RISK COMMUNICATION

Greg Krueger
Senior Technical Advisor

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PARADIGM SHIFT

- Risk models provide a different perspective from that of the design and licensing basis framework
  - Utility organizations understand the regulatory framework and the boundary conditions that typically accompany the implementation of design and licensing basis analyses
- Probabilistic Risk Assessment (PRA) tools bring a very different set of analysis methods and boundary conditions when evaluating internal and external hazards
- Acceptance comes from demonstrating the complementary nature of risk tools when blending deterministic and probabilistic frameworks
- Translating risk information can be challenging for the risk analyst as well (terminology, characterization of risk)

Risk Informed Decision Making & Continuous Improvement Ensure **Nuclear Safety**

Magnitude of Core Damage Risk

How Can I Reduce the **Risk**?

	Fire	Plant Transients	Seismic / Flood
Operations	• Identify fire hazards during rounds • Control fire system impairments	• Reduce plant trips • Control protected equipment	• Ensure reliable flood and seismic response actions
Maintenance	• Adhere to hot work and combustible control procedures	• Ensure configuration control	• Maintain seismic supports and flood barriers
Engineering	• Identify and correct degraded equipment	• Equipment monitoring and reliability	• Ensure robust design and control
All Site Personnel	• Report oil leaks and burning odors	• Maintain 2-foot zone around equipment	• Report degraded supports and flood barriers

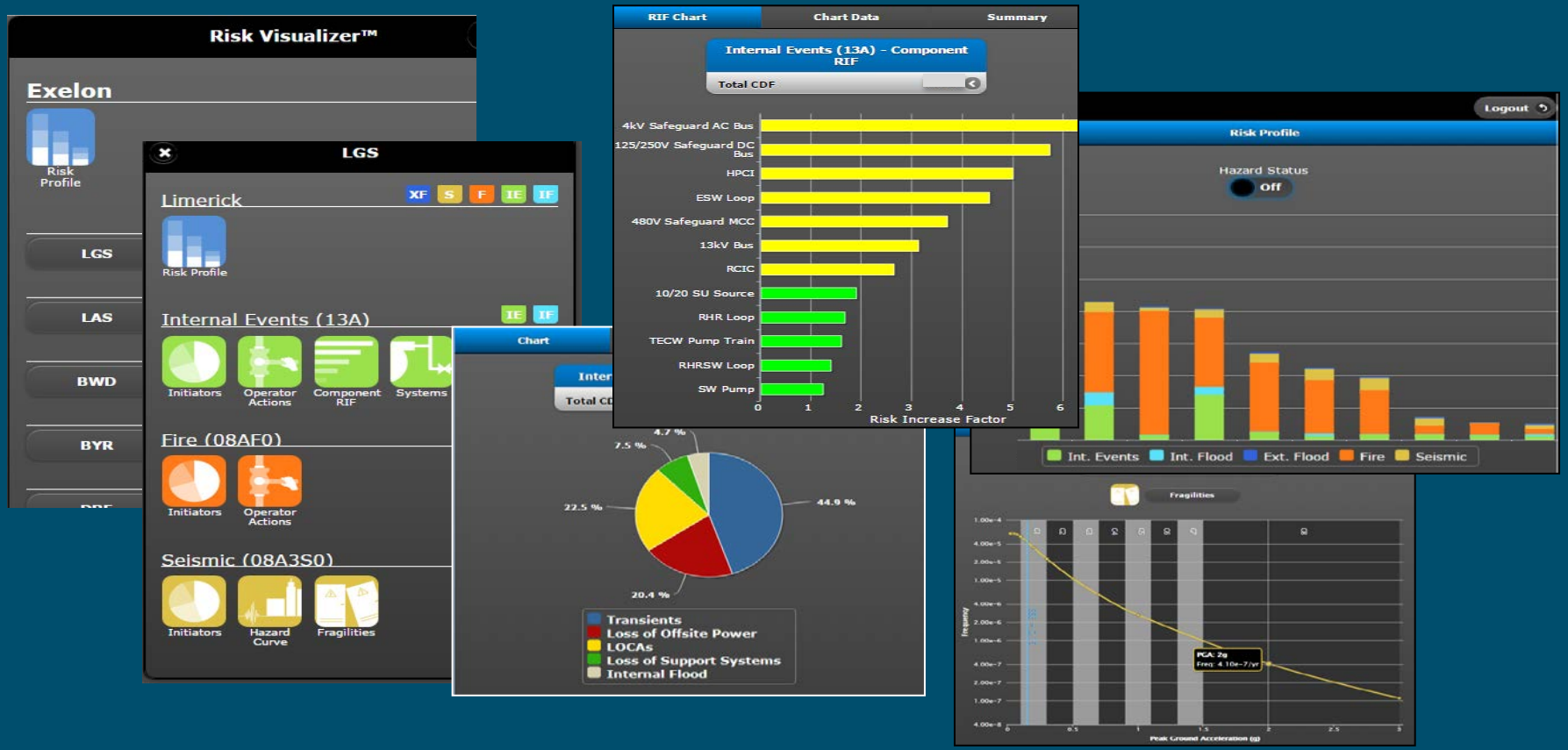
ACTIONS TO ADDRESS PRA INSIGHTS

Hazard	Actions to Address	Action Application
Seismic	• Post-Fukushima Implementation Initiatives • Seismic Walkdowns • Application of New Seismic Hazard Information	• Insight Communication
Fire	• Increased Fire Communication • Increased Fire Training for Operations • Integration of Fire Insights Into Online Risk Assessments • Risk Informing Fire Marshal Rounds • Fire Detection PM Optimization	• Insight Communication • Process Optimization
Internal	• Integration of New PRA Model Into Online Risk Assessment • Operator Response Time Program Support • Pursuing Risk-Informed Modifications or Single Point Vulnerability Trip Risk	• Procedure and plant changes • Process Optimization

RISK VISUALIZER™ - CONTEMPORARY INTERFACE FOR RISK COMMUNICATIONS

- Replace posters and graphics with an interactive tool
- Display all hazard contributors
- Facilitates training
  - Provide a common tool for training organizations
  - Tool for Risk Management Engineer to illustrate insights and differences
- Provides risk information to a broad audience
  - Easy to use tool will help drive use, questions, and continued interest
- Functionality considerations
  - Provide “drill down” capability
  - Careful use of terminology – No/limited PRA terminology
  - Provides user with fleet PRA information to enable cross-comparison

RISK COMMUNICATION GRAPHICAL INTERFACE



PRA models highlight our understanding of risk

- PRA models identify insights that can be managed
- Insights from different PRA hazard models are additive
- Relative risk comparison across hazards can provide insight
  - Existing internal event PRA models provide substantial risk insight opportunities
    - ✓ Increased application of existing insights should be pursued
    - ✓ Focus solely on the numbers may inappropriately influence actions or conclusions
    - ✓ Spatial insights from external hazard studies can provide valuable information in addressing risk
    - ✓ Risk comparison across similar units can highlight design and operational differences

Risk Measurement ≠ Risk Management

SUMMARY

- Significant planning and outreach is required to communicate risk concepts to broad nuclear utility audiences
- Fleet commonality and consistency in communication is needed to assure a similar understanding of risk
- Comparison across similar facilities provides perspective on design and operational impacts on risk
- Continued focus on the behaviors impacting the risk profile is essential