

# GENERAL DYNAMICS

Electric Boat

SQ/09-30

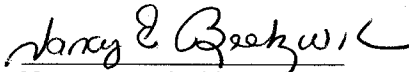
April 29, 2009

Subject: Castings with Post Weld Repair Heat Treatment Nonconformance

Reference: (a) NAVSEA Technical Publication S9074-96-AR-GIB-010/278 (Tech Pub 278), Requirements for Fabrication Welding and Inspection, and Casting Inspection and Repair for Machinery, Piping, and Pressure Vessels

Dear Valued Supplier,

1. The purpose of this letter is to highlight a recent issue involving a violation against the Reference (a) Tech Pub 278 specification requirements for post weld repair heat treatment of castings. Specifically, the violation was associated with furnace loading temperature, rate of heating, and the rate of furnace (product) cooling.
2. During review of objective quality evidence (furnace chart) for verification of the Reference (a) post weld heat treatment requirements of a repair welded casting, it was discovered that,
  - the loading temperature of the furnace exceeded the requirement of Paragraph 8.5.1 that "the furnace temperature shall not exceed 800°F at the time weldment is placed in it"
  - the rate of heating above 800°F exceeded the Paragraph 8.5.2 requirement of "not more than 400°F per hour divided by the maximum metal thickness of the component or vessel in inches, but in no case more than 400°F per hour"
  - the rate of furnace cooling exceeded the Paragraph 8.5.6 requirement for cooling "at a rate not greater than 200°F per hour"
3. Investigation to determine the extent of the cited discrepancy revealed that the responsible supplier was noncompliant with the listed paragraphs since inception of the specified Tech Pub 278 requirements. Query of a sample of other casting suppliers revealed one additional supplier noncompliant with the specified requirements.
4. In addition to notifying suppliers of the subject noncompliant occurrence and identifying the specific deviated contract requirements, Electric Boat is requesting that any supplier manufacturing, or responsible for, weldments, castings, or heat treatment services where Reference (a) is contractually imposed verify that internal post weld heat treatment procedures comply with all Reference (a) requirements discussed above. If noncompliance is detected, suppliers are obligated to notify Electric Boat of the nonconformance in accordance with Quality Control Requirements for Procured Material, Specification EB2678J, Paragraph 9.3.
5. Please share this lesson learned letter with appropriate personnel within your organization and sub-tier suppliers providing castings, weldments, and/or heat treatment services where Reference (a) is contractually imposed. Should further discussion of this topic be required, contact Joseph Tycz of Electric Boat Supplier Quality at e-mail [jtycz@gdeb.com](mailto:jtycz@gdeb.com) or 860.433.5505.



Nancy E. Beckwith  
Manager of Supplier Quality  
L6S Black Belt  
[nbeckwit@gdeb.com](mailto:nbeckwit@gdeb.com)  
(office) 860-433-3790  
(fax) 860-433-5378

Approved for Public Release

xc: Casting Suppliers, Document Data Bank, NGSB