

**Record of Meeting
Joint U.S.-Russian Crown Ethers Technology
Workshop
Aiken, South Carolina
August 6-7, 2001**

Russian Participants:

Evgeny Filippov, DC IIE Daymos, Ltd.

U.S. Participants:

Jack Watson, Oak Ridge Research National Laboratory (ORNL)

Bruce Moyer, ORNL

David Hobbs, Savannah River Site (SRS)

Major Thompson, SRS

William Wilmarth, SRS

Hank Elder, SRS

Darrel Walker, SRS

Robert Pierce, SRS

Harry Harmon, SRS

Liliya Petrachenkova, Science Applications International Corporation

Tatyana Albert, Tom Albert and Associates

Purpose:

The purpose of the workshop was to share information on recent developments on crown ether solvent extraction, especially for cesium and to identify how the Russian expertise and capabilities can be used to help test the U.S. process that is expected to be used at Savannah River.

Workshop Activities and Proposed FY02-03 Work Plan

The proposed work enhances and/or provides an improvement to the U.S. solvent extraction process with respect to strontium and actinide removal.

The suggested work plan for FY02 includes the following activities.

Testing of a crown ether solvent extraction system for removing Sr and actinides (Pu, Am, and Np) from the average SRS simulant. The U. S. will supply the formula for preparing the simulant by September 30, 2001, and the Russian group will make the simulant based on the formula. The composition of the solvent system will be defined by the Russian group and will consist of three different formulations, one with dibenzo-21-crown-7, one with dicyclohexano-18-crown-6, and one without crown ether. These solvents to be tested will be based upon the solvents that the Russian group has studied recently for these elements. These are crown ether based systems using a fluorinated alcohol. The tests will include testing of the solvent with and without non-radioactive Cs.

Distribution coefficients will be measured for the extraction, scrub, and strip steps. Appropriate scrub and strip solutions will be determined by the Russian group. General observations, such as third-phase formation and coalescence break times, will be made.

Proposed cost for FY02 is \$25K.

A conceptual work plan for FY03 is suggested that involves examination of candidate caustic-side extractants for Sr and actinides. This work will/should build upon the progress made in FY02 but could include a wider variety of potential extractants and could include removal of cesium.

Proposed cost for FY03 is \$25K.

It was agreed that DOE and SRS will review the proposed Scope of Work for FY02-03. Once it has been approved by the U.S. side, it will be sent to Daymos Ltd. for review.

Signed:

For the U.S. side by
Jack Watson
Oak Ridge National Laboratory

For the Russian side by
Evgeny Filippov
DC IIE Daymos, Ltd.