Watts Bar Nuclear Plant

Watts Bar Nuclear Plant (WBN)
Schedule for the Development of a License Amendment Request (LAR) for Increased Tritium Production at WBN

January 19, 2022

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Agenda

- Opening Remarks
- Purpose of the Meeting
- Background
- Key Stakeholders
- Project Schedule
- Key Milestones
- Areas for Improvement
- Future Meetings
- Closing Remarks

Opening Remarks

- WBN Units 1 and 2 are currently licensed to allow up to 1,792 tritium producing burnable absorber rods (TPBARs).

- At the recent request of the Department of Energy (DOE) National Nuclear Security Administration (NNSA), TVA is developing a license amendment request (LAR) to increase the licensed limit to 2,496 TPARs for each unit.

Purpose of the Meeting

- Inform Nuclear Regulatory Commission (NRC) for planning and scheduling purposes of the schedule for development of a LAR to increase tritium production at WBN Units 1 and 2.
- Introduce the key stakeholders responsible for development of the LAR.
- Identify key schedule milestones to support DOE NNSA production requirements.
- Discuss areas for potential improvement in the LAR schedule.
- Discuss future meetings.

Background

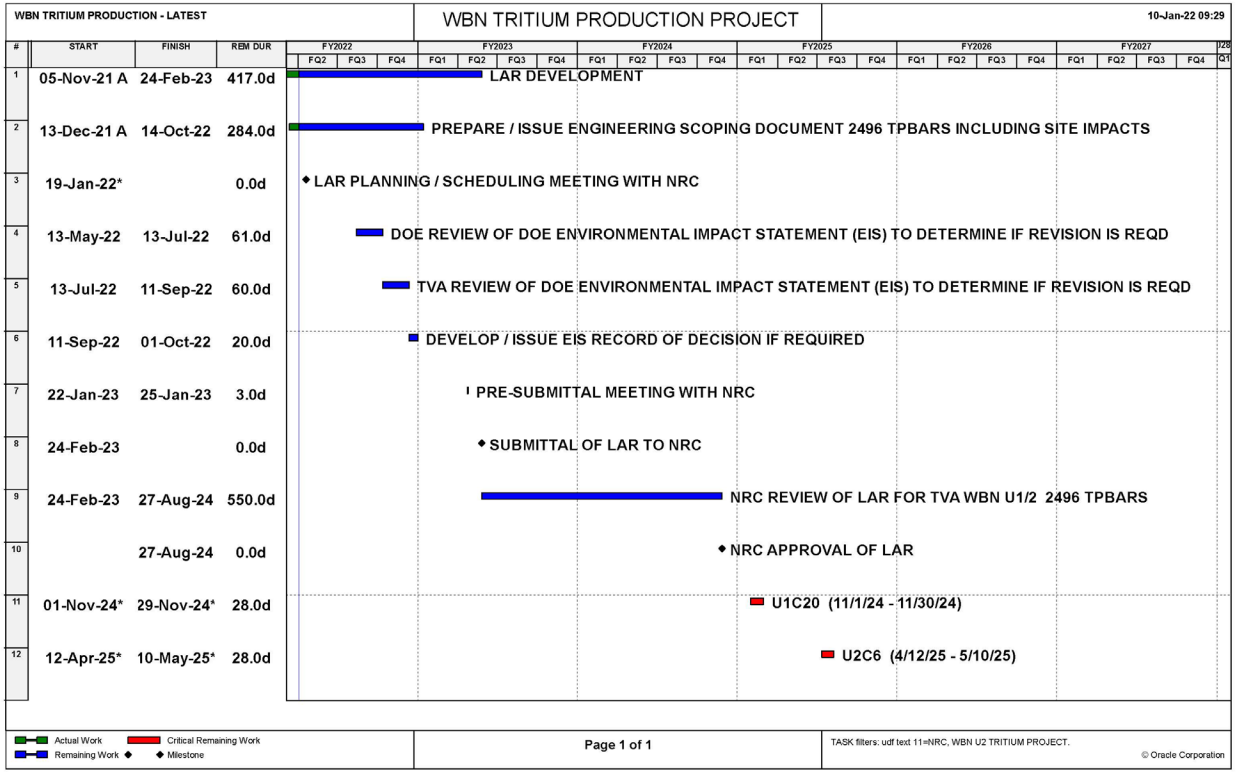
- Tritium Production Program
  - Watts Bar Unit 1 tritium production began in October 2003
  - Watts Bar Unit 2 tritium production began in October 2020

- WBN Unit 1 License Amendment 107 (ML16159A057) and WBN Unit 2 License Amendment 27 (ML18347B330) authorized up to 1792 TPBARs.

Key Stakeholders

- General Manager Reactor Engineering & Fuels – David Brown
- General Manager for Nuclear Projects - Kevin Dutton
- Project Manager – Charlie Davis
- Senior Tritium Program Manager - Carla Borrelli
- Tritium Program Manager – Korrie Yetzer
- Bryan Mack – Manager Site Reactor Engineering
- TVA Licensing Project Manager – Russ Wells
- LAR Principal Development – Mark Burzynski
- Nanette Founds, Deputy Director, NNSA
- Kyle Wilhelm, Program Manager, NNSA
- Contract Support being provided by Sargent and Lundy, Westinghouse, and PNNL

Project Schedule



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Key Milestones

- 2/24/2023 – Submit LAR to NRC requesting approval to increase the licensed limit for TPBARs to 2,496 TPARs for each unit.
- 8/27/2024 – NRC approval of the LAR (assuming an NRC 18-month review based on past precedents).
- LAR would be implemented during the WBN Unit 1 Cycle 19 refueling outage (U1R19) scheduled for fall 2024 and WBN U2R6 scheduled for spring 2025.

Preliminary Project Scope

- No plant physical modifications to support radioactive effluent source term changes
  - Radioactive effluent concentration and dose assessment calculation updates similar to recent TPBAR LARs
- Fluence-related calculations
  - Similar to recent TPBAR LARs
- No control room operator actions associated with radioactive effluent management
  - No human factors evaluations required
- Environmental assessment information based on updated radioactive effluence calculations
  - Similar to recent TPBAR LARs

Areas for Improvement

- TVA is constantly evaluating the LAR development schedule for areas of improvement. Any changes to the LAR submittal date will be communicated to the NRC Project Manager.
- TVA would like NRC to evaluate whether approval of the LAR can be accomplished within a 12-month review period from NRC acceptance of the LAR based on limited scope and efficiencies gained through review of the previous WBN Units 1 and 2 TPBAR LARs.
  - Provides greater margin in the LAR approval and implementation schedule.
  - Provides TVA and DOE benefits with shorter period where core development contingency work is funded and worked.

Future Meetings

- May/June 2022 – LAR status meeting to review project scope, LAR outline, and key issues
- Mid-January 2023 (tentative) – LAR Pre-submittal meeting

Closing Remarks

- TVA appreciates the opportunity to meet with NRC regarding the schedule for development of the increased tritium production LAR.
- TVA welcomes NRC feedback on the NRC review schedule of the LAR and future opportunities to discuss the status of the LAR.
- Proposed LAR is needed to support the DOE NNSA production requirements.


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