

WBN 2 Mid-Cycle SG Outage Strategy

Jeremy Mayo, Steam Generator Program Manager

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Agenda



Introduction

Overall Contingency Strategy

Questions

Introduction

- The WBN Unit 2 cycle 3 refueling outage (U2R3) was the third inservice inspection (ISI) for the Unit 2 Model D3 SGs (Alloy 600MA).
- This was the first outage to implement Generic Letter (GL) 95-05 voltage based repair criteria (ARC).
- Significant in-service inspection scope was performed.
- Condition monitoring requirements met for all degradation mechanisms except for GL 95-05 conditional burst probability in SG3 [WBN, Unit 2 Technical Specification (TS) 5.9.9 Item 5]
- License Amendment Requests (LARs) submitted and approved since U2R3
 - Alternate Probability of Detection (ML21027A167)
 - POD of 0.6 for less than 3.2 volts
 - POD of 0.9 for greater than or equal to 3.2 volts and less than 6.0 volts
 - POD of 0.95 for indications greater than or equal to 6.0 volts
 - Temperature Adjustment to Voltage Growth Rate for GL95-05 ARC (ML21161A239)
- During the mid-cycle inspection scheduled for September 11, 2021, WBN 2 will be implementing a similar scope of eddy current inspection that was implemented during the U2R3 outage.

Overall Contingency Strategy

- If results are as expected for Condition Monitoring, and Operational Assessment (OA) supports remaining months to SG replacement, no additional contingencies will be needed.
 - SG replacement is scheduled for March 2022 (U2R4 refueling outage).
- TVA is developing WBN 2 mid-cycle contingency plans for each activity or condition that is considered high risk.
 - $\text{Risk} = (\text{Probability} \times \text{Consequence})$
- OA for the mid-cycle outage will apply the alternate POD values and temperature adjustment of crack growth rate based on the previous LARs.

Overall Contingency Strategy (cont.)

- TVA is working with Westinghouse on a tube support plate (TSP) locking/displacement contingency if the OA does not support the approximate six months of operation from the mid-cycle outage to the SG replacement outage (U2R4).
 - Locking of a TSP would limit the displacement of that TSP during a main steam line break, thereby minimizing contribution to probability of burst.
 - Modification of TSPs to limit support displacement would be accomplished using sleeves to create bulges on the top and bottom of the support.
 - This modification will be implemented under the 50.59 process.
 - The analysis based on displacement is an exception to GL 95-05 and requires a LAR.
 - Some supports may not need TSP locking to limit displacement.
- The implementation of TSP locking and the corresponding revised method for calculating SG tube burst probability proposed for application at Watts Bar Unit 2 has been licensed previously at South Texas Unit 2 (March 8, 2001).
 - Amendment No. 114 approved the application of a 3.0 volt repair criteria for SG tubes experiencing OD SCC at hot leg intersections at TSP elevations with locked tubes that would experience limited displacement during a postulated SLB for one cycle of operation.



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