



BWROG / NRC ECCS- Suction Strainer Meeting

March 28, 2012
Rockwell, MD



Agenda - morning

<u>Time</u>	<u>Topic</u>	<u>Lead</u>
9:00 a.m.	Introductions and Opening Remarks	NRC/BWROG
9:15 a.m.	Overall Project Schedule Update	BWROG
9:45 a.m.	Discussion of Reduction of Insulation Damage Pressure Issue	NRC/BWROG
10:15 a.m.	Break	
10:30 a.m.	Discussion of Staff Feedback on ECCS Suction Strainers Bypass Test Plan	NRC/BWROG
11:50 a.m.	Opportunity for Public Comment	NRC
12:00 p.m.	Lunch	

Agenda - afternoon

<u>Time</u>	<u>Topic</u>	<u>Lead</u>
1:00 p.m.	Discussion of Staff Feedback on ECCS Suction Strainers Bypass Test Plan	NRC/BWROG
2:00 p.m.	Discussion of Staff Feedback on ECCS Suction Strainers Chemical Effects Strategy Outline	NRC/BWROG
2:45 p.m.	Break	
3:00 p.m.	Discussion of Staff Feedback on ECCS Suction Strainers Chemical Effects Strategy Outline	NRC/BWROG
4:40 p.m.	Wrap Up	NRC/BWROG
4:50 p.m.	Opportunity for Public Comment	NRC
5:00 p.m.	Adjourn	



Introductions / Opening Remarks

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Overall Project Schedule Update

Ted Schiffley - BWROG Chairman

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Reduction of Insulation Damage Pressure

Steve Scammon (Energy NW) –
Committee Chairman

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Reduction of Insulation Damage Pressure

Staff agrees that BWRs do not need to take a 40% correction factor reduction to the URG air jet test insulation damage pressures

BWROG agrees that there is limited URG air test data from which to predict the exact damage pressure for some insulation materials

Reduction of Insulation Damage Pressure

The BWROG has reviewed the NRC staff proposal to add margin to the damage pressures for some materials and recommends that these damage pressures not be changed

- BWR and PWR ZOI methods are different
- URG methods have many conservatisms
- Impact is negligible to plant safety
- Change to damage pressures would unnecessarily delay issue resolution without commensurate improvement in safety

Reduction of Insulation Damage Pressure

Nukon:

- Change in BWR damage pressure would increase generated fines by less than 2% (NRC SER on NEI 04-07, Appendix II)
- Small increase in fines would have insignificant effect on strainer head loss
- Requires most BWRs to revise existing design basis debris generation calculations

Reduction of Insulation Damage Pressure

Diamond Power Mirror with standard latches:

- Damage at 4 psi >99.9% is large size Mirror (> 6.0 in²) and is not transportable
- Damage at 2 psi >99.9% cassettes remain intact
- Metallic insulation headloss is typically small

Reduction of Insulation Damage Pressure

Calcium Silicate - jacketed:

- The Ontario Power tests jacketing was not representative of BWR configuration
- BWR ZOI is already larger than PWR ZOI (6.4 D vs 5.5 D)

Reduction of Insulation Damage Pressure

Min-K -unjacketed:

- The ZOI at 4 psi is 11.7D so a change to 2.4 psi (12.8D) would only apply to Min-K that is very distant from the break, which is likely shielded by intermediate structures
- Only 7 BWRs have Min-K and all have less than 100 lbs (4 have less than 20 lbs)

Reduction of Insulation Damage Pressure

Knauf - unjacketed:

- No damage at 6 psi
- Insufficient air jet test data to determine exact damage pressures
- Change in BWR damage pressure would increase generated fines
- Small increase in fines would have insignificant effect on strainer head loss similar to Nukon

Reduction of Insulation Damage Pressure

Koolphen - unjacketed:

- Closed cell phenolic insulation and will float
- Insufficient air jet test data to determine exact damage pressures
- Koolphen not widely used in BWRS (only 2 plants)
- Like Armaflex, Koolphen does not contribute to headloss

Reduction of Insulation Damage Pressure

Newly recommended damage pressures would only result in small increases in debris generation

Recognized conservatisms in URG methods envelope any minor increases in debris generation

Reduction of Insulation Damage Pressure

The need to revise plant-specific debris generation calculations with changed damage pressures would divert resources and delay generic source term definition without a significant improvement in safety

**BWROG recommends that
URG damage pressures
not be changed**



ECCS Suction Strainer Bypass Test Plan

Brad Tyers (Exelon) – Vice Chair,
DSE-C

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Agenda for Discussion

- Questions were broken down into three categories
 - Critical Discussion Items
 - Clarification Discussion Items
 - Typos and “other”
- Focus of discussion will be items committee feel have critical importance

Critical Discussion Items

Review of the Staff questions on the plan revealed common concerns

- Testing Methodology
 - Termination Criteria – Is Bypass at Steady State
 - Questions – 8, 22, 31
- Fiber Concentration
 - Incremental Batch Addition
 - Questions – 13, 28, 29, 36, 41
 - Fiber Size Classification
 - Question – 44
- Proto-typical Nature of Strainer Design
 - Testing with Fiber Only
 - Question – 1
 - Approach Velocities
 - Questions – 4, 9, 10, 11, 42
 - Debris Bed Coverage
 - Question – 7

Clarification Discussion Items

Various questions identified minor areas for clarification

- Test Water Chemistry
- Control Filter Purpose and Filter Replacement Methodology
- Assumed Sacrificial Area on Strainer for Velocities
- Turbulence
- Data Collection Methodology
- Repeatability
- Agitation

Typos and “Other”

Third category of comments from the Staff addressed typographical errors and physical testing execution



Public Comment

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ECCS Suction Strainer Chemical Effects Strategy Outline

Jim Furman – Alion Science and
Technology

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Summary

- Strategy document submitted to NRC for review November 2011
- Staff provided formal comments February 2012
- Phone call to discuss comments with Staff, March 2012
- Additional informal comments received March 2012
- Present answers to formal comments March 2012

Next Steps

- Schedule 2Q2012 phone call with NRC to discuss informal comments
- Generate Material Dissolution Test Plan - submit to NRC for review 3Q2012
- Receive / address NRC comments 4Q2012
- Begin Material Dissolution testing 2013



Wrap-up

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Public Comment

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Meeting Adjourned

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