ECCS Suction Strainers
ZOI of Protective Coatings
Issue No. 8

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Source Term Vice Chairman

NRC / BWROG Resolution Plans
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Topics

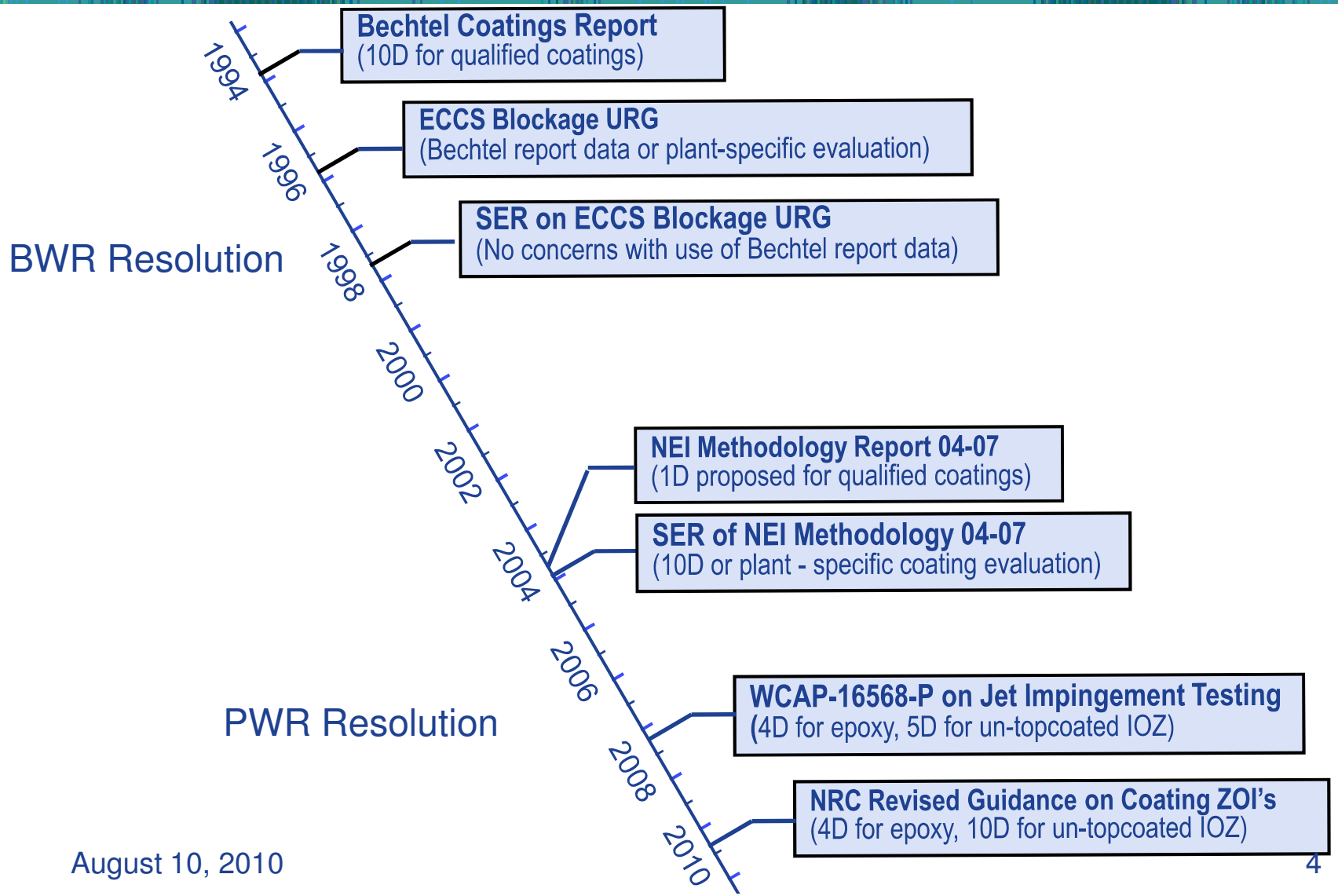
- Issue Overview & History
- BWR/PWR Considerations for ZOI of Protective Coatings
- Resolution Strategy
- Next Steps and Milestones
- Conclusion

ZOI of Protective Coatings Issue Overview

Qualified coating loads evaluated differently for BWRs and PWRs

NRC has indicated a concern that the BWR evaluation method is not sufficiently conservative

ZOI of Protective Coatings Issue History



ZOI of Protective Coatings: Treatment of Qualified Coatings Loads for BWRs

- Generic evaluation in URG
- Assumed BWR LOCA condition described in Bechtel Coatings Report:
  - A 24” unrestrained pipe break
  - an ANSI Jet, per App. C of ANSI/ANS 58.2-1998
  - impingement of the jet on a wall 20 ft away (i.e., 10D), generating 302 ft^2 of coating debris
  - A 2X factor was applied for 604 ft^2 total debris area
- Calculated debris volume based on assumed coating thickness and 604 ft^2 total debris area

ZOI of Protective Coatings: Treatment of Qualified Coatings Loads for PWRs

	Qualified Coating Type	
Item	Epoxy	IOZ [1]
ZOI shape	Spherical	Spherical
ZOI size	4D	10D
ZOI basis	Industry Testing	SER of NEI 04-07
Debris quantity	Plant specific	Plant specific

[1] IOZ = Un-Topcoated Inorganic Zinc

ZOI of Protective Coatings BWR/PWR Differences: Regulatory

- Current BWR approach based on NRC approval of *Utility Resolution Guide for ECCS Suction Strainer Blockage* (NEDO-32686-A)
- PWR approach based on:
  - NEI 04-07 ZOIs for determining plant-specific coating debris
  - NRC Safety Evaluation of NEI 04-07 provided revised ZOIs
  - NRC revised guidance on coating ZOI's dated April, 2010

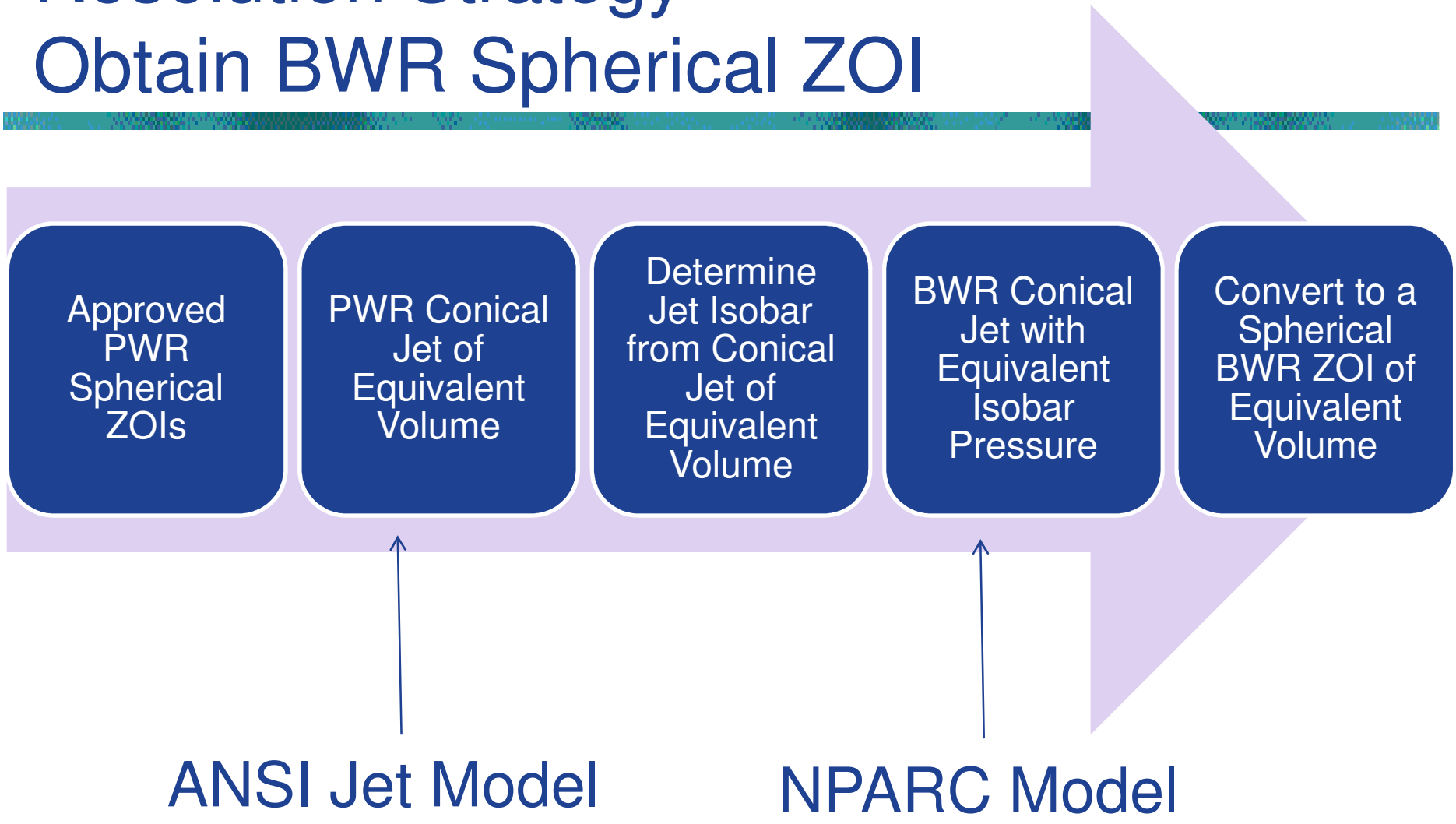
ZOI of Protective Coatings
BWR/PWR Differences: Technical

- BWR piping pressures are ~50% of PWR pressures
- Pipe diameters for the highest-pressure BWR pipes are smaller than corresponding PWR pipes
- Current BWR coating debris quantities are generic, whereas those of PWR's are assessed on plant-specific bases

Resolution Strategy - Summary

1. Calculate equivalent BWR ZOI from PWR ZOI
2. Apply BWR ZOI at several plants
3. Compare those results to URG
4. If more conservative than URG, then no further action is required
5. If less conservative than URG, then plant-specific evaluations

Resolution Strategy
Obtain BWR Spherical ZOI



Resolution Strategy

Using the BWR equivalent spherical ZOIs, develop sample plant-specific debris loads:

- Prepare a guideline document (modeled after NEI 04-07 guidance) for use in assessing BWR coating debris loads with moving sphere model
- Identify BWRs in which to assess plant-specific spherical ZOI coating debris loads, including samples from each containment type
- Assess plant-specific coating debris loads using guideline document and BWR spherical ZOIs

Resolution Strategy

- Compare results of plant-specific coating load evaluations to URG guidance on qualified coating loads
- Issue initial report, including recommendations from URG comparison, for NRC review
- Resolve NRC RAIs, as applicable

ZOI of Qualified Protective Coatings Proposed Schedule

Milestones	Date
Confirm resolution plan with NRC	4Q 2010
Calculate spherical ZOI for BWR coatings	1Q 2011
Issue guidance document	2Q 2011
Complete coating evaluations at sample plants	3Q 2011
Issue evaluation report	4Q 2011

ZOI of Protective Coatings
Key Relationships to Other Issues

- Issues 1 & 2, Downstream Effects: If coating loads increase, debris bypass and downstream effects may be affected
- Issue 3, Debris Headloss Predictions: If coating loads increase, overall headloss may also be affected

ZOI of Protective Coatings Conclusion

Qualified coating loads are currently evaluated differently for BWRs and PWRs

Using NRC guidance for PWRs, BWROG will assess whether BWR URG values are conservative