



CASE STUDY

UNDERWATER WELDING PLATFORM RECTIFICATION WORKS FOLLOWING HURRICANE

Gulf of Mexico

Following hurricanes Katrina and Rita, Neptune was consulted by a major operator in the Gulf of Mexico to propose a timely and cost effective repair solution to a damaged platform.

A number of vertical and horizontal cross braces on the platform were severely damaged and in need of replacement. Neptune, in conjunction with Cal Dive International, was approved to undertake the repair work following the approval and demonstration of the NEPSYS® solution. Cal Dive removed and replaced the damaged cross braces and the Neptune team welded the new braces in place using scallop sleeve joints and approved wet welding procedures. The cross braces ranged in size from 18" (46cm) to 26" (66cm) in diameter and represented a total of 400ft (122m) of joint requiring welding.

A critical k-node joint on the top cross brace was also found to be in need of repair. Neptune fabricated a custom designed habitat which was secured to the jacket leg using clamps, fully enclosing the damaged area and allowing the weld to be performed in a contained, dry environment. Using the NEPSYS® technology, Neptune performed a 360° full penetration weld, joining a vertical diagonal to the jacket leg at the k-node.

Prior to completion of the project all welds including the NEPSYS® repair were assessed by a third party representative using magnetic particle inspection (NDT testing) and found to be 100% compliant. The wet welding was completed to the standards set by AWS 3.6 and the NEPSYS® welding met the highest quality requirements of the original fabrication code AWS D1.1.



NEPSYS® Summary: Welds are specified as AWS D3.6 Class A welds – with strength equivalent to surface welds. Welds and welders can be qualified up to depths of 24m on a range of different materials in Neptune's Facility in Perth and greater depths at third party facilities. Clients and third party approval bodies are involved throughout the process to ensure welding meets client and industry requirements. Habitats are custom designed and can also be designed to fit nonuniform geometry.

Project Facts:

10m working depth

4 diver welders

Approved wet and dry welding procedures

NEPSYS® Facts:

- Permanent repair solution
- High quality structural weld
- Minimal operational impact
- Certified & accredited to GL ABS, Lloyds & DNV standards
- Compliant to welding codes:
 - AWS D3.6 Class A
 - Mil Std 1689
 - ISO 15614-10
 - ISO 5817 level B
- Patented internationally

For further information

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