SQN Unit 2 RFO 14

STEAM GENERATOR EDDY CURRENT TESTING

12/11/2006 10:31:30 AM

STEAM GENERATOR	1		2		3		4		TOTAL ACTUAL TO BE PLUGGED	DEGRADATION ASSESSMENT TUBE REPAIR PROJECTIONS
DAMAGE MECHANISMS	INDICATIONS	TUBES TO PLUG	INDICATIONS	TUBES TO PLUG	INDICATIONS	TUBES TO PLUG	INDICATIONS	TUBES TO PLUG		
AVB WEAR	13	1	41	0	20	0	17	0	1	2
COLD LEG THINNING (SQN2 ONLY)	37	0	70	1	48	1	40	0	2	10
FREESPAN ODSCC	0	0	1	1	1	1	0	0	2	2
FREESPAN PWSCC	0	0	0	0	0	0	0	0	0	5
LOOSE PARTS DAMAGE	0	0	0	0	0	0	0	0	0	14
SLUDGE PILE CRACKING	0	0	0	0	0	0	0	0	0	6
TSP ODSCC AXIAL (ARC)	437	7	502	2	571	5	1232	5	19	27
TSP ODSCC CIRC (DENTS)	1	1	0	0	0	0	0	0	1	2
TTS ODSCC AXIAL	0	0	0	0	1	1	2	2	3	23
TTS ODSCC CIRC	0	0	2	2	1	1	1	1	4	9
U-BEND ODSCC AXIAL	0	0	0	0	0	0	0	0	0	0
U-BEND ODSCC CIRC	0	0	0	0	0	0	0	0	0	0
TSP PWSCC AXIAL	1	1	0	0	1	1	0	0	2	2
TSP PWSCC CIRC (DENTS)	0	0	0	0	2	1	0	0	1	5
TTS PWSCC AXIAL	0	0	0	0	0	0	2	1	1	20
TTS PWSCC CIRC	0	0	1	1	0	0	0	0	1	5
U-BEND PWSCC AXIAL	1	1	0	0	0	0	0	0	1	4
U-BEND PWSCC CIRC	0	0	3	2	0	0	0	0	2	1
PRE-HEATER WEAR (WBN1 ONLY)	0	0	0	0	0	0	0	0	0	0
OTHER/PREVENTIVE	0	0	2	2	0	0	0	0	2	2
TOTALS IND/PLUG (Current)	490	11	622	11	645	11	1294	9	42	139
Total Previously Plugged		77		171		126		123	497	
PLUG TOTALS		88		182		137		132	539	
TOTAL SLEEVES (Current)		0		0		0		0	0	
Total Previously Sleeved		0		0		0		0	0	
SLEEVE TOTALS		0		0		0		0	0	
TOTAL PERCENT PLUGGED EQUIVALENT		2.6%		5.4%		4.0%		3.9%	4.0%	

Attachment

SG	ROW	COL	CAL	LEG	TEST	ANGLE	VOLTS	INDICATION	LOCATION	SURFACE	CHARACTERIZATION	AVG. DEPTH (for indications > 0.5 +Pt volts)	LENGTH	PDA
AVB WEAR (Maximum Depth)														
1	37	62	18	H	ZBAZZ	0	1.25	42	AV3+.00		AVB WEAR			
COLD LEG THINNING (Maximum Depth)														
2	33	16	10	C	ZBAZZ	89	1.57	58	C03-.06		C/L THINNING			
OD VOLUMETRIC														
2	12	65	50	H	ZPSNM	12	0.37	SVI	HTS+7.66	O	VOLUMETRIC			
AXIAL PWSCC AT HTS														
4	4	25	52	H	ZPSNM	15	0.95	SAI	HTS-8.13	I	PWSCC HTS AXIAL		3.12	
4	4	25	52	H	ZPSNM	30	3.04	SAI	HTS-10.64	I	PWSCC HTS AXIAL		1.96	
AXIAL PWSCC TSP NEAR DENT														
3	12	4	49	H	ZPSNM	18	0.53	SAI	H01-.25	I	PWSCC TSP AXIAL	36.5	0.26	
1	29	78	53	H	ZPSNM	14	0.41	SAI	H05+.19	I	PWSCC TSP AXIAL			
AXIAL PWSCC U-BEND TANGENT														
1	1	52	38	C	ZPU24	22	1.86	SAI	H07+3.94	I	PWSCC UBEND AXIAL	47.6	0.16	
CIRC PWSCC HTS														
2	20	70	31	H	ZPSNM	24	0.41	SCI	HTS-.11	I	PWSCC HTS CIRC			
CIRC PWSCC TSP NEAR DENT														
3	12	56	49	H	ZPSNM	41	0.85	SCI	H07+.03	I	PWSCC TSP CIRC			
3	12	56	57	H	ZGSMB	34	1.49	SCI	H07+.03	I	PWSCC TSP CIRC			
CIRC PWSCC U-BEND														
2	4	53	38	H	ZPU24	32	0.61	SCI	H07+22.26	I	PWSCC UBEND CIRC			3.42
2	3	94	41	H	ZPU24	24	0.54	SCI	H07+16.23	I	PWSCC UBEND CIRC			2.54
2	3	94	41	H	ZPU24	32	0.77	SCI	H07+18.72	I	PWSCC UBEND CIRC			4.17
AXIAL ODSCC HTS														
4	22	28	26	H	ZPSNM	63	0.37	SAI	HTS-.08	O	ODSCC HTS AXIAL			
4	26	33	25	H	ZPSNM	129	0.22	SAI	HTS-.10	O	ODSCC HTS AXIAL			
3	26	42	33	H	ZPSNM	100	0.09	SAI	HTS-.07	O	ODSCC HTS AXIAL			
AXIAL ODSCC TSP														
2	3	5	45	H	ZPSNM	108	0.19	SAI	H03+.30	O	ODSCC TSP AXIAL			
2	7	20	45	H	ZPSNM	97	0.17	SAI	H05+.24	O	ODSCC TSP AXIAL			
1	35	19	42	H	ZPSNM	105	0.25	SAI	H01-.01	O	ODSCC TSP AXIAL			
1	43	59	42	H	ZPSNM	132	0.10	SAI	H01+.16	O	ODSCC TSP AXIAL			
1	5	72	48	H	ZPSNM	117	0.16	SAI	H03-.11	O	ODSCC TSP AXIAL			
AXIAL ODSCC FREESPAN														
2	8	2	45	H	ZPSNM	104	0.17	SAI	H01+.49	O	ODSCC FREESPAN AXIAL			
3	31	61	52	H	ZPSNM	99	0.32	SAI	HTS+47.63	O	ODSCC FREESPAN AXIAL			
CIRC ODSCC HTS														
2	15	38	24	H	ZPSNM	55	0.16	SCI	HTS+.05	O	ODSCC HTS CIRC			
3	11	28	32	H	ZPSNM	29	0.20	SCI	HTS-.01	O	ODSCC HTS CIRC			
2	13	67	28	H	ZPSNM	27	0.17	SCI	HTS-.17	O	ODSCC HTS CIRC			
4	8	71	35	H	ZPSNM	25	0.25	SCI	HTS+.00	O	ODSCC HTS CIRC			
CIRC ODSCC TSP														
1	45	39	47	H	ZPSNM	79	0.50	SCI	H07-.25	O	ODSCC TSP CIRC			

1. Discuss any trends in the amount of primary-to-secondary leakage observed during the recently completed cycle.

SQN Unit 2 observed no detectable leakage during the recently completed cycle.

2. Discuss whether any secondary side pressure tests were performed during the outage and the associated results.

SQN did not perform any secondary side pressure tests during RFO-14.

3. Discuss any exceptions taken to the industry guidelines.

No exceptions.

4. For each SG, provide a description of the inspections performed including the areas examined and the probes used (e.g., dents/dings, sleeves, expansion -transition, U-bends with a rotating probe), the scope of the inspection (e.g., 100% dents / dings greater than 5 volts and a 20% sample between 2 and 5 volts), and the expansion criteria.

- 100% Full-length bobbin examination in all 4 SGs.
- 100% hot leg top of tubesheet (TTS) RPC examination in all 4 SGs using a plus point probe +2"/-8" (Ref. WCAP-14797)
- 100% of low Row U-bends using a mid range magnetic biased ZETEC +Point (or MHI probe) Row 1-4 U-Bend probe
- 100% Row 5 through 8 U-Bend using a MHI probe (or +Point) in all SGs.
- 100% freespan dings ≥ 2 volts (Cycle 13) from HTS to H07 using the +Pt probe
- 100% TSPs H01 to C07 dented greater than or equal to 2 volts (Cycle 13) using the +Pt probe
- 100% of AVB locations with dents with a +Pt probe (Ref. Corp PER 03-000055-000).
- 100% of MBM with dings with a +Pt probe (Ref. Corp PER 03-000023-000).
- 100% of all free-span dents or dings in the U-bend region (any voltage) using the +Pt probe (Ref. Corp. PER 03-000055-000).
- 100% DSIs approximately > 1v will be examined and reviewed for preventive plugging.
- OXPs and BLGs within the hot leg +2/-8" Top of Tubesheet inspection distance have been plus point examined.

5. For each area examined (e.g., tube supports, dent.dings, sleeves, etc), provide a summary of the number of indications identified to-date of each degradation mode (e.g., number of circumferential priamry water stress corrosion cracking indicaitons at the expansion transition). In particualr, address whether tube interity (structural and accident induced leakage integrity) was maintained during the previous operating cycle. In addition, discuss whether any location exhibited a degradation mode that had not previously been observed at this location at this unit (e.g., observed circumferential primary water stress corrosion cracking at the expansion transition for the first time at his unit).

See attached summary and Condition Monitoring

New Axial ODSCC Freespan not associated with ding/dents (first detected by bobbin)
New Circ ODSCC at TSP associated with a 35v dent

6. Describe repair/plugging plans.

See attached summary 42 tubes presently on the plugging list.

7. Describe in-situ pressure test and tube pull plans and results (as applicable and if available).

Nothing requiring In-Situ to date.

SG 4 Row 22 Column 70 is planned to have the first two hot leg intersection pulled.

8. Describe the schedule for steam SG related activities during the remainder of the current outage.

Presently in close out. Retests only

9. Discuss the following regarding loose parts:
- what inspections are performed to detect loose parts;

100% Full length Bobbin Coil exams and 100% +Pt at top of tubesheet

- a description of any loose parts detected and their location within the SG;

PLPs have been reported and those in SG 3 have looked at by FOSAR

- if the loose parts were removed from the SG;

No loose part detected to date.

- indications of tube damage associated with the loose parts; and

No tube damage has been reported by ET detected associated with loose parts. Analysts have been sensitized on loose part damage. The enhanced technique for loose part wear detection is utilized.

- the source or nature of the lose parts if known.

No loose parts detected to date.

10. Discuss the results of any secondary side inspections.

SG 3 only FOSAR thus far. Remaining SGs to be examined in the next few days.

11. Discuss any unexpected or unusual results.

none

12. For plants with Once-Through SGs

A. If you have Bacock and Wilcox (B&W) welded plugs installed in the steam generators, be prepared to discuss the actions taken in response to Framatome's notification of the dffect of tubesheet hole dilation on the service life of B&W welded plugs.

NA

B. Discuss any actions taken in response to the severed tube issue during the outage (NRC information Notice (IN) 2002-02 and IN 2002-02, Supplement 1. If actions are comlete, please indicate so.

NA