

# Field Application of HPI to Become a Highly Reliable Organization through Employee Engagement

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# Risk

## How to manage it

“Risk is inherent in any nuclear, chemical, and/or industrial operation. Risk is governed by the plant, the programs and the people. Engineering controls and plant design, administrative controls, programs, and training mitigate risk.

“Human Performance is another factor that enters into every aspect, can reduce risk and achieve high performance.”

-- Darlene Murdoch



# There Must be BALANCE

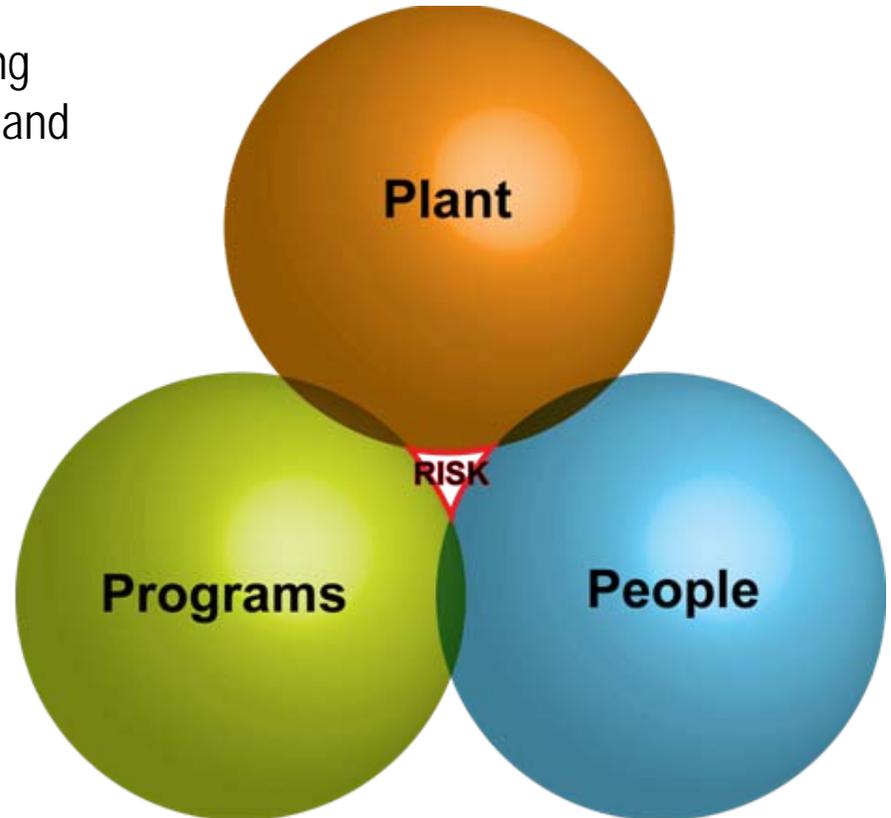
Overlaying Human Performance Concepts and Integration into existing processes effectively reduces RISK and achieves High Performance



And this is HOW.....

Reducing errors (Re) and Managing defenses (Md) leads to Zero Significant injuries & events (Oe).

$$\text{Re} + \text{Md} \Rightarrow \text{Oe}$$



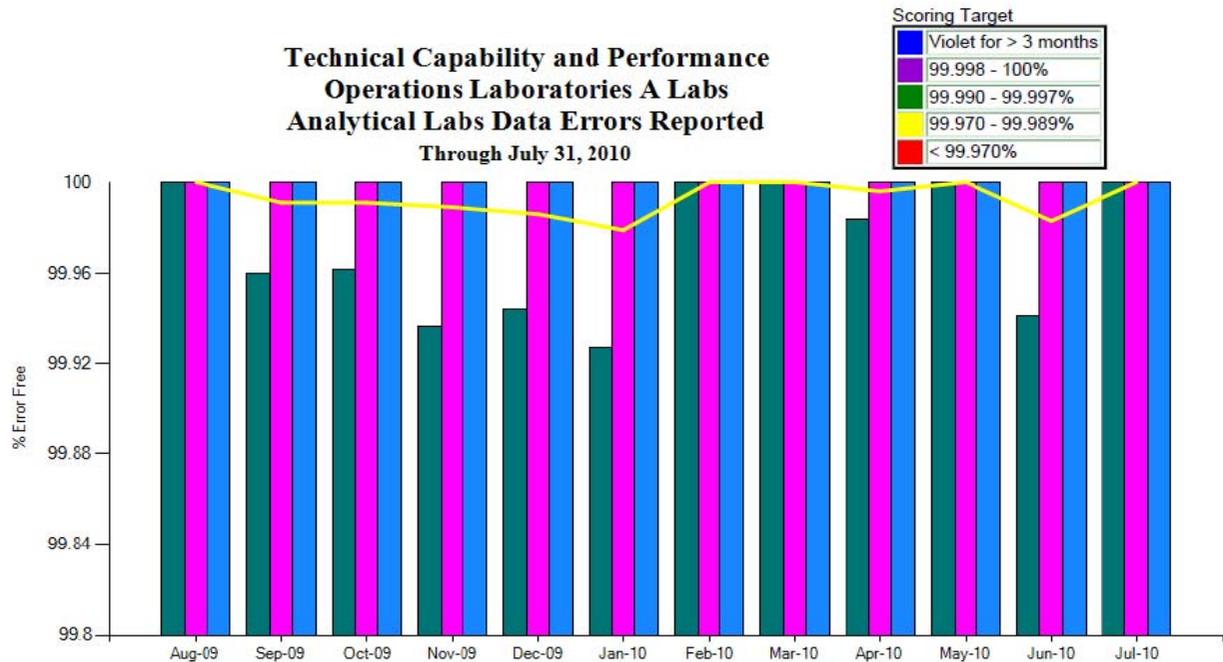
# Effective Plant Leadership Must Consider:



Leaders take it seriously!

Leaders must take action!

# NOW...How to get people engaged and believing it works



Title	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10
F/H - % Error Free	100	99.96	99.962	99.936	99.944	99.927	100	100	99.984	100	99.941	100
Score: F/H % Error Free												
EBL - % Error Free	100	100	100	100	100	100	100	100	100	100	100	100
Score: EBL % Error Free												
Tritium - % Error Free	100	100	100	100	100	100	100	100	100	100	100	100
Score: Tritium % Error Free												
Total ALAB - % Error Free	100	99.991	99.991	99.989	99.986	99.979	100	100	99.996	100	99.983	100
Score: Total ALAB % Error Free												

# Excellence

***“We are what we repeatedly do.  
Excellence, then, is not an act but a habit.”***

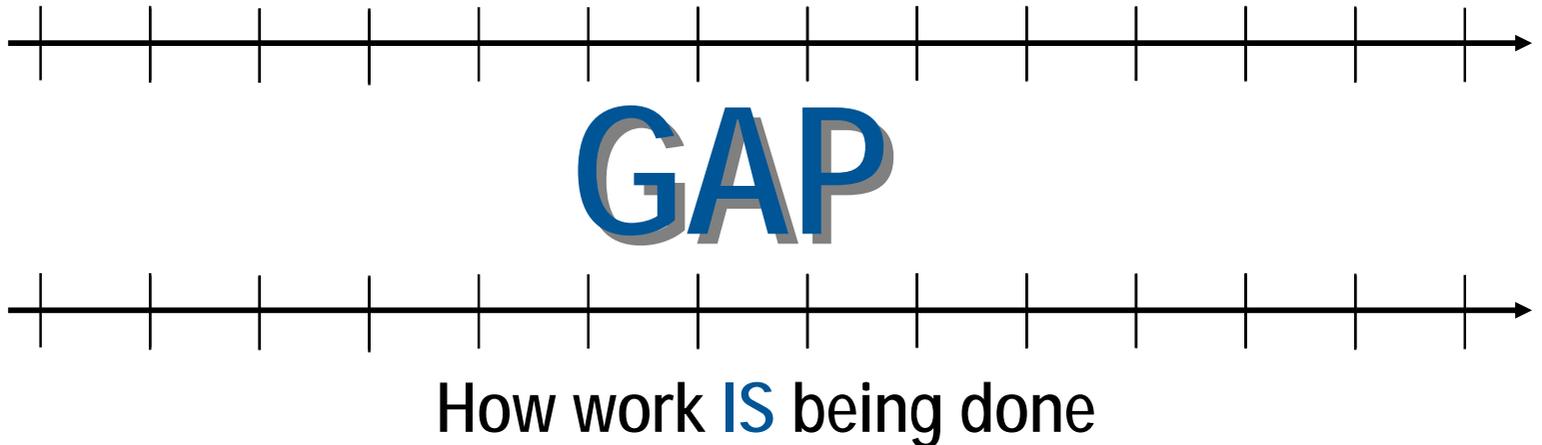
-- Aristotle  
Greek philosopher (384 BC – 322 BC)

**Perfection is Barely Adequate in our business!**

-- Darlene Murdoch

# You Have to Start with the Leaders

- People achieve high levels of performance based largely on the encouragement and reinforcement received from leaders, peers, and subordinates
- Leaders influence the Plant, the Programs, and the People
- Leaders influence the Culture
- How leaders IMAGINE work is being done



# How Work IS Being Done



# How to Get the Leaders On Board?

## Business statement, mission, vision and principles

- **Business Statement**

- Provide the highest quality analytical services to our customer, the Department of Energy
- Perform our services in the most efficient, timely and cost-competitive manner
- Maintain all regulatory certifications and accreditations

- **Mission**

- Safely operate nuclear and environmental laboratories
- Provide the highest quality analytical services to a variety of customers

- **Vision**

- Be a world-class analytical laboratory
- Be a recognized as such by our customers



- **Principles**

- Safety is foremost in all our activities
- Conduct ourselves with the highest of values and standards
- Be an excellent steward of our customers' trust
- Foster leadership qualities in all of our employees
- Provide analytical services below the cost of our competitors

# Trying to Achieve High Performance

- Can the leaders determine what's needed and what are the issues
  - Assessments (training, ConOps, chemical management, technical capabilities, etc.)
- Then, can the organization determine what's needed and handle the issues?
- Balance between staff members and expertise
  - Does it exist?
  - Can it be created?
  - Is change necessary?



# Workers Start Seeing Leaders be...

## RESPONSIVE TO ISSUES

- Conduct of Analytical Measurements
- Lab Tech Qualification and Training
- Readiness reviews for Analytical Baseline changes
- Error tracking
  - Looking across the labs for common themes
- Refreshers, Refocus, All-Hands and Safety Meetings
- Equipment Repairs and Replacement
- Chemical Management improvements
- Lab Drills

**...Leaders taking action and setting a foundation.**

# What About the Workers?

- Show them you care...



*...by allowing them to take action.*

# Dual Applications

- Housekeeping (Nuclear)
- Snake List
- 5S+ LEAN

*...Workers take pride.*

# Results

- Snake List

- 91 of 188 total items completed.

Examples:

- Excess computer equipment staged in 735-1B
- Domestic water leak near laundry storage
- ICP-MS Upgrade and Installation in L174 (772-F) (See picture below)



- 5S+ LEAN Projects

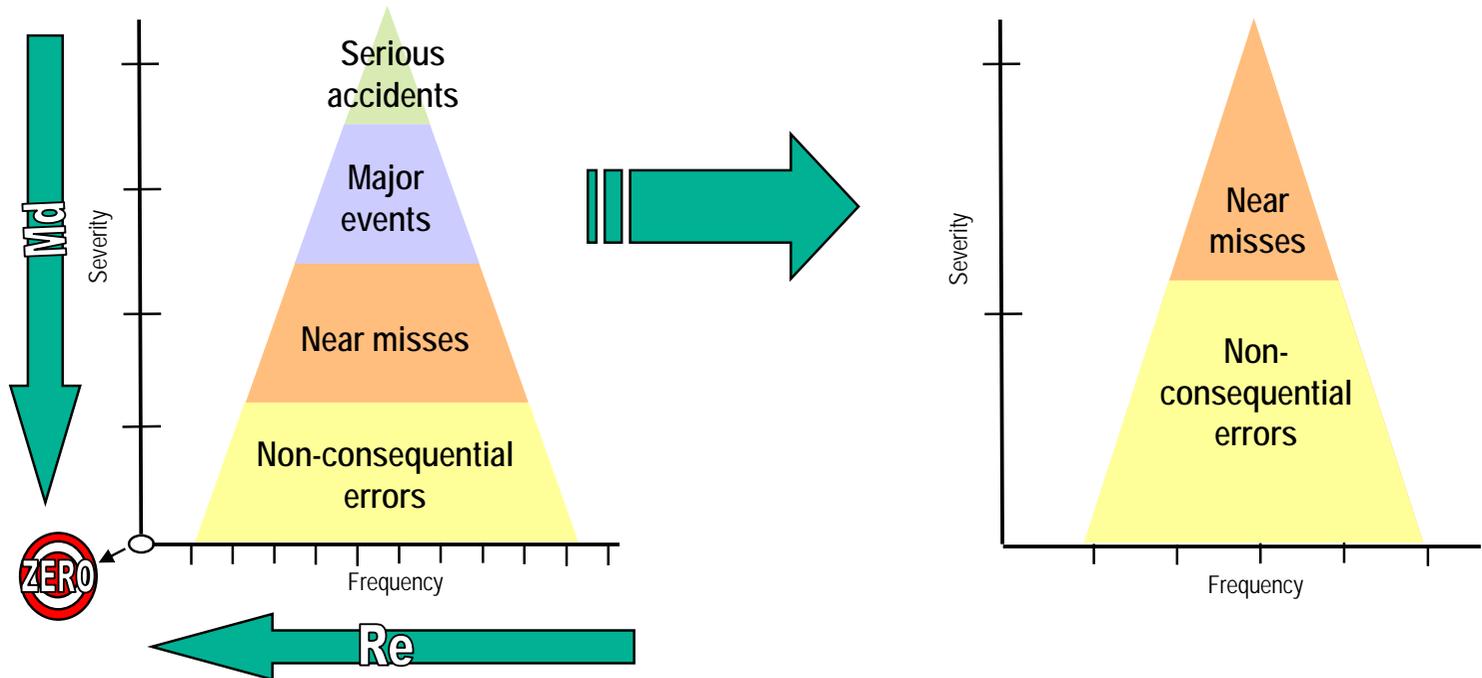
- EBL 735-B Analytical Supplies Storage Room
- 772-F Service Floor Storage Cabinets 5S (See picture below)



*...people will care and sweat the small stuff.*

# People will also be engaged if...

A culture must be in place for people to feel free to report errors and conditions. Errors are trended and conditions are corrected.



# Just Culture & Reporting

## Learning is key

- **Encourage reporting**
  - Value errors as leading safety data and indicators.
- **Create and sustain a “just” work environment**
  - Don’t punish errors
  - Hold individuals accountable
- **Learning organization**
  - Create opportunities for observation, **reflection**, and feedback

# Why Implement Human Performance Tools?

## A Healthier Workplace

- Cost-effective results
- People are more confident
  - Plant
  - Programs
  - Leadership
- People are happier
  - Better work environment
- Reduces risk and achieves High Performance

***And it's nothing new!***

# Implementing HPI

## A Way of Doing Business

- HPI is not just training
- HPI is not a program
- It is a way of doing business that includes:
  - Behavioral observation and walk-around
  - Conduct of Operations
  - Work Management
  - Systems and program development with integration of HPI Tools
  - Simulations and training (drills)
  - Leadership
  - Error Reporting
  - Corrective Action Program
  - Event investigation and lessons learned
  - Feedback

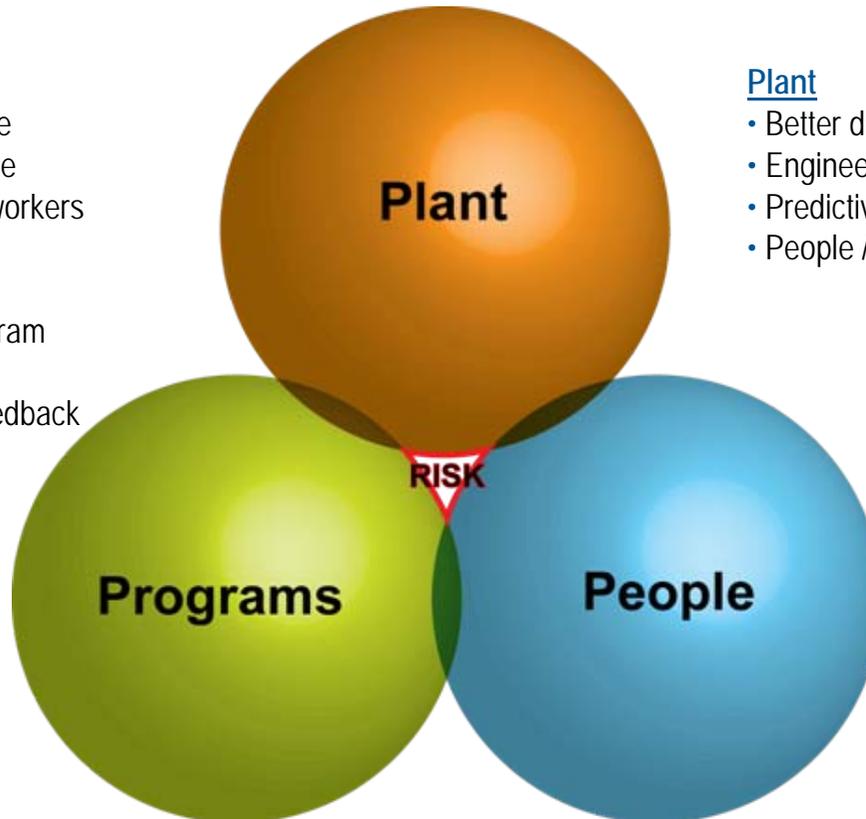
# Reducing Risk by Seamless Integration

Better all around

Start Achieving High Performance with an Engaged Workforce

## Programs

- Corrective Maintenance
- Preventive Maintenance
- Better documents for workers
- Error reporting
- Observations
- Corrective Action Program
- Event investigations
- Lessons Learned & feedback
- BBS / HPI
- Metrics



## Plant

- Better designed plants
- Engineering controls
- Predictive maintenance
- People / plant interface

## People

- Training
- Just Culture
- Self-Assessments
- Work gets done safely
- Personal satisfaction
- More confident
- Learning organization