



# Safety Alert

From the International Association of Drilling Contractors

ALERT 13 – 04

## LOWER MARINE RISER PACKAGE (LMRP) CONNECTOR FAILURE

### WHAT HAPPENED:

The U.S. Bureau of Safety & Environmental Enforcement has issued a Safety Alert as the result of a number of incidents on rigs caused by a loss of integrity of LMRP H-4 connector bolts. BSEE instructed the operators of affected rigs to secure current well operations and to retrieve the LMRP and/or BOP to the surface. These operators were directed to suspend operations until the existing bolts on the LMRP connector/wellhead connector could be replaced or recertified. Replacement bolts must be certified by an independent third-party to be in compliance with recommended heat treatment practices, or the existing bolts have been examined and certified by an independent third-party that they are fit for purpose.

While the BSEE Alert only affects rigs operating in the US Gulf of Mexico, IADC has been informed of at least one other similar failure occurring elsewhere. Contractors with rigs using H-4 connectors should take steps to ensure the integrity of these connectors to avoid potential failure.



Upper half of failed LMRP Connector



Lower half of failed LMRP Connector

### WHAT CAUSED IT:

- Stress corrosion cracking caused by hydrogen embrittlement is believed to have caused this situation. It appears that zinc electroplating without proper baking (per ASTM B633) caused this embrittlement.

### CORRECTIVE ACTIONS: To address this incident, the following is recommended:

- Operators and rig owners should check the bolts of their LMRP and Wellhead connectors to ascertain if they may be defective. Information on identifying affected bolts can be obtained by calling GE Oil & Gas at +1 (281) 985-3428 (accessible 24 hours a day) or by email at [Drilling.Support@ge.com](mailto:Drilling.Support@ge.com).
- Operators and Contractors with H-4 connectors, as identified through the above source, should also consult with their contractors and subcontractors to determine the appropriate inspection, disposition and/or corrective actions. Operators in the US Gulf of Mexico should notify BSEE, who will require an independent third-party certification that confirms proper inspection and refurbishment processes were completed prior to reinstallation of any affected bolts.
- Operators and contractors should review the QA/QC programs for all equipment vendors (contracted and sub-contracted) to ensure that all equipment is being manufactured to the required specifications. Special attention should be given to ensure proper heat treating has taken place in accordance with the specifications.

Source: Bureau of Safety & Environmental Enforcement ([www.bsee.gov](http://www.bsee.gov))

**The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.**

This material is presented for information purposes only. Managers & Supervisors should evaluate this information to determine if it can be applied to their own situations and practices

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