



**Commonwealth Edison**  
One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

September 5, 1980

Mr. James G. Keppler, Director  
Directorate of Inspection and  
Enforcement - Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Subject: Dresden Station Units 2 and 3  
Quad Cities Station Units 1 and 2  
Zion Station Units 1 and 2  
Additional Response to IE Bulletin  
79-02  
NRC Docket Nos. 50-237/249, .  
50-254/265 and 50-295/304

References (a): D. L. Peoples letter to J. G. Keppler  
dated February 19, 1980

Dear Mr. Keppler:

Pursuant to an NRC request at our December 13, 1979 meeting in Bethesda, Md. CECO. has performed load tests on concrete expansion anchors on all accessible safety related piping systems at Dresden, Quad Cities, and Zion Stations. Attached are tabulations of the relevant test data for the respective stations. This data is a final update of the information presented in Bethesda during the December 13, 1979 meeting.

This data represents a 95% confidence level of less than 5% defective (failed) anchors on a station basis. This is consistent with previous CECO. commitments to the NRC regarding the "95-5" criteria presented in Reference (a).

The results of the expansion anchor test program have shown that the installation of concrete expansion anchors at Zion, Dresden, and Quad Cities Station were acceptable. Very few load test failures versus the number of anchors tested were observed. In addition, during the course of the inspection process, a large number of oversized/flame cut holes were discovered in the base plates. This discovery led to the inspection of all base plates on safety-related piping systems for oversized/flame-cut holes. This inspection process is almost complete, at all operating stations, and where oversized/flame-cut holes were encountered, a steel plate washer was inserted. In the case of shear loading on the plate, the plate washer was welded to the base plate.

*8009250504 (AP)*

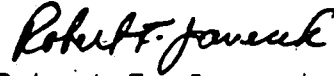
Mr. James G. Keppler, Director

September 5, 1980

Page 2

Please address any questions concerning this matter to this office.

Very truly yours,



Robert F. Janecek  
Nuclear Licensing Administrator  
Boiling Water Reactors

cc: Director, Division of Reactor  
Operations Inspection  
RIII Resident Inspector, Dresden  
RIII Resident Inspector, Quad Cities  
RIII Resident Inspector, Zion

6478A

ZION

PLATES INSPECTED

UNIT	SYSTEM	PLATES IN SYSTEM	PLATES INSPECTED	HANGER IN SYST
1	BD	136	63	240
	CC	233	113	810
	CS	107	31	275
	RC	107	47	221
	FW	105	40	252
	MS	19	8	212
	RH	59	17	125
	SI	327	148	537
	SW	183	25	326
	VC	260	154	347
1	TOTALS	1,536	646 (42%)	3,345
2	BD	113	9	210
	CC	395	42	470
	CS	119	17	296
	DT	71	8	66
	FW	92	12	252
	MS	107	14	212
	RC	86	9	211
	RH	59	29	92
	SI	279	26	477
	SW	15	17	267
VC	311	29	474	
2	TOTALS	1,647	212 (12.9%)	3,027
1&2	TOTALS	3,183	858 (27%)	6,372

ZION  
LOAD TEST

UNIT	SYSTEM	ANCHORS LOAD TESTED	ANCHORS FAILED TEST
1	BD	58	0
	CC	119	3
	CS	16	1
	RC	53	2
	FW	21	0
	MS	4	0
	RH	16	0
	SI	134	1
	SW	19	0
	VC	179	1
<hr/>			
1	TOTALS	619	8 (1.3%)
<hr/>			
2	BD	9	0
	CC	41	0
	CS	22	0
	DT	3	0
	FW	10	0
	MS	17	0
	RC	8	0
	RH	42	6
	SI	32	3
	SW	19	2
VC	28	0	
<hr/>			
2	TOTALS	231	11 (4.8%)
<hr/>			
1&2	TOTALS	850	19 (2.3%)
<hr/>			

ZION

THREAD ENGAGEMENT

UNIT	SYSTEM	BOLTS INSPECTED	BOLTS < MIN.
1	BD	179	3
	CC	363	26
	CS	55	0
	RC	129	3
	FW	75	3
	MS	24	3
	RH	45	1
	SI	469	33
	SW	87	4
	VC	494	29
1	TOTALS	1,920	105 (5.5%)
2	BD	36	0
	CC	144	3
	CS	60	3
	DT	8	0
	FW	39	0
	MS	34	0
	RC	26	1
	RH	87	1
	SI	93	0
	SW	53	0
VC	96	4	
2	TOTALS	676	12 (1.8%)
1&2	TOTALS	2,596	117 (4.6%)

ZION

SHELL PROJECTION

UNIT	SYSTEM	SHELLS INSPECTED	SHELLS PROTRUDING	SHELLS LOAD TESTED	SHELLS FAILED TEST
1	BD	172	36	9	0
	CC	344	18	5	0
	CS	50	16	14	1
	RC	134	4	4	0
	FW	78	8	0	0
	MS	24	4	0	0
	RH	44	11	3	0
	SI	453	68	11	0
	SW	86	10	0	0
	VC	403	49	14	1
1	TOTALS	1,788	224 (12.5%)	60	2 (3.3)
2	BD	33	4	1	0
	CC	130	11	5	0
	CS	60	18	5	0
	DT	8	0	0	0
	FW	39	9	2	0
	MS	34	2	0	0
	RC	30	4	1	0
	RH	99	17	8	0
	SI	92	13	4	0
	SW	49	7	1	0
VC	96	13	3	0	
2	TOTALS	670	98 (16.0%)	30	0 (0%)
1&2	TOTALS	2,458	322 (13.1%)	90	2 (2.4)

ZION  
ANGULARITY

UNIT	SYSTEM	BOLTS INSPECTED	BOLTS > 4°
1	BD	244	8
	CC	426	16
	CS	139	17
	RC	192	11
	FW	140	13
	MS	23	4
	RH	71	7
	SI	572	36
	SW VC	104 538	16 40
1	TOTALS	2,449	168 (6.8%)
2	BD	36	1
	CC	148	10
	CS	64	8
	DT	20	0
	FW	44	4
	MS	44	4
	RC	34	0
	RH	112	11
	SI SW VC	113 74 106	11 14 3
2	TOTALS	795	66 (8.3%)
1&2	TOTALS	3,244	234 (7.2%)

QUAD CITIES

PLATES INSPECTED

<u>UNIT</u>	<u>SYSTEM</u>	<u>PLATES IN SYSTEM</u>	<u>PLATES INSPECTED</u>	<u>HANGERS IN SYSTEM</u>
1	CS	33	13	51
	FW	4	0	12
	HPCI	94	39	112
	MS	17	2	19
	RCIC	2	1	8
	RHR	83	16	148
	SBGT	89	41	98
	SW	140	54	169
1	TOTALS	462	166 (35.9%)	617
2	CS	44	13	58
	HPCI	54	25	77
	MS	2	0	19
	RCIC	4	4	9
	RHR	112	48	153
	RWCU	1	0	14
	SBGT	24	19	32
	SW	55	30	83
2	TOTALS	296	139 (47%)	445
1&2	TOTALS	758	305 (40.2%)	1,062



QUAD CITIES

LOAD TEST

<u>UNIT</u>	<u>SYSTEM</u>	<u>ANCHORS LOAD TESTED</u>	<u>ANCHORS FAILED TEST</u>
1	CS	14	0
	FW	0	-
	HPCI	42	0
	MS	0	-
	RCIC	1	1
	RHR	24	1
	SBGT	44	0
	SW	37	0
1	TOTALS	162	2 (1.2%)
2	CS	19	0
	HPCI	14	0
	MS	0	-
	RCIC	4	-
	RHR	74	0
	RWCU	0	-
	SBGT	10	0
	SW	25	0
2	TOTALS	146	0
1&2	TOTALS	308	2 (0.7%)

QUAD CITIES  
THREAD ENGAGEMENT

UNIT	SYSTEM	BOLTS INSPECTED	BOLTS < MIN.
1	CS	22	0
	FW	0	-
	HPCI	58	4
	MS	0	-
	RCIC	1	-
	RHR	23	0
	SBGT	76	0
	SW	84	0
1	TOTALS	264	4 (1.5%)
2	CS	21	0
	HPCI	32	3
	MS	0	-
	RCIC	11	-
	RHR	107	2
	RWCU	0	-
	SBGT	21	0
	SW	40	1
2	TOTALS	232	6 (2.6%)
1&2	TOTALS	469	10 (2.0%)

QUAD CITIES  
SHELL PROJECTION

UNIT	SYSTEM	SHELLS INSPECTED	SHELLS PROTRUDING
1	CS	22	0
	FW	0	-
	HPCI	53	0
	MS	0	-
	RCIC	0	-
	RHR	22	0
	SBGT	76	0
	SW	84	0
1	TOTALS	257	0
2	CS	22	7
	HPCI	32	0
	MS	0	-
	RCIC	11	-
	RHR	108	1
	RWCU	0	-
	SBGT	21	0
	SW	41	0
2	TOTALS	235	8 (3.4%)
1&2	TOTALS	492	8 (1.6%)

QUAD CITIES

ANGULARITY

<u>UNIT</u>	<u>SYSTEM</u>	<u>BOLTS INSPECTED</u>	<u>BOLTS &gt; 4°</u>
1	CS	41	3
	FW	0	-
	HPCI	107	5
	MS	0	-
	RCIC	4	-
	RHR	51	4
	SBGT	170	2
	SW	196	3
1	TOTALS	569	17 (3.0%)
2	CS	38	0
	HPCI	60	1
	MS	0	-
	RCIC	12	1
	RHR	144	1
	RWCU	0	-
	SBGT	78	2
	SW	106	3
2	TOTALS	438	8 (1.8%)
1&2	TOTALS	1,007	25 (2.5%)

DRESDEN\*

PLATES INSPECTED

UNIT	SYSTEM	PLATES IN SYSTEM	PLATES INSPECTED	HANGERS IN SYSTE
2	CS	45	43	65
	CRD	8	4	78
	HPCI	99	78	134
	IC	16	5	25
	LPCI	88	83	114
	PS	14	7	19
	RBCCW	0	0	8
	RF	1	1	20
	RSC	3	0	14
	SBGT	32	16	28*
	SW	91	46	75
<hr/>				
2	TOTALS	397	283 (71.3%)	580
<hr/>				
3	CRD	8	4	37
	CS	37	29	61
	HPCI	74	41	106
	IC	13	2	25
	LPCI	65	53	108
	PS	8	1	19
	SBGT	4	4	See Unit 1
	SC	2	2	12
SW	75	32	61	
<hr/>				
3	TOTALS	286	168 (58.7%)	429
<hr/>				
2&3	TOTALS	683	451 (66.0%)	1,009

\* UNITS 2 & 3

DRESDEN

LOAD TEST

<u>UNIT</u>	<u>SYSTEM</u>	<u>ANCHORS LOAD TESTED</u>	<u>ANCHORS FAILED TEST</u>
2	CS	143	0
	CRD	4	1
	HPCI	169	0
	IC	18	0
	LPCI	320	4
	PS	18	0
	RBCCW	0	-
	RF	4	0
	RSC	0	-
	SBGT	20	0
	SW	85	0
2	TOTALS	781	5 (.6%)
2	CCSW	2	0
	CRD	5	0
	CS	97	3
	HPCI	97	0
	IC	12	0
	LPCI	166	1
	PS	3	0
	SBGT	5	0
	SLC	0	-
	SW	40	0
3	TOTALS	427	4 (.95%)
2&3	TOTALS	1,208	9 (.8%)

DRESDEN  
THREAD ENGAGEMENT

UNIT	SYSTEM	BOLTS INSPECTED	BOLTS < MIN.
2	CS	122	1
	CRD	0	-
	HPCI	143	0
	IC	18	1
	LPCI	294	1
	PS	18	0
	RBCCW	0	-
	RF	3	0
	RSC	0	-
	SBGT	20	0
	SW	94	0
2	TOTALS	712	3 (.4%)
3	CCSW	2	0
	CRD	0	-
	CS	100	1
	HPCI	91	0
	IC	6	0
	LPCI	162	2
	PS	3	-
	SBGT	5	0
	SLC	0	-
SW	39	0	
3	TOTALS	408	3 (.7%)
2&3	TOTALS	1,120	6 (.6%)

DRESDEN  
SHELL PROJECTION

UNIT	SYSTEM	SHELLS INSPECTED	SHELLS PROTRUDING	SHELLS LOAD TESTED	SHELLS FAILED TES
2	CS	128	7	7	0
	CRD	0	-	-	1
	HPCI	146	2	2	0
	IC	18	3	3	0
	LPCI	293	1	1	1
	PS	18	0	-	-
	RBCCW	0	-	-	-
	RF	3	0	-	-
	RSC	0	-	-	-
	SBGT	20	1	1	0
	SW	94	0	-	-
2	TOTALS	720	14 (1.9%)	14	2 (7.1%)
3	CCSW	2	0	-	-
	CRD	0	-	-	-
	CS	99	0	-	-
	HPCI	91	0	-	-
	IC	6	0	-	-
	LPCI	163	1	1	1
	PS	3	0	-	-
	SBGT	5	0	-	-
	SLC	0	-	-	-
	SW	39	2	2	0
3	TOTALS	408	3 (.7%)	3	1 (33.3%)
2&3	TOTALS	1,128	17 (1.5%)	17	3 (11.8%)



DRESDEN  
ANGULARITY

UNIT	SYSTEM	BOLTS INSPECTED	BOLTS > 4°
2	CS	180	9
	CRD	16	2
	HPCI	269	15
	IC	18	0
	LPCI	343	5
	PS	22	2
	RBCCW	0	-
	RF	4	0
	RSC	0	-
	SBGT	53	5
	SW	166	13
<hr/>			
2	TOTALS	1,071	51 (4.8%)
<hr/>			
3	CCSW	16	0
	CRD	16	0
	CS	137	5
	HPCI	146	4
	IC	12	0
	LPCI	291	11
	PS	3	0
	SBGT	14	0
	SLC	0	-
	SW	99	6
<hr/>			
3	TOTALS	734	26 (3.5%)
<hr/>			
2&3	TOTALS	1,805	77 (4.4%)