



Institute of Nuclear Power Operations

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



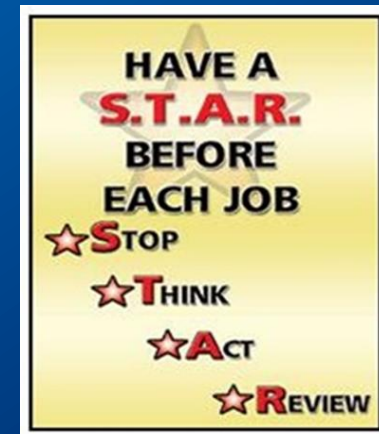
Brief History of HU: 1985-2010

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



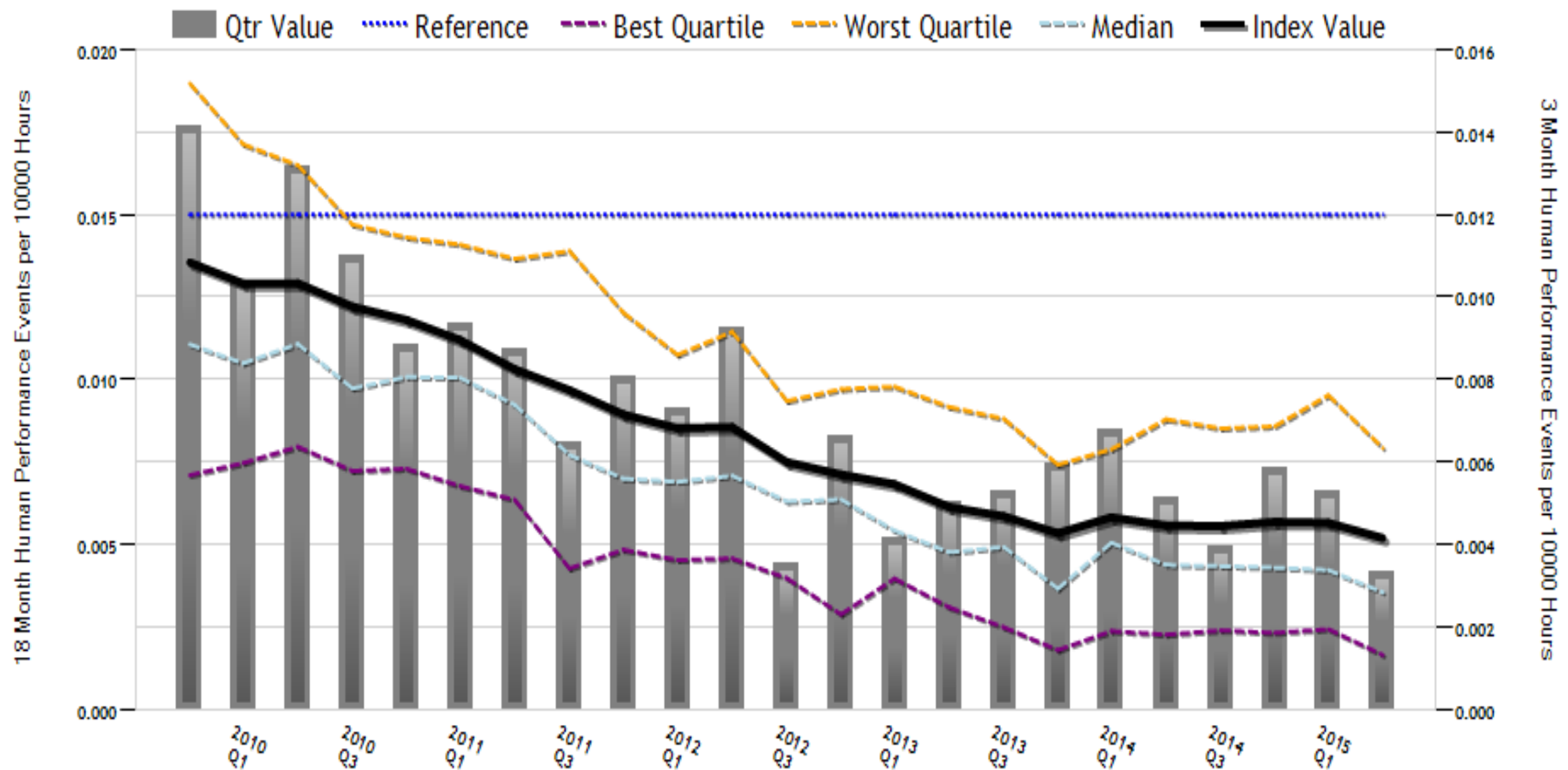
Transition to a more mature HU

- SOER 10-2, *Engaged, Thinking Workforce* (2010)
- 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



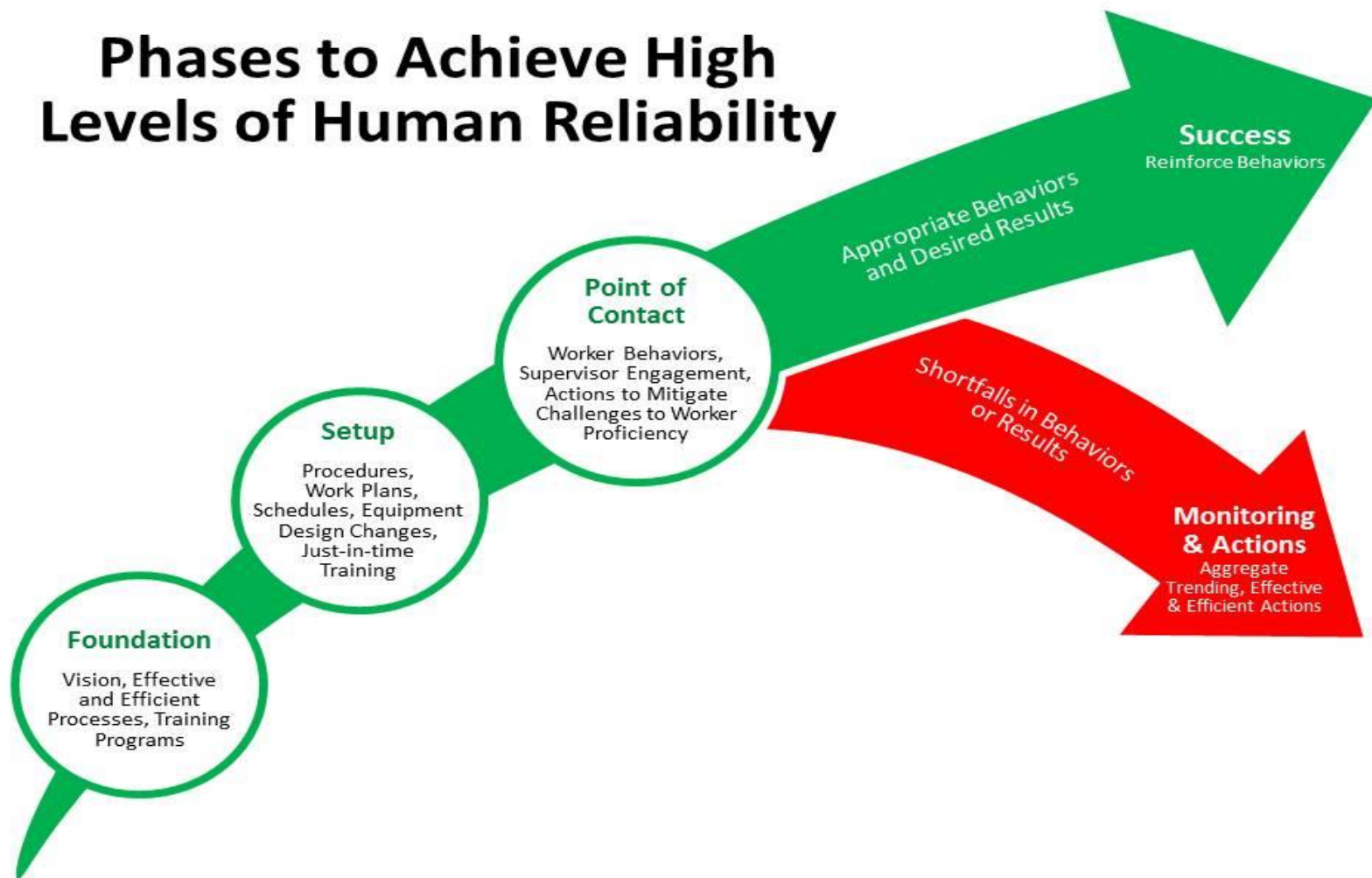
HU Directional Changes



- 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



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



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