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December 17, 1999
1940-99-20661

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington DC 20555

Dear Sir:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
ASME XI Relief Requests

Attached to this cover letter are six requests for relief from requirements contained in ASME Section XI. This relief is requested pursuant to 10 CFR 50.55(a)(3). To support planning and scheduling for our next refueling outage, staff review and approval is needed by June 30, 2000.

If any additional information or assistance is required, please contact Mr. John Rogers of my staff at 609.971.4893.

Very truly yours,

Sander Levin
Acting Director
Oyster Creek

SL/JJR
Attachment

cc: Administrator, Region I
NRC Project Manager
Senior Resident Inspector

A047

FOR APPROX 05000219

Attachment to Letter 1940-99-20661

Oyster Creek Nuclear Generating Station

ASME Relief Requests R19, R20, R21, R22, R23, R24

Relief Request R 19

CODE REFERENCE:

ASME Section XI, 1992 Edition, 1992 Addenda, Subsection IWE, Subarticle IWE-2200(g)

CODE REQUIREMENT:

ASME Section XI, 1992 Edition, 1992 Addenda, Subsection IWE, Subarticle IWE-2200(g) requires that when paint or coatings are reapplied, the condition of the new paint or coating shall be documented in the preservice examination records.

CODE RELIEF REQUEST:

Relief is requested from the Code required preservice inspection of reapplied paint and coatings on all IWE Class MC Components.

PROPOSED ALTERNATIVE EXAMINATION:

Reapplied paint and coatings on the containment vessel's interior surfaces will be examined in accordance with the Maintenance program and the GPU Nuclear OQA plan, as stated in GPU the Nuclear response to NRC Generic Letter 98-04, our letter 1940-98-20665 dated November 11, 1998.

BASIS:

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested for the Oyster Creek Nuclear Generating Station on the basis that the proposed alternative provisions to the ASME Section XI Code requirements would provide an acceptable 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. Subarticle IWE-2200(g) requires that when paint or coatings are reapplied, a preservice inspection is performed and documented in the preservice inspection records.

Paint and coatings are not part of the containment pressure boundary under current Code rules, because they are not associated with the pressure boundary function of the component (Paragraph NE-2110(b) of Section III). Neither paint nor coatings contribute to the structural integrity or leak tightness of the containment, although degradation of the coating may be symptomatic of plate deterioration. Furthermore, the paint and coatings on the containment pressure boundary were not subject to ASME XI rules for repair or replacement in accordance with IWA-4111(b)(5) during original application. The adequacy of the applied coatings is verified through the inspections performed by the

Quality Verification group through the implementation of the maintenance program and the GPU Nuclear Quality Assurance Plan.

The Maintenance and Quality Assurance programs for paint and protective coatings include planned and systematic actions necessary to provide adequate confidence that shop or field coating work will perform satisfactorily in service.

The Maintenance and Quality Assurance programs are applied to protective coatings consistent with the nature and scope of work specified in the Technical Specifications. The following elements are included:

- 1) Preparation of coating specifications/procedures;
- 2) Review of coating manufacturers test data;
- 3) Review of manufacturers identification, control, storage, handling, surface preparation, application, curing and inspection;
- 4) Training and qualification of inspection and applicator personnel;
- 5) Supplier surveillance inspection.

Recording the condition of reapplied coating in the preservice record does not substantiate the containment structural integrity. Should deterioration of the coating in the reapplied area occur, the area would require additional evaluation regardless of the preservice record. Recording the condition of the new coating in the preservice records is a burden without a compensating increase in the level of quality and safety of the containment.

In SECY 96-080, Issuance of final amendment to 10 CFR 50.55a to incorporate by reference the ASME Boiler and Pressure Vessel Code, Section XI, Division I, Subsection IWE and IWL", dated April 178, 1996, response to comment 3.2 about IWE-2200(g) states, "In the NRC's opinion, this does not mean that a visual examination must be performed with every coating application. A visual examination of the topcoat to determine the soundness and the condition of the topcoat should be sufficient". This is currently accomplished through inspections directed by Maintenance procedures.

In addition, the requirement to perform a preservice examination when paint or coatings are reapplied has been removed in the rewrite of Subsection IWE of ASME Section XI.

PERIOD FOR WHICH RELIEF IS REQUESTED:

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Oyster Creek Nuclear Generating Station.

Relief Request R 20

CODE REFERENCE:

ASME SECTION XI, 1992 Edition, 1992 Addenda, Subsection IWE, Subarticle IWE-2500, Table IWE-2500-1, Examination Category E-D, Seals, Gaskets, and Moisture Barriers, tem E5.10 and E5.20.

CODE REQUIREMENT:

ASME 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 and other devices that are required to assure containment leak-tight integrity be visually (VT-3) examined, once each inspection interval.

CODE RELIEF REQUEST:

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.

PROPOSED ALTERNATIVE EXAMINATION:

The leak-tightness of seals and gaskets will be tested in accordance with 10 CFR 50, Appendix J. No additional alternatives to the visual examination, VT-3, of the seals and gaskets will be performed.

BASIS:

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested for the Oyster Creek Nuclear Generating Station 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, Seals, Gaskets, and Moisture Barriers, requires the visual examination of seals and gaskets for Items E5.10 and E5.20.

Oyster Creek Nuclear Generating Station 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.

- 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.
- Torus manways. Access to the torus is provided at two locations from the reactor building. Each access manway consists of a 3 ft. 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.
- 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.
- 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 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 50, Appendix J, Type B test requirements at periodic intervals. As noted in 10 CFR 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/joints, which are proven adequate through Appendix J testing, to be disassembled. For electrical penetrations, this would involve pre-maintenance Appendix J testing, de-termination of electrical cables, where possible, and disassembly of the connection/joint, removal and examination of the seals and gaskets, reassembly of the connection/joint, re-termination of the cables, if necessary, post maintenance testing of the cables, and a post maintenance 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 Section XI recognize that disassembly of connections/joints to perform these examinations is not warranted. Note 1 in Examination Category E-D was modified in the 1995 Edition of 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 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 Section XI.

PERIOD FOR WHICH RELIEF IS REQUESTED:

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Oyster Creek Nuclear Generating Station.

Relief Request R 21

CODE REFERENCE:

ASME 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.

CODE REQUIREMENT:

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

CODE RELIEF REQUEST:

Relief is requested from the Code required torque and tension tests specified in Table IWE-2500-1, Examination Category E-G, Pressure Retaining Bolting, Item E8.20

PROPOSED ALTERNATIVE EXAMINATION:

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 50, Appendix J.

BASIS:

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested for the Oyster Creek Nuclear Generating Station 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. 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 un-torqued and then re-torqued or retensioned. The performance of a 10 CFR 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. 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.

PERIOD FOR WHICH RELIEF IS REQUESTED:

Relief is requested for the first inspection interval for the containment inspection required by ASME B&PV Code Section XI, 1992 Edition, 1992 Addenda at Oyster Creek Nuclear Generating Station.

Relief Request R 22

CODE REFERENCE:

ASME Section XI, 1992 Edition, 1992 Addenda, Subsection IWE, Paragraphs IWE-2420(b) and IWE-2420(c).

CODE REQUIREMENT:

ASME Section XI 1992 Edition, 1992 Addenda, Subsection IWE, Paragraphs IWE-2420(b) and IWE-2420(c) requires that when component examination results require evaluation of flaws, evaluation of areas of degradation, or repairs in accordance with Article IWE-3000, "Acceptance Standards", and the component is found to be acceptable for continued service, the areas containing such flaws, degradation, or repairs shall be reexamined during the next inspection period listed in the schedule of the inspection program of Paragraph IWE-2411, "Inspection Program A", or Paragraph IWE-2412, "Inspection Program B", in accordance with Table IWE-2500-1, Examination Category E-C.

CODE RELIEF REQUEST:

Relief is requested from the Code requirement of Paragraphs IWE-2420(b) and IWE-2420(c) to perform successive examination of repairs.

PROPOSED ALTERNATIVE EXAMINATION:

Successive examinations in accordance with Paragraphs IWE-2420(b) and IWE-2420(c) are not required for repairs made in accordance with Section XI, 1992 Edition, 1992 Addenda, Article IWA-4000. In lieu of the successive examinations required by IWE-2420, an acceptable level of quality and safety will be provided by the Section XI, Article IWA-4000 repair process and subsequent examinations and evaluations.

BASIS:

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief is requested 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. The purpose of a repair is to restore the component to an acceptable condition for continued service in accordance with the acceptance standards of Article IWE-3000. In addition, Paragraph IWA-4150 of Article IWA-4000 requires the owner to conduct an evaluation of the suitability of the repair including consideration of the cause of failure to preclude recurrence of the component degradation.

If the repair has restored the component to an acceptable condition, successive examinations are not warranted. If the repair was not suitable, then the repair does not meet Code requirements and the component is not acceptable for continued service. Neither Paragraph IWB-2420(b), Paragraph IWC-2420(b), nor IWD-2420(b) requires a repair to be subject to successive examination requirements. Furthermore, if the repair area is subject to accelerated degradation, it would still require augmented examination in accordance with Table IWE-2500-1, Examination Category E-C. The purpose of IWE-2420(b) is to manage components found to be acceptable for continued service (i.e. no repair or replacement at this time) as an Examination Category E-C component. If the component has been repaired or replaced, than the more frequent examination would not be needed. The successive examination of repairs in accordance with Paragraphs IWE-2420(b) and IWE-2420(c) constitutes a burden without a compensating increase in quality and safety.

PERIOD FOR WHICH RELIEF IS REQUESTED:

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Oyster Creek Nuclear Generating Station.

Relief Request R 23

CODE REFERENCE:

ASME Section XI, 1992 Edition, 1992 Addenda, Subsection IWE, Subarticle IWE2500(b).

CODE REQUIREMENT:

ASME Section XI, 1992 Edition, 1992 Addenda, Subarticle IWE-2500(b) requires that when paint or coatings are to be removed, the paint or coatings shall be visually examined in accordance with Table IWE-2500-1 prior to removal.

CODE RELIEF REQUEST:

Relief is requested from the Code required visual examinations of paint and coatings prior to removal on all IWE Class MC components.

PROPOSED ALTERNATIVE EXAMINATION:

The paint and coatings in containment will be examined in accordance with the Oyster Creek maintenance program. If degradation of the coating is identified, additional measures will be applied to determine if the containment pressure boundary is affected. Although repairs to paint or coatings are not subject to the rules of ASME Section XI (Inquiry 97-22), repairs to the primary containment boundary, not including coatings, if required, would be conducted in accordance with ASME Section XI Code rules.

BASIS:

Pursuant to 10 CFR 50.55a(a)(3)(i) relief is requested for the Oyster Creek Nuclear Generating Station on the basis that the proposed alternative provisions to the ASME Section XI Code requirements would provide an acceptable 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. Subarticle IWE-2500(b) requires that when paint or coatings are to be removed, a visual examination of the paint or coatings shall be performed in accordance with Table IWE-2500-1. Neither paint nor coatings were subjected to Code rules when they were originally applied and are not subject to ASME Section XI rules for repair or replacement in accordance with IWA-4111(b)(5). Degradation or discoloration of the paint or coating materials on the containment could be an indicator of potential degradation of the containment pressure boundary. Additional measures would have to be employed to determine the nature and extent of any degradation, if present.

The activity of performing periodic containment or coating examinations and corrective maintenance is performed in accordance with the Oyster Creek maintenance program and the GPU Nuclear OQA plan. The application of ASME Section XI rules for the removal of paint or coatings when unrelated to a Section XI repair or replacement activity, is a burden without a compensating increase in quality and safety.

PERIOD FOR WHICH RELIEF IS REQUESTED:

Relief is requested for the first inspection interval for containment inspections required by ASME B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Oyster Creek Nuclear Generating Station.

Relief Request R 24

CODE REFERENCE:

ASME Section XI, 1992 Edition, 1992 Addenda, Subsection IWE, Subarticle IWE-2500(c)(3)

CODE REQUIREMENT:

ASME Section XI, 1992 Edition, 1992 Addenda, Subarticle IWE-2500(c)(3) requires one foot square grids be used when ultrasonic thickness measurements are performed on augmented examination surface areas. The number and location of the grids is determined by the owner.

CODE RELIEF REQUEST:

Relief is requested from the requirement to use one foot square grids for augmented examination areas.

PROPOSED ALTERNATIVE EXAMINATION:

Oyster Creek will continue to implement the current containment monitoring ultrasonic examination program utilizing six inch grid patterns. The Ultrasonic measurement will be performed within 1/8 inch of designated locations. This will be accomplished by the use of a template. The drywell wall was previously stamped to match the notches provided in the template. The template is six inches square with circular holes cut out on one inch centers. This will allow for 49 UT readings to be taken at each grid location.

BASIS:

Pursuant to 10 CFR 50.55a(a)(3)(i) relief is requested for the Oyster Creek Nuclear Generating Station on the basis that the proposed alternative provisions to the ASME Section XI Code requirements would provide an acceptable 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. Subarticle IWE-2500(c)(3) requires the use of one foot square grids for augmented examination areas to determine the minimum wall thickness within an examined area.

Since 1987 Oyster Creek has developed and implemented a drywell corrosion monitoring program in which inspections are conducted at identified corroded locations. Inspections have been periodically performed during refueling outages and outages of opportunity in the former sandbed region, in the spherical region (elevation 50'2" and 51'10") and in the cylindrical region (elevation 87'5"). The ongoing measurements are not taken in all the locations where measurements were taken initially. The initial locations where corrosion/material loss was most severe were selected for the ongoing program. A spot

the locations where measurements were taken initially. The initial locations where corrosion/material loss was most severe were selected for the ongoing program. A spot check of locations measured initially was performed during the 12R (October, 1988) outage which confirmed proper selection for ongoing measurements.

In March, 1990 an additional check was performed at Elevation 50'2". This check consisted of a continuous UT "A" scan in all accessible areas in a one inch band at elevation 50'2". As a result of this check, three additional grids at Elevation 50'2" were added to the program. In April 1990, an additional elevation was investigated for corrosion. This investigation was performed by continuous UT "A" scan in a one inch band, at elevation 51' 10". Results showed only one area which was less than nominal. An inspection grid of this area was added to the inspection program.

As experience increased with each data collection campaign, only grids showing evidence of change were retained in the inspection program. Additional assurance regarding the adequacy of this inspection plan was obtained by a completely randomized inspection that showed that all locations satisfied code requirements.

The corrosion rate monitoring program involves the establishment of six inch by six inch grid locations on the containment vessel interior, the use of a template with 49 holes on one inch centers for locating the UT probe, a specified 1/8 inch tolerance on the location of subsequent measurements and taking thickness measurements periodically. This program enabled Oyster Creek to statistically determine corrosion rates at these grid locations. Since the grid locations are in the known areas where material loss is most severe, the corrosion rates and projected wall thicknesses are determined over a small fraction of the drywell but conservatively applied uniformly. Since this was and is a plant-specific issue which received significant NRC review and approval, we are requesting a continuation of the NRC-approved approach.

Examination personnel performing these augmented containment ultrasonic examinations are currently qualified and certified in accordance the GPUN qualification and certification procedure which meets the requirements of SNT-TC-1A. This meets the requirements of Paragraph IWA-2310, 1992 Edition, 1992 Addenda, Section XI which states, "Certifications based on SNT-TC-1A are valid until recertification is required". Recertification of IWE non-destructive examination personnel will be in accordance with ANSI/ASNT CP-189.

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(i) in that the alternative examinations proposed provide an acceptable level of quality and safety.

PERIOD FOR WHICH RELIEF IS REQUESTED:

Relief is requested for the first inspection interval for containment inspections required by B&PV Code, Section XI, 1992 Edition, 1992 Addenda at Oyster Creek Nuclear Generating Station.