

Southeast Florida
Area Contingency Plan
(SEFL ACP)

Risk Analysis: Area Planning
Scenarios

Annex B

May 2022

Record of Changes

Change Number	Change Description	Section Number	Change Date	Name
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Table of Contents

1000 Introduction	3
2000 Scenario Development	3
2100 Average Most Probable Discharge and Scenario	5
2200 Maximum Most Probable Discharge and Scenario	6
2300 Worst Case Discharge and Scenario	10
3000 Discharge and Release History	20
3100 Record of Worst Case Discharges	20
4000 Risk Assessment	20
4100 Possible Sources of WCD	20
4101 Vessel Traffic.....	22
4200 Spill Activity	22
4300 Vulnerability Analysis	23
4400 Planning Assumptions	23
4500 Meteorological Conditions	24
4600 Planning Scenarios.....	24
5000 Offshore Facility WCD Scenario	25
5100 Nearshore and Shoreline Protection	42
5101 Mechanical Cleanup Methods.....	43
5102 Shoreline Protection	43
5103 Wildlife Support.....	43
5200 Additional Support for a blowout lasting 120 days:	44

1000 Introduction

This annex has been developed by the Federal On-Scene Coordinator (FOSC), in consultation with the Southeast Florida Area Committee, and is based on an assessment of all potential sources of discharges in this area meeting the provisions of 40 CFR Part 300.210(c) of the National Contingency Plan. At a minimum, this will address the following area planning elements:

- Oil spill discharge and hazardous substance release history;
- A risk assessment of potential sources of discharges within the area;
- A realistic assessment of the nature and size of possible threats and resources at risk;
- Planning scenarios that provide for a Worst Case Discharge (WCD), a Maximum Most Probable Discharge (MMPD), and an Average Most Probable Discharge (AMPD) from a vessel, offshore facility (outer continental shelf activity and near shore production fields), or onshore facility (fixed and mobile) in the area, as applicable.

2000 Scenario Development

As required by the Oil Pollution Act of 1990, a most probable discharge, a maximum most probable discharge, and a worst case discharge are presented in this annex of the Southeast Florida Area Contingency Plan. In addition, The Coast Guard requires an offshore WCD scenario be included in area contingency plans where offshore continental shelf activity is present. The below definitions can be found in 33 CFR Parts 154 and 155, and 40 CFR Part 300.5, as appropriate.

Understanding the potential volumes of oil (fuel or cargo) carried on vessels is a major consideration in oil spill planning. The following table reflects the approximate capacities of the vessels that transit SE Florida:

Vessel Type	Reference Length	Approximate Volume
Small speedboat	12-40 feet	6-120 gallons
Medium sized yacht	40-60 feet	200-1200 gallons
Small Tugboat	30-60 feet	1500-25,000 gallons
Ocean-going Tugboat	90-150 feet	90,000-190,000 gallons
Mega-Yacht	200-400 feet	90,000-225,000 gallons
Dry bulk ship	500-700	400,000-800,000

(cement, etc.)	feet	gallons
Large Cruise Ship	900-1100 feet	1-2 million gallons
Panamax Container Ship	900-1000 feet	1.5-2 million gallons
Very Large Container Ship (VLCS)	1300+ feet	4-5 million gallons
Ocean Going Tank Barge	550-750 feet	7-14 million gallons
Ocean Going Tank Ship (carrying refined products)	700-850 feet	8-15 million gallons
https://response.restoration.noaa.gov/about/media/how-much-oil-ship.html		

An essential part of contingency planning is anticipating the effects of a spill and preparing in advance the response actions to spills that are likely to occur in the area. These assessments are most accurately achieved by conducting table-top drills and exercises. This section outlines a response to five oil spill scenarios:

- an average most probable discharge (AMPD) based on historical data;
- a maximum most probable discharge (MMPD) is also based on state/regional historical spill data; the size of the discharge most likely to occur taking into account such factors as the size of the largest recorded spill, traffic flow within the region, hazard assessment, risk assessment, seasonal considerations, and operating records of facilities and vessels in the state/region;
- a worst case discharge (WCD) for a vessel is a discharge has been identified by the Area Committee Executive Advisory Committee of 1-2 cargo tanks of petroleum from a liquid bulk tank ship in two separate scenarios (see below);
- a worst case discharge (WCD) originating from a pipeline breach at night while discharging from a liquid bulk tank ship to a shore side storage facility; and □ an international offshore drilling platform worst case discharge (WCD).

The environmental sensitivity of natural resources within the Sector Miami AOR makes rapid and effective spill response essential. In developing the Worst Case Discharge Scenario, it became clear that where it is practical, the Coast Guard response options should include in-situ burning and use of dispersants. In addition, it may be necessary for the FOSC to direct destruction of the vessel and cargo under the Intervention on the High Seas Act, as amended (33 USC 1471-1487).

Each of these three response options may involve RRT Region IV concurrence and in the case of intervention, further review by Commandant. Any delay in approval will adversely impact the response action. To minimize potential delays, the FOSC shall retain the option of ordering the staging of fire boom, dispersants, dispersant application equipment and any other assets deemed necessary while awaiting RRT and Commandant authorization for use.

The discharge scenarios described in this section include the following quantities of oil:

- **AVERAGE PROBABLE DISCHARGE:** estimated to be 50-250 GAL of diesel or gasoline.
- **MAXIMUM MOST PROBABLE DISCHARGE:** estimated to be 5,000-10,000 GAL of fuel (diesel, gasoline, aircraft fuel, etc.).
- **WORST CASE DISCHARGE:** projected to be 500,000 GAL of fuel (diesel, gasoline, aircraft fuel, etc.).
- **INTERNATIONAL OFFSHORE DRILLING INCIDENT WORST CASE DISCHARGE:** projected to be an uncontrolled release of 75,000 BBLs per day for 30 Days.

2100 Average Most Probable Discharge and Scenario

The Coast Guard has determined Average Most Probable Discharge as the lesser of 50 barrels or 1% of a Worst Case Discharge for an offshore or onshore facility/pipeline/marine terminal, or the lesser of 50 barrels or 1% of cargo from a Tank Vessel during cargo transfer operations. This value was adopted for consistency with Federal Vessel and Facility Contingency Plans.

The average most probable discharge of oil in the Sector Miami AOR is a reported spill or mystery sheen based on their location. They may be fuel directly entering the water or fuel entering the bilges and then being pumped overboard. By the time these spills are reported, the spill/sheen is generally too thin to be collected or sampled. Clean up of these spills is almost never possible.

The average most probable discharge of oil in the Sector Miami AOR for which a cleanup occurs is a diesel fuel spill of 50-250 gallons at a marina. Due to the immediate availability of some response equipment most of the spill is contained. When this size spill occurs from a commercial or recreational vessel the response often requires the marina operator or Sector to initiate cleanup.

Average Most Probable Discharge Scenario: At 0800 a 50 ft yacht overfills its fuel

tank discharging diesel fuel into the water into a waterway. At 0830 a report is received of approximately 60 gallons of diesel fuel oil trapped around the yacht and the dock; some of which is contained using marina boom. Upon notification, the Sector Port Assessment Team Supervisor sends out the duty pollution investigators. The local DEP representative and FWCC are also notified of the incident. Pollution investigators determine that the responsibility party/marina has hired a response contractor.

The cleanup contractor's crew arrives at 0930 with additional boom and sorbent materials. 50 feet of containment boom is deployed to contain the remaining fuel and sorbent pads are used to absorb the contained fuel. The pads are collected into plastic trash bags and double bagged for disposal when they become oil soaked. By 1400, pollution investigators determine that the area has been sufficiently clean-up and response efforts are terminated.

2200 Maximum Most Probable Discharge and Scenario

The Coast Guard has defined Maximum Most Probable Discharge as the lesser of 1,200 barrels or 10% of the volume of a Worst Case Discharge for an offshore facility or onshore facility/pipeline/marine terminal; 2,500 barrels of oil for a vessel with an oil cargo capacity equal to or greater than 25,000 barrels; or 10% of the vessel's oil cargo capacity for vessels with a capacity less than 25,000 barrels for Tank Vessels. These values were adopted for consistency with Federal Vessel and Facility Contingency Plans.

Maximum Most Probable Discharge Scenario: At 0500 on a Sunday morning the M/V General Carrier, a 700-foot dry cargo vessel carrying 100,000 gallons of fuel runs aground in the anchorage located off Port Everglades. As the vessel grounds, some damage occurs to the coral reef system. Additionally, one of the vessel's fuel tanks is damaged releasing 10,000 gallons of Bunker C fuel oil. The vessel Master contacts Sector Miami and/or the National Response Center immediately after the grounding.

The Sector Command Center (SCC) Command Duty Officer (CDO) is notified of the event at 0515. The initial information passed by the Master is that the cargo ship has grounded in the Port Everglades anchorage and that oil is in the water. The SCC CDO notifies the Command Cadre, recalls the Incident Management Division and ensures all emergency notifications are made: District 7 Command Center, NOAA, FWCC, FL DEP, and State Warning Point. It will take CG Station Fort Lauderdale minutes to get a small boat on scene to evaluate the situation. The SCC CDO should consider the following initial actions:

1. Request that CG Station Fort Lauderdale dispatch a small boat to provide timely evaluation of the situation;
2. Inform the District 7 (dr) duty officer and operations center of the casualty. Secure a Federal Project Number from the National Pollution Funds Center

- (NPFC). Request an over-flight be arranged via the District 7 Command Center.
3. Determine if the ship Person-in-Charge (PIC) is contracting for response services. If not, then inform the Sector Incident Management Division Supervisor to contact an oil spill response contractor and alert them of the need for response.
 4. Contact ships agent.

The initial report received at 0530 from the CG Station Fort Lauderdale small boat, is that the vessel is hard aground and that a large quantity of oil is in the water and appears to be moving toward shore. Reports to Sector Miami from the vessel master state that a damage survey is being conducted by the crew but is not complete. Two tugs are on the way from Port Everglades to assist the vessel.

The following decisions will have to be made at this time:

1. Can the leak be stopped by pumping oil from the damaged tank into other onboard tanks?
2. Notify NOAA Scientific Support Coordinator to request support to the Unified Command. Natural Resource Damage Assessment (NRDA) personnel will be integral partners in the response efforts to assess environmental damages and approve the salvage plan/vessel removal operations to prevent further damage to the reef system and shoreline.
3. Obtaining an oil spill trajectory from NOAA to determine when and where the spill is expected to hit the shoreline. Determine where to deploy the initial containment booms to reduce the spreading of the oil and protect sensitive shorelines in the path of the oil.
4. Request NOAA SSC consult with the RRT Region IV to utilize dispersants. NOAA SSC should be prepared to develop a dispersant plan. If approved/accepted, make preparations to deploy dispersants in accordance with dispersant plan as soon as possible.
5. Where to set up the command post for the response. Ensure State and vessel representative are notified of the location.
6. How many additional oil spill cleanup contractors will be needed to handle the cleanup? Will additional resources be necessary, Strike Team, cleanup monitors, boat crews, etc.?

An Incident Command Post is established at the Broward County Emergency Operations Center by 0800. The Command Post is fully staffed by 0930. Using a trajectory model, NOAA estimates that the oil will begin coming onshore around 1200 today in the northern beaches of Broward County/Palm Beach county boundary.

The ship reports that the two assist tugs are available immediately today and their primary OSRO, NRC will be on-scene by 0800. The ship also reports that one fuel tank has been holed and there are no further damages found to the vessel, its cargo or its fuel tanks.

Response Strategy and Equipment:

The initial response strategy is:

- Secure the damaged tank from continuing to discharge;
- Boom-off the vessel;
- Conduct over-flights to map the location of the spill;
- Obtain a spill trajectory model to determine when and where the oil will impact shorelines. Move protection/recovery resources into the area as quickly as possible and deploy resources ahead of the spill;
- Request CG Gulf Strike Team support;
- Establish a marine safety zone around the vessel.

Follow-up actions include:

- Determine the sensitivity of the shorelines and develop a protection/recovery strategy using the sensitivity/protection maps in the Area Contingency Plan.
- Conduct a detailed damage assessment of the vessel and determine if additional products may be at risk of being released.
- Work with NOAA to conduct underwater surveys to initially assess damages to the coral reef system and determine best egress route to remove vessel.
- Develop vessel salvage plan working with Salvage Master, CG Salvage Engineering
- Response Team (SERT) and possibly NAVY SUPLSALV. The salvage plan should include taking appropriated actions to secure/lighter products as necessary to safely
- remove the vessel to limit further damages to natural resources.

The estimated amount of equipment necessary to contain the spill and to collect the oil is as follows:

- Containment Boom (18") to deflect oil away from sensitive shorelines and containment boom to hold oil from escaping the immediate area = 20,000 feet of containment & deflection boom.
- Boom (36") to boom off vessel = 4,000 feet;

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

- Near-shore skimmers to collect approximately free floating 8,000-10,000 gallons of oil = 3;
- Frac. Tanks to store/transport the recovered product = 3.
- Coast Guard small boats to enforce Marine Safety Zone = 2.
- (Potential) VOSS/OSRO offshore skimmer to assist collection of offshore oil.

Personnel:

Coast Guard Personnel needed to conduct this response over a two week period would include at a minimum:

- 12 = Pollution investigators/cleanup monitors
- 10 = OSC representative qualified personnel
- 2 = Casualty Investigators
- 2 = Coxswains (2-12 hr rotations)
- 2 = Qualified small boat crews (2-12 hr rotations)
- 5 = Personnel to staff Field Command Post (CG Station Fort Lauderdale)
- 12 = Personnel to staff Incident Command Post (Broward EOC)
- 6 = Support Personnel
- 53 = Total personnel needed

Response:

Primary response to the event would be by all personnel at Sector Miami and at least two small boats from CG Station Fort Lauderdale. This would be enough personnel to provide one security boat crew, one support boat crew; three land based pollution investigation/monitoring teams, two casualty investigators and personnel to staff the Field and Incident Command Posts. Additional personnel qualified to conduct pollution investigations and monitor cleanup operations would have to be obtained through the Seventh Coast Guard District DRAT.

Over-flight support would be provided by Coast Guard Air Station Miami. Requests should be made through the Seventh Coast Guard District Command Center.

Response time for Sector Miami personnel to be on-scene shore-side may take as long as

2.5 to 3 hours during an early morning event. Support personnel from the Gulf Strike Team historically take 8-12 hours to arrive without equipment once notified (air travel scheduling dependent). Local Reservists would likely be available to respond but funding to bring them on active duty may not be quickly resolved. TAD personnel from other Seventh Coast Guard District units could be available within

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

24-48 hours. Contractor furnished equipment located throughout the region could take up to 4 hours to arrive at the designated staging area(s).

Clean-up:

The equipment listed is the minimum necessary to conduct an initial cleanup of product working 24 hours a day for 7-12 days. If dispersants are not approved, very little of the product will be lost due to evaporation and some will disperse into the water column which will be unrecoverable. The oil that enters the exposed beaches, marshes and mangroves presents the biggest problem for cleanup. Whether the mangroves or marshes should be entered to conduct cleaning operations or if/when to employ water washing or whether to just boom the area with sorbent boom and let the tidal action wash some of the free floating oil out of the area will be based on recommendations made by the shoreline cleanup and assessment team along with input from DEP and NOAA scientists. This part of the cleanup could take several months to complete. The Unified Command will be guided by the SSC/NRDA staff in making this decision on when final cleanup is considered to have been completed.

2300 Worst Case Discharge and Scenario

As defined by section 311(a) (24) of the Clean Water Act, the definition of a Worst Case Discharge in the case of a vessel is a discharge in adverse weather conditions of its entire cargo, and in the case of an offshore facility or onshore facility/pipeline/marine facility, the largest foreseeable discharge in adverse weather conditions. This definition has been adopted for consistency with Federal Vessel and Facility Contingency Plans.

Worst Case Discharge Scenario(s): At 0600 on a Sunday morning the worst case discharge scenario involves one of three scenarios:

- a fully loaded tank ship anchored off Port Everglades is allided into by a cargo ship also maneuvering to anchor; or
- a fully loaded tank ship moored in Port Miami (Fisher Island) is allided into by an inbound/outbound container ship which loses navigational control.

In either scenario, the damaged tank ship sustains heavy damage along its port or stbd side but it is still seaworthy and under its own power. At least two cargo tanks are ruptured with the adjacent longitudinal and transverse bulkheads fractured. The Master is able to contact Sector Miami and its PIC for further direction. The second vessel may or may not be heavily damaged depending on the angle of impact.

The Sector Command Center (SCC) Command Duty Officer (CDO) is notified at 0615 that a tank ship carrying various fuels has been struck as described above. The tank ship is heavily damaged along a section of the port/stbd side hull but still

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

seaworthy and under power. Initially, two port/stbd wing cargo tanks have been penetrated with the adjacent longitudinal and transverse bulkheads fractured. The oil from the damaged tanks is in the water and spreading rapidly. The tank vessel remains in its location and immediately attempts to transfer cargo to available tanks.

By 0630, SCC CDO notifies the Command Cadre, recalls the Incident Management Division, and ensures all emergency notifications are made: District 7 Command Center, NOAA, FWCC, FL DEP, and State Warning Point. The CDO further instructs the Command Center watch standers to immediately call in all available Sector personnel. The FOSC also requests immediate assistance from the Gulf Strike Team and CG Salvage Engineering Response Team (SERT).

CG Stations Fort Lauderdale and Miami Beach are in close proximity of the incident site, as applicable, thus can be mobilized immediately. It will take the Sector personnel about two hours to arrive to CG Base Miami Beach or Port Everglades Incident Command Post. The SCC CDO should consider the following initial actions.

1. Immediately dispatch the applicable CG Station small boat to provide timely evaluation of the situation.
PortMiami scenario - Consider evacuating the remaining vessels at CG Sector/Station facilities to prevent loss of operational availability due to free floating oil; attempt to relocate to the nearest CG facility until able to return to home unit.
2. Inform the District 7 (dr) duty officer and operations center of the casualty. Secure a Federal Project Number from the National Pollution Funds Center (NPFC). Request an over-flight be arranged via the District 7 Command Center.
3. Determine if the ship Person-in-Charge (PIC) is contracting for response services. If not, then inform the Sector Port Assessment Team Supervisor to contact available oil spill response contractors and alert them of the need for response (NRC, MSRC, Resolve Marine, etc.).
4. Contact ships agent.

Due to heavy free floating oil, the CG small boat may not be able to approach the ship or may stall due to oil drawn into the engine cooling inlets. The initial report received at 0700 from the CG Helo On-scene, is that the port/stbd side of the tank ship above the water line is damaged, intact and appears stable but severe leakage is observed in area of damaged tanks. No injuries have been reported. The allision has resulted in the sudden release of 50,000 gallons of No. 6 oil. Release would be

instantaneous, occurring within one hour of the collision. The total potential discharge is 20,000 barrels or 840,000 gallons.

The wind is from the south at approximately 5-10 MPH with unlimited visibility. Seas are 2-4 feet at the anchorage. Air and water temperatures are 75 and 80 degrees F, respectively.

1. No medium or major spills have occurred in the Sector Miami AOR in recent history mainly due to highly scheduled and controlled ship movements to/from the ports of SE Florida. Transits to tank ship moorings are short and channels are narrow thus all ship movements are tightly controlled by the port pilots and/or harbor master (PEV). However collisions are likely due to the close proximity of moored vessels to the channel making this scenario a real possibility especially in inclement weather. Tank ships arriving to PortMiami/Port Everglades carry many fuels (JP-5, Diesel, gasoline, etc.) and No.6 oil was selected for its resistance to evaporate or dissipate.
2. Hazard assessment: MSDS information for No. 6 oil will be used. Although the product is frequently heated to aid in flow rate, another hazard to No. 6 oil is that a chemical may be added to make the product less viscous. It's important to obtain a copy of the ship's onboard cargo MSDS to ascertain if a chemical is mixed with the product and its associated hazards. Expect high kill rate to wading birds in the immediate area of the oil until the chemical has evaporated. During the initial days of the incident, if a chemical has been added, it will rapidly evaporate, increasing exposure risk in the immediate area of oil pools and possibility of responder respiratory problems developing. Air monitoring on site and at various locations downwind must be conducted. This information should be used to assist in the development of the site safety plan.
3. Vulnerability analysis: Intra-coastal waterways, mangroves and Biscayne Bay are the most environmentally sensitive areas of PortMiami scenario. This area hosts numerous important resources such as living coral reefs, mangroves, turtle nesting areas, manatees, shellfish and many bird nesting areas.

The Port Everglades anchorage scenario could impact coastal beaches and nesting areas.

Reference applicable ESI maps for accurate natural resources threatened.

4. Risk assessment: Oil discharged inside the jetties during the flood cycle, would be further pushed inward rapidly towards the inner harbor north/south with

prevailing currents and wind action. Oil impacting the shoreline and sensitive habitat is inevitable.

Oil discharged at the anchorage location would likely be pushed in a north/northwest direction by prevailing currents and winds. Oil impacting the shoreline and sensitive habitat is likely.

5. Seasonal considerations: This scenario can occur during all times of the year. The most severe weather threat is experienced from June through November, the traditional hurricane season, but on average, the winds and seas are strongest during the late fall and winter months of October through March. Sea turtles nest from March through October with the greatest risk from May through September.

The following decisions will have to be made at this time:

1. Can the tank ship internally transfer cargo from the damaged tanks to available tanks and voids or be boomed off for immediate lightering?
2. Notify NOAA Scientific Support Coordinator to request support to the Unified Command. Natural Resource Damage Assessment (NRDA) personnel will be integral partners in the response efforts to assess environmental damages and approve the salvage plan/vessel removal operations to prevent further damage to the reef system and shoreline.
3. Obtaining an oil spill trajectory from NOAA to determine when and where the spill is expected to hit the shoreline. Determine where to deploy the initial containment booms to reduce the spreading of the oil and protect sensitive shorelines in the path of the oil.
4. Anchorage scenario - Request NOAA SSC consult with the RRT Region IV to utilize dispersants and/or in-situ burning. (Can fire boom equipment be obtained and deployed?) NOAA SSC should be prepared to develop a dispersant and/or in-situ burning plan(s). If approved/accepted, make preparations to deploy tactics in accordance with the applicable plan as soon as possible.
5. Notify all Port Administration and port agents of the incident and consider rerouting of inbound shipping.
6. What additional resources are needed (MSRC, NRC, Gulf Strike Team etc.) and how many additional cleanup monitors, boat crews, etc. will be needed to handle the clean-up?

7. Where to stage response equipment.
8. Where to set up the Incident Command Post for the response. Ensure State and vessel representatives are notified of the location.
9. What sensitive areas are at risk? The greatest risk is the potential for damage to the coral reefs, sea grass ecosystems, mangroves and coastal vegetation found in the area. Of secondary importance is the impact to the port shipping and loss of public use (and subsequent revenue) of the numerous beaches and parks located in the affected geographic region. The sensitive areas are mapped out in detail in the Environmental Sensitivity maps contained in Volume II of the Plan.

The FOSC decides to initially establish the Incident Command Post at Sector Miami due to the need to have communications with Coast Guard cutters and aircraft. However, due to the size of the incident, the FOSC should consider moving the Unified Command Post to the applicable County Emergency Operations Center as the response organization expands to address the size of the incident. The Responsible Party may desire to contract another location due to cost which should be acceptable as long as the Unified Command organization can be accommodated as well as connectivity, public affairs and security issues can be met.

The Response & Prevention Departments report to the Sector and begin activating contractors, updating all involved agencies, determine surge staffing to the SCC and requesting the NOAA SSC to obtain a trajectory of the spill.

Initial On-Scene investigation, evaluation and recommendations:

The Investigation Team would attempt to determine the amount and direction of oil discharged, assess the general condition of the two vessels, and report back to the FOSC. They should make recommendations as to the immediate disposition of the second ship.

Response Strategy and Equipment:

The initial response strategy is:

- Secure source of discharge by transferring cargo to other tanks to a level below the damage/fractures as practicable;
- Boom off the vessel;
- Evaluate the stability of both vessels;

- Conduct over-flights to map the location of the spill;
- Obtain a spill trajectory model to determine when and where the oil will impact shorelines. Move protection/recovery resources into the area as quickly as possible and deploy resources ahead of the spill;
- Request CG Gulf Strike Team support;
- Establish a marine safety zone around the vessel.
- Locate staging areas and deploy equipment (in harbor – shallow water boom and skimmers, coastal – ocean boom, fire boom and skimmers, airport – dispersants and associated equipt). NOTE: in-situ burning should be conducted off shore and outside of 6 miles of the coastline unless RRT Region IV allows alternate strategy.

Follow-up actions include:

- Determine the sensitivity of the shorelines and develop a protection/recovery strategy using the sensitivity/protection maps in the Area Contingency Plan.
- Conduct a detailed damage assessment of the vessels and determine if additional products may be at risk of being released.
- Develop vessel salvage plan working with Salvage Master, CG Salvage Engineering Response Team (SERT) and possibly NAVY SUPLSALV. The salvage plan should include taking appropriated actions to secure/lighter products as necessary to safely remove the vessel to limit further damages to natural resources.
- The Incident Command Post should be moved to the applicable County Emergency Operations Center as the response escalates in size and scope.
- Procedures for acquiring additional resource assistance: the Logistics Section is tasked with locating and obtaining equipment as the needs are identified. Locating sources include using the corporate knowledge of the CG National Strike Force and the Contractors involved.

The estimated amount of equipment necessary to contain the spill and to collect the oil is as follows:

1. Boom:

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

- Anchorage scenario - approximately 386,000' of boom is required to prevent oil from impacting beaches immediately north of the anchorage.
 - PortMiami scenario - approximately 386,000' of boom is required to prevent oil from marshes, mangroves and water intakes.
2. Skimmers: 46 skimmers are required at a minimum. 75 percent of these must be capable of operating in water depths of less than 6 feet.
 3. Oil Spill Removal Vessels (OSRVs): 3 vessels needed at a minimum: MSRC's FLORIDA RESPONDER (Miami)(if available), NRC's LIBERTY (Miami), and the Coast Guard's VOSS System (Miami).
 4. Aircraft: minimum of 1 helicopter for dedicated sorties (pollution mapping; FOSC trips, etc.) and periodic use of fixed wing for video mapping and potential dispersant applications. FAA assistance will be required to establish flight restrictions for the airspace surrounding the tank ship.
 5. Oil storage vessels/tanks: 18 large tank barges will be required to support the deep water skimming operations and transport the recovered oil/water mixture to shore for disposal. Another 30 small tank barges will be required to support the shallow water skimming operations.
 6. Support vessels: 15 appropriate sized vessels/tugs capable of towing the deep water skimming systems and shuttling barges to shore. Another 20 smaller vessels will be needed to support the shallow water skimming operations. Approximately 200 small utility boats for tending skimmers, tending boom and other logistical support will be needed.

Personnel:

Response personnel needed to conduct this response exercise over a 3-6 month period would include at a minimum:

1. Incident Command Organization: At full development will require about 55 Coast Guard officers and senior enlisted personnel in supervisory positions as well as 14 State agency representatives, 4 NOAA representatives, 2 Fish & Wildlife representatives, 5 local agency representatives and 4 responsible party representatives. An estimated 36 junior Coast Guard personnel would fill miscellaneous command support functions and 4 C G boats and 8 boat crews for continuous operations until "right-sized" for prevailing activities.

2. Field Operations: Estimate a minimum of 55 Coast Guard enlisted personnel for field teams. The field personnel required from other agencies is estimated to be about 75 total.
3. Contractor personnel: Difficult to estimate because of the variability of manpower requirements for different response strategies. Including boom deployment and tending, skimmer operations, shoreline cleanup and logistical support, personnel levels expected to reach 1000 within the first week and stabilize at up to about 5000 within 3 weeks depending on the extent of shoreline impacts.
4. Miscellaneous personnel: Wildlife rescue efforts can be expected to draw over 300 volunteers in 3 or more collection/rehab sites. The additional requirements for salvage operations, investigations, and similar efforts cannot be projected with any accuracy.

Response:

A spill of this magnitude located in the environmentally sensitive areas of SE Florida and Biscayne Bay will involve government agencies at all levels and create intense public interest. There will also be a significant local monetary impact due to the impact on shipping schedules and economy connected to the tourism industry (hotels, sport fishing, conventions, etc.).

Initially, the Unified Command will be established as the response progresses. The most critical administrative task is getting the representatives from the many government agencies online so there is a minimum delay in implementing the initial response strategy. With the large number of involved agencies, each with their own responsibilities, without proper coordination every issue has the potential to become a point of conflict. Outreach to the RDSTF to stand up its Multi-agency Coordination (MAC) Group may be needed to coordinate support to the local and regional government agencies. The most critical operational task is the rapid procurement of adequate boom, including fire boom, and/or dispersant equipment if in-situ burning or dispersants is to be effectively employed.

The primary response to the event would be the initial use of all Sector Miami personnel. This would include adequate personnel for at least two land based pollution investigation teams, two casualty investigators and surge personnel to staff the SCC and Incident Management Division. Personnel qualified to conduct pollution investigations and monitor cleanup operations could be accessed through Seventh Coast Guard District DRAT. Additional management support would be needed to oversee deployment and support of the displaced cutters and boats/crews.

If not assigned an air asset, over-flight support would have to be provided by Seventh Coast Guard District Command Center.

Response time for all resources: The containment boom is scheduled to begin arriving in the area within 1-3 hours, initially from the local Coast Guard, State and contractor stockpiles. The rest of the identified boom and trained personnel and equipment needed to deploy the boom and should arrive over the next 12-24 hours. Fire boom arrival is estimated within 24-48 hours. Small portable skimmers and the large skimmers in MSRC's and NRC's Miami inventory should arrive on scene within 4-6 hours. The three OSRV's could begin arriving within 6-12 hours. The majority of the larger skimmers is located in Jacksonville and could begin arriving in the area in approximately 10-12 hours. National Strike Force and Navy SUPSALV assets will take up to 8-12 hours to reach the area (flight availability dependent). Contractor furnished equipment could take up to two hours to stage at designated staging areas. Additional resources outside the region would take a minimum of eight hours to arrive after they were called. Personnel from other Strike Teams would probably be available within 24-48 hours.

The response time for the Sector to be fully manned and operational at the Incident Command Post could take as long as 2-4 hours. Reservists are locally available but funding to provide them for significant events in the past has not been forthcoming. Anticipate as many as 10 to volunteer their services part time at no cost along with many CG Auxiliarists. TAD personnel from other Seventh Coast Guard District units could be available within 24-48 hours.

The response strategies used will be drawn from the NOAA Scientific Support Coordinator's (SSC's) recommendations and shoreline response strategies listed in NOAA's Shoreline Countermeasures Manual for Tropical Coastal Environments.

Response strategies by location of the spill are described below:

1. Offshore: Containment offshore will be accomplished using a combination of dispersants and standard open water boom including fire boom if available and a viable tactic. Boom should be deployed around the vessel to contain as much oil as possible. The oil in the standard boom arrangements away from the vessel will be removed using skimming systems. The offshore response strategy is to remove as much oil as possible using dispersants, open water skimming, and in-situ burning if appropriate.
2. Near shore: Very little near shore boom will be deployed initially. The limited amount of boom available will either be used offshore or for use in the inlet protection strategies. As the response progresses, sensitive shorelines will be protected as resources become available.

3. Shoreline: The majority of all boom deployed in the anchorage scenario will be in an effort to prevent the oil from reaching beaches and nesting sites. The boom used must be suitable for very shallow water. This operation will be very labor intensive and will require constant monitoring of the placements. Planned boom deployment locations are detailed on charts located in Volume II of the Area Contingency Plan.
4. Inland: The majority of all boom deployed in the PortMiami scenario will be in an effort to minimize the migration of oil north and south within the shallow waters of the intra-coastal waterway and marshes. The boom used must be suitable for very shallow water. This operation will be very labor intensive and will require constant monitoring of the placements. Planned boom deployment locations are detailed on charts located in Volume II of the Area Contingency Plan.
5. Sensitive areas: Most of the SE Florida coastline, Biscayne Bay, and many areas within the intra-coastal waterway are considered sensitive areas. Many areas are designated as critical habitat, marine sanctuaries and/or national/state parks. By using the above strategies for the given scenarios, it is hoped that the amount of oil reaching the designated sensitive areas is minimal. With consultation from the NOAA SSC and RRT Region IV it may be necessary to “sacrifice” one area as a natural collection point to save many others.

Cleanup:

The mechanical cleanup stage of the operation will involve offshore skimming operations and cleaning the many miles of docks, sea walls, and beaches that may become impacted. This part of the operation is expected to last 3 to 6 months depending on the extent of shoreline impact.

The dispersant activities and in-situ burning tactics are anticipated for no longer than 3 days. After this time, the oil will have emulsified to an extent dispersants/in-situ burning is no longer effective. The larger skimmer systems will be needed for approximately 14 days. After that time, the majority of the oil will be on the shoreline and operations will consist mainly of cleaning of beaches and man-made shore structures (docks, sea walls, etc.) using sorbents, portable skimmers and pressure washers.

Significant impacts will occur to mangrove-lined shorelines if oiled. The Shoreline Cleanup and Assessment Teams (SCAT), the NOAA SSC and the DEP would make recommendations to the FOSC on the best approach to clean/protect these sensitive

resources. This part of the cleanup could take many months and will require hundreds of thousands of feet of sorbent boom and materials.

Storage and disposal of oil spill generated wastes will become a significant issue during the incident. Numerous waste storage areas will be established with roll-off boxes and Frac tanks to store solid and liquid product. In addition, barges and OSRV's will need to be off-loaded to continue response operations. Options include local incineration of solid oily waste at designated staging areas and/or transporting the material over the road to the Waste to Energy Plants in Miami-Dade and Broward counties and/or specific hazmat landfills outside the region. Liquid wastes will also likely need to be transported to recycling facilities in Dade and Broward Counties. Annex 6b contains a list of these facilities. The disposal options will be evaluated by the Disposal Group Supervisor of the Planning Section and coordinated with the Florida Department of Environmental Protection representative.

A determination will have to be made as to when the cleanup is considered complete. The FOSC will solicit guidance from the SSC and the SOSC representative before making this decision. The decision will be based on over-flight information, the feasibility of continuing oil removal operations offshore, the daily recovery rate of operating skimmers, and the amount of oil remaining on the impacted shorelines. At some point in the operation, the removal actions will cause more damage to the environment than the oil presents.

3000 Discharge and Release History

The table on the next page provides an account of WCDs that occurred in the area, including substantial oil spills or hazardous substance releases which caused elements of this plan to be implemented.

3100 Record of Worst Case Discharges

Under development 2022

4000 Risk Assessment

The possibility exists for a WCD to occur anywhere in Southeast Florida given the high volume of deep-draft vessels (tank and non-tank vessels), the prevalence of oil and chemical terminals, and tug/tank barge composites. In addition, the unpredictable and sudden severe weather during transitional seasons, river fog in the winter and afternoon thunderstorms during the summer increase the risk.

4100 Possible Sources of WCD

Area Oil Pollution Risks

Threats – facilities/installations: most facilities in the Sector Miami AOR are required to have Facility Response Plans (FRP) due to the quantity of oil transferred

as cargo or bunkering and/or stored onsite. A copy of the Facility Response Plan for each facility is maintained by Sector Miami. A potential exists for a spill to occur during offloading, storage, and transfer of product at each of these facilities. Potential spills are described in each facility FRP in terms of the average most probable, maximum most probable and worst case discharges. The primary petroleum products being transferred/stored at these facilities include: Aircraft fuels (JP-5, JP-8, Jet A, Avgas), No 2 fuel oil, No. 6 fuel oil, diesel fuel, gasoline, propane, asphalt, crude oil (export) and lube oil.

Threats – road/ship transport: The largest concern from a release occurring on the highway system is from an accident involving a tanker carrying gasoline and/or diesel fuel. Although pipelines deliver fuel from storage tanks in Port Everglades to Miami Dade, Broward and USAF airports, no pipelines exist to distribute vehicle fuel stocks to distribution centers in South Florida. Over 1000 tankers depart Port Everglades daily to provide this need. An accident on US-1 resulting in an overturned tanker truck near one of the numerous canals and bridges running along the coast could result in a significant discharge of petroleum products into a sensitive marine ecosystem.

Another facility in the PortMiami (Fisher Island) receives via tank ship and distributes No. 6 Oil and diesel fuel to marine customers and ships via bunker barge. Additionally, the vessels are boomed-off and are under continuous surveillance during unloading operations. These actions limit the potential risk of an “operational” spill escaping the containment areas.

Offshore

Modern technology has significantly improved the capability to explore for oil and gas reserves in deep water throughout the Gulf of Mexico and Caribbean basin. This new type of industry presents

numerous threats in the quantity of oil discharged, ability to secure the source at the wellhead and scale of oil recovery response. See below for the International Offshore Drilling Incident Worst Case Scenario for further details under 5000.

Area Hazardous Material Risk

Threats - facilities/installations: In this region, there are a few facilities which store hazardous materials in bulk. While most are located inland (chlorine liquid/gas for disinfection of water), there is one medium sized propane storage facility in located in Port Everglades. Propane is brought into the port via ocean-going barge.

Threats - road/ship transport: Tank trucks carry and deliver propane to several propane storage facilities located throughout the AOR. Other sources of hazmat are non-bulk, shipped by containers and delivered overland via truck.

Offshore

Threats - ship transport: There is very limited knowledge regarding types and quantities of HAZMAT that may be transported in bulk offshore of the SE FL coast. However, it is likely that significant quantities of Hazmat are routinely moved through Sector Miami's AOR while en-route to other ports.

Modern technology has significantly improved the capability to explore for oil and gas reserves in deep water throughout the Gulf of Mexico and Caribbean basin. This new type of industry presents numerous threats in the quantity of oil discharged, ability to secure the source at the wellhead and scale of oil recovery response. See also the International Offshore Drilling Incident Worst Case Scenario for further details.

Pipelines

Two pipelines lead from Port Everglades to supply local airports with fuel. The Everglades pipeline, owned by Buckeye Pipelines, is 10' in diameter, single high pressure (>1000 psi) and leads to Miami International Airport. The Citgo pipeline is 8" in diameter, single high pressure and leads to Fort Lauderdale International Airport. These pipelines are within the inland zone. Most, if not, all accesses to a navigable waterway are contained within canals and gates.

4101 Vessel Traffic

Vessel Traffic Considerations: The Southern Straits of Florida area is a major maritime traffic route, and averages approximately 2,000 to 2,500 commercial vessel transits per month, many transiting to SE Florida ports. In the event of a catastrophic pollution incident, mariners should be notified of the potential threat and traffic routing modifications should be considered to minimize potential hazards and limit the possibility of contaminating additional vessels with pollution. Sector Miami should liaise with port captains, harbor masters, and shipping agents to notify arriving and vessels of the incident and take appropriate evasion courses near the affected area and hull monitoring for potential oiling.

A WCD for a vessel is defined as loss of a vessel's entire cargo in adverse weather conditions. There is a significant volume of oil that is transported, stored, or consumed as fuel within in the Southeast Florida area. The largest foreseeable vessel discharge could result from a collision between two vessels.

4200 Spill Activity

The USCG MISLE database and Sector Miami's unit records were analyzed for the Sector Miami's FOSSC Zone. Below is a record of the Worst Case Discharges and releases.

MISLE CASE #	DATE	LOCATION, MATERIAL, AMOUNT
	23NOV87	HILLSBORO INLET, DIESEL FUEL, 4500 GAL (APPROX)
	28MAR91	MIAMI, BUNKER C FUEL, 7000 GAL, POTENTIAL
	19JUN91	PORT EVERGLADES, NO. 6 OIL, 600 GAL
	15NOV94	PORT EVERGLADES, IFO/DIESEL FUEL, 170,000/44,000 GAL POTENTIAL
	19NOV96	KEY BISCAYNE, IFO/DIESEL FUEL, 57,000/30,000 GAL POTENTIAL
	04FEB98	PORT EVERGLADES, IFO/DIESEL FUEL, 40/18 TONS POTENTIAL

4300 Vulnerability Analysis

The following infrastructure and natural resources could be vulnerable from the effects of a major oil spill in the area:

- Water intakes (drinking, cooling, or other)
- Businesses
- Residential areas
- Wetlands and other sensitive environments
- Fish and Wildlife
- Endangered flora and fauna
- Recreational areas
- Marine transportation system
- Utilities
- Unique habitats or historical sites
- The Geographic Response Strategies detail tactics used to protect, recover, and mitigate the effects of a WCD.

4400 Planning Assumptions

The following assumptions are made for the WCD planning scenarios:

- The ability to respond to a WCD will be beyond the ability of the Southeast Florida Area Committee, the Local Community, and local spill response

resources.

- A Unified Command will be established as soon as possible.
- Responders will be adequately trained in oil/hazardous substance response and will operate within the level of their training, expertise, and capabilities as described in 29 CFR Part 1910.120.
- The applicable Facility/Vessel/Pipeline/Offshore response plan will be implemented.
- A WCD scenario will draw major media and governmental interest.

4500 Meteorological Conditions

The most severe weather threat is experienced from June through November, the traditional hurricane season, but on average, the winds and seas are strongest during the late fall and winter months of October through March. Sea turtles nest from March through October, with the greatest risk from May through September.

Tropical cyclones (hurricanes and tropical storms) are severe but infrequent, with the season extending from June 1 through November 30. Extra-tropical cyclones (low-pressure systems) occur frequently during winter and spring and are likely to produce occasional rough conditions in the area during this time. Extreme weather conditions during an actual spill may inhibit aerial surveillance of a slick and oil recovery operations.

4600 Planning Scenarios

Given the applicable conditions described above, the WCD, MMPD, and AMPD volumes from all potential sources is calculated and listed in the table below. The MMPD and the AMPD scenario volume is calculated based on a fixed number established for an offshore facility, an onshore facility/pipeline/marine terminal, or a percentage of the WCD rate from each potential source. For tank and non-tank vessels, the MMPD and the AMPD scenario volume is calculated based on a fixed number, a percentage of the cargo capacity, or the cargo transfer rate.

Therefore, the MMPD and the AMPD spill volumes from an offshore facility or onshore facility/pipeline/marine terminal is calculated as:

- 1,200 barrels or 10% of the WCD volume when calculating the MMPD.
- 50 barrels or 1% of the WCD volume when calculating the AMPD.

The MMPD and the AMPD spill volume from a tank/non-tank vessel is calculated as:

- 2500 barrels with a cargo capacity greater than or equal to 25,000 barrels, or 10% of the cargo capacity when calculating the MMPD.
- The lesser of 50 barrels or 1% of cargo from the vessel during cargo transfer operations when calculating the AMPD.

5000 Offshore Facility WCD Scenario

There are no offshore facilities operating within the Sector Miami's AOR. However, it would be prudent to list the information for the numerous offshore facilities operating within the New Orleans FOOSC Zone as a spill from one of these wells could impact Sector Miami's AOR.

INTERNATIONAL OFFSHORE DRILLING INCIDENT WORST CASE DISCHARGE

Background

In response to increasingly disastrous potential of offshore drilling platform oil spills such as the Deepwater Horizon spill, a Worst Case Discharge (WCD) scenario for this potential was created to provide sufficient planning to respond to a dynamic discharge of this scope.

The Deepwater Horizon (DWH) incident in 2010 resulted in a significant number of lessons learned and elevated concerns regarding offshore drilling operations and the United States' capabilities to respond to and mitigate the potential impacts from a drilling platform Worst Case Discharge (WCD) in the offshore environment. These lessons learned have been thoroughly documented in the Deepwater Horizon Incident Specific Preparedness Review (ISPR) and Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling: Report to the President (<http://www.oilspillcommission.gov>). The ISPR specifically recommends a full review and update to all ACP's to include the following in response to an actual WCD:

- Identification and prioritization of environmentally and economically sensitive areas;
- Near-shore containment strategies;
- Offshore control and removal strategies; and
- Identification of the equipment, trained personnel, and response resources needed to implement the strategies.

Additionally, a number of Caribbean basin nations have shown interest, or have commenced planning to conduct drilling operations. Due to their close proximity to the US coastline, this could also present an environmental threat to the US Exclusive Economic Zone (EEZ), Territorial Seas, Coastal and Inland waterways and shorelines. The impacts from a drilling platform WCD scenario in one of these nations' territorial

seas would likely result in a Spill of National Significance (SONS) and would significantly impact the Sector Miami Captain of the Port Zone (COTP).

Potential threats of an International Oil Drilling Platform Worst Case Discharge (WCD)

The primary threat addressed by this planning scenario is the risk of a significant oil spill resulting from an anticipated increase in the exploration activities for offshore oil and gas resources in the territorial seas of other nations adjacent to the United States. Trajectory modeling has indicated that a spill originating from these sites has the potential to impact US waters and shoreline areas depending on the amount and duration of the spill. If a WCD were released from a number of these sites, the trajectory modeling suggests that the oil could reach US waters within 2-3 days and have potential shoreline impacts within 5-7 days. However, oil characteristics and environmental conditions may significantly impact the trajectory of a spill. Therefore, these timelines are only intended for planning purposes. The windows of opportunity to disperse, burn and mechanically recover the spilled product will depend on the characteristics of the oil spilled and the environmental conditions at the time of the spill.

Immediately following a spill, the windows of opportunity should be determined for the various response techniques, and then used to establish initial response priorities. In addition to the issues associated with oil spill impacts in the marine and coastal environment, a drilling platform WCD magnitude spill could disrupt maritime traffic through the impacted region causing Marine Transportation System (MTS) disruptions for the US and its trading partners.

SE Florida Oil Platform Worst Case Discharge (WCD) Response Planning Estimate

Following study of the Deepwater Horizon incident, a WCD consensus estimate was developed by CG and NOAA planners to address challenges of a large enough spill that would encompass any smaller scenarios to achieve regional preparedness planning of required equipment, personnel, and protective strategies to protect the environmentally and economically sensitive areas of Florida. As a result of this increased threat from international offshore drilling, the WCD scenario for SE Florida is an uncontrolled release of 75,000 barrels (bbls) of oil per day for 30 days.

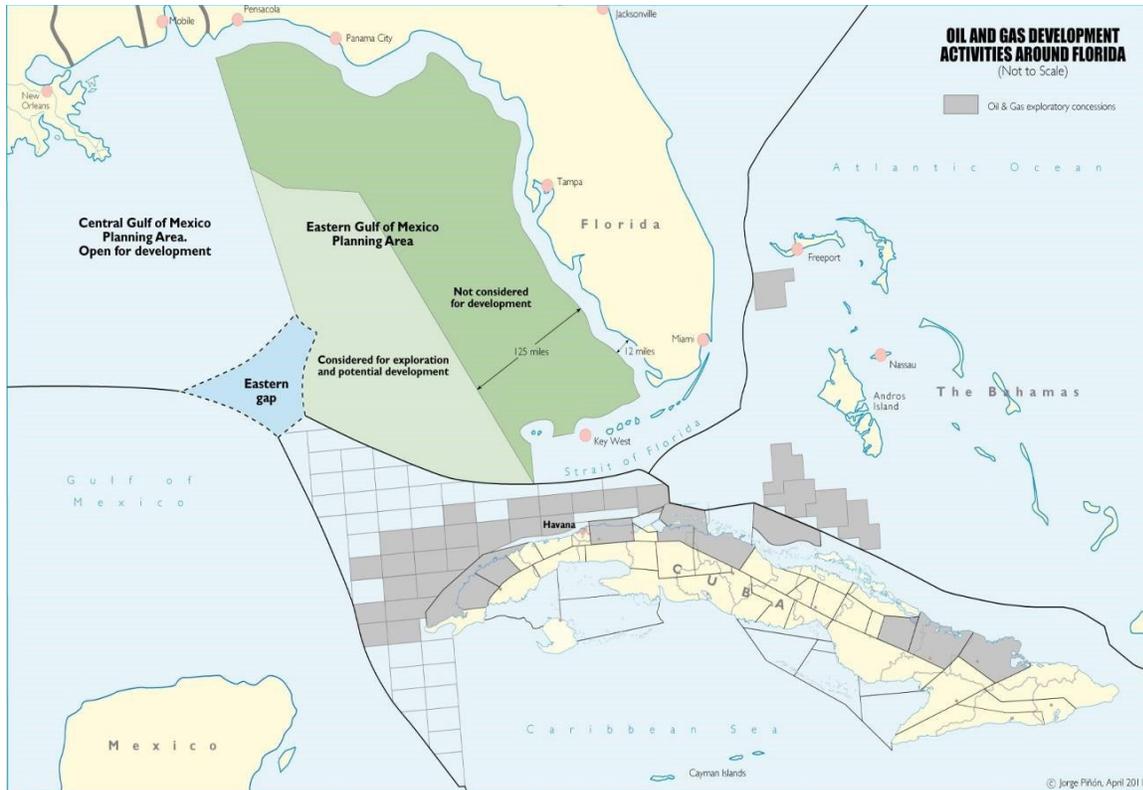


FIGURE 5100-1: Eastern Gulf of Mexico and Caribbean Oil Drilling Sites

Crisis Communications Planning

The lessons learned from the DEEPWATER HORIZON offshore response and M/V COSCO BUSAN allision oil spill demonstrated that in a response of this magnitude, public interest and scrutiny will be intense, and that timely and accurate information will be critical to maintain public confidence in the command structures to resolve the emergency. Media training is critical to all who will speak to the media on behalf of the Unified Command. Until formal Public Affairs Guidance is promulgated by the Unified

Area Command of an incident, the SE Florida Area Committee may rely upon CG District Seven Public Affairs staff or liaison with the SE Regional Domestic Security Task Force – Public Affairs Group to provide support to the Unified Command for the immediate and continuous requests for information from the media and public.

At the outset of the incident, a press release should be drafted and released to address the Search and Rescue actions involved with the incident. As soon as possible, a second press release should be released announcing the establishment of the Unified Command, and should include the initial actions taken to response to the pollution threat posed by this type of Worst Case Discharge.

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

A Joint Information Center should be established as soon as possible with representatives from each member agency of the Unified Command to coordinate the public affairs activities of all participating agencies. The Coast Guard, in its role as the as the Federal On-Scene Coordinator, should provide the Public Information Officer (PIO) for the response.

Offshore drilling rig incidents present particular challenges in status reporting due to difficulty in obtaining at-time, accurate, and reliable information. Therefore, CG public affairs policy dictates that information provided to the media on flow rate is based only on fact and not conjecture. In the absence of factual information, public affairs policy should ensure that information providers acknowledge the uncertainty and efforts to obtain reliable information.

International Oil Drilling Platform Worst Case Discharge Scenario

At 0400 on a Sunday morning, the Deepdrill Nine, an ultra-deepwater dynamically positioned, semi-submersible offshore oil drilling rig, explodes in the Florida Straits for unknown reasons in adverse weather conditions. The offshore rig is fully engulfed in flames. The fire has spread to an area around the rig on the waters' surface. The crew is abandoning the rig. The free flowing crude oil is burning at the surface, in 4 to 6 foot seas. The wind is from the south at approx. 25 knots with visibility reduced during squalls to less than ½ mile. Air and water temperature are 75 and 85 degrees F, respectively.

The CG District Seven Command Center is notified of the event at 0415 that an offshore drilling rig suddenly exploded in a position approximately 50 nautical miles south of Key West and positioned in the Florida Gulf Stream Current. The rig is fully engulfed in flames and has broken free from its well-head, leaving free-flowing crude oil to discharge into the Florida Straits. Several crewmembers are severely injured. A "MAYDAY" was issued prior to the crew abandoning the rig.

Initial Actions: CG Sector Key West received the "MAYDAY" and tasked a USCG Patrol Boat to divert to the last reported position of the rig vessel to investigate.

CG Sector Miami is placed on immediate standby to provide Search and Rescue support as directed. The initial information passed to the patrol boat is that the vessel exploded after an uncontrolled fire ignited and has broken free from the well head with no way of stopping the discharge of oil from the well. When the patrol boat arrived on-scene and located the injured crew in lifeboats, the Master informed the patrol boat commanding officer that the last calculated rate of flow could be up to 75,000 barrels per day. Several of the rig's crewmembers are critically injured and require immediate treatment for any chance of survival. The patrol boat confirmed the drill rig was the

Deepdrill Nine exploratory drilling rig, located in the waters of Cuba's Exclusive Economic Zone. The patrol boat cannot stabilize the injured rig workers, and has departed the scene with the rig's crewmembers onboard.

Sector Miami actions should include:

- (1) All CG Sector Miami Stations should be placed on B-0 for immediate sentry patrol tasking;
- (2) Full incident management team (IMT) staffing should be activated in accordance with the Sector Miami Watch, Quarter, Station Bill (WQSB);
(NOTE: it will take Sector personnel approximately two hours to arrive to CG Base Miami Beach and set-up an initial incident command post)
- (3) The SCC CDO should also conduct the following initial actions:
 - (a) Keep the District 7 (dr) duty officer and operations center informed of Sector status and preparatory activities. Once the IMT has set-up the initial incident command post, obtain the contact number(s) for routing incoming calls.
 - (b) Secure a Federal Project Number from the National Pollution Funds Center (NPFC).
 - (c) Inquire status of any current reconnaissance flights from the District 7 Command Center.

Notifications and Initiation of Response

Upon receiving notification of an incident, the FOSC should follow the initial actions outlined to ensure:

- (1) Signatory members of the Area Committee are immediately notified of a significant event;
- (2) The USCG chain of command is briefed to ensure that necessary response mechanisms are activated;
- (3) Notification of all federal, state, local, commercial, and non-government response agencies; and
- (4) Activation of appropriate response resources.

Additionally, the following considerations should be made in the event of a suspected or potential offshore drilling platform WCD scenario:

- (1) Request assistance from the USCG Gulf Strike Team;

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

- (2) Request assistance from the NOAA Scientific Support Coordinator (SSC) and begin developing initial spill trajectory modeling;
- (3) Request Florida Fish and Wildlife Conservation Commission (FWCC) to support affected wildlife surveys, assessments, and response planning (e.g. turtles, manatees, etc.);
- (4) Request aerial overflights of the affected area to assess damage, conduct Search and Rescue (SAR), and monitor for oil discharge;
- (5) Identify location to set-up the Unified Incident command Post. Ensure other responding agencies and elements are notified of ICP location; and
- (6) Identify sensitive areas that are at risk. The greatest risk is the potential for damage to the sea-grass ecosystems, mangroves, and coastal vegetation found in the area. Secondary importance is the loss of public use (and subsequent revenue) of the numerous beaches and parks. The ESAs are mapped out in detail in the Geographic Response Plan (GRP) maps.

Development of Response Strategies

After the existence of an offshore oil drilling platform WCD scenario is confirmed and initial actions are taken, the following should occur as soon as reasonably possible:

- (1) Risk assessment: SE Florida is comprised of many environmentally and economically sensitive areas that could be negatively affected with long term or even potentially permanent impacts. This area hosts numerous important resources, such as living coral reefs, mangroves, turtle and crocodile nesting areas, many bird nesting areas, high public use beaches/shoreline and extensive residential development. Identify resources at risk, prioritization of sensitive areas, and request necessary resources to conduct an efficient response. Oil discharged south of the Key Biscayne, could be carried north towards Biscayne Bay to Lake Worth Inlet, Palm Beach by the Gulf Stream and pushed westward by wind action. Oil impacting the shoreline is inevitable and incursion into inner waters is highly possible.
- (2) Hazard assessment: Material Safety Data Sheet Information (MSDS) for “Mayan” crude oil will be used. During the initial days of the incident when the oil is burning, the hazards are greatly increased due to the inherent risks of working around burning oil and the possibility of respiratory problems developing. Air monitoring on-site and at various downwind locations may be required thus must be planned for. This information should be used to assist in the development of the site safety plan.
- (3) Seasonal considerations: This scenario could occur during any time of the year. The most severe weather threat is experienced from June through November, the traditional hurricane season, but on average, the winds and seas are strongest during the

late fall and winter months of October through March. Sea turtles nest from March through October, with the greatest risk from May through September.

(4) Vessel Traffic Considerations: The Southern Straits of Florida area is a major maritime traffic route, and averages approximately 2,000 to 2,500 commercial vessel transits per month, many transiting to SE Florida ports. In the event of a catastrophic pollution incident, mariners should be notified of the potential threat and traffic routing modifications should be considered to minimize potential hazards and limit the possibility of contaminating additional vessels with pollution. Sector Miami should liaise with port captains, harbor masters, and shipping agents to notify arriving and vessels of the incident and take appropriate evasion courses near the affected area and hull monitoring for potential oiling.

Critical Decisions

(1) Should the International Offshore Drilling Response Plan (IODRP) be activated?

Immediately initiate discussions with the Seventh Coast Guard District Commander to activate the International Offshore Drilling Response Plan (IODRP), and consult with Regional Response Team 4 (RRT4) to consider the use of dispersants and in-situ burning.

(2) Can fire boom and/or dispersant equipment be obtained and deployed prior to the oil getting too close to shore?

There is currently 1500 feet of fire boom pre-staged in the SE Florida This fire boom along with associated equipment can be ready for deployment within twelve hours of request. In addition there is 16,500 feet of fire boom located in Houston Texas, 1000 Feet located in Maine, 2,000 feet in Lake Charles, LA, 1500 feet located in Port Fourchon, LA, 1000 feet in New Iberia, LA, 500 feet in Boston, MA, 500 feet in Seattle, WA, 1000 feet in Everett, WA and 500 feet in Honolulu, HI. MSRC has Air America Flight Center out of Daytona Beach, FL under contract to conduct aerial remote sensing and observations for In-situ operations In addition National Response Corp has a DC-6 and other contracted aerial spotter aircraft resources located in OpaLocka, FL .

Approximately 9000 gallons of dispersant (COREXIT 9500) are stored in Port Everglades. The National Response Corp. OSRV LIBERTY moored in Miami features a vessel deployment applicator. Approximately 2200 gallons (COREXIT 9500) are stored on board a dedicated dispersant aircraft located in Punta Gorda, FL and is capable of being deployed within 2 hours of notification. Additional significant dispersant supplies can be delivered rapidly from various pre-staged US storage locations of the Gulf of Mexico region.

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

Authorization and determination to use these alternative response technologies are strictly controlled through a consultation process with the National Response Team / Regional Response Team IV. References regarding the consultation process and procedures for use can be found in Section 6300 of the ACP and:

http://www.nrt.org/production/NRT/RRTHome.nsf/Allpages/newrrt_ivopsmanual.htm

Decision to deploy these strategies should be made as early as possible in order to mobilize the necessary personnel and equipment prior to any oil entering the 3NM boundary line from the SE Florida shoreline. Pre-spill trajectory modeling based on historical data indicates that oil may reach the near shore zone in 2-3 days, but varying environmental conditions may change these models in an actual event.

(3) Do the on-scene weather conditions permit burning?

In-situ burning generally is most effective in conditions of 20 knots of wind or less and 3-5 feet sea state or less. In order to sustain a burn, the thickness of oil corralled in fire boom should be at least 2-3 mm thick. More severe environmental conditions may not be conducive to burn operations. Additionally, oil from an offshore incident may experience extensive weathering due to the wave action and anticipated travel time from the source to US waters. This weathered oil may prove to be significantly more difficult to ignite and/or sustain burn.

(4) What additional resources are needed (MSRC, NRC, Gulf Strike Team, etc.)?

Organic response resources in the SE Florida are insufficient to staff an effective response organization from an uncontrolled offshore drilling platform spill. The tactics and strategies for containment, protection, and recovery should be identified and the necessary resources requested. Due to the logistics and time involved with moving these resources into the area, the requests should be made as soon as feasible.

(5) Where to stage response equipment?

Staging areas should be identified based on operational needs and areas potentially impacted based on the trajectory modeling of the oil. At its peak, over 7000 vessels were involved in the Deepwater Horizon spill, significant support and resupply will be required to maintain a large offshore response and near shore booming. Staging areas will need to be established and readied as soon as possible. Any public use facilities (boat ramps, parks) that will be closed/dedicated for the response efforts need to be documented for any future monetary claims of loss of public use.

(6) How and when to enact a Crisis Communications Team, and begin preparing a first press release?

One of the most critical elements of a response of this magnitude is that of public and media relations. Due to the environmental sensitivity and economic importance of the marine environment in SE Florida, there is significant public scrutiny planning efforts in response to a WCD emanating from an offshore drilling platform. It can be widely assumed that this scrutiny would be amplified exponentially during an actual incident. Therefore, it is critical to establish a Crisis Communication Team and address SAR and pollution response efforts immediately.

(7) Where to set up the initial Incident Command Post (ICP) for the response?

The ICP may initially be established at Sector Miami due to the need to have communications with Coast Guard cutters and aircraft. However, due to the size of the incident, the Incident Commander may consider moving the ICP to several different locations including County Emergency Operations Centers (EOCs) or surrounding areas as the response organization expands to address the size of the incident. Potential ICPs are identified below. Considerations for ICP locations need to incorporate adequate berthing, food, and conference facilities with sufficient IT support.

(8) What sensitive areas are at risk?

The greatest risk is the potential for damage to the coral reefs, sea-grass ecosystems, mangroves, and coastal vegetation found in the area. Secondary importance is the loss of public use (and subsequent revenue) of the numerous beaches and parks located in SE Florida. The sensitive areas are mapped out in detail in the Environmental Sensitivity Indices (ESI) and Geographic Response Plans (GRP) (Appendix 9730).

(9) Volunteer Management

Pictures of oiled wildlife from the Deepwater Horizon spill will cause a significant number of concerned citizens to patrol beaches. Immediate efforts to liaise with County Emergency Mangers should occur to recommend activation of designated volunteer coordinators. Volunteer Management in SE Florida is discussed in Annex 6a.

Trajectory Modeling of a Worst Case Discharge

Upon activation and establishment of the SE Florida Unified Command, the NOAA oil trajectory models will be the primary means for monitoring and tracking the speed and direction of the movement of the spill.

The Gulf Stream is an intense, warm ocean current in the western North Atlantic Ocean. It moves north along the coast of Florida and then turns eastward off of North Carolina, flowing northeast across the Atlantic.

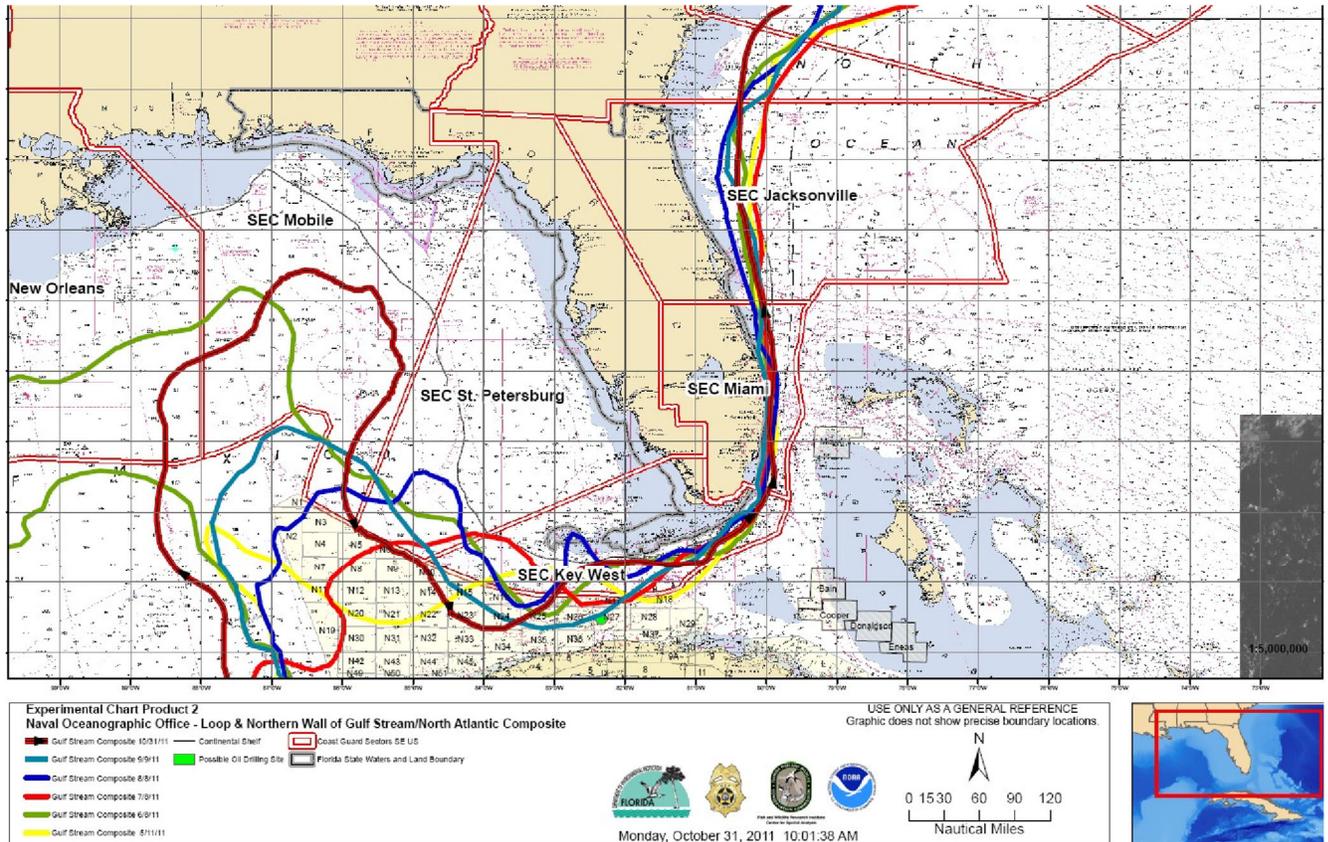


FIGURE 5100-2 The Gulf Stream Through The Florida Straits (May-Oct 2011)

According to NOAA, the velocity of the current is fastest near the surface, with the maximum speed typically about 5.6 mph (9 km/h). The average speed of the Gulf Stream, however, is 4 mph (6.4 km/h). The current slows to a speed of about 1 mph (1.6 km/h) as it widens to the north. The Gulf Stream transports nearly four billion cubic feet of water per second, an amount greater than that carried by all of the world's rivers combined.

Given the strength of the Gulf Stream Current, a release of crude oil from one of the predesignated oil exploration sites will immediately be affected by the ocean currents, so the scientific trajectory model will play a critical role in determining the most probable areas of concern.

Determine the Likely Characteristics of the Oil

The Responsible Party (RP), NOAA Scientific Support Coordinator (SSC), Environmental Unit personnel or other technical specialists will predict the probable physical characteristics of the oil from the spill after it has been weathered and transported over days or weeks. Effective pollution response strategies will account for the expected weathering of the oil including the probability that much of the oil will change characteristics over time and may have taken the form of tar balls or tar patties.

When crude oil (or a heavier refined product) floats on the ocean surface, its physical characteristics change. During the first few hours of a spill, the oil spreads into a thin slick. Winds and waves tear the slick into smaller patches that are scattered over a much wider area. Various physical, chemical, and biological processes change the appearance of the oil. These processes are generally called “weathering.” Initially, the lighter components of the oil evaporate much like a small gasoline spill. In the cases of heavier types of oil, such as crude oil or home heating oil, much of the oil remains behind. At the same time, some crude oils mix with water to form an emulsion that often looks like chocolate pudding. This emulsion is much thicker and stickier than the original oil. Winds and waves continue to stretch and tear the oil patches into smaller pieces, or tar balls. While some tar balls may be as large as pancakes, most are coin-sized. Tar balls are very persistent in the marine environment and can travel hundreds of miles.

It is critically important that response operations continue to adjust and adapt plans based on the scientific and incident specific conditions, including on-scene and projected weather conditions. As the characteristics of the oil change, tactical plans and protection strategies must also change.

Spill of National Significance – Layered Response Strategy

A spill of this magnitude located near the environmentally sensitive areas of the SE Florida will involve government agencies at all levels and create intense public interest. There will also be a significant local monetary impact due to the majority of the economy being connected to the tourism industry. This incident meets the criteria of a Spill of National Significance (SONS); the FOSC should request that designation and activation of the SONS organizational structure. However, only the Coast Guard Commandant is empowered to declare a SONS in the coastal zone. Initially, the Incident Command System/Unified Command will be established in accordance with the SE Florida Area Contingency Plan. However, as the response progresses, the SONS organizational structure will likely be implemented. The most critical administrative task is getting the representatives from the many government agencies on line and briefed on the circumstances of this disaster so there is a minimum delay in implementing the initial response strategies.

National Incident Commander (NIC). The NIC will assume the role of the FOSC in communicating with affected parties and the public, and coordinating federal, state, local, and international resources at the national level. This strategic coordination will

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

involve, as appropriate, the National Response Team (NRT), Regional Response Team (RRT), the Governor(s) of affected state(s), and the mayor(s) or other chief executive(s) of local government(s). Other NIC responsibilities will include: lead national level communications and develop strategic objectives; coordinate interagency issues; coordinate federal, state, local, and international issues; and oversee Unified Area Command activities for effective response.

Florida Peninsula Area Command. In an offshore drilling platform WCD scenario, the Seventh Coast Guard District Commander will initiate and supervise the establishment of a Florida Peninsula Area Command, to activate the International Offshore Drill Response Plans (IODRP), and also coordinate the plans and flow of personnel and resources to support the affected Coast Guard Sectors.

As depicted in Figure 3, in an offshore drilling platform Worst Case Discharge scenario, multiple levels of plans, preparations and activities will take place concurrently based on pre-established geographic zones.

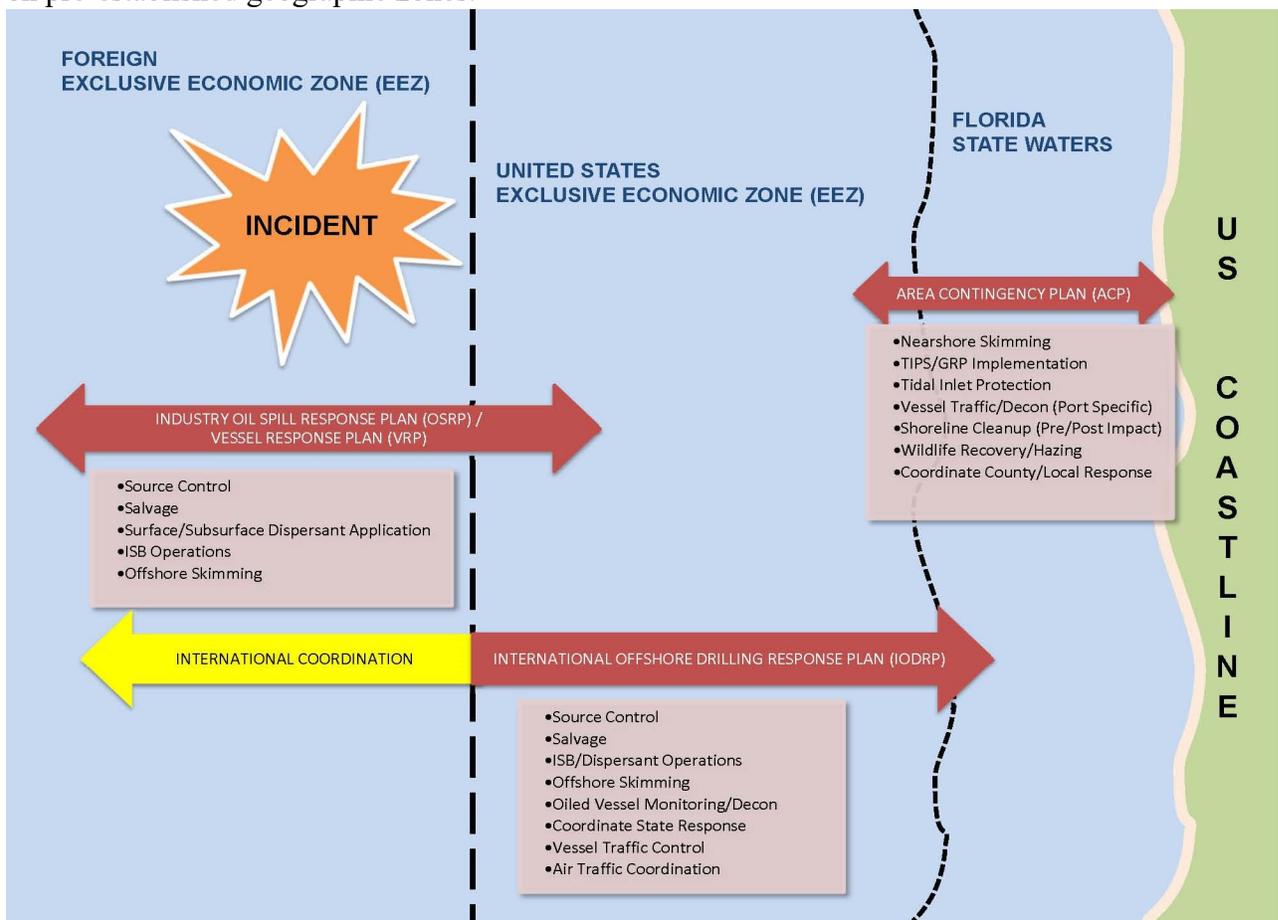


FIGURE 5100-3 Geographic Planning and Response Zones

Prioritization of Critical Resources. Critical Resources will be managed across the Florida Peninsula; response and recovery activities will require significant assets not typically on-hand in the SE Florida and other areas along the Florida coastline. The NIC and/or Area Commander will establish a Resources Section within the Area Command that will identify, prioritize, coordinate and distribute those critical response resources (boom, skimmers, collection equipment) that are determined to be most critical during the WCD incident, and prioritize the allocation of these resources.

SE Florida Response Efforts. The primary initial response activities would involve monitoring activities offshore and responding to reports of stranded tar balls along the shoreline which could involve a majority of Sector Miami personnel, including qualified Coast Guard Auxiliary personnel. For planning purposes, this could require:

- up to three cutters for offshore sentry patrols;
- 2-3 land-based Federal On-Scene Coordinator Representative (FOSCR);
- four 2-person Pollution Responder teams to respond to reports of tar balls;
- 2 extra Sector Miami Command Center watchstanders per watch dedicated for receiving and documenting reports of offshore oil and stranded tar balls ashore;
- Consider set-up/deployment of Coast Guard Vessel of Opportunity Skimming System (VOSS).
- Consider initial outreach to potential Vessel of Opportunity (VOO) list of participants
- Additional support activities and personnel include:
- Incident management staffing in accordance with the Watch Quarter Station Bill (WQSB);
- 3-4 logistics support staff for contacting additional resources needed to assist;
- Aerial observation via continuous over-flight support via I-213 requests to Seventh Coast Guard District Command Center or established Unified Area Command (UAC).

The response time for the Sector to be fully manned and operational at the Incident Command Post could take as long as 8 hours. Reservists and Coast Guard Auxiliarists who reside in SE Florida may be available to respond within 12-24 hours. Support personnel from the Gulf Strike Team historically take 12-24 hours to arrive with minimal equipment. Additional personnel from other Seventh Coast Guard District units, as well as Coast Guard Vessel of Opportunity Skimming System (VOSS) and Spilled Oil Recovery System (SORS) units, will be immediately requested and will begin arriving within 24 hours. Additional qualified pollution response personnel and equipment as needed for at-time demands would have to be accessed through Seventh Coast Guard District Disaster Response and Assessment Team (DRAT).

Prioritization of Environmentally Sensitive Areas. All near shore and shoreline strategies, plans, and tactics must carefully consider the impact of any protection efforts on the environment. Large areas of SE FL coastline are considered environmentally sensitive areas, including turtle nesting areas, mangroves and Biscayne National Park,

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

and near shore coral beds and/or Essential Fish Habitat (EFH). This is especially important in this WCD scenario, in which there is a prolonged discharge up to and/or exceeding 30 days. As learned during the Deepwater Horizon incident, protection efforts in shallow waters and tidal flats and near strong currents may actually do more harm to the environment than the pollution threat. The priority focus in the layered response strategy is to stop the flow of oil at its source, and using the strategy of offshore collection booming and in-situ burning to keep the amount of tar balls reaching the coastline to a minimum. The deployment of the offshore deflection boom, Tidal Inlet Protection Strategy booming and skimmers in the tidal inlets is meant to prevent any tar balls migrating from the Gulf Stream from reaching the more sensitive internal water areas throughout the SE FL region.

Layered Response Strategy. As depicted in Figure 3, the layered response strategies employed in this WCD scenario will be drawn from lessons learned from the Deepwater Horizon incident and also the NOAA Scientific Support Coordinator's (SSC) recommendations and shoreline response strategies listed in NOAA's Shoreline Countermeasures Manual for Tropical Coastal Environments. Response strategies are already included in the SE FL Area Contingency Plan for the Tidal Inlet Protection Strategies (TIPS) and Geographic Response Plans (GRP), and will be updated by region using the trajectory model and predicted potential impacts. Guidance on how the TIPS and GRP's would be prioritized during a response.

Assuming that the IODRP will be activated and a Unified Area Command (UAC) stood up during a WCD scenario, the following is a description of the operations and responsibilities involved in the Layered Response Strategy as depicted in Figure 3:

- (1) Source and Offshore Operations. The Florida Peninsula Area Command or National Incident Command (NIC) will be responsible for leading and coordinating the offshore response efforts and source control to a WCD.
 - (a) **Subsurface Response-Source Control.** All source control efforts and subsurface, underwater and relief well response efforts will be the responsibility of the Responsible Party and/or the National Incident Commander.
 - (b) **Rig Site Response.** Coordination of the Rig Site response at the Semi-Submersible Exploratory Drilling Rig will be led by the Responsible Party and/or the National Incident Commander.
 - (c) **Offshore Response.** The offshore response strategy is to remove as much oil from the ocean surface as possible using in-situ burning, dispersants and open water skimming. Containment, Countermeasures and Cleanup Skimming vessels would be deployed, including: Gulf Strike Team VOSS (Vessel of Opportunity Skimming System) and Open Water Oil Containment and Recovery System (OWOCRS), Clean

Gulf Associates twelve OSRVs (Oil Spill Response Vessels) and FRUs (Fast Response Units) and the CGA 200 HOSS (High Volume Open Seas Skimmer) barge. The three OWOCRS from the National Strike Force (NSF) located in Mobile, AL, could also provide support. Tank barges would also be required to pump recovered oil into if offshore recovery were attempted. Storage capacity in tank barges would be necessary for storage, separation and transportation of recovered oil.

The use of Alternative Response Technologies (ART), including dispersants and in-situ burning, may also be authorized for use in compliance with the policies of the Regional and National Response Teams.

(2) Nearshore Operations. The top priority of all nearshore response efforts will be to prevent the oil from passing through tidal inlets into the shallow waters and more sensitive areas. Coordination and prioritization of the nearshore response efforts will follow the Tidal Inlet Protection Strategies (TIPS) and Geographic Response Plan (GRP) sections of the SE FL Area Contingency Plan and will take into account the NOAA Trajectory model for the WCD spill. These initial strategies cover all 15 tidal inlets of the SE Florida region from Biscayne Bay to Sebastian Inlet. The proposed strategies emphasize flood-tidal conditions, and the basic assumption is that the WCD pollution threat (tar balls) will be coming from the open Atlantic Ocean via the Gulf Stream.

(a) In SE Florida, approximately 98,000 feet of boom are regionally available with all sources considered. Many of the Tidal Inlet Protection Strategies (TIPS) will include inlets that will be very difficult to boom due to strong currents, changing tides and large expanse. Additionally, the decision to deploy a TIPS in the same geographic location as a Geographic Response Plan (GRP) is highly likely. In this case and due to the extremely limited response resources available, it is important to employ a prioritization strategy that takes into account operational realities and net environmental benefits.

Shoreline protection and response efforts will be coordinated by trajectory analysis. The boom, anchoring system and other response equipment used must be suitable for shallow water and sensitive environment (corals/sea grasses). The shoreline response strategy will be very labor intensive and will require constant monitoring of the placements. Vehicles would also be required. The number and type of vehicles would depend largely on the areas and severity of shoreline impact. 4x4 Trucks would be needed to mobilize the required small boats and personnel transport vehicles such as buses or vans would be necessary to mobilize response and clean up personnel.

(b) Required Resources for Tidal Inlet Protection Strategies. Prioritization of inlet protection efforts will be based on the NOAA trajectory models of the projected movement of the oil. A region-wide response to the offshore drilling platform WCD

scenario for the TIPS in the SE Florida could require the following estimated amount of equipment to prevent tar balls from marshes, mangroves and water intakes:

(1) Boom:

- Northern Division (Palm Beach, Martin, St. Lucie, and Indian River Counties) –
Deflection Boom: approximately 43,116 feet
Protection Boom: approximately 15,669 feet
- Southern Division (Upper Keys, Miami-Dade, and Broward Counties) - Deflection Boom: approximately 29,842 feet
Protection Boom: approximately 9,166 feet

(2) Skimmers: although the assumed threat will be oil coalesced into tar balls by the time it migrates to the SE Florida region, some offshore skimming operations are identified as needed at inlet openings or due to limited natural landside collection locations must be positioned where vacuum trucks would normally perform the collection.

- Northern Division (Palm Beach, Martin, St. Lucie, and Indian River Counties) – approximately 8-16 combination or near shore and off shore skimmers
- Southern Division (Upper Keys, Miami-Dade, and Broward Counties) – approximately 7-14 combination or near shore and off shore skimmers

(3) Oil Spill Removal Vessels (OSRVs): 1 vessel needed on call for “spot” reports of large oil mats or for surface application of dispersant.

(4) Aircraft: minimum of 1 fixed wing aircraft for dedicated sorties (pollution mapping; FOSC trips, etc.) and periodic use of fixed wing for video mapping and potential dispersant applications. FAA assistance may be required to establish flight restrictions for the airspace surrounding the trajectory path (real or forecasted).

(5) Oil storage vessels/tanks: this type of asset will be highly dependent to the number of skimmers involved. It is estimated that approximately a combination of 10-30 small tank barges and/or vacuum trucks would be required to support the deep water skimming operations, shallow water skimming operations, and transport the recovered oil/water mixture to shore for disposal.

(6) Support vessels: 2-5 appropriate sized vessels/tugs capable of towing the deep water skimming systems and shuttling barges to shore. Another 20 smaller vessels to support the shallow water skimming operations. Approx 200 small utility boats for tending skimmers, tending boom and other logistical support.

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

(c) Required Resources for Geographic Response Plans (GRP) Prioritization of the GRP's is contingent upon the trajectory of the oil, deployment of the TIPS, and affected sensitive areas. The 2012 update of the GRP's calls for approximately 70 of boom and identifies 196 sensitive areas.

(d) Shoreline Pre-Cleaning. Prior to shoreline impact of free floating tar balls or mats, activation of the Volunteer Coordination Plan will mobilize volunteer teams in order to conduct pre-cleaning of non-oiled debris. Operations will consist of moving any stranded non-oiled debris beyond the high water mark (wrack line), but short of vegetated areas, to reduce the amount of potentially oiled debris and simplify recovery of tar on shorelines.

(e) Shoreline Cleanup. The trajectory model and the scientific recommendations as to what form of oil or tar balls is expected, will both be used to develop response tactics. If the WCD spill trajectory indicates tar balls are predicted for potential impact to any area of the SE Florida region

(f) Geographic Subdivision Monitoring Plan. Using the geographic subdivisions shown in the Geographic Response Plan, properly trained Shoreline Cleanup Assessment Team (SCAT) and shoreline cleanup personnel will be pre-positioned in those identified GRP subdivision areas with the highest probability of pollution impact to ease planning, reporting, and logistical support.

Prioritization of Critical Resources. Critical resources will be defined and managed through the Florida Peninsula Area Command. Recovery activities will require significant assets not typically on hand in the SE Florida region and other areas along the Florida coast. The NIC and/or Area Commander will establish a Resources Section within the Area Command that will identify (through communications with local regional Incident/Unified Commands), prioritize, coordinate and distribute those critical response resources (boom, skimmers, collection equipment) that are determined to be most critical during the WCD incident, and prioritize the allocation of these resources within the response organization.

Cleanup and Disposal. The cleanup stage of the operation will involve offshore skimming operations and cleaning the many miles of wildlife, marshes, sea walls, beaches, and docks that may become impacted. This part of the operation is expected to last months depending on the extent of shoreline impact. When offshore skimming is complete, shoreline clean ups and operations will consist mainly of cleaning the beaches and man-made shore structures (docks, sea walls, etc.) using sorbents, portable skimmers, and pressure washers. Significant impacts will occur to mangrove-lined shorelines if oiled.

The Shoreline Cleanup and Assessment Teams (SCAT) will provide recommendations to the Incident/Unified Command on the best approach to clean/protect these sensitive resources. This part of the cleanup could take many months and will require hundreds of thousands of feet of sorbent boom and materials. Numerous waste storage areas will be established to store solid and liquid product. In addition, barges and Oil Spill Response Vessels (OSRV) will need to be off-loaded to continue response operations. Options include local incineration of solid oily waste at designated staging areas and/or transporting the material over the road to a Waste Plant, and/or specific hazmat landfill outside the region.

Synthetic sorbents (i.e., pads, sweeps, booms) have become standard response materials in the “mechanical recovery” of spilled oil. Their oleophilic, hydrophobic character makes them efficient at separating oil and water and they are routinely used to recover oil from solid surfaces as well (e.g., rubble, cobble and boulder shorelines; equipment/gear; vessels; etc.). Since oiled sorbent material often constitutes a substantial percentage of the oily solid waste generated during spill response and cleanup, opportunities for minimizing this waste volume should be considered.

Disposal options will be evaluated by the Disposal Group Supervisor, in compliance with federal, state, local laws, and implemented into a Waste Disposal Plan. Cleanup operations will normally be secured after a joint survey has been conducted by the Unified Command, natural resource trustees, and state and local agencies. The decision will be based on overflight information, the feasibility of continuing oil removal operations offshore, the daily recovery rate of operating skimmers and the amount of oil remaining on the impacted shorelines. At some point in the operation, the removal actions will cause more damage to the environment than the oil presents.

5100 Nearshore and Shoreline Protection

If the spill went unabated, shoreline impact would depend upon existing environmental conditions. Nearshore response may include the deployment of shoreline boom on beach areas, or protection and sorbent boom on vegetated areas. Strategies would be based upon surveillance and real time trajectories provided by Shell contractors that depict areas of potential impact given actual sea and weather conditions. Strategies from the SEFL ACP, The Response Group and UC would be consulted to ensure that environmental and special resources would be correctly identified and prioritized to ensure optimal protection. The Response Group shoreline response guides depict the protection response modes applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances.

5101 Mechanical Cleanup Methods

Near shore mechanical recovery resources will be deployed to contain and collect oil prior to reaching the shoreline, minimizing the amount of oil that may impact the shoreline. In areas of shallow water, it may be possible to collect or corral the oil with ocean boom and take it to deeper water or low-current areas that have better skimmer access and higher recovery rates. Sorbent boom and snare boom may be utilized to recovery light sheens and more viscous oils.

Sorbent boom is designed primarily to absorb oil, although it can act as a protective measure against thin oil sheens under very quiet water conditions. Snare boom (pompoms tied onto a line) is effective as a sorbent of more viscous oils under higher wave and current conditions. When used with conventional booms, sorbents can be placed outside of the boom to pick up escaping oil, or inside the boom to absorb contained oil.

5102 Shoreline Protection

The Response Group shoreline response guides depict the protection response modes applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Supervisory personnel have the option to modify the deployment and operation of equipment allowing a more effective response to site-specific circumstances. Booming strategies will be implemented to exclude oil from impacting priority resources, and may be diverted to collection areas for recovery. The following are various types of boom that may be deployed to protect the shoreline:

- **Near Shore Boom:** When oil threatens impact shoreline or marshes, this medium size boom (~18") can be deployed to deflect or contain oil, or prevent impact to sensitive areas.
- **Bottom-seal Boom:** This boom is designed for deployment in very shallow water here traditional boom may foul on the bottom during low water levels. This boom's special features allow it to conform to the substrate, so that it can continue to act as a barrier to oil during changing tides or lower water levels. Bottom seal boom uses ballast tubes that are filled with water and actually lay on the bottom to provide a seal against oil passage.
 - Shallow water boom is effective in higher-current areas because the shallow skirt minimizes the drag in the current.
- **Inland Boom:** Inland boom is the smallest conventional boom and is designed for deployment in very shallow water; as the draft is only 6-12 inches. It is normally deployed in more protected waters where there is little to no wave action.

5103 Wildlife Support

SEFL ACP

Risk Analysis: Area Planning Scenarios, Annex B

If wildlife is threatened due to a spill, MSRC and CGA have resources available for Shell, which can be utilized to protect and/or rehabilitate wildlife. Wildlife support resources are identified in the Shoreline Protection & Wildlife Support status board.

5200 Additional Support for a blowout lasting 120 days:

- Ocean Barge to transport recovered oil from offshore skimming systems and temporary storage barges to onshore disposal sites (identified in Area Contingency Plans and approved by the State)
- Additional OSRO personnel to relieve equipment operators
- Vessels for supporting offshore operations
- Field safety personnel
- Continued surveillance and monitoring of oil movement
- Helicopter, video cameras
- Infrared (night time spill tracking) capabilities □ Logistics needed to support equipment:
 - Parts, trailers, and mechanics to maintain skimmers and boom
 - Staging areas
 - Fueling facilities
 - Decontamination stations
 - Dispersant stockpile transported from Houston to Houma
 - Communications equipment and technicians □ Logistics needed to support responder personnel:
 - Food
 - Berthing
 - Additional clothing/PPE/safety supplies
 - Decontamination stations
 - Medical aid stations
 - Safety personnel