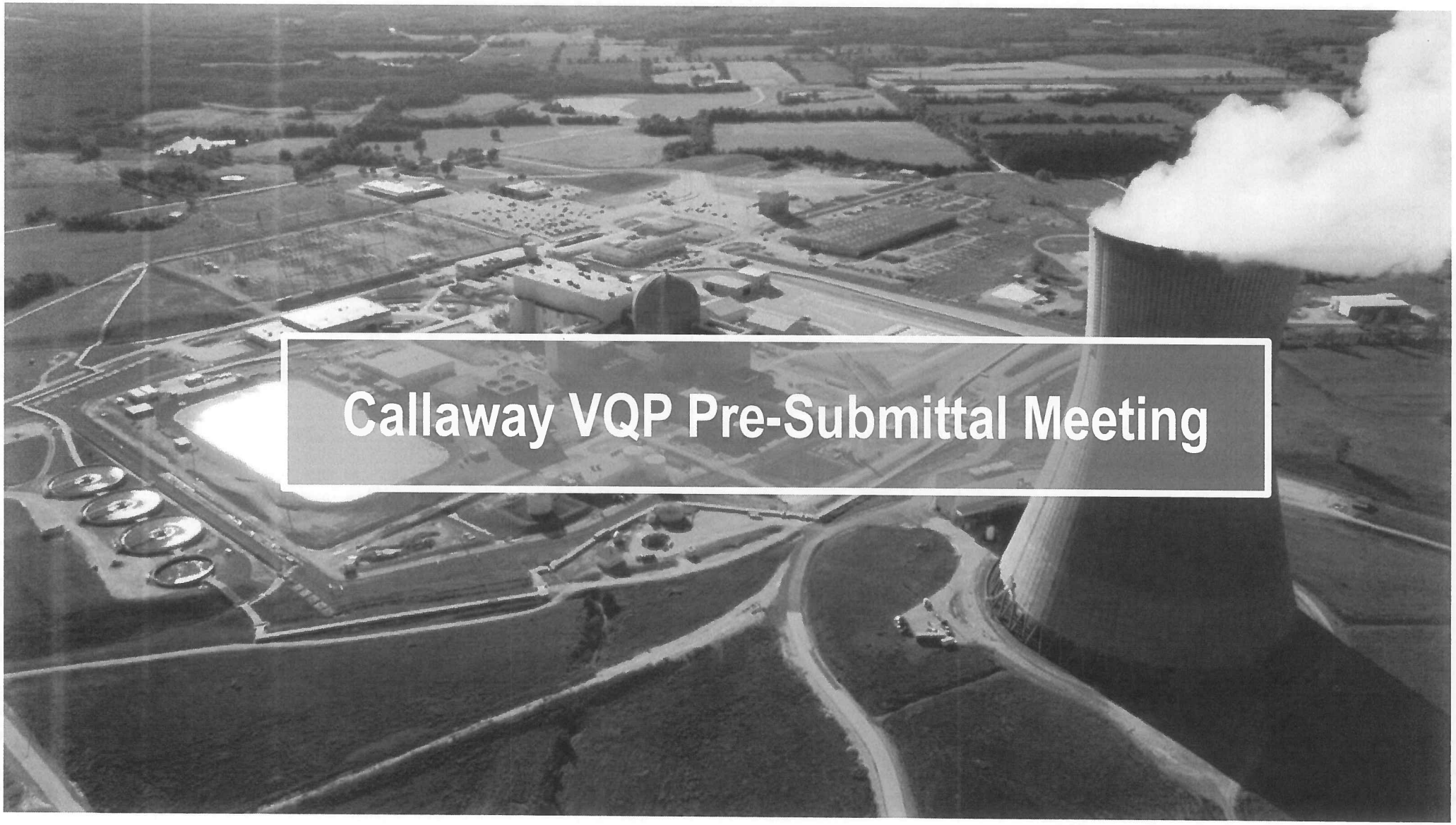
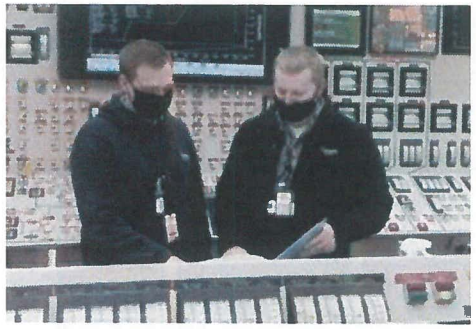
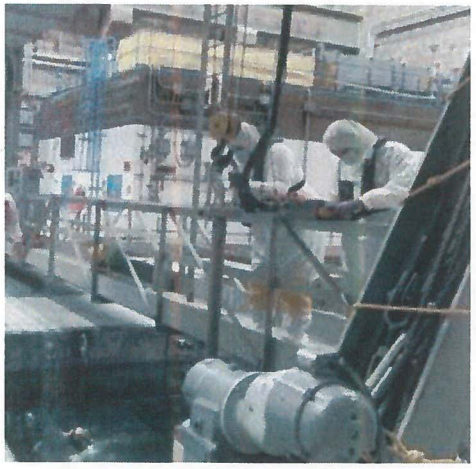
Callaway Unit 1 Presentation Information for Planned Pre-Application Meeting

11 pages follow this cover page



Callaway VQP Pre-Submittal Meeting





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Callaway VQP Pre-Submittal Meeting

Brent Jungmann – Ameren – Sr. Director Nuclear Engineering

- Welcome
- Meeting Purpose – to provide the NRC with information on the upcoming License Amendment Request (LAR) for the Vendor Qualification Program (VQP) of Framatome as a supplier of nuclear fuel to Callaway Energy Center

Team Members

Presenters in Bold

Ameren Team Members	Titles
Brent Jungmann	**Senior Director, Nuclear Engineering**
Todd Witt	Manager, Regulatory Affairs
Tom Elwood	**Supervising Engineer, Regulatory Affairs**
Brian Richardson	**Supervising Engineer, Reactor Engineering / Safety Analysis / Fuels**
Don Rickard	**Consultant Regulatory Affairs Engineer**
Chris Ehmke	Reactor Engineering / Fuels
Jim Knaup	Reactor Engineering / Core Design
Justin Vinyard	Reactor Engineering / Fuels
Jonathan Cordz	Reactor Engineering / Safety Analysis
Jim McInvale	Consultant Reactor Engineer
Larry Russell	Consultant Project Manager

Framatome Team Members	Titles
Rick Williamson	Contract Manager
Tom Gardner	Project Manager
Morris Byram	Licensing
Kevin Segard	Neutronics
Quang Phung	Neutronics
Jackson Breakell	Thermal-Hydraulics
Mike Aldrich	Thermal-Mechanics
Tim Lindquist	Safety Analysis
Gordo Wissinger	LOCA Analysis
Graeme Leitch	Mechanical Design
Brian Painter	Mechanical Analysis

Agenda

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• Purpose of Meeting / Desired Outcomes	Callaway
• Background	Callaway
• Scope Change from Previous Submittal	Callaway
• Technical Specification Changes	Callaway
• Discussion of Insufficiency Items	Callaway
• Schedule	Callaway

Purpose of Meeting / Desired Outcome

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- This LAR is being submitted to request approval to operate eight (8) GAIA fuel assemblies in operating cycle 27 without restriction
- The fuel assembly design, methods, and details of this request are the same as what was described in Ameren's previous submittal (ML22153A174)
  - The first LAR was withdrawn to remove proposed changes to the power distribution TSs for supporting a full transition to Framatome fuel
  - The associated Framatome method for Power Distribution Control is also removed
- Additional details on the submittal, methods, and modifications to the methods are contained in ML21123A258, ML21279A286 and ML22047A094 from earlier pre-submittal meetings for the previous LAR.

Background

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- Callaway LFA / VQP Program for Framatome Fuel
  - Lead Fuel Assemblies (LFAs) – 4 Fuel Assemblies
    - 3 cycles (Cycles 25, 27, 28)
    - Non-Limiting Operation (Cycle 25 only)
  - Vendor Qualification Program (VQP)
  - VQP Assemblies – 4 Additional Fuel Assemblies
    - 3 cycles (Cycles 27, 28, 29)
    - Fully Licensed Operation
- GAIA Fuel Design
- Based on Framatome methods as previously discussed

Technical Specification Change Implications

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- **Cycle 26** – started May 2022
  - No Framatome fuel in core
- **Cycle 27** – starts late October 2023
  - 8 Framatome GAIA Assemblies (4 LFAs and 4 VQP)
  - Balance of core continues to be Westinghouse-supplied fuel assemblies
  - Presence of Framatome fuel assemblies dictates changes to:
    - TS 2.1.1 - Reactor Core Safety Limits
    - TS 4.2.1 - Fuel Assemblies
  - Westinghouse methods continue to govern COLR development
    - Framatome evaluations ensure compliance with limits
- **Cycles 28 and 29**
  - Same practices would continue until GAIA Assemblies are discharged from the core

Discussion of Insufficiency Items (ML22199A177)

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Consistent with the NRC letter acknowledging the request to withdraw the first LAR, the following items will be addressed:

1. What is the timeline for availability of the Ejected Rod Analysis Results?
   - Final documentation will be available by the time of this LAR submittal.
2. In general, the limitations and conditions, established by the NRC staff, for each topical report … are not dispositioned or addressed.
   - A cross-walk table correlating the discussion locations of the limitations and conditions for each referenced topical report will be added as stand-alone Appendix.
3. The basis for selecting the governing PDL TS LCO does not appear to be associated with the fuel that has the limiting margin. There is inadequate discussion regarding how one TS limit protects the other fuel.
   - This proposed LAR does not alter the TS 3.2 Power Distribution Limits TSs, i.e., unique TS structure is not present in the proposed LAR (compared to the previous LAR).
4. Operation with an improper fuel assembly loading event was not discussed in the LAR although referenced in the Attachment 12 – Non-LOCA Summary Report.
   - FSAR 15.4.7, "Inadvertent Loading and Operation of a Fuel Assembly in Improper Position," will be evaluated in accordance with 10 CFR 50.59 and 10 CFR 50.71(e).

Exemption Request

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- M5 Cladding 10 CFR 50.46 and 10 CFR 50 Appendix K Exemption Request
- Similar to M5 cladding exemption requests for other plants

Separate TS License Amendment Request

- Ameren Missouri recently submitted an updated spent fuel pool criticality analyses that addresses GAIA fuel
  - Meets current 10 CFR 50.68 standards and conforms to RG 1.240
- Affects TS 3.7.16, "Fuel Storage Pool Boron Concentration," and TS 3.7.17, "Spent Fuel Assembly Storage," and TS 4.3, "Fuel Storage"

Schedule

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- **LAR submittal** — **Early October 2022**
  - Pre-submittal Meeting – September 12, 2022
  - Ameren/Framatome can support NRC Audit as early as end of October 2022
- **Requested NRC approval of LAR** — **September 30, 2023**
  - Supports Operating Cycle 27, RFO expected start date September 30, 2023

Questions

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