Human Performance Improvement Implementation
at the Idaho National Laboratory:
Milestones, Successes and Lessons Learned

Dr. Bob Richards and Joy Rule
Center for Human Performance Improvement

August 2007
Framing

- We have just passed through our Childhood and are now in our Teenage years...
  - Oh the Joy!
Goal of this Presentation

• For those just starting Human Performance Programs…
  – Provide some bread crumbs – share what we have learned and are learning
  – Share our most important asset (our excitement--our enthusiasm, pure pleasure in the attempt!)
• For those already well down the path…
  – Provide a good reason for you to CELEBRATE over the progress you have made (whew! Glad I don’t have to go through that again)
  – Give you an opportunity to coach us (in this session and afterwards) us as we move onward and upward
Approach

• Describe who we are, why we were established, and what we are trying to accomplish
• Describe our progress to date (we have conceptualized our journey in terms of 5 milestones)
• Describe the key challenges we are currently facing
• Share some insights
  – Surprises
  – Concerns
  – Where we are especially struggling
The Idaho National Laboratory (INL)

• Is a Department of Energy (DOE) multi-program national laboratory.
  – Born of the former INEEL and separated from the Idaho Closure Project and combined with former ANL-W in Feb 05 to lead a renaissance in nuclear energy
  – Moved out from under EM to NE
• Contractor is Battelle Energy Alliance (BEA) brought on with a 10 year contract rather than the typical 5 years
• Amazing challenge and task—massive startup/turn around!
• Rich heritage in human factors, human reliability, safety and risk analysis, and systematic approach to training
• Long history of employee involvement in Safety (first DOE Site to receive STAR status)
The Idaho National Laboratory (INL)

• Amazing diversity
  – 20% employees work in support in the Advanced Test Reactor and are very open and appreciative of INPO HPI program
  – 20% employees work at what was formerly ANL-W but moved to be part of the INL at its inception—highly hazardous and technical non-reactor nuclear operations (fuels)
  – 10% employees manufacture tank armor for the M1 Tank
  – Remainder are scientists, engineers, lab technicians or support staff performing/supporting
    • nuclear research
    • non-nuclear multi-program research
INL Center for Human Performance Improvement—Who we are

• Pre-BEA: A movement with lots of champions, two or three major initiatives
  – Seamlessly incorporated into Voluntary Protection Program
  – Essentially all personal received HPI fundamentals

• BEA: An actual organizational entity with management, charter, budget and R2A2 (roles, responsibilities, authority, and accountabilities)
  – First employee joined in February of 2006
  – Last month reached fulltime staff of 5
  – Emerging charter
Leadership

Just Safety Culture

Productivity

Reliability¹

Observable Performance on Customer-driven Outcomes

Readiness for Excellence

Innovation

Phase 4

Phase 3

Phase 2

Phase 1

¹ – Reliability is a function of safety, quality, security and excellence in the conduct of operations
Initiatives (Paths/Milestones)

Goal: Use human performance principles and tools to improve the INL’s safety, processes and productivity, innovation and quality, and worker satisfaction.

- Milestone 1: Benchmark best practices
- Milestone 2: Create awareness
- Milestone 3: Develop needed organizational structures and infrastructural support
- Milestone 4: Collaborate
- Milestone 5: Customize
Milestone 1: Benchmark best practices

Learn from the best and build on their work

• Experts in our own backyard (INL’s human factors research, decision science, facilitation and OD, and risk and reliability experts)

• INPO and commercial nuclear power plants
  – Attended many courses, conferences, assist visits. Very beneficial!

• International Society for Performance Improvement (ISPI) and American Society for Training and Development (ASTD)
  – Several are/were Certified Performance Technologist

• Sister labs (EFCOG, DOE Human Performance Center)

• Military organizations (particularly the Navy)

• Battelle non DOE-labs
  – Participated in Safety Culture Survey Working Group efforts (Sonja Haber was key external consultant)
Baseline our knowledge and skills

• Surveyed approximately 30% of personnel regarding individual adoption of human performance skills, team influences, and organizational/management factors
HU Baseline and Leadership Behaviors Survey
-Approximately 30% of Employees Surveyed

Average and Ranges for each Section

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<th>Area</th>
<th>Satisfactory</th>
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<th>Great</th>
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<tr>
<td></td>
<td>Rating</td>
<td>40%</td>
<td>50%</td>
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<tr>
<td>Culture of Fairness and Respect</td>
<td>71%</td>
<td>9 16 18 21</td>
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<td>Individual Continuous Improvement</td>
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<td>Intolerance of Error-Likely-Situations</td>
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<td>28 30 31 32 34 41</td>
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<td>Organizational Process</td>
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HU Program Framework – FY06 Implementation

- Develop Strategy
- Establish Organizational Structure
- Define Management Expectations and Performance Indicators
  - Improve Work Processes and Jobsite Conditions
  - Reward and Reinforce
  - Train and Educate
  - Share Lessons Learned
  - Integrate and Communicate
Milestone 2: Create awareness

- Training fundamentals was the primary focus for several years (2001-2006)
  - Essentially all personnel at the INL (including former ANL-W employees) received fundamentals training
  - On-going as new personnel come onboard
  - Again owe great debt to INPO and various plants from whom we borrowed/learned extensively
- Identify/adopt appropriate tools
  - Support BBS (SOAR closely related program)
  - Identified most relevant tools
    - Constructed job aids
    - Constructed evaluation/observation forms
  - Created workshops for
    - Individual/active error reduction tools
    - Situational awareness and questioning attitude
Milestone 3: Develop needed organizational structures and infrastructural support

- Formed the Center for Human Performance Improvement (CHPI). Charged with developing:
  - Strategic plans
  - Tactical goals
  - Creating training and promoting tool use
  - Integrating human performance into ongoing efforts and initiatives such as transformation, management oversight, work management, ISMS, quality, and cause analysis
- Chartered the Human Performance Advisory Group (HPAG)
- Drafted Program Description Document (PDD)
- Designed Qualification Program
Milestone 4: Collaborate

Leader/Manager and Worker adoption is the key

- While the Center can serve as a seed-bed, the real impact is realized through adoption of human performance principles and tools by the managers and workers themselves in their minute to minute activities
- Identified collaborators. Started meeting regularly to share lessons learned, teach each other, and maintain momentum
- In support of one facility, created a supervisory qualification program which has been greatly extended to the entire site
  - Initial design completed
  - Currently being piloted
All employees

Employees involved in hazardous work

Front-line “leaders” of groups involved in hazardous work

Managers of groups involved in hazardous work

“Collaborators” (from each org) who will help implement HPI in their org/work area

HPI Center staff who implement HPI Lab-Wide

1. Each BEA audience has specific needs to apply HPI in their work

2. Each tier is a pre-requisite for the next tier.

Competence increases as one moves down the pyramid
Qualification Program Components

Tiers 2-6 include:

1. Interactive training workshops
2. Reading assignments with study guides (& verbal check-out by an HPI collaborator)
3. On-the-job coaching & evaluation on effective use of HPI tools
4. Comprehensive exam
Milestone 5: Customize

- Long realized that one size doesn’t fit all
  - Running and maintaining a reactor is not the same as running a guard force or a manufacturing facility
    - All the same principles apply
    - But the tools differ in nature and content
  - Research laboratories—High consequences
    - Good fit with several INPO type tools
    - However work conditions often very different requiring us to adapt existing tools and invent new ones
- Plan to revisit more general R&D needs in the near future
- Office and other support personnel
Representative Initiatives

- Human Performance reviews and participation in cause analysis
- Human Performance Advisory Group chartered and providing guidance
- Workshops identified and created
  - Error reduction tools (full implementation)
  - Situational Awareness (recently completed, in full implementation)
  - Accountability and Just Culture (in design)
  - Coaching and observation (in final design)
- Qualification program finalized and Supervisory level is being piloted
- Collaborators meeting and being included regularly in planning and execution
- Program Description Document (PDD) for Human Performance is drafted
- Strong Nuclear Safety Culture seminar program implemented at RTC
- Pilot of a reporting program for non-consequential events under development
Key Challenges

• Where to call home
  – Pros and cons of where we are currently located
• Unique but reinforcing of several other important functions
  – Role and integration with quality, performance oversight
  – Accountability/Just culture efforts
  – Including several that already several years old (Management Systems, ISMS, BBS-SOAR, VPP)
• Short term “crises” (huge pull but sometimes reactive) vs long term opportunities (high leverage)
• Learning vs Doing
• Build Test Build: How good does it need to be before we try it out
• All things to all people
Key Insights to Date

1. Focus – don’t try to be all things to all people
2. Leverage opportunities
3. Human Performance Reviews have opened doors
4. Wonderful ties to High Reliability Organization research
5. Build momentum quickly --Going slow to go fast (but fast enough to not lose championship)
   - Quality of tools, training, and collaborations
   - Competence of staff
Friendly Advice?