

DUF₆ Conversion Project Scrubber Systems

Uranium Disposition Services, LLC (Duratek, Burns & Roe, and AREVA) is a joint venture formed to process the government's inventory of depleted uranium hexafluoride (DUF₆)—a material byproduct of weapons production—for reuse and disposal.

MCE was contracted by the design agent, AREVA NP, for the design, fabrication, inspection, testing, packaging, and delivery of 32 scrubber systems, 18 for the conversion facility in Paducah, Kentucky, and 14 for the facility in Portsmouth, Ohio. MCE is providing four separate designs:

- The deionized water (DIW) scrubber is part of the treatment system for the recovery of hydrogen fluoride (HF) from the DUF₆ conversion process offgas (POG) stream. Each DIW scrubber system consists of a venturi eductor, a packed tower scrubber, and a separate/recycle sump tank.
- The potassium hydroxide (KOH) scrubber is part of the treatment system for removal of HF from the DUF₆ conversion POG streams. Each KOH scrubber system consists of a venturi eductor, a packed tower scrubber, and a separate/recycle sump tank.

- The Backup Scrubber is being designed to handle the combined output of the particular facility's KOH scrubber. The backup scrubber includes a heat exchanger to cool the off-gas to 3° F below ambient, with a condensate drain back to the backup scrubber.
- The HFS KOH scrubber removes HF from a static vent line from the bulk HF storage tanks. Each HFS KOH scrubber consists of a packed tower and scrubber tank.



**Client: AREVA NP
Lynchburg, Virginia**