



Human Reliability

EPRI Perspective on HRA and IDHEAS

NRC Commission Briefing

May 29, 2014

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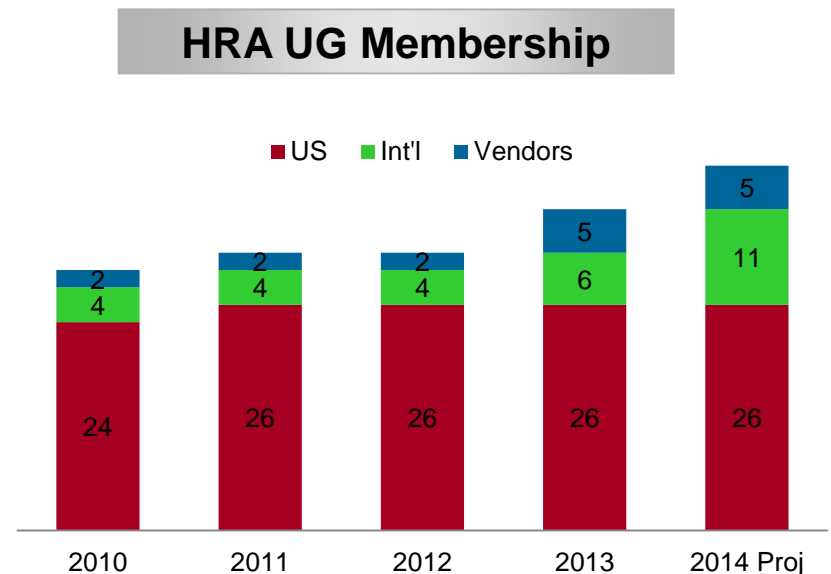
Human Reliability Analysis (HRA) at EPRI

- HRA User's Group

Objectives:

1. To develop a tool to enable different analysts to obtain **comparable results** for same action & method at similar plants.
2. To develop **guidelines** for application of HRA methods.
3. To enable users to **converge on common methods**.
4. To **collaborate with stakeholders**, such as USNRC, Owners Groups, & within EPRI to develop guidelines and training materials.

- Refinement and extension of risk analysis methods



State of HRA in Practice

- “EPRI HRA Methodology” mature
 - Refinements possible
- Extension of existing HRA methods
 - Adaptation for fire PRA (EPRI/NRC collaboration)
 - Adaptation for external events (e.g., seismic)
 - Dependency analysis
- Ongoing issues and gaps
- Use of risk insights

EPRI Perspective on IDHEAS

- Motivation: to take advantage of work done by NRC to provide
 - Better psychological underpinning to HRA
 - More comprehensive understanding of potential human failure events
 - Updated approach to quantification
- IDHEAS is a positive step forward
- Relationship between IDHEAS and “generic methodology” unclear
- Cautions as we proceed

EPRI Path Forward on IDHEAS

- Path forward on IDHEAS
 - Working with NRC to complete and test method
 - Immediate application of insights
 - *Eventually* put IDHEAS into the HRA Calculator®
- HRA technology will continue to evolve
 - Continue research to fill knowledge gaps as needed




Backup Slides

Acronyms

EPRI	Electric Power Research Institute
HRA	Human Reliability Analysis
IDHEAS	Integrated Decision-tree Human Event Analysis System
NRC	Nuclear Regulatory Commission
PRA	Probabilistic Risk Assessment

Ongoing Issues and Gaps

- Meaningful minimum estimates
 - Responses not well addressed by current methods
 - “Tribal knowledge” model of technology transfer
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- Decision making
 - Extremely long time frames
 - Unique execution actions
 - Command and control in severe accidents

Considerations as we Proceed

- Barriers to applying the method
 - Method not complete
 - Perception that there is not consensus within NRC on acceptance of IDHEAS
 - Utilities “busy” with existing workload
- Technology transfer
- Does method solve “pain points” and gaps or does it just propagate them?
- Continue to review real-world operating experience & insights from PRA applications to further update/refine methods