TECHNICAL LETTER REPORT
ON THE FOURTH 10-YEAR INTERVAL INSERVICE INSPECTION
REQUESTS FOR RELIEF
FOR
AMERGEN ENERGY COMPANY
OYSTER CREEK GENERATING STATION
DOCKET NUMBER: 50-219

1.0 INTRODUCTION

By letter dated August 1, 2002, the licensee, AmerGen Energy Company, submitted Requests for Relief OC-02-01, OC-02-02, OC-02-03, OC-02-04, and OC-02-05 to certain requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, *Rules for Inservice Inspection of Nuclear Power Plant Components*. In response to an NRC Request for Additional Information (RAI), the licensee provided further information in a letter dated June 23, 2003. The requests are for the fourth 10-year inservice inspection (ISI) interval at Oyster Creek Generating Station (OCGS). The Pacific Northwest National Laboratory (PNNL) has evaluated the subject requests for relief and proposed alternatives below.

2.0 REGULATORY REQUIREMENTS

Inservice inspection of the ASME Code Class 1, 2, and 3 components is to be performed in accordance with Section XI of the ASME *Boiler and Pressure Vessel Code* (B&PV Code), and applicable addenda, as required by 10 CFR 50.55a(g), except where specific relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). The regulation at 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the U.S. Nuclear Regulatory Commission (NRC), if the licensee demonstrates that (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 (ISI) 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, which was 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 Code of Record for the OCGS fourth 10-year interval inservice inspection program, which began on October 15, 2002, is the 1995 Edition of Section XI of the ASME Boiler and Pressure Vessel Code, with 1996 Addenda.

Additionally, for the first OCGS Containment Inspection Program, which began on September 10, 1998, the licensee has elected to use ASME Section XI, 1992 Edition, with 1992 Addenda, as allowed by 10 CFR 50.55a(b)(2)(vi).

3.0 TECHNICAL EVALUATION

The information provided by AmerGen Energy Company in support of the requests for relief to Code requirements has been evaluated and the bases for disposition are documented below.

3.1 Request for Relief OC-02-01, Examination Categories B-J and C-F-1, Items B9.10 and C5.10, Pressure Retaining Welds in Piping (Class 1), and Pressure Retaining Welds in Austenitic or High Alloy Piping (Class 2), Alternative to Surface Examinations

Code Requirement: Examination Categories B-J, Item B9.10, and C-F-1, Item C5.10, require essentially 100% surface and volumetric examinations, as defined by Figures IWB-2500-8 and IWC-2500-7, respectively, of the length of Class 1 and 2 piping welds. This applies to all Class 1 circumferential and longitudinal welds in piping 4-inch NPS and larger in diameter, and all Class 2 circumferential and longitudinal welds in austenitic or high alloy piping with $\geq$ 3/8-inch wall thickness and a diameter greater than 4-inch NPS. "Essentially 100%," as clarified by ASME Code Case N-460, is greater than 90% coverage of the examination volume, or surface area, as applicable.

Licensee's Proposed Alternative to Code: Pursuant to 10 CFR 50.55a(a)(3)(ii), the licensee is proposing to discontinue the surface examinations required by Code for Class 1 and 2 circumferential and longitudinal piping welds included in Examination Categories B-J, Item B9.10 and C-F-1, Item C5.10. Further, the licensee proposes to complete the Code-required volumetric examinations by performing ultrasonic testing in accordance with ASME Section XI and BWRVIP-75, which focuses on approaches that are best suited for detecting and evaluating inter-granular stress corrosion cracking (IGSCC).

Licensee's Bases for Alternative (as stated):
During 20 years of Section XI required surface examinations, no service-induced OD cracks have been discovered on any stainless steel weld at Oyster Creek. A positive result of the investigations performed on BWR piping is that no significant mode of degradation other than [inter-granular stress corrosion cracking] IGSCC has been noted. This means that inspections can focus on those approaches that are best suited for detecting and evaluating IGSCC.

Service-induced stresses on most BWR piping are relatively low. The source of the high stress primarily responsible for IGSCC is the high tensile stress on the inside of the pipe

caused by normal welding practice.

Liquid penetrant testing is very radiation dose intensive due to pre- and post-cleaning and dwell times associated with penetrant and developer applications. The process also creates substantial amounts of mixed waste. Oyster Creek has concurred with recommendations in Generic Letter 88-01 and NUREG-0313, and now implements BWRVIP-75, which focus on approaches which are best suited for detecting and evaluating IGSCC. Continuing with the ASME Section XI surface examinations for the welds in question results in additional exposure to personnel and creation of mixed waste with no increase in safety or quality.

Evaluation: The Code requires that licensees perform a volumetric examination of the inner 1/3 of the full weld thickness, and a surface examination of the outside surface, of Class 1 and 2 full-penetration piping welds equal to or greater than 4-inches NPS. For Class 2 welds, this requirement only applies to piping with wall thickness 3/8-inch and greater. In accordance with 10 CFR 50.55a(a)(3)(ii), the licensee is proposing to discontinue the surface examinations of piping welds required by Examination Categories B-J and C-F-1. The licensee's alternative is based on an approach to target inter-granular stress corrosion cracking (IGSCC) as the only mode of service degradation that may be manifested for these piping welds. This approach to mitigate IGSCC in BWR piping is outlined in BWRVIP-75, which has been approved by the Staff. The licensee argues that no service-induced outside [surface] diameter (OD) generated cracks have been discovered on any stainless steel weld at Oyster Creek, and to continue to inspect the OD surface would result in hardship due to unnecessary personnel radiation exposure, and generate excessive amounts of mixed radioactive waste, with no compensating increase in quality or safety.

The licensee's proposal, to replace the Code-required surface examinations for certain piping welds in Categories B-J and C-F-1 is consistent with NRC-approved EPRI and Westinghouse methodologies on risk-informed ISI contained in TR-112657, Revision B, "Revised Risk-Informed Inservice Inspection Evaluation Procedure" and WCAP-14572, Revision 1-NP-A, "Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report." Although the two topical reports use different approaches, both have reached their objectives of identifying risk-significant areas of the piping systems and defining the appropriate examination methods, examination volumes, procedures, and evaluation standards necessary to address the degradation mechanisms of concern and the ones most likely to occur at each location to be inspected.

In regard to the issue of surface examinations for piping welds of Categories B-J and C-F-1, the licensee performed a degradation mechanism assessment (DMA) consistent with those required by the aforementioned risk-informed ISI methodologies. As in the DMAs performed for risk-informed ISI by other licensees, the Oyster Creek assessment concluded that the only degradation mechanism that would require a surface examination is external chloride stress corrosion cracking (ECSCC), and consequently, since no source of chlorides could be identified to initiate ECSCC at Oyster Creek, no surface examinations need be performed on these piping welds.

Surface examinations on these stainless steel piping welds are typically performed using the visible dye liquid penetrant method. This method requires that:

1. The surface of each weld area be prepared by solvent pre-cleaning,
2. A penetrant is then applied and must remain wetted for a time interval of approximately 12-15 minutes,
3. The penetrant is then carefully removed, and
4. A developer is applied to "bring-out", through capillary action, any cracking indications.
5. A preliminary report describing the indications' lengths and locations, if present, must be completed.
6. Finally, the developer and remaining penetrant residues are removed in a post-cleaning step.

Each of these steps are performed manually, and require that examination personnel remain present to observe any conditions that might impact the inspection. For moderate-to-large bore piping, the entire procedure can take as much as an hour per weld. These surface examinations can produce significant cumulative personnel exposures, based on the number of examinations required during an outage, and the general radiation dose rates. In addition, as shown by the application steps above, liquid penetrant method examinations produce large quantities of radioactive mixed wastes, consisting mostly of cleaning cloths with substantial levels of solvents and penetrant materials. Therefore, the current Code surface examination requirements present a considerable hardship to the licensee.

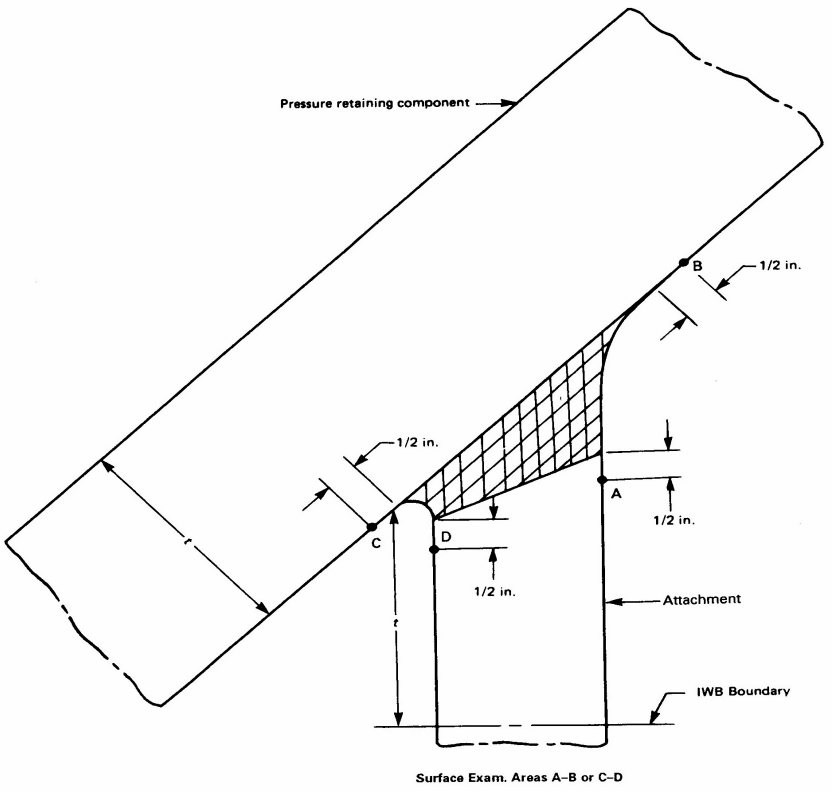
The licensee's approach, to eliminate surface examinations based on the absence of any identified active degradation sources, is consistent with NRC-approved risk-informed ISI methods. Based on personnel radiation exposures expected and the levels of mixed radioactive wastes that would be generated, it is clear that a hardship would be encountered if the Code surface examination requirements are imposed. The subject welds will continue to be volumetrically examined, and no evidence of service-induced, outside surface-generated cracking has ever been detected for the subject piping at Oyster Creek. For these reasons, the Staff believes that compliance with the Code surface examination requirements results in a hardship with no compensating increase in the level of quality or safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii), it is recommended that the proposed alternative be authorized for the Code piping Categories and Item Numbers listed in this request.

3.2 Request for Relief OC-02-02, Examination Category B-K, Item B10.10, Welded Attachments for Vessels, Piping, Pumps and Valves, Reactor Pressure Vessel Support Skirt

Code Requirement: Examination Category B-K, Item B10.10, requires essentially 100% surface examination, as defined by Figure IWB-2500-13, of the length of both the interior and exterior surfaces of the reactor pressure vessel (RPV) support skirt attachment weld (see Figure 1 below). "Essentially 100%," as clarified by ASME Code Case N-460, is greater than 90% coverage of the examination volume, or surface area,

as applicable.

Licensee's Relief Request: Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee is requesting relief from performing the surface examination on the interior portions of the RPV support skirt attachment Weld 1-569 and adjacent base material.



ASME Figure IWB-2500-13, Integral Attachment Weld (typical).

Licensee's Basis for Request (as stated):

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested on the basis that the Code requirements to examine essentially 100% of the surface areas is impractical due to physical obstructions and geometric interference. Control rod drive housings and instrumentation penetrations restrict the examination of area C-D as required by Figure IWB-2500-13. The physical location of the drives and instrumentation penetrations, and the design of the vessel skirt, prohibit access to area C-D. Area A-B as shown in Figure IWB-2500-13 remains accessible for surface examination to the extent required by the Code.

In addition, Oyster Creek's nondestructive examination group pursued the use of an alternative ultrasonic examination method in lieu of the surface examination for area

C-D. As a result of this review, which considered the unique configuration of the Oyster Creek vessel skirt design, it was concluded that ultrasonics would not provide Code examination coverage. Compliance with the applicable Code requirements would require redesigning and modifying the RPV support skirt.

License's Proposed Alternative Examination (as stated):

As an alternative to the Code requirement to perform a surface examination of areas A-B and C-D, AmerGen proposes to perform the following:

1. Perform a surface examination of area A-B as required by Table IWB-2500-1, Category B-K,
2. Perform a VT-3 visual examination of the support skirt IWB boundary as shown in Figure IWB-2500-13 for any support member deformation.

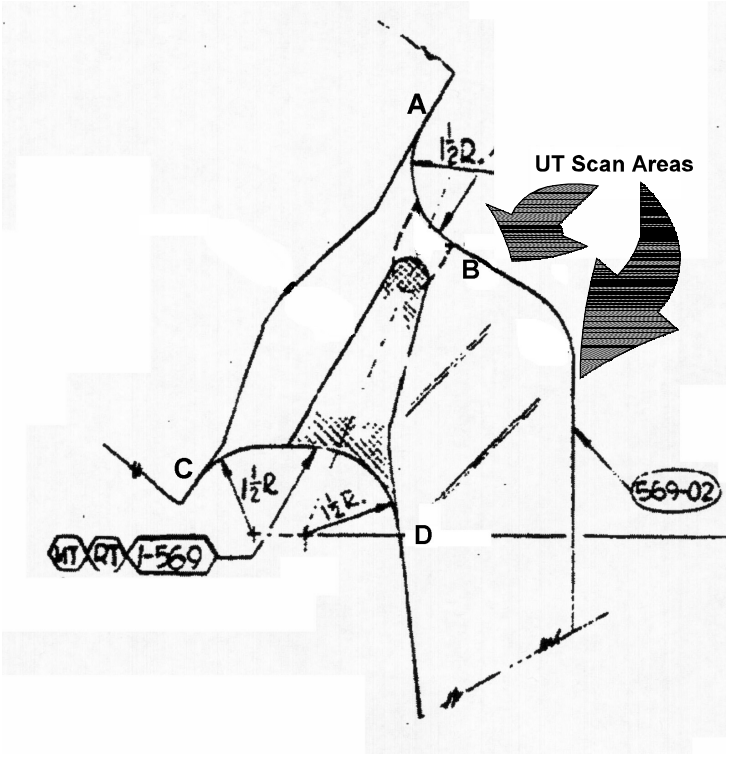
Evaluation: The Code requires the licensee to perform essentially 100% surface examination of both the inside and outside surfaces of reactor pressure vessel (RPV) support skirt Weld 1-569. However, access to the inside surface is severely restricted due the presence of control rod drive and in-core instrumentation housings and electrical lead conduits. In addition, no personnel entry or inspection ports are provided in the OCGS support skirt design. Therefore, surface examination of the inside surface is impractical. To gain access to perform limited surface examinations would require the licensee to make design modifications to the RPV support skirt. This would place a significant burden on the licensee.

The licensee is performing 100% of the Code-required surface examination on the outside surface of RPV support skirt Weld 1-569. The Code designates this outside surface of the integral attachment weld as area A-B, and the inside surface as area C-D. Areas A-B and C-D include the weld and ½-inch of base material on either side of the weld for each surface over the length of the weld (see Figure 2). The licensee has also proposed to perform a visual VT-3 of the outside surface of the IWB support boundary in order to detect deformation that might be manifested on this surface.

The inspections performed by the licensee should detect any degradation that might be present on the outside surface of RPV support skirt integral attachment Weld 1-569. However, their proposed alternative examination does not include any provisions for assuring gross degradation is not present on the inside surface of this weld. The licensee stated that an ultrasonic examination of the inside surface applied from the outside was considered, but that the 1-1/2-inch blend radius on the weld surface demonstrates limited capability to conduct this examination. Based on the drawings[1] provided by the licensee, it is the Staff's opinion that ultrasonic examination methods may indeed provide further information to ensure that inside surface-breaking flaws are not present. As shown in Figure 2, it appears that relatively simple techniques, applied from the outside surface in the areas above and below the support skirt "shoulder"

1. All drawings provided in the licensee's response to the NRC RAI are not included in this report.

region should provide reasonable assurance that no significant structural discontinuities exist that may be generated from the inside surface of Weld 1-569. In fact, other licensee's are applying similar volumetric alternatives to examine the inside surface regions on RPV integral attachment welds.



Actual configuration of Weld 1-569 showing areas to apply ultrasonic scans for the inside surface area C-D.

The licensee has shown that it is impractical to access the inside surface area C-D of RPV support skirt integral attachment Weld 1-569 for the Code-required surface examination. The licensee is able to obtain 100% of the Code-required surface examination of the outside surface area A-B, providing reasonable assurance that any flaws generated from the outside surface will be detected. However, the licensee's alternative, to perform a VT-3 visual inspection, of the outside IWB boundary region does not provide reasonable assurance that no inside surface flaws exist. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that the licensee's request be granted, with the provision that the licensee develop and implement ultrasonic techniques for detecting surface-breaking flaws on the inside surface region C-D of Weld 1-569.

3.3 Request for Relief OC-02-03, Examination Category D-B, Items D2.20, D2.40, D2.60, and D2.80, All Pressure Retaining Components

Code Requirement: Examination Category D-B, Items D2.20, D2.40, D2.60 and D2.80, require a system hydrostatic test, as defined in IWD-5222, for Class 3 pressure retaining components to be conducted once during each inspection interval. Components include all pressure vessels, piping, pumps and valves in each system.

Licensee's Proposed Alternative to Code: Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee is proposing to use ASME Code Case N-498-4 to perform system leakage tests in lieu of the hydrostatic test requirements listed in Examination Category D-B, Items D2.20, D2.40, D2.60 and D2.80 of the 1995 Edition through 1996 Addenda of the Code.

Licensee's Basis for Alternative (as stated):

ASME Section XI Boiler and Pressure Vessel Code Committees and working groups have over recent years reviewed the requirements for hydrostatic testing. Code committee consensus acknowledged that the small increase in system pressure and limited challenge to pressure boundary integrity associated with a hydrostatic test versus the pressure for the system leakage test did not offset the hardship imposed by the performance of the hydrostatic test. As a result, Code Case N-498-1 was published and endorsed by the NRC in Regulatory Guide 1.147. Section XI was revised in the 1995 Edition, 1996 Addenda, and the requirements of Code Case N-498-1 (i.e. system leakage tests replacing hydrostatic tests) were incorporated into Tables IWB-2500-1, Category B-P and IWC-2500-1, Category C-H. However, the pressure test requirements for Class 3 stated in N-498-1 were omitted in the Code revision as shown by Table IWD-2500-1. Category D-B still requires a system hydrostatic test. The Section XI Working Group Pressure Testing has recognized this omission and is taking action to resolve this issue through the Section XI Main Committee.

The ASME Code has subsequently approved Code Case N-498-4 for use regarding pressure testing of Class 1, Class 2, and Class 3 systems. Code Case N-498-4 allows for the alternative use of a system leakage test in lieu of hydrostatic testing for Class 3 systems. However, the Code Case does not require any hold time prior to the performance of the VT-2 examination. Contrary to the Case, Oyster Creek would impose a hold time as follows:

- For insulated systems, a 4 hour hold time would be required at system operating pressure and temperature.
- For non-insulated systems a hold time of 10 minutes would be required at system operating pressure and temperature.

Evaluation: The 1995 Edition, 1996 Addenda of the Code requires a system hydrostatic test to be performed once per interval in accordance with IWA-5000 for Class 1, 2, and 3 pressure-retaining systems. In lieu of the Code requirement, the licensee proposes to implement the alternatives to Code requirements contained in Code Case N-498-4, *Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems*,

dated February 15, 1999. The licensee is proposing to implement this Code Case for Class 3 systems only.

A previous version of the Code Case (N-498-1) was published in May 1994 and has been approved by NRC for use with no restrictions[2]. However, N-498-1 did not include Class 3 systems. Further revisions of the Code Case (N-498-2, N-498-3 and N-498-4) sought to correct this oversight, but failed to require system hold times during the conduct of the pressure tests. The hold times are important because in order to detect small leakages, it is necessary for a sufficient volume of liquid to accumulate, especially for insulated systems. The Code has always required a 4-hour hold time for insulated, and a 10-minute hold time for uninsulated, components prior to conducting these pressure tests. For these reasons, the later revisions of the Code Case are not acceptable for use. However, the licensee has committed to augmenting Code Case N-498-4 with the following:

1. For insulated systems, a 4-hour hold time would be required at system operating pressure and temperature.
2. For non-insulated systems, a hold time of 10 minutes would be required at system operating pressure and temperature.

The system hydrostatic test stipulated in Section XI is not a test of the structural integrity of the system but rather an enhanced leakage test. Hydrostatic testing only subjects the piping components to a small increase in pressure over the design pressure; therefore, piping dead weight, thermal expansion, and seismic loads present far greater challenges to the structural integrity of the system. Consequently, the Section XI hydrostatic pressure test is regarded primarily as a means to enhance leak detection rather than as a method to determine structural integrity. In addition, industry experience indicates that leaks are not being discovered as a result of hydrostatic test pressures causing a preexisting flaw to propagate through the wall—in most cases leaks are being found when the system is at normal operating pressure.

System hydrostatic testing entails considerable time, radiation dose, and economic resources. The safety assurance provided by the enhanced leakage detection gained from a slight increase in system pressure during a hydrostatic test may be offset or negated by the necessity to gag or remove Code safety and/or relief valves (placing the system, and thus the plant, in an off-normal state), erect temporary supports in steam lines, and expend resources to set up testing with special equipment and gages. Therefore, performance of system hydrostatic testing represents a considerable burden. Giving consideration to the minimal amount of increased assurance provided by the increased pressure associated with a hydrostatic test versus the pressure for the system leakage test, and the hardship associated with performing the hydrostatic test, the Staff finds that compliance with the Section XI hydrostatic testing requirements results in hardship and/or unusual difficulty without a compensating increase in the level of quality and safety. Performing the hydrostatic pressure test in accordance with Code Case N-498-4, as augmented by the licensee's proposed hold times, will provide reasonable

2. Approved in Regulatory Guide 1.147, Revision 12, *Inservice Inspection Code Case Acceptability*.

assurance of operational readiness. Therefore, pursuant to 10 CFR 50.55a(a)(3)(ii), it is recommended that the licensee's proposed alternative, to implement the pressure test rules of Code Case N-498-4, as augmented with the stated hold times, be authorized for Code Class 3 components at OCGS.

3.4 Request for Relief OC-02-04, Examination Category E-G, Items E8.10 and E8.20, Class MC, Pressure Retaining Bolting, Metal Containment Connections

Note: Upon review of the NRC's Request for Additional Information (RAI), the licensee has elected to withdraw Request for Relief OC-02-04.

3.5 Request for Relief OC-02-05, Appendix VII, Subarticle VII-4240, Annual Training Requirements for Ultrasonic Personnel

Code Requirement: ASME Appendix VII, Subarticle VII-4240, requires a minimum of 10 hours annual training for personnel certified by an Employer to perform ultrasonic nondestructive examination (NDE) methods. The training is intended to impart knowledge of new developments, material failure modes, and other topics pertinent to the ultrasonic techniques used.

Licensee's Proposed Alternative to Code: Pursuant to 10 CFR 50.55a(a)(3)(i), the licensee is proposing to use the annual training requirements set forth in 10 CFR 50.55a(b)(2)(xiv) in lieu of those listed in Code Subarticle VII-4240.

Licensee's Bases for Alternative (as stated):

This alternative was previously approved for the Third Ten-Year Interval for the Oyster Creek Generating Station in a Safety Evaluation Report dated December 5, 2001 [letter from L. Raghaven (U.S. Nuclear Regulatory Commission) to O.D. Kingsley (Exelon Nuclear)].

10 CFR 50.55a was amended in the Federal Register (Volume 64, No.183, dated September 22, 1999) to require the 1995 Edition, with the 1996 Addenda of Section XI for Appendix VIII qualification requirements. This also imposes the requirements of Appendix VII of the 1995 Edition, with the 1996 Addenda of Section XI. This includes Subarticle VII-4240, which requires a minimum of 10 hours of annual training.

10 CFR 50.55a(b)(2)(xiv) requires that all personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training on specimens that contain cracks. The training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

Paragraph 2.4.1.1.1 in the Federal Register notice for the final rule (64 Fed. Reg. 51370, 1999) contained the following statement:

The NRC had determined that this requirement was inadequate for two reasons. The

first reason was that the training does not require laboratory work and examination of flawed specimens. Signals can be difficult to interpret and, as detailed in the regulatory analysis for this rulemaking, experience and studies indicate that the examiner must practice on a frequent basis to maintain the capability for proper interpretation. The second reason is related to the length of training and its frequency. Studies have shown that the examiner's capability begins to diminish within approximately six months if skills are not maintained. Thus, the NRC had determined that 10 hours of annual training is not sufficient practice to maintain skills, and that the examiner must practice on a more frequent basis to maintain proper skill level. The PDI program has adopted a requirement for 8 hours of training, but it is required to be hands-on practice. In addition, the training must be taken no earlier than 6 months prior to performing examinations at a licensee's facility. PDI believes that 8 hours will be acceptable relative to an examiner's abilities in this highly specialized skill area because personnel can gain knowledge of new developments, material failure modes, and other pertinent technical topics through other means. Thus, the NRC has decided to adopt in the Final Rule the PDI position on this matter. These changes are reflected in Sec. 10 CFR 50.55a(b)(2)(xiv) of the final rule.

Implementation of the requirements contained in ASME Section XI and 10 CFR 50.55a will result in redundant training programs. The use of the regulatory requirements in lieu of additional requirements will simplify record keeping, satisfy needs for maintaining skills, and provide an acceptable level of quality and safety.

Evaluation: Appendix VII, Subarticle VII-4240, of the Code requires 10 hours of annual training to impart knowledge of new developments, material failure modes, and any pertinent technical topics as determined by the licensee. No hands-on training or practice is required to be included in the 10 hours of training. This training is required of all UT personnel qualified to perform examinations of ASME Code Class 1, 2, and 3 systems. Independent of the ASME Code, 10 CFR 50.55a(b)(2)(xiv) imposes the requirement that 8 hours of hands-on training with flawed specimens containing cracks be performed no earlier than 6 months prior to performing examinations at a licensee's facility. The licensee contends that maintaining two separate UT annual training programs create confusion, redundancies, and extra paper work.

As part of the staff's rulemaking effort to revise 10 CFR 50.55a(b)(2), the issue of UT annual training requirements was reviewed. This review was included in the summary of comments to the rule that was published in the *Federal Register* on September 22, 1999 (64 *FR* 51370). In the review, the staff determined that the 10 hours of annual training requirement specified in the ASME Code was inadequate for two reasons. The first reason was that the training does not require practice with flawed specimens. Practice with flaws is necessary because signals can be difficult to interpret. The second reason is related to the length of training and its frequency. Studies have shown that an examiner's capability begins to diminish within 6 months if skills are not maintained. Therefore, examiners must practice on a frequent basis to maintain their capability for proper interpretation of flaws.

Based on resolution of public comments for the above rulemaking, the staff accepted an

industry initiative advanced by the Electric Power Research Institute (EPRI), which proposed 8 hours of hands-on practice with flawed specimens containing cracks. The practice would occur no earlier than 6 months prior to performing examinations at a licensee's facility. The initiative was adopted in 10 CFR 50.55a(b)(2)(xiv) for personnel maintaining their Appendix VIII qualifications. The staff has determined that the proposed alternative to use 10 CFR 50.55a(b)(2)(xiv) in lieu of Subarticle VII-4240 will maintain the skill and proficiency of UT personnel at or above the level provided in the Code for annual UT training, thereby, providing an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), it is recommended that the licensee's alternative be authorized.

4.0 CONCLUSIONS

Based on the information provided in the licensee's submittal, it has been concluded that the alternative proposed in Request for Relief OC-02-05 provides an acceptable level of quality and safety. Therefore, it is recommended that this request be authorized, pursuant to 10 CFR 50.55a(a)(3)(i), for the remainder of the fourth 10-year inspection interval at OCGS, which began on October 15, 2002. This authorization is limited to the components described in Section 3.5 above.

For Requests for Relief OC-02-01 and OC-02-03, it has been determined that complying with the specified Code requirements would result in a hardship with no compensating increase in quality or safety. Therefore, pursuant to 10 CFR 50.55a(a)(3(ii), it is recommended that Requests for Relief OC-02-01 and OC-02-03 be authorized for the remainder of the fourth 10-year inspection interval at OCGS. This authorization is limited to the components described in Sections 3.1 and 3.3 above.

Further, the Staff concludes that the Code examination coverage requirements are impractical for the inside surface of RPV support skirt integral attachment Weld 1-569 listed in Request for Relief OC-02-02. However, it is feasible to apply an ultrasonic technique, from the outside base material surface, to assess the condition of the inside surface of this full-penetration attachment weld. Other licensees are currently performing similar ultrasonic examinations to ensure that no conditions that would challenge the structural integrity of this attachment weld exist. The outside surface examinations that are being completed, in conjunction with new ultrasonic examinations, if performed, should provide reasonable assurance of the continued structural integrity of this component. Therefore, pursuant to 10 CFR 50.55a(g)(6)(i), it is recommended that relief be granted for the remainder of the fourth 10-year inspection interval at OCGS, provided the licensee implement the aforementioned ultrasonic examination. This authorization is limited to the components described in Section 3.2 above.

Upon review of the Staff's Request for Additional Information, the licensee elected to withdraw Request for Relief OC-02-04.