Progress Energy

Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 50.54(f)

February 7, 2006
3F0206-01

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Subject: Crystal River Unit 3 – Response to Item (2)(a) of NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"

Reference: CR-3 to NRC letter dated July 26, 2004, "Crystal River Unit 3 – 60-Day Response to NRC Bulletin 2004-01, Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"

Dear Sir:

Pursuant to 10 CFR 50.54(f), Florida Power Corporation, doing business as Progress Energy Florida, Inc. (PEF), hereby submits the Crystal River Unit 3 (CR-3) Requested Information response, specifically Item (2)(a), to NRC Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors."

The information requested in Item 2 of the bulletin is being provided within 60 days of plant restart following CR-3 Refueling Outage 14 (14R), which was completed on December 10, 2005.

This letter provides the response to the commitment, submitted in the above referenced letter, to perform Bare Metal Visual exams on the pressurizer Alloy 182 welds during every refueling outage until mitigation is performed, additional guidance is provided by the Materials Reliability Program (MRP), or new ASME Code or regulatory requirements are imposed.

This letter establishes no new regulatory commitments.

If you have any questions regarding this submittal, please contact Mr. Paul Infanger, Supervisor, Licensing and Regulatory Programs at (352) 563-4796.

Sincerely,

Dale E. Young
Vice President
Crystal River Nuclear Plant

DEY/seb

Attachments:
A. Response to Item (2)(a) of Bulletin 2004-01
B. Results of Alloy 82/182/600 Inspections Performed During 14R

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

A110

STATE OF FLORIDA

COUNTY OF CITRUS

Dale E. Young states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; 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.

Dale E Young

Dale E. Young
Vice President
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 7th day of Feb., 2006, by Dale E. Young.

Ellen Deppolder

Signature of Notary Public
State of Florida

ELLEN DEPPOLDER
MY COMMISSION # DD 408539
EXPIRES: July 8, 2009
Bonded Thru Notary Public Underwriters

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

Personally Known ✓ -OR- Produced Identification _____

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302 / LICENSE NUMBER DPR-72

ATTACHMENT A

Response to Item (2)(a) of Bulletin 2004-01, "Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors"

NRC Bulletin 2004-01 requests that Pressurized-Water Reactor (PWR) licensees provide the following information within 60 days of plant restart following the next inspection of the Alloy 82/182/600 pressurizer penetrations and steam space piping connections:

2(a) submit to the NRC a statement indicating that the inspections described in the licensee's response to item (1)(c) of this bulletin were completed and a description of the as-found condition of the pressurizer shell, any findings of relevant indications of through-wall leakage, followup NDE performed to characterize flaws in leaking penetrations or steam space piping connections, a summary of all relevant indications found by NDE, a summary of the disposition of any findings of boric acid, and any corrective actions taken and/or repairs made as a result of the indications found.

Response

By letter dated July 26, 2004, "Crystal River Unit 3 – 60-Day Response to NRC Bulletin 2004-01, Inspection of Alloy 82/182/600 Materials Used in the Fabrication of Pressurizer Penetrations and Steam Space Piping Connections at Pressurized-Water Reactors," the following commitment was made:

> Bare Metal Visual (BMV) exams will be performed on the pressurizer Alloy 182 welds during every refueling outage until mitigation is performed, additional guidance is provided by the Materials Reliability Program (MRP), or new ASME Code or regulatory requirements are imposed. Visual aids, as necessary, and visual examination personnel will be certified in accordance with Progress Energy's written practice and ASME Section XI, as supplemented by the March 2002 Electric Power Research Institute (EPRI) report, as applicable.

In the Crystal River Unit 3 (CR-3) response to Bulletin 2004-01 dated July 24, 2004, Table B was used to document the past inspections performed and illustrate those scheduled for the pressurizer penetrations and steam space piping connections at CR-3. This table has been modified to include the results of the examinations performed during CR-3 Refueling Outage 14 (14R) and is provided in Attachment B.

Examinations were performed using visual aids and visual examination personnel certified in accordance with Progress Energy's written practice and ASME Section XI, as supplemented by the March 2002 Electric Power Research Institute (EPRI) report, as applicable. The Bare Metal Visual (BMV) examinations found no evidence of boric acid, through-wall leakage or component degradation on the pressurizer shell or dissimilar weld metals. As such, no follow up NDE was required and no corrective actions or repairs were necessary.

In addition, inspections of the pressurizer penetrations and associated piping at CR-3 were performed as part of the ASME Section XI, Class I system leakage test. These inspections were performed during the refueling outage with the Reactor Coolant System at normal operating pressure with the insulation on. These inspections are VT-2 exams performed under CR-3 plant procedure (SP-204) in accordance with ASME Section XI requirements and are documented on a system pressure test report in accordance with the CR-3 ASME Section XI Program. The

inspections of the pressurizer and associated piping found no evidence of boric acid, leakage or component degradation.

A visual examination of borated system pressure boundary components in the Containment Building was performed at the beginning of 14R as part of the CR-3 Boric Acid Corrosion Control (BACC) Program. The results of these examinations were documented and evaluated in accordance with the BACC Program procedure and the CR-3 corrective action program.

CR-3 implemented a risk-informed ISI program (RI-ISI) as permitted by Reference 2 below. As part of the RI-ISI, several Pressure Testing (PT) examinations were replaced by BMV and Thickness and Contours (UT) measurements. These inspections are noted in the table in Attachment B.

CR-3 continues to monitor industry experience, Code changes and MRP recommendations to ensure that plant-specific inspection plans are prudent based on the knowledge available in order to ensure that the structural and leakage integrity of the pressurizer penetrations and associated piping is maintained.

REFERENCES

1. PEF to NRC letter, 3F1104-02, dated November 10, 2004, Crystal River Unit 3 – Third 10-Year Inservice Inspection Program – Request for Approval of Risk-Informed Inservice Inspection Program for Class 1, ASME Code, Category B-J and B-F Piping Welds

2. NRC to PEF letter dated September 20, 2005, Crystal River Unit 3 – Safety Evaluation for Relief Request Regarding the Risk-Informed Inservice Inspection Program (TAC No. MC5085)

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

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ATTACHMENT B

Results of Alloy 82/182/600 Inspections Performed During 14R

Results of Alloy 82/182/600 Inspections Performed During 14R

Component and ISI Program Identifier	Material	Comments	Scheduled Exams	Visual Exams Scheduled (100%)	14R Exam	Comments
1-inch Vent and Sample Nozzle to Upper Head J-groove Weld (X009)	Alloy 182	VT-2 performed every Outage per ASME Section XI	N/A	BMV every Refuel Outage	BMV performed during 14R	No evidence of leakage or degradation
2.5 inch Pressure Relief Nozzle to Safe End Weld and Nozzle Butter (B4.1.3, B4.1.4, and X026)	Alloy 82/182	VT-2 performed every Outage per ASME Section XI	PT in 10/2007 (Once per 10 years per ASME Section XI)	BMV every Refuel Outage	BMV performed during 14R UT (thickness and contour) performed in 14R (B4.1.4) ** See Below	No evidence of leakage or degradation
2.5 inch Pressure Relief Nozzle to Safe End Weld and Nozzle Butter (B4.1.5, B4.1.6, and X026)	Alloy 82/182	VT-2 performed every Outage per ASME Section XI	PT in 10/2007 (Once per 10 years per ASME Section XI)	BMV every Refuel Outage	BMV performed during 14R UT (thickness and contour) performed in 14R (B4.1.6) ** See Below	No evidence of leakage or degradation
2.5 inch Pressure Relief Nozzle to Safe End Weld and Nozzle Butter (B4.1.7, B4.1.8, and X026)	Alloy 82/182	VT-2 performed every Outage per ASME Section XI	PT in 10/2005 (Once per 10 years per ASME Section XI)	BMV every Refuel Outage	BMV performed during 14R (X026) UT (thickness and contour) performed in 14R (B4.1.8) ** See Below	No evidence of leakage or degradation

Results of Alloy 82/182/600 Inspections Performed During 14R

Component and ISI Program Identifier	Material	Comments	Scheduled Exams	Visual Exams Scheduled (100%)	14R Exam	Comments
4 inch Safe End to Spray Nozzle Weld (B4.1.1, B4.1.2, and X007)	Alloy 82	VT-2 performed every Outage per ASME Section XI	UT in 10/2005 PT in 10/2005 (Once per 10 years per ASME Section XI)	BMV every Refuel Outage	BMV performed during 14R (X007) UT performed in 14R (B4.1.1) UT (thickness and contour) performed in 14R (B4.1.2) ** See Below	No evidence of leakage or degradation
Extension Pin to Spray Nozzle Weld (X008)	Alloy 82	Internal to vessel	N/A	Visual when manway opened for maintenance.	N/A	Manway not opened
Extension Pin to Internal Spray Pipe (X008)	Alloy 82	Internal to vessel	N/A	Visual when manway opened for maintenance.	N/A	Manway not opened
4 Upper Weld Buttons (X008)	Alloy 82	Internal to vessel	N/A	Visual when manway opened for maintenance.	N/A	Manway not opened
4 Lower Weld Pads (X008)	Alloy 82	Internal to vessel	N/A	Visual when manway opened for maintenance.	N/A	Manway not opened
1½ -inch Thermowell to Pressurizer J-groove Weld (X005)	Alloy 182	VT-2 performed every Outage per ASME Section XI	N/A	BMV every Refuel Outage	BMV performed during 14R	No evidence of leakage or degradation

Results of Alloy 82/182/600 Inspections Performed During 14R

Component and ISI Program Identifier	Material	Comments	Scheduled Exams	Visual Exams Scheduled (100%)	14R Exam	Comments
1-inch Level Sensing Nozzle (X022) (Steam Space Qty 3)	Originally Alloy 182, replaced in 2003 with Alloy 690/52 weld material	VT-2 performed every Outage per ASME Section XI	N/A	BMV during Refuel Outage following replacement, then once every 10 years	BMV performed during 14R	No evidence of leakage or degradation
1-inch Level Sensing Nozzle to Pressurizer Shell J-groove Weld, (X006) (Water Space Qty 3)	Alloy 182	VT-2 performed every Outage per ASME Section XI	N/A	BMV every Refuel Outage	BMV performed during 14R	No evidence of leakage or degradation
1-inch Sampling Nozzle to Pressurizer Shell J-groove Weld, (X023)	Alloy 182	VT-2 performed every Outage per ASME Section XI	N/A	BMV every Refuel Outage	BMV performed during 14R	No evidence of leakage or degradation

**NRC to PEF letter dated September 20, 2005, Crystal River Unit 3 – Safety Evaluation for Relief Request Regarding the Risk-Informed Inservice Inspection Program (TAC No. MC5085) authorized the implementation of the proposed CR-3 RI-ISI Program. Under the RI-ISI Program, PT examinations with program identifiers B4.1.2, B4.1.4, B4.1.6 and B4.1.8 were replaced with BMVs and Thickness and Contours measurements, in accordance with the recommendations of MRP letter 2004-05.