



Renewals: Guidance Updates and Lessons Learned

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Renewals & Aging Management

Renewal applications must include:

- Time-limited aging analyses
- Aging management programs



First Storage Term

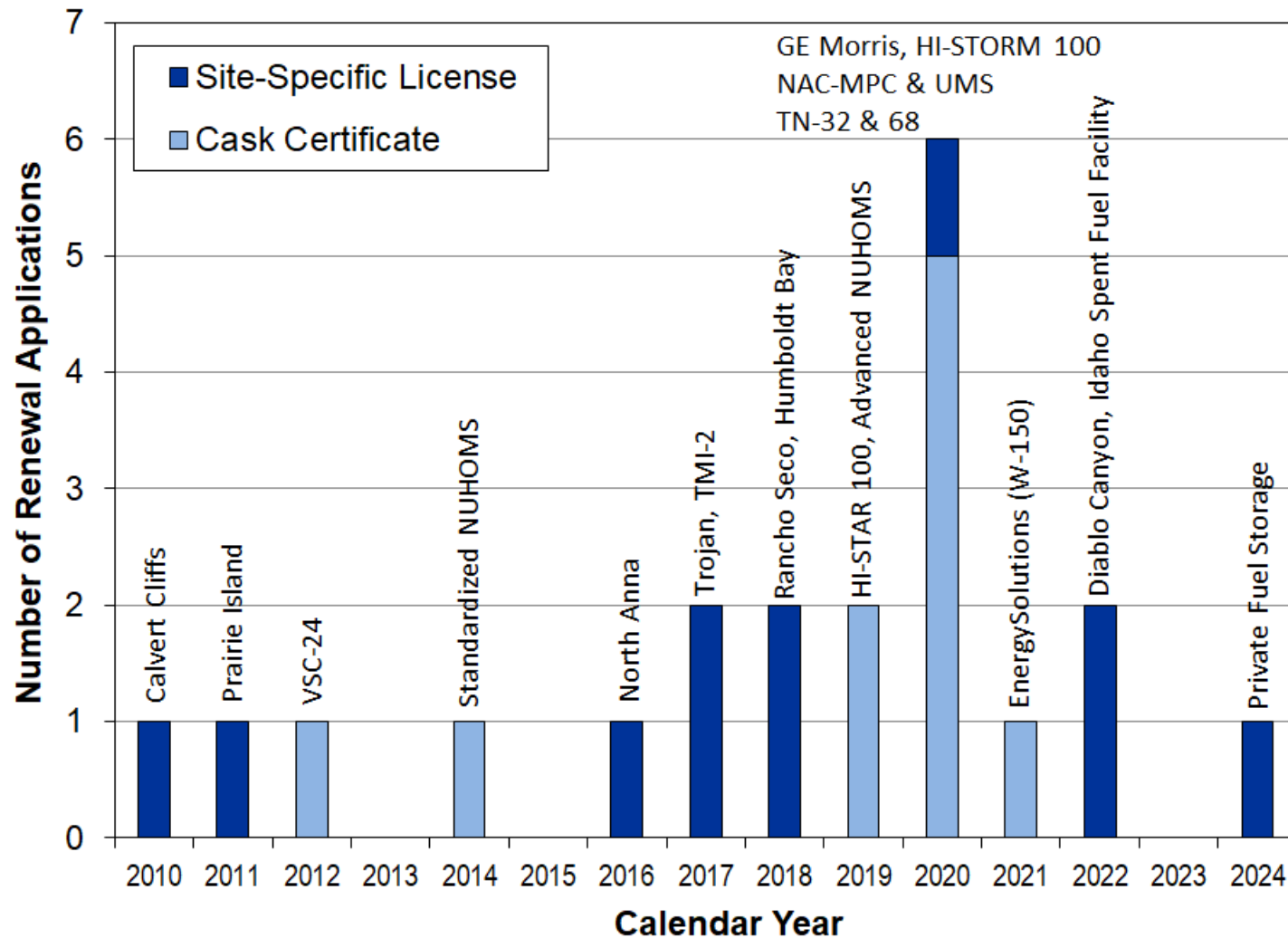
- Up to 40 years
- Materials Performance: Focus on **Materials Selection** with appropriate maintenance



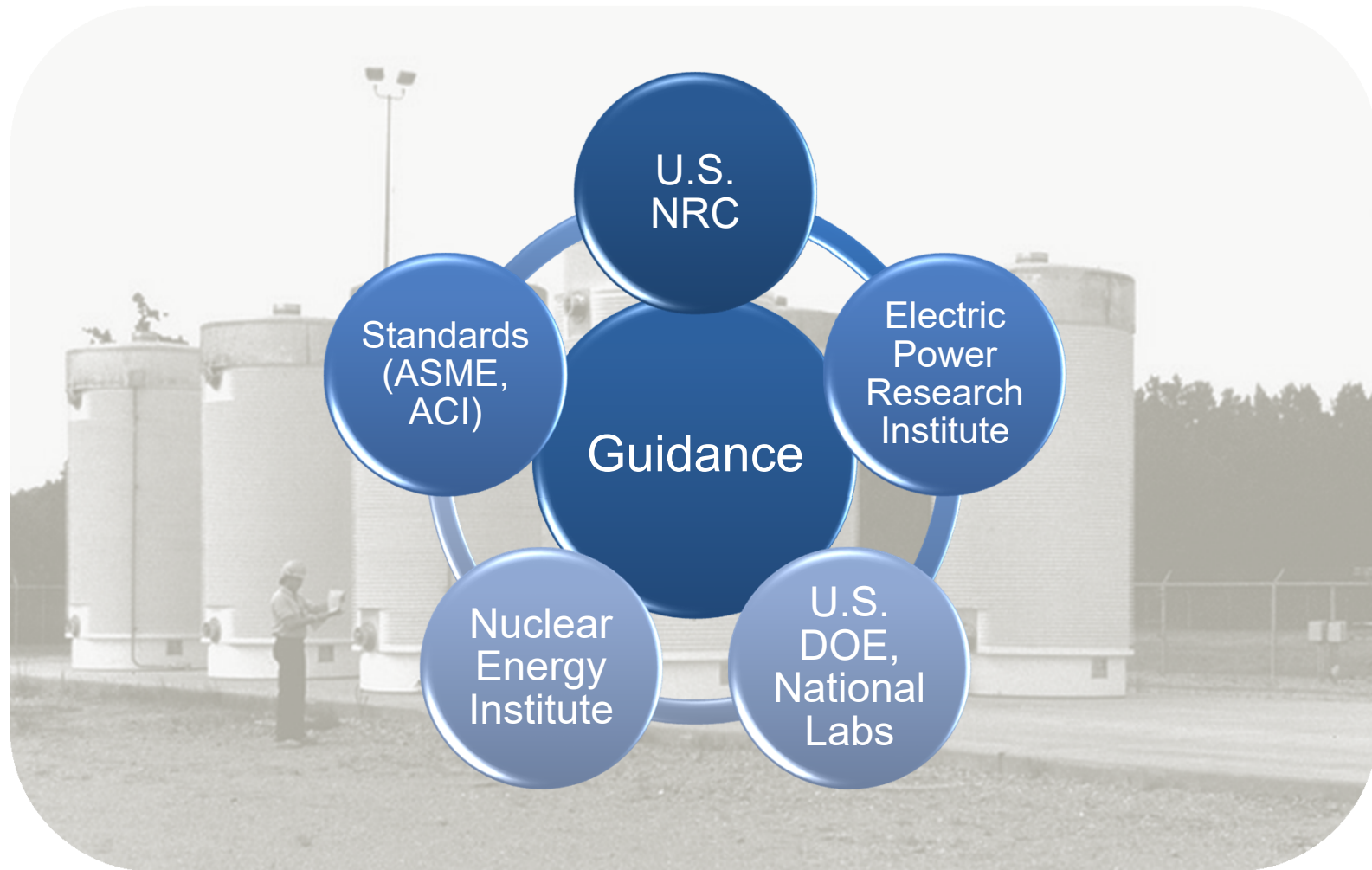
Renewed Storage Terms

- Additional 40-year terms
- Materials Performance: Focus on **Aging Management** (monitoring, inspections)

Status of Renewal Applications

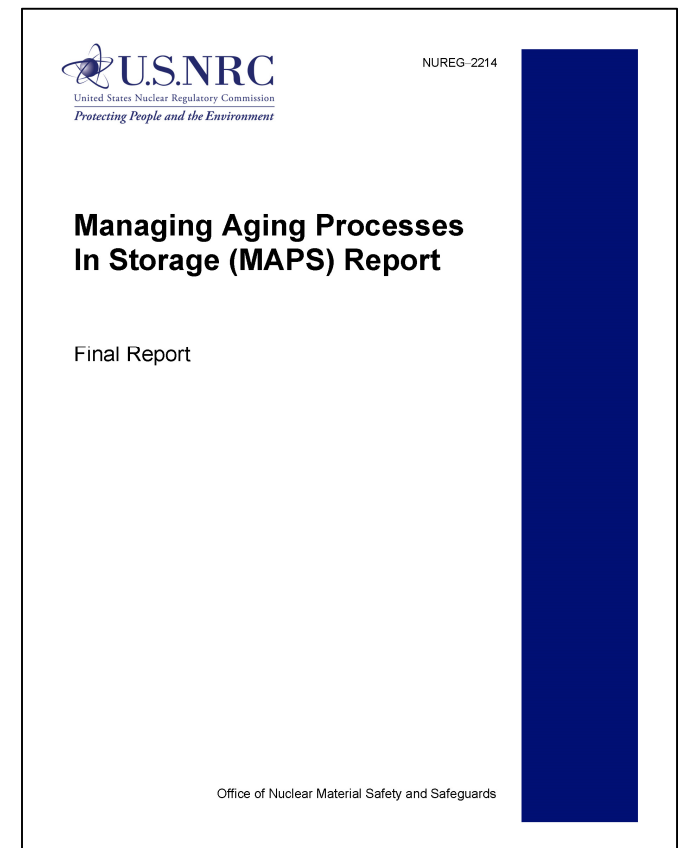


Aging Management Guidance



NUREG-2214

- Technical basis for credible aging mechanisms
- Example aging management programs (AMPs)
- Applicants can propose alternative approaches
- Similar to NUREG-1801, GALL Report, for reactor renewal
- Issued July 2019
- ML19214A111



Endorsement of NEI 14-03

- Industry guidance for developing license renewal applications
- Periodic AMP effectiveness reviews (“tollgates”)
- New INPO database of ISFSI operating experience
- NRC planning to partially endorse Revision 2
- ML16356A210

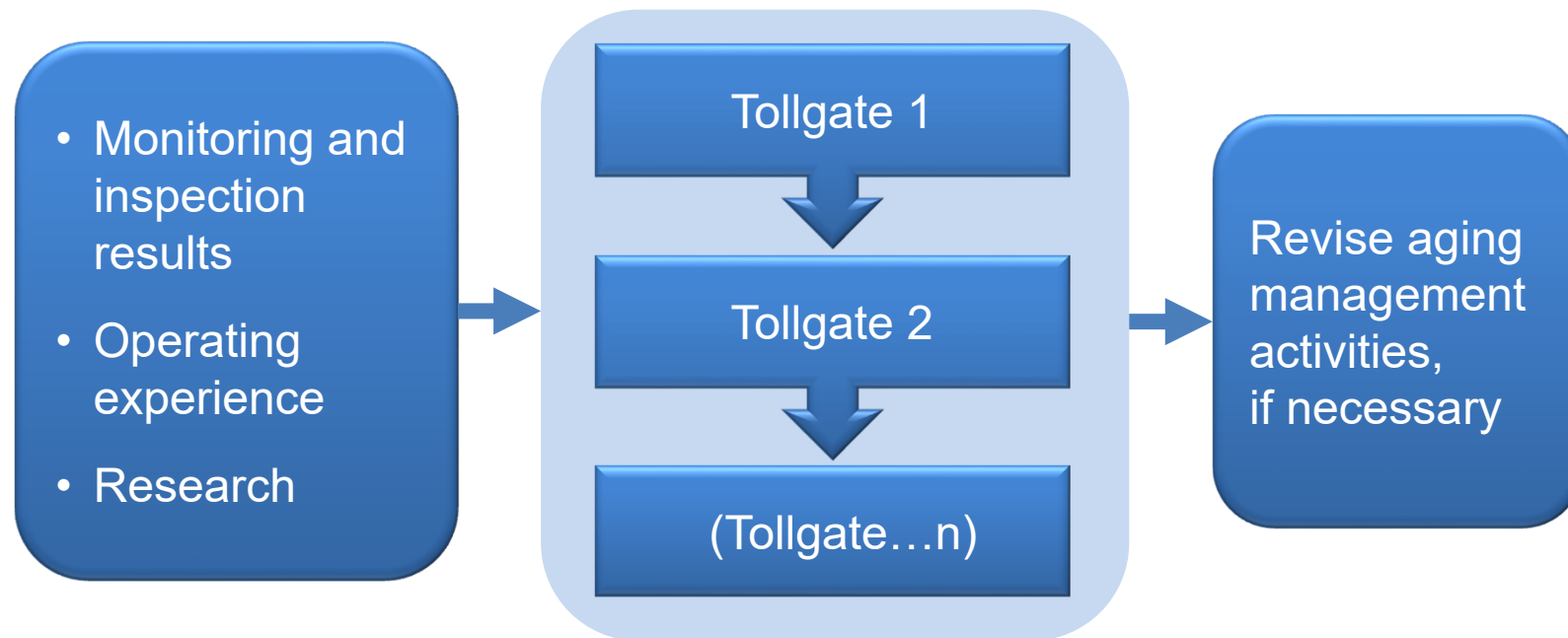
NEI 14-03 [Revision 2]

**Format, Content and
Implementation
Guidance for Dry Cask
Storage Operations-
Based Aging
Management**

December 2016

AMP Effectiveness Reviews

- Included in recent renewal applications as part of the AMPs



Lessons Learned: Renewal Applications

- Reference to NUREG-2214 – efficiency gains
- Scoping – basis for exclusion; fabrication vs. licensing drawings
- Identification of aging effects – technical basis
- SAR description of AMPs – level of detail
- Time-limited aging analyses (TLAAs) – defined by the original license / certificate

Lessons Learned: AMP Implementation

NRC Temporary Instruction

- Prairie Island
- Calvert Cliffs
- Oconee
- HB Robinson



Lessons Learned: AMP Implementation

- Hierarchical program document to link approved AMPs to procedures
- Ensure all aspects of AMPs are included in procedures – particularly if existing site procedures are credited
- Documentation of completed AMP activities
- Lessons will feed into new NRC Inspection Procedure

Abbreviations

- ACI – American Concrete Institute
- AMP – aging management program
- ASME – American Society of Mechanical Engineers
- DOE – Department of Energy
- INPO – Institute of Nuclear Power Operations
- SAR – safety analysis report
- MAPS – Managing Aging Processes in Storage
- NEI – Nuclear Energy Institute
- TLAA – time-limited aging analysis