A Glance at Human Performance (HU) in Nuclear Power

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The HU Journey in Nuclear Power

• Where we’ve been
• Where we are now
• Where we’re headed
Brief History of HU: 1985-2010

1985-2000

• HPES
• CRTD & Prof Dev. Seminars
• Self-checking and event reports
• Excellence in Human Perf.
• HU Fundamentals Course
• Focus on assistance, observations, and coaching

2000-2010

• HU Conferences (2001-2014)
• Nuclear Safety Culture
• HU Reference and Tools docs.
• New HU Lead Seminar
• HU Event Site Clock Reset metric

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Transition to a more mature HU

- Shift focus from mechanical HU tool use to engaged, thinking, focused workforce
- Increase collaboration between INPO and industry HU community (2013)
- Cumulative Impact Initiatives and Nuclear Promise
HU Event Rate

Overlay Options: All Units (All Unit), Quartile Overlays

18 Month Human Performance Events per 10000 Hours

3 Month Human Performance Events per 10000 Hours

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HU Directional Changes

• Error-reduction tools are important but shouldn’t be the main HU focus
• Incorporate HU into core business
• Apply a graded approach focusing on risk and proficiency
• Effective & efficient processes that don’t overburden workers
• Procedures written to a targeted worker experience level
INPO 15-008, Achieving High Levels of Human Reliability

Phases to Achieve High Levels of Human Reliability

**Foundation**
Vision, Effective and Efficient Processes, Training Programs

**Setup**
Procedures, Work Plans, Schedules, Equipment Design Changes, Just-in-time Training

**Point of Contact**
Worker Behaviors, Supervisor Engagement, Actions to Mitigate Challenges to Worker Proficiency

**Monitoring & Actions**
Aggregate Trending, Effective & Efficient Actions

**Success**
Reinforce Behaviors

Appropriate Behaviors and Desired Results

Shortfalls in Behaviors or Results
Key Points & Differences

• Ingrain HU behaviors & use HU tools selectively

• Workers don’t need to outwardly display HU behaviors in an overt, detracting manner

• Team interactions are important

• Supervisors identify and mitigate obstacles to proficient performance

• Supervisors spend more time in field & less time with admin burdens

• Worker focus is important
Proficiency Overview

Building Blocks

Obstacles & Challenges

Interventions / Mitigation
Going forward…

- The principles and foundational aspects of HU will remain intact
- The industry HU working group will lead the 5-year HU strategy with support from INPO
- HU will continue to become “the way of doing business” instead of a separate entity
- Line management will take on greater responsibility for HU focus
- Department event reporting and tracking
HU Working Group Strategy for the Next 5 years

1. Promote the Value of HU as a key strategy for the core business
2. Strengthen organizational engagement to innovate HU
3. Improve standards, processes, best practices, and tools
4. Develop standards for subject matter expertise in HU
Recent INPO Documents for HU

• INPO 15-008, Achieving High Levels of Human Reliability

• INPO 15-005, Leadership & Team Effectiveness Attributes (plus Addendum 1)

• INPO 15-011, Principles for Excellence in Integrated Risk Management

• https://web.inpo.org/Pages/Library.aspx

Older INPO HU documents: INPO 05-002, INPO 06-002, INPO 06-003, INPO 07-006, INPO 08-004, INPO 14-004