



## New Reactor Sump Design Reviews

### RIC 2008 Technical Issues/Systems Session

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March 12, 2008

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## Agenda

- Guidance
- Combined License and Design Certifications under review
- Licensing challenges

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## Background

- Regulation - 10 CFR 50.46(b)(5), GDC 35, and GDC 38
- Current Guidance in RG 1.82, Rev. 3
- GSI-191 Assessment of Debris Accumulation on PWR Sump Performance
- Operating reactors are in the final stages of addressing GL 2004-02
- Currently reviewing 5 different applications
- Planning to update RG 1.82, Rev. 3

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### South Texas Review

- South Texas is using the certified ABWR
- Departure from ABWR DCD
- Application of RG 1.82, Rev. 3
- Regulatory challenges
  - Strainers are designed using an approved methodology consistent with RG 1.82, Rev. 2
  - Level of detail in COL
  - Chemical and downstream effects
  - Review is on hold

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### ESBWR Review

- Design includes features to minimize generation and transport of debris
- Regulatory challenges
  - Application of some provisions of RG 1.82, Rev. 3 to a passive design
  - Level of detail in DCD Rev. 4
  - Long term cooling
  - Chemical and downstream effects

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### AP1000 Amendment Review

- DCD certified with a COL Item
- Design includes features to minimize generation and transport of debris
- Rely on PWROG resolution methods
- Regulatory Challenges
  - Application of RG 1.82, Rev. 3 to a passive design
  - Understanding head loss margins
  - Final strainer design not complete
  - Chemical and downstream effects

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### EPR Review

- Apply RG 1.82, Rev. 3
- Regulatory Challenges
  - Level of detail in application
  - New approaches to address the issues
  - Materials in containment contributing to chemical effects

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### US APWR Review

- Apply RG 1.82, Rev. 3
- Regulatory Challenges
  - Applicant has not selected a strainer design
  - Committed to provide additional information

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### Conclusion

- Reviewing designs against RG 1.82, Rev. 3
- Plan to update RG with lessons learned from GL 2004-02 responses
- Strainer designs should be addressed as part of DC
- Applications, thus far, have not contained sufficient detail
- Prototypic configuration testing has been used for GSI-191

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