

Purpose of Modification:

The purpose of this contract modification is to issue a Change Order to direct Pretreatment Facility Capacity Enhancement Modifications. Related correspondence is as follows:

1. BNI Letter from C. Albert, BNI, to J. Eschenberg, ORP, "Implementation of Pretreatment Capacity Modifications" CCN 137122, dated December 22, 2006.
2. BNI Letter from W. Elkins, BNI, to J. Eschenberg, ORP, "Implementation of Pretreatment Capacity Modifications" CCN 1146875, dated February 14, 2006.

Description of Modification:

The following change is hereby incorporated into the Contract:

Under Section C, *Statement of Work, C.7 Facility Specification*, delete paragraph (b)(8), which now reads:

"(8) The Pretreatment Facility will have the established capability to conduct oxidative leaching on HLW sludge and entrained solids to selectively remove Cr and sulfate for the HLW Vitrification feed in accordance with the procedures to be established by Specification 12, *Number of High-level Waste Canisters and estimated volume of ILAW Glass Per Batch of Waste Envelope D.*";

And insert as paragraph (b)(8) the following:

- "(8) The Pretreatment Facility shall have the established capability to conduct sludge washing, caustic leaching, and oxidative leaching on HLW sludge and entrained solids. The Pretreatment Facility shall include the following capabilities to assure sludge washing, caustic leaching, and oxidative leaching flowsheet and treatment capacity:
- (i) Provide two ultrafiltration trains to support solid-liquid separation, sludge washing, caustic leaching, and oxidative leaching. The ultrafilter surface area for each train shall be approximately 1,500 square feet.
 - (ii) Provide the capability to mix chemical reagents used in the leaching processes, in line with ultrafiltration vessel recirculation pumps, to shorten mixing times.
 - (iii) Perform caustic leaching at 100°C to enhance leaching kinetics.
 - (iv) Include the capability to remove heels from the ultrafiltration vessels to move treated solids forward in the process and minimize recycle.
 - (v) Operate filtration at 45°C or higher to increase filter flux rates and potentially reduce caustic required in leaching.
 - (vi) Add caustic to ultrafilter permeate vessels to prevent post filtration precipitation and reduce the volume of permeate the must pass through the ultrafilters.

- (vii) Increase the capacity of the cesium ion exchange system to a nominal 30 gallon/minute flowrate. This shall accommodate the increased waste volume resulting from caustic increases required to effectively conduct sludge washing, caustic leaching, and oxidative leaching on HLW sludge and entrained solids.”

Limitations:

The Contractor shall submit a Certified cost proposal (a Certificate of Current Cost or Pricing Data will be required at time of negotiation completion) for this Change Order by May 7, 2007. Pending definitization of this Change Order, the Contractor is authorized to incur costs not-to-exceed \$10,000,000 in performing this Statement of Work change. The Contractor shall comply with Clause I.83 FAR 52.243-6 Change Order Accounting (APR 1984).