SRR Safety and CONOPS
Continuous Improvement

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Savannah River Remediation

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Governor’s Nuclear Advisory Council
SRR continues a legacy of safe work within Liquid Waste Operations, an organization that has not recorded a lost time injury since March 2006 (over 11 million safe hours).

- SRR FY09 Total Recordable Case (TRC) rate is 0.22; FY09 Days Away, Restricted, or Transferred (DART) Rate = 0.0 (7/1/09 - 09/30/09)
- Current SRR TRC and DART Rates = 0.0 (10/1/09 - 12/8/09)
- Eighth VPP Star of Excellence (Seven consecutive)
- National Safety Council’s Million Hour Award
- S.C. Manufacturer’s Alliance’s Plant Safety Award
- SC Chamber of Commerce Award
- Construction employees worked >22 million hours without a lost time injury (since June 1998)
WSRC experienced a greater than anticipated incidence of minor injuries leading to transition, with six injuries in the six months preceding transition to SRR.

- Behavior Based Safety (BBS) observation rates and observation quality were declining
- Employee feedback indicated distraction in the workforce

SRR challenged Local Safety Improvement Teams to improve performance
- Injuries at SRS and across the complex indicate an increase in those related to slips/falls and sprains and strains, injuries more common to an aging workforce (SRR average age is 50).

  - SRR providing strength and balance training to SRR workers.
    - Training of employees is underway with completion schedule of September 2010.
    - Workers will then provide reinforcement to their peers on the principles covered in the training through the Behavior Based Safety (BBS) process

  - BBS observers are focusing on slips and falls (behaviors and conditions).
Liquid Waste Operations
EM ORPS Reportable Events Last 24-Months
Through October 31, 2009

SRR Occurrence Reporting and Processing System (ORPS) performance has been stable. As of 10/31, SRR ORPS EM Normalized Score was 0.58 vs. an EM average of 2.04. The SRR goal is 95% of EM average, or 1.94.
What Our ORPS Events Tell Us

ORPs Events
(10/01/08 through 11/16/09)

Number of Events

<table>
<thead>
<tr>
<th>Equipment Failure</th>
<th>Human Performance (Error reduction Tools)</th>
<th>Procedure Use &amp; Adherence</th>
<th>Work Processes</th>
<th>BBS</th>
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- [01/03/08] HTF - TK 43 Purge Eah Flow Gauge (EOL)
- [02/03/08] TTF - FDB-2 Purge Eah Flow Gauge (EOL)
- [02/03/08] TTF - Flush Water Valve - 168 (EOL)
- [02/03/08] TTF - Purge Eah Flow Gauge (FP)
- [02/03/08] TTF - Flush Water Valve - 168 (EOL)
- [06/21/08] HTF - Alarm Panel AINN-1 (LS)
- [06/21/08] HTF - Temp Ind Transmitter (IC)
- [07/17/08] HTF - JIG Starting Battery - End of Life (EOL)
- [09/02/08] VVIT - Vent Purge Pressure Gauge (EOL)
- [10/21/09] HTF - TK 43 Purge Eah Flow Indicator (EOL)
- [10/21/09] HTF - Incorrect Valve Position (PC/SC)
- [10/21/09] VVIT - PSA Blowout (PC/SC)
- [10/21/09] HTF - PSA (PC/SC)
- [10/21/09] HTF - Incorrect Valve (PC/SC)
- [02/01/09] VVIT - 3-Vap Valve Mis-position (PC/SC)
- [02/01/09] VVIT - ISA Pressure/Cal Check (PC/SC)
- [08/26/09] VVIT - Vaslt #2 Material Handling Event (PC)
- [PC/SC] Poor Check/Ref Check
- [02/01/09] HTF - Pump Pit Overflow
- [02/01/09] VVIT - Fractured Patella
- [02/01/09] HTF - Strike Tank #1
- [02/01/09] VVIT - Process Upset
- [02/01/09] HTF - Fracture to right foot (Eyes on path & surrounding)
- [02/01/09] HTF - Fracture to Left Ankle (Choose wrong path)
Plan For Continuous Improvement

- **Improving Equipment Management**
  - Engineering utilizing system health reports to determine future modification to improve overall system or equipment reliability
  - Majority of failures are end of life
  - No repetitive failures
  - Equipment failure rate trending downward since 2003

- **Improving Human Performance**
  - Site Corrective Actions Program now requires HPI error coding of ORPS events
  - An analysis of ORPS events HPI error coding will be performed in January 2010 in order to determine HPI weaknesses
  - Results of analysis will be used to develop plan for HPI Error Reduction Refresher Training
Safety and Conduct of Operations events across the DOE Complex are monitored for lessons learned.

Some recent examples:

- **Worker injured in cart accident at WIPP**
  - Carts placed out of service, conducted evaluation of cart.
  - Cart occupancy restricted to operator only.
  - All cart operators qualified by classroom training and satisfactory completion of Job Performance Measure (JPM).

- **Worker injured by fall from catwalk at Hanford**
  - SRR assessed for compliance with fall protection program requirements, using relevant facts and judgments of need as the basis.
  - Results indicated strong compliance with regulations and procedures.

- **Increase in electrical events across the DOE complex**
  - Electrical Safety Assessment completed to validate facility performance and to reinforce management expectations in this key safety area.
  - Results indicated compliance with regulations and procedures. Continuous improvement opportunities were identified and are being implemented.

- **LLNL Vehicle Fatality**
  - Addressing Type A judgements of need (JON) through procedure changes, and BBS observation.
Some indicators were telling us that it was time to take a Safety Pause in order to refocus the workforce on safety.

- Recent safety events at SRS with other contractors
- Safety performance degradation in WSRC in months prior to transition
- Recent safety and conduct of operations events across the DOE Complex
- The onset of significant ARRA work involving some workers new to the site and not familiar with our safety culture
- CONOPs leading indicators within SRR showed a need to improve
We understand the need for continuous improvement in our Safety and Conduct of Operations posture and have undertaken the following improvement initiatives:

- Complete Integrated Safety Management System (ISMS) Baseline
- Complete electrical safety assessment and implement improvement actions
- Rollout strength and balance training
- Continue safety-related equipment improvement initiatives
- Implement Human Performance Improvements
- Improve administrative area/skill of the craft safety posture (routine office area walk down, event planning safety procedure)
- Complete essential work only during holiday work periods - followed by return to work safety focus briefings