

# BWR ECCS Screen Blockage Resolution

The ECCS Blockage Issue had its genesis with the BWR effort during the 1990s and was subsequently addressed in the mid 2000s by the PWRs. With the PWR programs nearing completion, the U.S. Nuclear Regulatory Commission (NRC) has identified differences between the BWR and PWR methodologies that need to be addressed.

## Solution-Based Approach

AREVA NP Inc. has teamed with Performance Contracting, Inc. (PCI) whose Sure-Flow™ strainers are installed at 15 U.S. and five Taiwan BWRs; and with Alden Research Laboratory, Inc., a world leader in hydraulic analysis, to provide NRC-recommended Computational Fluid Dynamics analysis and to perform debris specific NPSH testing on all of the various strainer designs. Together, we are uniquely positioned to provide a comprehensive solution which ultimately will minimize the impact to site resources; reduce overall program costs; and remove any potential vendor-to-vendor turnover issues.

## Key Advantages to Utilizing the AREVA Team:

- Industry-Leading Experience
  - Resolved NRC Bulletin 96-03 in 15 U.S. and five Taiwan BWRs
  - Major contributor to resolution of GSI-191
    - PCI strainers installed at 18 U.S. PWR units
- Technical Expertise
  - AREVA is a member of the NEI Task Force and assembled the methodology document for NRC review
  - AREVA is teamed with Alden Lab for Computational Fluid Dynamics and plant specific NPSH, chemical effects and debris bypass testing
- Cost Savings, Lower Risk
  - AREVA's combined experience with BWR and PWR ECCS blockage issues and resolution allows turnkey solutions that translate directly into cost savings and lower risk for customers



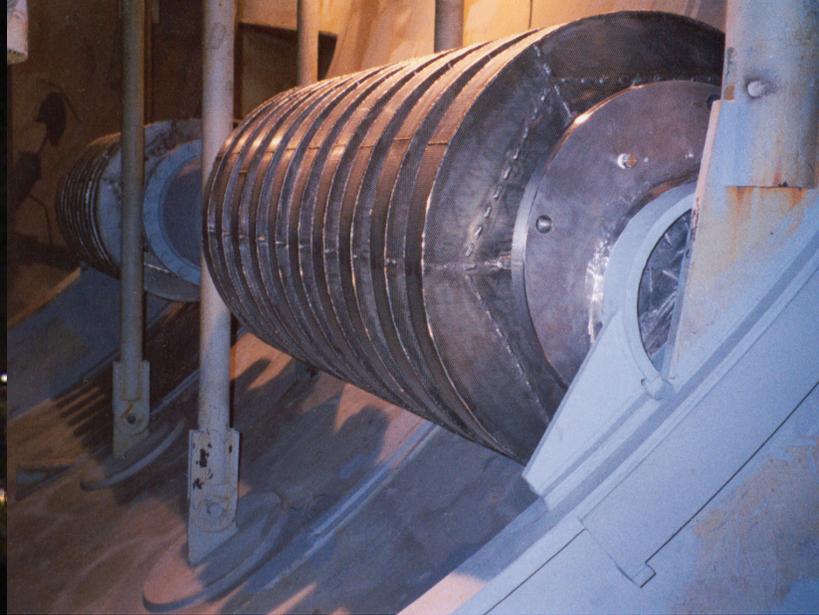
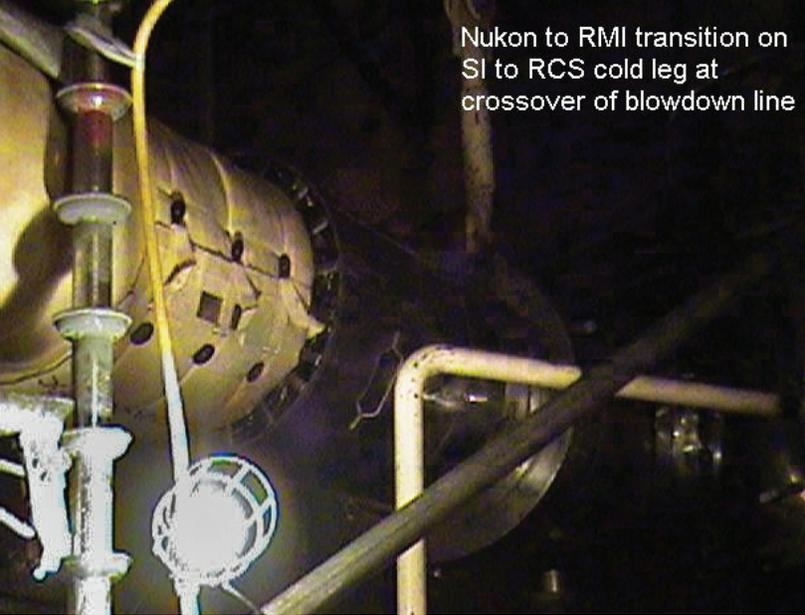
BWR testing facility at Alden Lab

## Features and Benefits

- Conducts large NPSH and chemical effects testing at Alden Lab
- AREVA Teammate Alden Lab has access to the only full-scale NPSH test facility with chugging capabilities, including suppression pool dynamic conditions found immediately after a LOCA
- The AREVA Team is fully qualified to resolve the strainer blockage issue
- Demonstrated performance in addressing regulatory requirements



Nukon to RMI transition on  
SI to RCS cold leg at  
crossover of blowdown line



## Walkdown/Debris Identification

AREVA has extensive experience in the performance of NEI 02-01 rev 1, Condition Assessment Guidelines: Debris Source Terms inside PWR Containments, and can easily translate that experience in the performance of the BWROG document TP-08-035: Drywell & Wetwell Walkdown Guidance Document.



## Technical Capabilities

Having been deeply involved in the successful resolution of the earlier BWR and PWR ECCS Blockage Issues, the AREVA Team is poised to bring the best and most up-to-date technical solutions to our customers in all aspects relating to this issue, including:

- Source Term and Latent Debris Identification
- Protective Coating
- Debris Generation/Debris Transport Analysis
- Downstream Effect for Plant Equipment and Fuel
- Chemical Effects
- Headloss Effects
- Resolution Options
- Installation/Implementation

### AREVA NP Inc.

For more information, contact  
Fariba Gartland  
Engineering Services  
Tel: 704 805 2288  
Fariba.Gartland@areva.com  
or contact your Regional Manager  
3315 Old Forest Road  
Lynchburg, VA 24501  
Tel: 434 832 2723  
Fax: 434 832 3840  
regional.manager@areva.com

[www.us.areva.com](http://www.us.areva.com)

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4/09 ANP:U-310-V1-09-ENG

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