ATTACHMENT 1

Consumers Power Company
Big Rock Point Plant
Docket 50-155

BIG ROCK POINT IGSCC INSPECTION PROGRAM

3 Pages

ATTACHMENT 1
BIG ROCK POINT IGSCC INSPECTION PROGRAM

I. Summary

To date Big Rock Point has performed IGSCC examinations on 73 of the 116 susceptible welds. Many of these welds have been examined several times. To date no IGSCC has been found on any of the welds covered by GL 88-01. For detailed information on these examinations and a history of correspondence on IGSCC at Big Rock Point refer to the reference section and Attachment 2 (Listing of IGSCC welds).

II. Scope and Schedule

A. 1992 REFUELING OUTAGE-(end of the second ISI interval)

1) During the 1992 Refueling Outage Big Rock intends to inspect the 12 welds which are only accessible from the Reactor Vessel interior during the mechanized examination.These 12 welds have not been previously examined for IGSCC.It should be noted that these welds will be examined for IGSCC if there are commercially available qualified techniques for the inspection of Reactor Vessel Nozzles from the nozzle I.D. for IGSCC. Otherwise these nozzles will be inspected using standard UT techniques.

2) Perform IGSCC examinations of the accessible portions (1/3) of the Pipe-to-Safe End circumferential welds on the two 20" main recirculating lines.

B. THIRD INSPECTION INTERVAL 1992-2002

If the 12 welds in the Reactor Vessel are successfully examined for IGSCC during the 1992 refueling outage there will be 85 Category D welds at Big Rock.

It is Big Rock's intention to inspect approximately 1/3 of these welds each inspection period during the third interval or about 29 welds each inspection period.

Additionally Big Rock intends to inspect approximately 6 welds on the 3" Cleanup System each inspection period during the third interval.The selection of these 6 welds is intended to provide surveillance on the only area of the cleanup system that has exhibited succeptability to cracking.

III. Revision of Scope and Schedule

A. If IGSCC is detected during an inspection, the number of welds to be examined will escalate per the requirements of ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWB-2430, 1977 Edition through Summer 1978 addenda.

B. If IGSCC indications are detected, indications will be evaluated per ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWB-3500, 1977 Edition through Summer 1978 Addenda.

C. If an Indication is unacceptable, repair will be by weld overlay reinforcement, partial weld replacement or full weld replacement. All flaw repair(s) will be handled on a case by case basis. Other repair methods may be used if appropriate materials and processes are available that offer the repaired weld sufficient resistance to IGSCC.

D. Indications may be analyzed per ASME Boiler and Pressure Vessel Code, Section XI, Subsection IWB-3600, 1977 Edition through Summer 1978 Addenda.

E. This program will be amended at the end of the second Inservice Inspection interval (1992) to reflect code updates as required by 10 CFR 50.55a.

IV. Qualification of Examinations

A. All IGSCC examinations will incorporate qualified examiners and procedures in accordance with Generic Letter 88-01.

V. References

1. GENERIC LETTER 81-04 2/26/81

2. RESPONSE TO GL 81-04 6/30/81

3. I.E. BULLETIN 83-02

4. RESPONSES FROM CPCO 5/4/83 & 5/12/83

5. ADDITIONAL INFORMATION RESPONSE TO GL 81-04 6/22/83

6. NRC INSPECTION REPORT 50-2155/83-010

7. GENERIC LETTER 84-11 4/19/84

8. RESPONSES FROM CPCO 5/25/84 & 7/2/85

9. NRC INSPECTION REPORT 50-155/85-018 10/24/85

10. NRC EVALUATION OF CPCO RESPONSE TO GL 84-11 2/4/86

11. CPCO LETTER 10/13/86

12. NRC LETTER 10/28/86

13. NRC INSPECTION REPORT 50-155/87-003 3/26/87

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14.NRC INSPECTION REPORT 50-155/87-021 9/8/87

15.CPCO INSPECTION PROGRAM 9/30/87

16.CPCO INSPECTION PROGRAM REVISION 11/13/87

17.GENERIC LETTER 88-01 1/25/88

18.NRC INSPECTION REPORT 50-155/88-008 3/17/88

19.CPCO RESPONSE TO GL 88-01 7/25/88

20.NRC REQUEST FOR ADDITIONAL INFORMATION ON GL 88-01 4-18-89

21.CPCO RESPONSE TO ADDITIONAL INFO LETTER 6-23-89

22.NRC INSPECTION REPORT 50-155/89-012 7/12/89

23.CPCO INSPECTION PROGRAM REVISION 2 4/25/90

24.NRC REPORTING REQUIREMENTS 6/6/90

25.NRC REQUEST FOR ADDITIONAL INFORMATION 12/11/90

26.NRC INSPECTION REPORT 50-155/90-021 12/20/90

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BIG ROCK POINT IGSCC PROGRAM WELDS

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ATTACHMENT 2

BIG ROCK POINT IGSCC PROGRAM WELDS

IGSCC EXAMINATIONS PERFORMED TO DATE

	IGSCC CAT.	WELD I.D.	DESCRIPTION	YEAR EXAMINED
1	D	4-MRS-141-1	BRANCH-TO-PIPE	1989
2	D	4-MRS-141-2	PIPE-TO-ELBOW	1987
3	D	4-MRS-141-3	ELBOW-TO-PIPE	1987
4	D	4-MRS-141-4	PIPE-TO-ELBOW	1985
5	D	4-MRS-141-5	ELBOW-TO-PIPE	1989
6	D	4-MRS-141-6	PIPE-TO-ELBOW	1985,1987
7	D	4-MRS-141-7	ELBOW-TO-PIPE	1985,1987
8	D	4-MRS-141-8	PIPE-TO-TEE	1987
9	D	4-MRS-141-10	TEE-TO-PIPE	1987
10	D	4-RDC-101-1	VALVE-TO-PIPE	1988
11	D	4-RDC-101-2	PIPE-TO-VALVE	1988
12	D	4-RDC-101-3	VALVE-TO-PIPE	1989
13	D	4-RDC-101-30	ELBOW-TO-FLANGE	1989
14	D	5-MRS-131-1	BRANCH-TO-PIPE	1988
15	D	5-MRS-131-2	PIPE-TO-ELBOW	1988
17	D	5-MRS-131-3	ELBOW-TO-PIPE	1988
	D	5-MRS-131-4	PIPE-TO-VALVE	1988
18	D	5-MRS-131-5	VALVE-TO-ELBOW	1989
19	D	5-MRS-131-6	ELBOW-TO-PIPE	1989
20	D	5-MRS-131-7	PIPE-TO-ELBOW	1985
21	D	5-MRS-131-8	ELBOW-TO-PIPE	1989
22	D	5-MRS-131-9	PIPE-TO-BRANCH	1989
23	D	5-MRS-132-1	BRANCH-TO-PIPE	1988
24	D	5-MRS-132-2	PIPE-TO-ELBOW	1987
25	D	5-MRS-132-3	ELBOW-TO-PIPE	1987
26	D	5-MRS-132-4	PIPE-TO-VALVE	1987
27	D	5-MRS-132-6	VALVE-TO-ELBOW	1988
28	D	5-MRS-132-7	ELBOW-TO-PIPE	1985,1987
29	D	5-MRS-132-8	PIPE-TO-TEE	1987
30	D	5-MRS-132-11	PIPE-TO-BRANCH	1987
31	D	6-SCS-102-22	PIPE-TO-ELBOW	1987
32	D	6-SCS-102-23	ELBOW-TO-PIPE	1987
33	D	6-SCS-102-24	PIPE-TO-TEE	1987
34	D	6-SCS-102-25	TEE-TO-BRANCH	1987
35	D	6-SCS-102-25A	PIPE-TO-BRANCH	1987
36	D	6-SCS-102-26	TEE-TO-REDUCER	1985
37	D	14-MRS-101-5	PIPE-TO-SAFE END	1987
38	D	14-MRS-101-6	SAFE END-TO-NOZZLE	1987
39	D	14-MRS-102-6	PIPE-TO-SAFE END	1983,1985,1987
40	D	14-MRS-102-7	SAFE END-TO-NOZZLE	1983,1987
41	D	14-MRS-103-5	PIPE-TO-SAFE END	1987
42	D	14-MRS-103-6	SAFE END-TO-NOZZLE	1987
43	D	14-MRS-104-5	PIPE-TO-SAFE END	1987
44	D	14-MRS-104-6	SAFE END-TO-NOZZLE	1988
45	D	14-MRS-105-5	PIPE TO-SAFE END	1983,1985
46	D	14-MRS-105-6	SAFE END-TO-NOZZLE	1985
47	D	14-MRS-106-5	PIPE-TO-SAFE END	1983,1985
48	D	14-MRS-106-6	SAFE END-TO-NOZZLE	1983
49	D	17-MRS-111-1	NOZZLE-TO-SAFE END	1988

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BIG ROCK POINT IGSCC PROGRAM WELDS

	IGSCC CAT.	WELD I.D.	DESCRIPTION	YEAR EXAMINED
50	D	17-MRS-111-2	SAFE END-TO-PIPE	1988
51	D	17-MRS-111-7	ELBOW-TO-REDUCER	1983,1985,1987
52	D	17-MRS-111-7LD-1	LONGITUDINAL WELD	1987
53	D	17-MRS-111-7LD-2	LONGITUDINAL WELD	1987
54	D	17-MRS-112-1	NOZZLE-TO-SAFE END	1988
55	D	17-MRS-112-2	SAFE END-TO-PIPE	1983,1985
56	D	17-MRS-113-1	NOZZLE-TO-SAFE END	1989
57	D	17-MRS-113-2	SAFE END-TO-PIPE	1989
58	D	17-MRS-114-1	NOZZLE-TO-SAFE END	1989
59	D	17-MRS-114-2	SAFE END-TO-PIPE	1983
60	D	17-MRS-114-7	ELBOW-TO-REDUCER	1983,1985,1987
61	D	17-MRS-114-7LD-1	LONGITUDINAL WELD	1987
62	D	17-MRS-114-7LD-2	LONGITUDINAL WELD	1987
63	D	20-MRS-121-20	SAFE END-TO-PIPE	1983
64	D	24-MRS-121-11/5-MRS-131	BRANCH CONNECTION	1989
65	D	20-MRS-122-20	SAFE END-TO-PIPE	1983
66	D	20-MRS-122-17/5-MRS-132	BRANCH CONNECTION	1988
67	D	20-MRS-122-11/5-MRS-132	BRANCH CONNECTION	1988
68	D	24-MRS-121-1	REDUCER-TO-TEE	1983,1985,1987
69	D	24-MRS-121-5/4-MRS-141	BRANCH CONNECTION	1989
70	D	24-MRS-122	REDUCER-TO-TEE	1983,1985,1987
71	D	24-MRS-122-5/4-MRS-141	BRANCH CONNECTION	1988
72	D	3-RCS-121-14	THERMAL SLEEVE WELD	1990
73	D	3-RCS-122-13	THERMAL SLEEVE WELD	1990

THE CONFIGURATION OF THE FOLLOWING WELDS DOES NOT ALLOW FOR MEANINGFUL EXAMINATION

	IGSCC CAT.	WELD I.D.	DESCRIPTION
1	G	4-MRS-141-9	TEE-TO-VALVE
2	G	4-MRS-141-11	PIPE-TO-BRANCH
3	G	4-RDC-101-31	FLANGE-TO-FLANGE
4	G	5-MRS-132-9	TEE-TO-REDUCER
5	G	5-MRS-132-10	TEE-TO-PIPE
6	G	20-MRS-121-17/6-SCS-102	BRANCH CONNECTION
7	G	20-MRS-121-17/5-MRS-131	BRANCH CONNECTION
8	G	24-MRS-121-2/3-RCS-121	BRANCH CONNECTION
9	G	24-MRS-122-2/3-RCS-122	BRANCH CONNECTION

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BIG ROCK POINT IGSCC PROGRAM WELDS

IGSCC EXAMS TO BE PERFORMED DURING THE MECHANIZED VESSEL INSPECTION
NOTE: THESE WELDS WILL BE EXAMINED FOR IGSCC IF QUALIFIED TECHNIQUES
AR AVAILABLE FOR IGSCC EXAMINATION OF THESE WELDS FROM THE REACTOR
VESSEL INTERIOR, OTHERWISE THESE WELDS WILL BE EXAMINED USING STANDA
ULTRASONIC TECHNIQUES.

	IGSCC CAT.	WELD I.D.	DESCRIPTION
1	G	795-11F	NOZZLE-TO-SAFE END
2	G	14-MRS-101-1	SAFE END-TO-PIPE
3	G	795-11E	NOZZLE-TO-SAFE END
4	G	14-MRS-102-1	SAFE END-TO-PIPE
5	G	795-11D	NOZZLE-TO-SAFE END
6	G	14-MRS-103-1	SAFE END-TO-PIPE
7	G	795-11C	NOZZLE-TO-SAFE END
8	G	14-MRS-104-1	SAFE END-TO-PIPE
9	G	795-11B	NOZZLE-TO-SAFE END
10	G	14-MRS-105-1	SAFE END-TO-PIPE
11	G	795-11A	NOZZLE-TO-SAFE END
12	G	14-MRS-106-1	SAFE END-TO-PIPE

A REVIEW OF ORIGINAL MANUFACTURER'S DRAWINGS FOR THE
PRIMARY COOLANT SYSTEM INDICATES THAT THE FOLLOWING
WELDS DO NOT EXIST. NOTE: EVEN IF THESE WELDS DID EXIST
THEY WOULD BE LOCATED IN THE REACTOR CAVITY BEHIND CONCRETE
WALLS AND WOULD BE INACCESSIBLE FOR EXAMINATION

	IGSCC CAT.	WELD I.D.	DESCRIPTION
1	G	14-MRS-101-2	PIPE-TO-PIPE
2	G	14-MRS-102-2	PIPE-TO-PIPE
3	G	14-MRS-103-2	PIPE-TO-PIPE
4	G	14-MRS-104-2	PIPE-TO-PIPE
5	G	14-MRS-105-2	PIPE-TO-PIPE
6	G	14-MRS-106-2	PIPE-TO-PIPE

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BIG ROCK POINT IGSCC PROGRAM WELDS

INACCESSIBLE EXAMS- THE FOLLOWING WELDS ARE LOCATED 35 FEET FROM THE FLOOR OF THE RECIRCULATING PUMP ROOM AND WOULD REQUIRE EXTENSIVE SCAFFOLDING,REMOVAL OF ASBESTOS INSULATION,WELD PREPERATION OF ORIGINAL PLANT WELDS(THESE WELDS HAVE NEVER BEEN PREPPED FOR UT EXAMINATION-THEY STILL HAVE FINAL PASS WELD BEADS ON TOP OF WELD). IT IS ESTIMATED THAT IT WOULD REQUIRE 6 MAN-REM TO PERFORM EACH EXAM.

	IGSCC CAT.	WELD I.D.	DESCRIPTION
1	G	14-MRS-101-3	PIPE-TO-PIPE
2	G	14-MRS-101-4	PIPE-TO-PIPE
3	G	14-MRS-102-3	PIPE-TO-PIPE
4	G	14-MRS-102-4	PIPE-TO-PIPE
5	G	14-MRS-102-5	PIPE-TO-PIPE
6	G	14-MRS-103-3	PIPE-TO-PIPE
7	G	14-MRS-103-4	PIPE-TO-PIPE
8	G	14-MRS-104-3	PIPE-TO-PIPE
9	G	14-MRS-104-4	PIPE-TO-PIPE
10	G	14-MRS-105-3	PIPE-TO-PIPE
11	G	14-MRS-105-4	PIPE-TO-PIPE
12	G	14-MRS-106-3	PIPE-TO-PIPE
13	G	14-MRS-106-4	PIPE-TO-PIPE

THE FOLLOWING WELDS ARE LOCATED IN THE REACTOR CAVITY BEHIND CONCRETE WALLS AND ARE INACCESSIBLE FOR EXAMINATION.

	IGSCC CAT.	WELD I.D.	DESCRIPTION
1	G	6-SCS-101-1	NOZZLE EXTENSION-TO-REDUCER
2	G	6-SCS-101-2	REDUCER-TO-PIPE
3	G	6-SCS-101-3	PIPE-TO-ELBOW
4	G	6-SCS-101-4	ELBOW-TO-PIPE
5	G	6-SCS-101-5	PIPE-TO-ELBOW
6	G	6-SCS-101-6	ELBOW-TO-PIPE
7	G	6-SCS-101-7	PIPE-TO-REDUCER

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BIG ROCK POINT IGSCC PROGRAM WELDS

ONLY ABOUT 1/3 OF THE CIRCUMFERENCE OF THE FOLLOWING WELDS ARE ACCESSIBLE FOR EXAMINATION. IN 1983 AN ATTEMPT WAS MADE TO EXAMINE THESE WELDS. THESE WELDS WERE NOT ABLE TO BE EXAMINED DUE TO THEIR CONFIGURATION

	IGSCC CAT.	WELD I.D.	DESCRIPTION
1	G	796-1A	NOZZLE-TO-SAFE END
2	G	796-1B	NOZZLE-TO-SAFE END

THE FOLLOWING IS A LIST OF THE IGSCC CATEGORY A WELDS AT BIG ROCK. THIS PIPING IS MADE OF A351-CF8M-316 MATERIAL WHICH IS RESISTANT TO IGSCC. THE GRAIN STRUCTURE OF THIS MATERIAL DOES NOT ALLOW FOR MEANINGFUL EXAMINATION OF THESE WELDS.

	IGSCC CAT.	WELD I.D.	DESCRIPTION
1	A	17-MRS-111-3	PIPE-TO-PIPE
2	A	17-MRS-111-4	PIPE-TO-PIPE
3	A	17-MRS-111-5	PIPE-TO-PIPE
4	A	17-MRS-111-6	PIPE-TO-ELBOW
5	A	17-MRS-112-3	PIPE-TO-PIPE
6	A	17-MRS-112-4	PIPE-TO-PIPE
7	A	17-MRS-112-5	PIPE-TO-PIPE
8	A	17-MRS-112-6	PIPE-TO-PIPE
9	A	17-MRS-112-7	PIPE-TO-TEE
10	A	17-MRS-113-3	PIPE-TO-PIPE
11	A	17-MRS-113-4	PIPE-TO-PIPE
12	A	17-MRS-113-5	PIPE-TO-PIPE
13	A	17-MRS-113-6	PIPE-TO-PIPE
14	A	17-MRS-113-7	PIPE-TO-TEE
15	A	17-MRS-114-3	PIPE-TO-PIPE
16	A	17-MRS-114-4	PIPE-TO-PIPE
17	A	17-MRS-114-5	PIPE-TO-PIPE
18	A	17-MRS-114-6	PIPE-TO-ELBOW
19	A	24-MRS-121-2	TEE-TO-ELBOW
20	A	24-MRS-121-3	ELBOW-TO-[illegible]E
21	A	24-MRS-121-4	PIPE-TO-[illegible]
22	A	24-MRS-121-5	ELBOW-TO-PIPE
23	A	24-MRS-121-6	PIPE-TO-PIPE
24	A	24-MRS-121-7	PIPE-TO-VALVE
25	A	24-MRS-121-8	VALVE-TO-PIPE
26	A	24-MRS-121-9	PIPE-TO-PUMP
27	A	20-MRS-121-10	PUMP-TO-ELBOW
28	A	20-MRS-121-11	ELBOW-TO-PIPE

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BIG ROCK POINT IGSCC PROGRAM WELDS

CATEGORY A WELDS CONTINUED

29	A	20-MRS-121-12	PIPE-TO-VALVE
30	A	20-MRS-121-13	VALVE-TO-PIPE
31	A	20-MRS-121-14	PIPE-TO-VALVE
32	A	20-MRS-121-15	VALVE-TO-PIPE
33	A	20-MRS-121-16	PIPE-TO-ELBOW
34	A	20-MRS-121-17	ELBOW-TO-PIPE
35	A	20-MRS-121-18	PIPE-TO-ELBOW
36	A	20-MRS-121-19	ELBOW-TO-PIPE
37	A	24-MRS-122-2	TEE-TO-ELBOW
38	A	24-MRS-122-3	ELBOW-TO-PIPE
39	A	24-MRS-122-4	PIPE-TO-ELBOW
40	A	24-MRS-122-5	ELBOW-TO-PIPE
41	A	24-MRS-122-6	PIPE-TO-PIPE
42	A	24-MRS-122-7	PIPE-TO-VALVE
43	A	24-MRS-122-8	VALVE-TO-PIPE
44	A	24-MRS-122-9	PIPE-TO-PUMP
45	A	20-MRS-122-10	PUMP-TO-ELBOW
46	A	20-MRS-122-11	ELBOW-TO-PIPE
47	A	20-MRS-122-12	PIPE-TO-VALVE
48	A	20-MRS-122-13	VALVE-TO-PIPE
49	A	20-MRS-122-14	PIPE-TO-VALVE
50	A	20-MRS-122-15	VALVE-TO-PIPE
51	A	20-MRS-122-16	PIPE-TO-ELBOW
52	A	20-MRS-122-17	ELBOW-TO-PIPE
53	A	20-MRS-122-18	PIPE-TO-ELBOW
54	A	20-MRS-122-19	ELBOW-TO-PIPE