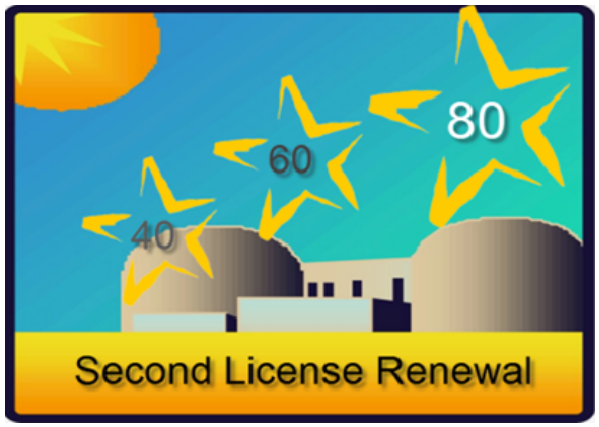

SLR PWR Vessel Internals GAP Analysis for Lead Plant

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Agenda

- Background and Objectives
- Strategy for Lead Plant and MRP Activities
  - Starting Point
  - Lead Plant GAP Analysis
  - Transition to MRP-227 Rev 2
- Gap Analysis and MRP-227 Rev 2 Timelines
- Summary and Conclusions

Background

- MRP-227-A and the associated NRC Safety Evaluation have become an established and an acceptable way to manage aging of the reactor vessel internals (RVI) for the first license renewal period.
- Draft GALL-SLR does not currently include reactor vessel internal (RVI) AMR lines or an AMP to manage aging of RVI
- MRP-227, Rev 2 is being created for the second license renewal period, but not in time for lead plant subsequent license renewal application (SLRA) or several other early plant SLRAs.
  - MRP-227 Rev 2 will include lessons learned from aging management of internals during the first Period of Extended Operation (PEO)
  - MRP-227 Rev 2 is anticipated to be available for NRC evaluation and acceptance in 2020

Dominion

Objectives

- Propose an RVI Aging Management strategy for lead plant and early plant SLRAs
- Describe a process for developing RVI aging management guidance in advance of MRP-227 Rev 2 to support lead plant SLRA
- Provide orderly transition to MRP-227 Rev 2 guidance and associated NRC Safety Evaluation

Strategy to Provide One Acceptable Way to Manage RVI Aging Management

- Starting Point: Start with MRP-227 (most current version with NRC safety evaluation), existing RVI AMR and AMP (current baseline)
- Lead Plant GAP analysis - performed to:
  - Identify differences between current baseline and SLR guidance being developed for MRP-227 Rev 2
  - Align Lead Plant AMP with MRP aging management being developed for MRP-227 Rev 2
- Transition: Use Interim MRP Guidance and feedback from lead plant process to transition to MRP-227 Rev 2

Dominion

Change Process

Changes are required to address GAPs and extend MRP-227 for aging management in the Subsequent Period of Extended Operation (SPEO)

- Changes will be informed from industry operating experience that is based on MRP-227 inspections
- Process used to prepare MRP-227 will be used to identify changes and provide MRP-227 Rev 2.
- Process will consider developments in aging degradation mechanism knowledge
- Some changes are expected – none are expected to be major changes to existing aging management strategies.

Dominion

Starting Point

GALL Rev 2 AMRs and AMP (LR-ISG-2011-04) recommended to provide the baseline for identification of RVI AMP changes in SLRA

- Modify GALL Rev 2 AMR lines to reference GALL-SLR further evaluations for component degradation mechanism changes.
- Use SLR-SRP further evaluation 3.1.2.2.9 (in SLRA) to document components with “new/changed” degradation mechanisms and their aging management impacts
- Adapt MRP-227 content (in SLRA) to address aging management impacts of further evaluation
  - Enhancements to identify addition of new component examination strategy, as needed
  - Exceptions to identify changes in MRP-227 examination methodology/frequency, as needed

Dominion

Lead Plant GAP Analysis: Integration With Industry Efforts to Develop MRP-227 Rev 2

- Update Lead Plant RVI component list consistent with MRP-227-A A/LAI 1 & 2
- Component degradation mechanism screening consistent with MRP-175 and MRP-191 SLR update
- Lead plant RVI inspection strategies consistent with MRP-227 SLR Interim Guidance based on changes to MRP-227 OEM tables (e.g. Table 4-3 for Westinghouse Primary Inspection Components)

Dominion

Transition: Development of Interim MRP Guidance

- Provide an orderly transition to MRP-227 Rev 2 and associated NRC Safety Evaluation
- Lead plant and early plant RVI inspection strategies will be consistent with MRP-227 and will include SLR Interim Guidance based on MRP-227 OEM tables
- Prior to MRP-227 Rev 2 issue, MRP Interim Guidance will incorporate significant industry operating experience associated with inspection strategies as required
- Early Plant RVI inspection Strategies will already be consistent with MRP-227 Rev 2 when issued.
- SLR-ISG is anticipated to incorporate MRP-227 Rev 2 into the GALL-SLR

Dominion

Lead Plant GAP Analysis Approach:

GAP Analysis provides integration with Industry efforts that are determining the parts of previous MRP-227 development that require update for SLR. Activities include: (those with proposed NRC briefings shown in red italic):

- Update RVI component list
- *Update aging degradation mechanism screening criteria as necessary*
- Component Screening and Evaluation
  - *Perform component screening for aging degradation mechanisms*
  - *Identify affected components*
  - Evaluate primary, expansion, and existing components examination strategies, and update as needed
- *Integrate affected components into inspection guidance*

Lead Plant Activity: Update RVI Component List

- Implement MRP-227-A A/LAI 1 & 2 and update Lead Plant RVI component list as necessary
- Confirm no component replacements or modifications since first license renewal
- Provide input to MRP-191 component and material update

MRP Activity: Update Mechanism Screening Criteria

- Simultaneous with lead plant RVI Component List Update activity
- Review MRP-175 screening criteria and identify criteria that will change
- Update of screening criteria is anticipated
- Included as part of planned MRP-191 update
- NRC Staff briefing and follow-up technical discussions planned

Industry and Lead Plant Component Screening and Evaluation (MRP-191 Update)

- Based on Lead Plant RVI Updated Component List and MRP Updated Screening Criteria
- Identify components with “new/changed” degradation mechanism (update MRP-191)
- Identify any previously identified “Category A” component where extended operation would cause aging effect to become credible.
- Provide these components for FMECA evaluation
- Provide retained list of Category A components for update of MRP-191 list of no additional measures components

Dominion

Industry and Lead Plant Component Screening and Evaluation (Cont.)

- Develop re-screening and FMECA analysis of non-category A components and identify revised primary and expansion inspection components
- Issue MRP-191 update when screening inputs and inspection aging management strategies are complete
- Identify components where extended operation could affect applicability of prior functionality analysis results (update to MRP-230/232)
- Upon completion of aging management strategies, issue interim guidance for any needed changes to Primary, Expansion and Existing Programs tables of MRP-227
- Brief NRC Staff and engage with NRC in follow-up technical discussions

Dominion

Lead Plant & MRP Integrated Timeline

Activity Timeline	
Mar 2017	ACRS Full Committee
Jul 2017	GALL-SLR Issued
Dec 2017	MRP-191 Rev issued
4th Qtr 2017	MRP-227 Lead Plant Inspection Guidance Issued
1st Qtr 2019	Surry SLRA issued for NRC review
4th Qtr 2020	MRP-227 Rev 2 submitted for NRC review

Summary & Conclusions

- A strategy has been provided for preparing lead plant and early plant SLRAs using MRP-227 as a starting point for RVI Aging Management
- A process has been provided to integrate development of lead plant and early plant SLR RVI AMPs with Industry activities to prepare MRP-227 Revision 2
- Considerations have been identified to transition from the GAP Analysis process to MRP-227 Rev 2 guidance and associated NRC Safety Evaluation for SLRAs
- A plan to keep the NRC fully informed and engaged during the development of MRP-227-Rev 2 and its back up documents has been developed

Meeting Closure

Are there any technical concerns that require additional discussion?