SUBSEQUENT LICENSE RENEWAL EQ CONSIDERATIONS

Fall 2015 EQ Technical Conference

Nuclear Utility Group on Equipment Qualification

November 4-6, 2015

Clearwater, Florida

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Subsequent License Renewal

- NRC Initiatives Focused on Subsequent License Renewal
- Industry Electrical Working Group

Subsequent License Renewal

- NRC Meeting with Advisory Committee for Reactor Safeguards
  - Proposed slides for November 17, 2015 Meeting with ACRS, "Electrical Cable Qualification and Condition Assessment for Subsequent License Renewal (SLR)"
    - 10 CFR 50.49, Regulatory Guide 1.89 cited with respect to qualification
    - Regulatory Guide 1.218, "Condition Monitoring Techniques for Electric Cables in Nuclear Power Plant" cited with respect to condition monitoring
  - Standard-Qualification
    - "Confirmation or validation (through testing) that Electrical Cables Environmental Qualification will remain viable through the SLR period"
  - Standard – Condition Monitoring
    - "Development and validation of criteria for cable condition monitoring methods and techniques' for the SLR period to perform service life prediction of environmentally qualified and non- environmentally qualified cables"

Subsequent License Renewal

- Proposed Research Impacting EQ
  - NRC already has underway condition monitoring research for new and naturally aged cables.
    - Contract with NIST
  - Additional research ongoing regarding cable submergence
    - Evaluating EPRI research and criteria
  - Research regarding qualification apparently not yet defined, issues still being identified, but many have been identified

Subsequent License Renewal

- Issues Proposed by NRC Staff for Furtrher Investigation
  - Validation of qualification through SLR
  - Condition monitoring techniques with life predictability for period of SLR
  - Diffusion limited oxidation
  - Activation energy/non-Arrhenius behavior
  - Synergist Effects

Subsequent License Renewal

- Issues Proposed by NRC Staff for Furtrher Investigation – continued
  - Inverse temperature
  - Dose rate effect
  - Submergence degradation (end of life criteria)

Subsequent License Renewal

- Issues much the same as those addressed in EQ Task Action Plan
  - Group deeply involved in the resolution of those issues
    - Testified before ACRS
    - Submitted detailed comments
  - Task Action Plan resolution of issues was well documented by NRC Staff

Subsequent License Renewal

- No evidence of NRC consideration of EQ TAP resolution of issues
- Will be working with industry electrical working group for SLR
  - Resolution of issues in EQ TAP broad, not time limited
  - Will assure those prior efforts are recognized and brought into consideration

Subsequent License Renewal

QUESTIONS?