



CHEMICAL WEAPONS DEMILITARIZATION

The International Chemical Weapons Convention was entered into force on April 29, 1997. This Convention states that chemical weapons stockpiles must be destroyed over a ten year timeframe. Of all the signatories to this treaty, perhaps only the United States has efficiently moved towards accomplishing that goal.

The major chemical weapons stockpile sites in the United States are located at Johnston Island; Tooele, Utah; Anniston, Alabama; Umatilla, Oregon; Pine Bluff, Arkansas; Pueblo, Colorado; Blue Grass, Kentucky; Newport, Indiana and Aberdeen, Maryland. The destruction of this stockpile agent is overseen by the Program Manager for Chemical Demilitarization (PMCD).

Continental Research and Engineering personnel have been actively involved in working with the PMCD, the Environmental Protection Agency (EPA), the National Research Council (NRC) and major contractors such as SAIC, WDC, Raytheon, EG&G and Westinghouse to achieve the objective of complete stockpile destruction by the designated treaty date of April 29, 2007.



Our people have served as Systemization Director, Operations Superintendents and Safety Engineers at Johnston Island. We have been instrumental in JACADS start-up, continued operations, troubleshooting and operator training. Our experience includes designing and conducting trial burns, developing projectile processing procedures, responding to EPA permitting questions and participation in public outreach. We have also investigated engineering issues such as methods to enhance refractory lifetime, design and implementation of an exit gas velocity program in response to an EPA request, and investigation of unusual process conditions encountered while processing VX contaminated landmines.

As the JACADS facility nears closure, CR&E has been actively engaged as part of the closure team, including numerous presentations to the NRC on topical issues. Particular emphasis has been placed on secondary waste processing issues including the disposition of protective suits (DPE suits) and charcoal filter systems. We have been asked to develop processing options for these secondary wastes in consideration of existing facility, time and budget requirements.

We have also completed a variety of assignments at Tooele, Anniston, Umatilla and Pine Bluff and will continue to provide engineering and operational support to these facilities. CR&E is also working with SAIC and Jacobs Engineering to complete the initial design of a facility for Pueblo, Colorado containing agents HD (mustard) and HT. Our engineers have completed simulations of agent behavior utilizing our proprietary peak vaporization rate program and mass and energy balance models. We continue to work on various aspects of the preliminary plant design as well as a variety of operational, regulatory, process control and safety issues.

Selected Projects:

- Developed and implemented co-processing procedures for M55 GB rockets and 105 mm GB rounds, EG&G Defense Materials, *Tooele, Utah*
- Brine reduction area engineering support services for performance testing, Raytheon, *Johnston Island*
- LIC Burner Hot-spot evaluations, SAIC, *Edgewood, Maryland*
- JACADS Refractory system modification, Life cycle improvement 300,000 lbs GB/refractory lining to 3,000,000 lbs GB /refractory lining, Raytheon, *Johnston Island*
- DPE Closure assessment team for reduction of entries during closure, Raytheon, *Johnston Island*
- Closure review, Raytheon, *Johnston Island*
- Trial Burn Sampling port location, Raytheon, *Pine Bluff, Arkansas*
- JACADS Public Outreach, Raytheon, *Johnston Island*
- EPA coordination of approval of MPF Feed Rate Increase, modeling, testing, Raytheon, *Johnston Island*
- Gas velocity program, Raytheon, *Johnston Island*

