

Florida Power

CORPORATION
Crystal River Unit 3
Docket No. 50-302

July 29, 1997
3F0797-03

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Generic Letter 97-01, "Degradation of Control Rod Drive Mechanism Nozzle and Other Vessel Closure Head Penetrations"

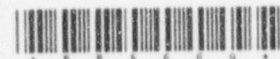
References: A. NRC to FPC letter, 3N0497-05, dated April 1, 1997
B. FPC to NRC letter, 3F0597-22, dated May 1, 1997
C. BWOG to NRC letter, OG-1663, dated July 25, 1997
D. NRC to FPC letter, 3N0296-15, dated February 14, 1996

Dear Sir:

Generic Letter (GL) 97-01, "Degradation of Control Rod Drive Mechanism (CRDM) Nozzle and Other Vessel Closure Head Penetrations," requested a 30-day response from licensees to address whether the information requested in the GL would be provided and to indicate if the time allowed for the response would be met (Reference A). Florida Power Corporation (FPC) provided Reference B as the 30-day response for Crystal River Unit 3 (CR-3). This letter is the 120-day response to GL 97-01 for CR-3.

CR-3 has participated with the B&W Owners Group (BWOG) in the development of a BWOG integrated response to Reference A. This integrated response to GL 97-01 for BWOG plants has been documented in BWOG Topical Report BAW-2301, "B&WOG Integrated Response to Generic Letter 97-01: "Degradation of Control Rod Drive Mechanism (CRDM) Nozzle and Other Vessel Closure Head Penetrations (VHP)." This topical report was submitted to the NRC by BWOG letter dated July 25, 1997 (Reference C), and provides the detailed information required by the 120-day response to GL 97-01. The information in the topical report includes CR-3 plant specific information which addresses the GL request. The topical report provides the requested information regarding inspection activities and a description of any resin bead intrusions, as described in Information Notice (IN) 96-11 (Reference D), that have exceeded the current EPRI PWR Primary Water Chemistry Guidelines recommendations for primary water sulfate levels.

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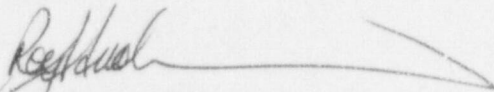
The topical report provides an integrated inspection plan for CRDM Nozzle inspections of the BWOG plants. The plan includes an inspection of CR-3's CRDM Nozzles from beneath the vessel head while it is removed from the vessel. This will be a one-time effort to inspect as many nozzles as possible, up to 69 nozzles, without impacting the outage duration. A minimum of 25 of the CRDM housing nozzles will be inspected (24 outermost nozzles and the one center nozzle without a CRDM). This inspection is scheduled for Refuel Outage 11. The details of the planned inspection will be submitted to the NRC at least 30 days before the start of the refuel outage. A summary of the inspection results will be submitted to NRC 90 days after completion of the outage as part of the Inservice Inspection (ISI) Summary Report.

The topical report also addresses the safety assessment performed and submitted (BAW-10190P) in May, 1993 on behalf of the BWOG plants and concludes that the safety evaluation report issued by the NRC on November 19, 1993 continues to remain valid.

Commitments made in this submittal are listed in Attachment A. Clarification of CR-3 plant specific information in BAW-2301 regarding the history of resin intrusions is provided as Attachment B.

Should you have any questions or require additional information, please contact David Kunsemiller at (352) 563-4566.

Sincerely,



Roy A. Anderson
Senior Vice President
Nuclear Operations

RAA:RER/LVC


xc: Regional Administrator, Region II
Senior Resident Inspector
NRR Project Manager

Attachments:

- A. List of Regulatory Commitments
- B. Clarification and Additional Information Regarding History of Resin Intrusions and Reactor Coolant Chemistry

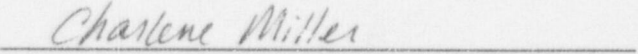
STATE OF FLORIDA
COUNTY OF CITRUS

Roy A. Anderson states that he is the Senior Vice President, Nuclear Operations for Florida Power Corporation; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.



Roy A. Anderson
Senior Vice President
Nuclear Operations

Sworn to and subscribed before me this 29th day of July, 1997, by
Roy A. Anderson.



Signature of Notary Public
State of Florida

NOTARY PUBLIC - STATE OF FLORIDA
CHARLENE MILLER
COMMISSION # CC896970
EXPIRES 11/4/2000
BONDED THROUGH ASA 1-888-NOTARY1

(Print, type, or stamp Commissioned
Name of Notary Public)

Personally Known -OR- Produced Identification

ATTACHMENT A

FLORIDA POWER CORPORATION
CRYSTAL RIVER UNIT 3
DOCKET NUMBER 50-302/LICENSE NUMBER DPR-72

LIST OF REGULATORY COMMITMENTS

The following are the actions committed to by Florida Power Corporation in this document. Any other actions discussed in the submittal represents intended or planned actions by Florida Power Corporation. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Manager, Nuclear Licensing of any questions regarding this document or any associated regulatory commitments.

ID Number	Commitment	Commitment Date
3F0797-03-1	The plan includes an inspection of CR-3's CRDM Nozzles from beneath the vessel head while it is removed from the vessel. This will be a one-time effort to inspect as many nozzles as possible, up to 69 nozzles, without impacting the outage duration. A minimum of 25 of the CRDM housing nozzles will be inspected (24 outermost nozzles and the one center nozzle without a CRDM). This inspection is scheduled for Refuel Outage 11.	Refuel Outage 11
3F0797-03-2	The details of the planned inspection will be submitted to NRC at least 30 days before the start of the refuel outage.	30 days prior to Refuel Outage 11
3F0797-03-3	A summary of the inspection results will be submitted to NRC 90 days after completion of the outage as part of the Inservice Inspection (ISI) Summary Report.	90 days after Refuel Outage 11

ATTACHMENT B

FLORIDA POWER CORPORATION
CRYSTAL RIVER UNIT 3
DOCKET NUMBER 50-302/LICENSE NUMBER DPR-72

CLARIFICATION AND ADDITIONAL INFORMATION REGARDING
HISTORY OF RESIN INTRUSIONS AND REACTOR COOLANT CHEMISTRY

B&W Owners Group topical report BAW-2301, Appendix D, "Supplemental RCS Chemistry Information for the B&WOG Plants", provides information regarding the history of excursions in the chemistry of reactor coolant at CR-3. This attachment provides clarification and additional information related to Appendix D.

1. Appendix D, section D.4

Based on information available to the B&W Owners Group the report states that limits for chloride, fluoride, and oxygen were exceeded at CR-3 on several occasions. Additional details regarding these excursions (i.e., dates, concentrations) are provided for chlorides in Table I, for fluorides in Table II, and for oxygen in Table III.

2. Appendix D, section D.5

Additional details regarding conductivity excursions are provided in Table IV. Based on information available to the B&W Owners Group, the report states that the conductivity excursions were related to changes in lithium concentration. There was only one occasion, on March 25, 1988, in which lithium was out-of-specification, at 2.6 ppm, whereas Table IV reflects 33 instances of conductivity excursions. At one refuel outage in which the vessel internals were removed, some resin beads were observed in the bottom of the reactor vessel. The fact that the resin beads were observed indicates that they entered the RCS during the outage. The resin beads were removed by vacuuming. Any appreciable resin intrusion would result in values of conductivity higher than those experienced at CR-3. Thus, it is concluded that these conductivity excursions were likely caused by other factors of coolant chemistry or by small intrusions of mixed bed resin.

TABLE I

HISTORY OF CHLORIDE EXCURSIONS AT CRYSTAL RIVER UNIT 3

No.	DATE	CONCENTRATION, ppm
1	Jan 4-13, 1977	0.1
2	Mar 14, 1977	0.15
3	May 24, 1977	0.15
4	Aug 23, 1977	0.10
5	Aug 26, 1977	0.20
6	Aug 28, 1978	0.15
7	Aug 29, 1978	0.10
8	Feb 1, 1979	0.10
9	Mar 7, 1979	0.19
10	Sep 4, 1979	0.36
11	Apr 14, 1980	0.16
12	Apr 20, 1980	0.13
13	Jul 14, 1980	0.15
14	Jul 26, 1980	0.13
15	Nov 15, 1981	1.08
16	Nov 18, 1981	0.10
17	Apr 10, 1986	0.14
18	Jan 20, 1987	0.11
19	Dec 20, 1987	0.12
20	Dec 21, 1987	0.25
21	Nov 29, 1990	0.12
22	Nov 30, 1990	0.36
23	Apr 2, 1991	0.10
24	Aug 10, 1991	0.08

TABLE II
HISTORY OF FLUORIDE EXCURSIONS AT CRYSTAL RIVER UNIT 3

No.	DATE	CONCENTRATION, ppm
1	Jan 6-16, 1977	0.50
2	Sep 24, 1977	0.10
3	Oct 23-28, 1977	0.10
4	May 5-6, 1979	0.10
5	Aug 28-29, 1979	0.18
6	Apr 15, 1980	0.26
7	May 30, 1980	0.28
8	Jul 13, 1980	0.13
9	Feb 28, 1981	0.14
10	Nov 23, 1981	0.18
11	Nov 26, 1981	0.40
12	Jul 28, 1990	0.06

TABLE III

HISTORY OF OXYGEN EXCURSIONS AT CRYSTAL RIVER UNIT 3

No.	DATE	CONCENTRATION, ppm
1	Jul 4, 1979	0.4
2	Jul 24, 1979	3
3	Aug 30, 1979	8
4	Mar 1, 1980	12
5	Jul 25, 1980	4
6	Mar 1, 1981	3
7	Mar 5, 1981	4
8	Apr 2, 1981	4
9	Dec 2, 1981	7
10	Feb 14, 1982	7
11	Feb 24, 1982	4
12	Feb 26, 1982	0.4
13	Oct 24, 1982	5
14	Apr 18, 1983	4
15	Nov 22, 1991	0.08
16	May 4, 1994	3
17	Jun 2, 1994	1

TABLE IV

HISTORY OF CONDUCTIVITY EXCURSIONS AT CRYSTAL RIVER UNIT 3

No.	DATE	SPECIFIC CONDUCTIVITY, $\mu\text{s}/\text{cm}$
1	Mar 2, 1980	65.6
2	Feb 7, 1981	19
3	Mar 1, 1981	5
4	Dec 4 1981	23
5	Feb 14, 1982	19
6	Feb 28, 1982	25
7	Mar 20, 1982	19
8	Apr 3, 1982	24.5
9	Apr 10, 1982	19
10	Apr 25, 1982	22.8
11	Oct 27, 1982	22.5
12	Nov 25, 1982	19
13	Dec 20, 1982	25.5
14	Oct 9, 1983	21
15	Nov 2, 1983	21.2
16	Dec 23, 1983	24.5
17	Mar 16, 1985	25.7
18	Jan 2, 1986	22
19	Feb 15, 1986	26
20	Jan 11, 1988	27
21	Mar 25, 1988	24
22	Apr 2, 1988	24
23	Jul 20, 1988	26
24	Dec 28, 1988	27

TABLE IV (continued)

HISTORY OF CONDUCTIVITY EXCURSIONS AT CRYSTAL RIVER UNIT 3

No.	DATE	SPECIFIC CONDUCTIVITY, $\mu\text{s}/\text{cm}$
25	Jan. 1, 1989	25
26	Jan. 10, 1989	25
27	April 1, 1989	26
28	April 25, 1989	25
29	May 16, 1989	25
30	Feb. 20, 1990	25
31	Feb. 28, 1990	25
32	April 6, 1990	28
33	Oct. 6, 1990	25