August 30, 2000

Mr. Ronald DeGregorio
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. MA7855)

Dear Mr. DeGregorio:

By letter dated December 17, 1999, you submitted Relief Request (R-20) 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

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

August 30, 2000

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. MA7855)

Dear Mr. DeGregorio:

By letter dated December 17, 1999, you submitted Relief Request (R-20) 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

DISTRIBUTION

PUBLIC	S. Little	E. Adensam	PD1-1 Rdg.	H. Pastis
J. Shea	ACRS	OGC	M. Gamberoni	C. Anderson, RI
G. Hill(2)				

ACCESSION NUMBER: ML003732253 *See previous concurrence

OFFICE	PDI-1/PM	PDI-1/LA	EMEB*	OGC*	PDI1/SC
NAME	HPastis	SLittle	DTerao	SUttal	MGamberoni
DATE	8/22/00	8/21/00	7/27/00	8/8/00	8/30/00

OFFICIAL RECORD COPY

AmerGen Energy Company, LLC
Oyster Creek Nuclear Generating Station

cc:

Mr. David Lewis
Shaw, Pittman, Potts & Trowbridge
2300 N Street, NW
Washington, DC 20037

Manager Nuclear Safety & Licensing
Oyster Creek Nuclear Generating Station
Mail Stop OCAB2
P. O. Box 388
Forked River, NJ 08731

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mayor
Lacey Township
818 West Lacey Road
Forked River, NJ 08731

Resident Inspector
c/o U.S. Nuclear Regulatory Commission
P.O. Box 445
Forked River, NJ 08731

Kent Tosch, Chief
New Jersey Department of
Environmental Protection
Bureau of Nuclear Engineering
CN 415
Trenton, NJ 08625

Deborah Staudinger
Hogan & Hartson
Columbia Square
555 13th St., NW
Washington, DC 20004

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE 10-YEAR INSERVICE INSPECTION

PROGRAM RELIEF REQUEST R-20

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. (GPUN), 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. 20 - Containment Inspection Seals & Gaskets

2.1.1 Code Requirements

The ASME Code Section XI, 1992 Edition, 1992 Addenda, Subarticle IWE-2500, Table IWE-2500-1, Examination Category E-D, Seals, Gaskets, and Moisture Barriers, requires seals and gaskets on airlocks, hatches, that are required to ensure containment leak-tight integrity to be visually examined, VT-3, once each inspection interval.

2.1.2 Specific Relief Requested

Relief is requested from the Code required Visual, VT-3, examinations on seals and gaskets within the scope of IWE-2500, Table IWE-2500-1, Examination Category E-D, Seals, Gaskets, and Moisture Barriers, Items E5.10 and E5.20 of the ASME Code, Section XI, 1992 Edition, 1992 Addenda.

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, Section XI when performing containment inspections. IWE-2500, Table IWE-2500-1, Examination Category E-D, SeaIs, Gaskets, and Moisture Barriers, requires the visual examination of seals and gaskets for Items E5.10 and E5.20.
>
> Oyster Creek has determined that the following types of containment penetrations have seals and/or gaskets which may be subject to the requirements of IWE-2500, Table IWE-2500-1, Examination Category E-D. A description of these penetrations and their associated seals and gaskets is provided below.
>
> Electrical Penetrations
>
> There are two types of electrical penetrations: one for low voltage power and control applications and one for high power applications. Both designs are similar. The penetration nozzle is welded to the primary containment vessel, and the ends are field welded in place during installation. A bonded resin is used in the seals where the cable emerges. This arrangement provides a leak-tight configuration which is leak tested after installation and provides a means for periodic leak testing thereafter.

Personnel and Equipment Access Penetrations

Penetrations are provided for personnel and equipment access into the drywell and torus.

(1) Drywell Personnel Lock and Equipment Hatch - A personnel lock and equipment hatch are provided for access to the drywell. The personnel lock and equipment hatch are combined into one integral unit and utilize flanged joints designed for use of a double gasketed seal. In addition, other gaskets and seals such as hand wheel shaft seals and penetrations, would require disassembly to gain inspection access.

(2) Torus manways - Access to the torus is provided at two locations from the reactor building. Each access manway consists of a 3-foot diameter shielded manhole entrance with double gasketed covers. Each bolted cover has a test connection between the double seal to allow leak testing of the joint.

(3) Drywell manway - The drywell head contains a 24-inch diameter manway with a double gasketed bolted cover. A test connection is provided between the double seal to allow for leak testing of the joint.

(4) Drywell head - The drywell head is held in place by bolts and is sealed with a double seal arrangement. This double seal provides a method for determining the leak tightness after the drywell head has been replaced.

Mechanical Penetrations with Bolted Joints

Containment penetrations such as the biological shield stabilizer manways, drain lines, and spectacle flanges, consist of bolted, flanged joints with gaskets or O-rings. These penetrations are designed to permit local leak-rate testing per 10 CFR Part 50, Appendix J, to verify the integrity of the sealed or gasketed connection.

Components which penetrate and seal the containment boundary with seals or gaskets as in the above mentioned penetrations are leak tested in accordance with 10 CFR Part 50, Appendix J, Type B test requirements at periodic intervals. As noted in 10 CFR Part 50, Appendix J, the purpose is to measure leakage of containment or penetrations whose design incorporates resilient seals, gaskets, sealant compounds, and electrical penetrations fitted with flexible metal seal assemblies. Examination of seals and gaskets requires the connections and/or joints, which are proven adequate through 10 CFR Part 50, Appendix J testing, to be disassembled. For electrical penetrations, this would involve pre-maintenance (10 CFR Part 50, Appendix J) testing, de-termination of electrical cables, where possible, and disassembly of the connection and/or joint, removal and examination of the seals and gaskets, reassembly of the connection and/or joint, re-termination of the cables, if necessary, post-maintenance testing of the cables, and a post-maintenance 10 CFR Part 50, Appendix J test of the penetration. The work required for the containment hatches would be similar except for the de-termination, re-termination, and testing of cables. This imposes the risk that equipment could be damaged.

The 1992 Edition, 1993 Addenda, and later editions and addenda of ASME Section XI recognize that disassembly of connections and/or joints to perform these examinations is not warranted. Note 1 in Examination Category E-D was modified in the 1995 Edition of ASME Section XI to state that sealed or gasket connections need not be disassembled solely for performance of examinations. However, without disassembly, most of the surface of the seals and gaskets would be inaccessible.

For those penetrations that are routinely disassembled, a Type B test is required upon final assembly and prior to start-up. Since the Type B test will assure leak tight integrity of primary containment, the performance of the visual examination would not increase the level of quality or safety.

Seals and gaskets are not part of the containment pressure boundary under current Code rules [NE-1220(b)]. When the airlock and hatches containing these materials are tested in accordance with 10 CFR Part 50, Appendix J, degradation of the seal or gasket material would be revealed by an increase in the leakage rate. Corrective measures would be applied and the component retested. Repair or replacement of seals and gaskets is not subject to Code (1992 Edition, 1992 Addenda) rules in accordance with Paragraph IWA-4111(b)(5) of ASME Section XI.

2.1.4 Alternative Examinations

The leak-tightness of seals and gaskets will be tested in accordance with 10 CFR Part 50, Appendix J. No additional alternatives to the visual examination, VT-3, of the seals and gaskets will be performed. This relief is requested for the first inspection interval for containment inspections.

2.1.5 Staff Evaluation of Relief Request R-20

The licensee proposes to use, in lieu of performing the VT-3 examinations for containment penetration seals and gaskets, the existing primary containment leakage testing program for leakage testing containment penetrations in accordance with 10 CFR Part 50, Appendix J.

In its request, the licensee stated that because the seals and gaskets associated with these penetrations are not accessible for examination when the penetration is assembled, containment penetrations seals and gaskets must be disassembled and re-assembled for the purpose of performing the VT-3 visual examination. These activities (a pre-maintenance Appendix J test, de-termination of cables at electrical penetrations if enough cable slack is not available, disassembly of the joints, removal and examination of the seals and gaskets, re-assembly of the joints, re-termination of the cables if necessary, post-maintenance testing of cables, and post-maintenance Appendix J testing of the penetration) associated with a VT-3 visual examination would introduce the possibility of component damage that would not otherwise occur. The periodic test of penetrations in accordance with 10 CFR Part 50, Appendix J will detect local leakage at containment peak accident pressure and measure leakage across the leakage-limiting boundary of containment penetrations whose design incorporates resilient seals, gaskets, sealant compounds, and electrical penetrations fitted with flexible metal seal assemblies. If unacceptable leakage is identified during the test, corrective measures would be taken and components would be re-tested.

Also, the staff finds that ASME Section XI, 1992 Edition, 1993 Addenda recognizes that disassembly of joints for the sole purpose of performing visual examination is unwarranted. Requiring the licensee to disassemble components for the sole purpose of inspecting seals and gaskets would place a significant hardship on the licensee without a compensating increase in the level of quality and safety.

3.0 CONCLUSION

Based on our review of the information provided in the requests for relief and the basis discussed above, the NRC staff concludes that the alternative proposed by the licensee will provide reasonable assurance of the leak-tight integrity of the containment penetration seals and gaskets during the testing required by 10 CFR Part 50, Appendix J. The staff concludes that for Relief Request No. R-20, 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