United States Nuclear Regulatory Commission

Protecting People and the Environment

DRAFT STANDARD REVIEW PLAN for LICENSE RENEWAL of INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS and CERTIFICATES of COMPLIANCE

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OVERVIEW

Standard Review Plan (SRP) for Independent Spent Fuel Storage Installations (ISFSI) License Renewal

- Background
- Bases/Regulations
- Terminology and Technical Issues
- License Renewal Process
- Non-Quantifiable Phrases
- Summary and Future Activities

BACKGROUND

SRP for ISFSI License Renewal

03/29/01	Letter to VEPCO (Dominion) "Preliminary NRC Staff Guidance for 10 CFR Part 72 License Renewal."
04/29/02	VEPCO (Dominion) Surry ISFSI application w/40 yr. exemption.
09/28/04	SECY-04-0175 "Options for the Surry ISFSI license renewal period exemption request."
11/29/04	Staff Requirements Memorandum (SRM) approves 40-year renewal for Surry and H.B. Robinson.
07/07/06	SECY-06-0152 "Commission approval of Recommendation on the10 CFR Part 72 license and Certificate of Compliance (CoC) Terms."
08/14/06	SRM to proceed with Part 72 rule making.

REGULATORY BASES

SRP for ISFSI License Renewal

- **Regulations**
  - 10 Code of Federal Regulations (CFR) Part 72
  - Subpart C - Issuance and Conditions of License
  - 10 CFR 72.42 Duration of license; renewal.

    (a) "…….The License term for an ISFSI must not exceed 20 years from the date of issuance. Licenses for either type of installation may be renewed by the commission at the expiration of the license term …..."

- **SRP for ISFSI renewal similar to established process for renewal of operating reactor license (10 CFR Part 54)**

TERMINOLOGY

SRP for ISFSI License Renewal

SRP Abbreviations:

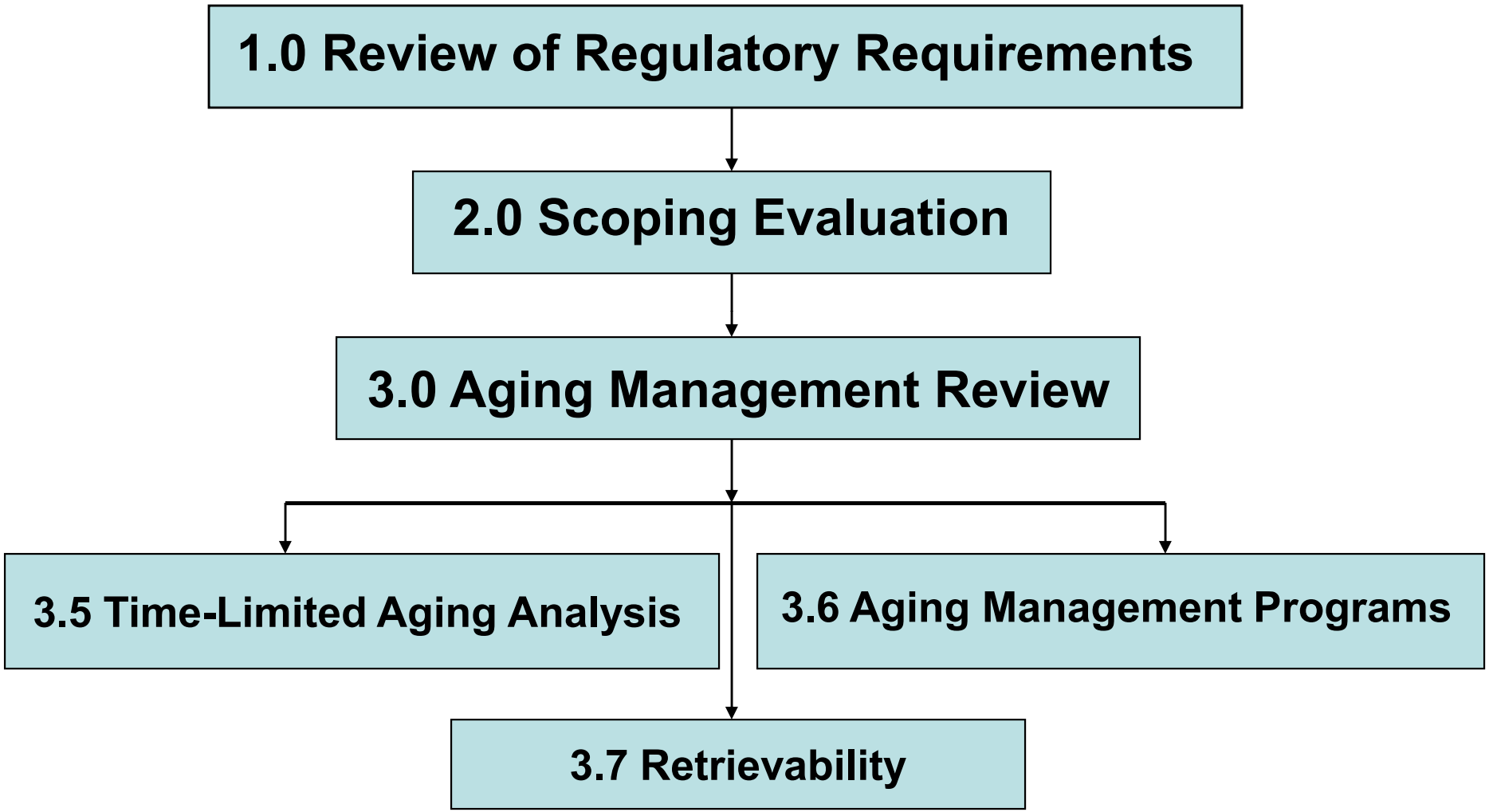
- **AMA** Aging management activity
- **AMP** Aging management program
- **AMR** Aging management review
- **DCSS** Dry cask storage system
- **SSCs** Structures, systems and components
- **TLAA** Time-limited aging analysis

An intended function code abbreviations:

- **CC** Provides criticality control of spent fuel.
- **HT** Provides heat transfer.
- **PB** Directly or indirectly maintains a pressure boundary.
- **RS** Provides radiation shielding.
- **SS** Provides structural support and/or functional support important-to-safety (ITS) equipment.
- **None** Determined to not have an ITS function, but its failure could impact performance of a safety-related SSC.

LICENSE RENEWAL PROCESS

SRP for ISFSI License Renewal



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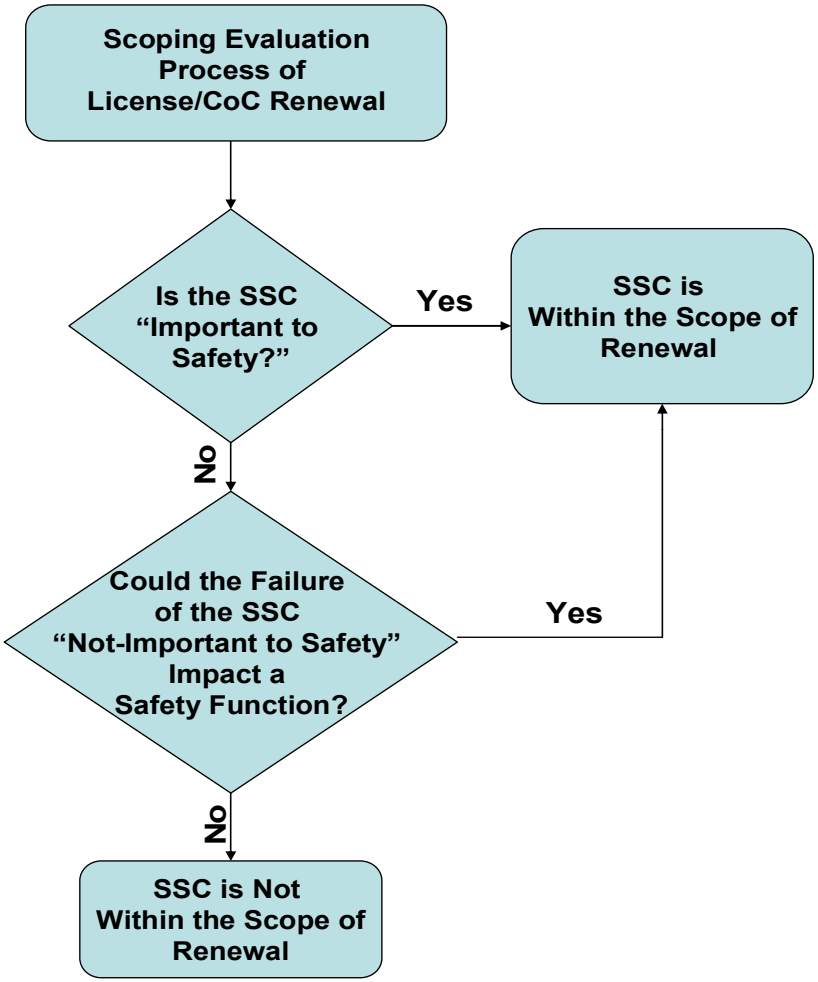
LICENSE RENEWAL PROCESS

SRP for ISFSI License Renewal



TECHNICAL ISSUES

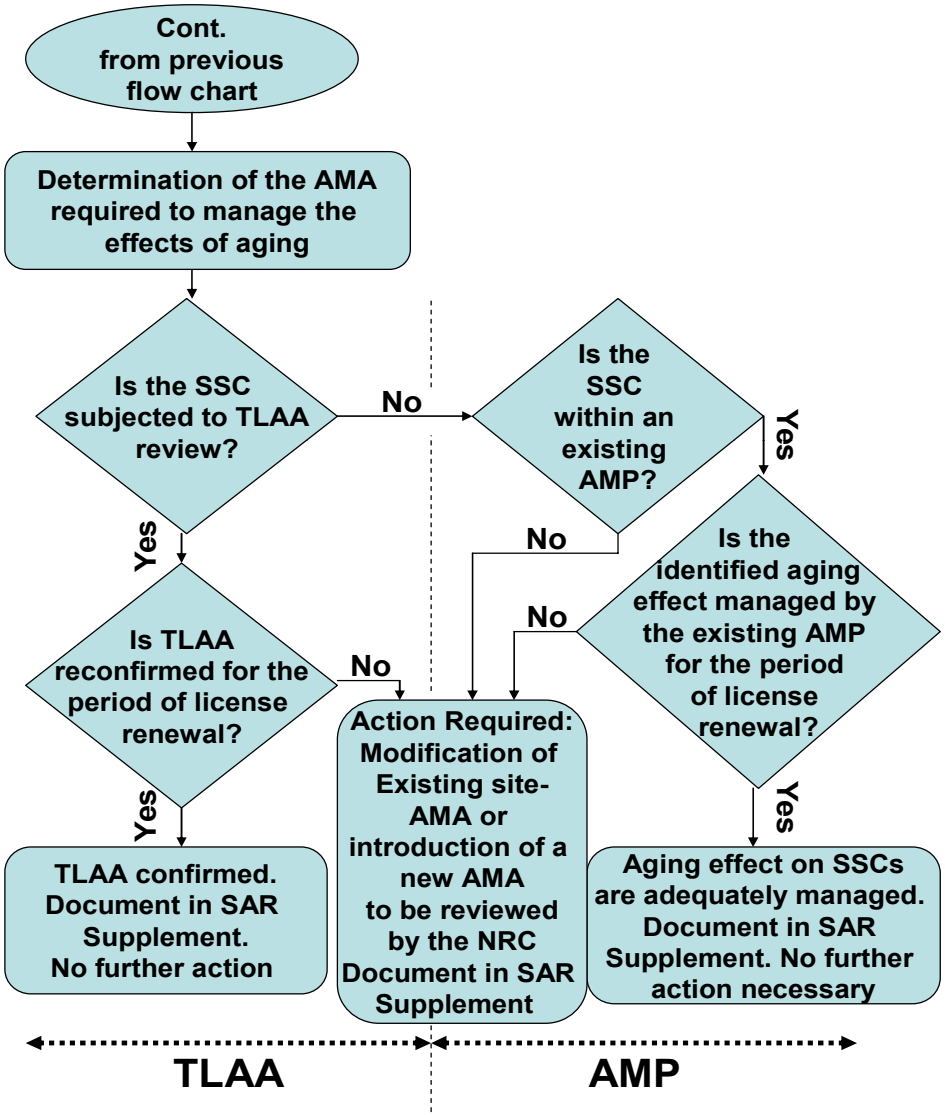
SRP for ISFSI License Renewal

Sample Table for Aging Management Review (AMR)

SSCs in-Scope	Intended Function	Material	Environment	Aging Effects Requiring Management	Aging Management Activity
Concrete (Above Grade)	HT, RS, SS	Concrete	Yard	Loss of Material, Cracking, Change in Material Properties	Site-Specific ISFSI AMP
Concrete (Below Grade)	HT, RS	Concrete	Underground	None Identified	None Required
Seismic Restraints	SS	Carbon Steel	Sheltered	Loss of Material	Site-Specific ISFSI AMP
Anchorage Transfer Cask Restraints	SS	Carbon Steel	Yard	Loss of Material	Site-Specific ISFSI AMP
			Sheltered	Loss of Material	Site-Specific ISFSI AMP

LICENSE RENEWAL PROCESS

SRP for ISFSI License Renewal



TECHNICAL ISSUES

SRP for ISFSI License Renewal

AGING MANAGEMENT ACTIVITY (AMA):

- Fuel performance research is ongoing.
- DCSS interior and cladding cannot reasonably be inspected.
- Presently no data regarding potential long-term degradation of high burn up fuel cladding.

REFERENCE DOCUMANTS:

- Research showed no deleterious effects on DCSS interior and low burn-up fuel cladding after 15 years of storage per:

  NUREG/CR-6745, "***Dry Cask Storage Characterization Project-Phase 1; CASTOR V/21 Cask Opening and Examination***"

  NUREG/CR-6831, ***"Examination of Spent PWR fuel Rods after 15 years in dry Storage."***

AGING MANAGEMENT ACTIVIRY, cont.:

- Research results formed the basis for ISG 11, Rev 3.
  - limits temperature and stresses in the cladding during loading.
- Monitor these developments to ensure that the potential degradation effects are identified.
  - Assess the most recent Rev. to ISG-11, and research results in this area, especially with respect to high burn-up fuel.
- The applicant should provide any new supporting data demonstrating high burn-up fuel performance during extended storage.

NON-QUANTIFIABLE PHRASES

SRP for ISFSI License Renewal

"Screening Criteria for Non-Quantifiable Phrases (Terms)" was developed as guidance to provide quantitative measures/information.

- large
- small
- slight
- slightly
- significant
- significance
- moderate
- moderately
- low
- minor
- many
- few
- little
- routine

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RULEMAKING

SRP for ISFSI License Renewal

Commission considering rulemaking to amend 10 CFR Part 72, ***"Licensing Requirements For the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste."***

- Clarification of license term limits for dry storage cask Certificates of Compliance (CoCs) and independent spent fuel storage installation (ISFSI) licenses.
- Clarification of ISFSI license and DCSS CoC renewal

SUMMARY AND FUTURE ACTIVITIES

SRP for ISFSI License Renewal

- SRP provides stability and structure to the technical review process
- Has been successfully applied to 4 ISFSI renewals
- SRP identifies core technical aging issues to be addressed
- Anticipated future renewal applications
- Issuance of draft SRP for public comment
- Concurrent rulemaking

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Questions?

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