

Risk-Informing NRC Technical Requirements

Adrian Heymer, NEI

202-739-8094, aph@nei.org





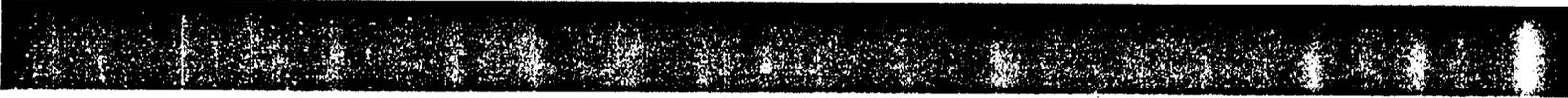
Risk-Informed Regulation

- **Improve the efficiency and effectiveness of the NRC regulatory regime in a manner that increases the focus on safety-significant matters while reducing unnecessary resource burden**
- **Incorporate new information, insights & 30+ years of operating & regulating experience**
- **Communication & coordination important elements**
 - Resolution of industry & NRC cultural issues



Industry Survey

- **59% response**
- **Reinforced September 1999 workshop statements**
 - Only minimal changes to regulations may be necessary
 - Rigidity in interpretation & compliance with regulatory guidance
 - need to develop alternative approaches
 - Codes & Standards -- an integral element -- need for industry consistency and coordination



Industry Survey

- **Build on recent regulatory improvements**
- **Focus on and complete current regulatory improvement activities**
- **Initiate rulemaking on §50.44 based on existing regulatory analysis**
- **Assess and implement improvements to §50.46**
 - Work has started in specific areas



Current Improvement Activities

- **Implementation of new oversight process**
- **Fire protection**
- **Security**
- **Technical Specifications**
 - Tech. Specs. should be considered synergistically with §50.65 requirements -- configuration control and performance monitoring
 - Elimination of duplicative requirements
- **§50.44 rulemaking**

§50.46/Appendix K Potential Improvement Areas

- **Improvements to fuel cladding requirements**
- **Update and adjustment of decay heat curves**
- **Alternative break size**
 - A mature WOG activity -- enables an early start on §50.46 interactions
 - NEI/WOG interacting with other owners' groups
- **Coincident loss of offsite power with LOCA**
- **Analytical methodologies & modeling**

Potential §50.46/Appendix K Impact

- Emergency Diesel Generators
- Systems inspection & testing
- Piping & piping support inspections
- Containment heat removal
- Containment testing
- Containment environmental envelope
- Debris & internal missile issues
- Coolable fuel geometry & improved fuel designs
- Electrical coordination & sequencing
- Coolant injection requirements (timing and flow)
- Reactivity insertion events
- Source term and early release prevention criteria
- Technical specifications
- FSAR
- Regulatory change process
- Onsite EP requirements

Other Regulatory Improvements

- Develop a plan for improving other regulations based on §50.46 & Appendix K insights
- Appendix A, to Part 50, GDC 17, 18, 19,...
- §50.49, technical requirements
- §50.55a
- Part 21
- Part 54

Other Regulatory Improvements

- §50.61, §50.62, §50.68
- Appendices E, G and J
- Administrative -- §50.71, §50.72, §50.73 & (§50.59)
- Regulatory consistency
 - §50.34 and §50.54
- Part 52 and requirements for Generation IV commercial nuclear power plants



Option Activities Summary

- **Complete existing activities**
- **Use §50.46 assessments as the basis for planning other improvements**
- **Keep Generation IV and existing plant activities separate**
 - Need to plan for Generation IV support -- long term
- **Need for defined near term schedules for:**
 - Completing current activities
 - §50.46 assessments and improvements