Tooele Chemical Agent Disposal Facility (TOCDF)

- Operated by URS for the U.S. Army’s Chemical Materials Agency
- Originally contained 42% of the nation’s chemical weapons
- Other Agent Disposal Facilities locations:
  - Anniston, AL;
  - Umatilla, OR;
  - Pine Bluff AR;
  - Pueblo, CO; and
  - Bluegrass, KY.
- Sites having finished destruction include:
  - Johnston Island,
  - Aberdeen, MD and
  - Newport, IN
Chemical Demilitarization Program

- Chemical Weapons Convention Treaty
  - Signed January 1993 by ISS nations
  - Required signees to destroy all chemical weapons in possession
  - Process receives close monitoring by state, national and international groups

- Our mission is the destruction of chemical weapons and secondary waste in a manner that is safe, secure and environmentally protective for workers and the public
Chemical Demilitarization Program – Utah

- U.S. Army Chemical Material Agency is the “owner” of chemical weapons and the primary customer.
- Citizens and State of Utah are the key stakeholders.
  - Treatment, storage and disposal of hazardous waste in accordance with the RCRA.
  - TOCDF is located on the Deseret Chemical Depot (DCD), which is 20 miles south of Tooele, UT.
Chemical Demilitarization Approach

- TOCDF employs incineration technology to destroy what was originally 42% of the nation’s chemical agents (nerve and mustard).

**LIQUID INCINERATOR**

- Atomizing Air
- Decon/Water
- Pollutants to Scrubber System
- Sump
- Com busted air blower
- Vortex Burner
- Primary Incinerator
- Afterburner
Chemical Weapons Stockpile

- Weapons included more than 1,000,000 projectiles, rockets, land mines and bulk agent containers, exceeding 26,000,000 pounds of agent.
- TOCDF employs a workforce of 1170 employees with diverse make-up including management, engineering, operations/maintenance, environmental, safety and medical.
- We expect to complete the mission within 2 years.
TOCDF Accomplishments 2010

- National Safety Council Award for 10,000,000 safe work hours. Now exceeding 11.5 Million hours
- A combined Recordable Illness & Injury Rate less than one fourth the industry average. The current RIR is 0.48
- OSHA Voluntary Protection Program (VPP) Star Status (2nd year in the program)
- First-ever annual zero penalty environmental notice from the Utah Division of Solid and Hazardous Waste
- Zero error surety (chemical agent security) program
- RIR at the end of February 2011 is 0.48
- 46 First Aid Injuries in 2010; 4 First Aid Injuries YTD
- 7 Recordable Injuries in 2010; 0 Recordable Injuries YTD
Approaching 6 years with Zero Lost Workday Cases
- The goal through the end of the project is zero lost work days

Continuous safety awareness and improvement through employee leadership and management commitment
- Work planning
- Condition reporting
- Workforce Safety Action Team (SAT)
- Fostering individual ownership / accountability
- Expanded training programs
Big ESS Pyramid – Security

- Measured by the absence of:
  - Violations
  - Major non-compliances
  - Outstanding results during oversight inspections
SURETY/SECURITY VIOLATIONS & MAJOR NON-COMPLIANCES

- Violations
- 12 Month Violation Rate
- Major Noncompliances
- 12 Month Noncompliance Rate
- Noncompliance Goal

Number of Events

occupation and environmental health practices
TOCDF RCRA NONCOMPLIANCE TOTALS

Big ESS Pyramid - Environmental

* Started including the State identified findings
**Started CAMDS Closure and Area 10 Secondary Waste Operations
Big ESS Pyramid – Environmental

- Environmental Managements Systems (EMS)
  - EMS Self-Certification
  - EMS Committee
  - Environmental Leadership Committee (ELS)
Site **ESS** Scoreboards

- Installed in 2010 to communicate timely and accurate information and status to workforce
Commitment to Continuous Improvement

- **Condition Reporting**
  - Program provides avenue for employees to suggest, perform and document process improvements and corrective actions in all facets of work at TOCDF
  - 3282 CRs were submitted in 2010

- **Management Assessments**
  - Management team conducts regular assessments of essential functions and processes to determine overall value
  - There were 1028 Management Assessments completed in 2010
Commitment to Continuous Improvement

- Peer Observations
  - 452 Peer Observations in 2010
  - Observe behavior and work practices for all aspects of work at TOCDF, CAMDS and Area 10
  - Performed by all employees as peers to provide open review and feedback for the purpose of coaching and improvement
  - Intended and encouraged to include broad objectives of Safety, Environmental, Surety, Quality, Disciplined Operations and the TOCDF Vision for Success
Occupational Health Clinic Mission Statement

To provide comprehensive occupational health services while minimizing the occurrence of job-related health risks, illness and injury.
TOCDF Occupational Health Program

- Screening and monitoring of Advanced Level A (DPE) entries around the clock
- Manage Heat Stress Prevention Program
- Evaluation of potential new employees – Post offer
- Medical Surveillance – Annual Health Review
- Emergency care for occupational and non-occupational injury / illness
- Case Management
- Substance Abuse / Dependency evaluations
TOCDF Medical Services Configuration

- Two Physicians
- Four Physician Assistants
- Twenty F / T Paramedics
- Occupational Health Nurse
- Laboratory Technician
- Support Personnel
Cholinesterase Program

- Blood test to measure red blood cell acetylcholinesterase activity
- Nerve agent depresses AChE activity
- Baseline established at time of employment and re-established every three years
- “Priority Blood Draws” for ChE activity when potentially exposed to nerve agent
- Employee evaluation when baseline changes are +/- 10%
Occupational and Environmental Health Practices

CHOLINESTERASE (ChE) SPECIMENS TESTED

- DCD
- TOCDF
Occupational and Environmental Health Practices

PRIORITY CHOLINESTERASE (ChE) TESTS

- 2001: 100
- 2002: 50
- 2003: 30
- 2004: 40
- 2005: 20
- 2006: 10
- 2007: 5
- 2008: 5
- 2009: 5
- 2010: 10
GREATER THAN 10% INCREASE / DECREASE IN CHOLINESTERASE (ChE)
420 employees currently enrolled in the program

Employees are enrolled when:

- Exposed to steady state of noise with a TWA of 85 dB or greater
- Exposed to impulse noise at 140 dB or greater
- Work in specific areas of the plant where sustained noise sources exist
Hearing Conservation Program Cont.

- All full-time Paramedics, Physician Assistants and Physicians are CAOHC certified Hearing Conservationists
- Audiograms are completed annually
- An identified STS is followed to completion
  - Follow-up audiogram with 48 hours noise free
  - Referral to Audiologist as required
  - Retraining on hearing protection
  - Noise dosimetry for documentation
Hearing Conservation Program Cont.

- Program guideline for functional hearing evaluations (alarms, PA announcements, encapsulating PPE)
- Termination audiograms are offered and recommended
Emergency Preparedness Program

Stemming from our commitment to excellence, we have incorporated diverse skills and specialized teams within our Emergency Preparedness Program.
Emergency Preparedness Program Cont.

- Hazmat
- First Response
- Decon
- Medical
- Rescue
  - High Angle
  - Confined Space
Emergency Preparedness Program Cont.

- The primary purpose of the TOCDF Emergency Response Program is to:
  - Maximize the safety of on-site personnel.
  - Minimize potential exposure to the general public.
  - Minimize environmental impacts.
  - Limit loss or damage to the facility and plant equipment.
The TOCDF Emergency Preparedness Program is captured within several written plans:

- TOCDF Emergency Response Plan
- Contingency Action Plans
  - Specific response actions for employees to follow ranging from a non-work related illness to an agent spill outside of engineering controls
- Emergency Preparedness Exercise Program Guidelines
  - Guidance for site employees to follow for exercise play
EP Related Training (All Employees)

- Initial Courses for all site employees:
  - CPR / First Aid / AED Initial
    - American Red Cross Curriculum – 8 hrs
    - 4 hour annual refresher for all site employees
  - HAZCOM (OSHA 1910.1200)
    - Site Specific – 4 hrs
  - Site OSHA RCRA Training
    - Site Specific – 16 hrs
    - Provide knowledge base for requirements in 29 CFR 1910.120 (q) for awareness level
EP Training (Specialized)

- First Responder Medical Training
  - Internal instruction - DOT/NHTSA Curriculum for Emergency Medical Responder (EMR) - 80 hrs *(100+ site employees trained, approx 15 per shift)*

- Site Decon Response Training
  - Internal Instruction - 16 hrs *(100+ site employees trained, approx 15 per shift)* Provides knowledge and skills for requirements in 29 CFR 1910.120 (q) for operations level
EP Training (Specialized) Cont.

- **Site Hazmat Response Training**
  - Internal Instruction - 40 hrs *(100+ site employees trained, approx 15 per shift)* Provides knowledge and skills for requirements in 29 CFR 1910.120 (q) for technician level

- **High Angle / Confined Space Rescue Technician Training**
  - Vendor – 120 hrs *(80+ site employees trained, approx 15 per shift)* Provides knowledge and skills as outlined in NFPA 1670 for Technician Level, also for the Rope Rescue Technician (Professional Qualifications) outlined in NFPA 1006.
Emergency Response Equipment

- In addition to industry standard equipment such as emergency showers and fire protection systems/fire extinguishers, TOCDF has in place many additional pieces of equipment to help prevent and or respond to emergency events such as:
  - Uninterruptable Power Supply for critical plant equipment
  - Emergency generators
  - Cascading HVAC for agent areas
  - 30 + AED’s and Trauma bags
  - Ambulance
  - HAZMAT Response Truck
  - Decontamination Response Trailer
  - High Angle/Confined Space Rescue equipment

- TOCDF is prepared to respond to various types of events with specialized trained personnel and equipment, 24 hours a day 7 days a week.
Occupational and Environmental Health Practices

Maintaining Excellence

- **Exercise Program**
  - Chemical Stockpile Emergency Preparedness Program (CSEPP)
    - Full scale exercise integrated with DCD and Tooele County performed annually
  - Chemical Accident Incident Response and Assistance (CAIRA)
    - Full scale exercise integrated with DCD performed quarterly
Exercises

Occupational and Environmental Health Practices
Maintaining Excellence Cont.

- **Weekly TOCDF exercises**
  - Built into the site operating schedule to occur every Tuesday evening
  - Rotating shifts allow each shift the opportunity to participate in an emergency response exercise or training evolution on a monthly basis
  - Change in campaign or type of munition dictates that an Operational Readiness Review (ORR) and / or Readiness Assessment (RA) is performed in the form of training and exercises
Emergency Response Organization Challenge

- In 2008 TOCDF held the first annual TOCDF Emergency Response Challenge
  - Designed to involve the site’s certified emergency responders to participate in scenarios related to realistic contingency conditions in a high learning, consequence free training environment
  - Personnel from all shifts’ emergency response teams participated in knowledge and skill demonstrations related to decontamination, hazardous material response, technical rescue and medical.
Minimal Simulation During Training
Decon Medical Vestibule
High Angle Rescue
Structural Collapse Training
Occupational and Environmental Health Practices

Confined Space Rescue
Conclusion

- TOCDF is prepared to respond to complex events with highly trained personnel and equipment, 24 hours a day 7 days a week.