

# ***RIC 2005 – Session H1 “Power Upgrades”***

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## ***Power Upgrades and the ACRS***

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# *ACRS History Perspective*

- 12 Extended Power Uprates to date
  - 8 BWR Uprates of 15-20%
- 15 More Under Review or Planned
- ACRS Reviews All EPU's
- Review Standard (RS-001) Developed
- BWR Topical Report on Constant Pressure Uprates



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# *Implementation Issues*

- Reactor Coolant System Changes
  - Constant RCS Pressure
  - Minor Changes to Flow Rates
  - Advanced Fuel/Core Design
  - Steam Generator Replacement
- Turbine Generator and Electrical
- Secondary Systems
  - Increased Feedwater/Steam Flow
- Large Transient Testing



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# *EPU Implications*

- Increased Flow-Assisted Corrosion (FAC)
- Flow-induced Vibration
- Increased Decay Heat
  - Severe Accident Behavior
  - Reduced Operator Response Time
- Increased Source Term
- License Renewal Synergy
- Need for Additional Inspections



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# *Margins*

- What Limits EPU Power Level?
- Why Don't CDF/LERF Change Significantly?
- Containment Performance Limits
  - Need for Containment Overpressure
- Proposed Changes to 50.46



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# Summary

- EPU's Use Margin from Original Plant Design
- Beware Unforeseen Consequences!
- Learn from Experience

