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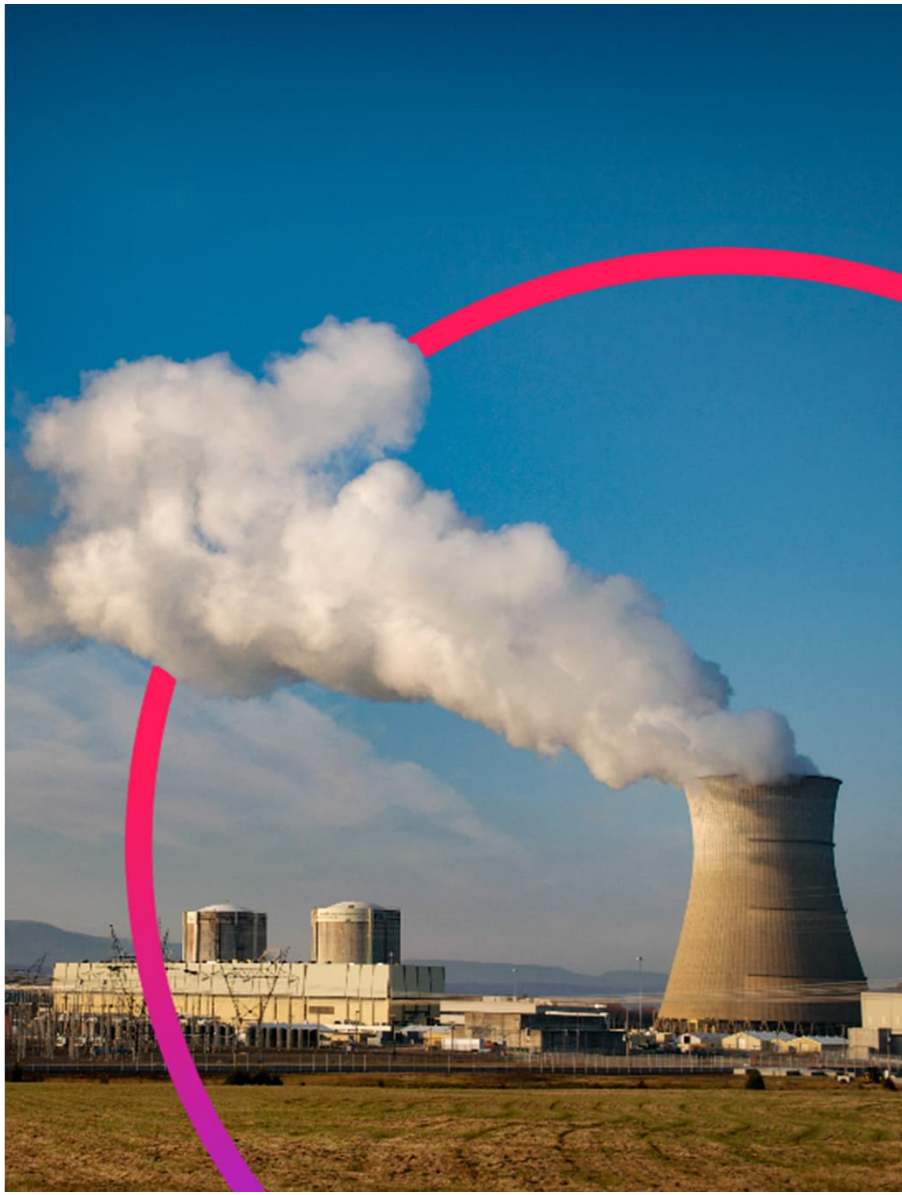
Arkansas Nuclear One

Proposed Alternative for Steam Generator Weld Examinations

January 28, 2025



Entergy Submittals for Steam Generator (SG) Weld Optimization of Inspection

ANO-1 and 2

June 6, 2024	-	ML24158A389 Requests for Alternative ANO1-ISI-24-01 and ANO2-ISI-24-01 submitted
October 16, 2024	-	ML24290A098 Request for Additional Information (RAI) Response submitted
December 18, 2024	-	Received Draft RAIs for Discussion in a Public Meeting on January 28

Waterford 3

March 18, 2024	-	ML24078A376 Request for Alternative WF3-RR-24-02 submitted
September 24, 2024	-	ML24268A296 RAI Response submitted

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Question 1

Request

Provide a technical justification describing the minimum sample size, utilizing calculations of SG Equivalents according to the staff position, or other methodology as least as conservative as the staff position, in the proposed performance monitoring plan that is necessary to provide a 25% or greater sampling. Include a description of how the sample size is consistent with - or if using a different methodology, at least as conservative as - the documented staff position for acceptable levels of performance monitoring demonstrated by the precedents previously provided, as noted above.

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Question 1

Proposed Response

Table 1. PM Exams at ANO-1, ANO-2 and Waterford

ASME Cat.	ASME Item No.	ANO-1 (B&W)		ANO-2 (CE)		WF3 (CE)	
		Current 5th Interval	6th Interval	Current 5th Interval	6th Interval	Current 4th Interval	5th and 6th Intervals
B-B	B2.31	2	0	N/A Per design	N/A Per design	N/A Per design	N/A Per design
B-B	B2.40	2	0	0	0	0	1
B-D	B3.130	N/A per design	N/A per design	0	1	N/A Per design	N/A Per design
C-A	C1.20	N/A per design	N/A per design	0	0	0	1
C-A	C1.30	1	0	0	0	1	1
C-B	C2.21	Not Selected	0	0	0	0	1
C-B	C2.22	1	0	0	0	0	1
Total Number of PM Exams		6	0	0	1	1	5
ASME Code Required Exams		10	10	8	8	5	5

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Question 1

Proposed Response (continued)

Table 2. ASME Code Required SGs for ANO-1, ANO-2 and Waterford

Plant	Unit(s)	ISI Intervals	ASME Code Required SGs = Unit(s) x Intervals
ANO-1	1	2 (5^{th} and 6^{th})	2
ANO-2	1	2 (5^{th} and 6^{th})	2
WF3	1	3 (4^{th}, 5^{th}, and 6^{th})	3

Table 3. Required SG Equivalent Exams Based on 25% Sampling for ANO-1, ANO-2 and Waterford

Plant	Required SG Equivalent Exams = 0.25 x (ASME Code Required SGs from Table 2)
ANO-1	0.5
ANO-2	0.5
WF3	0.75

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Question 1

Proposed Response (continued)

Table 4. PM SG Equivalent Exams for ANO-1, ANO-2 and Waterford

Plant	ASME Code Required Exams	PM Exams (From Table 1)	PM SG Equivalent Exams = PM Exams/ASME Code Required Exams
ANO-1	10	6	0.6
ANO-2	8	1	0.125
WF3	5	6	1.2

Table 5. PM and Required SG Equivalent Exams for Various Cases

Case	PM SG Equivalent Exams (from Table 4)	Required SG Equivalent Exams Based on 25% Sampling(from Table 3)
ANO-1 (only)	0.6	0.5
ANO-2 (only)	0.125	0.5
WF3 (only)	1.2	0.75
ANO-2 and WF3	1.325	1.25
All 3 Units	1.925	1.75

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Question 2

Request

The Waterford and ANO submittals are separate submittals. Therefore, they are reviewed and decided separately by the staff. Provide a description of the SG examination plans at ANO-1 and ANO-2 should, for any reason, the referenced Waterford examinations do not occur as planned or the Waterford examination information is not available.

Question 2

Proposed Response

Table 6. PM Exams at ANO-1 and ANO-2

ASME Cat.	ASME Item No.	ANO-1 (B&W)		ANO-2 (CE)	
		Current 5th Interval	6th Interval	Current 5th Interval	6th Interval
B-B	B2.31	2	0	N/A Per design	N/A Per design
B-B	B2.40	2	0	0	1
B-D	B3.130	N/A per design	N/A per design	0	1
C-A	C1.20	N/A per design	N/A per design	0	1
C-A	C1.30	1	0	0	0
C-B	C2.21	Not Selected	0	0	1
C-B	C2.22	1	0	0	0
Total Number of PM Exams		6	0	0	4
ASME Code Required Exams		10	10	8	8

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Question 2

Proposed Response

Table 7. ASME Code Required SGs for ANO-1 and ANO-2

Plant	Unit(s)	ISI Intervals	ASME Code Required SGs = Unit(s) x Intervals
ANO-1	1	2 (5^{th} and 6^{th})	2
ANO-2	1	2 (5^{th} and 6^{th})	2

Table 8. Required SG Equivalent Exams Based on 25% Sampling for ANO-1 and ANO-2

Plant	Required SG Equivalent Exams= 0.25 x (ASME Code Required SGs from Table 7)
ANO-1	0.5
AN2	0.5

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Question 2

Proposed Response

Table 9. PM SG Equivalent Exams for ANO-1 and ANO-2

Plant	ASME Code Required Exams	PM Exams (From Table 6)	PM SG Equivalent Exams = PM Exams/ASMECode Required Exams
ANO-1	10	6	0.6
ANO-2	8	4	0.5

Table 10. PM and Required SG Equivalent Exams for ANO-1 and ANO-2

Case	PM SG Equivalent Exams (from Table 9)	Required SG Equivalent Exams Based on 25% Sampling(from Table 8)
ANO-1 (only)	0.6	0.5
ANO-2 only)	0.5	0.5

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Question 3

Request

Clarify whether the licensee intends to perform additional examinations of the subject SG welds and nozzle inner radii (NIR) beyond the reactor unit where unexpected degradation was found as part of the proposed alternative examination schedules. If the licensee does intend to expand scope to other reactor units, describe the timing and number of additional examinations. If the licensee does not intend to expand scope of inspection to other reactor units, provide justification on how the proposed alternative requests address extent of condition for unexpected degradation.

Question 3

Proposed Response

If the Entergy fleet approach is approved as outlined in the response to Question 1, and a flaw be found in one of the reactor units, Entergy will perform an examination on one of the components within the other reactor unit of the same design as applicable (ANO-2 and Waterford) at the next reasonable opportunity accounting for outage preparation and timing.

If just the ANO only approach is approved as outlined in Question 2, any scope expansion and successive examinations are managed under the standard code requirements.

Note as shown in Table 6, no additional examinations are planned for the ANO-1 SGs.

Question 4

Request

Confirm that the licensee will follow the requirements of the ASME Code, Section XI, IWC-2430 and IWC-3500 for the examination of the SG welds and nozzle inner radii that are ASME Class 2 components.

Proposed Response

Yes, Entergy confirms we will follow the requirements of the ASME Code, Section XI, IWC-2430 and IWC-3500 for the examination of the SG welds and nozzle inner radii that are ASME Class 2 components.

QUESTIONS