January 18, 2006

Mr. David H. Oatley
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Acting Chief Nuclear Officer
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Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT, UNIT NO. 1 - NRC ASSESSMENT OF 2005 (1R13) STEAM GENERATOR TUBE INSPECTIONS (TAC NO.: MC8797)

Dear Mr. Oatley:

On November 9, 2005, the NRC staff, participated in a conference call with Pacific Gas and Electric (PG&E/ the licensee) regarding the Diablo Canyon Power Plant, Unit 1 (DCPP) 2005 steam generator (SG) tube inspection activities. To facilitate the phone call, PG&E was provided some discussion points for the call. On November 8, 2005, PG&E provided preliminary information regarding the results of its inspection. This information is attached as Enclosure 2.

Based on the information provided during the conference call, the NRC staff did not identify any issues that warranted additional follow-up at this time. Also, attached is a summary of the conference call.

This completes our review of the preliminary the preliminary results for the 2005 steam generator tube inspections at the Diablo Canyon Power Plant, Unit 1.

Sincerely,

/RA/

Alan B. Wang, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-275

Enclosure: 1) Assessment
2) PG&E Preliminary SG Inspection Results

cc w/encl: See next page

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NRC SUMMARY OF 2005 CONFERENCE CALL ON STEAM GENERATOR TUBE

INSPECTIONS FOR REFUELING OUTAGE 13

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON POWER PLANT UNIT 1

DOCKET NO. 50-275

n November 9, 2005, the Nuclear Regulatory Commission (NRC) staff participated in a conference call with Diablo Canyon Unit 1 representatives to discuss the scope, results, and status of their ongoing steam generator (SG) tube inspections performed during the Fall 2005 (1R13) refueling outage. Diablo Canyon Unit 1 has four recirculating Westinghouse Series 51 steam generators. To facilitate the discussion, Pacific Gas & Electric Company, the licensee for Diablo Canyon Unit 1, submitted a preliminary briefing paper (attached to this summary) which addresses the discussion points contained in an NRC letter to the licensee dated October 31, 2005 (ML053040206). In addition to the written material provided by the licensee, the following additional clarifying information was discussed during the conference call.

A loose part was left lodged between tubes R30C78 and R31C78 during the 2004 SG tube inspections (1R12). During the 2005 (1R13) inspections, no indication of a possible loose part was present at this location. The licensee believes the loose part could be a small wire introduced during maintenance activities in previous outages. At the time of the phone call, foreign object search and retrieval (FOSAR) activities had not identified the loose part.

A summary of the repairable eddy current indications identified as of November 8 is shown in Table 2 of the attached information provided by the licensee. At the time of the call, there were no mixed mode indications identified at tube support plates (TSP). The total number of circumferential indications at TSP and at the top of the tubesheet (TTS) has increased since the last inspection. The indications have low voltages. Most of the dents with circumferential indications located at the TSP have voltages greater than 5 volts, although there are some dents with magnitudes of 3 volts. One dent measuring 0.7 volts was found to have a circumferential indication. This dent was at the first hot leg support of SG 1-1. The number of axial outside diameter stress corrosion cracking (ODSCC) indications at TSPs is well within the projection made by the probability of prior cycle detection (POPCD) method. The licensee stated that it has identified axial ODSCC at the TTS, which is somewhat atypical, but consistent with the operating experience of Westinghouse Series 51 steam generators.

Within the U-bend region, no indications of cracking had been found at the time of the call. During the previous inspection, about 60 tubes were plugged for cracks in the U-bend. Given that U-bend examinations are ongoing, it was expected that some indications would be found.

A list of the most significant indications identified as of November 8 is shown in Table 3 of the attached information provided by the licensee. In this table, the licensee identified an axial primary water stress corrosion cracking (PWSCC) at a dented TSP. This tube had been plugged earlier (around cycle 6) and was deplugged during 1R11. The projected burst

pressure for this indication (based on an assessment performed following 1R12) was 4400 psi, compared to an estimated burst pressure of 4800 psi (based on the 1R13 results). This represents an under prediction of 400 psi, which makes the burst pressure analysis conservative. With respect to the implementation of the alternate repair criteria (ARC) for PWSCC at TSP elevations, there were some under predictions in the burst pressures for several indications but none of these under predictions exceeded 500 psi.

For the first time, a tube with an axial ODSCC indication at a TSP elevation is being plugged since it is at a TSP elevation which has an eddy current indication indicating that the TSP ligament may be cracked.

At the end of the conference call the licensee stated that the inspection results in steam generators 1-1 and 1-2 were identified as Category 3, which means that more than one percent of the total population of the tubes were found to be defective. The licensee will be submitting a formal report regarding their findings.

At the time of the conference call, the licensee was still finalizing some of their analysis and indicated that if there were significant changes, they would inform the NRC staff.

Pacific Gas and Electric Talking Points For
NRC Phone Call On
1R13 SG Tube Inspections
at Diablo Canyon Unit 1
November 9, 2005

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

In June 2005, a small leak (0.01 gpd) was detected and measured in the steam jet air ejector, based upon the presence of Argon 41. Subsequent weekly sampling has shown no detectable primary to secondary leakage. The leak is too small to determine the leaking SG.

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

No secondary side pressure tests were performed.

3. Discuss any exceptions taken to the industry guidelines.

Diablo Canyon Units 1 and 2 has one minor deviation of “shall” requirements of Revision 6 of the Secondary Water Chemistry Guidelines. Tables 5-2 and 5-3 of the Guidelines establish limits for exceeding 5% power. Diablo Canyon Units 1 and 2 apply these limits to 8% power.

4. For each steam generator, 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% of dents/dings greater than 5 volts and a 20% sample between 2 and 5 volts), and the expansion criteria. Also, discuss the extent of the rotating probe inspections performed in the portion of tube below the expansion transition region (reference NRC Generic Letter 2004-01, "Requirements for Steam Generator Tube Inspections").

Table 1 provides a summary of all inspections scheduled to be performed, and expansion criteria. As noted in the table, Plus Point inspection of the hot leg top of tubesheet extends to 8 inches below the TTS to meet W* ARC requirements, as specified in DCPP Technical Specifications.

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 primary water stress corrosion cracking indications at the expansion transition). For the most significant indications in each area, provide an estimate of the severity of the indication (e.g., provide the voltage, depth, and length of the indication). In particular, address whether tube integrity (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 this unit).

Table 2 provides the 1R13 Repairable indications and Tube Status Report as of 11-8-05 pm, and provides the number of indications identified to date of each degradation mode and steam generator tube location. Table 3 provides a list of the most significant indications of each damage mechanism. For SCC, the largest voltage indications are listed.

6. Describe repair/plugging plans.

Table 2 provides the number of tubes to be repaired to date. All repairs are performed by tube plugging at both hot and cold legs. Tubes being plugged with circumferential indications are evaluated for stabilization in accordance with vendor criteria.

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

To date, there are no indications that require in-situ pressure testing or tube pull.

8. Provide the schedule for steam generator-related activities during the remainder of the current outage.

Attached table provides the ECT status as of 11-8-05 pm. Closeout of ECT inspections is scheduled for 11-10, with tube plugging to follow.

9. Discuss the following regarding loose parts:

- *what inspections are performed to detect loose parts*
- *a description of any loose parts detected and their location within the SG*
- *if the loose parts were removed from the SG*
- *indications of tube damage associated with the loose parts*
- *the source or nature of the loose parts if known*

Inspections performed to detect loose parts. 100% of the bobbin data is routinely reviewed for possible loose part (PLP) indications. In addition, a special in-depth analysis is performed for PLP indications in rows 1 and 2 and the outer 2 peripheral tubes. Plus Point data is routinely reviewed for PLP at the hot leg top of tubesheet during the 100% hot leg TTS exams. When PLP signals are detected by eddy current,

the locations are provided to FOSAR personnel for search and retrieval. FOSAR visual examinations of the tube sheet annulus and blowdown lane regions are performed to identify loose parts. If loose parts are detected by FOSAR, the locations are provided to eddy current data analysis personnel for further review.

Description of any loose parts detected and their location within the SG, and if they were removed from the SG. ECT data is still being collected, and PLP reviews are in progress. FOSAR inspections are currently being conducted. In SG 1-2, three small wire pieces (appear to be from a wire brush) were found by FOSAR and retrieved.

Indications of tube damage associated with the loose parts. When loose parts are identified, either by eddy current or FOSAR, a tube integrity assessment is performed based on a review of the eddy current data. All reviews conducted to date have concluded that no tube degradation or tube wear has resulted from loose parts.

Description of historical loose part. In SG 1-1, in 1R12, a repeat PLP indication (from 1R8 through 1R12) between SG 1-1 R30C78 and R31C78, 3 inches above the cold leg top of tubesheet, was detected by FOSAR. Reference INPO OE report 21468. No tube wear was detected by eddy current. Based on FOSAR videos, the object was lodged tightly between 2 tubes, was metallic, cylindrical, about 0.4 inches in diameter and 0.75 inch long, with a hole (about 0.1 to 0.2 inch diameter) that runs through its center. It resembled a machine curl. In letter PGE-04-50 dated April 23, 2004, Westinghouse performed a very conservative engineering assessment of the foreign object and concluded that continued SG operation with the object present in the secondary side will not affect SG tube integrity for at least one fuel cycle. Therefore, attempts to dislodge the object and cause a potentially loose part were discontinued, and the lodged object was left in place for Cycle 13. The origin of the foreign object part has not been conclusively determined. The bobbin PLP signal has been traced to 1R7 (1995), such that the object was likely introduced in 1R7 or earlier.

The SG secondary side was opened in 1R5, 1R6, and 1R7 for maintenance activities, such as machining associated with feedwater thermal sleeve replacement and feedring plug repair. These activities had the potential to introduce the foreign object.

In 1R13, bobbin exam of this tube location did not identify a PLP signal, thus the foreign object became dislodged in cycle 13. Again, ECT did not detect any tube wear at that location. The object may have migrated.

Table 1 – 1R13 Eddy Current Inspection and Expansion Plan				
Item	Area	Probe	Inspection Criteria	Expansion Criteria
1	Full Length	Bobbin	100% (Except Rows 1 and 2 U-bend)	N/A
2	WEXTEX TTS Region	+Point	100% of hot leg TTS	If a C-3 condition is identified in the hot leg TTS inspection, inspect 20% of the cold leg TTS region in the affected SG in the current or subsequent outage. The 20% inspection should be biased to an area where degradation has the greatest potential to occur.
				If cold leg TTS cracking is detected, then either: Inspect 100% of the cold leg TTS region in the affected SG, plus 20% cold leg sample in the other SGs. If cracking is detected in the 20% sample, then inspect 100% of the cold leg TTS in the affected SGs. OR Define a critical area (CA) and buffer zone and inspect 100% of the tubes in the CA and buffer zone in the affected SG, plus 20% of the cold leg CA sample in the other SGs.
				If cold leg TTS non-crack-line indications are detected, then either: Define a critical area (CA) and buffer zone and inspect 100% of the tubes in the CA and buffer zone in the affected SG, plus 20% cold leg CA sample in the other SGs. OR For Category C-2 cold leg results, inspect an additional 20% cold leg sample in the affected SG. For Category C-3 cold leg results, inspect 100% of the cold leg TTS region in the affected SG, plus 20% cold leg sample in the other SGs.
3	WEXTEX TTS Region	+Point	Hot leg WEXTEX inspection extent is from +2" to -8". Cold leg WEXTEX region extent is +2" to -8.5".	If initial inspection extent is less than flexible W* length, increase inspection extent.
4		+Point	100% of hot leg WEXTEX anomalies (NTE anomaly extent is +2" to tube end)	N/A
5		+Point	100% of previous W* indications within the W* length	N/A
6		+Point	100% of bobbin distorted tubesheet signals (DTS) in the W* length	N/A
7	Low Row U-bends	+Point	100% of Rows 1 and 2	N/A
8	High Row U-bends for Circ PWSCC	+Point	100% of Rows 3 to 10	If circ PWSCC detected in Rows 9 or 10, expand to Row 20 at 100%.
				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.
9	High Row U-bends for Axial PWSCC	+Point	100% of Rows 3 to 10	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.

Table 1 – 1R13 Eddy Current Inspection and Expansion Plan				
Item	Area	Probe	Inspection Criteria	Expansion Criteria
				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.
10	≥ 5 Volt Dented TSP	+Point	• SG 1-1: 100% 1H to 4H; 20% 5H to 7H • SG 1-2: 100% 1H to 7C; 20% 6C • SG 1-3: 20% 1H to 7H • SG 1-4: 100% 1H to 6H; 20% 7H For any 20% sample, a minimum of 50 ≥ 5 volt dents shall be inspected. If the population of ≥ 5 volt dents at that TSP elevation is less than 50, then 100% of the ≥ 5 volt dents at that TSP shall be inspected.	If PWSCC (at any size dent), circumferential indications (at any size dent), or AONDB (at ≥5 volt dent) are detected at a TSP elevation where 100% inspections were not required, expand the Plus Point inspections (in a step-wise manner, 100% to affected TSP and 20% at next TSP) up through the hot leg side of the SG and down the cold leg side until a 20% sample is obtained that is free from PWSCC, circumferential cracking, or AONDB at ≥5 volt dent.
11	> 2 Volt and <5 Volt Dented TSP	+Point	• SG 1-1: 100% 1H to 4H; 20% 5H • SG 1-2: 100% 1H to 7C; 20% 6C • SG 1-3: 20% 1H • SG 1-4: 100% 1H to 6H; 20% 7H For any 20% sample, a minimum of 50 > 2 volt and < 5 volt dents shall be inspected. If the population of > 2 volt and < 5 volt dents at that TSP elevation is less than 50, then 100% of the > 2 volt and < 5 volt dents at that TSP shall be inspected.	If PWSCC (at any size dent), circumferential indications (at any size dent), or ≥ 2 inferred volt AONDB (at >2 and <5 volt dent) are detected at a TSP elevation where 100% inspections were not required, expand the Plus Point inspections (in a step-wise manner, 100% to affected TSP and 20% at next TSP) up through the hot leg side of the SG and down the cold leg side until a 20% sample is obtained that is free from PWSCC, circumferential cracking, or ≥ 2 inferred volt AONDB.
12	≤ 2 Volt Dented TSP	+Point	SG 1-1: 100% at 1H, 20% at 2H. Note: Bobbin is used for detection of axial PWSCC in ≤2 volt dents. +Point inspection of ≤ 2 volt dents is not required in SGs 1-2, 1-3, and 1-4, unless dictated by expansion requirements.	Generic criteria: On a SG-specific basis, if a circ indication or ≥2 inferred volt AONDB is detected in a dent less than or equal to "x" volts, then expand Plus Point inspections to include 100% of dents greater than "x - 0.3" volts up to the affected TSP, plus 20% of dents greater than "x – 0.3" volts at the next higher TSP. For 1R13, "x" equals 2.3 volts. Note: For any 20% sample, a minimum of 50 "x – 0.3" volt dents shall be inspected. If the population of "x – 0.3" volt dents at that TSP elevation is less than 50, then 100% of the "x – 0.3" volt dents at that TSP shall be inspected. Specific criteria for 1R13: If a circumferential indication or >2 inferred volt AONDB is detected in a dent less than 2.3 volts in SG 1-1 (at 2H or higher), or any TSP elevation in SGs 1-2, 1-3, or 1-4, then expansion to less than 2 volt dents would be required.
13	>2 volt dents never inspected by Plus Point	+Point	100%	N/A
14	Repeat PWSCC ARC Indications at Dents	+Point	100%	N/A
15	DIS	+Point	100% of distorted ID support plate bobbin signals (DIS) at dented TSP	N/A

Table 1 – 1R13 Eddy Current Inspection and Expansion Plan				
Item	Area	Probe	Inspection Criteria	Expansion Criteria
16	TSP Inspection for ODSCC ARC	+Point	100% of bobbin distorted OD support signals (DOS) at dented intersections (no lower voltage cutoff)	N/A
17		+Point	100% of DOS $\geq$ 1.7 volt	N/A
18		+Point	100% of cold leg DOS	N/A
19		+Point	DOS with suspected TSP ligament cracking (SLC)	N/A
20		+Point	Any bobbin indication in the wedge region exclusion zone	N/A
21		+Point	DOS at 7th TSP exclusion zone	N/A
22		+Point	DOS that extend outside the TSP crevice	N/A
23		+Point	100% of hot leg intersections with >2.3 volt SPR (mixed residual signal), and minimum of 5 largest hot leg SPR per SG.	N/A
24		+Point	TSP with copper signals	N/A
25		+Point	100% of prior cycle AONDB (bounds commitment to inspect 100% of AONDB that continue to be NDD by bobbin in current inspection)	N/A
26		+Point	100% of prior cycle TSP SAI-OD that are NDD by bobbin in current inspection	N/A
27	TSP Ligament Cracking	+Point	100% of existing baseline Plus Point confirmed TSP ligament cracking (LIC or LIG) indications.	N/A
28		+Point	100% of new bobbin SLC indications.	N/A
29	Free Span Dings	+Point	20% of >5 volt dings in U-bend 20% of >5 volt dings in straight legs, biased to lower hot leg elevations. Note: Bobbin is credited for detection of SCC in ≤5 volt dings	If ODSCC is detected at > 5 volt dings, inspect 100% of > 5 volt dings up/down to the coldest elevation at which degradation has been reported, plus 20% at next elevation.
30		+Point	20% of $\geq$ 2 volt dings in the U-bend that are coincident with AVB location	If ODSCC is detected at dings in the U-bend coincident with AVB locations, then inspect 100% of $\geq$ 2 volt ding indications coincident with AVB structures.
31	Free span bobbin indications (MBI, FSI, DNI)	+Point	100% of free span bobbin indications that are new or exhibit growth or change.	N/A
32	Cold leg thinning at TSP	+Point	New CLT indications (performed as part of 100% Plus Point inspection of cold leg DOS)	N/A
33	Loose parts	Bobbin or +Point	If possible loose part (PLP) indication is detected by eddy current, or if a loose part is detected by FOSAR, perform eddy current inspection to bound the loose part.	N/A

11/8/2005 4:18 PM

PG&E Diablo Canyon 1R13 Eddy Current Examination Status Report

AREVA

SCOPE DESCRIPTION			S/G 1-1				S/G 1-2				S/G 1-3				S/G 1-4			
Leg	Exam Description	Extents	Acquired	Analyzed	Scope	% Completed	Acquired	Analyzed	Scope	% Completed	Acquired	Analyzed	Scope	% Completed	Acquired	Analyzed	Scope	% Completed
Hot	Bobbin Straight Section (Row 1-5)	7H-TEH	457	457	472	96.8%	462	462	492	93.9%	461	461	463	99.6%	503	503	507	99.2%
Cold	Bobbin Straight Section (Row 1-5)	7C-TEC	471	469	472	99.4%	491	491	492	99.8%	463	463	463	100.0%	503	503	507	99.2%
Both	Bobbin: Full Length Rows >5	TEH-TEC	2,721	2,695	2,722	99.0%	2,624	2,624	2,624	100.0%	1,966	1,932	2,849	67.8%	2,713	2,713	2,714	100.0%
Cold	Bobbin Ubend (Row 3-5)	7H-7C	308	308	308	100.0%	337	337	339	99.4%	284	284	285	99.6%	329	329	333	98.8%
Hot	100% RPC TTS & Tubesheet Anomalies	TSH-TSH TSH-TEH	2,515	2,256	3,191	70.7%	3,020	2,861	3,113	91.9%	3,089	2,863	3,307	86.6%	2,580	2,395	3,218	74.4%
Cold	Low Row U-Bend RPC 100% Row 1-10	7H-7C	0	0	880	0.0%	312	253	847	29.9%	168	168	898	18.7%	155	112	833	13.4%
Both	Prior DNT/DNG RPC	TSP / TSP-TSP	245	223	358	62.3%	837	818	892	91.7%	124	116	138	84.1%	1,694	1,644	1,986	82.8%
Both	Prior LIC/LIG Locations	TSP	26	26	79	32.9%	47	47	76	61.8%	53	51	86	59.3%	12	11	19	57.9%
Hot	Prior AONDB/PWSCC Cracks RPC	TSP	39	38	49	77.6%	183	183	196	93.4%	9	9	13	69.2%	30	28	48	58.3%
Both	Prior Ubend DNG	7H-7C	0	0	4	0.0%	0	0	1	0.0%	0	0	9	0.0%	0	0	4	0.0%
Both	New SLC Locations	TSP	0	0	0	0.0%	0	0	17	0.0%	0	0	0	0.0%	0	0	0	0.0%
Both	SPR Locations	TSP	0	0	0	0.0%	0	0	5	0.0%	0	0	0	0.0%	0	0	0	0.0%
Hot / Cold	C/L/UB Special Interest (DOS,DIS,ICODE,Wedge,etc)	Various	0	0	0	0.0%	0	0	17	0.0%	0	0	0	0.0%	0	0	0	0.0%
Hot	H/L Special Interest (DOS,DIS,ICODE,Wedge,etc)	Various	0	0	0	0.0%	0	0	160	0.0%	0	0	0	0.0%	0	0	0	0.0%
Hot / Cold	Mag Bias RPC	Various	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%

* Analyzed denotes that all data has been completed through resolutions

TABLE 2
DIABLO CANYON UNIT 1 R13
Preliminary Repairable Indication and Tube Status Report

Location	Tube Degradation	Steam Generator				Total
		1-1	1-2	1-3	1-4	
DENTED TSP	Number of DIS @ <2v DNT (Excludes known flaws)	29	82	17	11	119
	DIS Overcall Rate	100%	100%	100%	100%	
	# of Confirmed SAI in Above DIS					0
	Axial PWSCC (New)	1	7		4	12
	Axial PWSCC (Repeat)	30	183		18	231
	Wedge Region					
	Axial ID/Axial OD	1	5			6
	SAI ID with TSP LIC				1	1
	Circ ODSCC		21		8	29
	Mixed Mode Axial OD/Circ					
	Mixed Mode Axial ID/Circ					
	Fail PWSCC ARC OA Burst					
	Fail PWSCC ARC DOP >=40% TW		1			1
	Repairable Indications	1	27	0	9	37
TSP ODSCC GL 95-05 ARC	DOS > 2.0 V (Inds)	9	3	1	3	16
	DOS =< 2.0 V (Inds)	725	512	116	168	1521
	AONDB @ >5 V Dent					
	Wedge Region					
	Preventative Plugging (<=2v DOS, >1.9v PP)					
	Repairable Indications	9	3	1	3	16
Tubesheet	Axial PWSCC (New) in W* Length					
	Axial PWSCC (Repeat) in W* Length	4	3	6	4	17
	Axial PWSCC Failed W* Criteria					
	Circ PWSCC @ TTS					
	Axial ODSCC @ TTS	2	2	4	2	10
	Circ ODSCC @ TTS	3	1	3	1	8
	Repairable Indications	5	3	7	3	18
U-bends	**Axial PWSCC (Inds)**					
	Axial ODSCC (Inds)					
	Circ PWSCC (Inds)					
	Innermost/Outermost Rows with Degradation					
High Row U-bends	**AVB Wear >=40%**					
Cold Leg Thinning	**Thinning >=40%**	1	1			2
Free Span	**Confirmed Indications**					
Misc.	**Preventative**					
Total	**Pluggable Indications ***	16	34	8	15	73
Total	**Plugged Tubes**	16	31	7	13	67

This table shows the number of indications with each type of degradation (not the number of tubes).

* The number of pluggable indications does not include the preventatively plugged locations.

Table 3
List of Most Significant Indications
DCPP 1R13 (Preliminary Results)

Degradation	SG	Row	Col	Location	Bobbin Volts	Plus Point Volts	Estimated Depth	Estimated Length
Cold Leg Thinning	11	4	92	2C - 0.04	3.12	-	42 %TW	-
AVB Wear	13	37	50	7H + 64.72	1.98	-	39 %TW	-
Circ PWSCC in Ubend	-	-	-	-	-	-	-	-
Axial PWSCC @ Dented TSP	12	31	47	2H - 0.01	3.81	3.22	64 %TW	0.49
Circ PWSCC @ Dented TSP	-	-	-	-	-	-	-	-
Axial ODSCC @ TSP	11	12	70	1H + 0.08	2.59	TBD	-	-
Circ ODSCC @ Dented TSP	14	2	70	1H - 0.28	NDD (17 V DNT)	0.94	TBD	128 deg
Circ ODSCC @ TTS	14	25	36	TSH + 0.00	NDD	0.44	TBD	110 deg
Axial PWSCC in W* Region	12	1	87	TSH - 9.31	NDD	2.66	TBD	0.4

Note: Significance for SCC Indications determined by Plus-point Voltage, except for bobbin coil ARC.