

Pre-Submittal Meeting for ANO Unit 1 TS 3.4.4, "RCS Loops, Modes 1 and 2" License Amendment



Agenda

Topic	Speaker
Introductions	NRC/Entergy
Licensee Presentation	Entergy
Reason for License Amendment Request	
Proposed Technical Specification Changes	
Precedent	
Summary	Entergy
Questions / Comments	NRC
Meeting Adjournment	

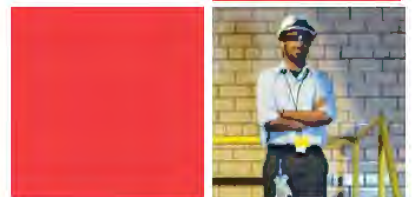


Introductions NRC / Entergy

Reason for the License Amendment

Background

- Entergy identified that the current methodology for calculating limits with four or three operating RCPs could not be clearly traced to the method originally used to calculate limits with one RCP per loop operating.
- Operational limits for future fuel cycles could not be assured to remain bounded for all conditions.
- The result is a potentially non-conservative TS.



Reason for the License Amendment

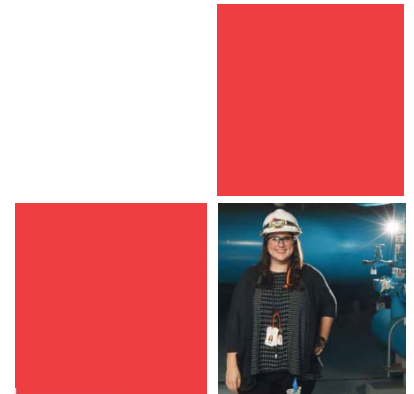
Background (cont.)

- ANO-1 current Technical Specification (TS) 3.4.4
“Reactor Coolant System (RCS) Loops – Modes 1 and 2”
Condition A allows power operation with one RCP in operation per loop for 18 hours without requiring a plant shutdown. This allowance was carried over from the original TS when ANO-1 transitioned to the Improved TS (ITS), which are based on NUREG-1430, “Standard Technical Specifications – Babcock and Wilcox Plants” Rev. 1.

Reason for the License Amendment

Background (cont.)

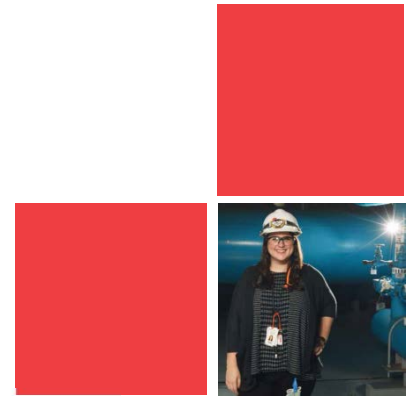
- NUREG 1430 Rev. 5, TS 3.4.4 does not have a provision that allows for normal power operation with one RCP in operation per loop. It requires the plant to be shutdown and placed in Mode 3 within 6 hours if only one RCP is in operation per loop.



Reason for the License Amendment

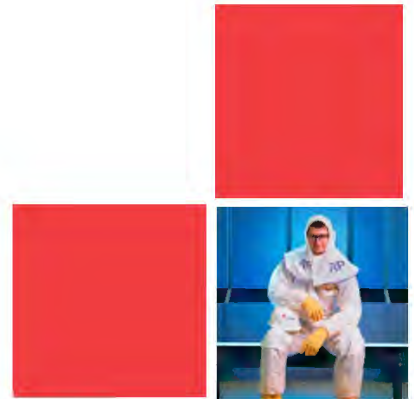
Background (cont.)

- Aside from ANO-1, no other operating Babcock and Wilcox plants' TS contain a provision that allows for operation with only one RCP in operation per loop.



Proposed Amendment

- The proposed amendment will eliminate the current TS 3.4.4 Condition A which allows for one RCP in operation per loop for 18 hours before requiring the plant to be in Mode 3 within 6 hours. It will have just one condition which requires the plant to enter Mode 3 within 6 hours if the LCO is not met.



Proposed Amendment

Current TS 3.4.4

Condition	Required Action	Completion Time
A. One RCP not in operation in each loop.	A.1 Restore one non-operating RCP to operation	18 hours
B. Required Action and associated Completion Time of Condition A not met. <u>OR</u> LCO not met for reasons other than Condition A.	B.1 Be in MODE 3.	6 hours

Proposed TS 3.4.4

Condition	Required Action	Completion Time
A. Requirements of LCO not met.	A.1 Be in MODE 3.	6 hours

Proposed Amendment

- The proposed amendment will also lower TS 3.3.1 “Reactor Protection System (RPS)” Table 3.3.1-1 “RPS Instrumentation” Function 7 “Reactor Coolant Pump to Power” Allowable Value from “ $\leq 55\%$ Rated Thermal Power (RTP) with one pump operating in each loop” to “ $\leq 5\%$ Rated Thermal Power (RTP) with one pump operating in each loop”
- This prevents power operation with only one RCP in operation in each loop and is consistent with NUREG-1430.



Precedent

- No similar amendment requests could be found where a Babcock and Wilcox plant revised TS 3.4.4 (or equivalent) to eliminate the provision to operate with one RCP in operation per loop without requiring a plant shutdown.
- Oconee and Davis Besse current TS require a plant shutdown to Mode 3 (Davis Besse within 6 hours, Oconee within 12 hours), which is consistent with NUREG-1430 (within 6 hours).



Precedent

- Davis Besse TS Table 3.3.1-1 for RPS Instrumentation has an Allowable Value of $\leq 55.1\%$ RTP with one RCP operating in each RCS loop.
- Oconee's TS Table 3.3.1-1 sets the power-to-pumps trip to "> 2% RTP with ≤ 2 pumps operating". The bases for Oconee's lower limit (2% RTP) is "... to prevent normal power operation unless at least three RCPs are operating".
- NUREG-1430 TS Table 3.3.1-1 has an Allowable Value of "[5]% RTP with ≤ 2 pumps operating".



Summary

- ANO-1 TS 3.4.4 is being treated as a non-conservative TS.
- ANO-1 proposes to revise TS Table 3.3.1-1 and TS 3.4.4 to be consistent with NUREG-1430 Rev. 5.
- None of the operating Babcock and Wilcox plants in the US have a TS condition that allows for extended operation with only one RCP in operation per loop.

Summary

- Submittal to the NRC is currently scheduled for the end of December, 2021.
- Requested approval date is December 30, 2022.



