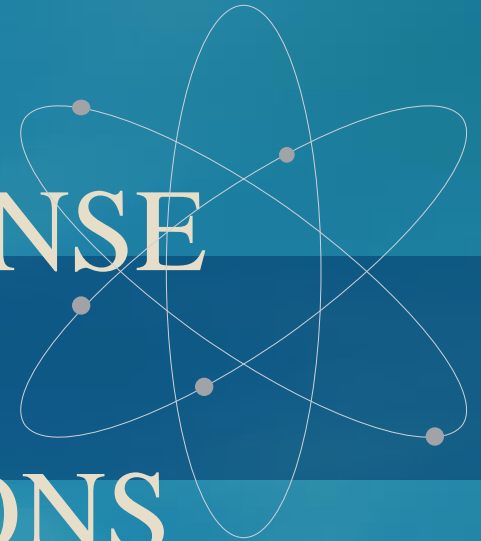


SUBSEQUENT LICENSE RENEWAL EQ CONSIDERATIONS



Fall 2015 EQ Technical Conference

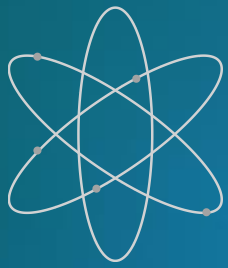
Nuclear Utility Group on Equipment Qualification

November 4-6, 2015

Clearwater, Florida

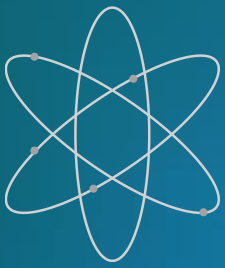
William Horin, Winston & Strawn, LLP (Counsel to NUGEQ (whorin@winston.com))

Ron Wise, NEQ Consulting (NUGEQ Technical Consultant (ronwise@aol.com))



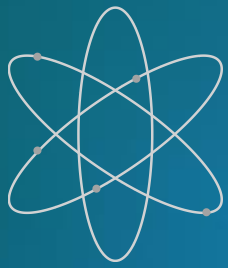
Subsequent License Renewal

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



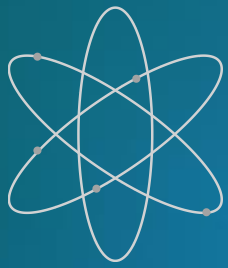
Subsequent License Renewal

- 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"



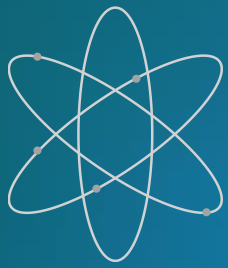
Subsequent License Renewal

- 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



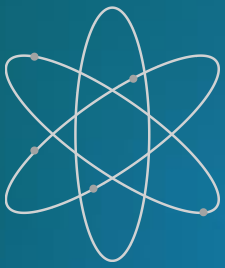
Subsequent License Renewal

- Issues Proposed by NRC Staff for Further 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



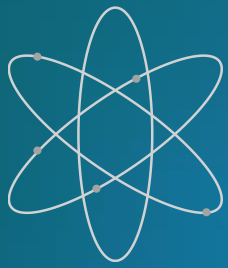
Subsequent License Renewal

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



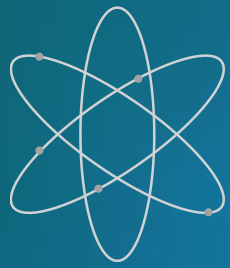
Subsequent License Renewal

- 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?