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9400 Area Planning Considerations

9410 Discharge and Release History

The Southern Coastal North Carolina Area contains two major shipping routes, up the Cape Fear River to Wilmington, NC and through Beaufort Inlet to Morehead City, NC. Both ports generally handle the same type of cargo, however, Wilmington receives a much greater portion of the traffic. Wilmington is located 26 miles up the Cape Fear River. The channel is 400 ft wide at its most narrow point and has a project depth of 38 - 40 ft. The river bottom is mostly sand and soft mud. At the entrance of the Cape Fear River is a rock ledge about 38 ft below mean sea level. All vessels with drafts near 38 ft must cross the ledge at high tide and travel up river against the ebbing current. Since arriving large vessels generally travel against the current, there is a lower risk for head-on collisions. Vessels departing the port travel down the river on the flood current to cross the ledge at high tide. While in the Cape Fear River bulk liquid cargo transfers can take place at any one of 14 terminals. The largest portion of chemical cargo transferred in the Cape Fear River is methanol, xylene, hexane and black and white liquor. Several other chemicals are transferred in smaller quantities. Oils transferred in the zone include mostly #6 and #2. There is no crude oil transferred anywhere in the zone. The Morehead City area includes Radio Island and Beaufort, NC. The approach to Morehead City is only 4 miles. The minimum width of the channel is 400 ft with a project depth of 42 - 45 ft. Piloted vessels enter and exit the port without concern for the tidal current. The only consideration for time of day is the draft of the vessel and then only if the draft is nearing 40 ft. Cargoes in this area consist mostly of asphalt and phosphoric acid. Oil spills from large commercial vessels do not occur frequently. The majority of oil discharges in the zone occur from small sources such as sunken fishing vessels and on-shore activities. All required facilities in the Wilmington COTP Zone have approved Response Plans and operate under the Facility Self-Inspection Program.

9410.1 Worst Case Discharge.

The worst case discharge is the largest foreseeable discharge in adverse weather. It is based on pollutant capacity, environmental sensitivity, hydrodynamics, bottom topography and historical data. The worst case discharge consists of 250,000 barrels of #6 oil in the Cape Fear River.

9410.2 Maximum Most Probable Discharge.

The maximum most probable discharge scenario in most cases is based on the largest recorded spill size for the area. For a facility the amount discharged would be 20,000 gallons. For a vessel the amount discharged would be 1000 gallons of #6 was discharged when a fuel transfer was improperly disconnected.

9410.3 Most Probable Discharge.

The most probable discharge scenario is based on the size of the average spill in the area. This discharge consists of a maximum of 50 gallons, usually from a personnel or mechanical error associated with recreational fueling operations or sinking fishing vessels. Many smaller spills of unknown origin are reported nearly daily.

9420 Scenarios Development

Scenario development should be based on the objectives, and consider vulnerabilities, hazards or weaknesses to the organization, and what probability there is of each occurrence. The depth and quantity of this information could vary depending on the situation the designers wish to create, and the objectives that were developed previously. These considerations will also have an impact on the type of exercise to be conducted: a tabletop, functional or full-scale exercise. And, of course, the style and extent of the scenario developed will depend on the type of a tabletop exercise as it would be for a full-scale exercise. At a minimum, the scenario should contain:

- Date and time of the incident;
- Weather conditions at the time of the incident;
- Tidal and current conditions at the time of the incident;
- Primary cause of the incident
- Source or sources of the spill;
- Any other pertinent consequences resulting from the incident.

9420.1 Resource Considerations

The following tables should be used as a guide to determine needs for equipment, personnel, and resources for any of the following scenarios.

Reference: (a) COMDTINST M3110.12B

1. Equipment requirements for a WORST CASE SCENARIO DISCHARGE. Equipment and quantity derived in accordance with reference (a).

PERSONNEL EQUIPMENT	QUANTITY REQUIRED	PERSONNEL EQUIPMENT	QUANTITY REQUIRED
ORDNANCE EQUIPMENT		PROFESSIONAL EQUIPMENT	
Pistol		Electrical Equip	
Sub-machine gun		Electronic Equip	
Rifle		Engineering Equip	
Shotgun		Vehicle Tool Kit	
Machinegun, M60		Vessel Insp Kit	
Body Armor		Marine Invest. Kit	
Web Gear (Ind.)		Subsistence Equip	
Weapons Container		Photographic Investigation	
COMMS EQUIPMENT		Photo ID Kit	
VHF BASE UNIT		Real-time Automated	
VHF REPEATER		Personnel I.D. Sys	
VHF SAT-COMM			
VHF Hand Held. DES		ADMIN EQUIPMENT	
VHF H-H,DES,INT.SAFE		Safe, 2 Drawer	
VHF Bracket Mount		Safe, 4 Drawer	
VHF Bracket Mnt. DES		File Cabiner, 5 Drw	
Pager Display		ocker, Storage	
Signal Device, Dis.		Bookcase, 3 Shelf	
Cellular Tele, Veh		Table	
Cellular Tele, Port		Desk, Dble	
FOUL WX/PERSONAL GEAR		Pedestal	
Basic		Chair, Office	
Boat		Typewriter	
Cold Weather		Calculator	
Extreme Cold Wx		Copier	
SURVIVAL EQUIP, BOAT PILOTING EQUIPMENT ANTI-EXP/DRY SUITS		Status Boards	
Coveralls, Anti-Exp.		Laser Printer	
Dry Suit		ENVIRONMENTAL HEALTH	
		Chlorine Test Kit	
		Milipore Filter	
VEHICLES(w/sfty equip)		Bacteriological Kit	
Sedan		Probe Thermometer	
Pickup,3/4ton w/tow		Flashlight	
8 Pax Van		FIRE FIGHTING EQUIP	
ADP EQUIPMENT		Basic	
Standard Workstation W/ X.25 connection		Firefighter	
Computer, Laptop W/ Modem		RESPIRATORY EQUIP	
Portable Printer		EEBA	
		SCBA	
		NBC/CBR Equipment	
MEP EQUIPMENT			
Pollution Inv Kit			
Pers Protect Equip			
First Aid Resp. Kit			

Response Equipment	UTC	Quantity Required	Available		Contractor Provided	Short Falls
			MSO	Group		
VESSELS (w/outfit)						
378 WHEC	5WHEA					
270 WMEC	5WMEC					
210 WMEC	5WMEC					
180 WLM	MWLBA					
157 WLM	MWLMB					
133 WLM	MLLMC					
110 WPB	5WPBC					
100 WLIC	MLC40					
82 WPB	5WP55					
65 WLI	MLC30					
SMALLBOATS (w/outfit)						
SRB Type	MBT01					
41 UTB Type	MBT02					
28 UTB Type	MBT02					
25 UTB Type	MBT02					
21 PWB Type	MBT03					
Other Boat	MBT06					
AIRCRAFT (w/outfit)						
HC130	3CG10					
Crew	3CG05					
HU25B	3EJ21					
Crew	3CG04					
H60J	3EJ35					
Crew	3CG06					
POLLUTION RESP EQUIP						
Boom 100 ft. section						
Line 1 in. circum.						
Chain, Anchor						
Anchors 15 lb. Danfor						
Shackles						
Thimbles						
VOSS OR SORS						
Skimmer						
Vacuum Truck						
Tank Truck						
Dracone						
Tank Barge						

Reference: (a) COMDTINST M3110.12B

Personnel requirements for a WORST CASE SCENARIO DISCHARGE. Force Elements derived in accordance with reference (a). Additional contractor provided personnel may reduce number of Coast Guard personnel required.

Force Element	O/E Pers	UTC	Quantity Required	Available		Contractor Provided	Short Falls
				MSO	Group		
Boat Crew	0/4	QAG21					
Boat Crew	0/3	QAG22					
PSS Boarding Tm	0/2	QSK32					
Fac Insp/Survey Tm	1/2	QSK50					
Phys Sec Tm	0/2	QSL50					
MER Tm	0/4	NDN70					
Marine Investigator	1/0	HAL30					
Marine Inspector	1/0	HAK30					
CVS Sup	1/0	HAK10					
Crisis Act TM	3/0	CSM30					
OPCEN Watch Tm	1/1	XAR10					
OPS Support	0/1	XAN61					
Comms Support	0/1	6AP21					
Port OPS Sup	0/1	XPOPS					
Invest Tm	1/7	PAL62					
Marine F/F Coord	0/1	QAK20					
Liaison Officer	1/0	LSM40					
Pub Affairs Off	1/0	68M50					
Pub Affairs Sup	0/1	LAN40					
Envir Hlth Sup Tm	1/1	FAQ10					
Medical Sup Tm	0/3	FAQ20					
Data Proc Sup Tm	1/3	6AN10					
Legal Sup Tm	2/2	LAN70					
Electronics Sup Tm	0/3	EAP30					
Engin Sup Tm	0/5	4AP40					
Security Police Tm	0/4	QSL60					
Subsistence Sup	0/1	LAQ41					
General Sup Tm	0/3	ZAN30					
Admin Sup Pers	0/1	LAN20					
Logistics Sup	0/1	L8N70					
C&C Team - Officer	2/0	CSM10					
C&C Sup - Officer	1/0	CSM20					
Crisis Action Team	3/0	CSM30					
C&C Team Enlisted	0/2	CSM40					
C&C Sup - Enlisted	0/1	CSM50					
C&C Sup - OFF/ENL	1/1	CSM60					
TOTAL PERSONNEL REQUIRED:							
Officer							
Enlisted							

*No distinction made between officer/enlisted for contractor provided personnel

9420.2 Strategy

Cleanup operations should be implemented as rapidly as possible to reduce the potential for migration into clean areas. Cleanup or treatment techniques are categorized as leave alone, pick-up or wash off. *Some factors for which the selection of techniques depend upon are:*

- Soil or shoreline type
- Slope or grade
- Amount of product / degree of product impact
- Site sensitivity (ecological, cultural, economic, human use)
- Depth of penetration
- Equipment trafficability and access

The appropriate equipment to implement the selected technique(s) is evaluated once the treatment decision has been made. *This selection is generally based on several factors including:*

- Applicability (*Primary Factor*)
- Availability
- Access
- Trafficability

9420.3 Worst Case Discharge Scenario

9420.31 Description

During a tropical storm, a 250,000 barrels (10,500,000 gallons) oil tanker fully laden with #6 oil, grounds on the ledge at buoy #11 at the entrance of the Cape Fear River resulting in a catastrophic release of the entire cargo over a period of two hours. The tide and current will, over the next two weeks, spread the oil up the Cape Fear River as well as out to sea and westward along the Elizabeth River and the AIWW.

At the time of the incident (T) the wind was 180_T at 65knots, and the temperature was 80_ F. As the tropical storm moved onshore, the wind changed as follows:

T + 2hours = 270_T at 35knots

T + 6hours = 270_T at 20knots

T + 12hours = 280_T at 10knots

9420.32 Assumptions

Because the dynamic sensitivity variables cannot be taken into consideration, only static sensitivity will be considered. Therefore, no endangered, threatened or commercially harvested species are mating, nesting, or spawning.

9420.33 Response Actions

The response actions for a Worst Case Discharge are divided into five primary phases.

- Assessment and Notifications
- Initial Response Actions – Resource Activation and Containment
- Identification and Prioritization of the Potential Impact Zones.
- Protection Options for Potential Impact Zones.
- Cleanup Options for each zone, Remediation and Restoration.
- Disposal and Assessment.

At no time shall any personnel be placed in danger to effect the securing of the source.

Action # 1

Discovery of spill/ Secure the source (*if possible*).

Action # 2

Terminate appropriate operations. Evacuate (*if necessary*).

Action # 3

Perform notifications.

Action # 4

Assess spill volume, site conditions, safety.

Action # 5

Determine resources and initiate containment activities (*if possible*).

Action #6

If necessary, request assistance from the local police and fire departments in site control and evacuations.

Action #7

Containment and protection.

Action #8

Recovery, remediation and site restoration.

Action #9

Disposal and decontamination.

Action #10

Reports and documentation.

9420.4 Maximum Most Probable Discharge Scenario

9420.41 Description

A Greek flagged freighter was taking on #6 bunkers at the North Carolina State Port Authority (NCSPA), Wilmington, NC. The person-in-charge of the shipboard portion of the transfer went below for coffee. While he was away, the NCSPA Police noticed that the transfer hose had ruptured. Approximately 1000 gallons of #6 fuel oil entered the Cape Fear River before the transfer could be shut down. The NCSPA Police contact the MSO and the Master of the vessel. Two container ships are moored to the south.

9420.42 Assumptions

At the time of the incident, the tidal current was flooding. The wind was 270_T at 15 knots and the temperature was 85_F.

The Vessel Response Plan (VRP) aboard the freighter names a cleanup contractor that has gone out of business just days before the incident. The Master takes no further action.

9420.43 Considerations

The response actions for a medium discharge are divided into three primary phases.

- Assessment and Notifications
- Initial Response Actions – Resource Activation and Containment
- Recovery, Cleanup and Remediation.

At no time shall any personnel be placed in danger to effect the securing of the source.

9420.44 Response Actions

The response actions for a medium discharge are divided into three primary phases.

- Assessment and Notifications
- Initial Response Actions – Resource Activation and Containment
- Recovery, Cleanup and Remediation

Action # 1

Discovery of spill/ Secure the source (*if possible*).

Action # 2

Terminate appropriate operations. Evacuate (*if necessary*).

Action # 3

Perform notifications.

Action # 4

Assess spill volume, site conditions, safety.

Action # 5

Determine resources and initiate containment activities *(if possible)*.

Action # 6

Request assistance from the local police *(if necessary)*.

Action #7

Recover free product *(if possible)*.

Action #8

Remediation and site restoration.

Action #9

Disposal and decontamination.

Action #10

Reports and documentation.

9420.5 Most Probable Discharge Scenario

9420.51 Description

A small shrimper sank (out of the channel) in the Neuse River just off of Oriental, NC. The crew was picked up by a passing fishing vessel. The F/V has 200 gallons of #2 diesel on board, but only 50 gallons has spilled. USCG Station Hobucken responded to the call with their pollution equipment.

9420.52 Assumptions

At the time of the incident, the tidal current was ebbing. The wind was 010_T at 10 knots and the temperature was 90_F.

The owner/operator of the F/V cannot afford a cleanup contractor.

9420.53 Response Actions

The response actions for a most probable discharge are divided into three primary phases.

- Assessment and Notifications
- Initial Response Actions – Resource Activation and Containment
- Recovery, Cleanup and Remediation.

At no time shall any personnel be placed in danger to effect the securing of the source.

Action # 1

Discovery of spill/ Secure the source *(if possible)*.

Action # 2

Terminate appropriate operations. Perform notifications. Evacuate *(if necessary)*.

Action # 3

Contact the emergency response contractor (*if required*).

Action # 4

Assess spill volume, site conditions, safety.

Action # 5

Determine resources and initiate containment activities (*if possible*).

Action # 6

Request assistance as needed.

Action #7

Recover free product (*if possible*).

Action #8

Remediation and site restoration.

Action #9

Disposal and decontamination.

Action #10

Reports and documentation.

9430 Decontamination

Trained personnel in accordance with established standard operating procedures will perform decontamination. The Safety Officer will approve all decontamination procedures, equipment and stations. All workers must be decontaminated when leaving a contaminated area. All equipment and clothing from a contaminated area should be stored in a controlled area near the incident site until decontamination or proper disposal can be accomplished.

Contaminated equipment such as containers, brushes, tools, etc., should be placed in labeled containers. Partially decontaminated clothing should be placed in plastic bags pending further decontamination or disposal. Respirators should be dismantled, washed and disinfected after each use.

Suitable containment structures or portable containers will collect water used for tool and vehicle decontamination. Areas used for decontamination will be monitored for residual contamination.