

# Clinton Power Station License Renewal Application



**Pre-submittal Meeting  
June 28, 2023**



**Constellation**<sup>®</sup>

# Agenda

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- Introductions
- General Plant Information
- 10 CFR Part 54 Safety Application Approach
  - Scoping and Screening
  - Aging Management Review
  - Aging Management Programs
  - TLAA and Exemption Identification
  - Operating Experience
- Lessons Learned
- Implementation Activities
- Project Management
- Schedule and Closing Remarks
- Questions and Answers

# Introductions

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## Speakers

*Chris Wilson* – Director, License Renewal

*Scott Kauffman* – License Renewal Engineering Manager

## Participants

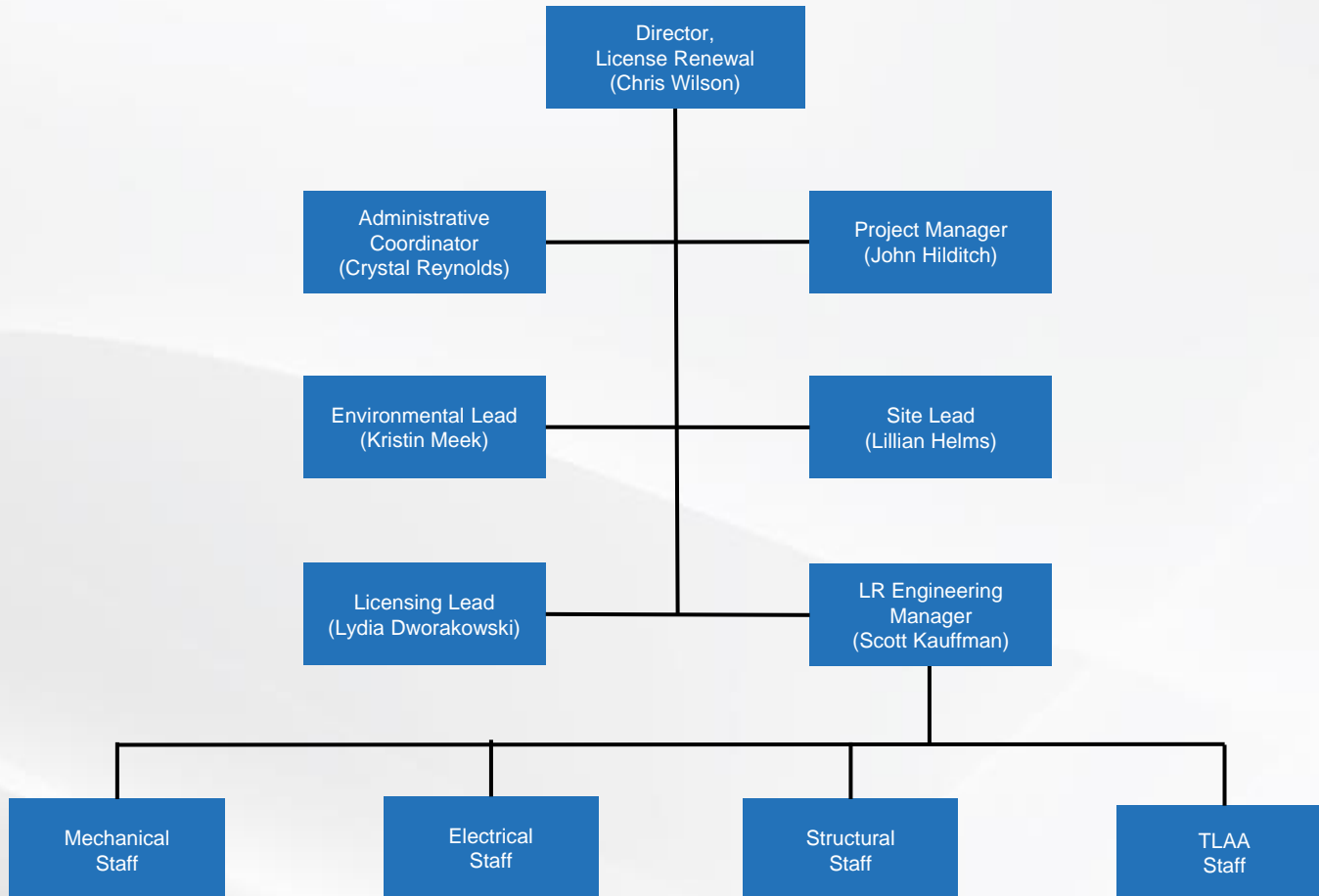
*Lillian Helms* – LR Site Lead

*Lydia S. Dworakowski* – Licensing Lead

*John Hilditch* – Project Manager

# Clinton Power Station LR Project Team

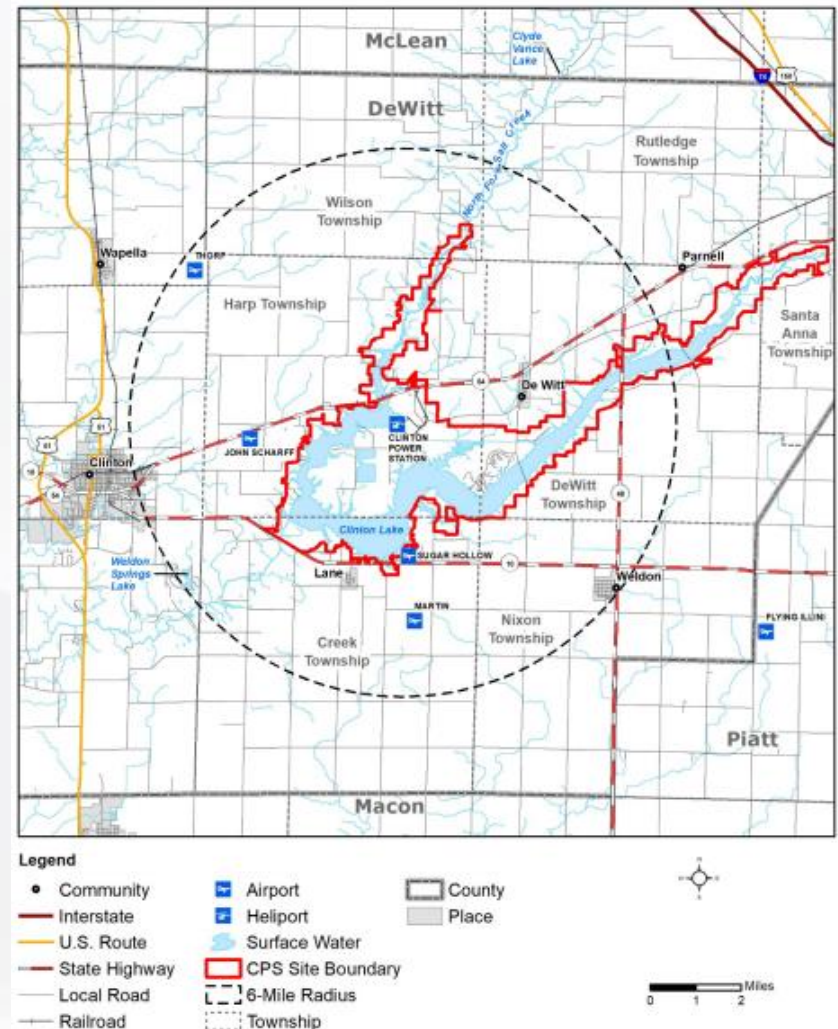
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# General Plant Information

## Clinton Power Station (CPS)

- Single unit BWR plant
- Originally planned as a two-unit site, but only one unit was built
- Located in east-central Illinois in DeWitt County
- General Electric BWR-6, Mark III Containment
- Current rated core thermal power of 3473 MWt
  - Original licensed core thermal power of 2894 MWt
  - Extended Power Uprate approved in 2002 (Amendment No. 149, 20% Uprate)
- Current gross electrical output of 1138 MWe
- Operating License issued on April 17, 1987; expires on April 17, 2027



# General Plant Information

## Major Plant Structures

1. Containment
2. Turbine Building
3. Radwaste Building
4. Control Building
5. Diesel Generator Building
6. Administrative Building
7. Raw Water Treatment Building
8. Clinton Lake (UHS)
9. Condensate Storage Tank
10. ISFSI Pad



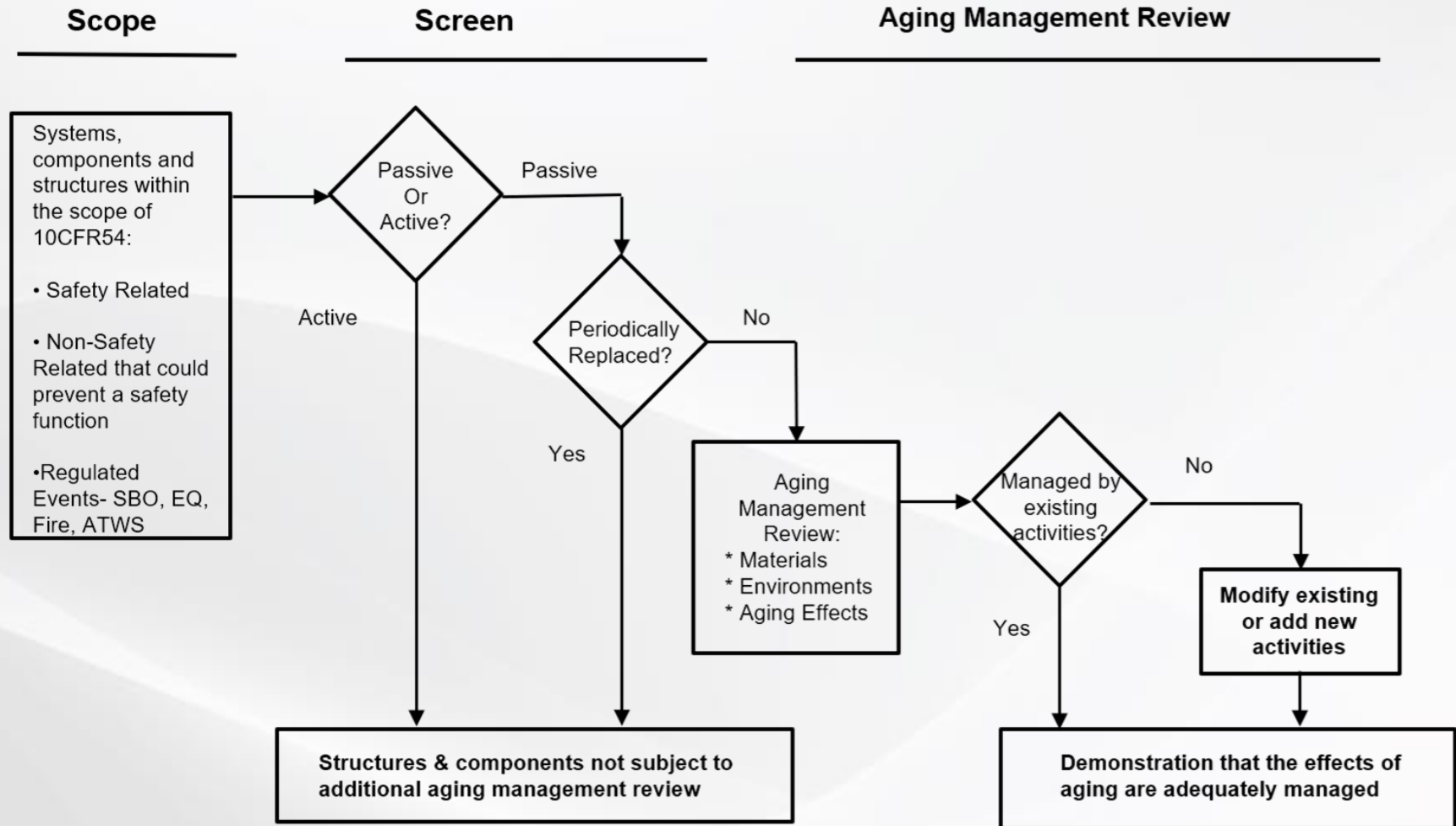
# 10 CFR Part 54 Safety Application Approach

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## Regulatory Guidance

- The License Renewal Application (LRA) format and content is based on:
  - **NUREG-1800**, “Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants,” Revision 2
  - **NUREG-1801**, “Generic Aging Lessons Learned (GALL) Report,” Revision 2
    - As supplemented by associated **Interim Staff Guidance (ISGs)**
  - **Regulatory Guide 1.188**, “Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses,” Revision 2
- Additionally, regulatory guidance that addresses subsequent license renewal (SLR), such as GALL-SLR and SLR ISGs, is being considered from the perspective of operating experience.

# 10 CFR Part 54 Safety Application Approach



# 10 CFR Part 54 Safety Application Approach

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- Utilized NEI 95-10, “Industry Guideline for Implementing the Requirements of 10 CFR Part 54 – The License Renewal Rule,” Revision 6
- Comprehensive Scoping & Screening was performed
- Aging Management Reviews (AMRs)
  - Identification of Potential Aging Effects
  - Identification of Aging Effects Requiring Management
  - Review of Operating and Maintenance History
  - Identification of Aging Management Programs
- Aging Management Programs (AMPs)
  - Goal is to maximize consistency with GALL
- Time Limited Aging Analyses (TLAAs)
  - Keyword search of licensing basis documents to identify potential TLAAs
  - Comparison of the Clinton identified potential TLAAs to LR guidance documents
  - Comparison of the Clinton identified potential TLAAs to other LR applicants
  - Review of applicable BWRVIP documents
- Operating Experience
  - Initial review period: 10/01/2013 through 08/31/2022; will perform gap review prior to submittal.
  - No new aging effects identified to date

# 10 CFR Part 54 Safety Application Approach

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## AMPs applicable to Clinton Power Station<sup>(1)</sup>

- CPS will have 44 AMPs
  - 36 are existing programs
  - 23 existing programs will be enhanced for LR purposes
  - 8 are new programs
  - No site-specific AMPs

## AMPs Not Applicable to Clinton Power Station<sup>(1)</sup> (does not include PWR specific AMPs)

- X.S1, Concrete Containment Tendon Prestress
- XI.M12, Thermal Aging Embrittlement of Cast Austenitic Stainless Steel (CASS)
- XI.M22, Boraflex Monitoring
- XI.M25, BWR Reactor Water Cleanup System
- XI.E5, Fuse Holders

(1) – Preliminary Information

# 10 CFR Part 54 Safety Application Approach

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Preliminary AMP results:

		AMPs Consistent with GALL	AMPs with Enhancements	AMPs with Exception without Enhancement	AMPs with Exception and Enhancement	Plant Specific AMPs
Existing	36	10	20	3	3	0
New	8	8	N/A	N/A	N/A	0
Total AMPs	44					

# Lessons Learned

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- Lessons learned from previous Exelon (currently Constellation) and industry license renewal projects are being utilized in the CPS LR Project
  - Constellation has extensive aging management experience
    - ✓ 20 of 21 units have renewed operating licenses
    - ✓ 12 units are operating in the period of extended operation
  - Constellation participates in NEI and EPRI initiatives related to License Renewal & Long-Term Operations
  - The Constellation CPS LR Project Team consists of experienced technical personnel
  
- Current NRC Expectations and SRP Guidance
  - Constellation reviews Breakout Questions, RAIs/RCIs, and Supplements associated with recent license renewal applications to ensure consistency with current NRC expectations and SRP guidance
  
- Regulatory guidance that addresses SLR, such as GALL-SLR and SLR ISGs, is being considered from the perspective of operating experience
  
- An Industry Peer Review of the LRA will be performed

# Implementation Activities

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- CPS has a truncated pre-PEO period due to the LRA submittal date (first quarter 2024) and the license expiration date (April 17, 2027)
  - Requires LR implementation activities in parallel with LRA development
  - An Implementation Team has been chartered, led by the Clinton Site Lead, and meets regularly to track the status of LR implementation activities
  - There are two refueling outages prior to entering the PEO
- One-Time Inspections
  - Pre-PEO one-time inspections requiring an outage are scheduled to be completed either during the Fall 2023 refueling outage (C1R21) or Fall 2025 refueling outage (C1R22)
  - These inspections are inclusive of the AMP M32 One-Time inspection program and AMP M35 ASME Code Class I Small Bore Piping program
- Additional mechanical pre-PEO inspections that will be performed online/during appropriate system outage window: AMPs M33 Selective Leaching, M41 Buried Piping and Tanks, M30 Fuel Oil Chemistry (EDG FO Tanks), M29 Aboveground Metallic Tanks, and M42 Service Level II/III Internal Coatings (Baseline)
- Electrical pre-PEO inspections that will be performed online/outage/during appropriate system outage window: AMPs E1 Insulation Material for Cables and Connections not subject to EQ, E2 Instrumentation Cables, E3 Power Cables, E4 Metal Enclosed Bus, E6 Cable Connections
- AMP Program Owners have been identified and are actively engaged with the LR team developing programmatic requirements

# Project Management

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- Constellation plans to submit the LRA, including the Environmental Report (ER), via the NRC Electronic Information Exchange (EIE)
- Constellation intends to utilize the Sciencetech eDocs portal to support NRC review. Documents such as:
  - LRA, ER, boundary drawings, USAR, and FPP will be made available on eDocs portal
- Constellation Licensing Lead will coordinate with the NRC PM
- Audit Support
  - Constellation will work with the NRC PM to establish and manage the schedules
  - Constellation will track NRC audit questions, requests, and the responses in a database
  - Site Lead will coordinate plant walkdowns and other on-site activities
- RAI Responses
  - Constellation will submit timely responses to NRC requests for additional information

# Schedule and Closing Remarks

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- The CPS LR application will be consistent with GALL, Revision 2 to the greatest extent possible
  
- The CPS LR application will be consistent with industry practices and lessons learned from recent LRs/SLRs to meet NRC requirements
  
- Constellation will submit a high-quality application that can support an efficient staff review
  - Recent industry RAIs will be addressed in the LR application
  - Timely RAI responses
  - Frequent NRC interface
  
- The CPS LR application is on track to be submitted on the target date of February 14, 2024

# Questions

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