

# NRC PWSCC CGR Activities

2026 NRC/Industry Materials Technical Exchange Meeting

June 16-17, 2026

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# Introduction

- The NRC is evaluating Alloy 690/52/152 PWSCC CGR data to help verify PWSCC CGR models and proposed factors of improvement.
  - EPRI Alloy 690/52/152 PWSCC CGR Expert Panel data and available literature data
- A690/52/152 Expert Panel CGR Data Analysis
  - MRP-386 Open Items (data gaps) evaluation
    - Confirm the applicability of the model parameters for estimating Alloy 690/52/152 CGRs
    - Identify potential areas where further testing could reduce uncertainty in key model parameters
  - Factors of Improvement (FOI)
    - Analyze Alloy 690/52/152 Expert Panel scored-in CGR datasets (base metal, weld metal, and dilution zones) to determine appropriate FOIs.
    - Evaluate additional datasets that factor in the effects of cold work, PPU, and evaluate dataset truncation vs data adjustment approaches

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# Introduction (cont.)

- Alloy 52/152 Dilution Zones (DZs)
  - Important for potential PWSCC of weld interfaces
  - Questions we are trying to address:
    - How does DZ CGR behavior affect flaw analysis assumptions/considerations?
    - Should FOIs be adjusted/augmented to account for DZs?

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# Current Activities and Status

- A690/52/152 Expert Panel CGR Data Analysis
  - MRP-386 Open Items evaluation
    - Nearly complete with the draft TLR in progress
  - A690/52/152 Factors of Improvement
    - Analyzing the Alloy 690/52/152 datasets
      - Determining the most relevant datasets for determining FOIs
      - Considering cold work effects, PPU, truncation vs adjustments
      - Aiming to complete this activity by the end of the year
  - Alloy 52/152 Dilution Zones Data Analysis
    - Determining the most relevant datasets for the analysis
    - Evaluating approaches for determining appropriate FOIs

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# Path Forward

- Complete the MRP-386 Open Items evaluation TLR (goal: draft by the end of August 2026)
- Continue interactions with EPRI regarding CGR datasets
  - Ex.: Observe EPRI meeting with the A690 Expert Panel on the A52/A152 dilution zones data analysis
- Complete the A690/52/152 FOI analysis (goal: complete draft analysis in August 2026)
- Complete the Alloy 52/152 DZ data analysis (goal: complete draft analysis in August 2026)

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# Acronyms

- CGR: crack growth rate
- DZ: dilution zone
- FOI: factor of improvement
- PPU: periodic partial unloading
- PWSCC: primary water stress corrosion cracking

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# Questions and Discussion

