

Greater New Orlea

# Offshore oil and gas industry adapts, but risks remain 10 years after Katrina



[<http://connect.nola.com/user/jenlarino/index.html>] By Jennifer Larino, NOLA.com | The Times-Picayune [<http://connect.nola.com/user/jenlarino/posts.html>]

Email the author | Follow on Twitter [<https://twitter.com/jenlarino>]

on August 19, 2015 at 10:28 AM, updated August 25, 2015 at 4:43 PM

Chris Steinmetz, general manager of Versabar in New Orleans, has a long and a short answer when asked what it takes to drag a 1,000-ton oil and gas platform from the bottom of the Gulf of Mexico. He prefers the short answer: a heck of a lot of engineering.

Versabar got its start in 1981, renting equipment for offshore construction. After Hurricane Katrina, the company was on the front lines of the oil patch cleanup. The destruction was on a level even industry veterans had not seen, Steinmetz said.

According to government data, Katrina destroyed 46 platforms and damaged 100 pipelines in August 2005. Massive waves sunk entire platforms and snapped seabed anchors. Hurricane Rita dealt a second blow less than a month later.

Back then, the industry prepared for a "100-year storm," Steinmetz said, which has a 1 percent chance of hitting in any given year. Storm surge from Katrina was that of a much stronger 400-year storm when it hit the Mississippi coast.

"Katrina and Rita redefined what the 100-year storm was," Steinmetz said. "It redefined what a storm could do."

Federal regulators and the oil and gas industry are quick to note no lives were lost or major spills reported offshore during Katrina despite the destruction. Environmental groups continue to challenge the spill claim, saying it airbrushes the impact of hundreds of smaller recorded spills.

Ten years later, regulators and industry say tougher design standards and better meteorological data have vastly improved hurricane safety offshore. Efforts to remove risky older, unused offshore structures are moving forward, though slowly.

Safety experts and environmental advocates are skeptical the industry is prepared for the next big storm. They say companies still have too much discretion in deciding when they shut down operations. Instead of drafting rules that push operators to prepare for worst-case storms, critics say regulators continue to be reactionary and heavily dependent on industry guidance.

## Storms force update for rig standards

Federal regulators estimate more than 3,000 of the 4,000 platforms in the Gulf in 2005 were in the direct paths of hurricanes Katrina and Rita, each of which halted production for weeks.

Together, the storms damaged 457 pipelines and destroyed more than 100 platforms. About 20 mobile drilling rigs experienced total failure, including nearly a dozen newer semi-submersible floating drilling units.



**Struggling neighborhoods need partners, not saviors: Anna Monhartova**  
[<http://www.nola.com/futureofneworlea>]

**New Orleans shouldn't let uneven recovery continue: George Hobor**  
[<http://www.nola.com/politics/index.ssf/>]

**After Katrina, New Orleans still plays a role in U.S relations with Venezuela**  
[<http://www.nola.com/politics/index.ssf/>]

**As marshes erode, how many coastal communities can we save?: Richard Campanella**  
[<http://www.nola.com/futureofneworlea>]

**Hurricanes Rita, Katrina, Betsy, Juan: 2015 year of key storm anniversaries in Louisiana**  
[<http://www.nola.com/hurricane/index.s>]

**All Stories**  
[<http://topics.nola.com/tag/hurricane-katrina-10th-anniversary/posts.html>]

Lars Herbst, director of the Gulf of Mexico region for the federal Bureau of Safety and Environmental Enforcement, said efforts to overhaul offshore standards for more severe storms began after Hurricane Ivan in 2004, but Katrina and Rita accelerated the process.

Today, Herbst said offshore platforms and pipelines are built to withstand higher waves, and stronger wind and currents, and new standards for rigs and platforms moored to the ocean floor aim to prevent the type of problems seen during Katrina and Rita.

Inspectors review how seabed soil, wave strength and other factors impact mooring systems before approving design plans, he said. Moored rigs must also be equipped with battery-powered GPS sensors that allow regulators to detect if a structure breaks free during a storm.

"If it's moving, we can monitor it," Herbst said.

Standards for how tall and how strong offshore oil and gas structures should be have been a moving target for the past century. Platforms built in the 1940s had deck heights 20 to 40 feet above sea level. By the 1990s, the 100-year storm wave crest design standard had risen to more than 70 feet.

After Katrina and Rita, the American Petroleum Institute released hundreds of pages of new design standards, including raising the 100-year wave crest height to 91 feet. The group developed stronger guidelines for tying down derricks, compressors and other platform features affected by storm winds. Government regulations drew heavily upon these standards.

David Miller, director of standards for the American Petroleum Institute, said better oceanographic data show storms intensify in warm, deep waters and in specific Gulf loop currents. Miller said API design standards now vary depending on where a structure is in the Gulf, something that did not happen before Katrina.

"We learned we needed to look at the Gulf as much more complex ecosystem," he said.

Miller said the industry is adapting and more prepared than it has ever been. "Standards are constantly being revised as we learn more from operations," Miller said.

### **Industry 'reactive, not proactive'**

Despite new standards, storms continue to threaten offshore structures. In 2008, Hurricanes Ike and Gustav destroyed 60 oil and gas platforms. Hurricane Isaac in 2012, a slow-moving, rain-heavy Category 1 system, did little harm offshore, but flooding from the storm lifted and overturned large oil storage tanks inland.

Robert Bea, a retired engineering-risk professor at the University of California at Berkeley, said each hurricane since has revealed a pattern -- industry and regulators are reacting to storms, not preparing for them.

Bea worked as a Shell executive overseeing offshore platforms during Hurricane Betsy in 1965. Shell's platforms survived, but he recalls reports of drilling rigs drifting and crashing into structures. He noted the same reports circulated after Katrina.

Bea said regulations and standards in the Gulf of Mexico are aimed at preventing past failures from happening again. Few rules push operators to actively make plans for the next, invariably stronger storm, he said.

"It's called waiting for the next failure," Bea said. "It's being reactive, not proactive."

Bea pointed to the North Sea for an example of a different approach. The industry there deals regularly with fierce, fast-forming storms. Most North Sea platforms are designed to keep crews safe during storms. Many have the ability to elevate decks to withstand waves 100 feet high or more. Bea said such structures can and do exist in the Gulf of Mexico, but they cost more to build.

In many ways, Bea said safety is a financial calculus. He fears industry is making the wrong calculation.

Bea noted oil and gas companies make the call on when to shut down operations before a storm, a situation that increases the risk profit is put before safety.

Past storms show idle platforms and pipelines and unused wells can pose a risk. Bea noted many companies delay removal for as long as possible because of cost.

Shortly after the BP oil spill, the Obama administration vowed to push operators to quickly plug abandoned wells and dismantle old platforms, known as the "Idle Iron" program.

The Associated Press reported in July **the number of unused wells in the Gulf has actually increased since 2010** [[http://www.nola.com/environment/index.ssf/2015/07/share\\_of\\_aging\\_temporarily\\_sea.html](http://www.nola.com/environment/index.ssf/2015/07/share_of_aging_temporarily_sea.html)], with nearly 14 percent of some 27,000 wells left with temporary seals for extended periods of time, sometimes more than a year. The Bureau of Safety and Environmental Enforcement told the AP the agency is making progress on its goal to permanently plug unused wells.

Environmental advocates say the risks during storms are huge. Many point to Taylor Energy's Mississippi Canyon 20-A platform, a newer structure that worked 550 feet above two dozen producing wells off the Louisiana coast until Hurricane Ivan destroyed it in 2004. The wreckage was removed, but oil continues to leak from the site to this day despite industry efforts to stop it.

Jonathan Henderson, coastal resiliency organizer with the Gulf Restoration Network, has logged 200 trips by air, boat and foot observing the impact oil and gas activity has on the Louisiana coast over the past five years. He said leaks, spills and toppled oil storage tanks remain the norm, even after relatively weak storms such as Isaac in 2012.

"I'm absolutely terrified of the prospect of another Category 5 storm hitting," Henderson said.

No major oil pollution occurred as a result of the destruction after Hurricane Katrina, though there were more than 100 "minor" incidents recorded, according to Bureau of Safety and Environmental Enforcement data. Spills that do not reach the coast and release less than 500 barrels of oil are considered minor.

Henderson said the impact of offshore failures will worsen with rising sea levels and an eroding coast. He added the 2010 BP oil spill raised another grave question: What happens if a Category 5 storm hits while a company is trying to contain a major oil well blowout offshore?

Few people inside or outside industry are talking about such a scenario, much less preparing for it, he said.

"The threat may seem surreal, but it's very much a possibility and nobody is planning for it," Henderson said. "That to me is unacceptable."

### **Lessons learned from storms**

Every day nearly 10,000 people wake up on a platform or a drilling rig in the Gulf of Mexico and go to work. The oil and gas industry says its priority is keeping those people and the places they work safe -- especially as more frequent and stronger storms become reality.

Phil Smith, general manager of emergency management and deepwater regulation for Shell in the Americas, oversees a team of about 80 company leaders who meet regularly to plan how to evacuate workers, secure operations and deploy boats, helicopters and other resources for a storm. Smith said Shell considers the cost of shutting down oil production, but safety is the priority.

"If there is speculation or some question about safety, we don't take those kind of chances," Smith said. "It's just not worth it to us."

Shell evacuated more than 2,000 employees and contractors working offshore before Katrina and Rita. The company spent more than \$300 million repairing Gulf infrastructure after the storms, including damage to its Mars platform where the storms toppled the latticework derrick and tore apart the rig floor. The underwater structure survived undamaged, and Mars returned to production in June 2006.

A decade later, Smith said hurricane planning is ongoing. In addition to design changes, Mars prompted the company to revisit hurricane checklists for crews, for example, detailing steps for tying down platform features, he said. The company uses an algorithm to deploy helicopters and other transportation efficiently. Shell's onshore storm base in Tangipahoa Parish was reinforced to keep power running during strong storms.

As Shell drills farther offshore, evacuation timelines have stretched from a few days to a week or more, Smith said. He said Shell's focus is returning offshore as quickly as safely as possible after a storm, rather than trying to see how far it can ride a storm out.

"That might upset investors or whoever, but that's the way it has to go," Smith said.

Herbst said the Bureau of Safety and Environmental Enforcement continues to work with industry to develop standards not just for designing structures, but for inspecting structures after a storm. He said it is possible for federal regulators to both learn from industry and uphold safety expectations.

"If we think it's a weak standard, we will not incorporate it at all," Herbst said.

Technology is also changing. Miller with the American Petroleum Institute noted modern rigs stay in place using electronic dynamic positioning systems, rather than mooring systems that connect to the seafloor. With enough notice, a rig can sail out of the path of a storm, he said.

**Low oil prices could raise risk**

If offshore safety is an economic calculus, the sharp downturn in oil prices will affect how the industry prepares for the next hurricane. Oil prices fell to a six-year low this month, down from nearly \$100 per barrel last summer to \$42.23 during Aug. 13 trading.

A wide range of energy companies work in the Gulf of Mexico, from the small, independent oil company on the well-explored Outer Continental Shelf to the major integrated corporations exploring the ultra-deep waters. The entire industry is slashing spending and cutting jobs.

Bea said companies under financial pressure are more likely to take safety risks. "The economic cost squeeze is on big time," Bea said, adding smaller companies are squeezed tightest.

In Harvey, Versabar's Steinmetz is more optimistic. Steinmetz said Katrina destroyed much of the older oil and gas infrastructure in the Gulf of Mexico. As damaged platforms are removed and older equipment replaced, the likelihood of widespread failures is lower, he said.

Today, a large portion of Versabar's work is in offshore cleanup. The company designed on a one-of-a-kind floating lift vessel that could safely pull entire platforms from the seabed.

"We're slowly getting those older structures out of there," he said. "We're getting there."

---

**Best of NOLA.com**

<p>Why leave N.O. this summer with these 12 festivals?...</p>	<p>Latest news on Saints &amp; summer training</p>	<p>Latest from our NOLA Neighborhoods series</p>
---	--	--

---

Registration on or use of this site constitutes acceptance of our [User Agreement](#) and [Privacy Policy](#)

© 2015 NOLA Media Group. All rights reserved ([About Us](#)).

The material on this site may not be reproduced, distributed, transmitted, cached or otherwise used, except with the prior written permission of NOLA Media Group.

Community Rules apply to all content you upload or otherwise submit to this site. Contact [interactivity management](#).

 [Ad Choices](#)