Central Texas Coastal Area Contingency Plan (CTCACP)

Risk Analysis: Area Planning Scenarios

Annex 1a

May 2022

Record of Changes

Change Number	Change Description	Section Number	Change Date	Name
1				
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3				
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1000 Introduction

The ACP has been developed by the Sector Houston-Galveston Captain of the Port, in consultation with the Central Texas Coastal Area Committee, and is based on an assessment of all potential sources of discharges in this area meeting the provisions of 40 CFR §300.210(c) of the NCP. The ACP is intended to be the fundamental element for building confidence that the plan addresses the necessary elements for planning a successful response within the area.

1100 Average Most Probable Discharge

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 Response Plans.

1200 Maximum Most Probable Discharge

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 Response Plans.

1300 Worst Case Discharge

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 Response Plans.

At a minimum, this annex addresses the following area planning elements:

1. Oil spill discharge and hazardous substance release history.
2. A risk assessment of potential sources of discharges within the area.
3. A description of planning assumptions describing a realistic assessment of the nature and size of possible threat and resources at risk.
4. 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, or onshore facility operating in the area as applicable.

1400 Spill and Discharge History

Table 1: Record of Significant Discharges and Releases

Date	Location	Source V = vessel OSF = offshore facility ONF = onshore facility OP = Pipeline	Product	Amount (bbls)	Responsible Party
8 Jan 2012	Texas International Terminals	Rail Car	Crude Oil	40	Rail Car #193051
19 Apr 2015	Cedar Bayou	ONF	Crude Oil	476	Crest Chem LLC
6 Sep 2016	ITC	V	MGO	2071	Afromax Shipping
17 Mar 2019	ITC Deer Park	ONF	Mixed oils & Firefighting Water	11904	ITC
22 Mar 2014	HSC & Galveston, Texas City Y	V/TB	RMG 380	4000	Kirby
9 Jun 2020	Intercostal Waterway	V/TB	Condensate	333	Enterprise

1500 Risk Assessment

A high probability exists for a WCD to occur anywhere in the Central Texas Coastal planning area given the high volume of deep-draft vessels (tank and non-tank vessels), the prevalence of oil and gas support vessels, offshore facilities (drilling rigs), oil and petrochemical terminals, and tug/tank barge composites. In addition, the unpredictable and sudden severe weather during transitional seasons and afternoon thunderstorms during the summer increase the risk.

2000 Possible Sources of WCD

The sections below describe the scenarios surrounding the source of a WCD scenario for offshore facilities, onshore facilities/pipelines/marine terminals, tank vessels and non-tank vessels.

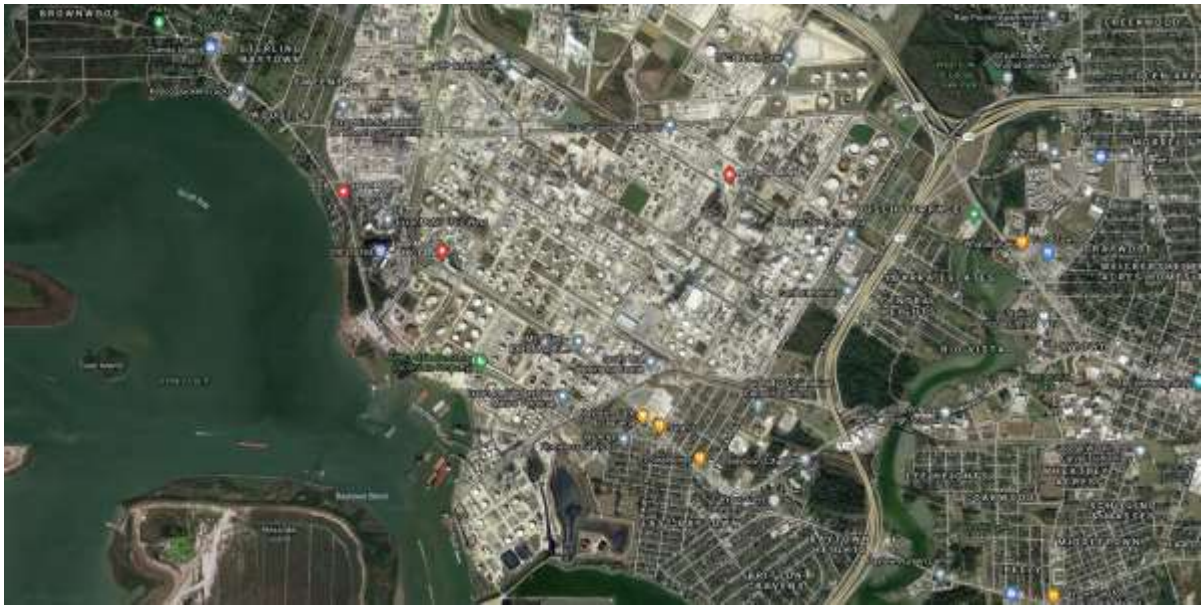
2100 Offshore Facilities/Pipelines

See Table 4 of Section 3301 of the Central Texas Coastal Area Contingency Plan (CTCACP) for OCS facilities and pipeline WCD volumes. Also see Section 3303: Gulf of Mexico Offshore Technical Information for Area Contingency Planning in the ACP base plan for OCS WCD scenarios and modeling.

2200 Onshore Facilities/Pipelines/Marine Terminals

The WCD from an onshore facility, pipeline, or marine terminal will be contingent on the specific location, type of product, weather conditions and scenario in which the discharge would occur. The Central Texas Coastal planning area is home to numerous onshore petrochemical facilities. These facilities also utilize thousands of miles of pipelines to receive feed stocks and transport products to other facilities and terminals.

The ExxonMobil Terminal located in Baytown has been identified as the WCD from an onshore facility. The facility has a WCD of 37,464 barrels of oil products. The terminal has a total of 1.1 billion barrels of tank storage capacity, comprised of 480 tanks with capacities ranging from 140 to 490,000 barrels each. The ExxonMobil Baytown Terminal can receive and redeliver crude oil and products via barge, ship, tank truck, tank rail car and pipeline, and it can store and/or blend crude oil or products for short or long-term periods.



Picture 1: ExxonMobil Terminal in Baytown, TX

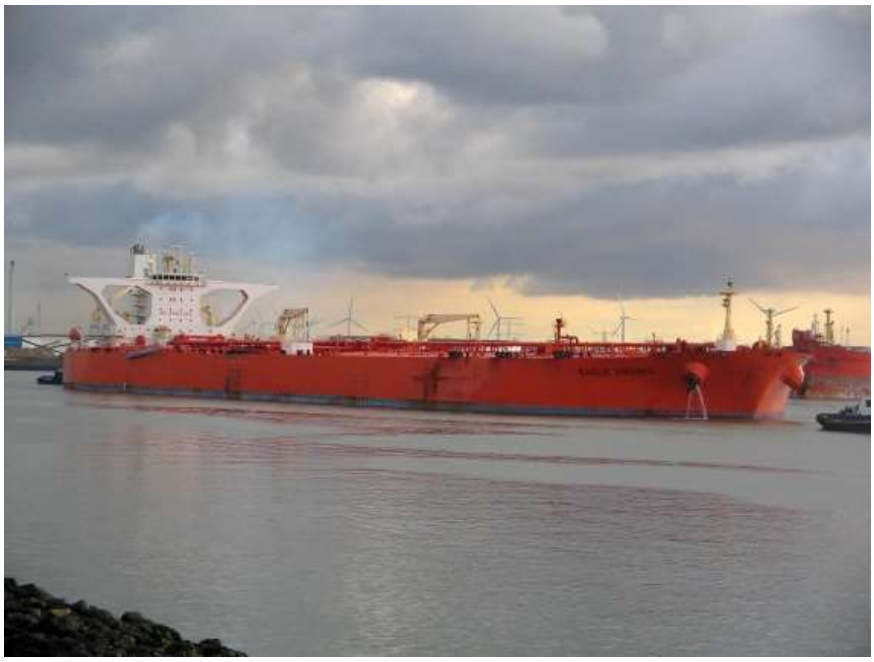
2300 Rail

The WCD from Rail would be from BNSF/Union Pacific in Harris County, with 12,857 barrels (540,000 gallons) of oil products.

2400 Tank Vessels Offshore

The WCD from a tank vessel originating in the Central Texas Coastal area has been identified as the total loss of a Very Large Crude Carrier (VLCC). These types of vessels carry approximately 2 million barrels of Arabian heavy crude (API 27.67) crude products as cargo on board.

The likely scenario involving the total loss of a VLCC would be the collision with another VLCC in the Freeport Lightering Area resulting in the total loss of one of the VLCCs and all product on board.



Picture 2: VLCC EAGLE VIRGINIA

The VLCC EAGLE VIRGINIA is considered to be the largest crude oil tank ship that arrives at the Lightering Zone in the CTCACP planning area. Owned by American Eagle Tankers Houston, TX, the vessel is 333 meters (1,092.5) long with a Dead Weight Tonnage (DWT) of 307,000 tons, with a draft of 75 feet. The M/V EAGLE VIRGINIA is capable of transporting 2,000,000 barrels of crude oil. In order to transport the crude oil to the ports of Houston and Texas City four lightering ships are used to transport the cargo. As a reference point, the VLCC EAGLE VIRGINIA is three times the DWT of the vessels it lighters to which are mainly AFRAMAX tankships. In cargo capacity an AFRAMAX tankship used for lightering into the Port of Houston and Texas City has a capacity of 419,000 barrels.

A WCD incident would involve any of the lightering ships colliding with the EAGLE VIRGINIA in a fog laden lightering zone which would break the VLCC in half discharging all 2,000,000 barrels of crude oil into the Gulf of Mexico.

2500 Tank Vessels within the Houston Ship Channel, Texas City Channel, and Galveston Inter-coastal Waterway

Deep draft vessel collision with a string of oil barges. Collision resulted when tow vessel lost control of barges (due to unusually strong tidal currents) as it exited the GICW at Bolivar Peninsula. The barges swung into the path of the outbound tank ship. The tank ship impacted the barges at a 45-degree angle. The bulbous bow undercut the two lead tank barges causing major structural damage. The two lead barges immediately sank in the HSC. The resulting discharge would be 45,000 BBLS of #6 Fuel Oil.

As a result, of an incident in this location, there will be severe impacts to the Marine Transportation System as well as impacts to environmentally sensitive areas.

3000 Vulnerability Analysis

The Sector Houston-Galveston Captain of the Port zone includes many areas that are considered vulnerable for the effects of an oil spill. The potential effects of the spill could affect human health, property, and the environment. Information taken from real world events and spill trajectories has shown that a WCD from any source could have a devastating effect on fish, wildlife, and sensitive environments in the area. The analysis shows that the following items could be vulnerable from the effects of a major oil spill in the area:

(1) Water intakes (drinking, cooling, or other)
(2) Businesses
(3) Residential areas
(4) Wetlands and other sensitive environments
(5) Fish and wildlife
(6) Endangered flora and fauna
(7) Recreational areas
(8) Marine transportation systems
(9) Utilities
(10) Other areas of economic importance (beaches, marinas).
(11) Unique habitats or historical sites.

A WCD from a VLCC tank vessel or an offshore/onshore facility would most likely impact these vulnerable and sensitive environments, which are identified and described in the following sections of the ACP base plan:

- Section 9000: Environmentally and Economically Sensitive Environments
- Section 10000: Fish and Wildlife and Sensitive Environments Plan (FWSEP)

The strategies and tactics used to protect, recover, and mitigate the effects of a WCD are addressed in Section 6400: Oil Spill Containment, Recovery and Cleanup of the ACP base plan.

3100 Planning Assumptions

The probability of a WCD occurring in the area is low. However, offshore facility operations, large crude carrier vessel transits, navigational hazards, and the operational activities associated transfer, handling, and storage of oil, along with the activities associated with offshore oil and gas

exploration and production within the area provide high consequence situations for a WCD. Factor in natural disasters such as tropical storms and other severe weather events, the likelihood of a major spill occurring in the area increases significantly.

3101 Offshore Facilities

Please see Section 3303 of the ACP base plan for information related to oil and gas exploration and production.

3102 Response Resources for WCD Offshore Platform Scenarios

For a list of the most up to date offshore response resources please see the Marine Well Containment Company (MWCC) or the HWCG LLC websites; additional links to offshore resources may be found in Section 7000: Response Resources of the ACP base plan.

3200 Planning Scenarios

Given the applicable conditions described above, the WCD volumes from all potential sources is listed in 3301 of the ACP base plan.

Additional Scenarios based on Area Risk Analysis will be developed as deemed necessary by the Area Committee.