

Considerations for Subsequent License Renewal

August 8, 2012

Melanie Galloway, Deputy Director
Division of License Renewal
Office of Nuclear Reactor Regulation
Melanie.Galloway@nrc.gov

Overview



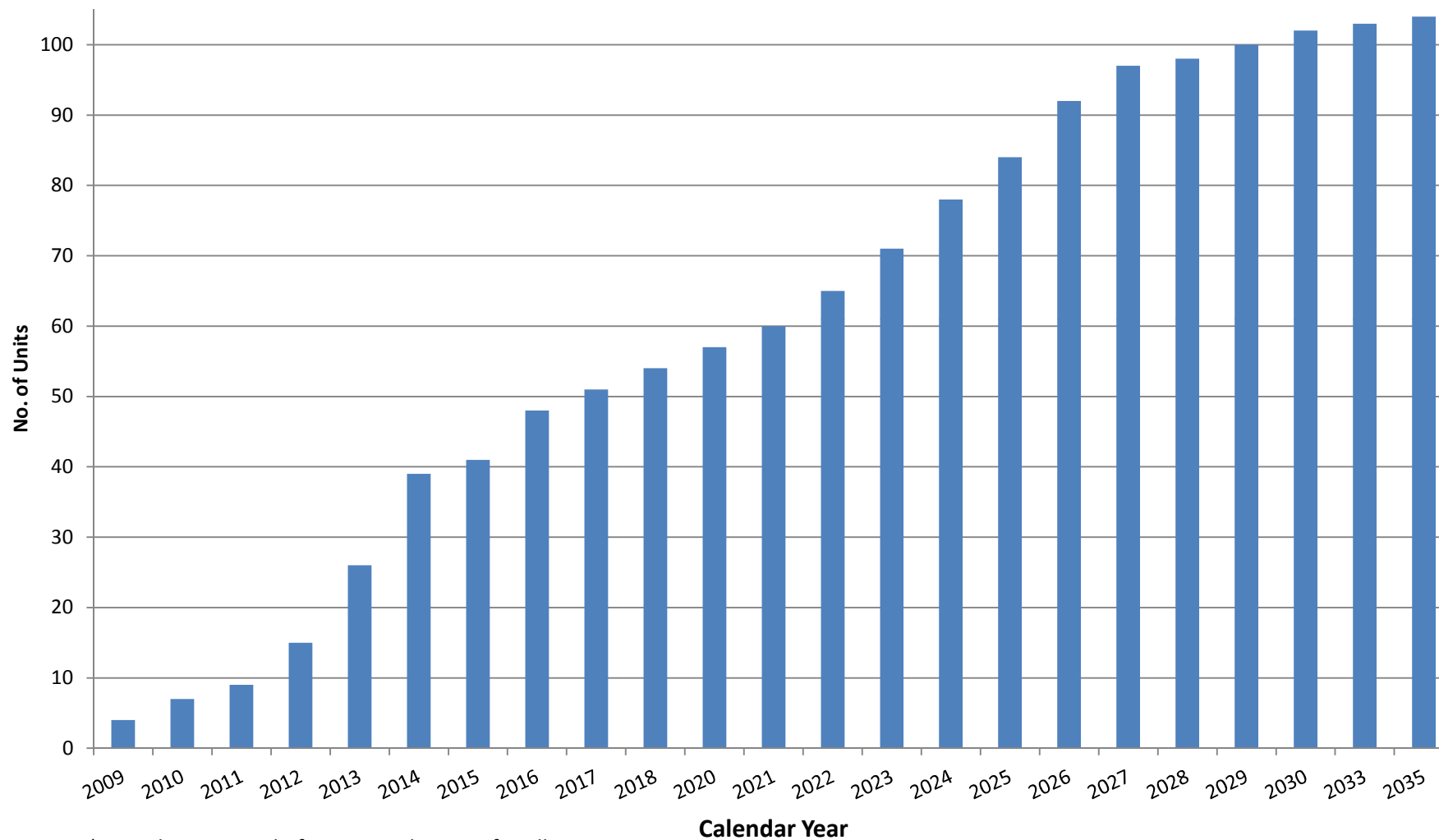
- License Renewal Status
- Background
- Industry's Role
- Current NRC Activities
- Importance of Operating Experience
- Considerations for Subsequent Renewal
- Conclusion

License Renewal Status



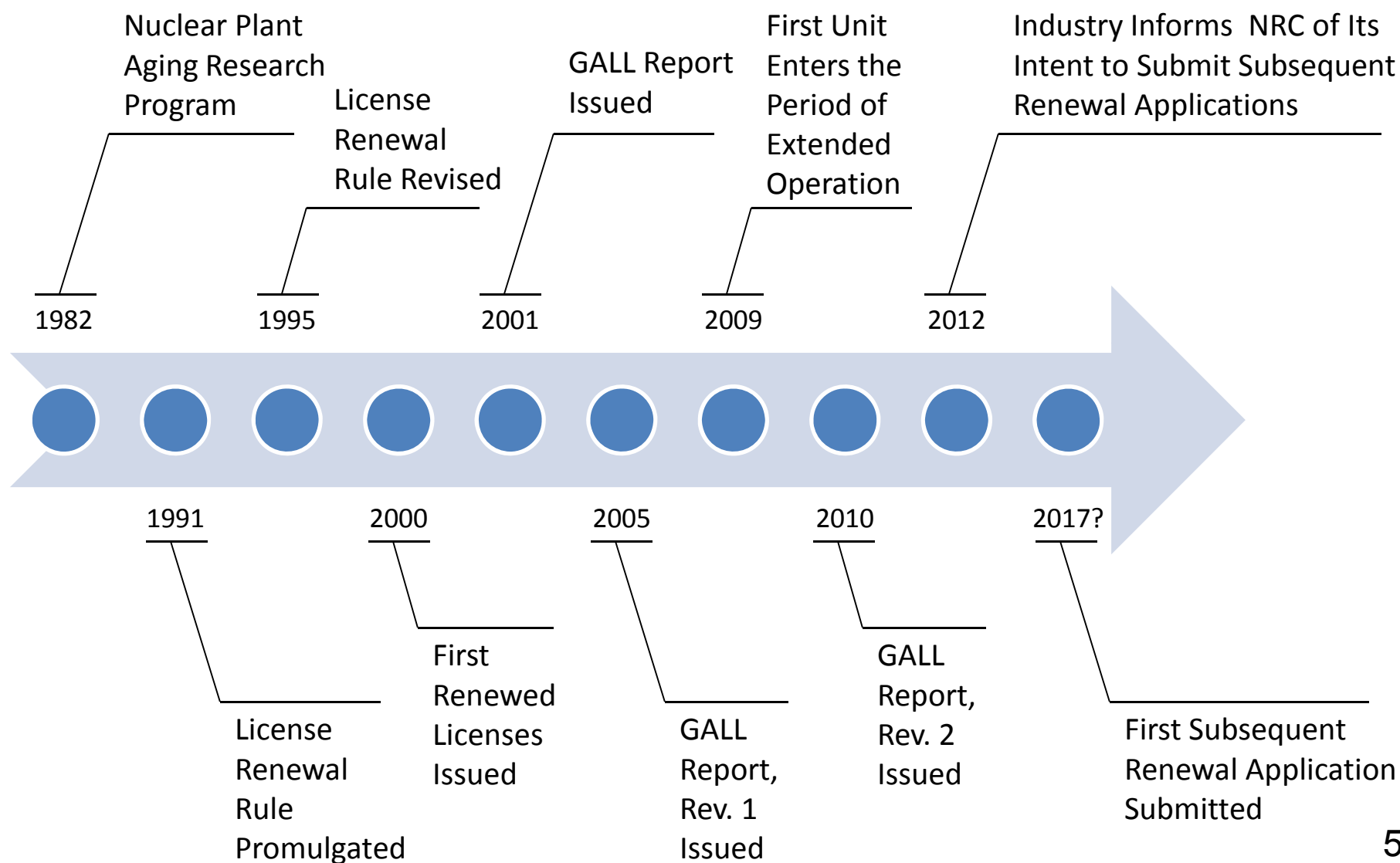
- First Renewals
 - Issued renewed licenses for 73 units
 - Currently reviewing applications for 13 units
 - Expect applications for all remaining units
- Subsequent Renewals
 - 13 units are in the period of extended operation and eligible for subsequent renewal
 - Industry intends to submit applications for subsequent renewal

Projection of Total Units in the Period of Extended Operation*



* Based on renewal of operating licenses for all 104 units

License Renewal Milestones



Industry's Role in Subsequent Renewal

- Take an active lead to develop resolutions to technical issues
 - Adequate understanding of degradation mechanisms
 - Sufficiency of aging management approaches
- Identify specific deliverables and schedules to support initial application submittals

Current NRC Efforts on Subsequent Renewal



- Technical
 - Aging management program effectiveness reviews
 - Expanded Materials Degradation Assessment
 - Workshops with industry and international colleagues
 - Review relevant domestic and international operating experience
 - Future guidance document updates (e.g., GALL Report)

Current NRC Efforts on Subsequent Renewal



- Process
 - Held May 9th meeting to receive public comments on subsequent license renewal
 - Additional public involvement in fall 2012
 - Commission paper planned

Importance of Operating Experience

- NRC guidance has evolved to address new aging issues
- Examples
 - Buried piping and tanks
 - Inaccessible non-environmentally qualified cables
 - Spent fuel pool neutron-absorbing materials
 - Pressurized water reactor vessel internals
- Enhancing aging management programs through the ongoing review of operating experience is paramount
- How have licensees enhanced their aging management programs?

Blocked Fire Protection Piping



Blocked Fire Protection Piping

- Demonstrates a partial success
 - Fouling was found through implementation of an aging management program
 - Timing should have been earlier to detect the fouling before full blockage of the pipe
- Resulted in NRC finding
 - Licensee failed to incorporate operating experience in accordance with procedures, which impacted the licensee's ability to implement an effective aging management program for the fire protection system

Failed Containment Tendon



Failed Containment Tendon

- Broken containment hoop tendon, a passive and long-lived component within the scope of license renewal
- Aging is suspected, although the cause is still being evaluated
- Demonstrates the importance of continually evaluating aging-related degradation mechanisms

Example Topics to Consider for Subsequent Renewal

1. Maintain “living” aging management programs including upgrades due to operating experience
2. Consider new and significant information in severe accident mitigation alternatives analyses
3. Consider reporting on operating experience and the effectiveness of aging management programs
4. Reconsider past exemptions and evaluations
5. Include within the scope of license renewal items addressed in NRC orders

Example Topics to Consider for Subsequent Renewal

6. Reconsider renewal term and timing of application
7. Consider aging management in the Reactor Oversight Process and enforceability
8. Conduct a pre-service-type inspection before operating beyond 60 years
9. Reconsider the use of “one-time” inspections
10. Audit aging management program effectiveness and evolution

Conclusions

- Industry must take an active role in providing the technical basis for long-term operations
- It is prudent for both the NRC and the industry to consider how the license renewal process can be strengthened to ensure safe and environmentally sound plant operation for extended time periods

Resources



- Submit considerations to the NRC for subsequent renewal: SLR.Resource@nrc.gov
- Summary of the May 9, 2012, public meeting on subsequent renewal: [ML12159A069](#)*
- NRC inspection report on blocked fire protection piping: [ML11363A182](#)*
- NRC license renewal Web page:
<http://www.nrc.gov/reactors/operating/licensing/renewal.html>

* Available in the NRC's Agencywide Documents Access and Management System at
<http://www.nrc.gov/readingrm/adams.html>