



ANS Meetings

IT'S GO TIME

*Creating Momentum Toward
Transformational Change*

Subsequent License Renewal: Is 80 the new 60?

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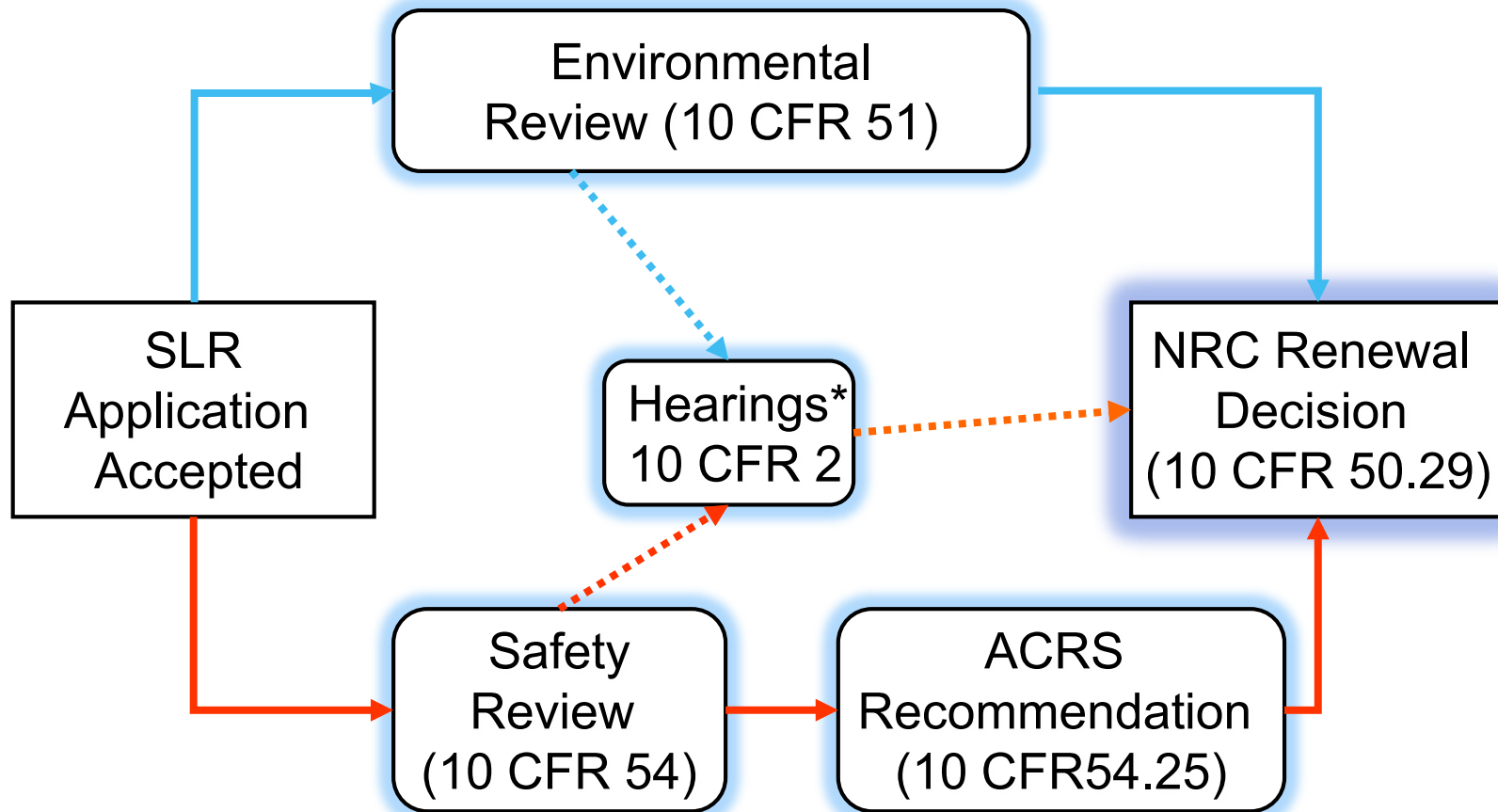
U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment



Subsequent License Renewal

- License renewal principles continue to be effective:
 - Regulatory process ensures the CLB provides and maintains an acceptable level of safety
 - Each plant's licensing basis must be maintained
- Identification of aging management needs for the 60 to 80 year operating period
- Technical reviews ensure effective aging management

SLR Review Process and Inputs into NRC Licensing Decision



* If a Request for Hearing is Granted

SLR Guidance

- **GALL-SLR Report (NUREG-2191):**
 - Provides acceptable methods to manage aging effects
 - Plant-specific alternatives may be proposed
- **SRP-SLR (NUREG-2192):**
 - Provides guidance to NRC staff reviewers to perform safety reviews of SLR applications



Technical Issues for Operations Beyond 60 Years

- Reactor pressure vessel neutron embrittlement at high fluence
- Irradiation-assisted stress corrosion cracking of reactor internals and primary system components
- Concrete and containment degradation
- Electrical cable qualification, condition monitoring and assessment

SLR Applications



Turkey Point Units 3 & 4 (FL)
Renewed License Issued
December 2019



Peach Bottom Units 2 & 3 (PA)
Renewed License Issued
March 2020



Surry Units 1 & 2 (VA)
Current expiration 2032 & 2033
Under review

- If approved, SLR adds an additional 20 years for up to a total operating life of 80 years.

SLR Prospective Applications

Expected Subsequent License Renewal Applications by Unit - NEI Survey Results



SLR Continuous Improvement

- Lessons learned so far:
 - Reviews can be completed in 18-months
 - Pre-submittal meetings improve coordination
 - Use of technology helped with effectiveness of audits
 - More effective use of audits reduced requests for additional information
 - Need for on-site audits minimized
 - Maintained flexibility with milestones



SLR Risk-Informing Activities

- Identify in pre-submittal meetings areas that will require additional review resources
- Conduct acceptance reviews with an integrated team
- Eliminate the on-site operating experience audit



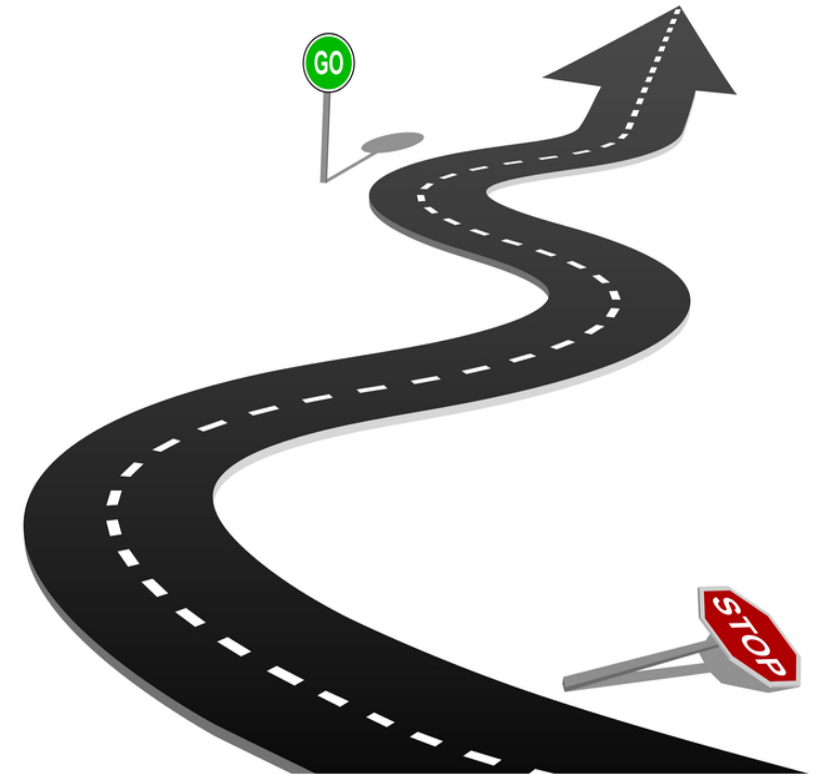
SLR Risk-Informing Activities

- Capture audit activities in a single Aging Management Audit
 - Part 1: In-Office Technical Review
 - Part 2: On-Site Audit
 - Part 3: In-Office Audit Breakout Sessions



SLR Path Forward

- Assess electrical, mechanical and structural GALL-SLR ISGs public comments
- Issue PWR Vessel Internals GALL-SLR ISG for public comments
- Implement lessons learned and risk-informing activities in upcoming SLRAs reviews
- Continue public meetings on lessons learned and guidance updates



What Limits License Renewal to 20 Years?

- Atomic Energy Act limits licenses to 40 years
 - Remaining time on current license plus license renewal period
- 10 CFR § 54.31(b) caps the additional period covered by renewed licenses at 20 years
 - Statement of Considerations in 1991 contemplated revisiting “as experience with licensee performance in managing age-related degradation during the renewal term is gained”
 - 94 licenses have been renewed with more than 320 reactor-years operation beyond their initial 40-year licenses
 - 4 units with licenses to 80 years

Why License Renewal for 40 Years?

- 6 units have initial 40-year licenses
 - Guidance in place to manage aging effects to 80 years
- 87 units have 60-year licenses
 - 43 units beyond 40 years and eligible to apply for SLR
- Efficiencies:
 - Applicants prepare one application for 40 years
 - Promotes continuity in plant implementation of AMPs for 40 years
 - NRC review of one application for 40 years
 - Can focus on oversight of AMP implementation

What is Needed for 40-Year License Renewal?

- Staff at initial stages of identifying changes and challenges
 - Legal/regulatory: 20-year license renewal limit, 40-year license limit
 - Environmental review: GEIS covers 20 years
 - Safety review: identification of aging effects and management programs currently for 80 years only (e.g., GALL-SLR)
 - Inspections/oversight: need for additional oversight with elimination of 20-year LR application review?
- Possible public meeting in late 2020 to seek stakeholder input

Questions?



Acronyms

- ACRS - Advisory Committee on Reactor Safeguards
- AMP – Aging Management Program
- CLB – Current Licensing Basis
- GALL - Generic Aging Lessons Learned
- GEIS – Generic Environmental Impact Statement
- ISGs - Interim Staff Guidance
- NEI – Nuclear Energy Institute
- PWR – Pressurized Water Reactor
- SER - Safety Evaluation Report
- SLR – Subsequent License Renewal
- SRP – Standard Review Plan

Contact Information

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