



**AREVA**

forward-looking energy

# **Draft Regulatory Guide Comments Meeting: *AREVA Breakaway Oxidation Testing Perspectives***

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# Breakaway Oxidation Testing Outline



- ▶ **Submittals**
- ▶ **Frequency**
- ▶ **Additional topics**

# Breakaway Oxidation Testing Submittals



- ▶ **Quality assurance testing for breakaway oxidation is more appropriate than reload batch testing**
- ▶ **Extent of submittal for NRC approval is currently unclear**
- ▶ **Proposal: High level description of the testing approach**
  - ◆ **NRC can audit qualification documents, detailed procedures, etc.**
  - ◆ **No submittal of scoping test results**
    - Available for audit
    - Current guidance provides path to re-perform scoping tests at any stage
    - Vendor should be able to re-perform scoping tests according to NRC approved high level approach without NRC review, if necessary or desired
    - Alternative, only initial scoping test results
  - ◆ **Approved high level description can be internally referenced in the detailed procedures (similarly to ASTM references)**

# Breakaway Oxidation Testing: Frequency



- ▶ **Frequency value should be flexible: Decrease with successful testing, increase if desired (e.g. process change)**
  - ◆ Value contained in a lower level document
- ▶ **Testing frequency needs to consider vendor-specific production size and process changes**
  - ◆ Large number of cladding tube lots produced, ~1500 lots/year
  - ◆ Infrequent changes to the manufacturing process
  - ◆ Limited number of tests per week with one device
- ▶ **Prescribed number of tests to demonstrate repeatability in the ongoing tests is not necessary**
  - ◆ Not testing for individual data points used to derive a limit each time
  - ◆ Device and test qualification will be performed
  - ◆ Number of tubes per lot is associated with frequency

# Breakaway Oxidation Testing: Additional Topics



## ▶ Additional topics

- ◆ AREVA proposed removal or relaxation of the weight gain benchmark
- ◆ AREVA proposed removal or relaxation of the scratch tests and scratch dimensions
- ◆ AREVA proposed removal of the oxygen content requirement

# Breakaway Oxidation Testing



► Questions? Comments?