Stakeholder Input on Potential Changes to Guidance for Renewal of Spent Fuel Dry Cask Storage System Licenses and Certificates of Compliance
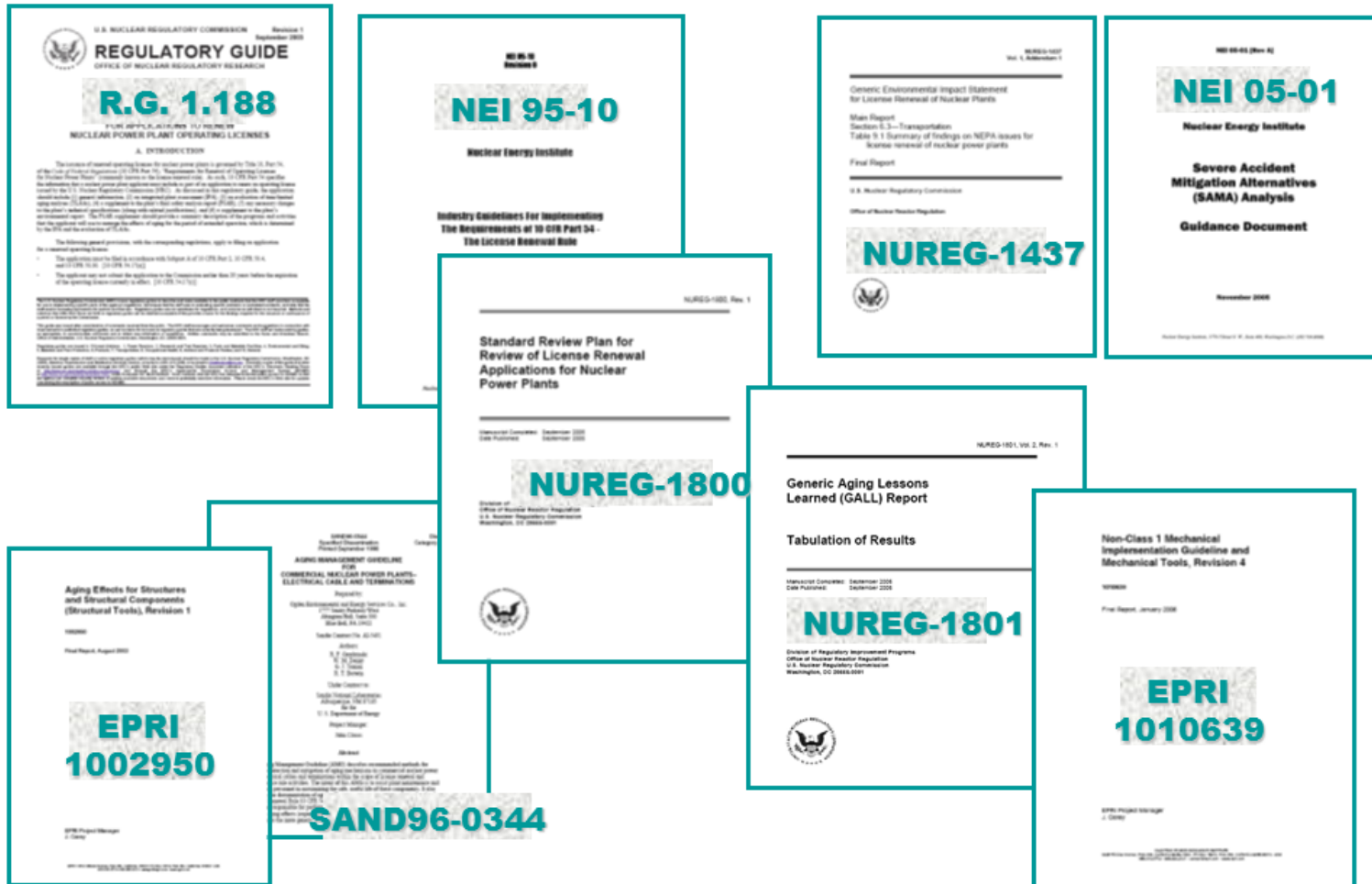## *Industry Perspective*

Rod McCullum
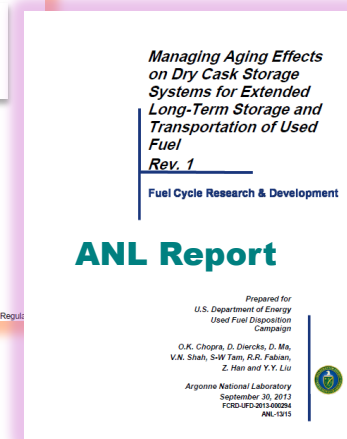
Nuclear Energy Institute

July 14, 2014

We are here

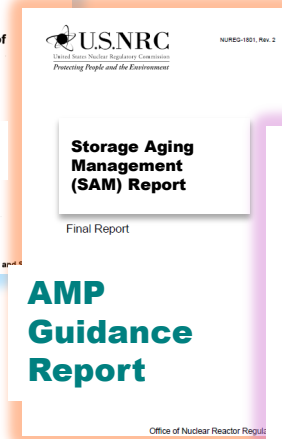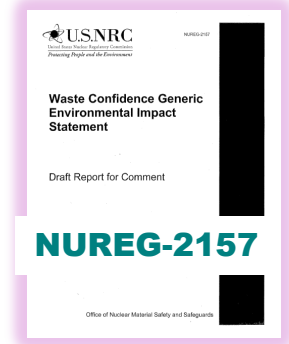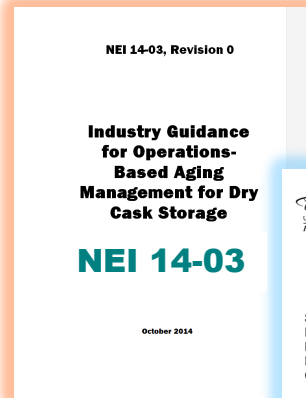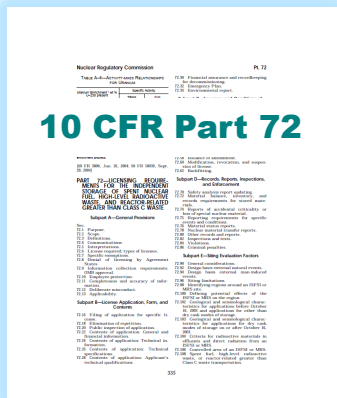Prairie Island
Calvert Cliffs
Surry
Robinson
Oconee

- 3 Dry Storage Licenses Renewed ★
- 2 Dry Storage License Renewal Applications ★ (Site Specific) & 1 Certificate of Compliance (CoC) Application Under Review
    - Multiple rounds of RAIs
    - Increased focus on aging management programs
- Industry is developing operations based aging management guidance (NEI 14-03) to assure consistency of future renewal submittals
    - Effort is being informed by ongoing dialogue with NRC
    - Focus is on providing for a learning approach to aging management
    - Will submit NEI 14-03 to NRC for endorsement in September 2014
- NRC is developing AMP guidance & updating NUREG-1927
- Coming CoC Renewals will affect many sites
    - A stable and predictable license renewal process is urgently needed

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Regulatory Guidance Structure for Reactor License Renewal

Proposed Regulatory Guidance Structure for Dry Storage License and CoC Renewal

10 CFR Part 72

NEI 14-03

NUREG-1927

NUREG-1437

NUREG-2157

RIRP N-10-01 (CISCC)

GAP Analyses

EPRI HBU R&D Test Plan

EPRI R&D CISCC Aging Mgmt.

AMP Guidance Report

ANL Report

Storage Aging Management (SAM) Report

Existing

Draft

Proposed

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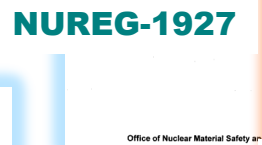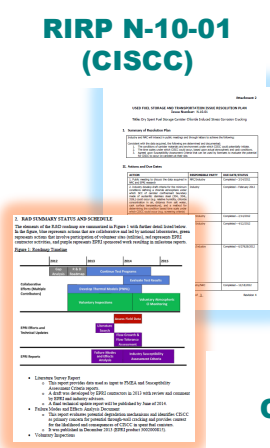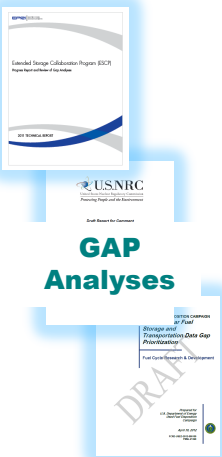
NEI 14-03 Status

- NRC reviewing outline submitted 3/18
- Full guidance document being drafted
    - Initial draft being reviewed by industry
- Industry commented on ANL Aging Management report
- Effort is benefiting significantly from ongoing dialogue
    - Industry/NRC meeting (4/23)
    - NEI Used Fuel Management Conference (5/6-8)
    - Prairie Island ISFSI License Renewal meeting (6/16)
    - Stakeholder Input meetings (7/14-15)
    - Calvert Cliffs ISFSI License Renewal meeting (7/17)
- Opportunities for future meetings welcome

NEI 14-03, where we started 3/18 Outline Submittal

- Vision established for Toll-Gate AMPs
  - But details of implementation needed
- Assessment Tools identified
- Approach to canister inspections described
- Roles and responsibilities addressed
- Reporting to NRC considered

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NEI 14-03 – Progress since 3/18

- "Toll gates" are better defined

- Operations-based aging management concept more thoroughly explained

- Importance of users' internal assessment processes and corrective action programs more clearly recognized

- Implementation examples developed

Opportunities to further develop NEI 14-03
Take-aways from interactions to date

- Topics for additional consideration in 14-03:
  - Level of detail
  - Hierarchy of documents
  - Intended function
  - Reporting
  - Distinction between design basis and renewal scope
  - Coordination of operating experience
  - Toll gate sample details

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Level of Detail and Hierarchy of Documents

- Take-away, clarification is needed on:
  - Level of detail in AMPs vs. in supporting procedures,
  - Placement of AMP information in FSAR vs. CoC/Tech Spec,
  - Articulation of "actionable" acceptance criteria vs. the role of Corrective Action Program (CAP)
- Industry Position
  - Learning aging management depends on effective licensee control of information at the appropriate level
  - Licensee implementation of learning aging management programs will be subject to NRC inspection
- Proposed NEI 14-03 Guidance
  - Add a section explaining the relationship between the CAP and acceptance criteria
  - Add explanation of the role of the 72.48 process
  - Add reactor aging management examples

Intended Function

- Take-away
  - Clarification is needed on what type and level of degradation is actionable

- Industry Position
  - Identified degradation is only actionable if it compromises the _intended function_ * of the Structure, System, or Component (SSC)

- Proposed NEI 14-03 Guidance
  - Add definition of intended function consistent with NUREG-1927 and precedents set at the three approved and three pending renewals

  * As defined in NRC Inspection Manual Chapter 0326

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Reporting

- Take-away
  - Clarification is needed on when AMP findings are reportable to NRC
- Industry Position
  - Current regulations should govern reportability
  - CAP programs trigger reporting consistent with current regulations
- Proposed NEI 14-03 Guidance
  - Add explanation of reportability triggers and discussion specific to dry storage aging mechanisms

Distinction Between Design Basis and Renewal Scope

- Take-away
  - Clarification is needed on what makes an issue a license renewal issue as opposed to a generic issue relevant to the original licensing basis

- Industry Position
  - Issues which call into question the original licensing basis (such as residual moisture) should be raised through the generic safety issue process, not in the review of individual license renewal applications. This is consistent with NUREG-1927

- Proposed NEI 14-03 Guidance
  - Add a new section, "Role of Existing Licensing Basis"

Coordination of Operating Experience

- Take-away
  - While there are multiple avenues of Operating Experience (OE) sharing, none can be said to provide a comprehensive view
- Industry Position
  - The Cask Vendor Users Groups are the best place to coordinate the sharing of OE
- Proposed NEI 14-03 Guidance
  - Add a recommendation for each cask users group to establish the position of OE coordinator
  - Provide detailed guidance for the sharing of OE between OE coordinators (including standardized format for information exchange) as well as guidance on OE coordinator cognizance of other sources (INPO, International Experience, etc.)

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Toll Gate(s)

- ## Take Away
  - The role that Toll Gate AMPs will play in learning aging management is now well understood

- ## Industry position
  - Toll Gates represent commitments to periodic, documented safety assessments that are performed at specific points in time after the renewed operating period begins. The number and timing is determined by the specific licensee or CoC holder.
  - Toll gates integrate OE, research, monitoring, and inspection results and assesses aggregate impact (e.g. applies SCC susceptibility criteria & HBU R&D results).

- ## Proposed NEI 14-03 Guidance
  - Describe toll gates and include sample table(s) consistent with Prairie Island and Calvert Cliffs precedents

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Prairie Island Example of Toll Gate

A3.11.2 PINGP Program Element

Formal evaluations of the aggregate feedback from the HDRP and other sources of information will be performed at the specific points in time during the period of extended operation delineated in the table below. These evaluations will include an assessment of the continued ability of the High Burnup Fuel Assemblies to continue to perform their intended function(s) at each point.

Toll Gate	Year*	Assessment
1	5	Evaluate, if available, information obtained from the HDRP loading and initial period of storage (during which the highest temperatures are likely to be observed) along with other available sources of information. If the HDRP cask has not been loaded at this point and no other information is available, move the next Toll Gate assessment forward 5 years.
2	15	Complete any outstanding evaluations from Toll Gate 1. Evaluate, if available, information obtained from the destructive examination of the fuel placed into storage in the HDRP along with other available sources of information. If the aggregate of this information confirms ability of the High Burnup Fuel Assemblies to continue to perform intended function(s) for the remainder of the renewal period, subsequent toll gate assessments may be cancelled. If the HDRP fuel has not been examined at this point and no other information is available, move the next Toll Gate assessment forward 5 years.
3	25	Complete any outstanding evaluations from Toll Gates 1 & 2 and evaluate any other new information. If the aggregate of this information confirms ability of the High Burnup Fuel Assemblies to continue to perform intended function(s) for the remainder of the renewal period, subsequent toll gate assessments may be cancelled. If the information is inconclusive, move the next Toll Gate assessment forward 5 years
4	35	Complete any outstanding evaluations from Toll Gates 1-3 and evaluate any other new information.

*Calculated from the effective date of the renewed license

NEI 14-03 Development Milestone Schedule

TASK	DATE
Submit Guidance Outline to NRC	Complete
Presentation at Regulatory Information Conference	Complete
Develop Initial Draft NEI 14-03 Guidance Document	Complete
User Presentation of Guidance at NEI UFMC	Complete
Project Team Review and Comment on Draft NEI 14-03	In Progress
Project Team Comment Resolution (in parallel with Prairie Island and Calvert Cliffs implementation example development)	In Progress
DSTF Steering Group Review Revised Draft NEI 14-03	August, 2014
DSTF Steering Group Comment Resolution and Report Revision	August, 2014
Final NEI Editorial Proof	September, 2014
Submit to NRC for Endorsement	September, 2014
NRC Review for Endorsement	Sept. – Dec., 2014

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Agenda Alignment

NEI's 4/23 Proposal for Future Meeting Topics

- Canister inspections and techniques

- Proposed toll gates
  - Timing and basis

- Format and content of renewal

- Canister internals and fuel

Discussion Planned for this Meeting

- "Lead" system inspections
  - 3:10 Today

- No additional discussion needed

- Format and Content of CoC Renewal Applications
  - 8:45 Tomorrow

- Fuel Performance and Cask Internals
  - 1:30 PM Tomorrow

- Additional topics on agenda will further enhance the dialogue

Name that Document

- NRC aging management guidance for dry cask storage – patterned after GALL Report for reactors
  - Can't be C-GALL (for Cask-GALL) because of forward looking nature of storage aging management (Generic Aging Lessons Learned still in future)
  - Can't be SAM (Storage Aging Management) because that acronym is already taken (Severe Accident Management)
- A few alternatives to consider
  - **M**anagement of **A**ging for **L**ong **T**erm **S**torage (MALTS)
  - **L**earning **A**ging **M**anagement **P**lans for **S**torage (LAMPS)
  - **M**anaging **A**ging **P**rocesses for **S**torage (MAPS)
  - **O**perations **B**ased **A**ging **M**anagement **A**pproaches (OBAMA)

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