
Integrating Non-nuclear Safety in Design



Approach to Integration Planning

- Develop an Integrated Management Plan
- Identify disciplines that systematically submit design features and controls.
 - Flow sheet the process
 - Coordinate the points of technical integration
 - Synchronize hazard evaluation studies
 - Define the process for resolution and elevation through the Integrated Project Team
 - Schedule the integration points and activities



Integrated Hazard Evaluation Studies.

- Keeping objectives aligned with information availability
 - Be prepared to respond to “clairvoyance expectation”
- Verify pre-requisites available
- Critical Role of Leaders and Scribes
- Group size and composition
 - Availability of the right team members
- Keeping activities synchronized



Top Challenges

- Requirements conflicts
 - Project advocates and scrutineers want to sub-optimize around parochial topic.
 - Selecting the lowest composite risk design solution must remain the project teams objective.
- Requirement complexity
 - Expect to deal with 2000 to 4000 requirements with major projects

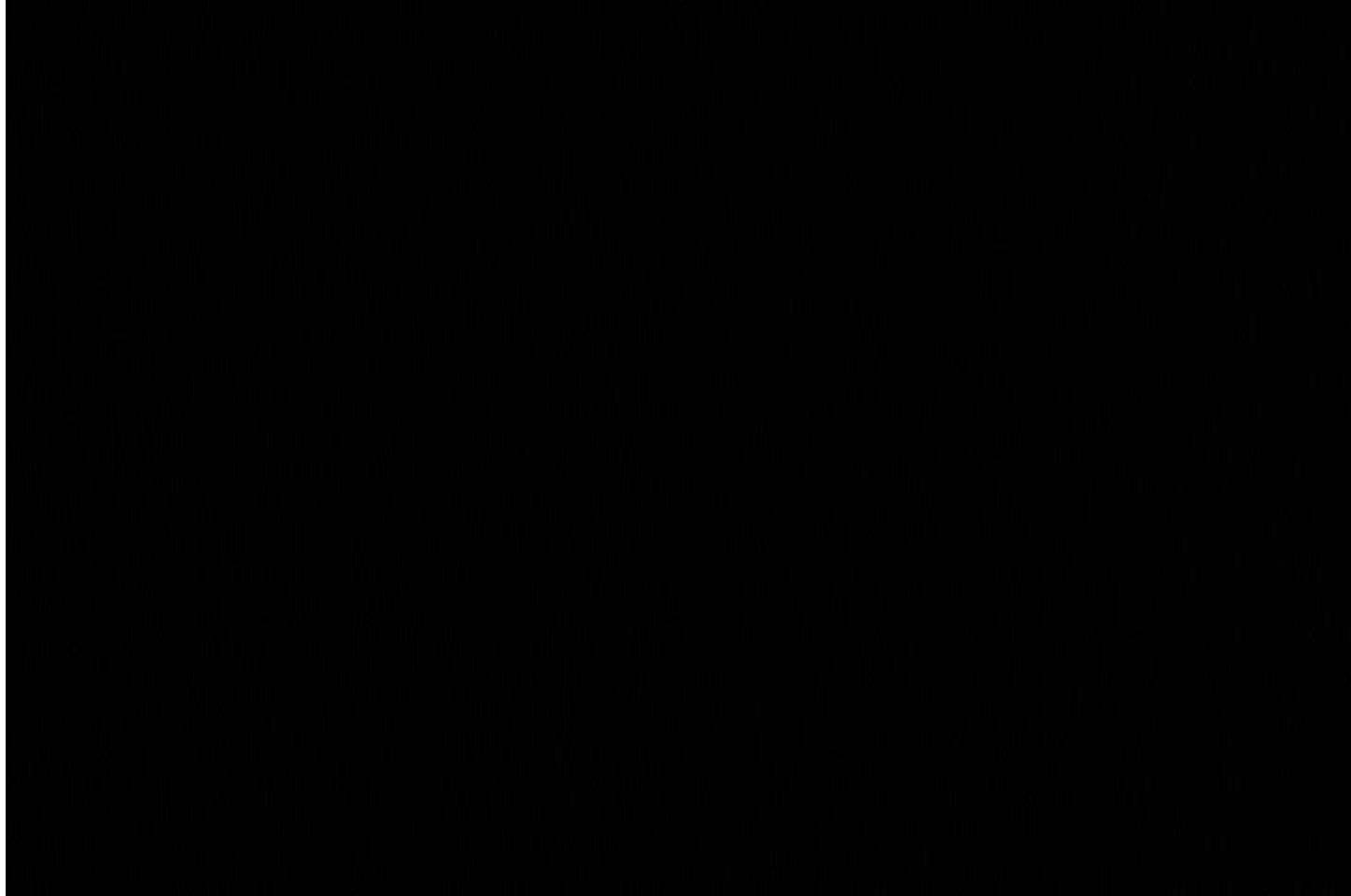


Top Challenges

- Advancing the “how we intend to operate the equipment” in concert with hardware development
- Chemical Safety
- Design for Construction Safety
 - not just constructability
- Sustainable design
- Environmental permitting – NEPA Non-attainment
- Human Performance Improvement



Top Challenges



Security and Emergency Response



How will the equipment be operated? In what environment will it be used?



HPI Training for Designers – Eliminate Error Likely Situation by Design

