MEMORANDUM FOR: Docket File No. 40-8681
FROM: Dana C. Ward, Project Manager
SUBJECT: AMENDMENT NO. 34 TO SOURCE MATERIAL LICENSE SUA-1358 FOR THE WHITE MESA MILL TO PROCESS ALLIED MATERIAL

Introduction
By letter dated June 15, 1993, Umetco Minerals Corporation (Umetco) requested amendment of Source Material License SUA-1358 for the White Mesa Mill to authorize the processing of alternate feed material received from Allied Signal Corporation (Allied) located in Metropolis, Illinois. The alternate feed material consists of filter cake as a residual product from Allied's processing operations to convert concentrated U3O8 to uranium hexafluoride.

The amendment request was submitted subsequent to a letter from this office dated May 5, 1993, notifying Umetco that the processing of the alternate feed material would require a license amendment. Otherwise, Umetco would have to return the material to Allied and could not dispose of it in the tailings impoundment. Further, if Umetco wants to process the alternate feed material, they would have to certify that the material does not contain hazardous waste, and that the feed material is being processed for the recovery of uranium, and not for any other primary purpose. Umetco's amendment request of June 15, 1993, affirmed that the material would be processed for its source material content and no other primary purpose. Umetco also affirmed by letter dated September 3, 1993, that the material does not contain RCRA hazardous waste.

Background
The Allied facility located in Metropolis, Illinois, receives yellowcake shipments from Umetco White Mesa and other producers for refinement to uranium hexafluoride. During this process certain waste products are produced as byproducts to the production of uranium hexafluoride. These waste products, such as filter cake, are uranium bearing and through reprocessing at a mill...
additional uranium which would have been otherwise lost can be extracted. This reprocessing is what Umetco proposes to do with the filter cake material from Allied.

At the time of the June 15, 1993, application request, Umetco had in storage approximately 1700 barrels of waste generated from the Allied operation. The material contained within the barrels is best characterized as calcium fluoride with approximately 2 percent natural uranium. Umetco has determined from past practices at the Uravan Plant in Colorado that the addition of calcium fluoride to the process circuit will enhance uranium recovery. Therefore, Umetco has determined that the addition of the uranium hexafluoride to the ore will increase uranium recovery on the order of 2500 pounds of additional uranium per month.

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 Allied is clearly not an "unrefined and unprocessed ore," the draft generic guidance as provided in SECY-91-347 which was published in the Federal Register on May 13, 1992, must be used to define the material. The staff review of the amendment application using the draft guidance is discussed below.

**Discussion**

The draft guidance prepared by the Office of Nuclear Materials Safety and Safeguards (NMSS) consists of three items which must be addressed. The first item states that the proposed feed material must meet the 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 Allied 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 material is classified as hazardous or mixed waste subject to EPA regulation under the Resource Conservation and Recovery Act (RCRA). Umetco's June 15, and September 3, 1993, responses address this issue.

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 TCLP test.

The last item discussed in the draft guidance addresses the issue of whether the ore is being processed primarily for its source material content. This certification was requested by the staff in a May 5, 1993, letter to Umetco. Umetco provided the requested certification by letter dated June 15, 1993.

In the decision sustaining the issuance of Amendment No. 30 to Umetco's license for the processing of Teledyne Wah Chang material, the presiding officer stated that the staff should consider the economics of future license amendments concerning processing of alternate feed materials. The staff has determined through statements made in Umetco's amendment request dated June 15, 1993, that Umetco's major economic gain from the processing of this material would be from the sale of any uranium extracted and not from any other economic incentives given by Allied. Using the guidance supplied by the program office via telephone on September 28, 1993, it was agreed that this was adequate determination that the processing of this material would be primarily for the recovery of uranium and not for any other primary purpose.

The staff reviewed the chemical constituents of the Allied source material and the tailings solution at the site. The information was provided by Umetco in their June 15, 1993, letter. Several inorganics were detected in the Allied material at levels well within the existing ranges determined for the tailings. One inorganic, barium, was determined to be present in the Allied material, but not detected in the Umetco tailings. The concentration of barium was determined to be 0.2 mg/l in the source material. This level is well below the ground-water standard of 1.0 mg/l, and the EPA toxic level of 100 mg/l. Umetco has determined that this low concentration would not contribute to any adverse effect to the tailings, and therefore, the Allied material after processing will be compatible with the existing tailings.

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 for this action at the White Mesa Mill are not necessary.

In accordance with the categorical exclusion contained in paragraph (c)(11) of 10 CFR 51.22, an environmental assessment is not required for this licensing action. That paragraph states that the categorical exclusion applies to the issuance of amendments to licenses for uranium mills provided that (1) there is no significant change in the types or significant increases in amounts of any effluent that may be released offsite, (2) there is no significant increase in individual or cumulative occupational radiation exposure, (3) there is no significant construction impact, and (4) there is no significant increase in the potential for or consequences from radiological accidents.
The licensing action discussed in this memorandum meets these criteria as the proposed amendment will not significantly change or increase the amounts of any effluent, will not significantly increase exposures, will have no construction impacts, and will not increase the potential for radiological accidents. An environmental report is therefore not necessary from the licensee since the amendment does not meet the criteria of 10 CFR 51.60(b)(2).

Conclusion

The staff has completed its review of Umetco's June 15, 1993, amendment request and supporting submittals. The staff concludes that the feed materials proposed for processing at the White Mesa Mill meet the criteria listed in the draft guidance provided by NMSS and the recommendations for future licensing actions determined by the presiding officer in the Teledyne case. The staff therefore recommends that Source Material License SUA-1358 be amended to authorize the processing of Allied material by adding License Condition No. 56 to read as follows:

56. The licensee is authorized to receive and process source materials from the Allied Signal Corporation's Metropolis, Illinois, facility in accordance with the amendment request dated June 15, 1993. [Applicable Amendments: 34]

The issuance of this amendment was discussed via telephone with Scott Schierman of Umetco on September 29, 1993.

Dana C. Ward
Project Manager

Case Closed: 04008681820R
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bcc:
Docket No. 40-8681

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LJCallan, RIV
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September 3, 1993

Mr. Ramon E. Hall
Director
U. S. Nuclear Regulatory Commission
Region IV
Uranium Recovery Field Office
Box 25325
Denver, CO 80225

Re: Calcium Fluoride TCLP Results

Dear Mr. Hall:

As discussed with Dana Ward of your office Umetco's review of the TCLP results on the CaF2 material shows the material does not exhibit a Toxicity Characteristic as it has passed the TCLP test.

A copy of the TCLP analysis performed by Data Chem of Salt Lake City on the Allied Calcium Fluoride, was received at your office on 8-4-93.

If I can be of any further assistance in regards to this matter, please feel free to contact me.

Sincerely,

S. L. Schierman
Radiation Protection Officer