



**Structural Integrity**  
*Associates, Inc.®*



## YOUR LICENSE RENEWAL AND SECOND LICENSE RENEWAL PARTNER

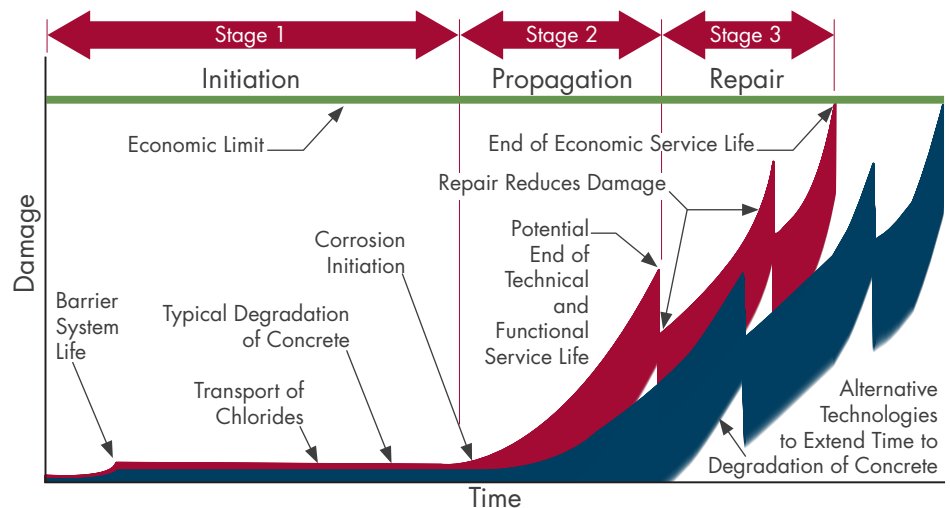
As a safe, efficient and clean source of electricity, nuclear energy continues to play an important role in meeting our electric demand. To make the most of this valuable resource, more than 75 plants have already renewed their licenses for 60 years of operation. Some owners are now looking to operate their plants for an additional 20 years - termed Second License Renewal or SLR. Structural Integrity Associates, Inc. (SI) can help ensure your plant will meet the demands of a longer operating life, and make your journey to license renewal and SLR a smooth one.

### INDUSTRY EXPERTISE

Our company was founded in 1983 to help utilities build and operate nuclear plants safely with a focus on the prevention and control of failures. Our understanding of material degradation mechanisms and how to manage them has led many nuclear utilities to turn to us for help in extending the life of their plants.

We offer innovative solutions and unmatched expertise in engineering assessments and repairs, and have provided technical support for all types of nuclear power reactors in the United States, as well as CANDU plants. Our professionals have developed technologies and software that have become standards in the nuclear industry. We are proud of our reputation for excellence and as a trusted independent provider of consulting services.

Structural Integrity has been a key consultant to nearly every U.S. utility that has sought to renew their operating licenses to date and remains actively involved with industry efforts led by EPRI and NEI. The range of our License Renewal services has grown significantly over time and covers nearly every aspect of your License Renewal (and now SLR) project.



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## LICENSE RENEWAL / SLR SERVICES

From start to finish, we can make a daunting task more manageable by helping you with all required license renewal application documentation, excluding the environmental review. Our services include:

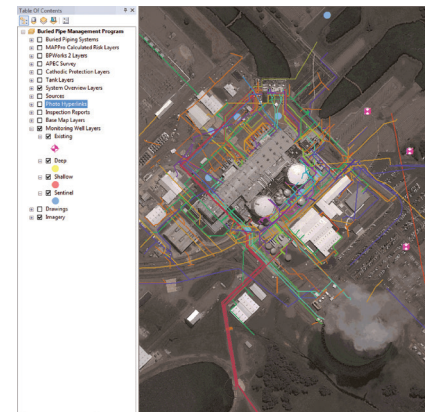
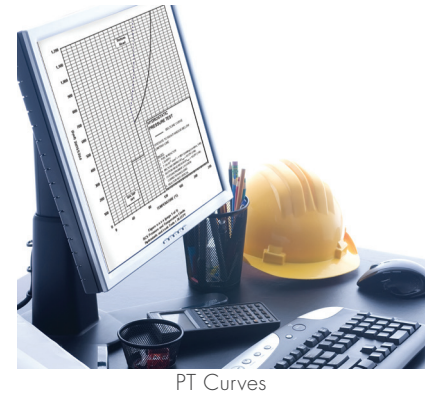
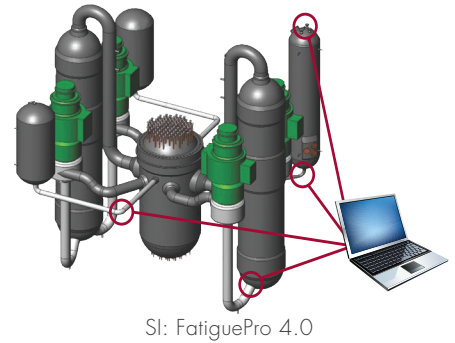
- SLR Assessment and Recommendation Report
  - For non-replaceable SSCs (e.g., containment structure) or very difficult to replace SSCs (e.g., reactor internals), provide recommended asset management practices to minimize the risk that the SSC will become unserviceable prior to the end of an 80-year service life.
  - Evaluation of aging management alternatives to assess the effect on plant serviceability and overall maintenance cost.
  - Evaluation of life-cycle costs for large components requiring periodic refurbishment such as turbine-generators, feedwater heaters and buried piping systems.
- License Renewal Application development (including FSAR Supplement and Technical Specification change support)
- Integrated Plant Assessment
- Aging Management Review, TLAA and Exemptions, including:
  - Metal Fatigue
  - Neutron Embrittlement
  - Concrete Containment Tendon Prestress
  - Containment Liner Plate, Metal Containment, Penetration Fatigue
  - Other Plant-Specific TLAAs
- Aging Management Programs
  - Development
  - Effectiveness Assessment
  - Operating Experience Review
- GALL Gap Evaluation and Disposition
- Commitment Implementation Support
- Regulatory Support (including RAI support)

## SLR ASSESSMENT

The decision to pursue SLR is less straightforward than the decision to pursue an initial license renewal due to changes in market conditions and the potential for greater expenditures to maintain critical assets. Accordingly, SLR decisions necessarily involve a benefit vs. cost evaluation where the benefit of an additional 20-year operating license is evaluated against the cost associated with subsequent LRA preparation, review, approval, and implementation. Implementation costs include the activities needed to ensure critical plant components do not unduly restrict plant operating performance or result in unmanageable repair / replacement costs.

Since the scope of plant equipment for license renewal has not changed and new rulemaking is not required, the focus of SLR will depend on the guidance used for initial LRA submittal and approval. For plants that received approval prior to issuance of the GALL report (NUREG-1801) or with earlier GALL report revisions, more effort may be needed to bring the LRA and associated AMPs up to current standards and NRC expectations. Regardless, the NRC expects plant owners to demonstrate the effectiveness of aging management programs during the initial period of extended operation (PEO). It will be most cost-effective for plants to proactively address this by integrating these efforts into ongoing activities well in advance of submitting a LRA for SLR.

As part of these evaluations, we are also able to envision and evaluate multiple scenarios related to the placement of maintenance, refurbishment, and replacement activities at different points in the plant timeline.



Management of Aging Pipe and Cables

