



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE RELIEF REQUEST TO THE FIRST TEN YEAR INSERVICE INSPECTION INTERVAL FOR
ENERGY OPERATIONS, INC.
WATERFORD STEAM ELECTRIC STATION, UNIT 3
DOCKET NO. 50-382

1.0 INTRODUCTION

The Technical Specifications for Waterford Steam Electric Station, Unit 3 state that the inservice inspection 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 and applicable addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the Nuclear Regulatory Commission (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 ten-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) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable ASME Code, Section XI, for the Waterford Steam Electric Station, Unit 3, first ten-year inservice inspection (ISI) interval is the 1980 Edition through Winter 1981 addendum. 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 April 30, 1997, Entergy Operations, Inc. submitted to the NRC its request for relief from examining 100 percent volume of the welds identified in Table 1 of Relief Request ISI-001, Revision 6 which were not evaluated by the NRC in previous relief requests. The staff has reviewed and evaluated the licensee's request for relief on the limited volumetric examinations, pursuant to 10 CFR 50.55a(g)(6)(i) for Waterford 3.

2.0 DISCUSSION

Component Classification (As stated)

Class 1 and 2, Examination Categories B-A, B-B, B-F, B-J, B-L-2, C-A, C-B, C-C, and C-F

Examination Requirement (As stated)

For each code item requiring a surface or volumetric examination, the examination tables in the Waterford 3 Ten Year Inservice Inspection Program identify a figure which illustrates the examination requirement for a specific code item. These figures were derived from those shown in IWB-2500-1 through 20 and IWC-2500-1 through 13 of Section XI and have been enhanced to show the exact weld configuration as it exists at Waterford 3.

Relief Requested (As stated)

Waterford 3 is requesting that relief be given in reference to obtaining 100 percent coverage when examining the items contained in Table 1.

Basis for Relief (As stated)

Class 1 and 2 piping and components are designed with welded joints such as nozzle-to-pipe, pipe-to-elbow and reducer-to-tee which physically obstruct all or part of the required examination. Every effort was made when selecting welds to minimize the number of welds requiring relief. Additionally, multiple angles, search units, extended Vee paths and other techniques (i.e., Refracted L waves) were used to provide additional coverage where practical. To perform the Code-required examination, modification and/or replacement of the component would be required. The examinations performed on the subject welds in addition to the examination of similar welds contained in the program would detect generic degradation, if it existed, therefore, demonstrating an acceptable level of integrity.

Waterford 3 has generated a detailed summary of the ASME Code Class 1 and 2 piping and component welds/areas which received a limited or partial examination. The summary identifies the specific weld/area and the specific cause for the partial examination. The listing of welds receiving a partial exam is attached (Table 1) to the licensee's relief request.

Schedule for Implementation

First ten-year interval

3.0 EVALUATION

The staff reviewed the licensee's "Description of Limitation" for each weld identified in Table 1 and determined that 100 percent examination coverage of each of the welds is impractical due to one of the following:

- a) the configuration of the component being examined, or
- b) the physical interference of the other component.

The licensee performed a best-effort examination of each weld and obtained a minimum of 43 percent to a maximum of 89 percent. If the Code requirements were imposed, the components would have to be modified and/or replaced which imposes a burden on the licensee. However, from the extent of examination coverage obtained for each of the welds, any degradation existing in the weld would be detected with reasonable confidence. Hence, the examinations conducted for the welds identified in Table 1 of the licensee's Relief Request provide reasonable assurance of operational readiness.

4.0 CONCLUSION

The staff has determined that the Code requirements to perform 100 percent examination of welds in Table 1 of the licensee's Relief Request ISI-001, Revision 6, are impractical due to either component configuration or physical constraints. The licensee would have to redesign and/or replace components in order to comply with the Code requirements. The completed examinations, however, provide reasonable assurance of operational readiness. Therefore, the licensee's request for relief is granted pursuant to 10 CFR 50.55a(g)(6)(i). The relief granted is 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.

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Date: December 9, 1997