



Weather Impacts on the Offshore Construction Industry

A Brief Overview

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Ron Hughes, Global Industries



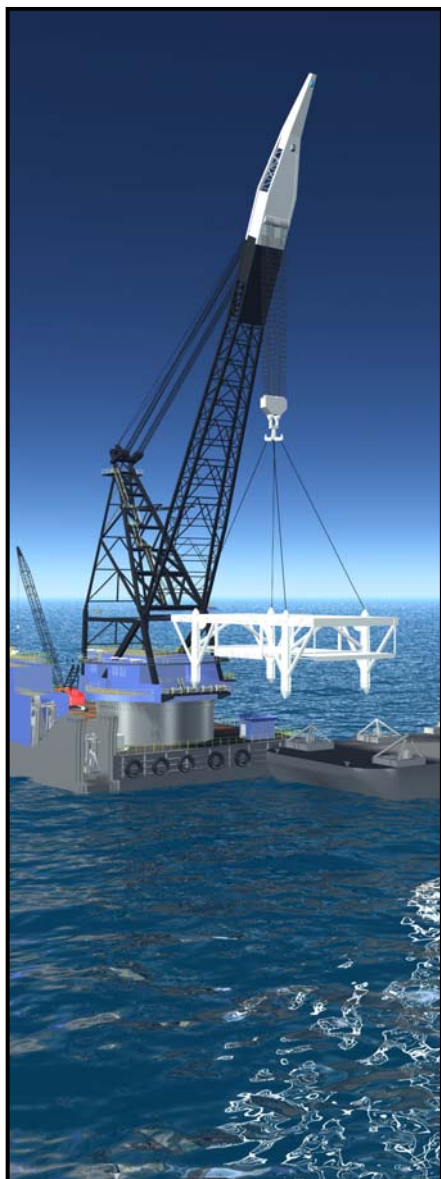
Agenda

1. Offshore Construction
2. Importance of Gulf Of Mexico
3. Impact of Significant Weather
 - a) Hurricanes
 - b) Loop Current
4. Questions





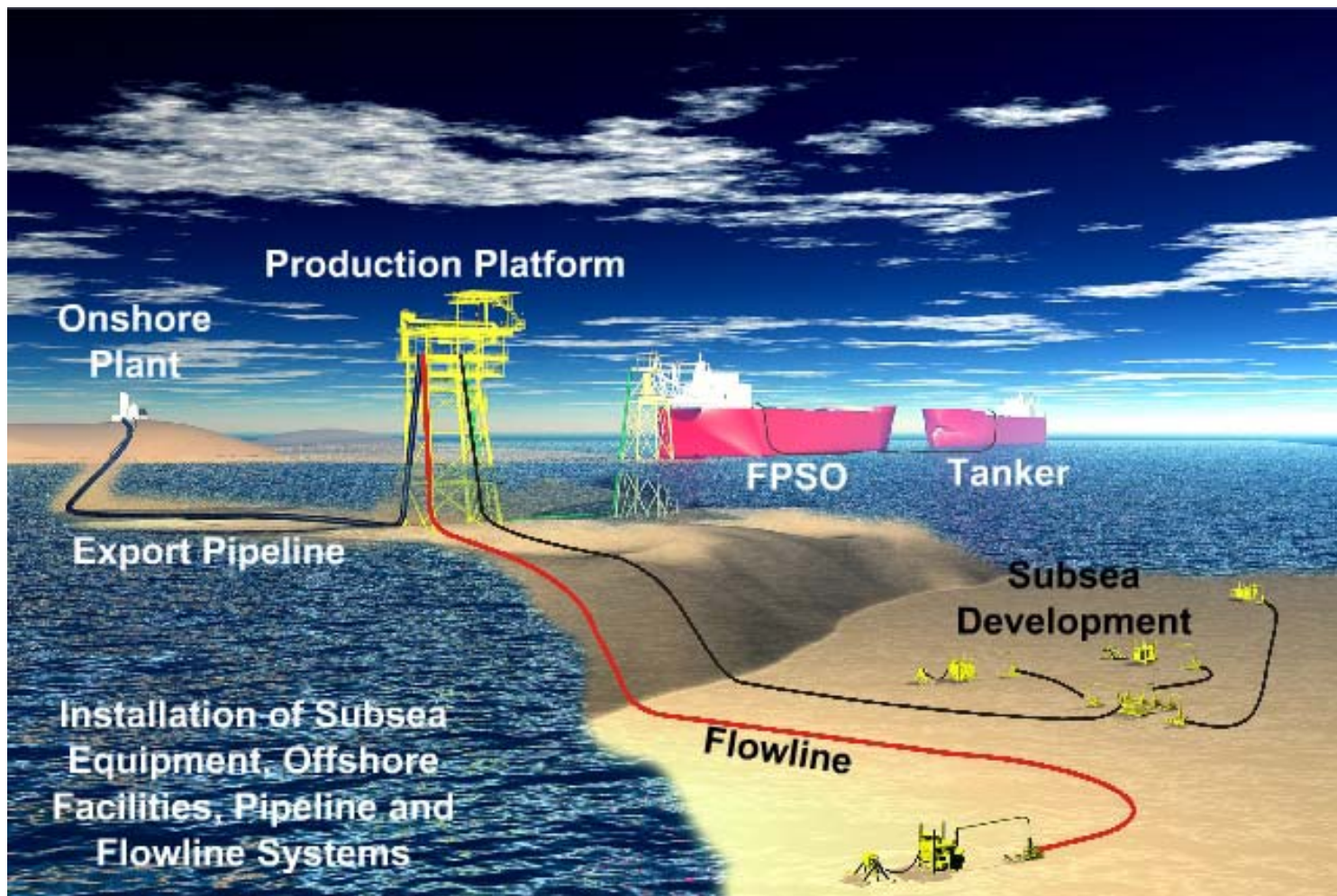
Company Overview: Summary



- Leading provider to the worldwide oil and gas industry of offshore construction, engineering, project management and support services including pipeline construction, SURF installations, platform installation and removal and diving
- Operations in the Gulf of Mexico, West Africa, Asia Pacific, Middle East, India, Latin America and Mexico's Bay of Campeche
- Founded in 1973; public since 1993
- Nasdaq Global Select: GLBL
- Headquarters in Carlyss, Louisiana; worldwide administrative offices in Houston, Texas
- Approx. 5,000 employees worldwide
- Marine Fleet: 30 Vessels

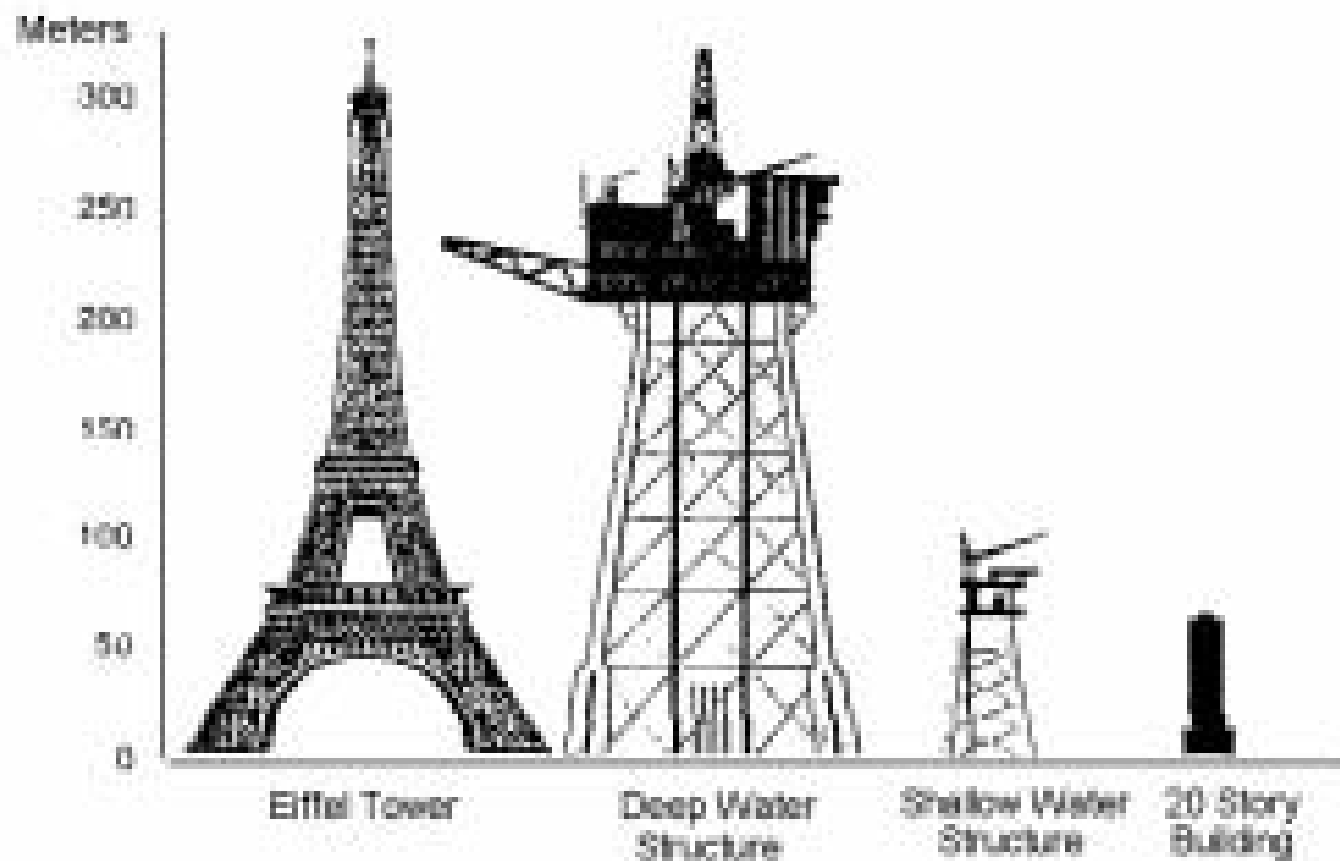


Offshore Field Development





Platform Size Comparison

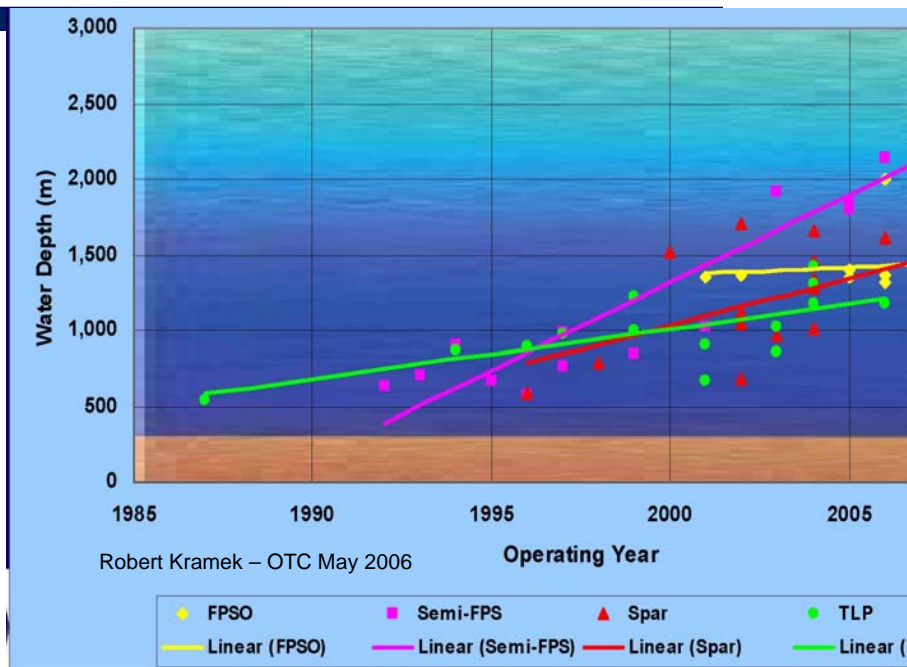


Deep Water Jacket shown weighs approximately 20,000 tons – Eiffel Tower weighs 7,100 tons



Typical Project

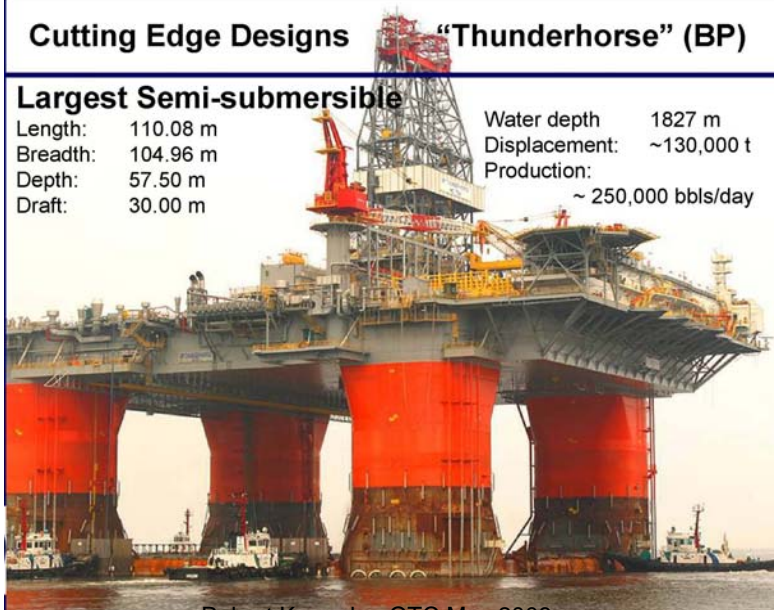
- Heavy lifts
- Expensive equipment
- Complex engineering
- Challenging Environment
- Highly weather dependent



Cutting Edge Designs “Thunderhorse” (BP)

Largest Semi-submersible

Length:	110.08 m	Water depth:	1827 m
Breadth:	104.96 m	Displacement:	~130,000 t
Depth:	57.50 m	Production:	~ 250,000 bbls/day
Draft:	30.00 m		

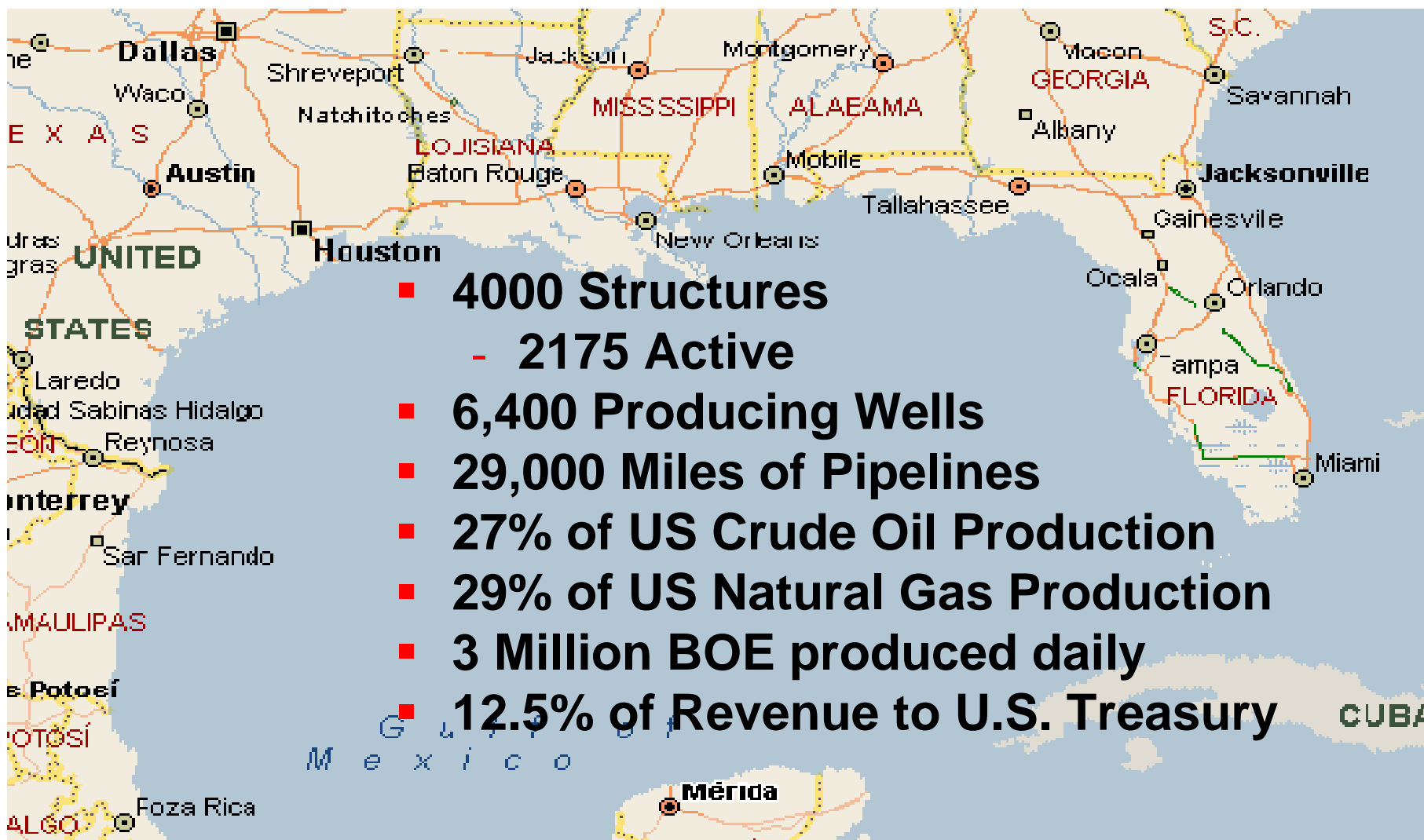


Robert Kramek – OTC May 2006





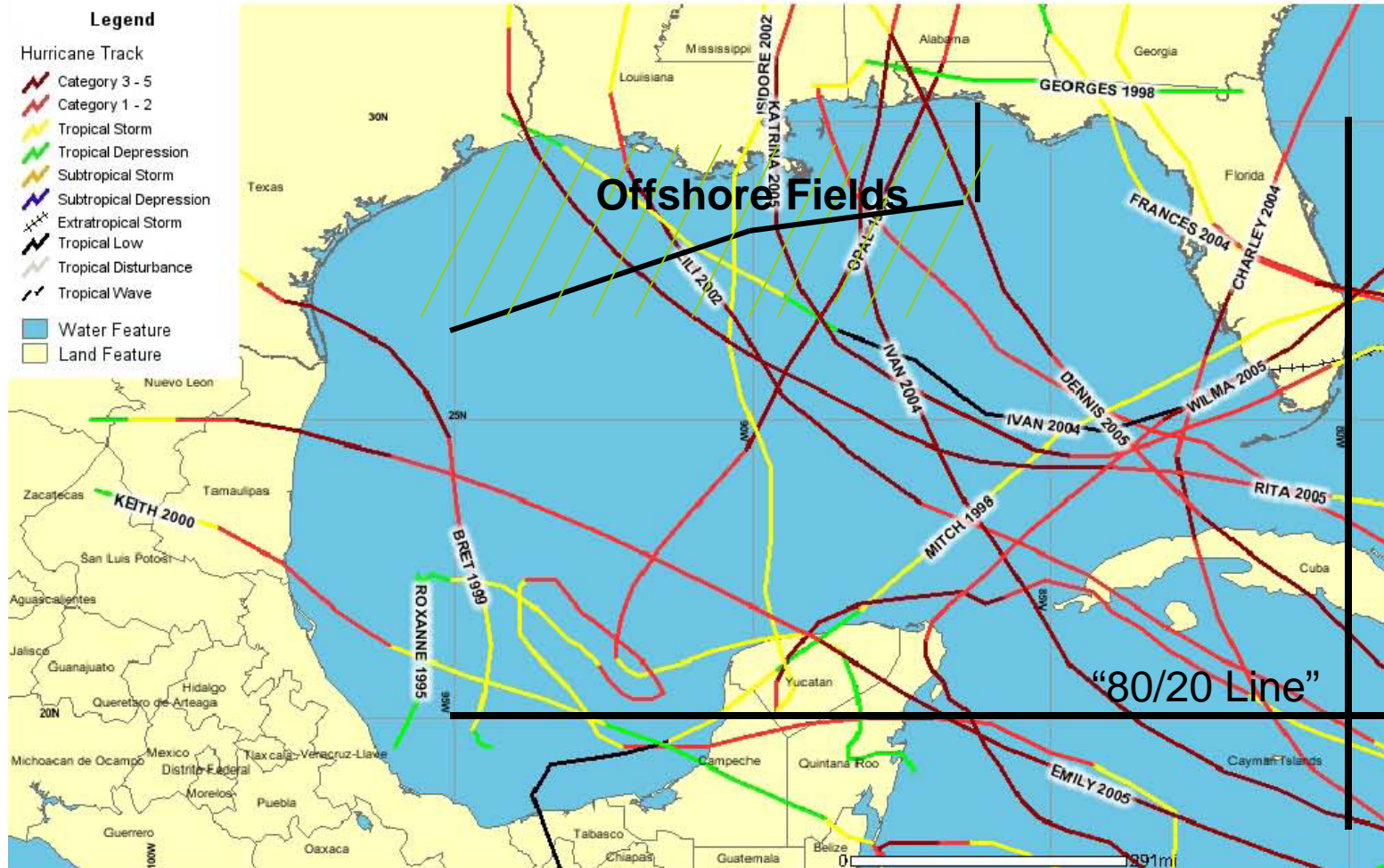
U. S. Gulf of Mexico



Hurricane Tracks vs Production



Figure 2. Major Hurricanes in the Gulf of Mexico, 1995-2005

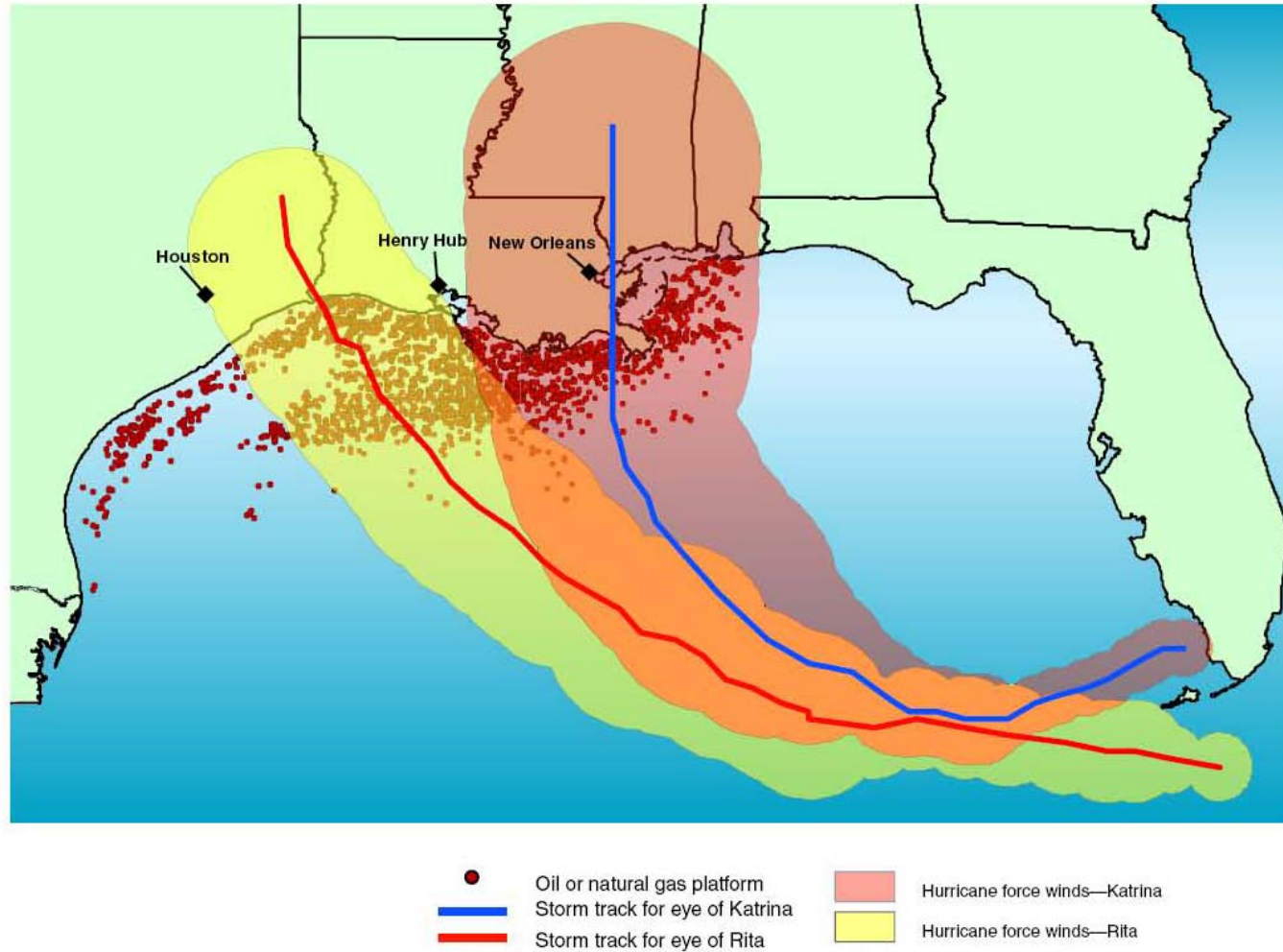


Source: National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center (<http://hurricane.csc.noaa.gov/hurricanes/>)

2005 Season

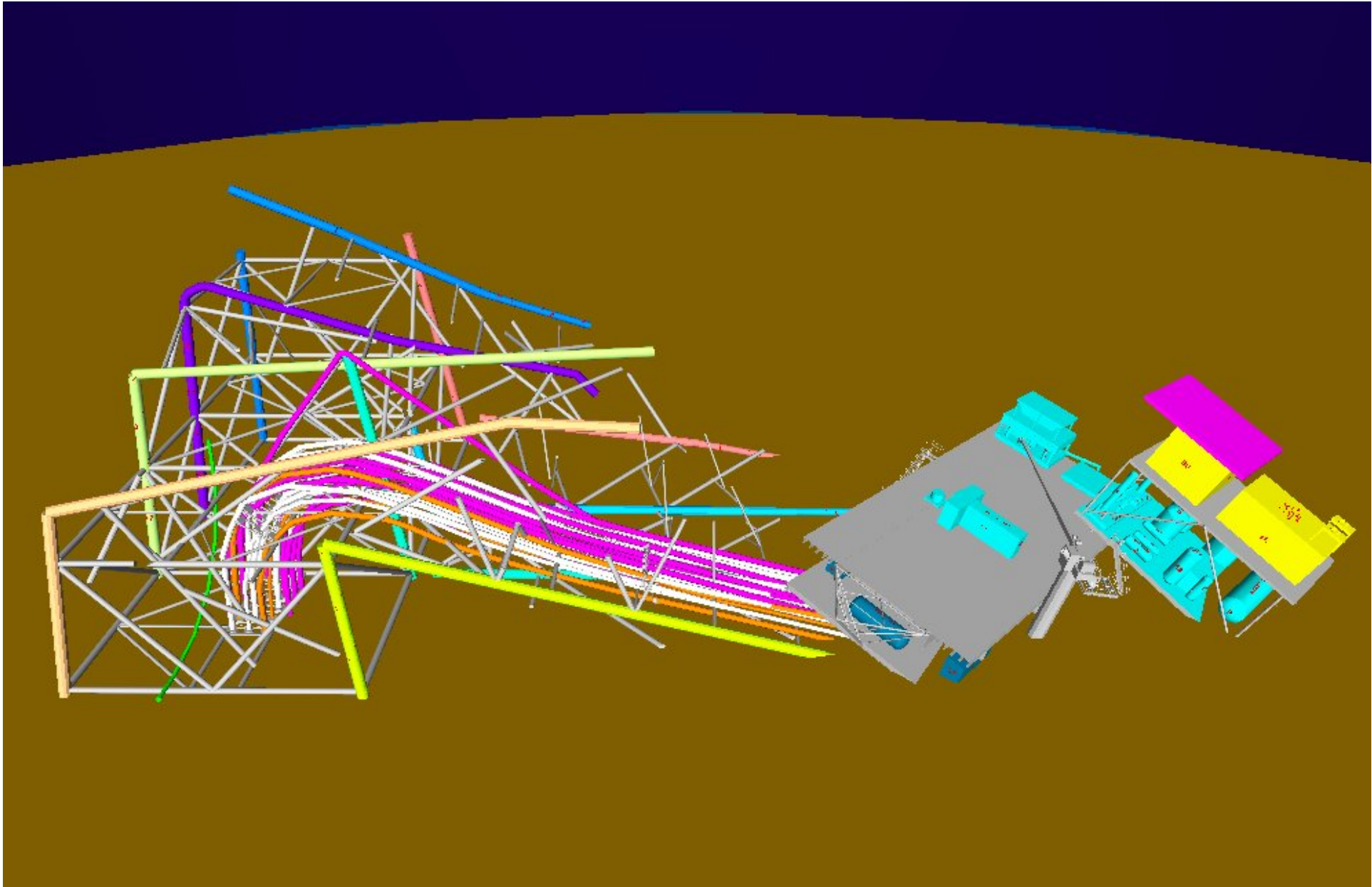


**Figure 3. Hurricanes Katrina and Rita
Relative to OCS Oil and Natural Gas Production Platforms**



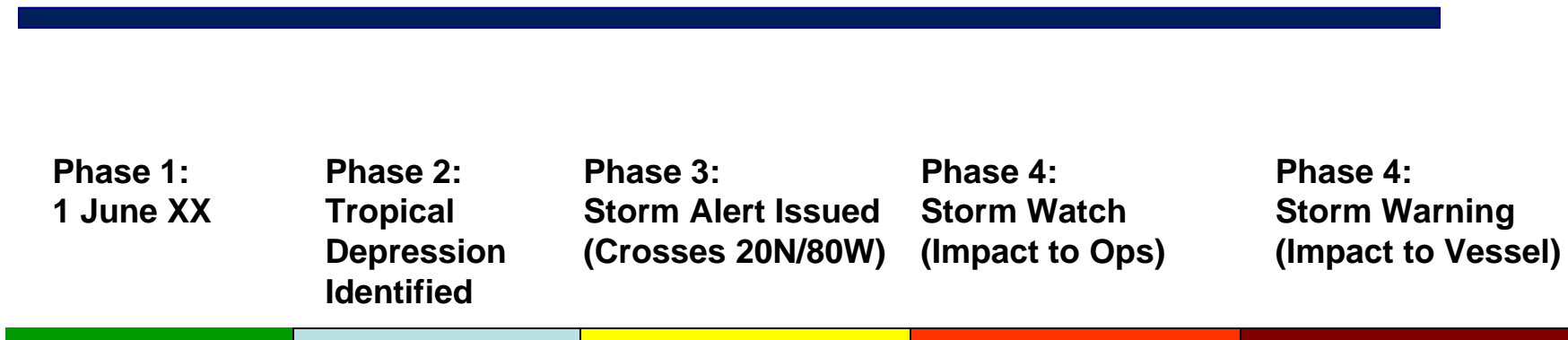
Source: Government Accountability Office, “Natural Gas: Factors Affecting Prices and Potential Impacts on Consumers” (GAO-06-420T), February 2006.

Post Hurricane Model of Downed Platform





Decision Flow....



Planning
Preparation
Supply Inventory
Hurricane Awareness

Dispatcher Awareness
Collect Data
Monitor Wx Buoys
Notification Procedures

Cease Saturation Diving
Identify Storm Watch/
Warning Radii
Formulate Courses of Action
Advise Tugs/utility vessels
Remove Non Essential Personnel
Notify Clients

Dispatch tugs to Sea Bouys
Cease Operations.

Dispatch Addt'l tugs as nec.
Arrange crew Transportation
Secure Equipment
Return Mat'l Barges to safe
Anchorage
Anchor tugs remain with
barges

- A. Secure from Operations
- B. Recover all anchors
- C. Tow to Safe Harbor
- D. Tow to Designated Anchorage
- E. Tow away to Fair Weather

$1 \uparrow$ Storm Watch Radius: $[A+B+(C \text{ or } D \text{ or } E)] \times (\text{Storm Speed}) = \text{Storm Watch Radius}$
Storm Warning Radius: $[B+(C \text{ or } D \text{ or } E)] \times (\text{Storm Speed}) = \text{Storm Warning Radius}$



Loop Current Activity



Loop Current

Gulf of Mexico Ocean Current Monitoring

In response to reports of high currents, both at the surface and at depth, the MMS has issued a Notice to Lessee's (NTL) requiring that currents be monitored from mobile offshore drilling units (MODU's) and floating production platforms in the Gulf of Mexico. A requirement of the NTL is that industry must send current data to the National Buoy Data Center (NDBC) for posting on a website. The public may view the data in an almost real-time mode.

[NTL 2007-G17, Deepwater Ocean Current Monitoring on Floating Facilities](#)
[National Data Buoy Center](#)



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