

Oconee SLRA: Breakout Questions

SLRA Section 4.3.3, “Non-Class 1 Piping Fatigue Analyses”

TRP: 143.2

| Question Number | SLRA Section | SLRA Page | Background / Issue (As applicable/needed) | Discussion Question / Request |
|-----------------|--------------------------|-----------|---|---|
| 1 | 4.3.3 (Table 4.3.3-2) | 4-66 | <p>SLRA Section 4.3.3 addresses the fatigue TLAA for the Non-Class 1 piping systems. Specifically, SLRA Table 4.3.3-2 provides 80-year thermal cycle projections for the piping systems and conservative cycles used in the cycle projections.</p> <p>The applicant also provided the specific cycle numbers associated heatup, cooldown or other relevant cycles, or cycle number per a specific time period (e.g., monthly cycles). However, the applicant did not describe how the conservative basis of the cycle projections was determined. The staff needs additional information to clarify the basis of the cycle projections.</p> | <ol style="list-style-type: none"> 1. Describe how the applicant determined the cycle projection basis for the non-Class 1 piping systems. As part of the response, discuss relevant references that were used to determine the conservative projection basis (e.g., by using the operating procedures, manuals or test requirements for the piping systems). 2. Provide the number of emergency feedwater actuation cycles per year, which is used in the cycle projections. |
| 2 | 4.3.3 (Table 4.3.3-2) | 4-66 | <p>SLRA Section 4.3.3 indicates that none of non-class 1 piping lines in scope for SLR exceed the allowable number of thermal cycles specified in ANSI B31.1 Code and, therefore, the stress range reduction factors applied to the piping systems remain valid in all locations. In comparison, SLRA Table 4.3.3-2, Note 1 indicates that the pressurizer sampling</p> | <ol style="list-style-type: none"> 1. Clarify whether the thermal expansion stress (S_E) of the pressurizer sampling piping meets the acceptance criteria (i.e., the stress does not exceed the allowable stress range (S_A), as modified by applying the stress |

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| | | | <p>pipng stress range reduction factor has been reduced from 1.0 to 0.7 to allow a total of 45,000 cycles for the piping.</p> <p>The staff finds a need to confirm that the updated stress reduction factor for the pressurizer sampling system (from 1.0 to 0.7) is adequately used in the stress analysis for the piping system and the related stress analysis is acceptable.</p> | <p>reduction factor of 0.7 for the piping). As part of the clarification, provide the S_E and S_A values.</p> |
| 3 | 4.3.3 (Table 4.3.3-2) | 4-66 | <p>The following reference indicates that the applicant used a threshold temperature of 220 °F to identify and screen out non-class 1 piping systems, for which the effect of thermal fatigue is insignificant (Reference: SLR-ONS-TLAA-0304, Non-Class 1 Mechanical Metal Fatigue, Revision 1, Seciton 3.0).</p> <p>The staff needs to clarify (1) whether the use of the threshold temperature (220 °F) is consistent with the Oconee current licensing basis (CLB) analysis for non-Class 1 metal fatigue and (2) the basis of the threshold temperature used to determine the insignificant effect of thermal fatigue.</p> | <p>Discuss (1) whether the use of the threshold temperature (220 °F) is consistent with the Oconee CLB analysis for non-Class 1 metal fatigue and (2) the basis of the threshold temperature used to determine the insignificant effect of thermal fatigue.</p> <p>In addition, identify the most limiting (most frequently cycled) non-Class 1 piping system except the pressurizer sampling piping.</p> |
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