Target Rock 2-Stage SRV Update

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BWR Expertise – Proven Solutions

Set Point Drift

The BWR Owner's group continues to pursue enhancements of the SRVs to improve the reliability and set-point drift. Step changes have occurred in performance improvement over the years, however, there is currently not an immediate technical corrective action that can be taken that will solve the on-going set-point drift occurrences

Pursing parallel paths

- Improving the valves - coat valve pilot discs with a thicker Platinum coating using PEMs process and valve lift test
- Licensing approach - evolve tech spec to SRV safety function vs valve setpoint

Target Rock SRV Committee Activity

2019 In-Process Activities

Testing a thicker coating of (sputtered) Platinum coated on pilot discs in valve lift tests.

Goal: Gather data and experience with a thicker coating towards the upper practical process limit of the Platinum Sputtering Equipment. Support industry's desire towards using a thicker Platinum coating.

Three disks are in process. Intent is to perform steam lift tests to validate basic coating performance fundamentals.

2019/Future Potential Activities

- Determined the need to validate assumptions and characterize corrosion products that are on an SRV Platinum Coated Pilot Disc/Seat at the end of an operating cycle. These products are swept away during the normal as-found lift tests. An alternate test methodology is being developed to obtain this data.

- Met with Oak Ridge National Laboratories Materials Group in April 2019 to explore utilizing their expertise with addressing Corrosion Bonding to reduce set-point drift.

Licensing Committee Activity

Traveler to Revise the Safety/Relief Valve Requirements in TS 3.4.3

In parallel with the BWROG activities to improve the performance of the S/RVs, the Licensing Committee is developing a traveler to address issues with TS 3.4.3, “Safety/Relief Valves”

- The current LCO requires each S/RV to be operable, but the safety function is based on the combined relieving capacity of all the valves.
- The valves are typically tested after removal from the plant and subsequent to cycle startup.
- 45 LERs on individual S/RVs failing to lift within tolerance, but in all but one case, the safety function would still be performed.

Traveler to Revise the Safety/Relief Valve Requirements in TS 3.4.3

TSTF-576, “Revise Safety/Relief Valve Requirements”

- Revises the LCO to be consistent with the S/RV safety function
- Revises the SRs to verify the S/RVs will collectively protect Safety Limit 2.1.2 on reactor steam dome pressure
- Separates safety operation from manual and automatic operation (Automatic Depressurization System (ADS) and Low-Low Set Valves (LLS))

S/RV testing and tolerances still required by ASME Code and 10 CFR 50.55a

TS LCO and SR compliance based on analysis of Code testing results

Traveler to Revise the Safety/Relief Valve Requirements in TS 3.4.3

Traveler has been drafted

- Working with other BWROG committees to finalize the technical justification

Following BWROG and TSTF review, will provide a draft to the NRC to support a presubmittal meeting

Anticipate:

- Presubmittal discussion in September
- Submittal in October

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QUESTIONS