Commonwealth Edison Company
1400 Opus Place
Downers Grove, IL 60515-5701

ComEd

January 16, 1996

United States Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Attention: Document Control Desk

Subject: Supplemental Pulled Tube Eddy Current Inspection Results
Byron Nuclear Power Station, Unit 1
Facility Operating License NPF-37
NRC Docket No. 50-454

References: 1. Denise M. Saccomando (ComEd) letter to USNRC Document Control Desk, "Byron Unit 1 Pull Tube Eddy Current Inspection Results," dated December 22, 1995

2. Harry Pontious (ComEd) letter to USNRC Document Control Desk, "Supplement Pulled Tube Eddy Current Inspection Results," dated January 2, 1996

In References 1 and 2, Commonwealth Edison Company (ComEd) provided the Nuclear Regulatory Commission (NRC) Staff with the latest (as of December 21, 1995 and January 2, 1996) field eddy current testing (ECT) data for the ten steam generator tubes pulled from the Byron Nuclear Power Station, Unit 1, Steam Generator A, during the recent mid-cycle steam generator tube inspection outage.

The data contained in these 2 correspondences were data results from vendors A through E. Subsequent to that submittal, ComEd has received the final data for F and G, received on January 12, 1996. For ease of review, ComEd is attaching the complete eddy current testing report for vendors A through G which supersedes References 1 and 2.

To the best of my knowledge and belief, the statements contained in this document are true and correct. In some respects these statements are not based on my personal knowledge, but on information furnished by other ComEd employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

220077

K:\nla\bybwd\stgen\circ2

A001
1/1

Please address any comments or questions regarding this matter to this office.

Sincerely,

Denise M. Saccomando
Senior Nuclear Licensing Administrator

Signed before me
on this 16th day of January, 1996,

OFFICIAL SEAL
JACQUELINE T EVANS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES: 12/15/97

by Jacqueline T. Evans.
Notary Public

Enclosure

cc: H. J. Miller, Regional Administrator - RIII
M. D. Lynch, Senior Project Manager - NRR
G. F. Dick Jr., Byron Project Manager - NRR
H. Peterson, Senior Resident Inspector - Byron
Office of Nuclear Facility Safety - IDNS

K:\nle\bybwd\stgen\circ2

ATTACHMENT

ComEd BYRON TUBE PULL ECT SIZING RESULTS SUMMARY

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s): Plus Point 300 kHz — 205,207,209
Vendor: A
Brief Discription of Technique: Axial scan line filter phase measurement with filter applied

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	62	40	6.8			Best Effort on Depth
28	68	28	76	4.7	40	0.18	
20	85	156 / 20 / 5	69	24.3			
38	44	70	40	7.8			Best Effort on Depth
23	43	67 / 59 / 22 / 39	86	26			
24	42	145	99	35.6	74	0.18	
14	93	251	83	41.8	98 / 99 / 88	.25 / .25 / .20	
27	48	58	40	6.4			Best Effort on Depth
38	55	310	88	43.9			
14	37	310	99	61.1			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s): Plus Pt. Gimbaled 300 kHz — 197
Vendor: A
Brief Discription of Technique: Axial scan line filter applied (Length measurement only)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	167	40	18.77			
28	68	41	40	4.69	52	0.33	
20	85	293	67	32.92			
38	44	44	40	3.71			
23	43	97,174	100,96	55.07			
24	42	177	89	33.07	80	0.19	
14	93	286	88	43.94			
27	48	232	51	23.72			
38	55	316	41	25.24			
14	37	304	98	48.77			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209 0.080 pancake
Vendor B
Brief Discription of Technique 0.080 mr pancake using axial average filter

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0	0			
28	68	40	84	6.22			
20	85	0	0	0			
38	44	0	0	0			
23	43	70,80	85,100	16.94			
24	42	80,90	95,99	20.64			
14	93	120	100	15.64			
27	48	0	0	0			
38	55	120	99	22.06			
14	37	220	99	27.33			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 207,205,209
Vendor B
Brief Discription of Technique .115 pancake using axial average filter

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0	0			
28	68	40	20	1.67			
20	85	40	99	8.19			
38	44	40	20	1.67			
23	43	100,160	99,92	39.06			
24	42	80,90	96,99	33.97			
14	93	130	79	11.31			
27	48	40	95	6.31			
38	55	40, 140	52,90	27.06			
14	37	140,70,30,20	96,99,34,20	25.89			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209
Vendor B
Brief Discription of Technique Plus point using axial average filter

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	60	98	10			
28	68	40	45	2.36			
20	85	30,20	90,86	7.19			
38	44	30	80	3.83			
23	43	70,40,40,60,20	99,98,89,96,70	38.89			
24	42	170	96	34.44			
14	93	100	91	18.44			
27	48	90	89	18.5			
38	55	60,120,40	95,98,99	40.58			
14	37	40,60,40,20	78,84,75,86	20.03			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209
Vendor C
Brief Discription of Technique Cross Correlation Filtering

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0	0			
28	68	40	26	1.77			
20	85	40	42	2.47			
38	44	80	69	8			
23	43	340	97	27.27			
24	42	149	86	26.14	80	0.21	
14	93	300	100	27.67			
27	48	150	25	9.64			
38	55	290	55	19.11			
14	37	340	54	25.69			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 197
Vendor C
Brief Discription of Technique Band Pass Filtering Plus Pt. 300 kHz

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	180	29	11.92			
28	68	40	34	1.72			
20	85	70	41	3.32			
38	44	60	25	2.42			
23	43	350	98	43.22			
24	42	180	97	34.64	72	0.25	
14	93	268	25	17.92			
27	48	170	59	12.99			
38	55	309	75	25.43			
14	37	350	97	39.39			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
Vendor D
Brief Discription of Technique .080 MR 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0				
28	68	0	0				
20	85	0	0				
38	44	88	0				
23	43	360	78				
24	42	190	80		86	0.29	
14	93	149	0				
27	48	0	0				
38	55	360	90				
14	37	338	70				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
Vendor D
Brief Discription of Technique .080 MR 300 kHz EDDYNET SOFTWARE

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91						DATA TOO NOISY
28	68						
20	85						
38	44						
23	43	72,47,58	99	34.1	91 MAX, 66 AVG.	0.27	
24	42	46,100,72	98	42.5			MIXED MODE IND
14	93	222,28	80	17.3			
27	48						
38	55	305	88	26.2			
14	37	250,25	94	41.3			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
Vendor D
Brief Discription of Technique Axial sensitive coil 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91						
28	68						
20	85						Some residual
38	44						
23	43						Some residual
24	42				81	0.35	Some residual
14	93						Some residual
27	48						
38	55						Some residual
14	37						

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s)
Vendor D
Brief Discription of Technique Circumferential sensitive coil 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	0	0				
28	68	32	11				
20	85	37,78	49,32				Multiple
38	44	34,67	34,42				Multiple
23	43	108,138	66,46				Multiple
24	42	191	79				
14	93	119	0				
27	48	298	49				
38	55	360	81				
14	37	303	66				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209
Vendor D
Brief Discription of Technique 115 MR 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	108	0				
28	68	51	0				
20	85	62,127	0,16				
38	44	211	0				
23	43	355	76				
24	42	186	80		71	0.29	
14	93	164	19				
27	48	223	0				
38	55	225	72				
14	37	335	57				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 205,207,209
Vendor D
Brief Discription of Technique Plus Pt. 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	159	0				
28	68	67	40				
20	85	104,43	44,18				Multiple
38	44	50,31	13,0				Multiple
23	43	360	74				
24	42	196	82		75	0.2	
14	93	300	33				
27	48	97	38				
38	55	353	57				
14	37	360	64				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 203
Vendor D
Brief Discription of Technique .080 HF 300 kHz conventional analysis (not using axial view)

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	98	0				
28	68	41	0				
20	85	152,38	0,0				Multiple
38	44	192	0				
23	43	349	74				
24	42	185	84		73	0.26	
14	93	152	0				
27	48	246	0				
38	55	339	69				
14	37	295	43				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 197
Vendor D
Brief Discription of Technique Gimballed Plus Pt. 300 kHz conventional analysis not using axial view

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	300	55	18.3			
28	68	64	58	7.1			
20	85	32,152	78	14.5			
38	44	32	40	3			
23	43	251,54,20	82	31.3			
24	42	168	94	33.4	84	TBD	
14	93	330	59	30.7			
27	48	180	not sizable	n/a			
38	55	276	81	28.9			
14	37	94,30,44,145	79	36.7			

BYRON PULLED TUBES (12/95)

Probe Analyzed
Vendor D
Brief Discription of Technique Cecco-5 Compensation Mix

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	NDD	0				
28	68	NDD	0				
20	85	NDD	0				
38	44	NDD	0				
23	43	45,23	78,58				
24	42	45,45	40,20				
14	93	45	30				
27	48	NDD	0				
38	55	90	50				
14	37	23	20				

BYRON PULLED TUBES (12/95)

Probe Analyzed: D
Vendor: UTEC
Brief Discription of Technique:

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	NDD					
28	68	97	30	7.2			Intermittent
20	85	300	not measurable				Intermittent
38	44	10, 10	not measurable				
23	43	97 (35,31), 42, 17	65	12			97 includes 2 axially separated ind's
24	42	206	80	26	not measurable	0.25	Intermittent
14	93	NDD					
27	48	NDD					
38	55	310	not measurable				Intermittent ind. below bottom roll trans.
14	37	360	not measurable				Intermittent

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s): 205,207,209
Vendor: E
Brief Discription of Technique: Plus Pt 300 kHz

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	160	80				
28	68	145	80		80,80	.17,.29	
20	85	360	90				
38	44	219	90				
23	43	360	100				
24	42	253	100		100	0.21	
14	93	360	90				
27	48	304	90		80	0.25	
38	55	360	90				
14	37	360	100				

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) 203
Vendor F
Brief Discription of Technique Data Inversion

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	295	30	24.5			Crack depth indeterminate 30% assigned
28	68	57,27 (84)	65	14.69			
20	85	61,86 (147)	52	19.03			
38	44	47,30 (77)	37	5.24			
23	43	243,40 (283)	80	45.83			
24	42	68,29 (97)	81	21.55	70		
14	93	324	52	34.12			
27	48	136,8 (141)	68	21.23			
38	55	85,255 (340)	67	39.58			
14	37	15,36,157 (208)	70	28.85			

BYRON PULLED TUBES (12/95)

Probe Analyzed / Cal Group(s) Plus Pt. Gimbaled 300 kHz 197
Vendor G
Brief Discription of Technique Band Pass Filtering

ROW	COL	ARC LENGTH(S) Degrees	MAX DEPTH %	AVG. DEPTH % OVER 360	AXIAL INDICATION DEPTH %	AXIAL INDICATION LENGTH (inches)	COMMENTS
24	91	23,23,23,23	98	12			
28	68	58,34,58,23,23	96	21.13	99,0,95	0.25,0.3,0.18	
20	85	81,23,23,47,23	99	30.32	22,0	0.15,0.27	
38	44	23,23,23,35,23,23	96	17.1	57	0.18	
23	43	23,81,35,23,23,35, 23,23	94	27.84	94,84,15,84,15	21,0.51,0.21,0.18,0.30	
24	42	256	86	42.71	92,91,74	0.36,0.42,0.27	
14	93	35,23,35,35,23,23, 23	97	27.94			
27	48	23,35,23,23,35	81	9.1	93,96	0.3,0.27	
38	55	81,23,58,35,23	97	20.13	32,27,70,81	0.21,0.18,0.18,0.12	
14	37	58,23,23,23,23,23, 23	75	13.61	54,78,70	0.18,0.12,0.15	