Integrated Safety Management Best Practice: *Corrective Action Program and the Safety Culture*

August 27, 2007

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Introduction

- Electronic Suspense Routing and Tracking System (E-STARS®)
  - Web based action tracking and work flow management system
- Problem Evaluation Request (PER)
  - Web based corrective action management system
  - Module of E-STARS®
- Together
  - Problem identification
  - Graded approach management
  - Cause to corrective action assignment and tracking
  - Objective evidence closure
  - Record repository

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History

Numerous challenges at Hanford necessitated change:

- DOE performance letter in 2001
  - PER and E-STARS® deployed
- Multiple layoffs, mission acceleration, restructuring, funding cuts
- Significant legacy issues emerged
  - lower level assessment = robust issue identification
- Increased injury and event rates
- Increased stop works and union grievances

HPI Steering Committee Strategy

- Shift the organizational focus -

From:	To:
Emphasizing administration in our processes	Robust hazard Identification and mitigation
Robust defense against second guessing	Processes built for the user
Robust reaction to events	Robust prevention of events

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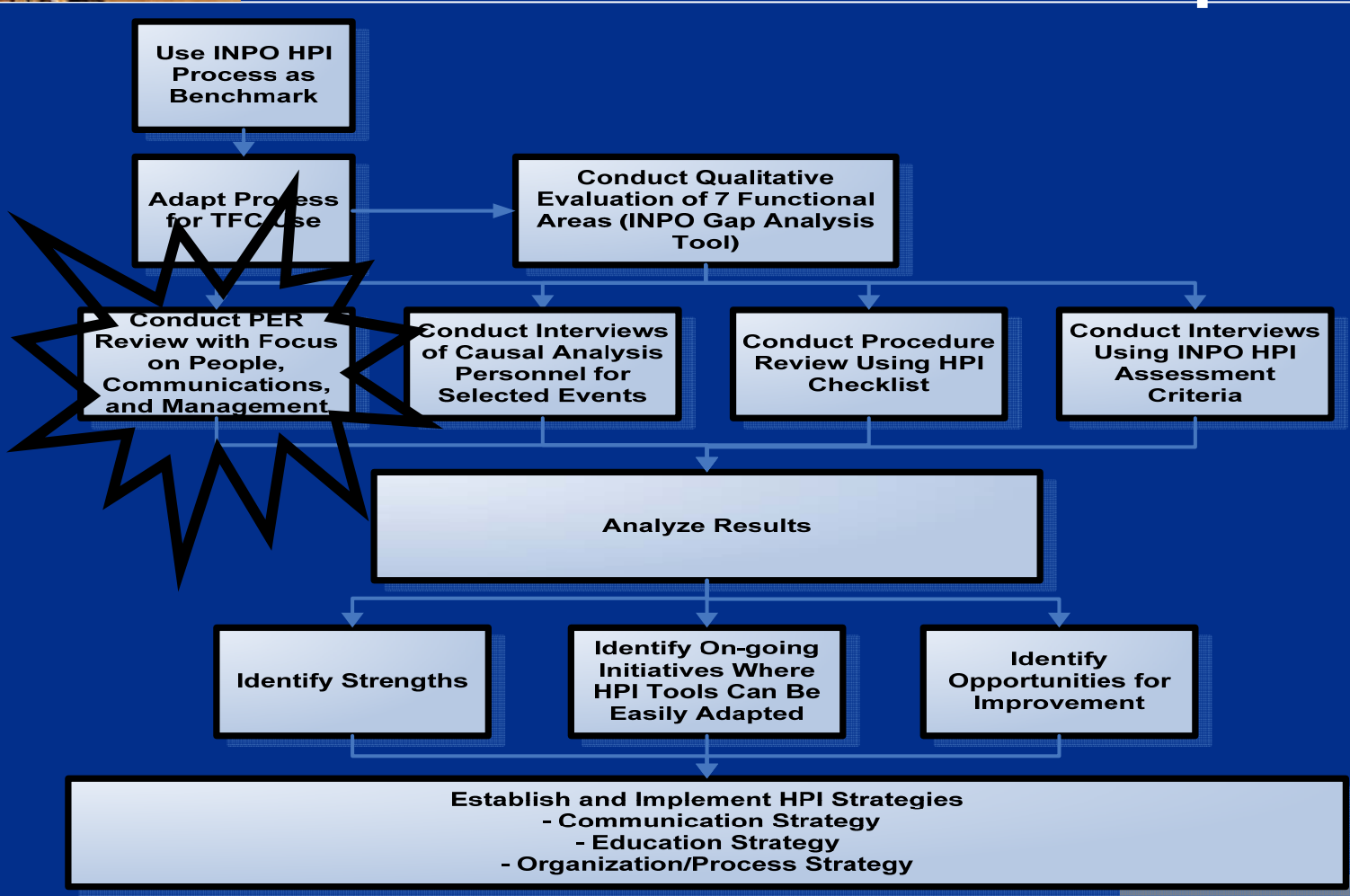
Gap Analysis



PER/E-STARS® as an ISM Best Practice

- **Enhances productivity through web-based technologies**
  - **Built for the users**
  - **Single problem identification and action tracking system**
    - Retired legacy tracking systems
- **Optimizes processing time through system automation**
  - **Easier to use = more use**
  - **Process drives immediate assignment to management**
- **Provides real time feedback for continual improvement**
  - **Increased user confidence in process**

PER/E-STARS® as an ISM Best Practice (cont.)

- Single point of entry for timely identification and evaluation of conditions and the correction of deficiencies adverse to:
  - Quality
  - Safety
  - Health
  - Operability
  - Environment
- Graded approach application to corrective action management

Worker Level Assessment

- Enables personnel the ability to:
  - Identify quality and safety-related deficiencies
  - Request process improvement evaluation
  - Request clarification of requirements
  - Evaluate lessons learned reports
  - Manage concerns, findings, or observations from surveillances, audits, or inspections, and
  - Manage action items, overall
- Overall increased information flow up and down the chain

ISMS Continuous Improvement

Worker involvement

Event prevention

Problem identification and resolution

ISMS Continuous Improvement based on effective problem identification, worker involvement, and event prevention

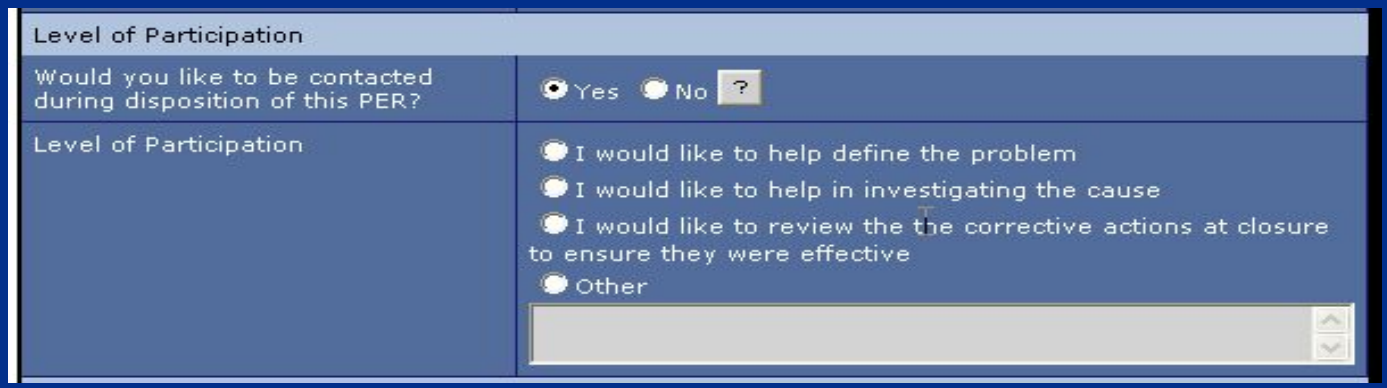
Safe Work Environment (SWE)

Problem identification and resolution

ISMS continuous improvement is based on an open work environment where everyone feels free to raise issues without fear of retaliation

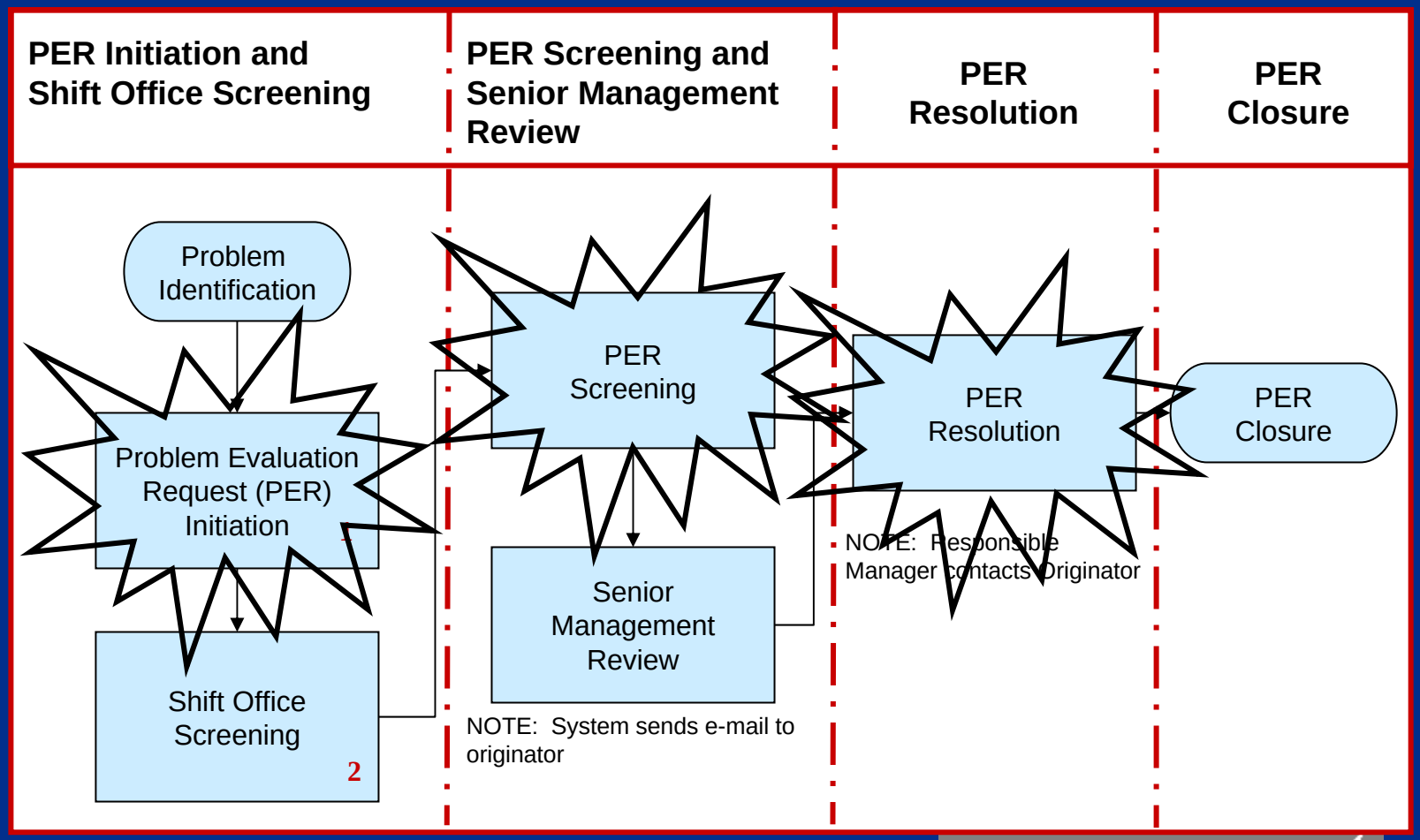
Employee involvement

- **Originator defined level of participation**

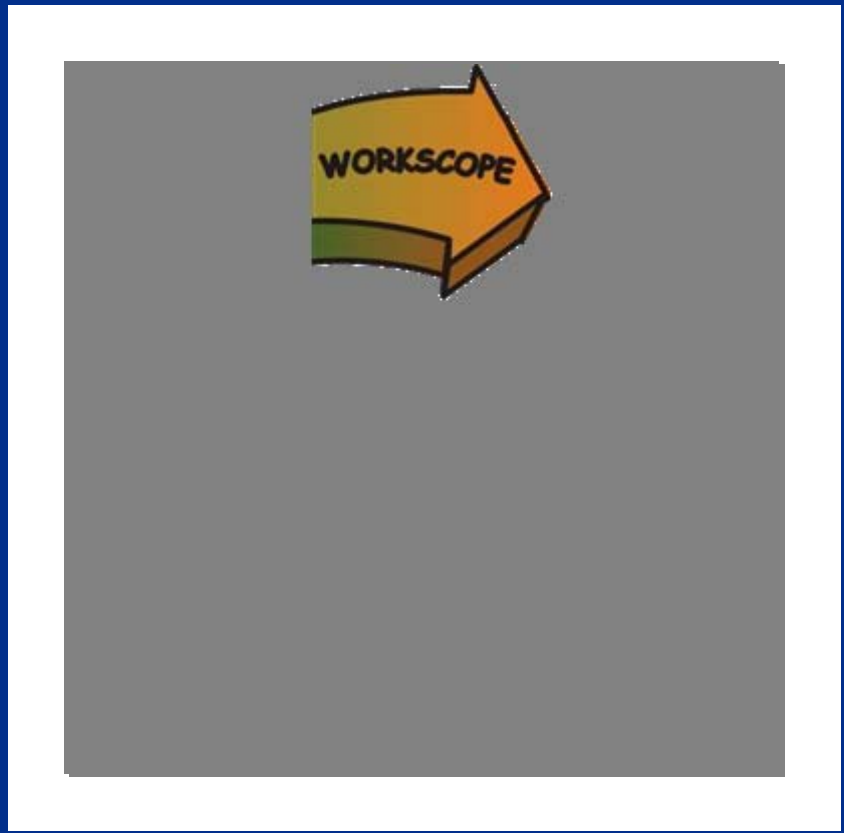


- **Automated e-mail notification system**
  - **@ key process steps**
  - **@ closure**
- **Process Improvement Initiative tracking**

Corrective Action Management (CAM) Process Flow



ISM in Action



Problem Identification

- **Employee identifies key attributes:**

Discovery Date/Time	(mm/dd/yyyy 2400)
Program/Project	Select One ?
Location	Select One ?
How Was The Problem Discovered?	Select One ?
Description of Concern or Problem Z SP ?	
System Identification	None ?
Equipment Identification Number	?
Requirement Not Satisfied	?
Source Document Number Available	?
Immediate Actions Taken Z SP ?	
Recommended Corrective Actions Z SP ?	

Trending Based on Key Attributes

- **Screening committee assigns trend codes:**

Causal Code	No Causal Code Selected Add Causal Codes
ORPS Code	Select One
Functional Area	Select One
Work Process	Select One
ISMS	Select One
PAAA	Select One
Consequence Code	Select One

Problem Resolution

- **Responsible Mangers evaluate problem and plan corrective actions:**

Extent of Condition/ Safety Significance and Generic Implications Z SP ?

Remedial Corrective Action Z SP ?

Causal Analysis, Apparent Cause and/or Root Cause Analysis Z SP ?

Corrective Actions to Resolve the PER Z SP

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Investigation and Analysis

- Event investigation and critiques
  - Consider human factors
- Root Cause Analysis
  - Consider organizational weaknesses
  - Consider error likely situations and error precursors

Investigation and Analysis

Flawed Defenses

Vision, Beliefs, & Values

Vision, Beliefs, & Values

Mission
Goals
Policies
Processes
Programs

Event

Latent Organizational Weaknesses

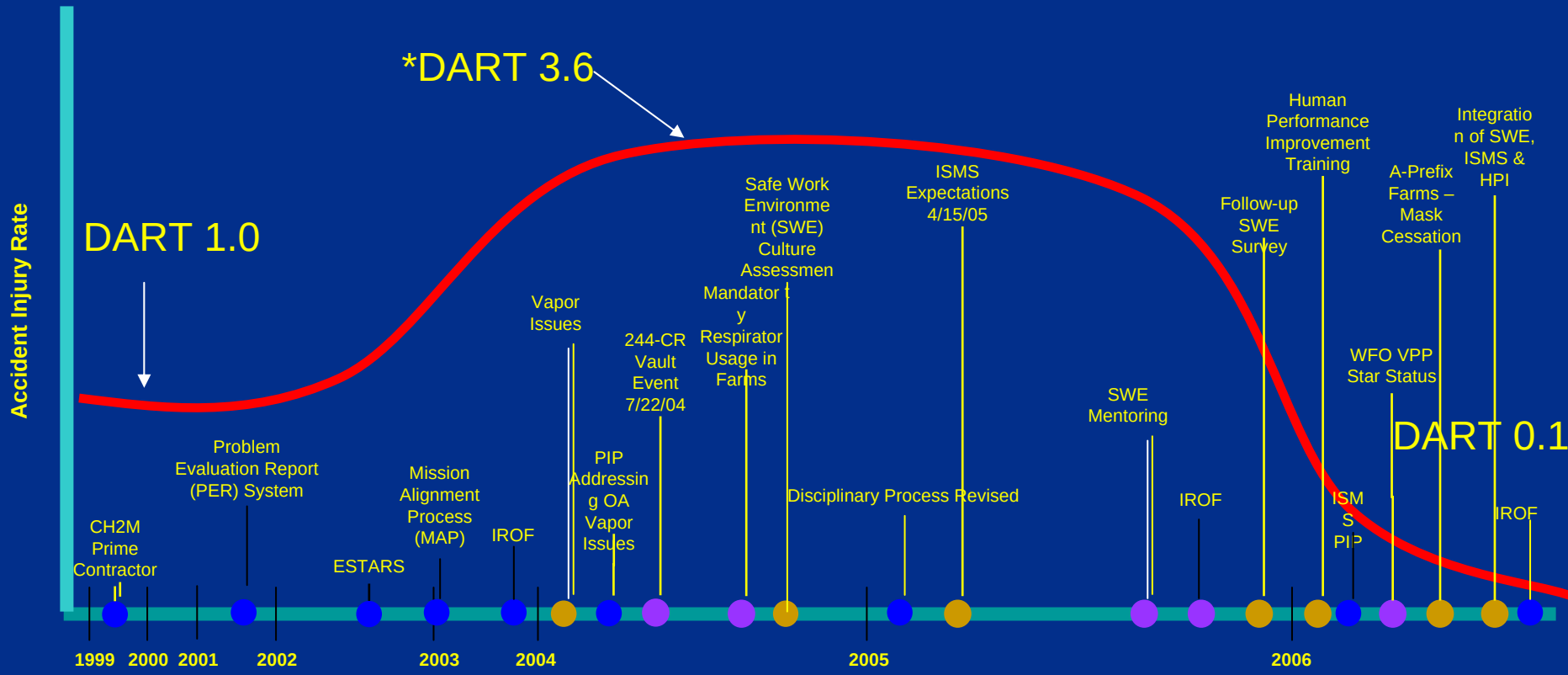
Error Precursors

Human Performance (Initiating Action)

Results

- Dramatic injury and event reduction
- Robust problem identification and resolution
- Worker safety perception of company has improved significantly
- Worker trust of management high
- Raising issues through immediate supervisor has improved
- Integrated ISMS expectations clear and evident

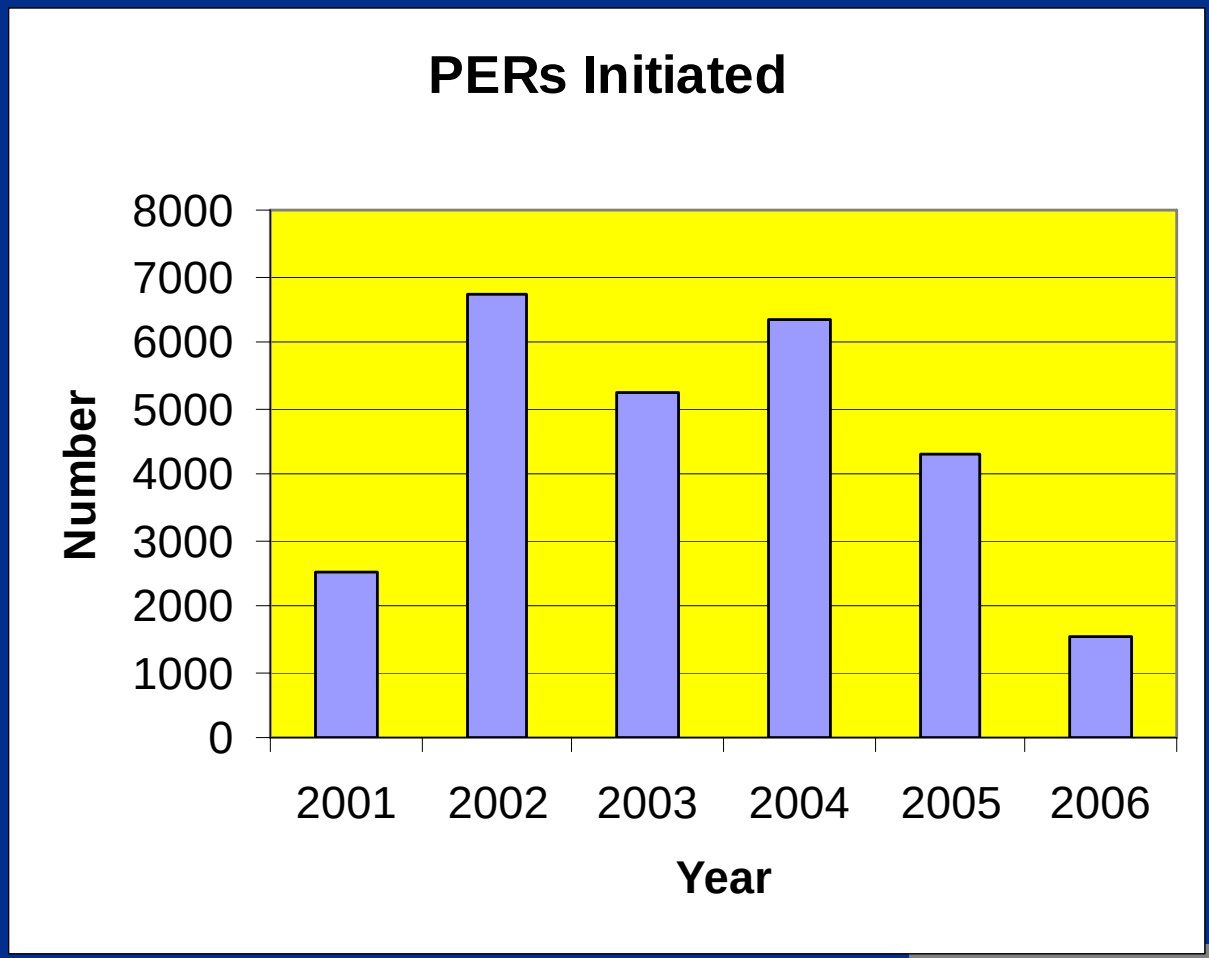
Tank Farm Contractor Improvement Cycle



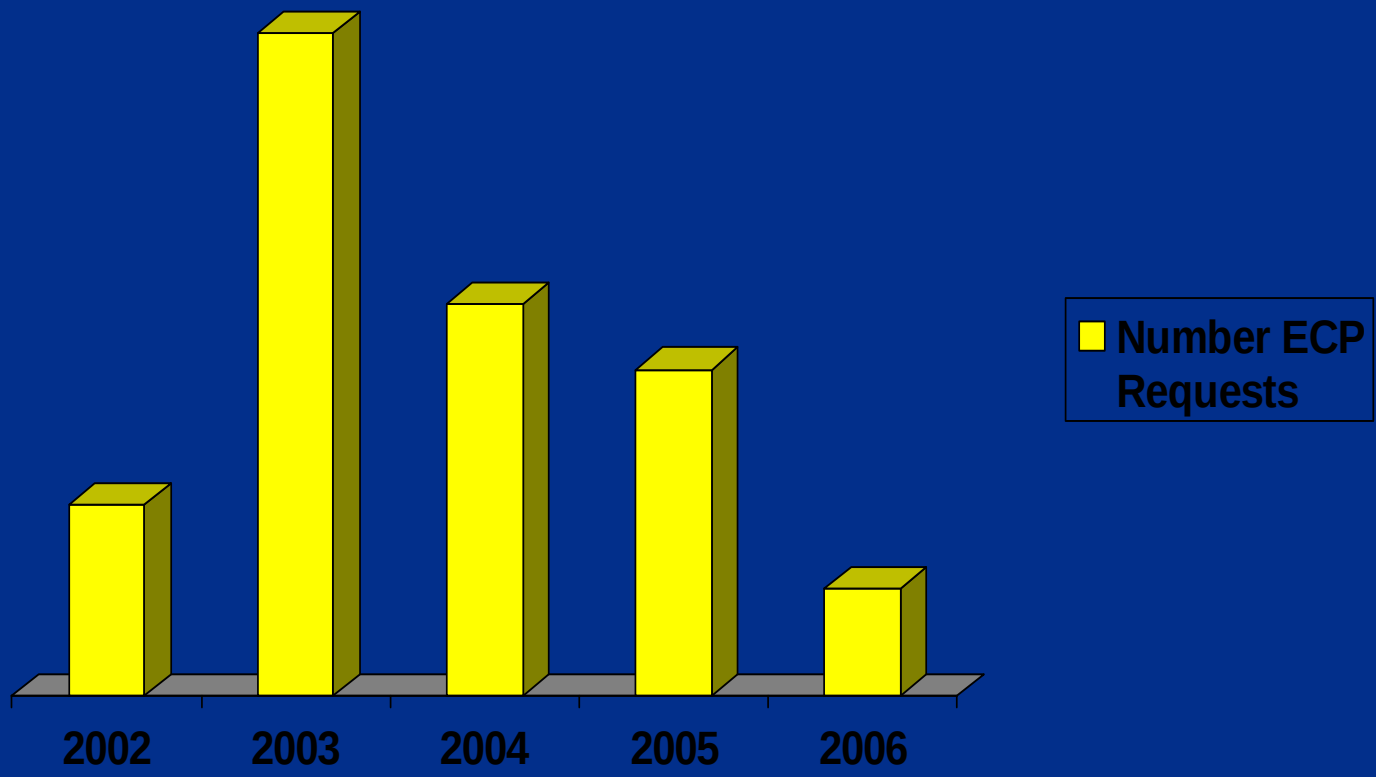
*DART – Days Away and Restricted Time

Not to scale – For illustration only

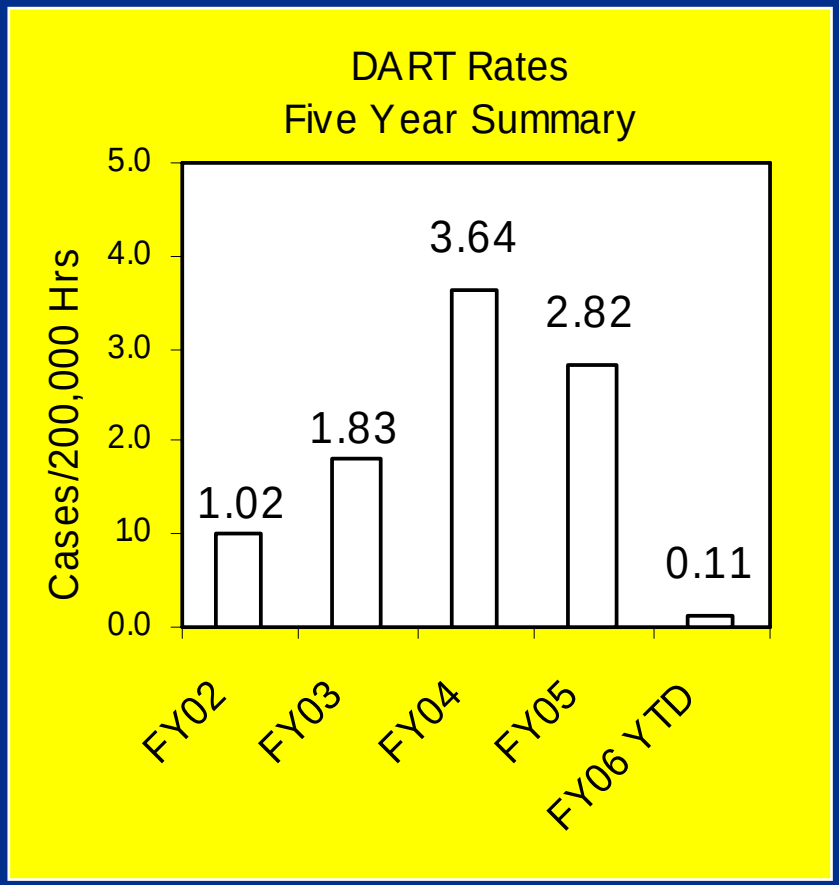
Problem Evaluation Request Cycle

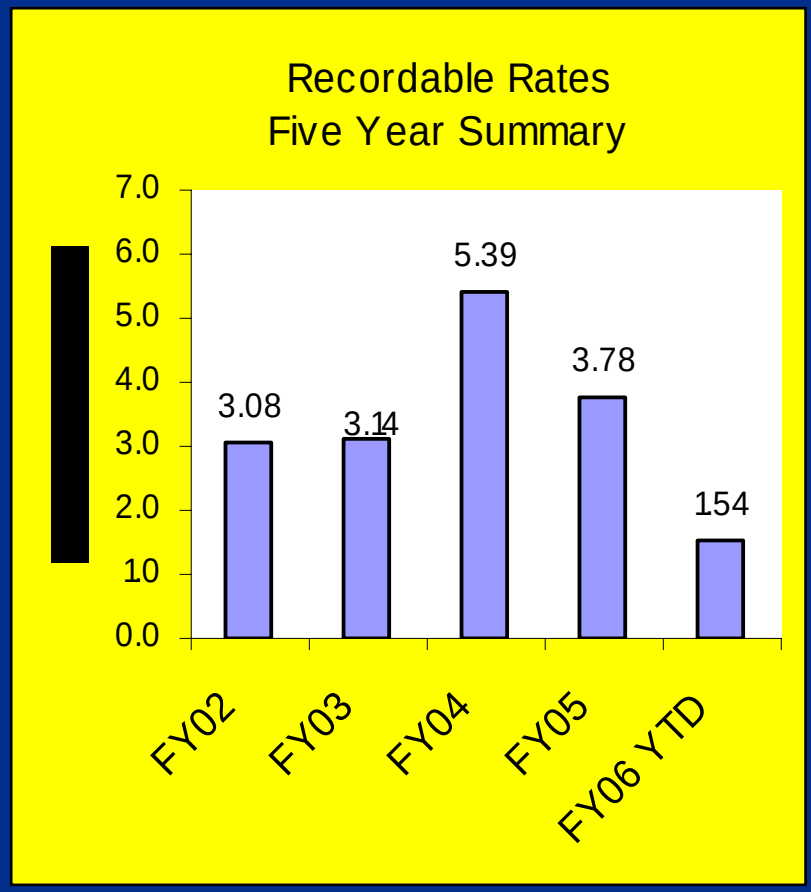


Employee Concerns Cycle



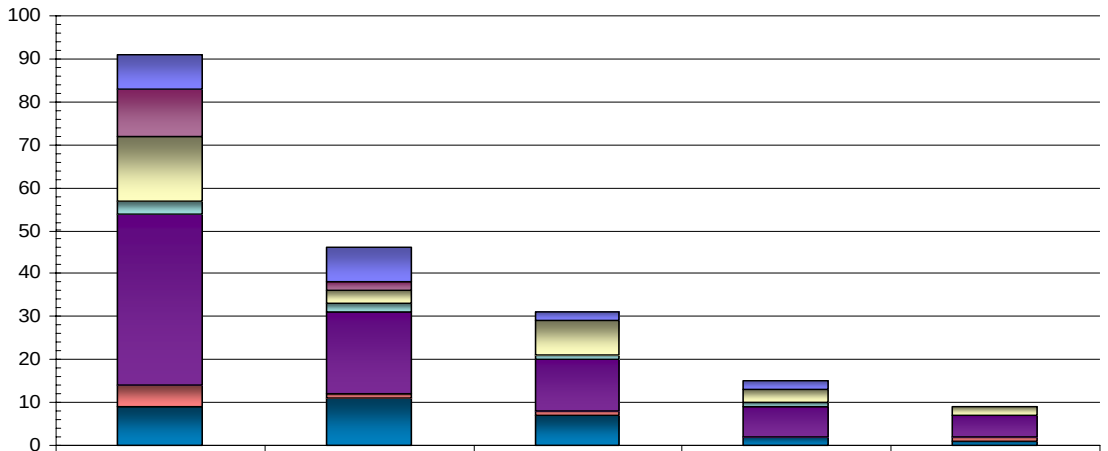
DART and Recordable Injury Cycles





Conduct of Operations Cycle

Conduct of Operations Index Frequency



	FY2002	FY2003	FY2004	FY2005	FY2006 (Year to date)
A) Skin and clothing Contaminations	8	8	2	2	0
B) Procedure Not Folllowed	11	2	0	0	0
C) Procedure Problem	15	3	8	3	2
D) Training Issues	3	2	1	1	0
E) Management Issues	40	19	12	7	5
F) Lockout/Tagout	5	1	1	0	1
G) Work Control Issues	9	11	7	2	1

Systems Integration

Contact Information

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For a demonstration of this and other process automation please call:

509-205-7520