Mr. Ronald DeGregorio August 30, 2000
Vice President Oyster Creek
AmerGen Energy Company, LLC
P.O. Box 388
Forked River, NJ 08731

SUBJECT: SAFETY EVALUATION OF THE REQUEST FOR RELIEF FROM THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE (ASME CODE) SECTION XI REQUIREMENTS FOR THE CONTAINMENT INSERVICE INSPECTION PROGRAM, OYSTER CREEK NUCLEAR GENERATING STATION (TAC NO. MA7856)

Dear Mr. DeGregorio:

By letter dated December 17, 1999, you submitted Relief Request 21 (R-21) concerning the containment examination requirements for the Oyster Creek Nuclear Generating Station Containment Inservice Inspection (ISI) Program. You requested approval for the use of alternative inspection to support the preparation for scheduled ISI activities during the 2000 refueling outage. We have reviewed your request, and, based on the information provided, we conclude that compliance with the ASME Code requirements would result in a hardship without a compensating increase in the level of quality and safety. Therefore, the proposed alternatives are authorized pursuant to 10 CFR 50.55a(a)(3)(ii) for the first interval of the IWE Containment Inservice Inspection Program.

On the date of the December 17, 1999, application, GPU Nuclear, Inc. (GPUN) was the licensed operator for Oyster Creek. On August 8, 2000, GPUN's ownership interest in Oyster Creek was transferred to AmerGen Energy Company, LLC (AmerGen). By letter dated August 10, 2000, AmerGen requested that the Nuclear Regulatory Commission continue to review and act upon all requests before the Commission which had been submitted by GPUN. Accordingly, the staff has completed its review of the requested relief request.

Our detailed evaluation and conclusions are documented in the enclosed safety evaluation.

Sincerely,

/RA/

Marsha Gamberoni, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-219

Enclosure: Safety Evaluation

cc w/encl: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE 10-YEAR INSERVICE INSPECTION

PROGRAM RELIEF REQUEST R-21

OYSTER CREEK NUCLEAR GENERATING STATION

DOCKET NO. 50-219

1.0 INTRODUCTION

In the Federal Register dated August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended its regulations, pursuant to 10 CFR 50.55a, to incorporate by reference the 1992 Edition with 1992 Addenda of Subsections IWE and IWL of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code). Subsections IWE and IWL provide the requirements for inservice inspection (ISI) of Class CC (concrete containment), and Class MC (metallic containment) of light-water cooled nuclear power plants. The effective date for the amended rule was September 9, 1996, and it requires the licensees to incorporate the new requirements into their ISI plans and to complete the first containment inspection by September 9, 2001. However, a licensee may propose alternatives to or submit a request for relief from the requirements of the regulation pursuant to Section 50.55a(a)(3) or (g)(5) of Title 10 of the Code of Federal Regulations (10 CFR), respectively.

By letter dated December 17, 1999, GPU Nuclear, Inc. (GPU), the licensee, proposed several alternatives to the requirements of Subsections IWE and IWL of Section XI of the ASME Code for its Oyster Creek Nuclear Generating Station (Oyster Creek). The NRC's findings with respect to authorizing the alternatives or denying the proposed request is discussed in this evaluation.

On the date of the December 17, 1999, application, GPU Nuclear, Inc. (GPUN) was the licensed operator for Oyster Creek. On August 8, 2000, GPUN's ownership interest in Oyster Creek was transferred to AmerGen Energy Company, LLC (AmerGen). By letter dated August 10, 2000, AmerGen requested that the Nuclear Regulatory Commission continue to review and act upon all requests before the Commission which had been submitted by GPUN. Accordingly, the staff has completed its review of the requested relief request.

Enclosure

2.0 EVALUATION

2.1 Relief Request No. 21 - Containment Inspection Seals & Gaskets

2.1.1 Code Requirements

The ASME Code Section XI, 1992 Edition, 1992 Addenda, Subsection IWE, Subarticle IWE-2500, Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item E8.20.

2.1.2 Specific Relief Requested

The ASME Code Section XI, 1992 Edition, 1992 Addenda, Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item E8.20, requires that MC (metallic containment) bolted connections be subject to a bolt or torque tension test.

2.1.3 Licensee's Basis for Relief

The licensee states that:

> Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested for Oyster Creek on the basis that compliance with the specified Code requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.
>
> 10 CFR 50.55a was amended in the Federal Register to require the use of the 1992 Edition, 1992 Addenda, ASME Section XI when performing containment inspections. Bolt torque or tension testing is required on bolted connections that have not been disassembled and reassembled during the inspection interval. Determination of the torque or tension value would require that the bolting be untorqued and then retorqued or retensioned. The performance of a 10 CFR Part 50, Appendix J, Type B test proves that the bolt torque or tension remains adequate to provide a leak rate that is within acceptable limits. The torque or tension value of bolting only becomes an issue if the leak rate is excessive. Once a bolt is torqued or tensioned, it is not subject to dynamic loading that could cause it to experience significant change. 10 CFR Part 50, Appendix J testing and visual inspection is adequate to demonstrate that the design function is met. Torque or tension testing is not required on any other ASME Section XI, Class 1, 2, or 3 bolted connections or their supports as part of the inservice inspection program.

2.1.4 Alternative Examinations

The following examinations and tests required by Subsection IWE assure the structural integrity and the leak-tightness of Class MC pressure retaining bolting, and, therefore, no additional alternative examinations are proposed:

1. Exposed surfaces of bolted connections shall be visually examined in accordance with requirements of Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item E8.10, and

2. Bolted connections shall meet the pressure test requirements of 10 CFR Part 50, Appendix J.

This relief is requested for the first inspection interval for containment inspections.

2.1.5 Staff Evaluation of Relief Request R-21

ASME Section XI, 1992 Edition with the 1992 Addenda, Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item E8.20 requires bolt torque or tension testing on bolted connections that have not been disassembled and reassembled during the inspection interval. This examination is used to aid in the determination that leak-tight seals exist and that the structural integrity of the subject bolted connections is maintained. The licensee proposes to use the 10 CFR Part 50, Appendix J, Type B test together with visual examinations in accordance with the requirements of Table IWE-2500-1, Examination Category E-G, Item E8.10 as an alternative to the Code requirement to verify the integrity of penetrations with bolted connections.

The staff finds that bolt torque or tension testing on bolted connections that have not been disassembled and reassembled during the inspection interval would require the bolting be un-torqued and then re-torqued or re-tensioned, whereas the leak testing as required by 10 CFR Part 50, Appendix J would adequately verify the leak-tight integrity of the containment. The staff also finds that compliance with ASME Code requirements will cause a hardship or unusual difficulty because un-torquing and subsequent re-torquing bolted connections involve unnecessary radiation exposure and costs to perform the work without a compensating increase in the level of quality and safety. In addition, the staff finds that the alternative approach proposed by the licensee (the test required by 10 CFR Part 50, Appendix J to verify the leak-tight integrity of bolted connections for containment vessel leak-tight integrity together with visual examinations) will provide reasonable assurance of the containment pressure boundary integrity. On this basis, the staff concludes that the alternative proposed by the licensee is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

3.0 CONCLUSION

The staff concludes that for Relief Request No. R-21, compliance with the Code requirements would result in a burden without a compensating increase in the level of quality and safety; and that licensee's proposed alternatives will provide reasonable assurance of containment pressure integrity. Therefore, these proposed alternatives are authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

Principal Contributor: T. Cheng

Date: August 30, 2000

AmerGen Energy Company, LLC
Oyster Creek Nuclear Generating Station

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