



Harris Nuclear Plant Pre-Submittal Meeting - March 27, 2018



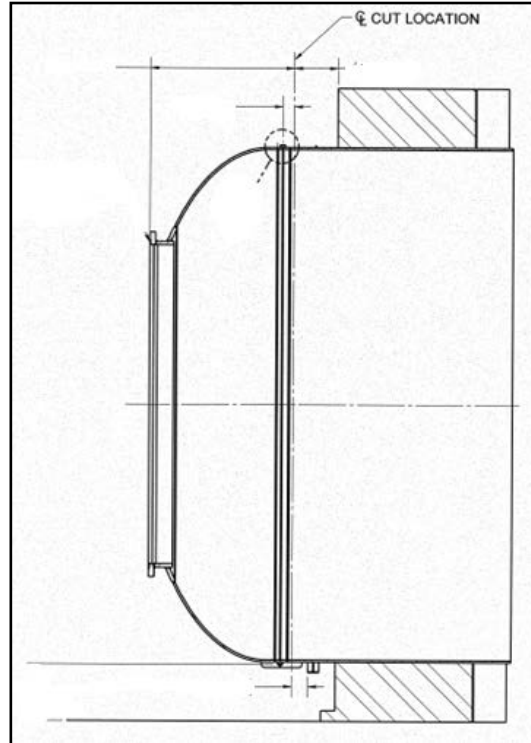
10 CFR 50.55a Relief Request

**Proposed Alternative Regarding Repair and Replacement
Testing Requirements for
Harris Nuclear Power Plant's
Equipment Hatch Sleeve Weld**

- Keith Henshaw, Reactor Vessel Head Replacement Project Lead Engineer
- Sarah McDaniel, Licensing Engineer

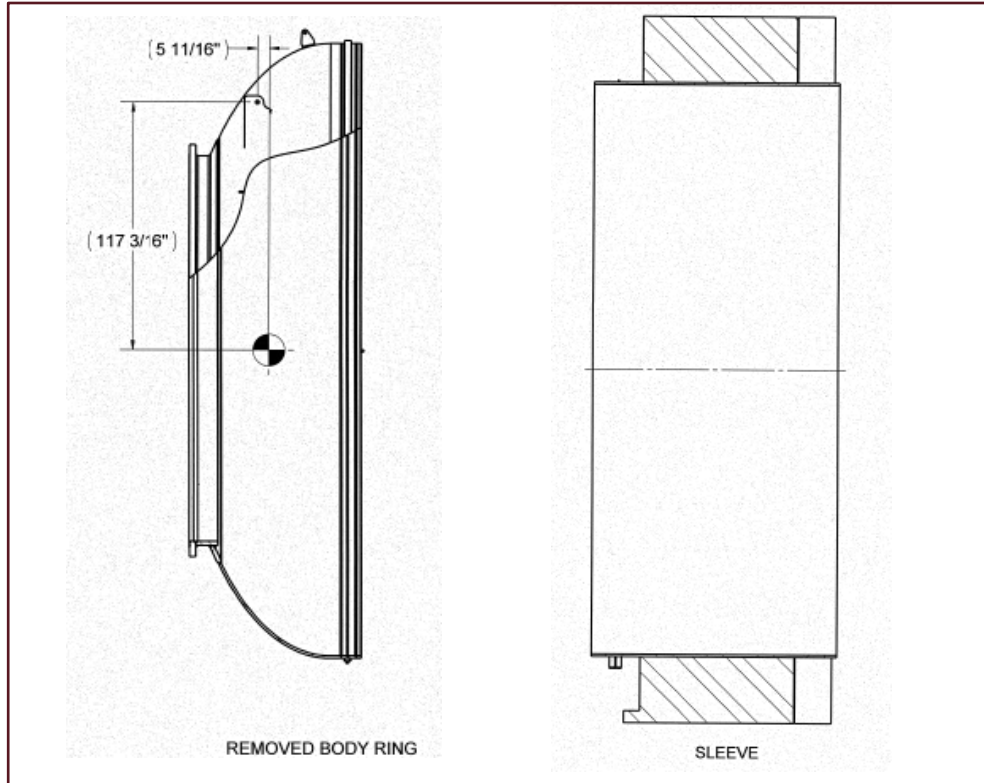
Equipment Hatch & Interference Removal

Cut location of the Equipment Hatch Sleeve

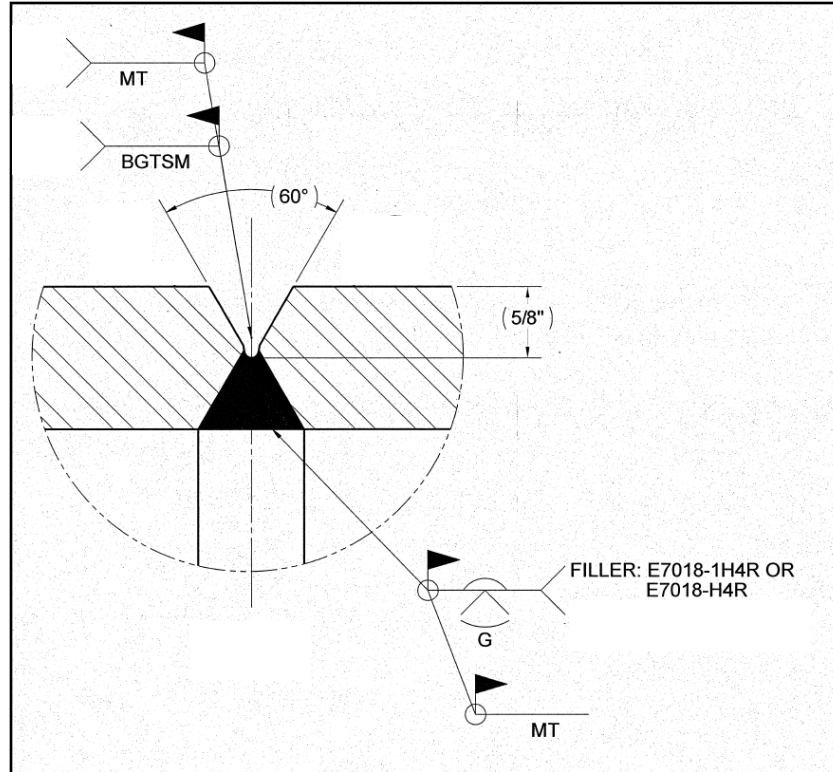


Equipment Hatch Removal

Separation of the Body Ring from the Liner Sleeve after the cut



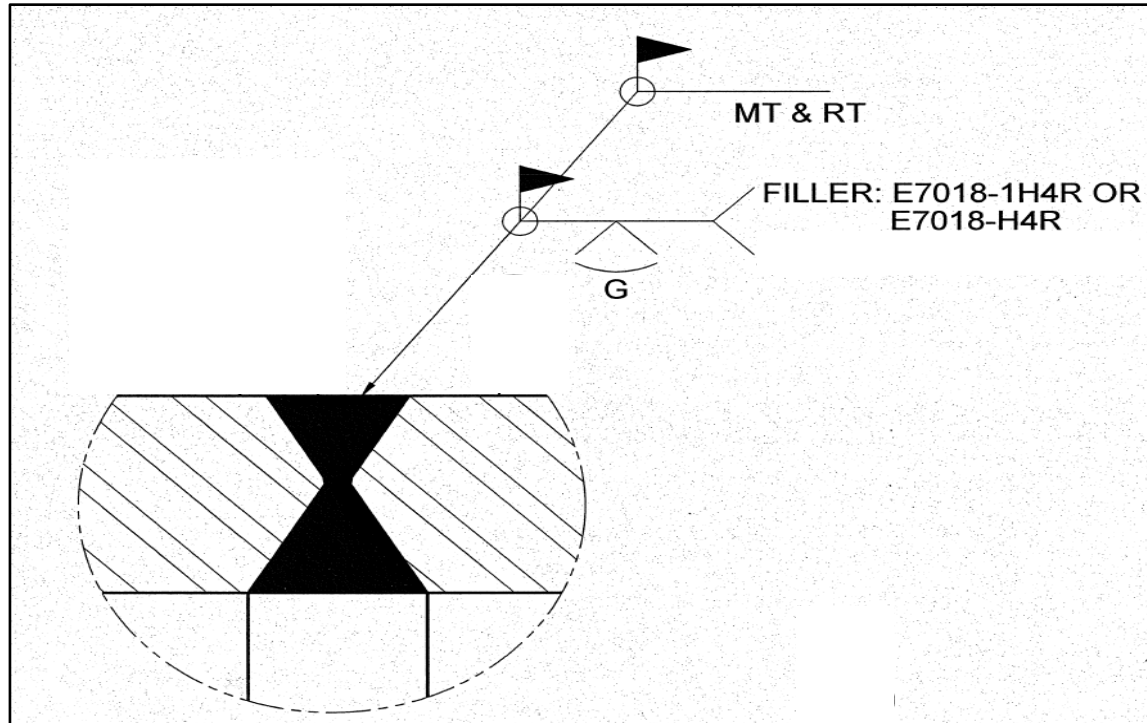
Equipment Hatch Reinstallation



Inside groove of reinstallation weld and non-destructive examinations performed first

Equipment Hatch Reinstallation

The completed full penetration weld reattaching the Body Ring to the Liner Sleeve



Harris Nuclear Plant - Applicable Code Edition and Addenda

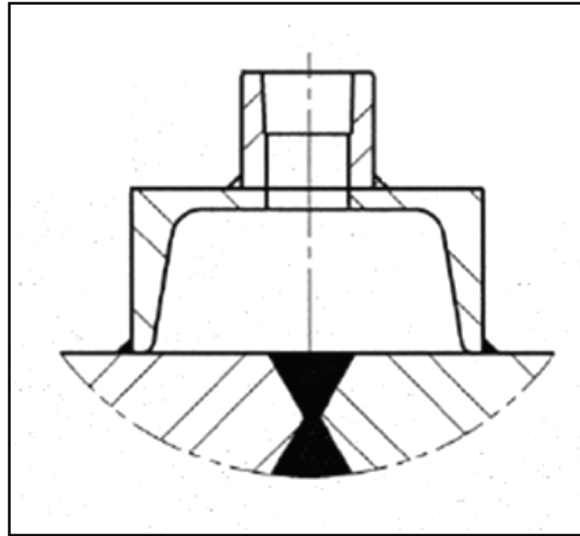
Inservice Inspection Program (ISI) Third Interval for Containment

- ASME Boiler and Pressure Vessel Code Section XI, 2007 Edition with 2008 Addenda

Containment Vessel Code of Construction

- ASME Boiler and Pressure Vessel Code Section III, Subsection NE, 1974 Edition with 1975 Winter Addenda

Installation of the Leak Chase Coupling Assembly



Proposed Alternative and Basis for Use

- 100% magnetic particle testing and 100% volumetric radiographic testing exams of the circumferential weld prior to leakage test
- Channel strength and simultaneous leakage (pressure decay) test at 115% of design pressure, 51.8 psig
- Localized leak rate testing in the weld area
- Bubble test per IWE 5223.4 and ASME Section V, Article 10, Appendix I
- Testing in this manner is consistent with original Owner requirements in Ebasco Specification CAR-SH-AS-1

FSAR and Original Design Specification

- HNP FSAR Section 3.8.1.1.3.3 and the original Ebasco Design Specification (CAR-SH-AS-1) identify that the Equipment Hatch penetration sleeve has sufficient material to initially allow for six removals and re-welding
- HNP performed Equipment Hatch Body Ring removal and reinstallation during the steam generator replacement in Fall 2001
- Concrete Containment will not be not modified

Waterford Steam Electric Station, Unit 3, 2012 – steam generator replacement

- Opening of the steel containment vessel construction hatch required relief from leakage test code requirements under ASME, Section XI, IWE-5221

Davis Besse Nuclear Power Station, Unit 1, 2013 - steam generator replacement

- Construction openings in the steel containment vessel required relief from the regulatory condition on IWE-5000 in 10 CFR 50.55a (b)(2)(ix)(J) of performing an Appendix J, Type A, integrated leak rate test

Watts Bar Nuclear Power Plant, Unit 1, 2006 - steam generator replacement

- Construction openings in the steel containment vessel required relief from leakage test code requirements under ASME, Section XI, IWE-5221

- The combination of 100% magnetic particle testing and 100% volumetric radiographic testing exams and the localized leak rate test of the reinstallation weld will confirm the full volumetric integrity of the equipment hatch body ring weld.
- In accordance with 10 CFR 50.55a(z)(1), the localized leakage testing proposed will provide an acceptable level of quality and safety in lieu of the Type A integrated leak rate test.

