



Savannah River

Nuclear Solutions, LLC

A Fluor Daniel Partnership, LLC

Narrowing the Gap Between Work as Imagined and Work as Performed at SRS

Bill Rigot

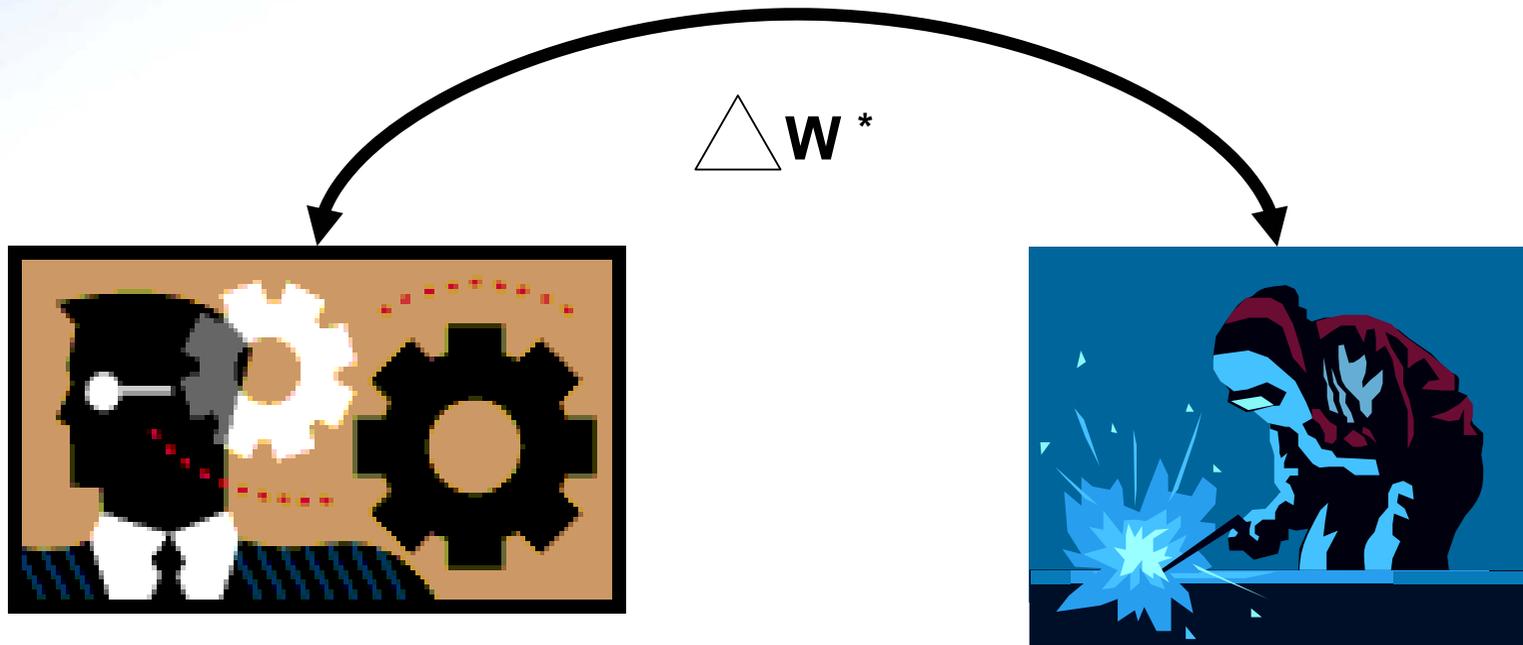
Fellow Technical Advisor

September 15, 2010

DOE ISM Champions Conference

Augusta, GA

Narrowing the gap requires leadership, planning, and execution



* ΔW = gap between work as imagined and work as done

Agenda

- **Background**
- **Implementation**
 - Project Plan
 - Heuristics
- **Culture**
- **Results**
- **Recommendations**

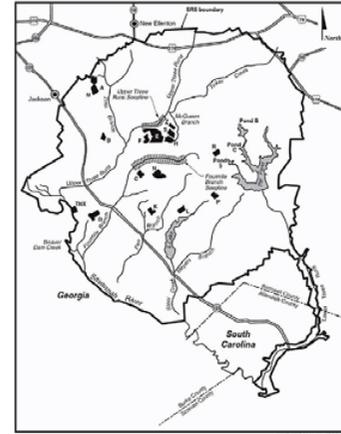


HPI



Background

- Construction began in early 1950's to support AEC in production of nuclear materials, primarily Plutonium and Tritium
- Post Cold War activities include environmental stewardship and cleanup, waste management and disposition of nuclear materials





Implementation

- **Began with dissatisfaction with current good safety and performance posture**
 - Several managers were graduates of INPO Senior Plant Manager's Seminar, had commercial nuclear power experience, or were Navy nuclear trained leaders
- **Used INPO Human Performance Gap Analysis to identify gaps**
- **Established Human Performance Improvement (HPI) Strategic Plan**
- **Established a structure for implementation**
 - HPI Steering Committee
 - HPI Working Group
 - HPI Champions Committee

Initial Focus

- **Corrective Action Program**
- **Selection of HPI Tools and training for workers, engineers and managers**
- **Establishment of Just Culture**
- **Implementation of HPI treated as a project**
 - Project manager
 - Project Plan
 - Cost & Schedule

HPI Project Plan

HUMAN PERFORMANCE IMPLEMENTATION MATRIX

FACILITY	Define a Champion 11-30-2007	Imp. Plan Dec-07	Tools										Program					
			Self Ck Jan-08	Peer Ck Feb-08	Proc Use & Adherence Mar-08	3-Way Comm Apr-08	Time-Outs May-08	Quest. Anticde Jun-08	Pre-Job Brief Jul-08	Placemat Alphabet Aug-08	Place Keeping Sep-08	Tool-Resources in the Field Jan-09	Fast Tracking Aug-08	CAP Oct-08	Task Preview Guide Apr-09	Error Coding Aug-09	Implement Error Reporting Jan-09	Pre-Job Brief Aug-09
1 Spent Fuel	Bob Sangster																	
2 SRNL Operations	Luke Reid John Miller																	
3 ACP-SGW	P. Northington													Aug '09		Sep '09	Aug '09	
4 ACP-D&D	P. Northington															Sep '09	Aug '09	
5 Site Infrastructure	Geof Fountain																	
6 Solid Waste Management Facility	John Pearson																	
7 Nuclear Materials Storage Project	Daryl Smaltr																Aug '09	
8 Analytical Laboratories	Kimberly Mitchell																	
9 F-Area Operations	Kimberly Mitchell																Sep '09	
10 HB-Line Material Disposition	Robert Abshire																Sep '09	
11 H-Canyon Material Disposition	Robert Abshire																Sep '09	
12 Defense Programs Division	Jack Alexander																	
13 Nuclear Nonproliferation Program	Will Davis																	
14 Saltstone Project	Andy Richardson																	
15 Effluent Treatment Project	Brenda Green																	
16 F-Tank Farm Closure Project	Brenda Green Brenda Green Brent Grifford																	
17 H-Disposition Project	Tony Welch																	
18 Waste Solidification Project	Jim Menghi																	
19 M&O Construction	David Harold																	
20 LWO Construction	Walter Wilson																	
21 M&O Business Management	Bill Rigor																	
22 M&O Engineering	Bob Rhoden																	
23 M&O Human Resources	Lee Schifer																	
24 ESHAQ (SS&ES + ESHAQA)	Lenn Brazley																	
25 Information Technology	Mike O'Rourke																	
26 PMMD	Tom Martin																	
27 WSI																		

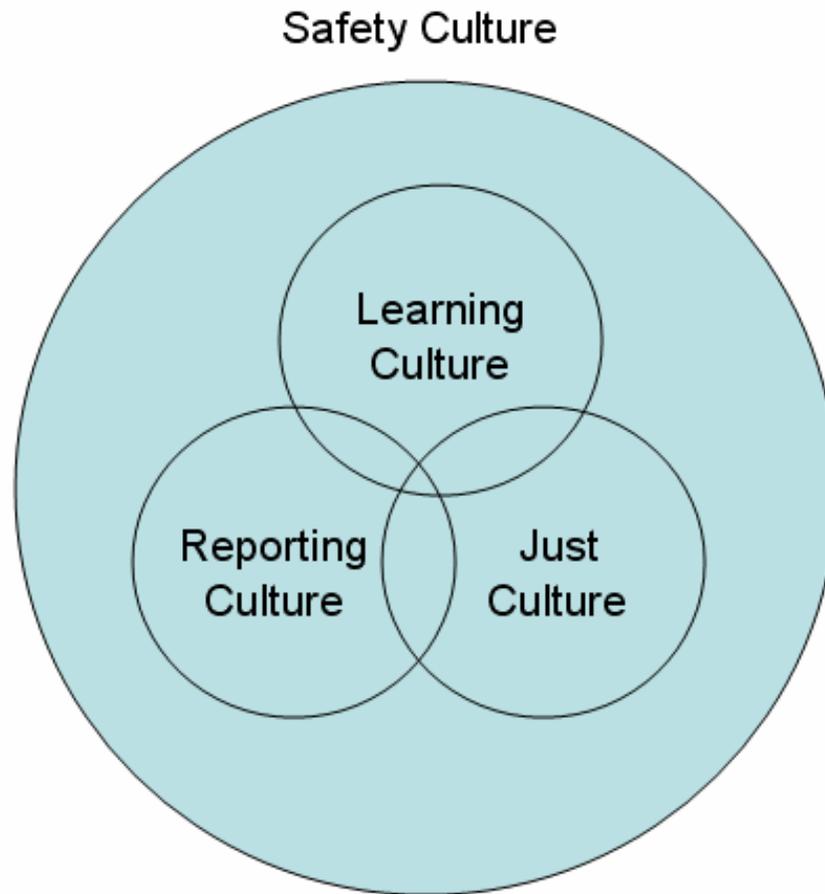
- Schedule:**
- Issue HPI Booklet to Site Employees Completed in March '09
 - Issue Pre-Job Brief Checklist Completed in April '09
 - Issue Task Preview Checklist Completed in April '09
 - HPI Effectiveness review October '09
 - Lectures TBD
 - Procedures TBD
 - Metric's March '09 through September '09
 - Clocks March '09 through September '09
 - Self-Assessment March '09 through September '09
 - Observations March '09 through September '09
 - BBS March '09 through September '09

Note: Tool implementation dates are based on monthly Spectrums.

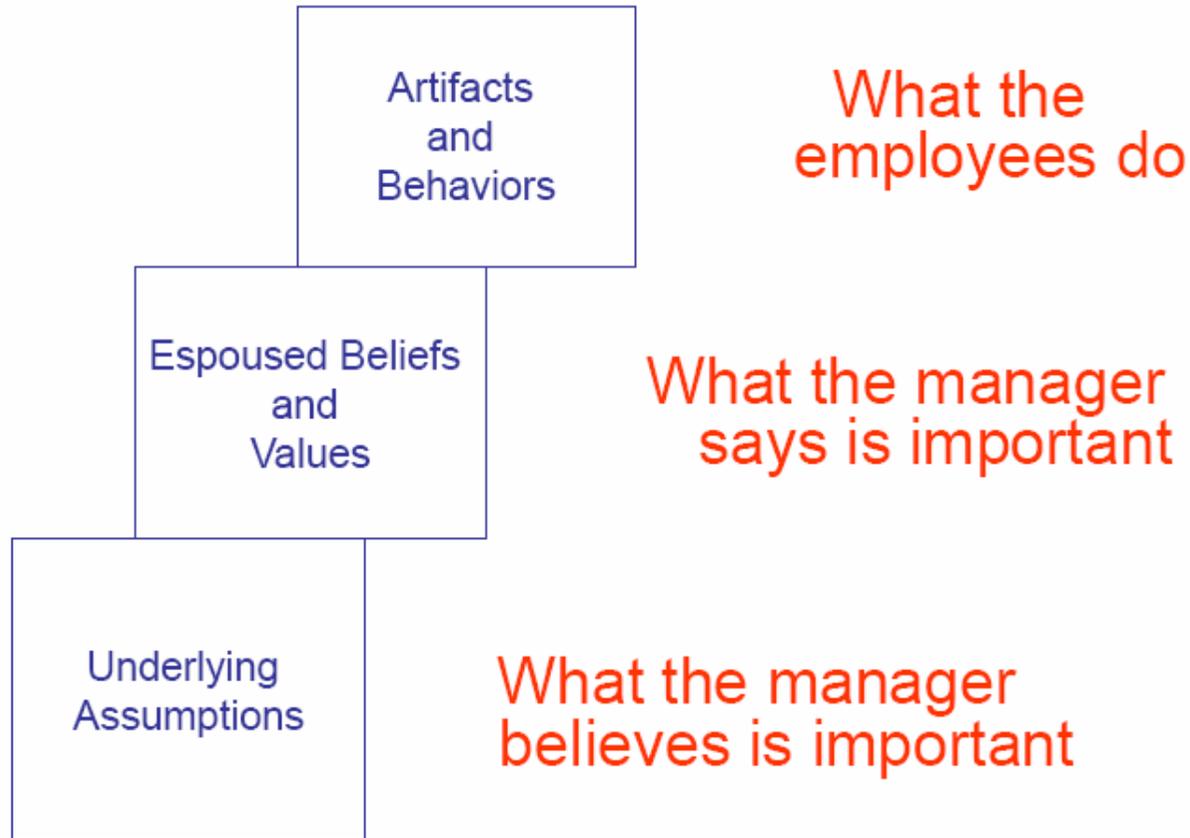
COMPLETE

SKR

Culture *



Schein Model of Culture *



Operational Excellence Model



Pilot Results – Defense Programs Tritium Facility

- **Considered a high performing NNSA facility**
- **Procedure compliance issues convinced management team that ΔW existed**
- **No previous experience with HPI**
- **Strong support from senior managers**
 - Understanding that implementation could drive reportable lagging indicators higher
- **Commenced 2006**

Tritium Implementation Activities

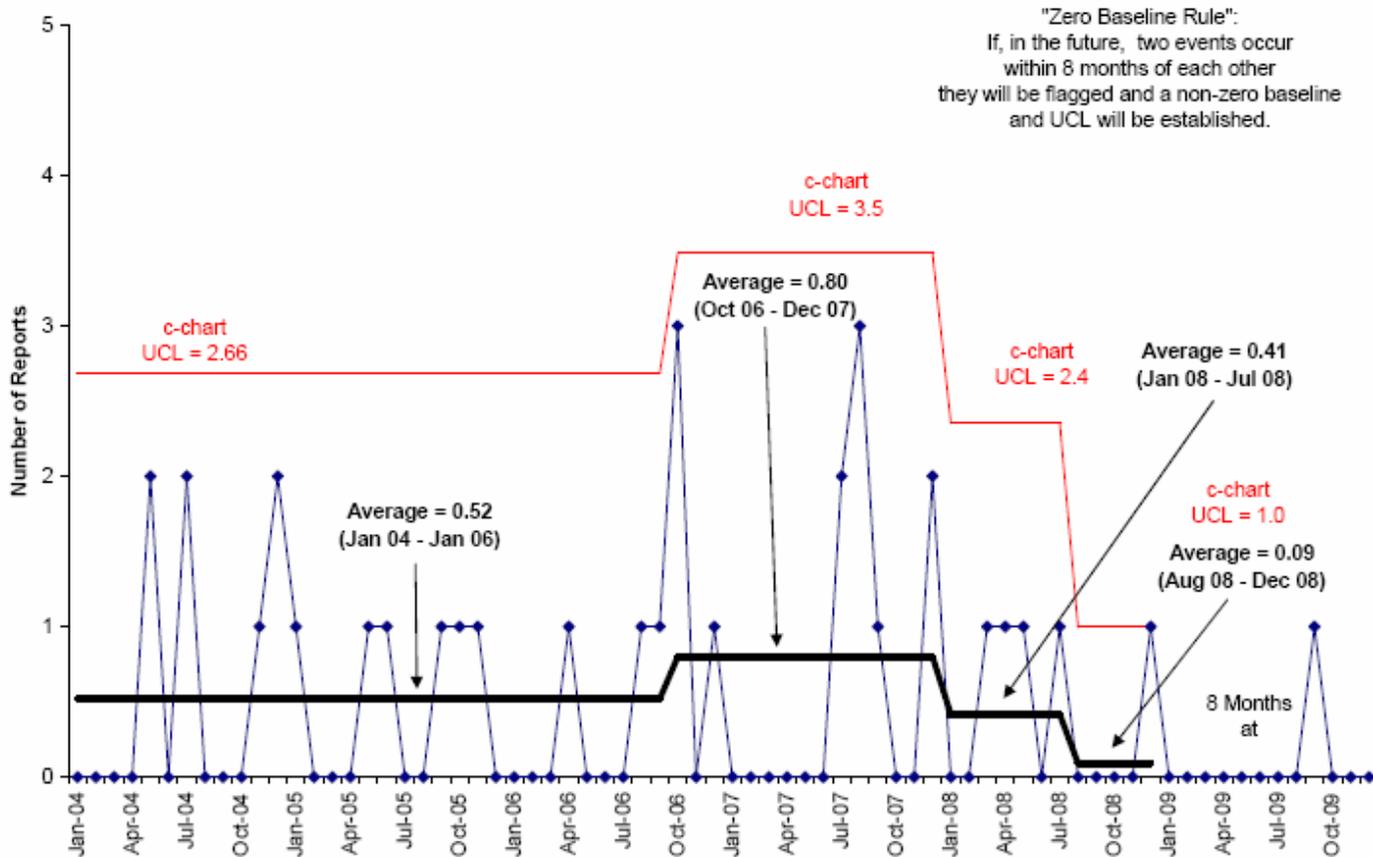
- **Training for managers, engineers and workers in that order**
- **Focus on Corrective Action Program (CAP) to drive improvement in measurable ways**
- **Changed critique process to drive to Just Culture from Blame Culture**
- **Established MRT to track day to day issues as they emerged**
- **Focused on error reporting early**
 - Shifted focus to Flawed Defenses with better results
- **Coaching tours**

Results

- **Reportable occurrences increased immediately and stayed at an elevated level for a year**
 - Then dropped dramatically to near zero
- **By training workers after managers, and engineers and also after changes made to CAP and critique process, meant they could exit training and into a changed work environment with a different context**
- **Managers experienced increasing sense of unease after reporting increased significantly**

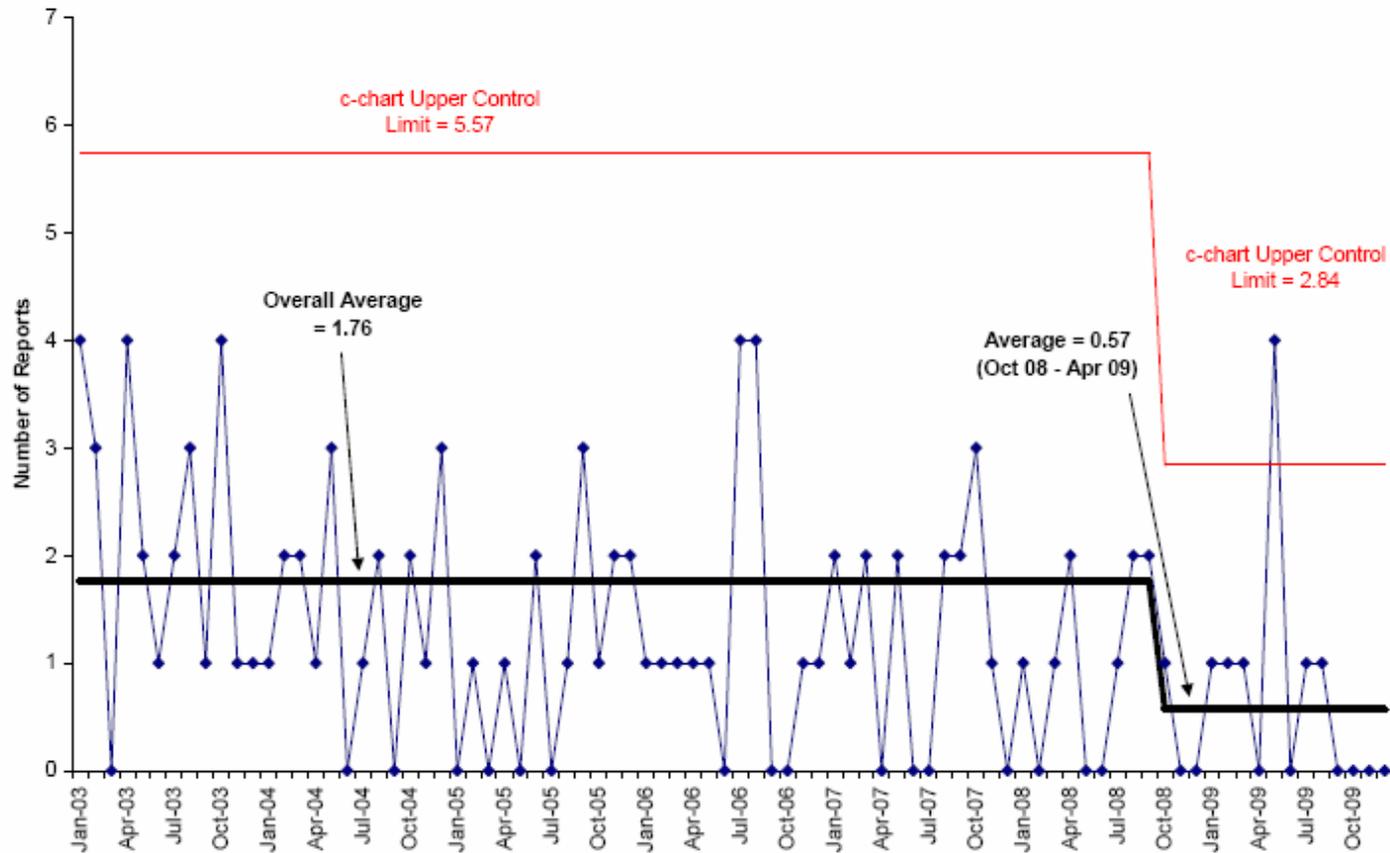
Statistical Results – Tritium Facility

Conops Reportable Events per Month



Statistical Results – Tritium Facility

Conops Non Reportable Issues per Month



Follow-on SRS HPI Self Assessment

- **Conducted 2 years after formal Site-wide implementation commenced**
- **Team of DOE SMEs, INPO and Nuclear Industry SMEs, and SRS SMEs**
- **Areas For Improvement (AFI)**
 - Use of HPI Tools
 - Corrective Action Program
 - Leadership/Management
 - Sustainability of HPI

Lessons to be Learned on Narrowing ΔW

- **Leadership, Leadership, Leadership**
- **A good CAP is crucial**
 - “You can’t fix what you don’t know”
- **Leaders must establish trust with their people before meaningful reporting will take place**
 - The most significant question by leaders to generate trust is: “What do you think?”
- **HPI Error Reduction Tools don’t reinforce themselves**
- **“To understand failure, you must first understand your reactions to failure” – Sydney Dekker, *The Field Guide to Understanding Human Error***