

Corrective Action Type FOR CASTING DISCONTINUITIES

Date 2/18/2005

CA Originator Ruud

Pattern Number: C-1 Coil

Description of Defect / Non-Conformance

Two defects were on opposite sides of a wall and after excavation resulted in a through wall defect requiring repair.

Root Cause : Incorrect parameter used during solidification modeling at ESI Group. They used 75% fraction solid cutoff as a feeding criterion. This made the simulation result look like the casting fed correctly with the rigging that was used.

Corrective Action: Weld upgrade C1 casting. Welding will be performed following the approved procedure FOR WELDS <2" - WPS 10-SMAW-CF8MNMN MOD REV 1. FOR WELDS <8" - WPS 15-GMAW-CF8MNMN MOD REV 2. Copper backing plates will used.

Verification of Corrective Action: All repairs will be verified by the inspection method used to discover the original defect.

Preventive Action: We used the xray information from the C1 casting to re-simulate the solidification using different fraction solid cutoff numbers. A good correlation between the C1 xray results and a 50% fraction solid cutoff number was found. As of 2-18-05, we are revising the rigging to give good simulated results with a 50%fraction solid cutoff.

Verification Of Preventative Action: Radiograph C-2 coil and compare results.

Estimated Implementation Date: Prior to shipment.

Signed: CA Ruud

CC: EIO, Barry Craig, Joe Edwards, E.J. Kubick, Geoff Mergel, File

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Concur:

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