



CENG
 a joint venture of
 





Industry Perspective on Risk Informed Fire Protection

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 RIC
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Constellation Fleet – Calvert Cliffs

- 2 – Combustion Engineering PWR, 2700 MWt

Constellation Fleet - Ginna

- Westinghouse PWR, 1775 MWt




Constellation Fleet – Nine Mile Point

- NMP1 BWR/2, Mark I Containment, 1850 MWt
- NMP2 BWR/5, Mark II Containment, 3467 MWt



Risk Informed Fire

- Decision to proceed
- Current Status
- Significant Issues
- Learning's



Decision to Proceed

- Letter of intent in Dec 2005
- Previous risk informed applications successful
- Staggered implementation for the Fleet
 - Participated in original effort to pilot 6850
 - Cable scheduling issues prevented completion
- Older Plants may not meet new expectations
 - Appendix R separation-Hymec used at one site
 - Operator Manual Actions
- Realistic Risk Informed Approach should limit modification requirements to those really needed



Current Status of Fire PRA

- Developed fire database and provided to EPRI
 - Tracks plant boundary information
 - Ignition sources
 - Fire modeling scenarios
- RG 1.200 Rev 1 (Internal Events) complete for several sites
- Fire standards developed procedures in progress
- High percentage of cable selections complete
- Fire PRA preliminary for several sites
- Planning on completing the fleet this year except NMP2



Significant Issues

- Challenge to be a non-pilot but proceeding with the pilots
 - Continuing updated guidance
 - Incorporation of FAQs
- Project stopped and started due to financial issues in 2008
- RG 1.200 internal event upgrade resource demand higher than anticipated
- Cable schedules analysis required extra resources



Significant Issues cont'd

- Initial High CDF due to conservatisms in 6850
 - Ignition frequencies
 - Non - Suppression Curves
 - High Heat Release Rates
- Conservatisms will hinder application in maintenance rule
- Sub component circuit analysis necessary



Learning's

Challenge		Mitigating strategy
Deviations from Appendix R	➔	Credit offsite power Credit for main Feedwater Credit for non safety air
First of a Kind project	➔	Stay engaged in the industry groups Use appropriate risk management Incorporate Lessons Learned from Pilots
Improvement in plant safety that may benefit Fire	➔	Implement mods to improve safety now Implement procedure changes







Learning's Cont'd

Challenge		Mitigating strategy
Configuration Management of PRA Documentation	➔	Use same controls as used for Fire Procedure Changes Training
Deterministic/Probabilistic Approaches Clash	➔	Increase Knowledge of probabilistic approach across the sites using NEI/EPRI training
Use of External Events for risk management	➔	Work with the industry to develop an approach