



Contact: Darrel Harvey, Vice President
Alan C. McClure Associates, Inc.
(713) 789-1840

FOR IMMEDIATE RELEASE:

Alan C. McClure Associates Completes Successful Strength Analysis for Hull Repair on FPSO

HOUSTON, TEXAS – February 19, 2004: Alan C. McClure Associates (ACMA), one of the industry's premier naval architecture and engineering firms, recently completed strength analysis of the tank bottom plating for ConocoPhillips' FPSO, "Independence". ConocoPhillips, recognizing the need to carry out innovative repairs with a minimum of disruption, contracted the services of an integrated project team that included Alan C. McClure Associates, Intelligent Engineering Holdings Limited and American Bureau of Shipping.

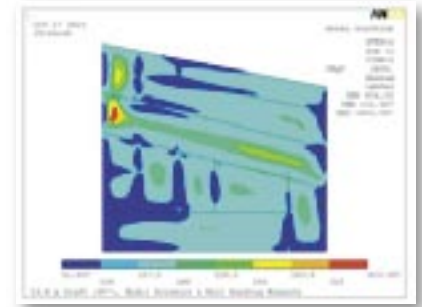
ACMA's analysis focused primarily on the effectiveness of repairing corroded shell plating with Intelligent Engineering's Sandwich Panel System (SPS). "Utilizing our advanced Finite Element Analysis (FEA) capabilities, ACMA examined the vessel hull to evaluate repair alternatives to the corroded shell plating," noted principal structural engineer, Peter Marucci. "We accomplished this by loading the model with hydrostatic and hydrodynamic pressures that the hull would experience from still-water and wave-induced bending moments." Because it's vital to examine all material and environmental variables to predict real-time performance, ACMA evaluated multiple models to determine stresses and loads within the FPSO tank. Similar analyses can also be performed for hull structural members to determine stresses during design and later during repairs for critical and 'hot' areas that are especially important for barges, cargo ships and all marine vessels.

The Sandwich Panel System (SPS), developed by Intelligent Engineering, is a technology that permits repairs without hot work inside the tank, allowing the vessel to remain in service. "Based on our modeling of the proposed repair sites, stress was shown to be significantly reduced using the sandwich paneling," Marucci explained. "The final result, completed to the satisfaction of American Bureau of Shipping, provided a quick, efficient and permanent repair solution utilizing the SPS system."

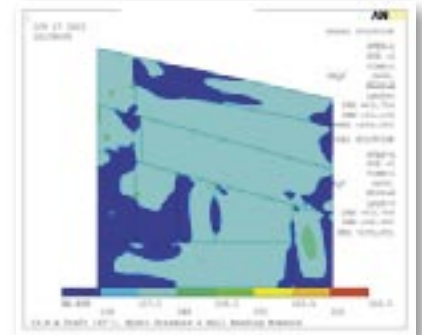
"There are a number of tankers in service today that are experiencing structural problems in areas where a high level of corrosion has occurred," said ACMA Vice President, Darrel Harvey. "Our advanced analytical capabilities and extensive shipyard experience gives ACMA a pronounced advantage in providing our clients with unbiased, third-party analysis of these kinds of challenges, as well as the ability to recommend the most cost-effective solutions."

About Alan C. McClure Associates, Inc.

Headquartered in Houston, Texas, Alan C. McClure Associates, Inc. is one of the industry's premier naval architecture and engineering firms, and has been providing a wide variety of design and engineering services to an international clientele for over 28 years. Projects include drilling rigs, floating production systems and support craft for the offshore petroleum industry. Our array of services also includes project management, legal/arbitration consulting, surveying and negotiations. The ACMA staff and services represent the engineering disciplines necessary to successfully complete projects in naval architecture, marine engineering, electrical engineering, mechanical engineering and engineering mechanics.



Before Repair



After Repair