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United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-001

**INSERVICE INSPECTION PROGRAM
RELIEF REQUEST HC-RR-A10
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NO. NPF-57
DOCKET NO. 50-354**

Pursuant to 10 CFR 50.55a(a)(3)(i), PSEG Nuclear, LLC (PSEG Nuclear) is submitting relief request HC-RR-A10 for NRC approval of a proposed alternative concerning performance demonstration methods for ultrasonic examination systems for Hope Creek Generating Station. Specifically, this proposed alternative concerns depth-sizing capability of dissimilar metal piping welds.

ASME Section X1 1995 Edition 1996 Addenda Appendix VIII Supplement 10, *Sizing Acceptance Criteria*, section 3.2 (b) requires a root mean square (RMS) error of less than or equal to 0.125" for depth sizing capability. PSEG Nuclear has been informed that qualification of examination procedures, automated ultrasonic acquisition exam equipment, and personnel for depth sizing to the Supplement 10 procedures were not capable of achieving qualification to an overall error less than or equal to a 0.125" RMS. Further review by the PDI Technical Working Group has determined that an error of up to 0.154" RMS should be considered acceptable for fracture mechanics calculations utilizing depth-sizing measurements obtained with the Supplement 10 procedure.

PSEG Nuclear requests that the NRC approve this request by August 2003 to support Hope Creek dissimilar weld piping inservice inspections.

Should you have any questions regarding this request, please contact Mr. Howard Berrick at 856-339-1862.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Salamon", with a long horizontal flourish extending to the right.

G. Salamon

Manager - Nuclear Safety and Licensing

Attachment:

1. ISI Relief Request No. HC-RR-A10

A047

C Mr. H. Miller, Administrator
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USNRC Senior Resident Inspector - Hope Creek (X24)

Mr. K. Tosch, Manager IV
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ASME Code Component(s) Affected

Dissimilar metal piping welds subject to examination using procedures, personnel and equipment qualified to ASME XI, Appendix VIII, Supplement 10 criteria.

Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, is the code of record for PSEG Nuclear Hope Creek Nuclear Generating Station's Second Ten-Year Inservice Inspection (ISI) Program Interval.

Applicable Code Requirements

ASME Section XI 1995 Edition 1996 Addenda Appendix VIII Supplement 10, Sizing Acceptance Criteria 3.2(b) requires qualification of examination procedures, automated ultrasonic acquisition exam equipment, and personnel for depth sizing when the overall root mean square (RMS) error of the depth measurements, as compared to the true depth, be less than or equal to 0.125 inches.

PSEG Nuclear has been informed by their ISI Non-destructive Examination (NDE) vendor that their procedures, personnel and equipment were unable to qualify to an overall error of less than or equal to a 0.125" RMS for flaw depth sizing. The vendor achieved an overall error less than or equal to a 0.154" RMS for flaw depth sizing.

The vendor satisfactorily qualified procedures, personnel and equipment for the detection and length sizing in accordance with the Performance Demonstration Initiative's (PDI) implementation of Supplement 10.

Proposed Alternative and Basis for Use

Pursuant to 10CFR50.55(a)(3)(i), PSEG Nuclear requests relief to use the following alternative requirement for implementation of Appendix VIII, Supplement 10 Sizing Acceptance Criteria 3.2(b) requirements. These requirements have been qualified through the PDI Program.

At the time of this submittal only two vendors have recorded RMS data. The two vendors each achieved similar RMS errors for depth sizing (0.154" and 0.155"). This would indicate the systems being qualified through PDI are the "best technologies" available at this time.

While the procedure's depth sizing capability was evaluated, the overall performance did not satisfy the acceptance criteria specified in Supplement 10, which requires an overall error less than or equal to a 0.125" RMS. The PDI Technical Working Group determined that the actual performance achieved of a RMS error of 0.154" should be considered for fracture mechanics calculations when utilizing the depth-sizing measurements obtained with the vendor's Supplement 10 procedure.

PSEG Nuclear proposes, for the purposes of evaluation, to add the difference (0.029 in.) between the vendor's achieved RMS value (0.154") and the Code value (0.125") to the determined size depth when performing fracture mechanics calculations.

Duration of Proposed Alternative

The requested duration of the proposed relief request alternative is until October 31, 2004. If after that time, the Code required 0.125" RMS value is still not achievable, PSEG Nuclear will re-apply for relief. The requested 18-month duration will allow industry vendors to explore and enhance technology towards reaching the Code goal of 0.125" RMS.

Precedents

None

References

Letter from M.P. Gallagher (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, dated December 13, 2002

Letter from M.P. Gallagher (Exelon Generation Company, LLC) to U.S. Nuclear Regulation Commission, dated February 14, 2003

Letter from Carl Latiolais (EPRI NDE Center-PDI Qualification Project Manager) to Wayne Denlinger, PSEG Nuclear LLC, dated March 18, 2003.