

September 8, 2000

Mr. John Paul Cowan
Vice President, Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear Licensing (NA1B)
Crystal River Energy Complex
15760 W. Power Line Street
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 - AUTHORIZATION TO USE ASME SECTION XI
CODE CASE N-546 (TAC NO. MA9187)

Dear Mr. Cowan:

In a letter dated June 1, 2000, as supplemented on July 17, 2000, Florida Power Corporation (FPC) requested, pursuant to Title 10, *Code of Federal Regulations* (10 CFR), Section 50.55a(a)(3), that the U.S. Nuclear Regulatory Commission (NRC) approve the use of the American Society of Mechanical Engineers (ASME), Section XI, Code Case N-546, "Alternative Requirements for Qualification of VT-2 Examination Personnel, Section XI, Division 1." This Code Case provides an alternative to the qualification and certification requirements of subsection IWA-2300 to Section XI for personnel who would conduct VT-2 visual examinations. In the July 17, 2000, supplement, FPC committed to the following two conditions in addition to those in the Code Case:

1. Examination personnel would be qualified by examination to demonstrate knowledge of Section XI and plant specific procedures for VT-2 visual examinations, and,
2. Examination personnel would be re-qualified in accordance with the frequency specified in IWA-2314 in the 1995 Edition of the ASME Code.

The NRC staff has evaluated your request and has determined that the alternatives to the ASME Section XI qualification requirements for visual examination personnel, with the commitment to test and re-qualification conditions stated above, will provide an acceptable level of quality and safety. Accordingly, the alternatives contained in ASME Code Case N-546 are authorized pursuant to 10 CFR 50.55a(a)(3)(i) for Crystal River Unit 3 until such time as this Code Case is approved by reference in 10 CFR 50.55a. At that time, if you intend to continue to implement Code Case N-546, you must follow all provisions in Code Case N-546 with the limitations issued in 10 CFR 50.55a, if any. A copy of the NRC's safety evaluation is enclosed.

John P. Cowan

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If you have any questions, please contact Len Wiens at 301-415-1495.

Sincerely,

/RA/

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure: Safety Evaluation

cc w/enclosure: See next page

John P. Cowan

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO A REQUEST TO USE AN ALTERNATIVE TO ASME CODE SECTION XI

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

DOCKET NUMBER 50-302

1.0 INTRODUCTION

The Technical Specifications for Crystal River Unit 3 (CR-3) state that the Inservice Inspection (ISI) and testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (ASME Code) and applicable addenda as required by Title 10, Code of Federal Regulations (10 CFR), Section 50.55a(g), except where specific written relief has been granted by the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.55a(g)(6)(i). In 10 CFR 50.55a(a)(3), it is stated that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

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 limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year 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) on the date 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for CR-3 is the 1989 Edition. CR-3 is currently in the third 10-year ISI interval. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval. Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life

property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

In a letter dated June 1, 2000, Florida Power Corporation (FPC or the licensee) requested approval, pursuant to 10 CFR 50.55a(a)(3)(i), to use the alternative requirements of ASME Section XI Code Case N-546, dated August 24, 1995, titled "Alternative Requirements for Qualification of VT-2 Examination Personnel, Section XI, Division 1." These alternative requirements were in lieu of the requirements of subsection IWA-2300, "Qualification of Nondestructive Examination Personnel," to ASME Section XI. In the July 17, 2000, supplemental letter FPC committed to the following conditions in addition to those conditions in Code Case N-546:

1. Examination personnel would be qualified by examination to demonstrate knowledge of Section XI and plant specific procedures for VT-2 visual examinations, and,
2. Examination personnel would be re-qualified in accordance with the frequency specified in IWA-2314 in the 1995 Edition of the ASME Code.

The NRC staff has reviewed and evaluated the licensee's request and supporting information to use Code Case N-546 as a proposed alternative to the Code requirements for CR-3.

2.0 DISCUSSION

Code Requirement: The ASME Code Section XI, 1989 Edition, Subsection IWA-2300, requires that all personnel performing VT-2 visual examinations be certified to comparable levels of competency as defined in American Nuclear Standard Institute (ANSI) N45.2.6. The VT-2 visual examination is conducted in accordance with ASME Code, Section XI, to locate evidence of leakage from pressure-retaining components, or abnormal leakage from components with or without leakage collection system, as required, during the conduct of pressure testing.

Licensee's Request: The licensee has requested approval to implement alternatives to the ASME Code requirements contained in Code Case N-546, with two additional conditions. This Code Case is not yet approved by the NRC by reference in Regulatory Guide (RG) 1.147. Further, the licensee indicated that Subsection IWA-2312 states, in part, that personnel performing visual examinations not addressed in Recommended Practice SNT-TC-1A shall be qualified and certified to comparable levels of qualification as defined in SNT-TC-1A and the employer's written practice.

Licensee's Basis for Requesting Relief (as stated):

Code Case N-546 was published in Supplement 2 of the ASME Code, Section XI, 1995 Edition. The Code Case provides alternative requirements to those of IWA-2300 for the qualification of VT-2 examination personnel. The ASME Section XI Code Committee determined that such training in accordance with this Code Case would ensure that an adequate level of quality and safety was being maintained. VT-2 examination requires no special knowledge of technical principles underlying its performance. It is simply the straight forward examination for leakage. No special skill or technical training are

required in order to observe water dripping from a component or bubbles forming on a joint wetted with leak detection solution. As such, qualification in accordance with the provisions of the Code Case does not present any reduction in quality or safety.

Code Case N-546 allows personnel most familiar with the walkdown of plant systems such as licensed and non-licensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel to perform VT-2 examinations without formal qualification and certification. These personnel typically have a sound working knowledge of plant components and piping layouts which makes them acceptable candidates for performing VT-2 visual examinations.

When performing a system pressure test in accordance with ASME Section XI, Operations personnel walkdown the systems to meet the Improved Technical Specifications (ITS) requirements, and VT-2 examiners walkdown the systems to meet the ASME Section XI requirements. The use of Code Case N-546 will allow the qualification of Operations personnel to perform VT-2 examinations. This will enable the operators to perform walkdowns which fulfill the requirements of both ASME Section XI and ITS. This will result in a savings of manpower and radiation exposure at CR-3.

As previously stated, this request is in accordance with 10 CFR 50.55a(a)(3)(i), as compliance with Code Case N-546 will provide an essentially equivalent alternative to the IWA-2300 requirements. Approval of this request would provide relief from the administrative and financial burden of certification without decreasing the level of quality or safety.

Licensee's Proposed Alternative to Code Requirements: (as stated)

Crystal River Unit 3 (CR-3) will implement a training program that satisfies the requirements of ASME Section XI Code Case N-546, "Alternative Requirements for Qualification of VT-2 Examination Personnel." Personnel that are qualified and certified in accordance with ASME Section XI, IWA-2300 requirements may be utilized to perform VT-2 leakage examinations. Personnel that meet the requirements of the Owner's training requirements, in accordance with Code Case N-546, will also be considered qualified to perform VT-2 examinations. The Code Case provides the following requirements for qualification of VT-2 personnel:

- (a) At least 40 hours plant walk-down experience, such as that gained by licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel.
- (b) At least 4 hours of training on Section XI requirements and plant specific procedures for VT-2 visual examination.
- (c) Vision test requirements of IWA-2321, 1995 Edition.

Training and qualification of VT-2 personnel will be documented and the records of the personnel qualified to perform VT-2 examinations will be maintained for the life of the plant. To provide for consistent quality of VT-2 examinations, the examinations will be performed using standard plant specific procedures. An independent review and

evaluation of VT-2 visual examination results will be performed and documented on the examination records after completion. Additionally, FPC will:

- Qualify VT-2 examination personnel by examination to demonstrate knowledge of Section XI and plant specific procedures for VT-2 visual examination.
- Re-qualify examination personnel in accordance with the frequency specified in IWA-2314 of the ASME Code, Section XI, 1995 Edition.

3.0 EVALUATION

The Code requires that VT-2 visual examination personnel be qualified to comparable levels of competency as defined in ANSI N45.2.6. The Code also requires that the examination personnel be qualified for near and far distance vision acuity.

The NRC staff considers the qualification requirements in Code Case N-546 to be comparable to those of the ASME Code, Section XI, paragraph IWA-2300, for VT-2 visual examination personnel. With regard to the selection of personnel to conduct the test, the Code Case states that licensed and nonlicensed operators, local leak rate personnel, system engineers, and inspection and nondestructive examination personnel are eligible due to their plant experience. Those personnel typically have a sound working knowledge of plant components and piping layouts, making them acceptable candidates for performing VT-2 visual examinations. Furthermore, the licensee follows plant-specific procedures to obtain consistent VT-2 visual examination results. The Code Case also requires a vision test for examination personnel similar to that of the Code. The NRC also finds it necessary for the VT-2 visual examination personnel to demonstrate knowledge of Section XI and plant specific procedures for VT-2 visual examinations and to demonstrate continued proficiency through periodic re-qualification in accordance with the frequency specified in IWA-2314 of the 1995 Edition of the ASME Code. In their July 17, 2000, supplement, FPC committed to both of these conditions. Therefore, the staff finds the licensee's proposed alternative to use Code Case N-546 with its commitment to qualify examination personnel by examination and to re-qualify examination personnel in accordance with the frequency specified in IWA-2314 of the 1995 Edition of the ASME Code provides an acceptable level of quality and safety.

4.0 CONCLUSION

On the basis of its review of Code Case N-546, and the additional conditions committed to by the licensee, the NRC staff has concluded that the alternatives to the Code qualification requirements for examination personnel will provide an acceptable level of quality and safety in that it will provide adequate leakage detection. Therefore, the licensee's request to implement alternatives contained in Code Case N-546 for Crystal River Unit 3 is authorized pursuant to 10 CFR 50.55a(a)(3)(i), until such time as the Code Case is approved by reference in 10 CFR 50.55a. At that time, if the licensee intends to continue to implement this Code Case, the licensee must follow all provisions in Code Case N-546 with the limitations issued in 10 CFR 50.55a, if any.

Principal Contributor: L. Wiens, NRR

Date: September 8, 2000

Mr. John Paul Cowan
Florida Power Corporation

CRYSTAL RIVER UNIT NO. 3

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