# Chemical Leaching from Coatings

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# EPOXY Coatings Leaching

- Industry will resubmit the following data to demonstrate leachates from epoxy coatings are insignificant
  - Leaching test data from two vendors
  - Letters from test lab and vendor stating how to interpret test data
  - Data using leaching test data
    - Epoxy coatings estimated for a large dry 4-loop PWR containment (1250 $ft^3$); 10% submerged
    - Sump water from a 3-loop PWR containment (80,000 $ft^3$)

# SUMMARY OF AVAILABLE INFORMATION CONCERNING OEM COATING POST-DBA PERFORMANCE

- EPRI Technical Report 1011753, “Design Basis Accident Testing of Pressurized Water Reactor Unqualified Original Equipment Manufacturer Coatings” Final Report dated September 2005 provides robust data useful for determining performance of OEM coatings in the post-LOCA environment
- Findings and Observations are contained in Section 4 of the Report

# DATA AVAILABLE IN EPRI REPORT 1011753

- A variety of actual OEM coated plant components were tested, representative of the mix found in a typical PWR containment (alkyds, polyesters, baked enamels, epoxies, polyurethanes, etc.)
- 100% failure of OEM coatings, assumed in NEI 04-07 as a default, did not occur for any coating type tested (for instance, alkyd failures averaged <34% overall)
- Coatings failed as small particles (5-1025 μm)

# DATA AVAILABLE IN EPRI REPORT 1011753

- Microscopic examination of test filters revealed discrete particulate debris only
- No amorphous deposits were observed on filters
- Time line analysis of coating failures reveals that the majority of failures occurred 24 - 48 hours into accident scenario

# DATA AVAILABLE FROM OTHER SOURCES

- Very small percentage of total containment OEM coating inventory will see post-DBA immersion conditions due to equipment location (located above maximum post-accident pool height)