



# Symposium on Nuclear Pressure Equipment Expertise and Regulation

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## **NPP License Renewal and Aging Management: Extrapolating America Experience**

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# U.S. NRC License Renewal

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- **Background and Overview**
- **Principles of License Renewal**
- **License Renewal Regulations**
- **Renewal Process**
- **Guidance Documents**
- **Logistics**
- **Program Status**
- **Summary**



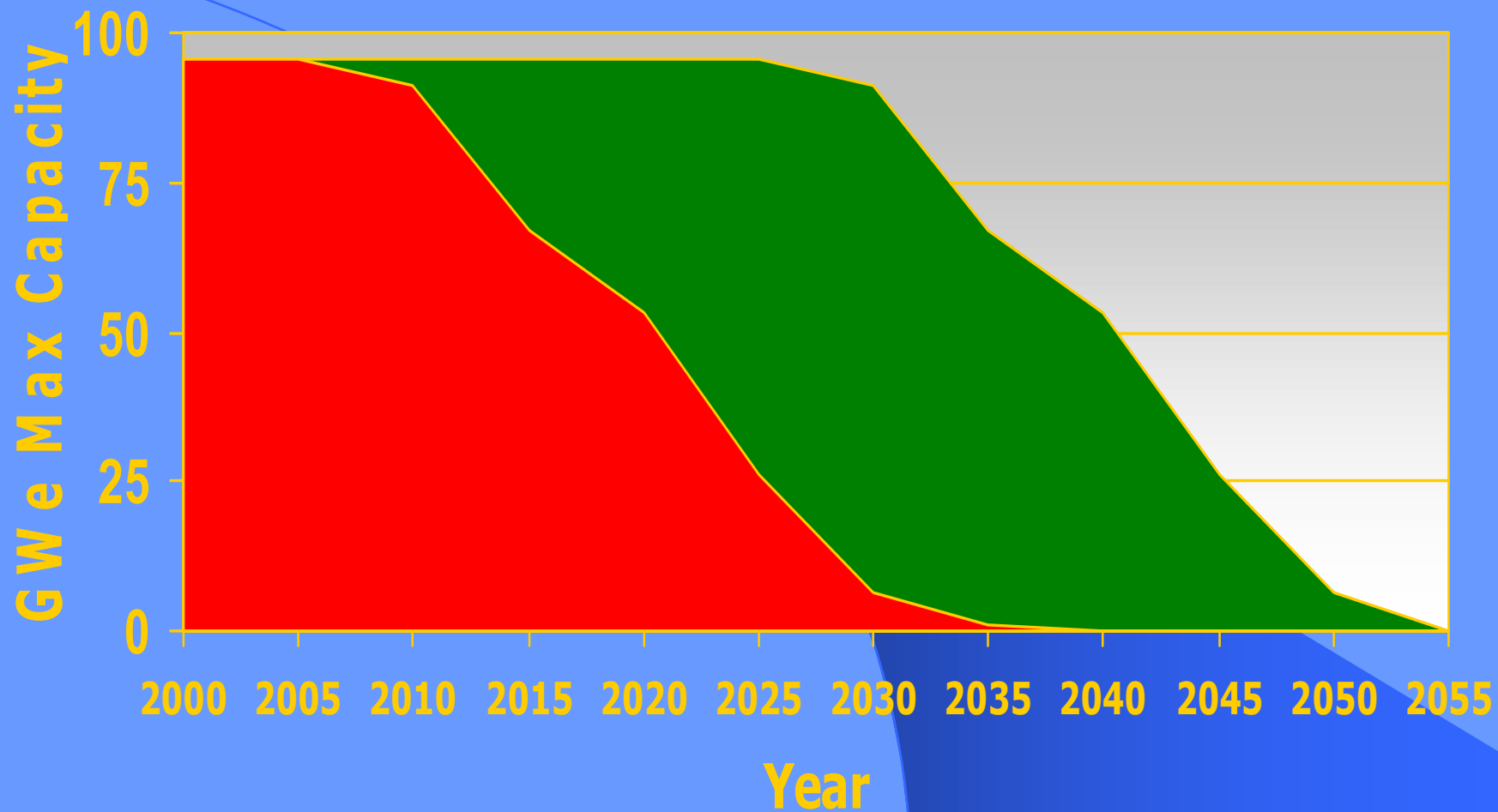
# What is License Renewal?

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- **Atomic Energy Act**
  - 40- year license to operate
  - Allows for renewal
- **10 CFR Part 54**
  - New license for up to 20 years beyond current term
- **Application submittal not earlier than 20 year before expiration of current license**



# U.S. License Extension Capacity





# Principles of License Renewal

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- **The regulatory process is adequate for ensuring safety of operating plants**
- **The current licensing basis (CLB) is adequate for ensuring safety of operating plants**



# Regulations

- **Renewal Application (10 CFR Part 54)**
  - Safety Evaluation
  - Hearing Opportunity
  - Advisory Committee on Reactor Safeguards review
  - Inspection Verification
  - Commission or Director of NRR approval
- **Environmental Impacts (10 CFR Part 51)**
  - National Environmental Policy Act (NEPA)

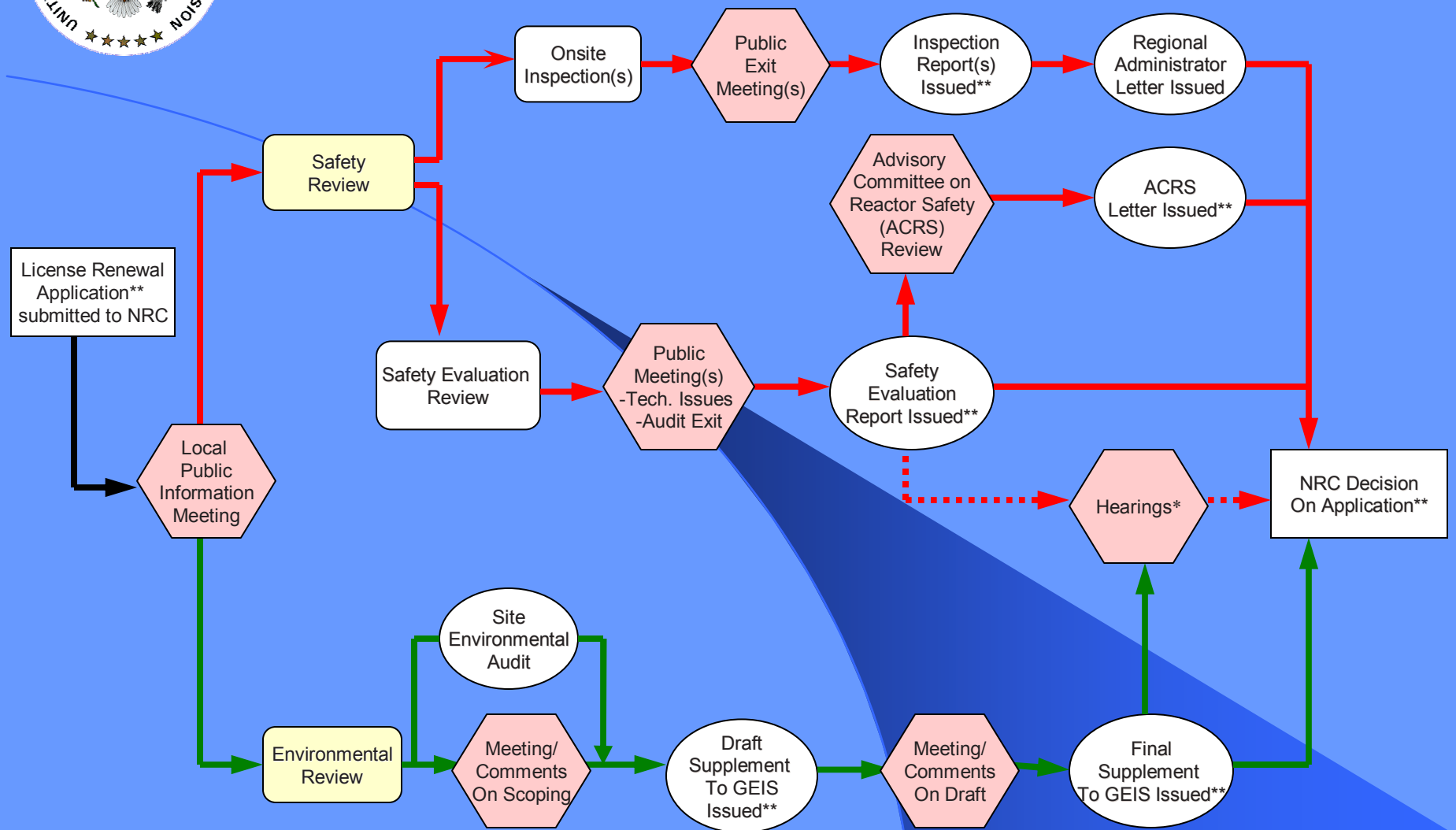


# Renewal Application

- Integrated Plant Assessment (Safety)
  - Identify structures and components
  - Describe and justify scoping and screening methodology
  - Demonstrate aging effects will be managed
- Evaluate time-limited aging analyses (TLAAs) and exemptions
- Final Safety Analysis Report supplement
- Technical specification changes
- Environmental report



# Renewal Process



○ Opportunities for Public Interaction

\* If a Request for Hearing is Granted

\*\* Available at [www.nrc.gov](http://www.nrc.gov)





# Guidance Documents

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- **Regulatory Guide 1.188**
- **Standard Review Plan (NUREG-1800)**
- **Generic Aging Lessons Learned Report (NUREG-1801)**
- **Inspection Manual Chapter 2516**



# Standards for Issuance of a Renewed License

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- **Actions have been or will be taken to:**
  - Manage the effects of aging during the period of extended operation on the functionality of structures and components
  - Evaluate TLAAs
- **Reasonable assurance that activities authorized by the renewed license will continue to be conducted in accordance with the CLB.**



# Logistics

- ~ 20,000 staff-hours per review
- 22 month review schedule (without hearing)
- Continuously monitor effort to identify process improvements
- Improved process



# Improved Process

- **Efficiencies through standardization**
- **Multi-discipline onsite audit teams**
- **Assesses 95% of aging management reviews**
- **Reviews based on GALL Report and previously approved programs**
- **Review efficiencies**



# Program Status

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- **Renewed licenses issued for 32 units at 18 plants**
- **Reviewing applications for 16 units at 9 plants**
- **Expect to continue to receive approximately 6 applications per year**



# Summary

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- **License renewal is a proven option for meeting U.S. power demands while maintaining public health and safety**
- **License renewal is stable and predictable**
- **License renewal allows for public scrutiny and participation**



# Further Information

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## Reactor License Renewal Web Page

<http://www.nrc.gov/reactors/operating/licensing/renewal.html>

## Backgrounder on Reactor License Renewal

<http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/license-renewal-bg.html>