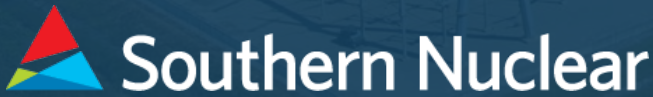




Hatch Nuclear Plant Subsequent License Renewal

Pre-Application Meeting
November 13, 2024

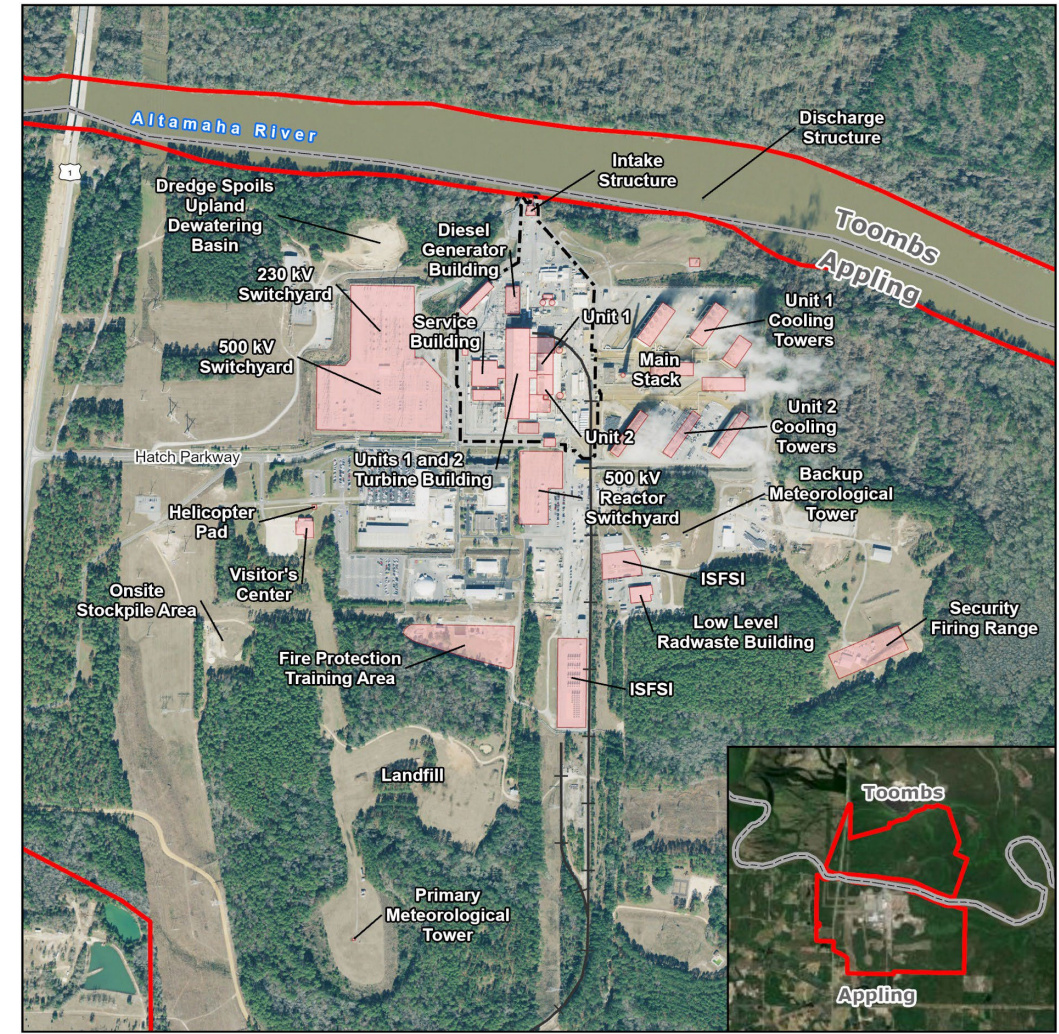


Agenda

- Hatch Background
- Hatch SLR Project Team
- General Topics
- Safety Portion of the Subsequent License Renewal Application
 - Scoping and Screening
 - Aging Management Programs
 - Time-Limited Aging Analyses
- Topics of Interest
- Closing Remarks
- Questions

Hatch Background

- Located near Baxley, GA, Hatch is jointly owned by Georgia Power, Oglethorpe Power Corporation, Municipal Electrical Authority of Georgia, and Dalton Utilities, and operated by SNC, the licensee and applicant
- The Hatch site is approximately 2,244 acres, located in Appling and Toombs County, GA
- Unit 1 and Unit 2 are General Electric Type 4 BWRs



Hatch Background

- Original license renewal application approved in 2002
 - Current license expiration dates: 8/6/2034 Unit 1, 6/13/2038 Unit 2
 - Based on pre-GALL
 - IP 71003 Phase IV completed May 2023
 - Entered PEO in 2014 (U1) and 2018 (U2)
 - Latest NEI 14-12 AMP effectiveness review completed first quarter 2023
- Core Power History
 - 2436 MWt, Initial
 - 2763 MWt, Power Uprate (1998)
 - 2804 MWt, Power Uprate (2003)
- Unit 1 and Unit 2 are on a 24-month refueling cycle

Hatch SLR Project Team

- **SNC Team:**

- *Brad Deen – Engineering Manager
- *Brad Creek – Electrical Lead
- *Adam Wilcher – Civil Lead
- *Michael Todd – Mechanical Lead
- DeLisa Pournaras – Safety Licensing Lead

- **Supplemental Team:**

- ENERCON – Jeff Head, Safety Lead
- Steve Franzone - Consulting Engineer

- **Vendors**

- ENERCON, General Electric, Transware, Structural Integrity

* Speakers

General Topics

- Submittal Schedule
- ePortal Folder Structure
- Operating Experience
- Application of Lessons Learned
- Scoping and Screening
- Incorporation of Draft GALL-SLR guidance

General Topics

- **Submittal Schedule**
 - Second Quarter of 2025 – on track
- **ePortal Folder Structure**
 - Folder for each AMP and AMR
 - Added folders for general references
 - Will add to the current structure as needed during audits
- **Operating Experience**
 - Latest available keywords utilized (~200 total)
 - Initial search covered February 1, 2013 to January 31, 2023, and an update through September 30, 2024
 - No new aging effects identified

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 industry and ENERCON SLRA experience
 - Review and incorporation of RAIs associated with approved SLRAs
 - Monitoring on-going applicant reviews

Approach to Application – Scoping and Screening

- Performed in accordance with 10 CFR 54.4 and 10 CFR 54.21(a)
 - NEI 17-01 Rev. 0, NUREG-2192 Draft Rev. 1
- 10 CFR 54.4 (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

Approach to Application – Aging Management Programs

- Consistency with NUREG-2191, Draft Rev. 1
- AMRs (SLRA Section 3)
 - Consistent (A through E notes)
 - No new aging effects identified through plant operating experience reviews
- AMPs (Appendix B) - 48 Total
 - Review of precedence set by other applicants and current BWR SLRA reviews
 - Includes aging management effectiveness review of current LR AMPs
- Recent SLR docketed correspondence addressed
- Separate section in each AMP basis document summarizes how RAIs/RCIs/Supplements were addressed

Approach to Application – Aging Management Programs

New AMPs		
Neutron Fluence Monitoring	ASME Code Class 1 Small-Bore Piping	Electrical Cable Connections
Reactor Head Closure Stud Bolting	External Surfaces Monitoring of Mechanical Components	High Voltage Insulators
Thermal Aging Embrittlement of CASS	Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components	Vessel ID Attachment Welds
Compressed Air Monitoring	Internal Coatings/Linings for In-Scope Piping	Lube Oil
One-Time Inspection	Electrical Insulation for Inaccessible Instrument and Control Cables	BWR Penetrations
Selective Leaching	Fuse Holders	

AMPs with Exceptions	
Water Chemistry	Fire Water
Reactor Head Closure Stud Bolting	Buried and Underground Piping and Tanks
BWR Vessel ID Attachment Welds	Masonry Walls
Fire Protection	Structures Monitoring

Approach to Application – 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 Neutron Fluence”
- 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

- **Reports**

- RPV Fluence
- Reactor Internals
- Methods report

Approach to Application – Time-Limited Aging Analyses

- Environmentally-Assisted Fatigue
 - NUREG/CR-6260 locations
- Plant-Specific TLAAAs
 - Fatigue of Cranes
 - Erosion, Corrosion, and Material Fatigue of HPCI
 - Main Steam Flow Restrictors
 - Erosion, Corrosion, and Material Fatigue for Recirc Pumps
 - Corrosion Allowance Calculations
- 24 Total TLAAAs

Topics of Interest

Buried and Underground Piping and Tanks

Fire Water



Application information is considered preliminary and subject to change

Hatch Buried Pipe and Tanks AMP

- **Introduction**

- Hatch is considering necessary preventive actions of the GALL-SLR XI.M41 AMP; however, since the site was not originally designed with a Cathodic Protection (CP) system, we are currently evaluating the need for a CP system

- **Construction**

- Unit 1 (1974), Unit 2 (1978)
- Did not contain CP in original design
- Material consists of Carbon Steel (CS), Stainless Steel (SS), Copper Alloy, Ductile Iron, and Gray Cast Iron
- Coatings consists of Coal-Tar Enamel, Wraps, and Asphaltic

Hatch Buried Pipe and Tanks AMP

- **Current Program**

- Ensures the integrity of buried pipes by monitoring their condition, conducting preventative maintenance, and identifying and addressing potential issues before they impact the intended function
 - Regular inspections, testing, and analysis of the pipes and tanks
 - Replacement of in-scope Carbon Steel (CS) piping with Stainless-Steel (SS)
 - Plans for additional in-scope piping to be replaced
 - Holiday testing prior to replacing backfill

Hatch Buried Pipe and Tanks Aging Management Program

- **Operating Experience (OE)**
 - Review of license renewal in-scope and not in-scope piping
 - Recent identified leaks were on Fire Protection piping
- **Soil Characteristics**
 - Mild to relatively Non-Corrosive (2010, 2014)
 - Recent sampling (2022, 2024)
 - Additional analysis (2024)
 - Pipe-to-soil potential
 - Resistivity

Hatch Buried Pipe and Tanks AMP

- **Summary**

- By leveraging the success of the current asset management plan under the guidance of NEI 09-14, and with the adoption of GALL-SLR XI.M41 AMP with exceptions and/or enhancements, Hatch will provide reasonable assurance that the program will continue to manage aging effects so that the intended function(s) of components within the scope of the program will be maintained

Fire Water AMP

- Introduction

- Hatch currently manages the aging effects of sprinklers under the XI.M27 AMP by using a performance-based methodology and reliance on the effectiveness of the corrective action program
- Hatch is evaluating taking the following exceptions to the XI.M27 AMP:
 - Element 4 - Utilizing performance-based methodology outlined in NFPA 805 and EPRI 106756. Some frequencies for sprinkler inspections are less frequent than those prescribed in NUREG-2191
 - Element 7 - Use corrective action program to determine extent of condition and follow on actions

SLRA Scheduling and Closing Remarks

- SNC is on track to submit the Hatch SLR Application in 2Q 2025
- SNC will submit a high-quality application which will support efficient staff reviews
 - Highly knowledgeable team with significant SLR experience including vendors
 - Participation in industry working groups and meetings
 - Industry and 3rd party peer reviews of SLRA
 - Monitoring on-going applicant reviews
 - Reviews of recent applicant RAIs, RCIs, and supplements
- Hatch's SLRA will meet NRC requirements, incorporate past industry practices and precedent where appropriate, while leveraging new efficiency opportunities where feasible.



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Acronyms

- AMP – Aging Management Program
- AMR – Aging Management Review
- BWR – Boiling Water Reactor
- EFPY – Effective Full Power Years
- GALL – Generic Aging Lessons Learned
- HPCI – High Pressure Coolant Injection
- ILR – Initial License Renewal
- LR – License Renewal
- MWt – Megawatts Thermal
- MWe – Megawatts Electric
- NEI – Nuclear Energy Institute
- PEO – Period of Extended Operation
- RCI – Request for Confirmation of Information
- RAI – Request for Additional Information
- RPV – Reactor Pressure Vessel
- SLR – Subsequent License Renewal
- SLRA – Subsequent License Renewal Application
- SSC – Structures, Systems and Components
- TLAA – Time-Limited Aging Analysis