Risk Informed Regulation for Operating Reactors

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PSAM 6
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Division of Risk Analysis and Applications

Strategic Performance Goals

- Maintain Safety
- Improve Regulatory Effectiveness, Efficiency, and Realism
- Reduce Unnecessary Burden
- Increase Public Confidence

Risk Informed Initiatives

Operational Events Analysis

PRA Method and Tool Development

Reviewing and Performing PRAs

Risk Informing Regulations

Questions for the Regulator

- Methods Development
  - Will we ever be done?
- Risk Assessment Quality
  - How good is good enough?
- Risk-Informed Decision-Making
  - Are we effective in a deterministic regulatory framework?

Regulatory Programs

- Focused Method Development Program
- Plant SPAR Models – end of FY 2003
- NRC endorsement of consensus PRA Standards
  - ASME/ANS
  - NEI peer review
- Change the framework in a coherent way

Risk Informed Regulation for Advanced Reactors

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Advanced Reactor Licensing

- Commission Advanced Reactor Policy
- 10 CFR Part 50, 51, and 52
- Regulatory Processes exist to safely license new reactors
- Regulatory challenges: lessons and issues

Build on Lessons Learned

- Use lessons from current reactor designs and licensing process
  - Part 52
    - Design specific probabilistic risk assessment
    - Address designs that differ significantly from LWRs
  - Risk Informed Licensing Process (RG 1.174)
  - Framework (Option 3) for adjusting current requirements
  - Operating Experience and Risk Insights
  - ROP → NEI 02-02 → Coherence Program

Sustain Defense in Depth Philosophy

- Non LWR Technology Issues
- Risk Assessment role –understanding, model quality, and metrics
- Margin and Uncertainty
- Design bases: frequency / consequence
- Experience: Common cause, human error, fire, external events, non-power operational modes