"Preparation: Paves the Path to Success"

Presentation to

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Discussion Topics:

- The Deepwater Horizon (DWH) Incident
- DWH Response
  - MSRC Response Effort: A historic view
- "Preparation: Paves the Path to Success"
  - The 6 "P's": Critical Success Factors
- The Foundation:
  - MSRC Capability Pre-DWH
- Preparation for the Next Response:
  - post-DWH
  - The MSRC "Deep Blue" Expansion Program
- Closing Comments

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Deepwater Horizon Incident: Background

- **Drilling exploratory well in Mississippi Canyon 252 (MC-252)**
  - **About 40nm (64km) offshore Louisiana**
- **At 21:45 hrs, 20 April 2010: Explosion and fire**
  - **11 workers lost**
- **BP initiates response**
  - **Search and rescue operation**
  - **Source control**
  - **Mechanical recovery**
  - **Dispersants**
    - **aerial & sub-sea**
  - **Burning**
  - **Shoreline Protection**
  - **Plus many, many other activities**

Source: Wikipedia

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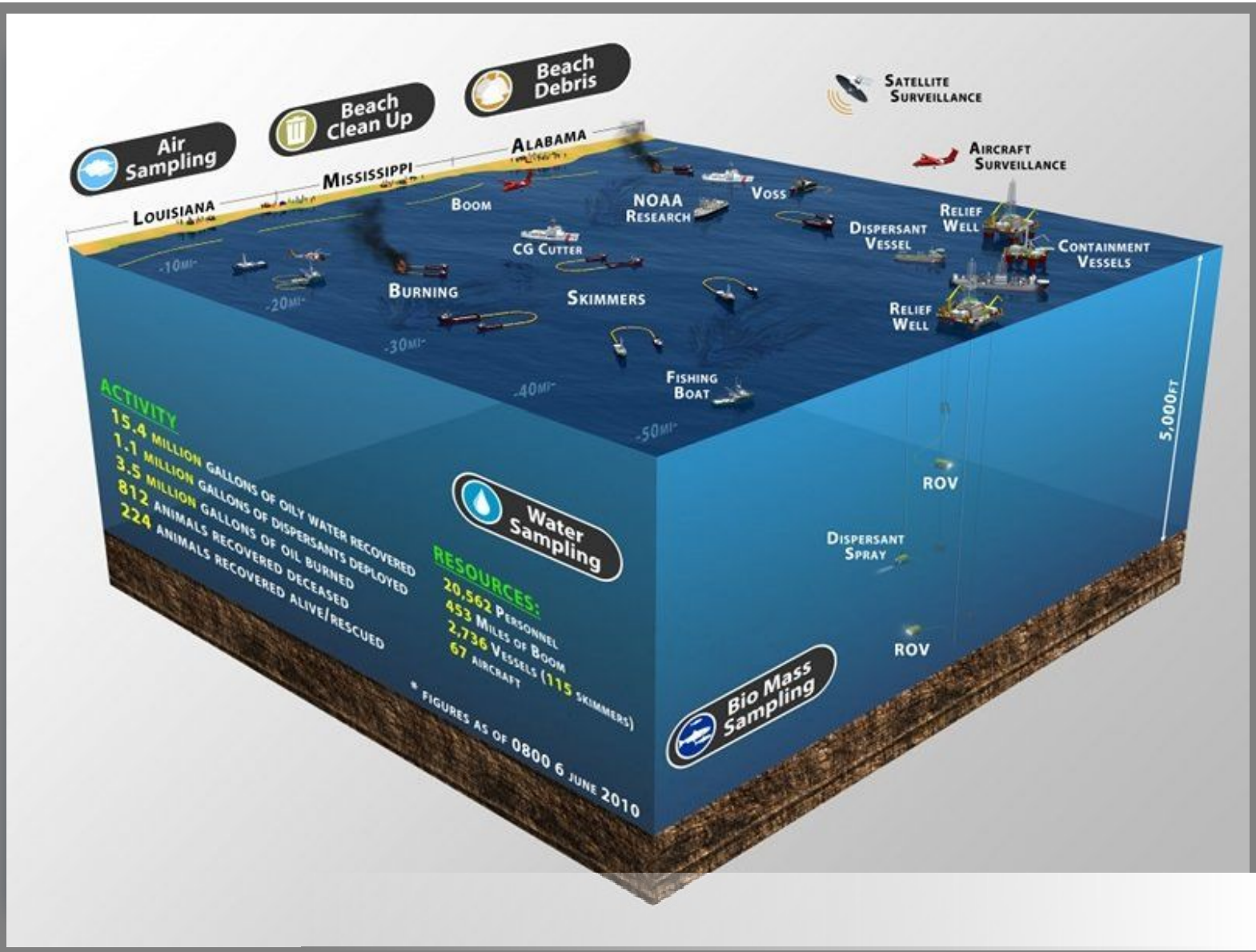
Deepwater Horizon:
April 21-22, 2010

DWH Response:
Multiple Tactics & Tools Utilized



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Deepwater Horizon Spill: A Snapshot in Time

Deepwater Horizon Spill: May 24, 2010

Source: NASA Terra Satellite

DWH Response: Background

- **Morning 22 April: Rig sinks**
  - **Water depth: ~5,000' (~1,524m)**
  - **First report of oil sheen on water**
- **BP ramps up unprecedented response**
  - **President declares DWH a "Spill of National Significance" (SONS)**
- **15 July: "capping stack" cuts off flow of oil**
- **19 September: relief well kills "Macondo Well"**

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DWH Incident: Immediate Aftermath

- **Rule Changer: The DWH incident has and will continue to change US Energy policy for the foreseeable future**
- **Moratorium was issued to halt drilling of new wells offshore US**
- **Public perception and awareness of the spill at unprecedented level**
- **24/7 news, cable and social medium (Twitter, Facebook and others) were key drivers of public sentiment**
- **Finally, was catalyst for new oil spill response planning requirements and Agency oversight (and expectations)**

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MSRC Role in DWH Response:

- **With any spill, it is important to recognize the role of the participant**
- **MSRC was the single largest oil spill response contractor**
- **MSRC provided services including:**
  - **Mechanical recovery**
  - **Dispersant Services**
  - **In situ burn**
  - **Emergency Communications Services**
  - **General Contractor for hiring of subcontractors**

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MSRC Role in DWH Response:

- **As important, MSRC was <u>not</u> involved in:**
  - **Relief well drilling activities**
  - **Subsea Well Control Efforts**
  - **Drafting of Federal Response Plan or Spill Management**

Photo Source: Google Images

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MSRC Mechanical Recovery Response:

- 12 "Responder" Class Oil Spill Response Vessels (OSRVs)
  - Including 2 California based OSRVs which were routed via Panama Canal in unprecedented move
- 3 Ocean-going barges
- 22 Shallow Water Barges
- 6 Fast Response Vessels
- 71 Marine Assets
- 42 Skimmers
- ~65,000 ft (~20,000m) of boom

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MSRC Dispersant Services:

- King Air 90 based at Stennis Airfield in Mississippi was immediately activated
- C-130 based in Coolidge, Arizona was immediately activated and relocated to Stennis Airfield
- MSRC coordinated all dispersant logistic services for Stennis based aircraft including:
  - 4 C-130s
  - 4 U.S. Air Force C-130s assigned to work with industry
  - ~801,000 gallons of dispersant sprayed from Stennis based aircraft
- Dispersant Capability was developed in absence of any Regulatory requirement
  - Key concept in Preparedness

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MSRC In Situ Burn Support:

- **MSRC provided 9 in-situ burn kits**
  - **Long lead time for manufacture make burn systems a critical inventory item to be able to utilize this tool**
- **MSRC provided support personnel**

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Emergency Communications Response:

- 5 Emergency Satellite Communications Packages
- Personnel (76)
  - MSRC (30)
  - Specialized Contractor Companies (46)
- Services included:
  - Full deployment and support
  - Telephone and Data Internet support via satellite link
  - Established emergency communications until permanent systems were in place

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MSRC General Contractor Services

- **52 Contractors**
  - **7,278 contract personnel at peak of activities**
- **Services included:**
  - **Shoreline Clean-up (pre and post impact)**
  - **Boom deployment**
  - **Skimming operations**
  - **OSRV Back-deck Operations**
  - **Shallow Water Response Operations**
  - **Logistics Support**
  - **Safety**

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Preparing for a Spill: The 6 "P's"

- **Key Success Factor:**

"Preparation: Paves the Path to Success"

Or, stated another way:

"Proper Planning & Preparation
Prevents Poor Performance"

Key question: How do you get there?

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Preparing for the spill: The 6 "P's"

- **Commitment of Customers/Members:**
  - Capital to buy equipment
  - Operating Budget
    - Hire, retain & train personnel;
  - Support long-term readiness posture
    - This includes maintenance; Quality Assurance drills and Quality Control Inspections
  - New initiatives
    - Certified dispersant spray aircraft
  - Train, drill and work together ***BEFORE*** oil spills onto the water
- **Then --- build off a strong base of assets**

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MSRC Responder Class OSRV

- 15 Dedicated Oil Spill Response Vessels nationwide
  - Dedicated special purpose
- High capacity skimming systems
  - Boom-oil containment
  - Storage
- Floating inventory of ocean boom for enhanced "U" skimming
  - ~2,240m on Gulf of Mexico OSRVs post DWH

- 210 ft (64m) length
- 12 knot speed of advance
- 4,000 bbl (636m^3) temporary storage
- 2 Oil water separators

- Berthing for 38
- Medical facility
- Helicopter deck
- Command and control capability

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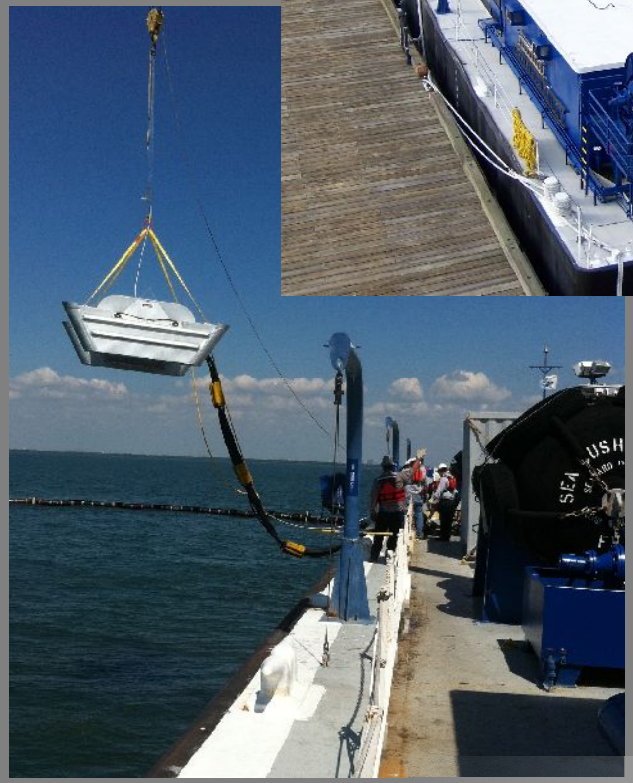
Oil Spill Response Barges (OSRBs)



- Converted from oil storage to skimming barges
- 19 Barges Nationwide
  - Dedicated
- High capacity skimming systems
  - New technology dual skimmers
  - Boom-oil containment
  - Storage
- Floating inventory of ocean boom for enhanced "U" skimming
  - Approximately 2,600 ft each post-DWH

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Protected Water Systems

- **Fast Response Vessels (FRVs)**
  - 47 ft. (14.3m) length
  - 26 knot
  - Lori Brush skimmers
  - 50 bbl (~8 m^3) storage

- **Shallow Water Response Barges (SBS)**
  - 2 Pontoons
  - Self propelled or push boats
  - GT 185 skimmers
  - 400 bbls (~64 m^3) of storage
  - Draws 3 feet (<1m)of water

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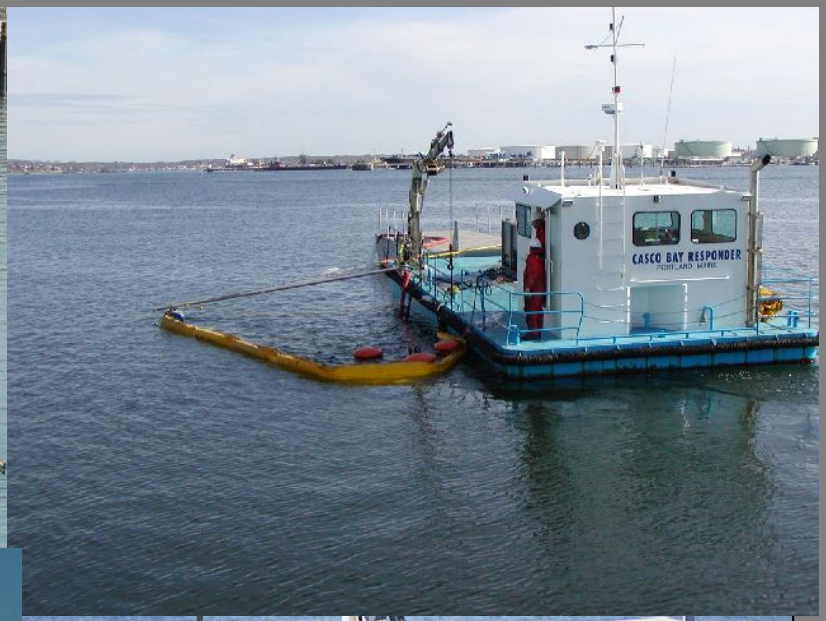
Protected Water Systems



MSRC Dispersant Services

MSRC Customer's desire for preparedness drove new program development and multi-year funding prior to regulatory requirement

Source: MSRC

Emergency Communications Services

- **Emergency Communications Packages**
  - Use in spill and non-spill emergencies
  - Suites provide marine and aviation radios
  - Dedicated satellite access
  - Independent telephone system (96 phone stations per suite)
    - ✓ Use at operating facilities avoids co-mingling with operations
    - ✓ Fulfills regulatory requests to move command centers to other locations with little infrastructure support
- **30 Full time Communications & IT experts on staff**

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MSRC Services - Spill Response

- **The single core component to any successful response?**

Trained & Qualified Personnel

- **Experience on over 700 spills in last 20 years**
- **Extensive use of proven MSRC Health & Safety procedures, training protocols, management systems & procedures**
- **Extensive GOM experience including multiple responses during Hurricanes *Katrina/Rita* (2005)**
  - **Lessons learned from *Katrina* were recycled back into operations plan**
- **Continuous improvement.**
  - **Extensive tactical lessons learned from DWH are being recycled back into operations plan**

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Post-DWH Expansion: The MSRC Deep Blue Program

- With a US moratorium in place prohibiting drilling new wells, MSRC's funding members challenged MSRC to quickly expand response capability for GOM Operations
- In short order, MSRC set off a worldwide procurement of various asset types.
- This geographic expansion was termed .....

"Deep Blue"

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Conversion of Platform Supply Vessels (PSVs) for dual service Oil Spill Response

- **Five (5) Platform Supply Vessels (PSVs) were converted for dual mission**
  - Daily mission: PSV Service to rigs
  - Oil Spill Response capable
- **Outfitted with:**
  - Skimmer
  - Boom
  - Daughter Craft
  - Reduced visibility capability
  - Tanks converted for recovered oil
- **MSRC Partners:**
  - Hornbeck Offshore Services (2)
  - Edison Chouest Offshore (3)

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Converted Deep Blue Dual Mission PSVs:

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MSRC Deep Blue Program: Skimmers

Procured High Capacity, High Efficiency Skimmers: 5 PSVs, 2 “Responders” & Skimming Barges

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MSRC Deep Blue Program: Ocean Boom

- **Procured ~69,000’ (~21,000m) Ocean rated boom**
- **Special sized to commingle with existing MSRC inventory**
  - **1.70m height**
- **Stored in Gulf of Mexico on OSRVs, OSRBs and PSVs**

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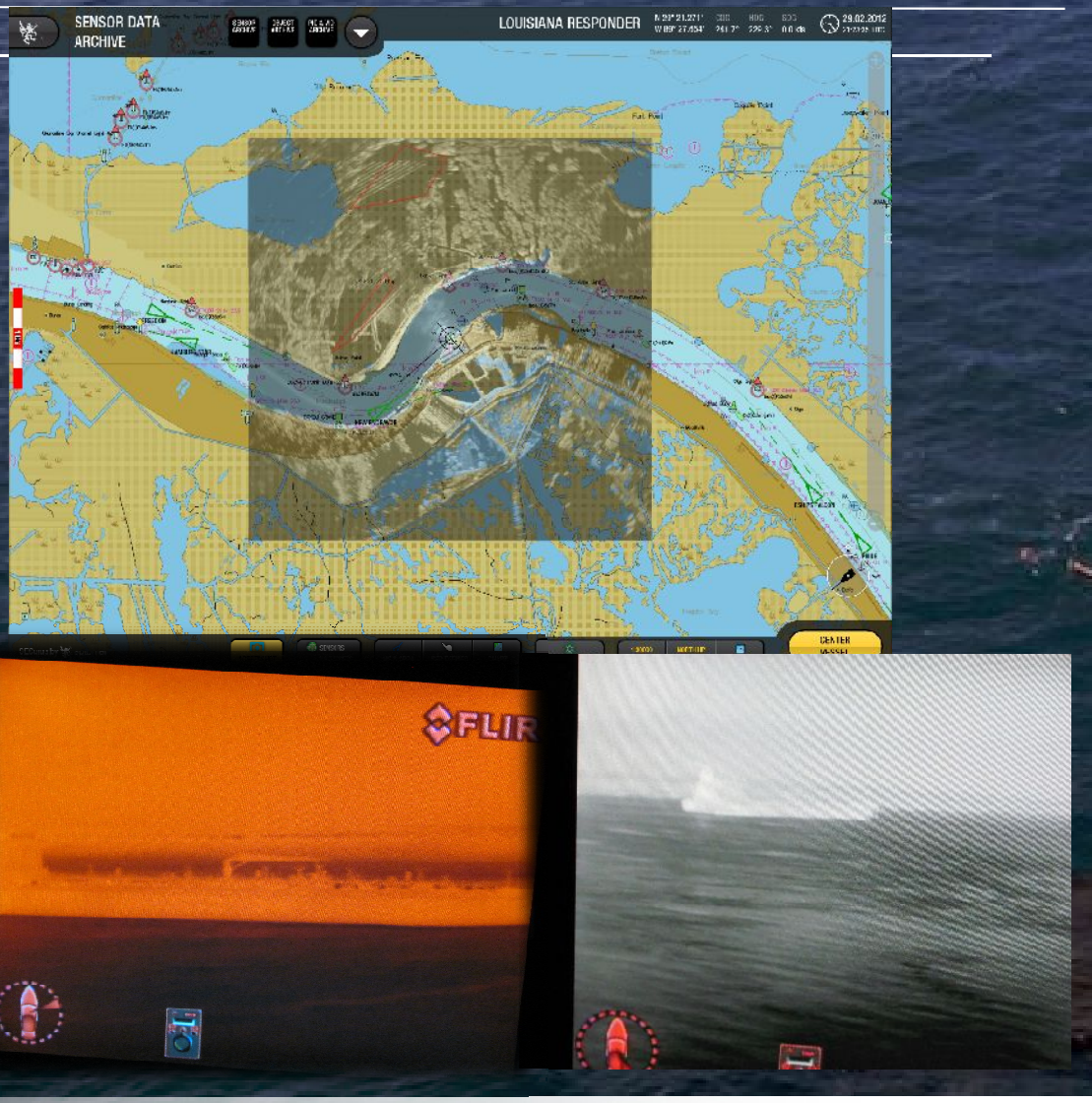
MSRC Deep Blue Program: Ocean Boom on OSRVs

MSRC Deep Blue Program: Low Visibility Capability

- Capability added to Gulf area OSRVs, OSRBs and PSVs
  - Rutter X-Band Oil Spill Detection & FLIR Infra Red
  - Communications on OSRBs
- Expansion to 8 remaining "Responder" Class OSRVs in '12



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MSRC Deep Blue Program: Low Visibility Capability on GoM Barges

MSRC Deep Blue Program: Burn Kits

- **Burn systems:**
  - **MSRC Procured 20,000’ (6,098m) new fireboom**
  - **Total fireboom inventory:**
    - **22,500’ (6,860m)**

MSRC Resources: Post Deep Blue Expansion

- Largest oil spill response organization worldwide
- 10 times the size (equipment and personnel) of other US national response organization
- $500 million initial capitalization

Asset Roll-Up:

- 453 Dedicated personnel
- 85 Equipment sites
  - 36 Manned sites
- 50 Oil Spill Response Vessels (OSRVs)
  - 15 x 210 ft (64m). OSRVs
  - 5 x Fast Response Vessels (FRVs)
  - 5 x PSVs (85 – 113m)
- 19 Oil Spill Response Barges (OSRBs)
  - Capacity from 12,000 – 68,000 bbls (1,907 – 10,811m^3)

- 68 Shallow Water Skimming Barges
- 654,000 ft (~200,00m) of boom
  - Various all sizes
- 293 Skimming Systems
- Low visibility electronics
  - Enhanced X-Band Radar
  - Infra Red Capability
- Fire Boom Systems
  - 22,500' (6,860m) dedicated in-house
  - Access agreements

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Regional Response Centers and Areas of Operation: Post Deep Blue

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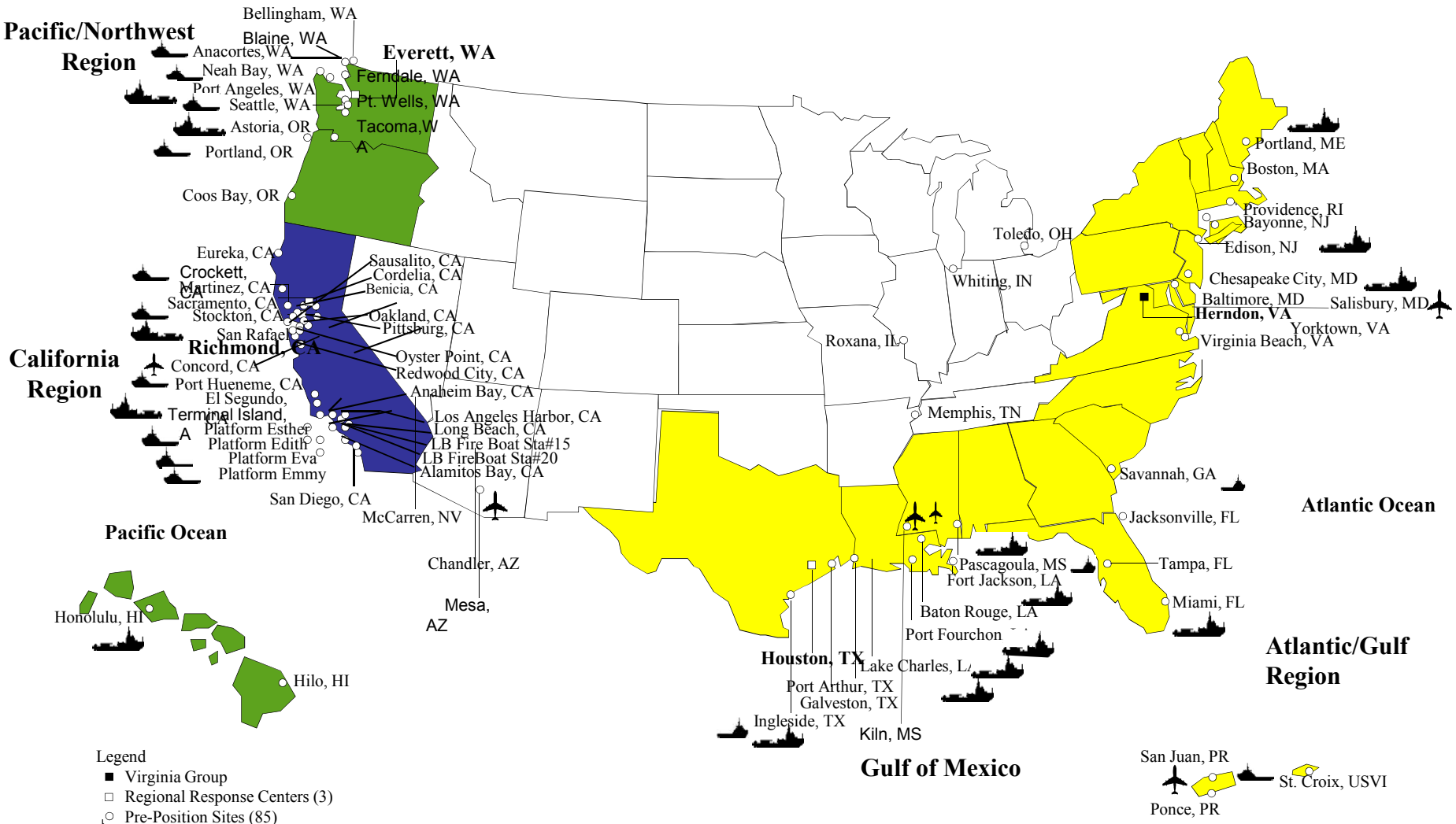

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Closing Comments:

- The Deepwater Horizon response effort was unprecedented
- This said, if one were balanced in their review, it was a great success--
  - Operations were accomplished safely; minimal health and safety issues
  - Operations were accomplished promptly
  - Minimal shoreline impact of oil
  - Strong working relationships inside response organization
  - Excellent support (financial and working) from BP
  - BP acted responsibly and committed beyond US Limits of Liability

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Closing Comments:

This said, there were challenges and lessons to be contemplated before the next response:

- **How to deal with perception of oiled beaches and tainted seafood, which led many to shy away from area?**
  - **Economic impact?**
- **Dispersants and burning were successfully used.**
  - **How to ensure that these tactics are available for use in future responses as a recognized "tool in your response toolbox"?**

- **In the internet era, how does a responding company deal with images such as these shown 24/7?**

- **How does one use information, and social media/internet to *change* the public perception of the response?**

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Closing Comments:

- **Economic Costs:**
  - **BP is one of the largest companies in the world**
  - **Response costs are estimated in the US$billions**
    - **US$17.7 billion as of 12/31/2010 (per BP website)**
  - **Third Party Damages and Penalties could add additional US$billions**

- **Continuity of Response Operations:**
  - **"What if?" the spiller does NOT have the financial wherewithal to continue to act responsibly, as BP did?**
  - **In US, we have the Oil Spill Liability Trust Fund (OSLTF) at US$1Billion**
    - **Not adequate in case of a spill similar to DWH**
  - **How does a responsible responder ensure its fiscal continuity? Oil spills are terribly expensive and require significant cash flow. What steps are to be taken? Who are to take them? And When?**

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Closing Comments:

- **Ensuring the long term commitment by plan holders --**
  - **Every day post-DWH, human nature will tend to minimize the impact of this spill.**
  - **How do we ensure readiness is not compromised?**
  - **Or asked another way, how do we ensure that for the next major spill we embrace ……**

"Preparation: Paves the Path to Success"

- **<u>This</u> conference, and others like it, provide an excellent forum to ensure that Lessons Learned are passed on; best practices are captured and Response Preparation for future spills is retained.**

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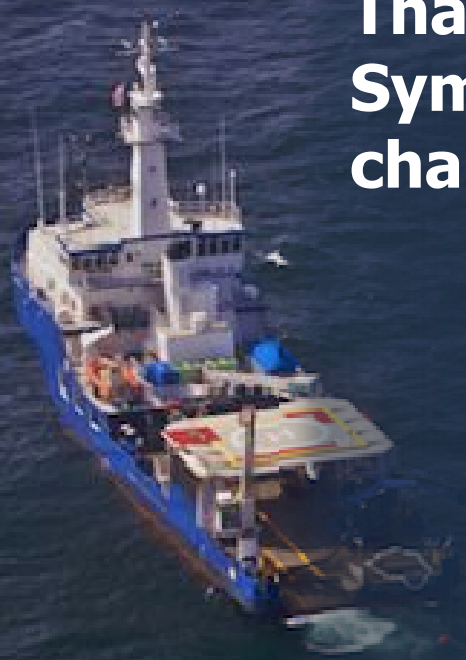
Closing Comments



Thank you for your attention. As this Symposium moves forward, you should challenge yourself to remember -----

"Proper Planning & Preparation Prevents Poor Performance"

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