MONTICELLO UNIT 1
SUBSEQUENT LICENSE RENEWAL APPLICATION
PRE-APPLICATION MEETING
MARCH 16, 2022

Agenda

- Monticello Subsequent License Renewal (SLR) Project Team
- Monticello Background
- General Topics
- Scoping and Screening
- Aging Management Programs (AMPs)
- Time-Limited Aging Analyses (TLAAs)
- Topics of Interest
- Questions
- Action Items

**Application materials subject to change.*

Monticello SLR Project Team

Xcel Energy
Scott McCall, Director of Projects
Paul Young, Manager – Site Routine Projects
Max Smith, Project Manager
Toutseng Hawj, SLR Senior Engineer (Electrical)
Stephen Sollom, SLR Senior Engineer (Environmental/Chemistry)
Jolynn Oquist, SLR Senior Engineer (Mechanical)
Sharida Ullah, SLR Senior Engineer (Civil)

ENERCON
Joanne Aleksick, Project Manager
Gary Adkins, LR/SLR Manager
Brian Norman, LR/SLR Supervisor
Jeff Gromatzky, Technical Lead
Mark Miller, Mechanical Lead
Ian Miller, AMP Lead
Deb Spamer, Electrical Lead
Ken Putnam, Civil Lead

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Monticello Background

Original license renewal application (LRA) approved on November 8, 2006

Current license expiration dates, 9/8/2030

- Based on NUREG-1801 R0, Generic Aging Lessons Learned (GALL)
- Inspection Procedure (IP) 71003 inspection completed 7/16/2010 (Phase II)
- Entered PEO 9/8/2010
- Latest NEI 14-12 AMP effectiveness review completed 3/1/2020
  - AMPs effective at managing age-related degradation
- Phase IV post-approval site inspection for license renewal completed 6/10/2020
  - No findings or violations of more than minor significance; no additional tracking items

Licensed core power history

- 1670 MWt, Initial license
- 1775 MWt, Extended Power Uprate (1998)
- 2004 MWt, Extended Power Uprate (2013)

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General Topics

- Submittal schedule
- ePortal Folder Structure
- Operating Experience (OE) including Keywords
- Application of lessons learned
- Scoping and Screening
- Incorporation of New SLR ISGs

General Topics

- **Submittal schedule**
  - First Quarter of 2023 - on track
- **ePortal Folder Structure**
  - Folder for each AMP and AMR
  - Added folders for Instructions, References, Special Topics
- **Audit**
- **Operating Experience (OE) including Keywords**
  - Latest available keywords utilized (196 total)
  - The AR search covered the period from 10/01/2010 to 07/29/2021
    - 69,000+ initial hits screened, over 10,000 identified for further review
  - Experience based interviews, in accordance with EPRI TR-110089, *"Experience-based Interview Process for Power Plant Management,"* conducted with AMP owners via teleconference
  - No new aging effects identified

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General Topics

- Application of Lessons Learned
  - Senior, LR/SLR experienced engineers in key positions
  - Review and incorporation of industry LR operating experience including implementation
  - Incorporated lessons learned from ENERCON SLRA experience
  - Review and incorporation of previous RAIs including Peach Bottom, Turkey Point, and Surry SLRA reviews
    - Included as evaluations within the AMP Reports and Technical Reports

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Scoping and Screening

- Performed in accordance with 10 CFR 54.4 and 10 CFR 54.21(a)(1)
  - NEI 17-01, NUREG-2192
- (a)(2) scoping consistent with NEI 95-10 Rev. 6, Appendix F
  - Walkdowns performed using Spaces Approach
  - Preventive Option approach to Non-Safety SSCs Not Directly Connected to Safety Related SSCs

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Interim Staff Guidance

Incorporation of new ISGs:

- SLR-ISG-2021-02 MECHANICAL, Updated Aging Management Criteria for Mechanical Portions of Subsequent License Renewal Guidance, (ML20181A434)
    - AMPs X.M2 (Neutron Fluence Monitoring), XI.M2 (Water Chemistry), XI.M12 (CASS), XI.M21A (Closed Treated Water), XI.M42 (Internal Coatings)
    - AMR line items associated with Fire Protection
- SLR-ISG-2021-03-STRUCTURES, Updated Aging Management Criteria for Structures Portions of Subsequent License Renewal Guidance ISG, (ML20181A381)
    - AMP XI.S8 (Protective Coating)
- SLR-ISG-2021-04 ELECTRICAL, Updated Aging Management Criteria for Electrical Portions of Subsequent License Renewal Guidance, (ML20181A395)
    - AMPs XI.E3A (MV Cable), XI.E3B (I&C Cable), XI.E3C (LV Cables)

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Aging Management Programs

- Consistency with GALL
- AMP Summary
- AMPs with exceptions to GALL

Aging Management Programs

Consistency with NUREG-2191 and SLR ISGs

- AMRs (SLRA Section 3)
  - Very consistent, > 99% A through E notes (~13-line items note greater than E)
  - No new aging effects
- AMPs (Appendix B)
  - Goal is to maximize consistency
  - Includes aging management effectiveness review of current LR AMPs
- Peach Bottom, Turkey Point, and Surry RAIs addressed
  - Separate section in each AMP basis document summarizes how the RAIs were addressed

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Aging Management Programs

AMP Category		AMPs Consistent with GALL	AMPs Consistent with Enhancement	AMPs with Exception	AMPS with Exception and Enhancement	Plant Specific AMPs
Existing	38	8	25	2	3	0
New	7	7	0	0	0	0
Total AMPs	45					

- **New AMPs**
  - XI.M35 - ASME Code Class 1 Small-Bore Piping
  - XI.E3B - Electrical Insulation for Inaccessible Instrument and Control Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements
  - XI.M42 - Internal Coatings/Linings for in-Scope Piping, Piping Components, Heat Exchangers, and Tanks"
  - XI.M38 - Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components
  - XI.M12 – Thermal Aging Embrittlement of CASS
  - XI. M29 – Outdoor and Large Atmospheric Metallic Storage Tanks
  - XI.M32 - One-Time Inspection
- **Discontinued AMPs**
  - XI.M5, BWR Feedwater Nozzle (not in GALL SLR)
  - XI.M6, BWR Control Rod Drive Return Nozzle (not in GALL SLR)
  - **Additional Information**
  - XI.M31, Reactor Vessel Material Surveillance

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Aging Management Programs

- AMPs with exceptions to GALL:
  - XI.M2, Water Chemistry;
  - XI.M3, Reactor Head Closure Stud Bolting;
  - XI.M9, BWR Vessel Internals;
  - XI.M30, Fuel Oil Chemistry;
  - XI.S1, ASME Section XI, Subsection IWE.

All exceptions and their bases have precedence in other LRAs and SLRAs.

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Time-Limited Aging Analyses

- TLAA
- Fluence Methodology

Time-Limited Aging Analyses

- Identification
- Vendor
- Change in Methods
- General and Plant Specific TLAAs

Time-Limited Aging Analyses

- Fluence Methodology
  - RAMA Fluence Methodology
  - Neutron transport followed the guidance of Regulatory Guide 1.190, Calculational and Dosimetry Methods for Determining Pressure Vessel
  - Methodology has been generically approved for calculations of exposure of the reactor pressure vessel (RPV) beltline and for BWR core shroud and top guide components
- Exposure Projections - Based on 72 EFPY
- Reports
  - RPV Fluence
  - Reactor Internals
  - Methods report
- Reactor Vessel Embrittlement
  - 3rd Capsule pulled April 2021

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Topics of Interest

- Irradiation of Concrete
- Irradiation of Reactor Vessel (RV) supports

Topics of Interest

Irradiation of Concrete/Irradiation of Reactor Vessel (RV) supports

Threshold for concern:

- Neutron: 1E+19 n/cm^2
- Gamma: 1E+10 rad

Questions