Summary of 2R15 SG Base Scope Tube Inspection and Expansion Plans

	Area	Technique	Inspection Criteria	Expansion Criteria
1	Full Length (Tube end to tube end)	Bobbin	100% of all in-service tubes in each steam generator Note: Exception may be provided for low row U-bend tubes (eg: row 2 & 3) that have U-bend rotating coil probe inspections performed. However, seamless tube-end to tube-end inspection (including bobbin and rotating coil probes) must be provided.	N/A
2	U-Bends (07H to 07C)	+Point™	100% of all in-service U-bend tubes (07H to 07C) in Rows 2 through 10 in each steam generator 20% of the => 1 volt dented AVB locations in the U-bend 20% of the => 2 volt dings in the U-bend region (07H to 07C)	Westinghouse Report SG-SGDA-03-33 <u>Circumferential Degradation</u> If circ PWSCC detected in Rows 9 or 10, expand to Row 20 at 100% in the affected SGs If circ PWSCC detected in Rows 11 through 14, redefine critical area (CA) and buffer zone based on review of Figure 10 of WOG U-Bend report and application of a factor of two reduction in longitudinal strain, and inspect 100% of the new CA and buffer zone in the affected SGs. If circ PWSCC detected in Rows 15 through 20, expand to 100% of all remaining rows in the affected SGs. <u>Axial Degradation</u> If axial PWSCC is detected in Rows 3 to 8 with NDD in Rows 9 and 10, then in the affected SG inspect 100% of Rows 11 to 16, 50% of Row 17, and 20% of Row 18. If axial PWSCC is detected in Rows 9 to 10, then inspect 100% of Rows 11 to 25 in the affected SGs. If axial PWSCC is detected in Rows 11 to 25, then review Figure 5 of the WOG U-Bend report to define a critical area and buffer zone based on tube ovality data, and inspect 100% of the CA and buffer zone in the affected SGs. If axial PWSCC is detected in greater than Row 25, then inspect 100% of all rows in the affected SGs.

	Area	Technique	Inspection Criteria	Expansion Criteria
3	WEXTEX	+Point™	100% of all in-service tubes in the HL in each steam generator Extent is +3" above TTS and -8" below TTS (Amendment 256, LCR S05-07) Note: Amendment 256requires inspection to W* Distance as defined in Tech Specs, which is typically bounded by 8 inspection below TTS, however the tube specific inspection and W* distance must be verified for Tech Spec compliance.	If initial inspection extent is less than W* Distance (Amendment 256) requirements, increase inspection extent accordingly.
4	Tubesheet Anomalies	+Point™	Inspect all 2R14 historical ETL & OXP in the HL & CL	All newly identified tubesheet anomalies, HL & CL, will be inspected with +Point in the area of interest (ETL, OXP).
5	PWSCC & ODSCC for Dented TSP Intersections (=> 1 V)	+Point™	100% of the => 1 volt dented TSP locations at 01H, 02H, 03H and 20% sample of 04H in SG 22, 23, and 24. 100% of the => 1 volt dented TSP locations at 01H, 02H, 03H, 04H and 20% sample of 05H in SG 21. Note: Bobbin is also credited for axial ODSCC in =<5 volt dented TSPs. +Pont Sample at 04H (05H in SG 21) is a different sample than inspected since 2R12 (as possible)	Expansions will be in accordance with the C-A option as described in Rev 6 of the EPRI PWR SG Examination Guidelines. The expansion requires a 100% inspection of the hot leg dented TSPs up/down to the coldest elevation at which degradation has been reported plus a 20% sample (buffer zone) of the next coldest dented TSP intersections; in the affected SG.
6	ODSCC for Dented TSP Intersections (> 5 V)	+Point™	A minimum 20% inspection of the > 5 volt dented TSP locations at 04H (05H for SG 21) to 07H, which shall include all >5 volt dented TSP locations at 04H (05H for SG 21) to 07H that were not inspected since 2R12. Note: The 04H (05H for SG 21) =>1 volt 20% sample from the PWSCC TSP inspections is conservatively NOT credited to meet the 04H (05H for SG 21) >5 volt minimum 20% sample for ODSCC. A separate, non-overlapping population is selected at 04H (05H for SG 21) for the two separate scopes.	Expansions will be in accordance with the C-A option as described in Rev 6 of the EPRI PWR SG Examination Guidelines. The expansion requires a 100% inspection of the hot leg dented TSPs up/down to the coldest elevation at which degradation has been reported plus a 20% sample (buffer zone) of the next coldest dented TSP intersections; in the affected SG.
7	Suspected TSP Ligament Cracking (SLC)	Bobbin and +Point™	100% +Point of all previously identified SLC	Newly identified Bobbin Suspected TSP Ligament Indication/Cracking (PSI) will be +Point inspected for confirmation and sizing. Note: Newly identified PSI require history review to determine if the indication was present
8	Free Span Bobbin Indications (Dings)	+Point™	A minimum 20% Inspection of the =>2 volt dings in each SG from TSH +0.5" to 07H + 2", which shall include all =>2 volt dings that were not inspected since 2R12. Note: The U-Bend scope also provides ding inspection from 07H to 07C.	If SCC is detected in the inspections, evaluate the need to expand IAW EPRI PWR Examination Guidelines.
9	Tube Plugs	Visual and +Point™	Visual inspection of 100% of the installed tube plugs in each steam generator. +Point inspection of 4 tube plugs (SG 21 R2 C45 and SG 24 R2 C3), HL and CL	N/A

	Area	Technique	Inspection Criteria	Expansion Criteria
10	Special Interest Base Scope	Visual and Bobbin and/or +Point	SSI and NDE Level III review: SG 21 R2 C45 SG 24 R2 C3 SG 24 R15 C92 Rotating coil inspection of any new AVB wear or CL Thinning	N/A
11	Secondary Side Inspections (SSI) & Foreign Object Search and Retrieval (FOSAR)	Visual And NDE	SSI/FOSAR of the TTS periphery and no tube lane region of each SG. SSI/FOSAR of the TTS for potential foreign object locations identified in the outage that are identified via eddy current. Inspect (ECT) tubes near foreign objects identified via SSI/FOSAR. Inspections shall utilize ECT techniques capable of detecting foreign object wear on tubing in the vicinity of the foreign object (typically tubes within 1 tube radius of the object). SSI and NDE inspection of historical foreign object locations in each SG (in accordance with SSI/FOSAR plan). SSI of tube location 15-92 (HL TTS) in SG 24 SSI review: SG 21 R2 C45 SG 24 R2 C3 SG 24 R15 C92	Retrieve foreign objects as possible. Evaluate foreign objects remaining in the SGs following FOSAR efforts.

Tube Information				Plus Point Data						Bobbin Data			
SG	Row	Col	Location	Axial Length Inches	ARC Deg	ID/OD	Volts	Max %	Ind	Ind	Volts	Max%	DNT/DNG Volts
SG21	27	64	AV3 +0.19							TWD	3.94	40	
SG22	32	78	02C +0.02							TWD	3.75	58	
SG22	34	49	AV4 -0.59							TWD	4.07	40	
SG23	11	3	01C +0							TWD	0.95	64	
SG23	30	35	AV2 -0.04							TWD	4.62	41	
SG24	29	82	01C +0							TWD	2.06	44	
SG24	30	51	TSH -0.72			ID	0.28		SAI				
SG24	31	31	AV3 -0.02							TWD	4.25	40	
SG24	42	55	AV1 -0.19							TWD	4.7	40	