

From: Gregory Cranston
To: David Lew, Lawrence Doerflein
Date: Sat, Mar 25, 2000 2:04 PM
Subject: IP2 SG Tube Inspection Update

See attached. This supersedes Rev. 0.

I faxed a set of SG tube maps to Dave Lew.

CC: Brian Holian, Michael Modes, William Raymond

ITEM 1

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STEAM GENERATOR TUBE TESTING STATUS

Rev. 1, 3/25/2000

I. BACKGROUND

- A. Each steam generator (SG) has 3,260 tubes.
- B. The number of tubes currently plugged are:
 - 1. SG21 - 313
 - 2. SG22 - 405
 - 3. SG23 - 301
 - 4. SG24 - 306

II. ITEMS OF NOTE

- A. The tube leak on SG24 was in Row 2, Column 5 and is currently reported as a 2" crack.
- B. The three new leaks discovered in SG 22 are in:
 - 1. Row 44, Column 42
 - 2. Row 45, Column 39
 - 3. Row 45, Column 44
 - 4. The leak was very slow - about 1 drop per 30 minutes for two tubes and 1 drop per 60 minutes for the third.
 - 5. The potential significance of the findings is that the ECT examinations had not identified defects in these tubes. The ECT data for one of the tubes had one finding categorized as non qualified indication (NQI) which had not yet been profiled with a RPC probe. Further licensee review of the ECT data for these tubes, as well as an engineering evaluation of the hydro results, continues.
 - 6. The 22SG has a reported leakage when operating at about 0.37 gpd.
 - 7. The location of the leak was the same on all three tubes and was at the tube to tube sheet fillet weld.
 - 8. This is the same issue described in NRC Information Notice 98-27. The Information Notice was written primarily for Once Thru Steam Generators (OTSG) but stated that the tube end cracking may not be limited to OTSGs.
 - 9. The leaks were detected using the mid-range +Point probe at 300 KHz. Picked up using RPC but cannot see with Cecco.
- C. The licensee is planning to redo all Row 2 & 3 tubes with the high frequency probe. They currently only have two probes but expect more to arrive on Sunday, 3/26,2000.
- D. There are two indications in the U bend area of 24SG that they are scheduled for insitu testing.

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III. TESTING STATUS

A. The number of tests to be conducted and their status is as follows:

1. Cecco Inspection Program

SG	Tube Inspections	Tests Acquired	Tests Analyzed and Complete	Retests	Percent Complete	Total Remaining Inspections	Comments
21	3858	3746	3746	112	97.10%	112	
22	3837	3699	3699	138	96.40%	138	
23	3949	3827	3827	122	96.91%	122	
24	3943	3942	3942	1	99.97%	1	
Total	15587	15214	15214	373	97.61%	373	

2. Bobbin Inspection Program

SG	Tube Inspections	Tests Acquired	Tests Analyzed and Complete	Retests	Percent Complete	Total Remaining Inspections	Comments
21	4248	4109	4094	181	95.56%	175	
22	4397	4156	4151	244	94.41%	241	
23	4520	4174	4174	346	92.35%	346	
24	4257	4257	4257	0	100.00%	0	
Total	17422	16696	16676	771	95.52%	762	

3. U-Bend +Point Inspection

SG	Tube Inspections	Tests Acquired	Tests Analyzed and Complete	Retests	Percent Complete	Total Remaining Inspections	Comments
21	248	226	226	22	91.13%	22	
22	184	159	159	25	86.41%	25	
23	208	204	204	4	98.08%	4	
24	227	173	173	54	76.21%	54	
Total	867	762	762	105	87.89%	105	

4. B&W Roll Plug Inspection

SG	Tube Inspections	Tests Acquired	Tests Analyzed and Complete	Retests	Percent Complete	Total Remaining Inspections	Comments
21	57	56	56	1	98.25%	1	

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22	85	85	85	0	100.00%	0	
23	10	10	10	0	100.00%	0	
24	42	42	42	0	100.00%	0	
Total	194	193	193	1	99.48%	1	

5. Special Interest +Point Inspection

SG	Tube Inspections	Tests Acquired	Tests Analyzed and Complete	Retests	Percent Complete	Total Remaining Inspections	Comments
21	180	0	0	0	0.00%	180	
22	201	0	0	0	0.00%	201	
23	128	0	0	0	0.00%	128	
24	137	137	136	1	99.27%	0	
Total	646	137	136	1	21.05%	509	

6. Special Interest Re-roll Candidate Inspection

SG	Tube Inspections	Tests Acquired	Tests Analyzed and Complete	Retests	Percent Complete	Total Remaining Inspections	Comments
21	124	0	0	0	0.00%	124	
22	18	0	0	0	0.00%	18	
23	852	0	0	0	0.00%	852	
24	52	52	0	0	0.00%	0	
Total	1046	52	0	0	0.00%	994	

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7. All Programs Summary

SG	Tube Inspections	Tests Acquired	Tests Analyzed and Complete	Retests	Percent Complete	Total Remaining Inspections	Comments
21	8751	8137	8122	316	92.81%	614	
22	8722	8099	8094	407	92.80%	623	
23	9667	8215	8215	472	84.98%	1452	
24	8658	8603	8550	56	98.75%	55	
Total	35798	33054	32981	1251	92.13%	2744	

8. Pluggable Tube Summary

Steam Generator	21	22	23	24	Total
Row 2 Tubes	72	49	45	57	223
SPI Indications	31	9	19	32	91
Total	103	58	64	89	314