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July 18, 2000

Re: Indian Point Unit No. 2
Docket No. 50-247
NL-00-093

Document Control Desk
US Nuclear Regulatory Commission
Mail Station P1-137
Washington, DC 20555-0001

Subject: Responses to the NRC's Request For Additional Information Regarding Steam Generator Operational Assessment Report (TAC No. MA9288)

References:

1) USNRC Letter to A. A. Blind from P. D. Milano, "Indian Point Nuclear Generating Unit No. 2 - Request For Additional Information Regarding Steam Generator Operational Assessment Report (TAC No. MA9288)," dated July 3, 2000.

2) Telecon on July 5, 2000 between the NRC and Con Edison.

3) Con Edison Letter to NRC, "Responses to the NRC's Request For Additional Information Regarding Steam Generator Operational Assessment Report (TAC No. MA9288), dated July 13, 2000.

Recently the US Nuclear Regulatory Commission (NRC), issued to Consolidated Edison Company of New York, Inc. (Con Edison) a request for additional information (Reference 1) and subsequently, in a telecon between the NRC and Con Edison (Reference 2), several additional questions were raised.

Attachment A provides the responses to Questions 5, 6, and 10 of Reference 1 and Attachment B provides the response to Question 1 of Reference 2. With the exception of Question 3 of Reference 1, this letter provides Con Edison's responses to the remaining questions identified in the above mentioned references. Additional responses were provided in Reference 3.

No new regulatory commitments are being made by Con Edison in this correspondence.

A001

Should you or your staff have any questions regarding this matter, please contact Mr. John F. McCann, Manager, Nuclear Safety and Licensing.

Sincerely,

Attachment

C: Mr. Hubert J. Miller
Regional Administrator-Region I
US Nuclear Regulatory Commission
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ATTACHMENT A

Responses to RAIs from NRC Letter Dated July 3, 2000

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
July 2000

NRC RAI Letter dated July 3, 2000

Question 5

The following questions stem from our review of the sludge pile operational assessment, specifically regarding your growth rate assumptions.

a. *Discuss why it is appropriate to apply the 1.257 correlation factor to obtain average depth growth rates from maximum depth growth rates.*

b. *Discuss why it is appropriate to combine growth rates from the 1995-1997 cycle with the 1997-2000 cycle. General industry practice has been to use the most bounding cycle of data, and it appears that the growth rates from this last cycle were higher than in the previous cycle.*

c. *Comment on the use of an NDE uncertainty on growth rates of +/-10%. This value appears to be very optimistic given industry experience with bobbin coil sizing capabilities.*

Reply

Discuss why it is appropriate to apply the 1.257 correlation factor to obtain average depth growth rates from maximum depth growth rates.

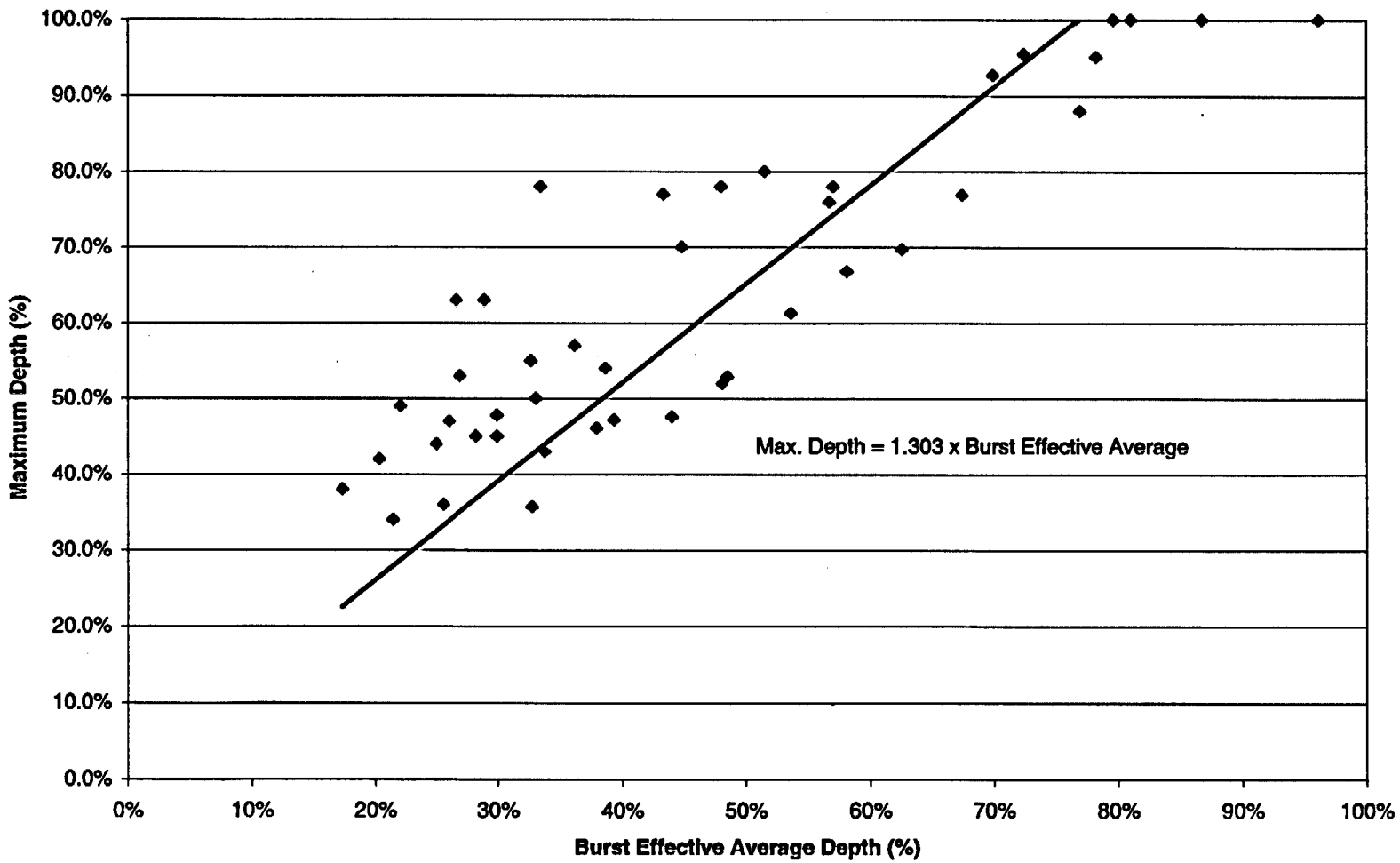
Correlation of average burst effective crack depth to maximum crack depth has shown that the max:avg depth ratio is consistently in the 1.23-1.3 range. Thus, if specific profile data from two successive inspections are not available to define the average-depth growth rate, but maximum depth data are available, it is acceptable to apply the max:avg ratio to define the average depth growth rate from the available maximum depth growth.
A correlation was performed using available IP2 data for maximum and average burst effective depth of indications that showed the max:avg ratio to be 1.257. This ratio was supported by a separate analysis of available pulled tube data for ODSCC in the freespan and sludge pile, to further evaluate the applicability of the 1.257 ratio of the maximum depth to the burst effective crack length average depth. Table 3-1(attached) includes the data that were used in this analysis, which are from several other operating plants. Figure 3.1 (attached) shows the ratio between the maximum depth and the average burst effective depth to be 1.303. This value is consistent with the expected range of 1.23-1.3, and with the 1.257 value based on the IP2 data. The difference between the ratios is less than 4%.

The growth of average depth is derived by dividing the maximum depth growth values by the max:avg ratio. The result is to shift the growth curve to the left (e.g., Figure 4.2-3 of SG-00-06-010) of the recommended growth curve. Consequently, the recommended growth curve, based on the ratio of 1.257, is conservative (greater growth) compared to the growth derived from application of the larger max:avg ratio of 1.303.

Table 3-1
Pulled Tube Database for Evaluating Maximum to Average Depth Ratio for ODSCC

Plant	Row	Col	Crack No.	Burst Eff. Avg. Depth	Max Depth
A	6	10	1	32.6%	55.0%
			2	51.5%	80.0%
			3	28.9%	63.0%
			4	26.6%	63.0%
			5	33.7%	43.0%
			6	33.4%	78.0%
			7	26.0%	47.0%
			8	26.9%	53.0%
			9	44.8%	70.0%
			10	38.6%	54.0%
			11	33.0%	50.0%
			12	36.1%	57.0%
	25	51	10	20.3%	42.0%
			1	96.1%	100.0%
			8	43.3%	77.0%
			9	28.2%	45.0%
			2	86.7%	100.0%
			3	25.5%	36.0%
			4	57.0%	78.0%
			5	56.7%	76.0%
			6	21.4%	34.0%
			7	48.0%	78.0%
	6	28	1	29.9%	47.8%
			2	29.9%	45.0%
			3	24.9%	44.0%
			4	17.3%	38.0%
			5	22.0%	49.0%
	28	35	1	37.9%	46.1%
	29	47	1	79.6%	100.0%
AB	20	102	1	69.9%	92.7%
			2	53.6%	61.3%
AA	42	44	1	78.2%	95.1%
			2	72.4%	95.5%
	37	34	1	48.5%	52.9%
			2	81.0%	100.0%
P	12	45	1	62.5%	69.7%
			2	67.4%	76.9%
			3	76.9%	88.0%
	16	28	1	32.7%	35.7%
			2	44.0%	47.6%
	18	30	1	48.1%	52.0%
	18	36	1	39.3%	47.2%
Y	37	32	1	58.1%	66.8%

Figure 3.1 Maximum Depth vs. Burst Effective Average Depth



Discuss why it is appropriate to combine growth rates from the 1995-1997 cycle with the 1997-2000 cycle. General industry practice has been to use the most bounding cycle of data, and it appears that the growth rates from this last cycle were higher than in the previous cycle.

The growth rate data from Cycle 13 and Cycle 14 were combined into a single population to permit a reasonable cumulative distribution to be developed. However, the distribution thus developed is used only as a comparison basis to choose a more conservative, bounding growth rate distribution based on data from another plant. Figure 4.5-3 (SG-00-05-010) shows that the growth rate distributions from the combined Cycle 13 and Cycle 14 data are quite similar to the growth rate distributions based on the data from another plant and this confirms that there are no characteristic differences in the ODSCC growth rates between IP2 and the comparison plant. The bounding growth rate distribution, based on the +Point data from the other plant, is used as the basis for developing the growth rates for IP2.
A log-normal distribution, whose average value is the same as the average value of the measured (bounding) distribution, is applied which represents the true growth rate, i.e., without NDE error. The standard deviation of the log-normal distribution is determined by iteration the statistical combination of the known NDE error and the unknown log normal deviation until a predicted distribution is achieved that reasonably matches the measured distribution. (The NDE mean error is essentially zero since the growth rate is determined as the difference between measurements at two successive inspections). This process defines the mean and deviation of the log-normal distribution used to represent the true growth, and provides a distribution that can be sampled for the Monte Carlo simulations.

In summary, the combined IP2 Cycle 13 and Cycle 14 data are used to develop a cumulative distribution to compare with other available industry growth rate data. A conservative bounding growth rate distribution from another plant is used to develop the parameters (mean and deviation) of a log-normal distribution which is used in the Monte Carlo simulation. Since the entire distribution of available IP2 growth rates is used in this process and is bounded by the growth rate distribution actually used, the resulting log-normal distribution is reasonable and conservative.

Comment on the use of an NDE uncertainty on growth rates of +/-10%. This value appears to be very optimistic given industry experience with bobbin coil sizing capabilities.

The bounding growth rate distribution is based on the use of +Point data that envelopes the maximum depth growth distribution based on the use of bobbin data. The validation of this approach is the comparison of the IP2 bobbin based growth rate distribution with the bobbin growth rate distribution for the same population of tubes from which the +Point data were taken. The performance of the bobbin probe at IP2 and at the comparison plants is reasonably expected to be the same. Because the bobbin data based growth rates for IP2 and the other comparison plants are quite similar, the use of the bounding +Point data is justified. Since the distribution of the bobbin based growth rates is used only as a comparison basis with other plants' data, the uncertainty of the bobbin sizing capability does not influence the growth rate used in the CMOA.

NRC RAI dated July 3, 2000

Question 6

Discuss the details of industry experience regarding cracking of a row 3 tube in a Westinghouse steam generator and how that experience reflects the IP2 conditions.

Reply

Table 1 summarizes the operating experience of Westinghouse SGs with regard to row 3 cracking. Each of the plants is discussed separately below.

Table 1

Summary of U-Bend Row 3 Indications

Westinghouse Originally Supplied Steam Generators

Plant	Year Ind. Found	Heat Treat	Probe	Crack Type		ID or OD Crack		U-Bend Location	
				Axial	Circ.	PWSCC	ODSCC	Near Apex	Near Tangent
Row 3 Indications									
Farley-1	1997	No	+Point	1			1	1	
	1997	No	+Point	1			1		1
Kewaunee	2000	No	+Point	5 tubes 11 ind.			5 tubes 11 ind.(1)	1 tube 1 ind.	4 tubes 10 ind.(2)
	1995-96	No					3 MBMs '95, '96		3
McGuire-1	1991	No	Pancake	1		1		~1" from apex	

Notes:
1. New inspection results under review as potential Manufacturing Burnish Marks (MBMs). Indications were plugged.
2. Indications located between 1 inch above tangent and 1 inch below apex.

a) Farley –1

Farley 1 is a 3-loop plant with Westinghouse Model 51 SGs. The tubes in one of the three SGs were manufactured by the manufacturer of the IP2 tubes. The operating temperature of the Farley –1 SGs is significantly higher than that of the IP2 SGs. The total accumulated operating time prior to SG replacement (2000) was 16.4 EFPY. No significant denting was observed in the Farley-1 SGs, and no hourglassing of the TSPs was observed.

The row 3 indications at Farley 1 were reported in 1997 at approximately 15 EFPY operation. Both reported indications were characterized as axial ODSCC; one was located at the tangent point of the row 3 u-bend, and the other was reported near, but not at, the apex of the tube.

b) Kewaunee

Kewaunee is a 2-loop plant with original equipment Westinghouse model 51 SGs. Some of the tubes for the Kewaunee SGs were manufactured by the same manufacturer who manufactured the IP2 tubes. The U-bends have not been heat treated after bending. There is very little denting (none in the low row –

bends) and, based on visual inspections, there is no evidence of flow slot hourglassing at the top TSP. The operating temperature for Kewaunee is slightly higher (3°F) than that of IP2, but is in the lower range among all operating plants. Kewaunee has accumulated 19.5 EFPY of operations (compared to 15.5 for IP2).

Row 3 indications reported in 1995-96 were resolved as MBMs.

During the 2000 inspection using a +point probe, 5 Row 3 tubes were reported with 11 ODSCC indications. Of the 11 indications, only one was located at the u-bend apex of a tube which had no other indications. The remaining indications were located near the tangent point of the u-bends. Examination of the bobbin history for many of these indications revealed that they were present with insignificant change for two to four operating cycles. Although the bobbin data suggests that these indications could be classified as MBM, similar to the prior row 3 indication resolutions, based on the +Point data, this classification cannot be definitively made. Therefore, these indications were treated as ODSCC indications, and appropriate CMOA evaluations were prepared.

c) McGuire Unit 1

The original equipment McGuire steam generators were Westinghouse Model D3 preheat steam generators that utilized ¾" diameter tubing. The preheater design of these SGs required different fabrication techniques for assembly, although the tube bending process was similar to that utilized for the Model 44 (and other) SGs. No denting or flow slot hourglassing was observed in the McGuire SGs. The operating temperature of the McGuire SGs was initially 618°F, but was reduced over time to about 608°F. The SGs were replaced in 1997.

McGuire Unit 1 reported cracking in 7 row 3 U-bends in one period between 9/91 and 8/94. Duke Power confirms that no further cracking has been reported in row 3 U-bends in their steam generators since that time. This was regarded as an "inspection transient". During this period, McGuire was inspecting free spans for cracking conditions using very conservative reporting requirements. Table 1 is an excerpt of their inspections of row 3 U-bends. Table 2 presents the results of IP2's review of that data. There are references to SG-B in Table 1, but there are conflicting references to SG "C" in the original cal groups. This data is from a pancake coil so liftoff could be a factor in characterizing the freespan signals.

Four of the tubes reported have freespan indications at possible dent locations in the freespan areas below the tangents. These tubes are R3C14, R3C18, R3C36 and R3C48. Based on their phase these indications originate from the ID of the tubing. Liftoff from possible dents may be influencing data interpretation; in fact, R3C36 may be entirely due to a dent while R3C48 seems not to be affected by liftoff at all. R3C14 and R3C18 are between those extremes.

Tube R3C16 had an indication at the apex originally called a SAI, but this signal may be anomalous and the signal to noise ratio is poor due to the small signal amplitude. The indication in tube R3C85 resembles a manufacturers buff mark; it is addressed as a volumetric indication since historical data is not available. This indication is located in the U-bend tangent.

The most significant finding in this review is R3C97. This tube has a clear indication of axial cracking, and based on the signal phase, the origin is from the ID of the tubing.

Summary and Conclusions

Three plants have reported indication in row 3 u-bends. Two of the three plants utilized the same size tubing (7/8") as that in IP2. All Row 3 indications reported in these two plants were axial ODSCC. There is evidence that the ODSCC indications may be the result of conservative reporting criteria and may be; however, this is not conclusive, and the indications were classified as ODSCC. The ODSCC indications in the two plants with 7/8" diameter tubing occurred after a cumulative operating time equal to, or greater than the current cumulative operating time of IP2.

A single clear Row 3 axial PWSCC indication about 1" from the u-bend apex was reported in 1991 in a preheater plant (essentially different design than the IP2 SGs) in ¾" diameter tubing. The row 3 bend radius is smaller for the Model D SGs than the Row 3 bend radius in the Model 44 SGs, but larger than the Row 2 bend radius in the Model 44 SGs. Very conservative reporting criteria were used, although the eddy current techniques utilized were not as sophisticated as those used at IP2 during the 2000 inspection. No additional indications were reported after 1991 until the SGs were replaced in 1997.

Since only isolated row 3 indications have been reported in operating plants, the potential for rapid onset of row 3 indications at IP2 is not considered to be credible. Most of the reported indications are not certain calls, thus the potential for row 3 cracking may be even less than the operating experience appears to indicate. All of the reported row 3 indications have occurred in plants with equal or greater operating time than IP2. There has been no consistent trend of occurrence of row 3 indications in the plants that have reported them. For example, indications were reported only in 1997 at one plant, then not again. At another plant, indications (classified as MBM) were reported in 1995-96, then not again until 2000. In the third plant an indication was reported in 1991, then none other was reported until the SGs were replaced in 1997.

The CMOA does not assume that there will be no indications in row 3 at IP2 in time. However, the assumption is made that the data for the Row 2 tubes applies also for the Row 3 tubes; thus, there is a significant population of undetected indications assumed for row 3 which the operating data for other plants shows is very conservative. Evaluation of the row 3 u-bend stress compared to the row 2 u-bend stresses concludes that the onset of row 3 cracking is expected to lag the onset of row 3 cracking by a factor of 2.5 to 4. The industry operating experience with regard to row 3 cracking supports this conclusion.

Table 1 Excerpt from Original McGuire Report

FTI TUBAN II (Version 2.3)
McGuire Nuclear Station - Unit One
S/G B

09-May-00 15:13:42
All data for Row 3 tubes.
QRY: 05/09/2000 13:22:06

OUTAGE	TEST	ROW	TUBE	IND	%TW	VOLTS	CHN	DEG	LOCATION		Probe	LEG	Tape/Cal#	Comments
04/93 RFO	U-Bend	3	14	SAI		3.34	1	19	7TH TSP	+16.52 / 8TH TSP	580	TE*	2	
04/93 RFO	U-Bend	3	16	SAI		2.25	1	7	7TH TSP	+10.19	580	TE*	2	
04/93 RFO	U-Bend	3	18	SAI		12.77	1	7	7TH TSP	+17.23 / 8TH TSP	580	TE*	2	
04/93 RFO	U-Bend	3	36	SAI		2.21	1	19	7TH TSP	+17.37	580	TE*	4	
04/93 RFO	U-Bend	3	48	SAI		1.05	1	5	7TH TSP	+17.75	580	TE*	5	
08/94 RFO	U-Bend	3	85	VOL		2.64	1	160	8TH TSP	+3.73	580	TE*	33	
09/91 RFO	U-Bend	3	97	ODI	S/N	4.41	2	16	7TH TSP	+8.40	580	TE*	3	

Table 2 Review of McGuire I Data

Outage	Row	Col	Ind	Freq	Deg	Location	Offset	type	comments
4/93	3	14	SAI	300kHz	19	7H freespan	+16.19	PWSCC	Dent-like
4/93	3	16	SAI	300kHz	20	7H apex	+9.91	PWSCC	Dent-like Conservative call
4/93	3	18	SAI	300kHz	11	7H freespan	+1.84	PWSCC	Dent-like
4/93	3	36	SAI	300kHz	26	7H freespan	+1.80 (est.)	PWSCC	Very dent-like
4/93	3	48	SAI	300kHz	13	7H freespan	+1.80	PWSCC	Good indication
8/94	3	85	VOL	300kHz	346	7H H/L tangent	+4.01	MBM	
9/91	3	97	SAI	300kHz	25	7 H apex	+8.15	PWSCC	Apex, Solid call

NRC RAI Letter dated July 3, 2000

Question 10

Supplement Section 7.0 of the U-bend operational assessment report with a discussion of outside diameter stress corrosion cracking experience with small radius U-bends.

Reply

a) Operating Steam Generators

Table 10-1 summarizes the operating experience in regard to the incidence of ODSCC in small radius u-bends. To date, 15 indications classified as ODSCC have been reported, two in row 2 tubes, and the remainder in row 3 tubes. For completeness, Table 10-1 notes that three additional indications classified as MBM were reported in row 3 tubes, and 1 indication classified as MBM was reported in a row 2 tube. Eleven indications reported in a recent inspection (Spring 2000) were classified as ODSCC based on +Point probe data, although the corresponding bobbin data were traceable historically without significant change, thus supporting a possible interpretation of these signals as MBM.

Two of the 15 indications classified as ODSCC occurred near the apex of the u-bend; the remainder occurred near the tangent points.

ODSCC in the u-bends is isolated, appears sporadically and does not exhibit a trend of consistent or increasing incidence. No operating plant has reported small row u-bend ODSCC at more than one inspection. There is no trend of multiple or increasing occurrence.

All of the plants that have reported small row u-bend ODSCC currently have cumulative operating times greater than IP2. None of the plants that reported small row u-bend ODSCC is significantly dented nor has reported TSP hourglassing.

b) Retired Steam Generator

A Surry 2 SG experienced row 1 tube leakage in September 1976. At that time, all of the row 1 and row 2 tubes were preventively plugged (NUREG CR-5117). No row 2 cracking was reported during the EC examination performed.

In August 1980, the Surry SGs were replaced. One of the retired SGs was transported to the Hanford, WA facility where detailed examination of the SG was performed over a period of time between 1983 to 1984.

It is reported in NUREG CR-5117 that SCC was found only at the apex of some row 1 and row 2 tubes. Both ID and OD axial cracks were observed in the row 1 tubes, and only axial OD cracks were observed in the row 2 tubes. No data are available regarding the number of cracks found. Scaling of Figure 3.28 (photograph of destructive examination of R2C27) of NUREG CR-5117 indicates that the Row 2 OD crack is approximately 25% throughwall. It is not specifically stated, but it is implied, that the pictured crack is typical of the row 2 observations.

No row 3 indications (PWSCC or ODSCC) were found during the examination of this SG. Examination of the surface deposits on the tubes revealed that the deposits were copper rich.

c) Significance to IP2

Two operating plants have reported ODSCC indications in low row u-bends. In addition manufacturing burnish marks (MBM) have been reported in the low row U-bends at 2 plants, one of them also reporting ODSCC. All of the plants reporting low row OD indications utilize the same size tubing (7/8") as that in IP2. There is evidence that many of the ODSCC indications may be the result of conservative reporting criteria (see RAI-6 above) and may be MBM; however, this is not conclusive, and the indications were classified as ODSCC. The ODSCC indications were reported after a cumulative operating time equal to, or greater than, the current cumulative operating time of IP2.

Since only isolated row 3 indications have been reported in operating plants, the potential for rapid incidence of row 3 indications at IP2 is considered small. Most of the reported indications are not certain calls, thus the potential for ODSCC may be even smaller than the operating experience appears to indicate. All of the reported ODSCC indications have occurred after an operating period equal to, or greater than the operating time of IP2. There has been no consistent trend of occurrence of ODSCC indications in the plants that have reported them. For example, in one plant, an indication was reported in row 2 in 1994, another in row 3 in 1997, then not again. At another plant, indications (classified as MBM) were reported in 1995-96, then not again until 2000.

ODSCC in the low row u-bends may be anticipated to occur in row 3 at IP2 in time. The operating experience indicates that the incidence of ODSCC in the u-bends is sporadic and infrequent. Because no consistent growth in the incidence of ODSCC has been experienced, it can be inferred that the initiation rate and growth rate of ODSCC indications is also small. Evaluation of the row 3 u-bend stresses compared to the row 2 u-bend stresses indicates that the onset of row 3 cracking is expected to lag the onset of row 2 cracking by a significant period of time.

Table 10-1

Summary of U-Bend Rows 2 and 3 ODSCC Indications
Westinghouse Originally Supplied Steam Generators

Plant	Year Ind. Found	Heat Treat	Probe	Crack Type		ID or OD Crack		U-Bend Location	
				Axial	Circ.	PWSCC	ODSCC	Near Apex	Near Tangent
Row 3 Indications									
Farley-1	1997	No	+Point	1			1	1	
	1997	No	+Point	1			1		1
Kewaunee	2000	No	+Point	5 tubes 11 ind.			5 tubes 11 ind.(1)	1 tube 1 ind.	4 tubes 10 ind.(2)
	None	No					3 MBMs '95, '96		3
Row 2 Indications									
Farley	1994	Yes	Pancake	2			2		2
Prairie Island-1	None	No					1 MBM '81		1

Notes:
3. New inspection results under review as potential Manufacturing Burnish Marks (MBMs). Indications were plugged.
4. Indications located between 1 inch above tangent and 1 inch below apex.

ATTACHMENT B

Response to Question from NRC Telecon Dated July 5, 2000

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
July 2000

NRC Telecon Question 1

Provide a table (or figure) that lists the assumed flaw distribution at the beginning of cycle. The distribution shall be based on average and maximum depth, and average and maximum length for each POD group. Provide this information for both U-bend and Non-U-bend (Sludge Pile) CMOA's.

Reply

A POD group indication represents a group of indications and, therefore, does not have a fixed flaw distribution at the beginning of cycle. The process of combining individual indications into POD groups is described in detail in the response provided to Question 7 from the June 21 to 26 telecons. The individual indications that make up a POD group are represented at their fractional value of (1/POD-1). The indications are selected in the order of their depth (average depth for burst and maximum depth for leakage) such that the 1st POD group has the deepest indications, the 2nd POD group the next set of deeper cracks, etc. A numerical example is provided in the table below to illustrate the process of grouping fractional indications. The crack parameters shown in the table do NOT represent any IP-2 indications

Indn. No.	Depth	POD	(1/POD-1)	POD Group	Comments
1	0.6	0.9	0.11	1	
2	0.48	0.8	0.25	1	
3	0.45	0.75	0.33	1	
4	0.38	0.6	0.67	1&2	0.31 out of 0.67 is a part of POD Group 1 and the remainder a part of Group 2.
5	0.37	0.55	0.82	2	0.64 out of 0.82 is a part of POD Group 2

The POD group 1 is composed of fractional parts of indications 1 to 3 and a part of indication 4 such that the fractional values of (1/POD-1) sum to 1. The fractional part of indication 4 not included in POD group 1 is included in POD group 2 along a part of indication 5. Any fractional part left over (as with indication 5) that is greater than 0.5 is treated a separate POD group; it is ignored if the value of the last POD group is less than 0.5 (as with 0.18 of indication 5).

During Monte Carlo sampling, a random number between 0 and 1 is drawn for each POD group to select an indication in the group for the SG sample population. The crack profile for the indication selected is included in the SG sample BOC distribution. In the above example, if a random number $0 \leq X \leq 0.11$ is drawn for POD group 1, the crack profile for indication 1 is picked to represent the group; if the random number is $0.11 < X \leq 0.26$, the crack profile for indication 2 is selected, etc. Over many SG samples, each indication contributes to the POD group in proportion to the fraction at which they are represented.