

February 1, 2006

Mr. Dale E. Young, Vice President
Crystal River Nuclear Plant (NA1B)
ATTN: Supervisor, Licensing & Regulatory Programs
15760 West Power Line Street
Crystal River, FL 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 - RE: REQUEST FOR RELIEF FROM THE
REQUIREMENTS OF THE ASME CODE (TAC NO. MC8993)

Dear Mr. Young:

By letter dated November 23, 2005, Florida Power Corporation submitted a request to use the 1998 Edition, 2000 Addenda to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (hereafter referred to as the ASME Code) Section XI, for repair/replacement activities. Additional clarifying information was discussed in a phone call on December 1, 2005, between Florida Power Corporation and the Nuclear Regulatory Commission (NRC) staff. The current inservice inspection Code of record for Crystal River, Unit 3, is the 1989 Edition, no Addenda. The authorization of the subsequent edition and addenda of the ASME Code will allow the use of welder qualifications of the vendor performing welding of an Inconel 690 plug in the Once-Through Steam Generator to repair a previously plugged tube.

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(g)(4)(iv) states that inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda of the ASME Code provided that they are incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed in 10 CFR 50.55a(b) and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met.

D. Young

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Due to the licensee's need for approval prior to restart, the NRC staff granted verbal approval on December 1, 2005. The enclosed safety evaluation documents the verbal approval of the request.

Sincerely,

/RA/

Michael L. Marshall, Jr., Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: Safety Evaluation

cc w/encl: See next page

D. Young

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELIEF REQUEST REGARDING THE USE OF A SUBSEQUENT EDITION AND ADDENDA
TO AMERICAN SOCIETY FOR MECHANICAL ENGINEERS
BOILER AND PRESSURE VESSEL CODE SECTION XI FOR
REPAIR/REPLACEMENT ACTIVITIES
FLORIDA POWER CORPORATION
CRYSTAL RIVER NUCLEAR PLANT, UNIT 3
DOCKET NO. 50-302

1.0 INTRODUCTION

By letter dated November 23, 2005, Florida Power Corporation (the licensee) submitted a request to use the 1998 Edition, 2000 Addenda to the American Society of Mechanical Engineers (ASME) Boiler And Pressure Vessel Code (hereafter referred to as the ASME Code) Section XI, Paragraph IWA-4712, "Fusion Welding" for repair/replacement activities. Additional clarifying information was discussed in a phone call on December 1, 2005, between Florida Power Corporation and the Nuclear Regulatory Commission (NRC) staff. The current inservice inspection (ISI) Code of record is the 1989 Edition, no Addenda for Crystal River, Unit 3. The authorization of the subsequent edition and addenda of the ASME Code will allow the use of welder qualifications of the vendor performing welding of an Inconel 690 plug in the Once-Through Steam Generator to repair a previously plugged tube.

The licensee submitted this request in accordance with the guidance provided in NRC Regulatory Issue Summary (RIS) 2004-16, dated October 19, 2004. In this RIS, the NRC staff stated that licensees who wish to use provisions of those editions and addenda of Section XI to the ASME Code subsequent to the Code of record for activities, including repair/replacement activities, must receive prior NRC review and approval as required by section 50.55a(g)(4)(iv) of Title 10 of the *Code of Federal Regulations* (10 CFR).

2.0 REGULATORY REQUIREMENTS

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the

Enclosure

limitations of design, geometry, and materials of construction of the components. Section 50.55a(g)(4)(ii) of 10 CFR requires that ISI examination of components and system pressure tests conducted during the first 10-year ISI interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein.

The repair, replacement, and modification of plant components are not explicitly mentioned in 10 CFR 50.55a(g)(4) and associated subparagraphs. However, these activities are specifically mentioned in ASME Code Section XI. The NRC staff considers that these activities are not separate and distinct from, but are included under, inservice examinations. Therefore, the requirements of 10 CFR 50.55a(g)(4)(iv) are applicable to repair/replacement activities.

Section 50.55a(g)(4)(iv) states that inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda of the ASME Code provided that they are incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed in 10 CFR 50.55a(b), and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met. Currently, Section 50.55a(b)(2) incorporates by reference the ASME Code Section XI from the 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition (Division 1) through the 2003 Addenda (Division 1).

3.0 REQUEST TO USE A SUBSEQUENT EDITION AND ADDENDA TO ASME CODE SECTION XI FOR REPAIR/REPLACEMENT ACTIVITIES

3.1 Current Code Requirements

The current ASME Section XI Code of record for Crystal River, Unit 3, is the 1989 Edition, with no Addenda. Paragraph IWB-4230 of the ASME Code, 1989 Edition with no Addenda provides requirements (specified in IWB-4231 through IWB-4235) that shall be met when manual or machine welding is used to weld plugs into heat exchanger tubes or tubesheet holes. The requirements include those for the welding procedure and performance qualifications. In particular, IWB-4232.4(e) provides requirements for performance qualification for welders and welding operators as follows:

Renewal of qualification is required when the welder or welding operator has not performed tube plugging using the process for which he is qualified for 3 months or longer, or when there is a specific reason to question his ability to make quality weld per the Welding Procedure Specification. Renewal of qualification shall be identical to the initial qualification, except that only one tube weld need be made.

In addition, IWB-4232.4 provides specific essential variables for performing the welder qualifications, such as welding process, filler metal, welding positions and preplaced metal inserts.

3.2 Proposed Alternative Code Edition and Requirements

The licensee proposes to use the 1998 Edition, 2000 Addenda of the ASME Section XI Code for repair/replacement activities. Paragraph IWA-4712 of the ASME Code, 1998 Edition, 2000 Addenda provides requirements (specified in IWA-4712.1 through IWA-4712.5) that shall be met when manual, machine, or automatic welding is used to join plugs to Class 1 heat exchanger tubes or tubesheet holes. The requirements include those for the welding procedure and performance qualifications. In particular, IWB-4712.2(b)(6) provides requirements for performance qualifications for welders and welding operators as follows:

Renewal of qualification is required when the welder or welding operator has not performed plugging using the process for which he is qualified for 6 months or longer, or when there is a specific reason to question his ability to make quality welds in accordance with the WPS [Welding Procedure Specification]. Renewal of qualification shall be identical to the initial qualification, except that only one weld need be made.

In addition, IWA-4712.2(b) provides specific essential variables for performing the qualifications, such as welding process, filler metal, base material, welding positions, preplaced metal inserts, and additional variables for welding operators in accordance with Section QW-360 to Section XI of the ASME Code.

4.0 TECHNICAL EVALUATION

The NRC staff evaluated the licensee's request using the criteria contained in 10 CFR 50.55a(g)(4)(iv), which states that inservice examination of components and system pressure tests may meet the requirements set forth in editions and addenda of the ASME Code subsequent to the Code of record provided certain conditions are satisfied.

The first condition is that the proposed edition and addenda is incorporated by reference in 10 CFR 50.55a(b). Currently, Section 50.55a(b)(2) incorporates by reference the ASME Code Section XI from the 1970 Edition through the 1976 Winter Addenda, and the 1977 Edition (Division 1) through the 2003 Addenda (Division 1), which includes the 1998 Edition, with 2000 Addenda of the ASME Section XI Code proposed by the licensee.

The second condition is that the limitations and modifications listed in 10 CFR 50.55a(b) are satisfied for the specific use of the proposed subsequent Code edition and addenda. There are no restrictions specified in 10 CFR 50.55a(b) for the portion of the 1998 Edition, with 2000 Addenda of the ASME Section XI Code that the licensee proposes to use.

The third condition is that if portions of subsequent Code editions or addenda are used, all related requirements of the respective editions or addenda must be met. During a phone call with the licensee on December 1, 2005, the NRC staff requested a clarification of the following statement in the licensee's November 23, 2005, submittal to ensure that all of the related requirements in Paragraph IWA-4712 of Section XI to the ASME Code, including that of the welding procedure, are met:

The welding process and welder qualifications of the vendor performing the plug welding meets all of the requirements set forth in the ASME Code

Section XI, 1998 Edition, 2000 Addenda.

The licensee clarified the above statement by including the welding procedure in the above statement as shown in the November 23, 2005, submittal. Based on the licensee's submittal and the above clarification, the NRC staff is satisfied that the licensee has followed all related requirements in the 1998 Edition, with 2000 Addenda of the ASME Code, Section XI that are relevant to the stated repair/replacement activities.

Based on the above, the NRC staff finds that the conditions of 10 CFR 50.55a(g)(4)(iv) are satisfied and that the licensee's request to use the 1998 Edition, with 2000 Addenda of the ASME Code, Section XI for repair/replacement activities is acceptable.

5.0 CONCLUSION

The NRC staff concludes that the proposed request is acceptable and authorizes the use of the Paragraph IWA-4712 to Section XI of the ASME Code, 1998 Edition, with 2000 Addenda, for the specified repair/replacement activities for the remainder of the current 10-year ISI intervals for Crystal River, Unit 3. All other requirements of the ASME Code, Section III and XI for which relief has not been specifically requested and approved remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: J. Honcharik

Date: February 1, 2006

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Florida Power Corporation

Crystal River Nuclear Plant, Unit 3

cc:

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