



Riders on the Storm: Stopping and Restarting Offshore Oil and Gas

Posted by [JoulesBurn](#) on September 8, 2008 - 8:15am

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It has been five days since Hurricane Gustav blew through town, and industry is still [working](#) to restore the flow of oil and gas from offshore production platforms in the Gulf of Mexico:

Meanwhile, about 47 percent of more than 700 stationary offshore platforms in the Gulf of Mexico remained evacuated Friday, according to the Minerals Management Service in New Orleans. The agency also said that 34 of 121 oil rigs remained unmanned.

Under the fold the latest from the industry on the LOOP, Port Fourchon, and other infrastructural concerns.

Likewise, the [LOOP](#) (Louisiana Offshore Oil Port) has reopened. However, it is [running on backup power](#) such that only one tanker at a time can be drained of oil. Commercial power might not be restored to the offshore terminal for **another week or two**.

With [Hurricane Ike](#) possibly [headed for the same area](#) in about five days, one might consider whether it is worth the effort to go back out there and restart things until the latest storm passes. What is the process for shutting down production and evacuating prior to the storm? What (and how long) does it take to do the reverse?

[This document](#) (1 MB pdf) from the National Ocean Industries Association provides some answers to these questions and well as information on regulations for platform design and operations with hurricanes in mind. For example, here is the shut-down procedure in brief:

- Evacuation Phase 1 - Receive Storm Notification
 - Review operations forecast.
 - Communicate with air and marine transportation providers.
 - Perform safety system checks.
- Evacuation Phase 2 - Complete Preparations
 - Secure all equipment.

- Test communications systems that enable monitoring from shore.
- Evacuate non-essential personnel.
- Evacuation Phase 3 - Shut Down and Evacuation
 - Shut-in wells and subsurface safety valves
 - Close incoming and exit pipelines
 - Shut down operating systems
 - Transport remaining personnel to shore

And here is the start-up:

- Visual Inspection of Affected Area: Operators perform fly-by inspections of facilities for preliminary assessment of damage.
- Pre-Boarding Safety Meeting: Facility personnel and managers meet to review post-storm inspection information.
- Damage Assessment: Core personnel return to the facility to conduct a more thorough review, which may be complemented by data underwater ROVs (Remotely-Operated Vehicles).
- Equipment Integrity Verification: Review of the physical topside structure and the pipelines is completed.
- Safety System Function Test: Individual systems are brought back on-line to be tested one at a time.
- Facility Startup.

Once shut down, the biggest problem is with damaged pipelines on the sea floor. These can often be repaired or bypassed without too much delay, but damage to the platform itself is a much bigger headache. The poster child for a platform suffering from a bad air day is the Thunder Horse platform, which was [left atilt](#) by Hurricane Dennis in 2005.



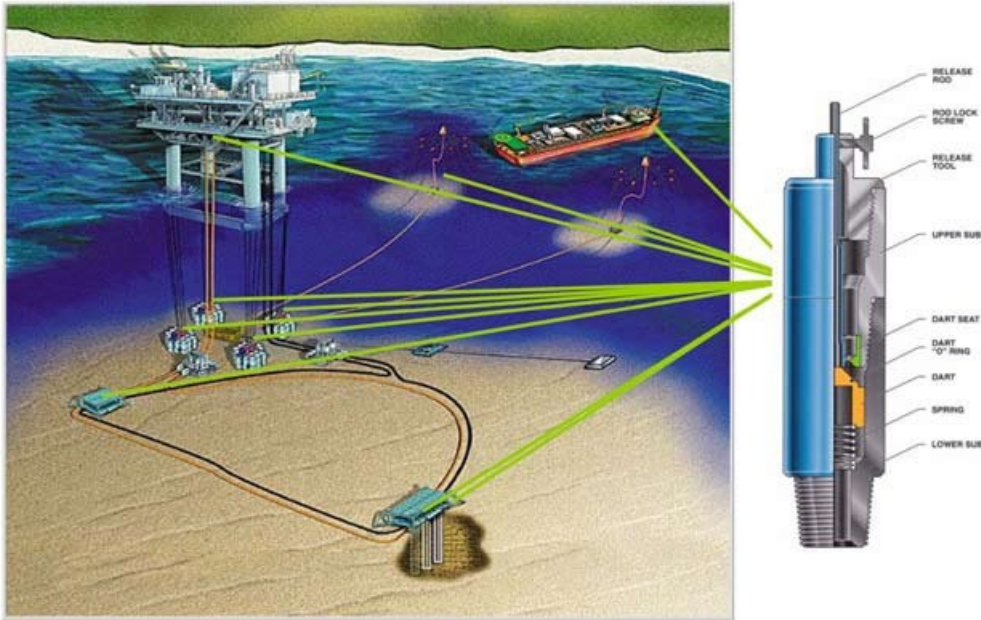
Shell's Mars Platform stayed upright during Hurricane Katrina, but it took [nine months](#) to restore the oil flow -- no small feat given the photo below:



At the time that the above-linked NOIA pdf was written, 343,000 BPD of production was still shut in from platforms damaged by hurricanes the previous summer (2005).

A more politically-sensitive issue is environmental risks from hurricane damage, and the NOIA document highlights the various technologies -- mandated by regulations -- which prevent the spillage of oil from ruptured pipelines.

All offshore platforms are equipped with safety valves that shut-in oil and natural gas in the event of storm damage. These valves lock closed at regular intervals so that oil or gas cannot flow if equipment is broken or separated. Every single safety valve held during the 2005 hurricane season.



Most of the damage to platforms has occurred on structures built prior to the 1988 regulations. I don't know, however, to what extent that older infrastructure has been retrofitted with equipment designed to prevent spills. Given the current volume level of the offshore drilling issue during the 2008 US Presidential election, an incident of any consequence due to Ike (or perhaps Kyle) will easily ratchet the noise up to a level of [eleven](#).



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