

USNRC RIC 2017

Session T24: Streamlining Research and Test Reactor License Renewals

Non-power Production or Utilization Facility (NPUF) License Renewal: Past, Present, and Future

Alexander Adams, Jr.
Office of Nuclear Reactor Regulation
March 16, 2017

USNRC RIC 2017

Non-Expiring License

The NRC staff has developed a proposed rulemaking to streamline license renewal and eliminate license terms for certain non-power production or utilization facility (NPUF) licensees, by requiring five year safety analysis report updates

USNRC RIC 2017

History of Non-Power Reactor License Renewal

- Prior to 1976 renewal was an administrative process without a detailed technical review
- Then renewal review was equivalent to an initial licensing full scope review
- 10 CFR Part 54 developed for power reactors
 - Non-power reactor renewal process established
 - Non-power reactors have no significant aging issues



History of Non-Power Reactor License Renewal

- NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors," issued in 1996
 - Part 1: Format and Content Guidance for Applications
 - Part 2: Standard Review Plan and Acceptance Criteria
- First comprehensive license application guidance for non-power reactors

4



History of Non-Power Reactor License Renewal

- Because of external events, in 2001, a backlog and delay in reviewing license renewal applications developed
- Commission directed that the staff seek short and long term solutions
- Short term was to develop streamlined approach for reactors under 2 MW(t) power which was applied to address backlog
- Long term was the non-expiring license rulemaking

5



Lessons Learned From Current Renewals

- Insufficient time for acceptance review – proposed rule proposes a two-year period
- Licensee and NRC staff challenged in dealing with 20- to 40- year old documentation – addressed by use of NUREG-1537 to update SARs and proposed rule would require SAR updates
- Scope and depth of safety analysis varied widely – addressed by use of NUREG-1537
- Technical Specifications (TS) content varied widely – addressed by use of NUREG-1537 and ANS/ANSI 15.1 standard on TS

6

USNRC RIC 2017

The Future – Proposed Rule Would Eliminate License Terms

- No license term in Atomic Energy Act (AEA) for Class 104a or 104c licenses
 - Limited by 10 CFR 50.51(a) to ≤ 40 years
- Non-expiring license is consistent with AEA Sec. 104a and 104c direction for the Commission to “impose only such minimum amount of regulation ... to promote the common defense and security and to protect health and safety of the public”

7

USNRC RIC 2017

No Notable Safety Considerations

- Low power levels of 10 MWt or less
 - Small fission product inventory
 - Small radiological consequence for maximum hypothetical accident
- Low energy systems
 - Low operating power and temperatures
 - Minimal decay heat
- No significant aging effects – Part 54 concern
 - Simple designs
 - Proactive aging management / aging-related surveillance requirements
- Slowly evolving licensing basis
 - Very low number of design changes each year
 - Few rulemakings apply

8

USNRC RIC 2017

No Nexus - Renewal Period and Safety

Based on:

- License renewal using NUREG-1537
- Inspection program
- TSs
- Existing reporting requirements
 - Safety issues with SSCs
 - Maintenance activities
- Proposed rule requirements to maintain SAR

9

USNRC **RIC** 2017
Protecting People and the Environment

**Session T24: Streamlining Research and
Test Reactor License Renewals**

QUESTIONS?



10
