

## The NewsRoom

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### **Petronius Weathers the Storm MMS Checks it Out**

A compliant tower platform, much like a fixed platform, is bottom founded, but allows for greater flexibility than a conventional fixed platform. This flexibility allows the compliant platform to flex when a force, such as a wave, current, or wind, is applied, which reduces the forces acting on the platform and foundation. Chevron's Petronius compliant tower platform is located in roughly 1,754 feet of water in the Central Gulf of Mexico, approximately 150 miles from downtown New Orleans.

On September 15, 2004, Hurricane Ivan passed about 25 miles to the west of Petronius, introducing the platform to enormous environmental loadings. The wave height was in excess of 90 feet for that location. Ivan delivered a wave into Petronius' deck 60 feet above sea level, causing significant damage to several of the platform's 4-foot-deep plate girders and below-deck piping and electrical systems. The wave force exerted extreme pressure on the side of the girders, resulting in permanent deflection of these beams.

The Office of Structural and Technical Support of the MMS has responsibility of ensuring that the platforms operating on the Outer Continental Shelf are designed, fabricated, installed, and maintained in accordance with regulations. It is the operator's responsibility to report all major damage and receive approval for subsequent repairs. After the storm had passed, Chevron informed MMS of the damage and began developing and implementing a repair plan. In the final stages of the repair, the Chief of OSTs, Tommy Laurendine, sent Fung Chan and Sean Verret, both structural engineers with OSTs, to Petronius to evaluate the repairs for final approval before production could be resumed, nearly six months later.

The repairs Chevron implemented were documented by photographs and followed up by a final repair permit, including all pertinent design criteria and analysis results. The Chevron repairs included leaving the girders in their damaged state and adding additional beams. In the end, OSTs approved the repair and gave the green light for Chevron to begin producing 40,000 barrels per day again.

MMS, part of the U.S. Department of the Interior, oversees 1.76 billion acres of the Outer Continental Shelf, managing offshore energy and minerals while protecting the human, marine, and coastal environments through advanced science and technology research. The OCS provides 30 percent of oil and 21 percent of natural gas produced domestically, and sand used for coastal restoration. MMS collects, accounts for, and disburses mineral revenues from Federal and American Indian lands, with Fiscal Year 2004 disbursements of approximately \$8 billion and more than \$143 billion since 1982. The Land and Water Conservation Fund, which pays for cooperative conservation, grants to states, and Federal land acquisition, gets nearly \$1 billion a year.

#### **Relevant Web Sites:**

[MMS Main Website](#)

[Gulf of Mexico Website](#)

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[MMS: Securing Ocean Energy & Economic Value for America](#)  
U.S. Department of the Interior