Chang Albany facility in accordance with the amendment request dated January 18, 1989.

The issuance of this amendment was discussed via telecon with Rick Van Horn of Umetco on May 29, 1992.

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Case Closed: 04008681200R