Appendix J: Spill Prevention Plan/Spill Response Plan

Marine Emergency Spill Response Plan - SOPEP

Champlain Hudson Power Express (CHPE)

CHPE Project

Hudson River Pre-lay Mattress Installation & Support Vessels

SHIPBOARD OIL POLLUTION EMERGENCY PLAN (SOPEP)

Prepared in accordance with the requirements of Title 33 - Navigation and Navigable Waters. CHAPTER I - COAST GUARD, DEPARTMENT OF HOMELAND SECURITY (CONTINUED). SUBCHAPTER O - POLLUTION. PART 151 - VESSELS CARRYING OIL, NOXIOUS LIQUID SUBSTANCES, GARBAGE, MUNICIPAL OR COMMERCIAL WASTE, AND BALLAST WATER. Subpart A - Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships. - Oil Pollution where feasible and applicable for an inland temporary work barge.

Electronic Copy

Master's Overriding Authority

THE PROCEDURES OUTLINED IN THIS MANUAL ARE INTENDED AS A GUIDE WHICH DOES NOT LIMIT OR OVERRIDE THE AUTHORITY OF THE MASTER OR PERSON-IN-CHARGE AS THE SENIOR COMPANY OFFICER AT THE SCENE OF AN INCIDENT.

IN ALL CASES, THE MASTER OR PERSON-IN-CHARGE WILL TAKE WHATEVER ACTION DEEMED NECESSARY BASED ON AN ASSESSMENT OF THE SITUATION AND JUDGEMENT OF THE INCIDENT REQUIREMENTS AND PRIORITIES.

ALL PERSONNEL INVOLVED IN THE RESPONSE WILL KEEP A LOG OF ALL CRITICAL ACTIONS TAKEN OR COMPLETED INCLUDING APPROXIMATE TIME.

Hudson River Pre-Lay Mattress Installation & Support Vessels

Shipboard Oil Pollution Emergency Plan (SOPEP)

DISTRIBUTION LIST

COPY #	LOCATION / NAME OR ORGANIZATION	TELEPHONE
1.	Vessel Copy	
2.	Vessel Master / Superintendent	TBD
3.	NKT Inc. (Office Copy)	919 561 2002
4.		
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9.		
10.		

INTRODUCTION

1. This Plan is written in accordance with the requirements of Title 33 - Navigation and Navigable Waters. CHAPTER I - COAST GUARD, DEPARTMENT OF HOMELAND SECURITY (CONTINUED). SUBCHAPTER O - POLLUTION. PART 151 - VESSELS CARRYING OIL, NOXIOUS LIQUID SUBSTANCES, GARBAGE, MUNICIPAL OR COMMERCIAL WASTE, AND BALLAST WATER. Subpart A - Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships. - Oil Pollution where feasible and applicable for inland temporary work barge.

2. The purpose of the Plan is to provide guidance to the Master and on shipboard personnel with respect to the steps to be taken when a marine pollution incident involving the vessel has occurred or is likely to occur.

3. The Plan contains all information and operational instructions required by the Guidelines. The appendices contain names, telephone numbers, pager numbers, etc., of all contacts referenced in the Plan, as well as other valuable reference material that would be used by the company's response team personnel.

4. A SOPEP is not required for this vessel; therefore, this Plan is monitored, checked and updated internally as part of the company's Safety Management System. It has not been examined by the Administration.

RECORD OF CHANGES

Amendment Number	Section and Page	Date Entered	Remarks	Name and Position of Person(s) Making Entry

VESSEL PARTICULARS

Name of Vessel:	*Insert vessel name*
Length Overall:	*Insert vessel particulars*
Breadth Molded:	*Insert vessel particulars*
Depth:	*Insert vessel particulars*

TABLE OF CONTENTS

1. PREAMBLE

1.1 PURPOSE OF THE PLAN

The purpose of this Plan is to guide vessel and shore personnel in responding QUICKLY, SAFELY, and EFFECTIVELY to a marine oil pollution incident involving the *Insert vessel name*.

It is prepared in accordance with the requirements of Title 33 - Navigation and Navigable Waters. CHAPTER I - COAST GUARD, DEPARTMENT OF HOMELAND SECURITY (CONTINUED). SUBCHAPTER O - POLLUTION. PART 151 - VESSELS CARRYING OIL, NOXIOUS LIQUID SUBSTANCES, GARBAGE, MUNICIPAL OR COMMERCIAL WASTE, AND BALLAST WATER. Subpart A - Implementation of MARPOL 73/78 and the Protocol on Environmental Protection to the Antarctic Treaty as it Pertains to Pollution from Ships. - Oil Pollution where applicable for an inland temporary work barge.

It is intended to be:

- **Realistic, practical, and easy to use for all personnel**
- **Clearly understood by vessel management personnel, both on board and ashore**
- **Evaluated, reviewed, and updated on a regular basis.**

1.2 VESSEL OPERATIONS OVERVIEW

Vessel Name is a *vessel description* built in the US for sheltered water work.

A detailed description of the vessel, including vessel particulars and drawings, is provided in *Appendix B - Vessel-specific Appendix.*

1.3 RESPONSE PRIORITIES

All emergency response activities will be carried out in accordance with the following overall priorities:

1. **Protection of Life (i.e., crew, public)**
2. **Protection of the environment**
3. **Securing the safety of the vessel and protecting property**

1.4 LINKAGE TO OTHER PLANS

This Plan is intended to guide the efforts of the Vessel Response Team in responding QUICKLY, SAFELY, and EFFECTIVELY to a marine emergency or oil spill incident involving the *Vessel Name*

Reference should also be made to the following company manuals and documentation for emergency procedures:

- *Hudson River Pre-Lay Matress Installation Methodology Document*
- *Site Specific HASP*

This Plan is also intended to work in coordination with the plans and resources of other responding agencies such as the **US Coast Guard (USCG)** which has jurisdiction over all marine originating oil spills in US waters.

In the event of a spill during an bunker transfer, the crew of the *Vessel Name* and the attending support vessel(s) will respond to contain and recover the spill in cooperation and coordination with other stakeholders and responders.

1.5 LOCATIONS OF THE PLAN

A copy of this Plan will be kept on the *Vessel Name* and at the NKT head office.

1.6 PLAN REVISION / UPDATE PROCEDURES

The NKT- **Project Installation Manager** is responsible for ensuring the plan is reviewed, revised, and updated as required. Proposed revisions to the Plan may be submitted in writing or faxed to the company's head office. *Figure 1.1* shows a copy of the *Revision Request Form* that can be used for this purpose.

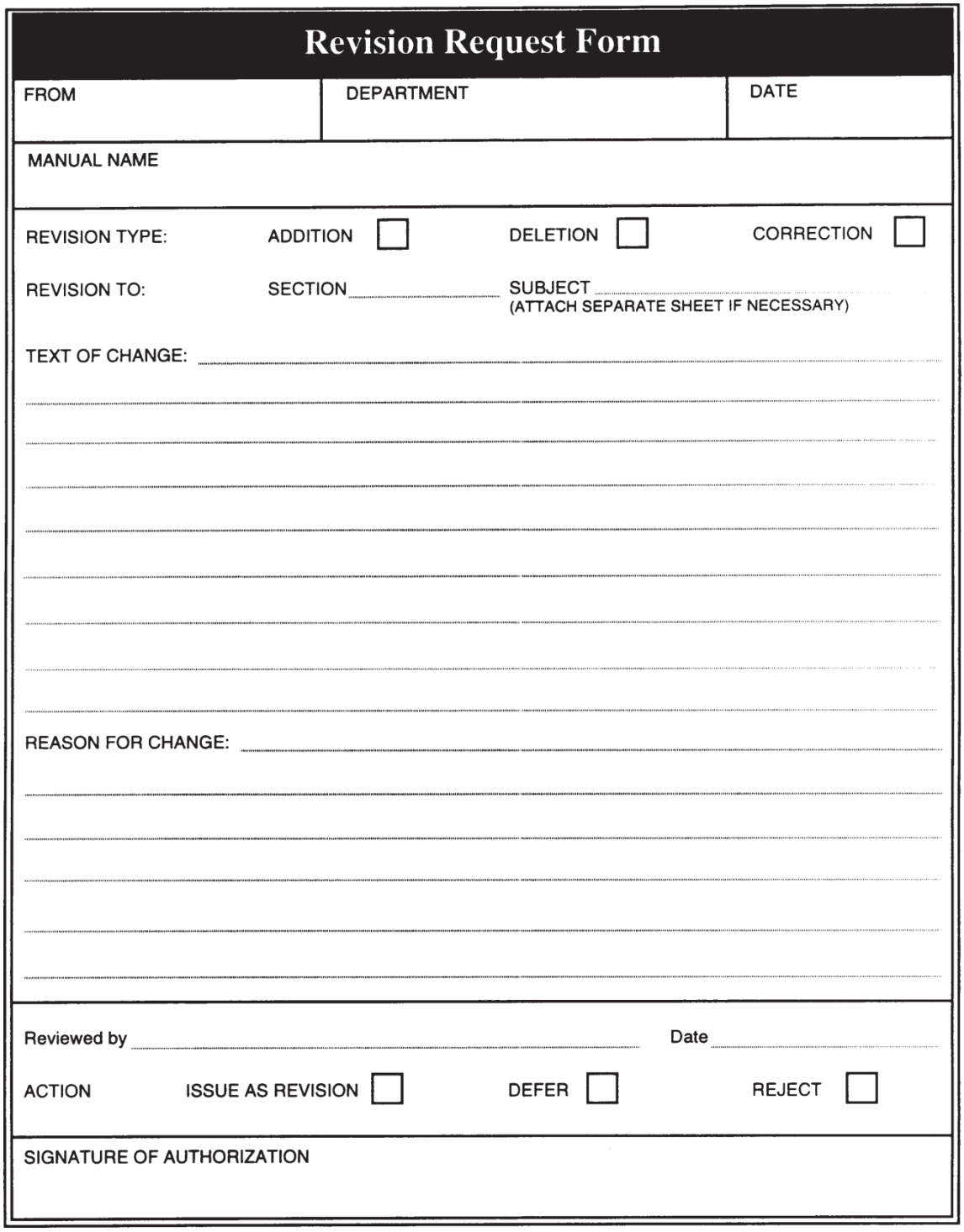
Revision pages will be issued to all Plan holders as required and changes will be recorded on the *Record of Changes* located in the *Introduction* to the Plan. The Plan will be formally reviewed and updated annually and more frequently if required.

The **Plan Administrator** is responsible for:

- Establishing and maintaining a central registry of Plan Assignees
- Establishing maintenance procedures
- Coordinating revisions

1.7 Approval of Response Techniques

Without interfering with shipowners' liability, some coastal States consider that it is their responsibility to define techniques and means to be taken against an oil pollution incident and to approve such operations which might cause further pollution, i.e. lightening. States are in general entitled to do so under the International Convention relating to intervention on the High Seas in Cases of Oil Pollution Casualties. 1969 (Intervention Convention).



Revision Request Form

FROM	DEPARTMENT	DATE

MANUAL NAME

REVISION TYPE: ADDITION ☐ DELETION ☐ CORRECTION ☐

REVISION TO: SECTION _____ SUBJECT _____
(ATTACH SEPARATE SHEET IF NECESSARY)

TEXT OF CHANGE: _____

REASON FOR CHANGE: _____

Reviewed by _____ Date _____

ACTION ISSUE AS REVISION ☐ DEFER ☐ REJECT ☐

SIGNATURE OF AUTHORIZATION

Figure 1.1
Revision Request Form

2. REPORTING REQUIREMENTS AND PROCEDURES

General

The Oil Pollution Act (OPA) top priority is to prevent, prepare for, and respond to oil spills that occur in and around inland waters of the United States. EPA is the leading federal response agency for oil spills occurring in inland waters. The US Coast Guard is the lead response agency for spills in coastal waters and Deepwater ports. The intent this Shipboard Oil Pollution Emergency Plan (SOPEP) is to ensure that proper authorities are informed, without delay, of any incident giving rise to pollution, or threat of pollution, of the marine environment, as well as the need for assistance and salvage measures, so that appropriate action may be taken.

The reporting procedures to be followed by the Master or other person in charge of the vessel after an oil pollution incident, as outlined in this Plan, are based on guidelines developed by the International Maritime Organization.

2.1 WHEN TO REPORT

2.1.1 ACTUAL DISCHARGE

An immediate report to the proper authorities and management is required whenever there is:

- **A discharge of oil resulting from damage to the vessel or its equipment**
- **A discharge, during the operation of the vessel (i.e., during fuel transfer or maintenance)**
- **An emergency discharge for the purpose of securing the safety of the vessel or saving life**

2.1.2 PROBABLE DISCHARGE

Although an actual discharge may not have occurred, a report is required if there is the probability of a discharge.

In judging the probability of a discharge and whether a report should be made, the following factors as a minimum, should be taken into account.

PROBABLE SPILL ASSESSMENT FACTORS

- **Level of risk to crew members and their condition, morale, and state of calmness**
- **Nature and extent of damage sustained by the vessel**
- **Failure or breakdown of machinery or equipment which may adversely affect ability to maneuver, navigate or operate pumps**
- **The location of the vessel and its proximity to land or other navigational hazards**
- **Traffic density**
- **Weather, tide, current, and sea state**

As a general guide, the Master should report in cases of:

- **Damage, failure or breakdown which affects the safety of the barge/tug and crew, or other shipping such as collision, fire, explosion, structural failure, instability, or excessive list**
- **Failure or breakdown of machinery or equipment which results in impairment of the safety of navigation such as steering gear, electrical generating system, propulsion, or essential ship borne navigational aids**

Follow Up Reports

Once the vessel has transmitted an initial report, further reports should be sent at regular intervals to keep those concerned informed of developments. Follow up reports to the USCG should be in the style given in *Section 2.2,* and should include information about every significant change in the vessel's condition, the rate of the release and spread of oil, weather conditions, and details of agencies notified and clean-up activities.

2.2 INFORMATION REQUIRED

Copies of the *Initial Incident Report Form* are located in *Appendix G - Forms*. This form outlines the critical information about a marine casualty or spill incident that should be communicated clearly and accurately throughout the initial notification process to enable appropriate action to be taken by all responders.

The format is consistent with the General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants, adopted as Resolution A.851(20) by the International Maritime Organization (IMO), as amended by Res. MEPC. 138(53). and should be followed so far as possible, (Note: The reference letters in the form do not follow the complete alphabetical sequence as certain letters are allocated to information required for other reporting formats).

The following information should be included when completing the report form:

AA/ Ship Identity (name, official number, flag, towing vessel if applicable and call sign)

BB/ Date and time of incident: a 6-digit group giving day of month (first two digits), hours and minutes (last four digits)

CC/ Ship's position, giving latitude: a 4-digit group in degrees and minutes suffixed with N (North) or S (South); and longitude: a 5-digit group in degrees and minutes suffixed with E (East) or W (West); or

DD/ Ship's position by true bearing (first 3 digits) and distance (stated) from a clearly identified landmark

EE/ True course (as a 3-digit group)

FF/ Speed (in knots and tenths of a knot as a 3-digit group)

LL/ Route information - details of intended track

MM/ Full details of radio stations and frequencies being guarded

NN/ Time of next report (a 6-digit group as in B)

PP/ Types and quantities of cargo and bunkers on board

QQ/ Brief details of defect, damage, deficiency, other limitations

RR/ Description of pollution. These should include the type of oil, an estimate of the quantity discharged, whether the discharge is continuing, the cause of the discharge, and, if possible, an estimate of the movement of the slick.

SS/ Weather and sea condition, including wind force and direction and relevant tidal or current details

TT/ Name, address, telex, facsimile, and telephone numbers of the ship's owner or representative (manager or operator of the ship, or their agents)

UU/ Details of length, breadth, tonnage, and type of ship

XX/
- Brief details of the incident
- Current condition of the barge/tug
- Names of other ships involved
- Action taken with regard to the discharge and movement of the ship
- Personnel injuries sustained
- Whether medical assistance is required.

If no assistance is required, this should be clearly stated.

Sufficient information about the incident must be obtained to enable those contacted to react appropriately to the situation and specific circumstances of the incident. This information must then be communicated CLEARLY, ACCURATELY, and CONCISELY at all levels of the notification process. As more information becomes available, it can be added to what is already known, or to replace outdated or inaccurate information.

Reports should be transmitted by the quickest available means to the US Coast Guard, Marine Safety Inspector or Marine Communications and Traffic Services Officer.

The following additional information should be sent to the Director of Safety and Compliance/DPA either at the same time as the initial report or a soon as possible thereafter:

- further details of damage to ship and equipment
- whether damage is still being sustained
- assessment of fire risk and precautions taken
- disposition of cargo on board and quantities involved

- number of casualties
- damage to other ships or property
- time assistance was requested, and time assistance expected to arrive at the scene
- name of salvor and type of salvage equipment
- whether further assistance is required
- priority requirements for spare parts and other materials
- details of outside parties advised or aware of the incident
- any other important information

After transmission of the information in an initial report, as much as possible of the information essential for the safeguarding of life and the protection of the ship and the marine environment should be reported in a supplementary report to USCG and the NKT on-call Incident Commander, in order to keep them informed of the situation as the incident develops. This should include items A, P, Q, S, and X as appropriate as well as any changes in any items already relayed.

2.3 WHOM TO CONTACT

Figure 2.1 at the end of this section show the initial notification/ reporting procedure, for US waters that is to be followed for all oil spill or marine emergency incidents involving company owned or operated vessels. This will ensure that a standard spill reporting procedure is in place, that adequate internal and external response personnel and resources are mobilized during the critical first hours following detection, and that the appropriate regulatory and other government agencies are properly notified.

2.3.1 INTERNAL NOTIFICATION

All spills or potential spills are to be reported immediately by the **Master** or **Person-In-Charge** of the *Vessel Name* to company management by paging the NKT Incident Commander and leaving a call-back number.

The NKT Incident Commander will complete the mandatory Coastal State Notifications as outlined in *Section 2.3.2*. If the NKT on-call Incident Commander cannot be immediately reached or if the circumstances warrant it, the Master or Person In Charge of the vessel must directly notify the appropriate government agencies. The NKT Incident Commander or their designate will notify the **Response Management Team (RMT)** as needed and required. Contact numbers for all RMT personnel are listed in *Appendix A*.

2.3.2 REGULATORY SPILL REPORTING REQUIREMENTS

The NKT Incident Commander (or Master or Person-In-Charge) will report the incident **WITHOUT DELAY** to the US Coast Guard's **Marine Communications and Traffic Services Centre (MCTS)** in New York:

Coast Guard MCTS Centre (New York)

1-718 354 4088/9 (24 Hours)
VHF Radio: New York Channel 11,12,14 & 16

Coast Guard Group - Sector 1 NY

1-718-354-4353

New York State DEC

1-800 457 7362 (24 Hours, within NY State)
(518) 457 7362 (24 Hours, outside NY State)

New Jersey State DEC

1-877 927 6337 (24 Hours)

Vermont State DEC

1-802 828 1138 (Business Hours: weekdays 7:45am – 4:30pm, Waste Management & Prevention Division)
1-800 641 5005 (24-hour State Police Dispatch)

New York Harbor Port Authority will in turn notify, as required, the agencies listed below (see *Appendix A* for 24 Hour Emergency Numbers): 718 354 4089

- **USCG Marine Safety Branch (Marine Safety Inspector)**
- **Corporation Port/Commission Port (spills in a Port)**
- **State Emergency Program (SEP) (all land sourced spills greater than 100 Litres)**

USCG will in turn notify government agencies who might become involved in the response effort.

See *Appendix A* for contact numbers.

NOTE:

Corporate policy is that all spills will be reported directly to key government agencies by Company personnel as soon as it is safely possible, rather than relying on other agencies to do so. This policy applies to all spills in US waters.

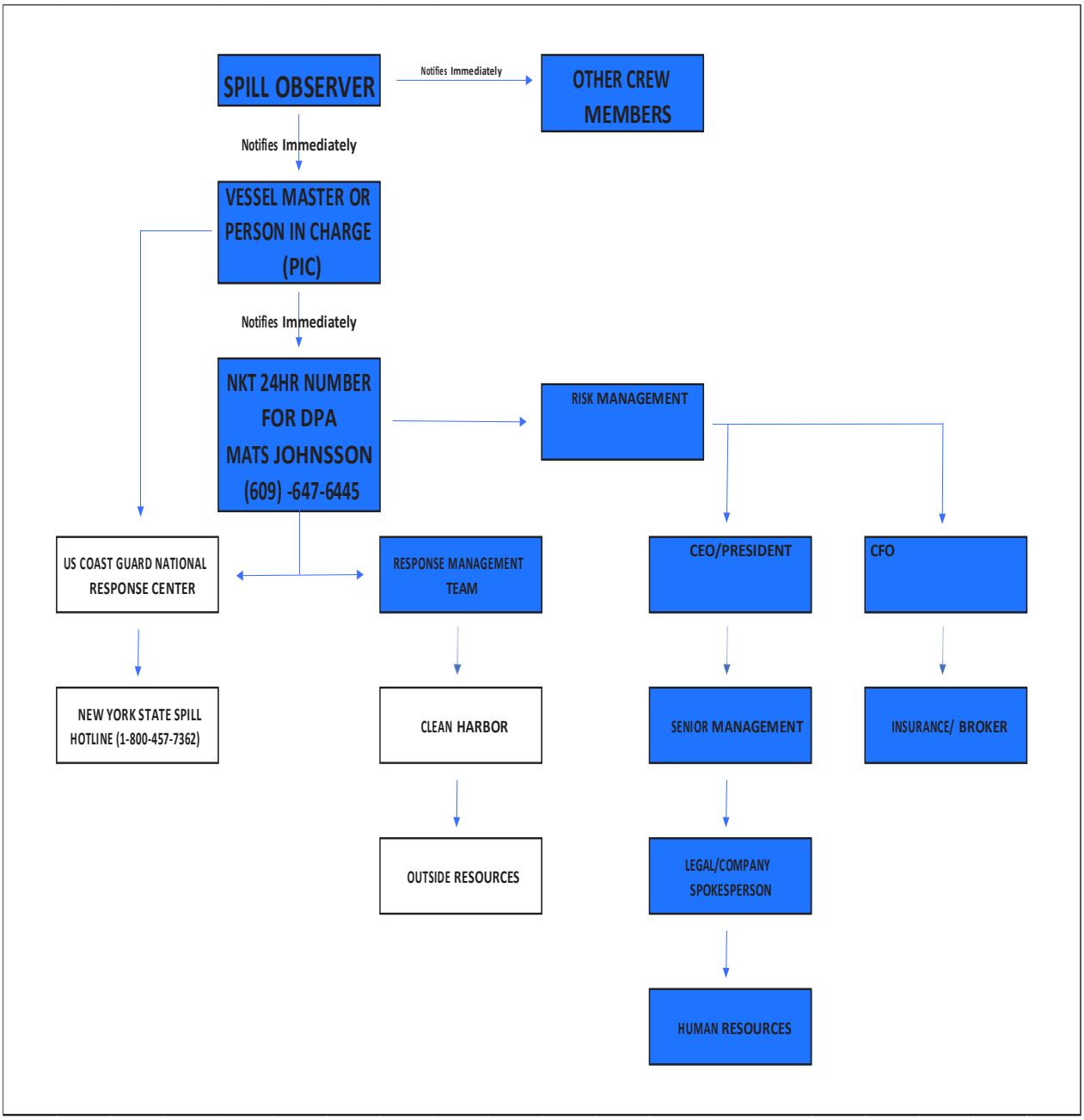
2.3.3 NOTIFICATION OF RESPONSE CONTRACTOR(S)

If a spill has occurred as a result of the incident, the Master (or NKT Incident Commander) will also alert appropriate contractor(s) to begin or prepare for potential deployment of response personnel and equipment to the spill site.

The company's primary oil spill response contractors for marine oil spill incidents are:

LOCATION	SPILL RESPONSE CONTRACTOR
US Waters	• Clean Harbors

A list of contractors and suppliers relating to a vessel casualty and/or marine oil spill incident is provided in *Appendix A - Contact Listing*.


SPILL OBSERVER
Notifies Immediately
OTHER CREW MEMBERS
Notifies Immediately
VESSEL MASTER OR PERSON IN CHARGE (PIC)
Notifies Immediately
NKT 24HR NUMBER FOR DPA MATS JOHNSSON (609) -647-6445
RISK MANAGEMENT
US COAST GUARD NATIONAL RESPONSE CENTER
RESPONSE MANAGEMENT TEAM
CEO/PRESIDENT
CFO
NEW YORK STATE SPILL HOTLINE (1-800-457-7362)
CLEAN HARBOR
SENIOR MANAGEMENT
INSURANCE/ BROKER
OUTSIDE RESOURCES
LEGAL/COMPANY SPOKESPERSON
HUMAN RESOURCES

3. STEPS TO CONTROL DISCHARGE

3.1 OPERATIONAL SPILLS

WHENEVER AN OIL SPILL OCCURS IT IS THE DUTY OF THE PERSON FINDING THE SPILL TO IMMEDIATELY INFORM THE MASTER OR PERSON-IN-CHARGE, WHO SHOULD CALL OUT THE VESSEL RESPONSE TEAM. REMEMBER THAT AN OIL SPILL MAY CREATE A FIRE OR EXPLOSION HAZARD, REQUIRING SAFETY PRECAUTIONS TO BE OBSERVED.

Immediately following an operational spill, the Master and crew members (i.e., Vessel Response Team) will initiate action to protect the crew, secure the vessel, stop the flow, control or contain the spill, and notify as per contact instructions. The NKT Marine Incident Commander and Response Management Team (RMT) will provide whatever practical support is required to assist the vessel team in dealing effectively with the incident.

The following operational spill occurrences are covered separately in this section:

THESE PROCEDURES ARE A GUIDE WHICH DOES NOT LIMIT THE AUTHORITY OF THE MASTER OR PERSON-IN-CHARGE AS THE SENIOR COMPANY OFFICER AT THE SCENE OF AN INCIDENT.

IN ALL CASES, THE MASTER OR PERSON-IN-CHARGE WILL TAKE WHATEVER ACTION HE DEEMS NECESSARY BASED ON HIS ASSESSMENT AND JUDGEMTENT OF THE INCIDENT REQUIREMENTS AND PRIOITIES

3.1.1 PIPELINE LEAKAGE DURING FUEL TRANSFER

The following procedures are only to serve as a guide to the actions to be taken in the event of an incident. The order in which they are laid out is not necessarily chronological and the circumstances at hand may dictate an alternate order of response actions. In the event of a pipeline leakage or hose failure during fuel transfer, the following steps/measures should be considered and/or taken:

1. IMMEDIATE ACTIONS

- □ Stop transfer operations immediately.
- □ Close fuel line(s) and manifold valves at the vessel and tank,
- □ Sound General Alarm and notify the Master.
- □ **Eliminate** all avoidable sources of ignition where flammable vapors could be present (e.g., naked lights, unprotected light bulbs, electric hand tools, etc.).
- □ Consider whether to stop air intake into accommodation areas and non-essential air intake to engine-room.

2. STOP PRODUCT FLOW / CONTAIN THE SPILL

- □ Ensure scuppers are secured/block potential escape points.
- □ Locate the hose break or source of leakage and secure immediately.
- □ Drain affected section of hose to an empty or slack tank or to the shore as necessary.
- □ Trim and/or list vessel accordingly.

3. SECURE THE SPILL AREA / ENFORCE SAFETY PROCEDURES

- □ Clear the area around the spill of all unauthorized or non-essential personnel.
- □ Enforce all safety measures and wear appropriate personal protective equipment (e.g., hard hats, gloves, and rubber boots).
- □ Follow standard confined space entry procedures before entering enclosed spaces.

4. ASSESS THE SITUATION AND REPORT THE SPILL
(Use the *Initial Incident Report Form* for guidance if readily available)

- □ Determine the product spilled; estimated quantity, actions taken, and level and type of assistance required.
- □ **Complete notification responsibilities** as outlined in *Section 2 - Reporting Requirements.* See *Appendix A* or the summary sheet for emergency numbers.

5. CONTAIN / CLEAN UP THE SPILL ON VESSEL

- □ Stay upwind of vapors - do not walk-through spilled oil.
- □ Spread sorbent boom, sheets, sweeps, or other available material to limit the spread of spilled oil across the deck.
- □ Use sorbent pads or other available material to soak up spilled oil.
- □ Use clean, non-sparking tools to recover used sorbent materials.
- □ Store waste materials in leak-proof, sealable containers (e.g., steel or plastic drums, heavy duty 6 mil plastic bags).
- □ Identify the type of waste in each container clearly.
- □ Store waste materials safely aboard the vessel in a contained area to prevent further leakage or spillage. (May request if waste materials can be stored on shore due to safety or space considerations.)
- □ Consult with BC Environment Waste Management Branch before removing waste material for disposal.

6. FURTHER ACTIONS

- □ After dealing with the cause of the spill, it may be necessary to obtain permission from the local authorities to resume normal operations.

3.1.2 TANK OVERFLOW DURING FUEL TRANSFER

The following procedures are only to serve as a guide to the actions to be taken in the event of an incident. The order in which they are laid out is not necessarily chronological and the circumstances at hand may dictate an alternate order of response actions. In the event of a tank overflow during fuel transfer, the following steps/measures should be considered and/or taken:

1. IMMEDIATE ACTIONS

- □ Inform bunkering personnel to shut down transfer operations immediately.
- □ Close fuel line(s) and manifold valves at the vessel and on dock/tank.
- □ Sound General Alarm and notify the Master.
- □ **Eliminate** all avoidable sources of ignition where flammable vapors could be present (e.g., naked lights, unprotected light bulbs, electric hand tools, etc.).
- □ Consider whether to stop air intake into accommodation areas and non-essential air intake to engine-room.

2. STOP THE PRODUCT FLOW / CONTAIN THE SPILL

- □ Ensure scuppers are secured / block potential escape points.
- □ Reduce the tank level by transferring fuel to an empty or slack tank.
- □ Drain the fuel line to an empty or slack tank, if possible to do so safely, and without risk of further spillage.

3. SECURE THE SPILL AREA / ENFORCE SAFETY PROCEDURES

- □ Clear the area around the vessel/dock of all unauthorized or non-essential personnel.
- □ Enforce all safety measures and wear appropriate personal protective equipment (e.g., hard hats, gloves, and rubber boots).
- □ Follow standard confined space entry procedures before entering enclosed spaces.

4. ASSESS THE SITUATION AND REPORT THE SPILL

(Use the *Initial Incident Report Form* for guidance if readily available)

- □ Determine the product spilled; estimated quantity, actions taken, and level and type of assistance required.
- □ **Complete notification responsibilities** as outlined in *Section 2 - Reporting Requirements.* See *Appendix A* or the summary sheet for emergency numbers.

5. CONTAIN / CLEAN UP THE SPILL ON VESSEL

- □ Prepare a portable pump to transfer spilled fuel to a slack tank or to the waste oil tank.
- □ Stay upwind of vapors - do not walk through spilled oil.
- □ Use sorbent boom, sheets, sweeps, or other available material to limit the spread of spilled oil across the deck.
- □ Spread sorbent pads or material to soak up spilled oil.
- □ Use clean, non-sparking tools to recover used sorbent materials.
- □ Store waste materials in leak-proof, sealable containers (e.g., steel or plastic drums, heavy duty 6 mil plastic bags).
- □ Identify the type of waste in each container clearly.
- □ Store waste materials safely aboard the vessel in a contained area to prevent further leakage or spillage. (May request the terminal if waste materials can be stored on shore due to safety or space considerations)
- □ Consult with BC Environment Waste Management Branch before removing waste material for disposal.

6. FURTHER ACTIONS

- □ After dealing with the cause of the spill, it may be necessary to obtain permission from the local authorities or the terminal to resume normal operations.

3.1.3 FIRE / EXPLOSION

The following procedures are only to serve as a guide to the actions to be taken in the event of an incident. The order in which they are laid out is not necessarily chronological and the circumstances at hand may dictate an alternate order of response actions.
A fire or explosion involving the vessel can be in the deck area, engine room, accommodation area, and may involve the dock. In the event of a fire/explosion situation the following steps should be considered and/or taken.

1. IMMEDIATE ACTIONS

- □ Sound General Alarm and muster crew to Emergency Stations.
- □ Shut down ventilation systems and close fire barriers to contain the fire.
- □ Inform the terminal / local fire department, if at dock.
- □ **Eliminate** all avoidable sources of ignition.
- □ **Fix position and complete notification responsibilities** as outlined in *Section 2 - Reporting Requirements.* See *Appendix A*

2. CREW SAFETY

- □ Ensure that appropriate personal protective equipment is worn by crew.
- □ Determine whether there are any injuries or missing personnel.
- □ Prepare serious injuries for immediate evacuation.
- □ Advise Master on crew status and head count.
- □ Follow confined space entry procedures before entering enclosed spaces.

3. FIRE CONTROL AND SUPPRESSION

- □ Inspect the fire location to assess immediate damage and risk.
- □ Use available conventional equipment to control or extinguish, if possible to do so safely.
- □ Quickly assess the danger to crew and the vessel and advise the Master:
  - What is the cause (i.e., electrical, fuel, other)?
  - Can it be brought under control?
  - Can it be isolated?
  - Can it be extinguished?

If fire is in the engine room:

- □ First attempt conventional firefighting methods.
- □ If conventional methods are unsuccessful, consider activating the fixed fire suppression system. This should only be done by the Engineer after warning other crew members and confirming no personnel are in the engine room.

If fire is in the accommodation area:

- □ Use portable extinguishers or fire hose to extinguish fire, depending on size and severity.
- □ Position the vessel to minimize wind exposure to the fire area and clear the accommodation compartment of smoke via venting.

If fire is on deck:

- □ Confirm the nature and risk of the material(s) on fire.
- □ Use appropriate personal protective equipment and breathing apparatus.
- □ Use portable extinguishers or fire hose to extinguish fire, depending on size and severity.
- □ Position the vessel to minimize wind exposure to the fire area.

If fire is on the dock:

- □ Identify possible emergency escape routes.
- □ Consider the necessity of vacating dock for vessel's safety.

4. DAMAGE ASSESSMENT

- □ Test stability, trim, handling, propulsion, navigation and communications capabilities.
- □ Evaluate immediate threats such as potential hull damage, loss of stability, oil pollution, etc., in connection with the fire / explosion.
- □ Report status of fire to **US Coast Guard** and **NKT Incident Commander**
- □ If there is a spill of oil in connection with the fire or explosion advise **NKT Incident Commander** and **Coast Guard,** and request oil spill response contractor assistance.

IF THE FIRE DOES NOT POSE AN IMMEDIATE RISK TO CREW MEMBERS AND THE VESSEL CAN BE SAFELY MOVED TO A SUITABLE SHORE LOCATION OR ANCHORAGE:

5. PROCEED TO ANCHORAGE AND CONTINUE FIRE FIGHTING ACTION

If the vessel is able to proceed under its own power:

- □ Confer with RMT (i.e., Incident Commander/Vessel Casualty Officer/Response Planning and Operations) and Coast Guard to discuss vessel movement options.
- □ Identify shore support requirements - e.g., medical aid, firefighting equipment, personnel.
- □ Proceed to nearest anchorage and continue efforts to control and extinguish the fire with the assistance of shore equipment and personnel.
- □ Be prepared to vacate anchorage if fire threatens local area.

3.1.4 CONTAINMENT SYSTEM OVERFLOW

The following procedures are only to serve as a guide to the actions to be taken in the event of an incident. The order in which they are laid out is not necessarily chronological and the circumstances at hand may dictate an alternate order of response actions. In the event of a loss of containment of the spill trays on deck, the following steps/measures should be considered and/or taken:

1. IMMEDIATE ACTIONS

- □ Inform terminal/bunkering personnel to shut down transfer operations immediately.
- □ Close fuel line(s) and manifold valves at the vessel and on dock.
- □ Sound General Alarm and notify the Master.
- □ **Eliminate** all avoidable sources of ignition where flammable vapors could be present (e.g., naked lights, unprotected lights, electric hand tools, etc.).
- □ Consider whether to stop air intake into accommodation areas and non-essential air intake to engine-room.

2. STOP THE PRODUCT FLOW / CONTAIN THE SPILL

- □ Identify where loss of containment has taken place.
- □ Ensure scuppers are secured / block potential escape points.
- □ Use sorbent booms to create secondary containment on deck.
- □ Reduce the level in the containment area by draining to waste tanks
- □ Drain the fuel line to an empty or slack tank, if possible to do so safely, and without risk of further spillage.

3. SECURE THE SPILL AREA / ENFORCE SAFETY PROCEDURES

- □ Clear the area around the vessel/dock of all unauthorized or non-essential personnel.
- □ Enforce all safety measures and wear appropriate personal protective equipment (e.g., hard hats, gloves, and rubber boots).
- □ Follow confined space entry procedures before entering enclosed spaces.

4. ASSESS THE SITUATION AND REPORT THE SPILL

(Use the *Initial Incident Report Form* for guidance if readily available)

- □ Determine the product spilled, estimated quantity, actions taken, and level and type of assistance required.
- □ **Complete notification responsibilities** as outlined in *Section 2 - Reporting Requirements.* See *Appendix A* or the summary sheet for emergency numbers.

5. CONTAIN / CLEAN UP THE SPILL ON DECK

- □ Stay upwind of vapors - do not walk through spilled oil.
- □ Use sorbent boom, sheets, sweeps, or other available material to limit the spread of spilled oil across the deck.
- □ Spread sorbent pads or material to soak up spilled oil.
- □ Use clean, non-sparking tools to recover used sorbent materials.
- □ Store waste materials in leak-proof, sealable containers (e.g., steel or plastic drums, heavy duty 6 mil plastic bags).
- □ Identify the type of waste in each container clearly.
- □ Store waste materials safely aboard the vessel in a contained area to prevent further leakage or spillage. (May request the terminal if waste materials can be stored on shore due to safety or space considerations)
- □ Consult with BC Environment Waste Management Branch before removing waste material for disposal.

6. FURTHER ACTIONS

- □ When the oil spilled on the vessel has been cleaned up and the vessel fully secured, the master may offer assistance to the terminal response team in containing, recovering or cleaning up oil spilled on the water. In that case shipboard personnel will work under the direction of the terminal's on-scene commander.
- □ After dealing with the cause of the spill, it may be necessary to obtain permission from the local authorities or the terminal to resume normal operations.

3.1.5 HAZARDOUS VAPORS RELEASES

The following procedures are only to serve as a guide to the actions to be taken in the event of an incident. The order in which they are laid out is not necessarily chronological and the circumstances at hand may dictate an alternate order of response actions.
A Hazardous Vapors Release involving the vessel can be in the deck area or may involve the dock. In the event of a Hazardous Vapors Release the following steps/measures should be considered and/or taken.

1. IMMEDIATE ACTIONS

- □ Sound General Alarm and muster crew to Emergency Stations.
- □ Shut down ventilation systems and close fire barriers to contain the vapors if safe to do so.
- □ Inform the terminal / local fire department, if at dock.
- □ **Eliminate** all avoidable sources of ignition.
- □ **Fix position and complete notification responsibilities** as outlined in *Section 2 - Reporting Requirements.*

2. CREW SAFETY

- □ Evacuate up wind until an assessment van be made and the product's identification/MSDS can be confirmed.
- □ Do not attempt to respond unless it is safe to do so.
- □ Identify the source of the Hazardous Vapors.
- □ Ensure that appropriate personal protective equipment is worn by crew.
- □ Determine whether there are any injuries or missing personnel.
- □ Prepare serious injuries for immediate evacuation.
- □ Advise Master on crew status and head count.
- □ Follow confined space entry procedures before entering enclosed spaces.

3. FIRE CONTROL AND SUPPRESSION

- □ Inspect the Hazardous Vapors Release location to assess immediate damage and risk.
- □ Use available conventional equipment to control the vapors, if possible, to do so safely.
- □ Quickly assess the danger to crew and the vessel and advise the Master:
  - What is the cause (i.e., electrical, fuel, other)?
  - Can it be brought under control?
  - Can it be isolated?
  - Can it be contained?

If release is on deck:

□ Evacuate to a safe distance up wind.
□ Confirm the nature and risk of the material(s).
□ Use appropriate personal protective equipment and breathing apparatus.
□ Position the vessel to minimize wind exposure to the Hazardous Vapors.

If release is on the dock:

□ Identify possible emergency escape routes.
□ Consider the necessity of vacating dock for vessel's safety.

4. DAMAGE ASSESSMENT

□ Identify the Hazardous Vapors from a safe distance and/or from the manifest.
□ Do not attempt to respond unless you have the proper equipment and training for the specific Hazardous Vapors.

IF THE VAPORS RELEASE DOES NOT POSE AN IMMEDIATE RISK TO CREW MEMBERS AND THE VESSEL CAN BE SAFELY MOVED TO A SUITABLE SHORE LOCATION OR ANCHORAGE:

5. PROCEED TO ANCHORAGE AND CONTINUE FIRE FIGHTING ACTION

If the vessel is able to proceed under its own power:

□ Confer with NKT Incident Commander and Coast Guard to discuss vessel movement options.
□ Identify shore support requirements - e.g., medical aid, firefighting/Hazmat equipment, personnel.
□ Be prepared to vacate anchorage if Hazardous Vapors threatens local area.

4. NATIONAL AND LOCAL COORDINATION

4.1 RESPONSIBILITY OF THE VESSEL MASTER (or Person-In-Charge)

The **Master** or **Person-In-Charge** is designated as the **Vessel Response Team (VRT) Leader** (see *Appendix C - Vessel Response Team Organization*). Immediately following an emergency incident or spill they are responsible for:

- **Ensuring the safety of crew members and the vessel**
- **Notifying the On-Call Incident Commander and ensuring the proper authorities are notified**
- **Directing crew members in performing their emergency duties**
- **Working with the appropriate authorities (i.e., US Coast Guard, appropriate Port Authority) to coordinate response actions until relieved by management.**

The Master or Person-In-Charge will be the point of contact for coordinating shipboard activities with national and local authorities and will be responsible for overseeing the action of the salvage or spill contractors employed until such time as he is formally advised by the Company that he has been relieved of these responsibilities.

4.2 RESPONSIBILITY OF THE INCIDENT COMMANDER

The designated **Incident Commander** for all marine emergencies and oil spills involving the *Vessel Name* is the NKT Installation Manager. The designated alternate is the Director of Safety and Compliance/DPA.

Upon being notified, the Incident Commander will proceed immediately to the Command Centre at the company's Wall Township office to provide assistance and support to the VRT. The Incident Commander's duties and those of key RMT members are described in the *Shipboard Oil Pollution Emergency Plan.* The Vessel Master or Person-In-Charge will continue to direct the crew and shipboard response activities.

4.3 RESPONSIBILITY OF THE RESPONSE MANAGEMENT TEAM

The **Response Management Team's (RMT)** role is to support the crew as effectively as possible, to provide tactical planning assistance, and to manage vital shore-based aspects of the response effort. RMT actions include:

□Arrange whatever outside or contractor assistance is requested by the Master or Person-In-Charge:
- air transportation
- medical assistance or evacuation
- towing
- oil spill response
- trim / stress / stability calculations
- damage assessment (i.e., Naval Architect).

□ Notify the Company's lawyers and insurance company.
□ Verify notification of key government / regulatory agencies.
□ Contact crew members families as required to apprise them of the situation.
□ Set up and secure the primary Command Centre.
□ Consider setting up a Command Centre closer to the site of the incident if desirable.
□ Set up Emergency Information Centre for responding to media and public inquiries.
□ Assemble a back-up crew (i.e., Master, Engineer) plus Vessel Casualty Officer for deployment to the vessel to assist the crew and assess damages if required.
□ Develop a Vessel Movement/Salvage Plan based on situation assessment, condition of the vessel, and local wind/wave/current/tide conditions.
□ Consult with the Master or Person-In-Charge regularly on the status of response actions and the barge.
□ Work with senior US Coast Guard officials under a unified command structure to coordinate response efforts and resources.
□ Issue appropriate news/information releases and deal with media representatives as require

4.4 UNIFIED COMMAND ORGANIZATION

Where allowed under local regulations, the **Incident Commander** and response personnel will work within a unified command structure in cooperation with the US Coast Guard's Federal Monitoring Officer (FMO).

The USCG is the designated agency for any incident, involving a ship in US waters, except within the port limits of Corporation Ports and Commission Ports. Local governments (e.g., provincial/state, municipal) may be represented on the Unified Command Team depending on the threat to near shore or foreshore areas.

Response personnel (i.e., **Vessel Response Team (VRT)** and **Response Management Team (RMT)**) will work with their counterparts from the Lead and other government agencies to ensure maximum coordination of planning and resources.
The Incident Commander will retain control of the response effort and the unified command team unless officially relieved by the Lead Agency OSC.

4.5 PLAN ACTIVATION / INITIATING THE RESPONSE

This Plan can be activated by any employee who detects or observes an oil spill originating from the *Vessel Name*

Once activated, the Master (or Person-In-Charge) and management personnel have authority under the Plan to commit whatever resources and expenditures are necessary to mount an effective response effort (see *Appendix A* for individual contact numbers).
The Master or Person-In-Charge and Company management has authority to:

- **call out some or all designated Response Management Team (RMT) members**
- **mobilize outside contractors (e.g., CLEAN HARBOR and suppliers necessary to support the response**
- **approve expenditures related to the response effort**
- **act on behalf of the company and represent its interests (until relieved by a more senior company official)**

4.5.1 EMERGENCY RESPONSE PRIORITIES

All marine oil spill response activities described in this Plan will be carried out in accordance with the following overall priorities:

1. **PROTECTION OF LIFE (i.e., crew, public)**
2. **PROTECTION OF THE ENVIRONMENT (i.e., spill response)**
3. **SECURING THE SAFETY OF THE VESSEL AND PROTECTION OF PROPERTY**

In the case of an oil spill while underway or due to a casualty incident, the first priority of company vessel and shore personnel will be to ensure the safety and security of the crew and the vessel. Response to the spilled oil will be a lower priority until the primary objectives are fully achieved.

Under these circumstances, personnel will mainly rely on its designated oil spill response contractors, to contain, recover, and clean up any spilled oil on its behalf.

4.5.2 SMALL SPILLS

In the event of a small operational spill during fuel transfer, or while berthed and where crew members and the vessel are not placed at risk, vessel/shore personnel will take immediate action to:

- **Detect and eliminate the source of discharge.**
- **Control the spill on the vessel deck and prevent it from entering the water.**
- **Notify the proper authorities.**
- **Contain and recover the spilled oil.**
- **Contact outside assistance and secure the necessary response personnel and equipment.**

If the vessel is fully secured, the Master may aid the facility response team. In this case, the crew will work under the direction of the facility Incident Commander.

4.5.3 LARGE SPILLS

In the case of larger spills, or spills resulting from a casualty all the crew's efforts will be directed at protecting life and securing the vessel. The spill **Response Organization (RO)**, such as Clean Harbors, will be required to deal with any oil spilled on the water as a result of the casualty on its own until the vessel and barge have been fully stabilized and secured.

The **Response Management Team** will be mobilized to direct the overall response effort under the Incident Commander, to protect the crew, secure the vessel, and work with the spill response organization.

The RO will provide a **Spill Response Manager** to oversee the oil spill response and direct their personnel and equipment. The Spill Response Manager will report directly to the Incident Commander during the response operation.

24 Hour Emergency Number-

June 2023

CORPORATE EMERGENCY RESPONSE TEAM

POSITION AND NAMES	NAME	OFFICE	CELL
Incident Commander			
President -			
VP			
Director Safety and Compliance/DPA			
Media / Public Relation			
Safety / Health / Security			
External/Government Liaison			
Risk/Insurance			
Human Resources			
IT			
Planning Section Chief			
Alt. Planning Chief			
Planning			
Planning			
Planning			
Operations Section Chief			
Alt. Operations Chief			
Operations			
Operations			
Operations			
Logistics Section Chief			
Logistics			
Logistics			
Finance Section Chief			

Staten Island Office

Shop Bay No. 1
Shop Bay No. 3
Break Room
Assistant's Desk
Dive Bay
Survey Conference Room

Response Organizations

NAME	BUSINESS	EMERGENCY
Clean Harbor	800 645 8265	800 645 8265
Witt O'Brien's	+1-202-585-0780	+1-985-781-0804
WSMC (Wash. State Marine Cooperative)	206 448 7557	206 448 7557
MSRC (Marine Spill Response Organization)	(480) 991-5599	(480) 991-5599
MRA (Marine Response Alliance)	206 332 8200	206 332 8200
SeaPro	907 225 7002	907 225 7002
Chadux	907 348 2365	907 348 2365
MRA- (Salvage & marine Fire Fighting- US)		1-206-332-8200

Regulatory Reporting

NAME	BUSINESS	EMERGENCY
US Coast Guard National Response Centre		1 800 424 8802
WA Emerg. Management Div. / DOE		1 800 258 5990
Alaska Dept. of Environmental Conservation (ADEC)	907 465 5340–Juneau	907 321 3424

Regulatory Reporting

NAME	BUSINESS	EMERGENCY
Port Metro New York Emergencies	718 330 2950	212 435 7777

B VESSEL-SPECIFIC APPENDIX

This Appendix is intended to provide information about the Support Vessel, *Vessel Name* that may be useful to response personnel in the event of a casualty or oil spill response.

B.1 GENERAL DESCRIPTION

Vessel Name is a *vessel description* built in the US for sheltered water work.

Vessel Particulars	
REGISTERED OWNER:	*Insert vessel details (as applicable)*
PORT OF REGISTRY:	*Insert vessel details (as applicable)*
IMO NO.:	*Insert vessel details (as applicable)*
DESIGNER:	*Insert vessel details (as applicable)*
YEAR BUILT:	*Insert vessel details (as applicable)*
GROSS REGISTERED TONNAGE:	*Insert vessel details (as applicable)*
Net REGISTERED TONNAGE:	*Insert vessel details (as applicable)*
DIMENSIONS:	Length: *Insert vessel details (as applicable)* Breadth: *Insert vessel details (as applicable)* Depth: *Insert vessel details (as applicable)*
CLASSIFICATIONS:	*Insert vessel details (as applicable)*
SPILL PREVENTION FEATURES:	• *Insert details* • *Insert details* • *Insert details*

C OIL SPILL RESPONSE TECHNIQUES

This section provides a general overview of the tactical priorities and countermeasure techniques that may be employed to contain, recover, and clean up a marine oil spill. The actual tactics that will be used to respond to a particular incident will depend on the unique circumstances and requirements of each spill (e.g., time of day, weather conditions, tidal flow, product(s) involved).

C.1 TACTICAL PRIORITIES

Once the safety of all personnel has been ensured, the source of discharge is secured and initial notification has been activated, the overall tactical priorities are:

- identification and protection of biological, physical, and economic resources,
- containment and recovery of spilled oil, and
- site and shoreline clean-up.

Response tactics will be determined by the Person-In-Charge or by the Corporate Incident Commander. Critical advice will be provided by representatives of key government agencies (e.g., U.S. / US Coast Guard, EPA, New York State).

Response operations will be physically conducted by Vessel Response Team (VRT) personnel and equipment in conjunction with the personnel and resources of various response contractors. Contractors will provide the majority of necessary response equipment and trained personnel for all spills beyond the capability of response personnel.

C.2 ROLE Of Clean Harbor Response Corporation

CLEAN HARBOR is the primary response organization for marine oil spills in US waters. CLEAN HARBOR has committed to providing marine oil spill response equipment including boats, skimmers, booms, communications equipment, and trained personnel within six hours of notification within the Port of New York.

C.3 FUEL CHARACTERISTICS

The volatility and flammability of petroleum products creates a safety hazard in the event of a spill. Volatility is a measure of a liquid's tendency to vaporize. Flammability refers to the ease with which vapors will ignite and is measured by its flash point. All gasolines readily give off vapors that can form ignitable mixtures at ambient temperatures. Diesel fuel and stove oil do not normally give off these vapors but may do so under certain temperature and air pressure conditions. Given the presence of air and a source of ignition, gasoline will ignite more easily than diesel fuel and stove oil. Middle distillate fuels (i.e., diesel, stove oil) and gasoline are classified as 'non persistent' oils. When spilled on water, they display the following general characteristics.

- gasoline is highly flammable due to vapors formation
- spread quickly across the surface of the water in a thin film or sheen
- may cover a wide area if uncontained
- fairly strong odor may be present, at non-toxic levels
- toxic to fish, wildlife, and marine plants in concentrated form
- evaporate fairly rapidly compared to thicker or more viscous products
- evaporation and wave action will dissipate spilled oil usually within 12-24 hours after the spill
- does not lead to extensive or heavy shoreline oiling or clean-up[1]

The behavior of these products on water determines the most appropriate and effective response tactics to be taken by responders to contain and recover spilled oil, to protect sensitive areas, and to clean up the spill site.

[1] Diesel fuel or heating oil may leave a light residue of heavier fractions on the surface of the water after the lighter components have evaporated. It may emulsify to a yellowish 'mousse' if mixed with fine sand in a sheltered area.

C.4 CONTAINMENT AND RECOVERY TACTICS

Open water containment booming and recovery is the first line of defense for distillate spills. Oil which cannot be contained using other containment booming techniques, should be boomed using shoreline booming techniques if feasible. Shoreline booming techniques can be used to protect sensitive shoreline resources. The three main shoreline boom deployment patterns are:

- Exclusion Booming
- Deflection Booming
- Diversion Booming

Containment booming and shoreline booming are briefly described on the following pages and are summarized in *Figure C.7*. A more detailed description of shoreline protection techniques is contained in the BC Environment Marine *Oil Spill Shoreline Protection and Clean-up Manual*.[2]

CONTAINMENT BOOMING (Distillates Only)

The goals of containment are to:

- contain as much as possible near the source of discharge,
- limit the spread of the oil across the water, and
- maximize the thickness of the spilled oil on water to facilitate recovery efforts.

NOTE: Containment should only be attempted with distillates such as diesel fuel, stove oils, jet A/A-1, and lubricating oils. Gasolines should NOT be contained or boomed under any circumstances due to the risk of fire or explosion.

Product can be boomed using one or more boats. The objective is to create and maintain a holding position until contractor skimming equipment is on site. *Figure C.1* illustrates containment booming using one work boat. A pile cluster, a corner of the barge, a buoy with anchor, etc. can be used to secure boom ends.

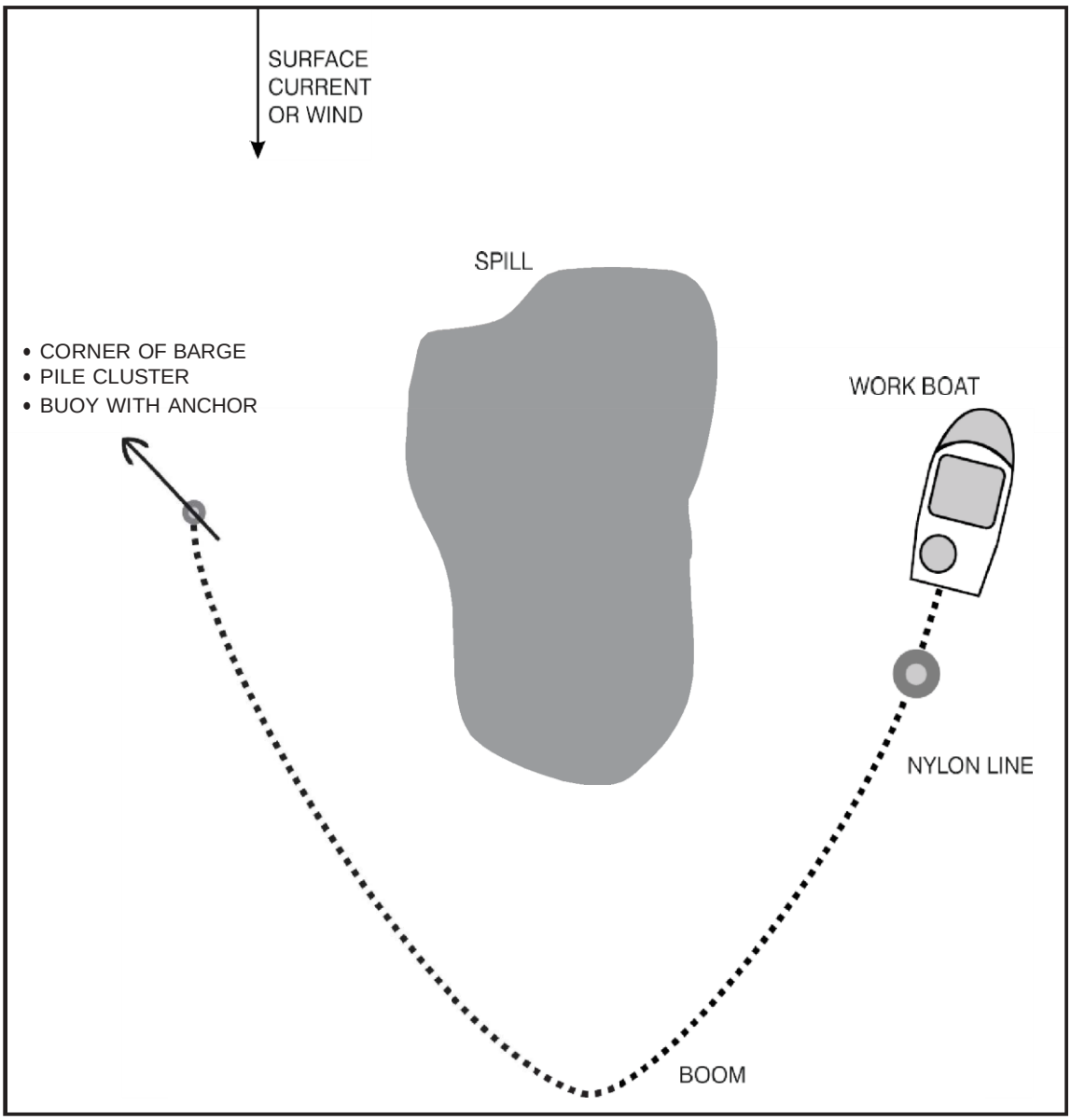


Figure C.1
Initial Containment Booming Using One Boat

Mechanical Recovery Tactics (Skimming)

To be effective, skimmers must be deployed as soon as possible after the spill is detected before the oil spreads into a thin sheen. Disc skimmers are recommended for medium to light fuel products. Surface skimming is not recommended for gasolines and similar low flash products.

Mobile disc skimmers can be deployed within a primary containment area such as that shown in *Figure C.2*. The spilled oil which is recovered by the skimmer is pumped into a floating bladder attached to the response boat, or into the storage tank on the recovery vessel, or directly into vessel slop tanks for return to refinery. In *Figure C.2*, the oil is being pumped into a storage bladder.

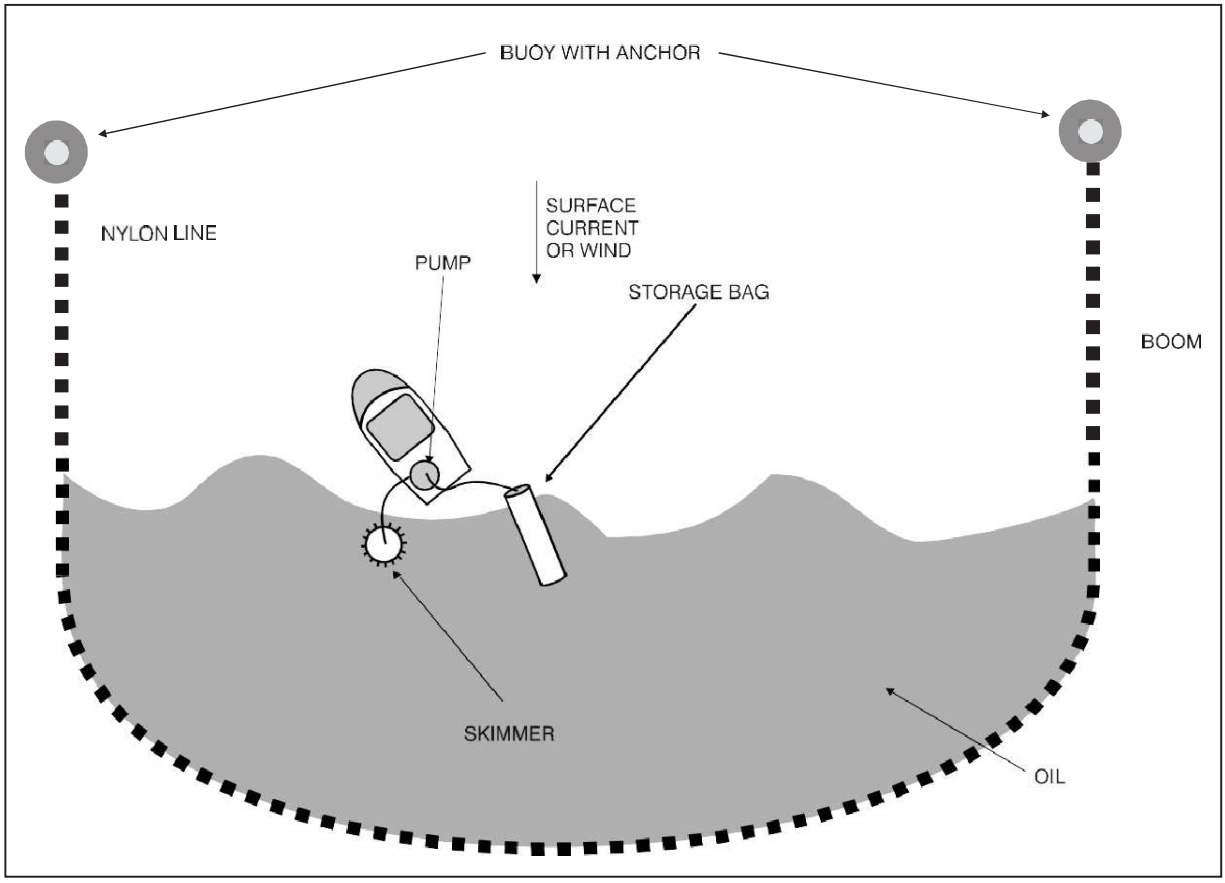


Figure C.2
Skimmer Deployment within a Boomed Area

Manual Recovery Tactics (Sorbent Pads)

Manual recovery involves spreading sorbent pads onto the surface of the water to soak up spilled oil. Sorbent pads are effective on thin sheens of oil or for small amounts of oil escaping from the containment boom. Sorbent pads can be used when the oil film is too thin to permit effective skimming.

Mechanical and manual sorbent recovery techniques are not mutually exclusive. An effective response can involve both sorbent material and mechanical skimming. Good commercial pads will selectively absorb oil rather than water and are very effective when used properly. For a fast response, sorbent pads should be applied generously.

NOTE: Oiled sorbent pads are classified as Special Waste and must be treated accordingly.

EXCLUSION BOOMING (Distillates and Gasolines)

Exclusion booming can be used to protect marinas and sensitive areas such as river estuaries. An exclusion boom deployment to protect a marina is shown in *Figure C.3*.

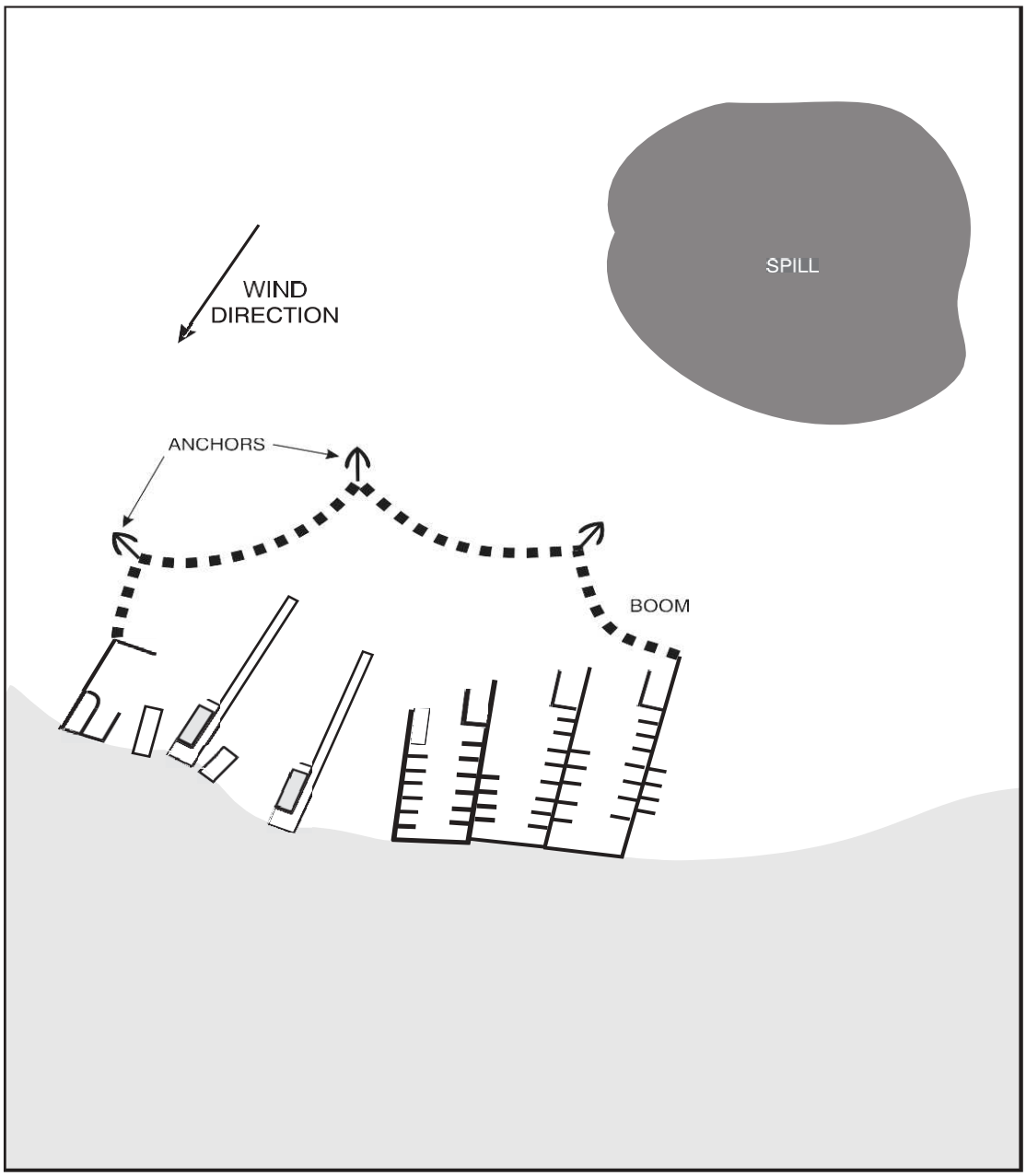


Figure C.3
Exclusion Booming of a Boat Basin

DIVERSION BOOMING (Distillates Only)

Diversion booming is aimed at directing oil towards the shoreline to a pre-selected collection point on the shore (i.e., a 'sacrificial beach). Once the oil has been diverted to the selected collection point, it can be collected using skimmers, vacuum trucks and/or sorbent materials.[3] Diversion booming can be accomplished using a single boom as shown in *Figure C.4*

Sacrificial beaches should only be chosen in close consultation with key government agencies including US Coast Guard, EPA, and applicable New York State Regulators

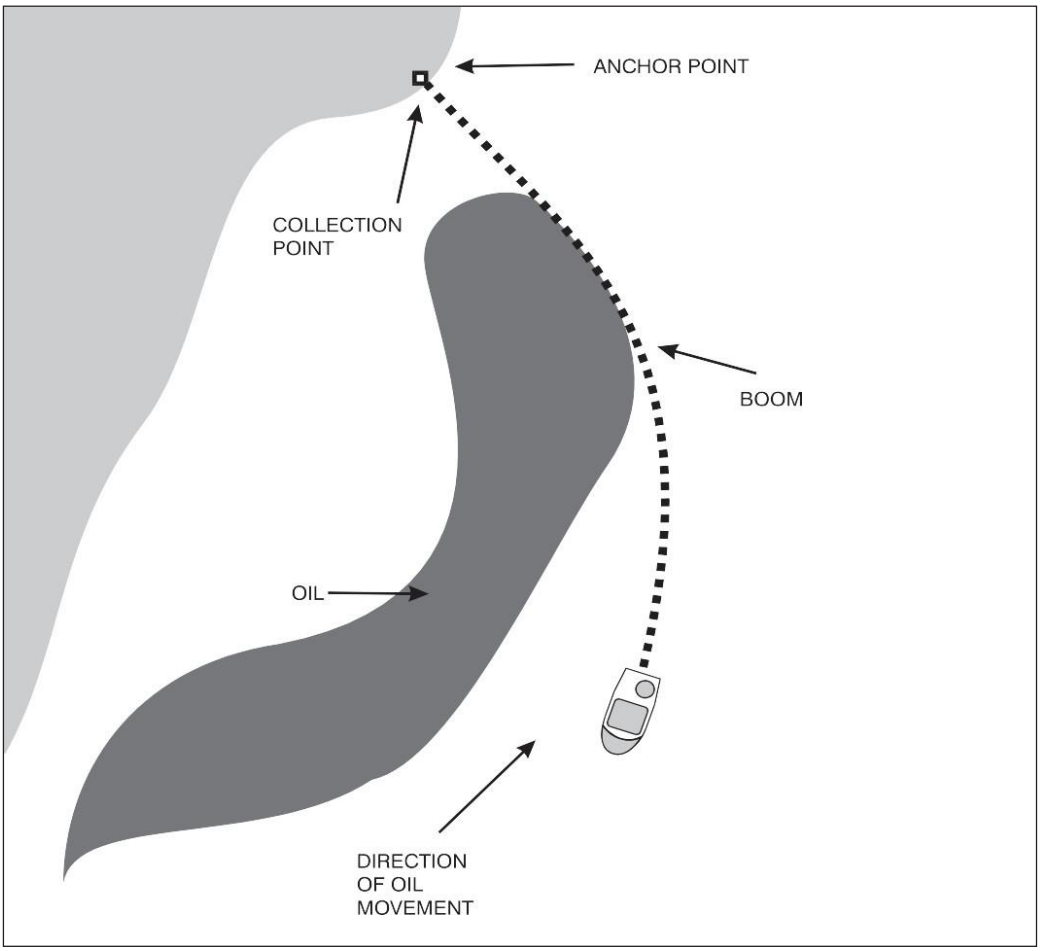


Figure C.4
Diversion Booming Along a Shoreline

[3] Although diversion booming requires the oiling of a shoreline area, it does allow more sensitive areas to be protected by directing oil onto a less sensitive sector or 'sacrificial beach'.

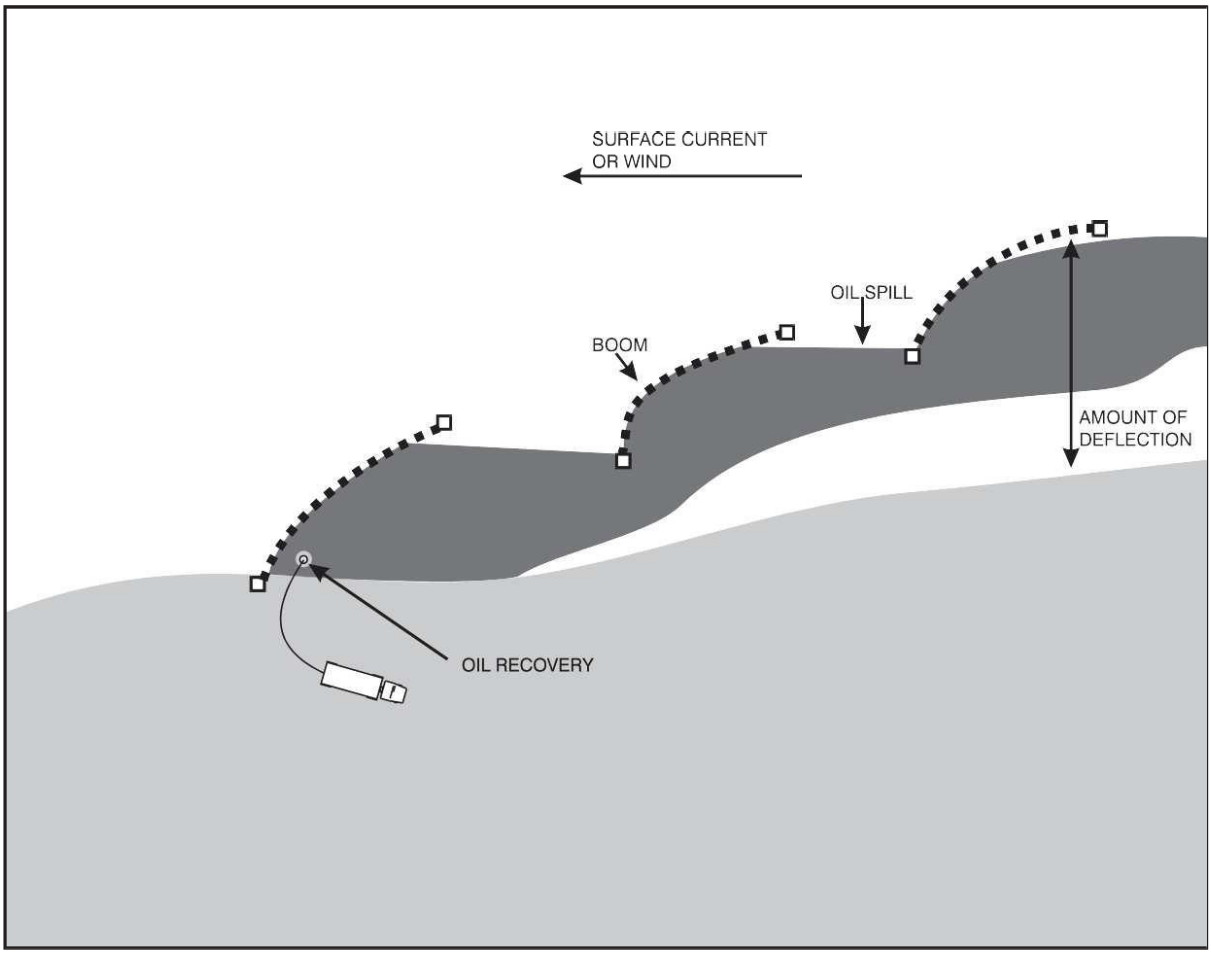


Figure C.5
Cascading Boom Deployment (Chevron)

DEFLECTION BOOMING (Distillates and Gasolines)

Deflection booming is aimed at directing the oil away from the shore to protect a sensitive shoreline area or resource. A typical deflection boom configuration is shown in *Figure C.3.*

Figure C.6
Deflection Booming away from a Marsh

Near shore Protection Techniques	Primary Use	Technique Description	Primary Logistical Considerations	Limitations
Containment Booming (Distillates)	Used in near shore waters with swells less than 2m to surround and contain portions of an approaching oil slick.	Boom is deployed in a "U" shape in front of the oncoming slick. The ends of the boom are anchored by work boats or droques. The oil is contained within the "U" and prevented from reaching the shore.	For 150m diameter Slick: • 280m of boom • 2 boats and crew • boom tenders • tow lines, drogues, connectors, etc.	• high winds • swells > 2m • breaking waves > 50 cm • currents > 1m/s
Exclusion Booming (Distillates & Gasolines)	Used across small bays, harbour entrances, inlets rivers, or creek mouths where currents are less than 0.5m/s and breaking waves are less than 50cm in height	Boom is deployed across or around sensitive areas and anchored in place. Approaching oil is deflected or contained by boom.	Per 300m of boom: • 1 boat and crew • 3 boom tenders • anchors, anchor line, buoys, etc.	• current > 0.5m/s • breaking waves > 50cm • water depth > 20m
Deflection Booming (Distillates & Gasolines)	Used to deflect oil away from relatively small sensitive areas where alongshore currents exceed 0.5m/s, breaking waves are less than 50cm, or available boom is insufficient to exclude oil from the area.	Boom is deployed from the shoreline away from the approaching slick and anchored or held in place with a work boat. Oil is deflected away from the shoreline.	Single Boom, 1.5m/s current • 60m boom • 1 boat and crew • 3 additional personnel • 3 anchors, line, buoys, recovery unit	• currents > 1m/s • breaking waves > 50cm
Diversion Booming (Distillates)	Used across small bays, harbour entrances, inlets, river, or creek mouths where currents exceed 0.5m/s and breaking waves are less than 50cm, and on straight coastline areas to protect specific sites, where breaking waves are less than 50cm.	Boom is deployed from the shoreline at an angle towards the approaching slick and anchored or held in place with a work boat. Oil is diverted toward the shoreline for recovery.	Single boom, 0.75m/s • 60m boo m • 1 boat and crew • 3 additional personnel • 3 anchors, line, buoys, recovery unit	• currents > 1m/s • breaking waves > 50cm

Figure C.7

Summary of near shore Protection Techniques

C.5 SHORELINE CLEANUP ASSESSMENT TEAM (SCAT)

The Shoreline Cleanup Assessment Team (SCAT) program is a systematic, orderly and comprehensive approach that can be used following an oil spill to provide a real time evaluation of shoreline oil conditions and to provide data and advice to the spill response organization and cleanup operations personnel. The SCAT process could be to identify sensitive shoreline resources which are potentially threatened and to develop appropriate near shore protection plans as outlined in the preceding section. The specific goals of the SCAT process are to:

- identify the shoreline areas that may be oiled as a result of the spill through aerial surveys,
- conduct ground surveys of these areas if necessary to establish clean-up locations and priorities,
- determine the most environmentally-suitable methods of clean-up based on shoreline type and characteristics, and
- conduct and monitor shoreline clean-up operations.

D VESSEL RESPONSE TEAM (VRT) ORGANIZATION

D.1 VESSEL RESPONSE TEAM (VRT)

The Vessel Response Team (VRT) is made up of the officers and crew of the *Towing Vessel and the Bargeman. Figure C.1 below*. The **Master** is automatically designated as the **VRT Leader**. The **Mate** is the designated alternate if the Master is unable to perform his duties.

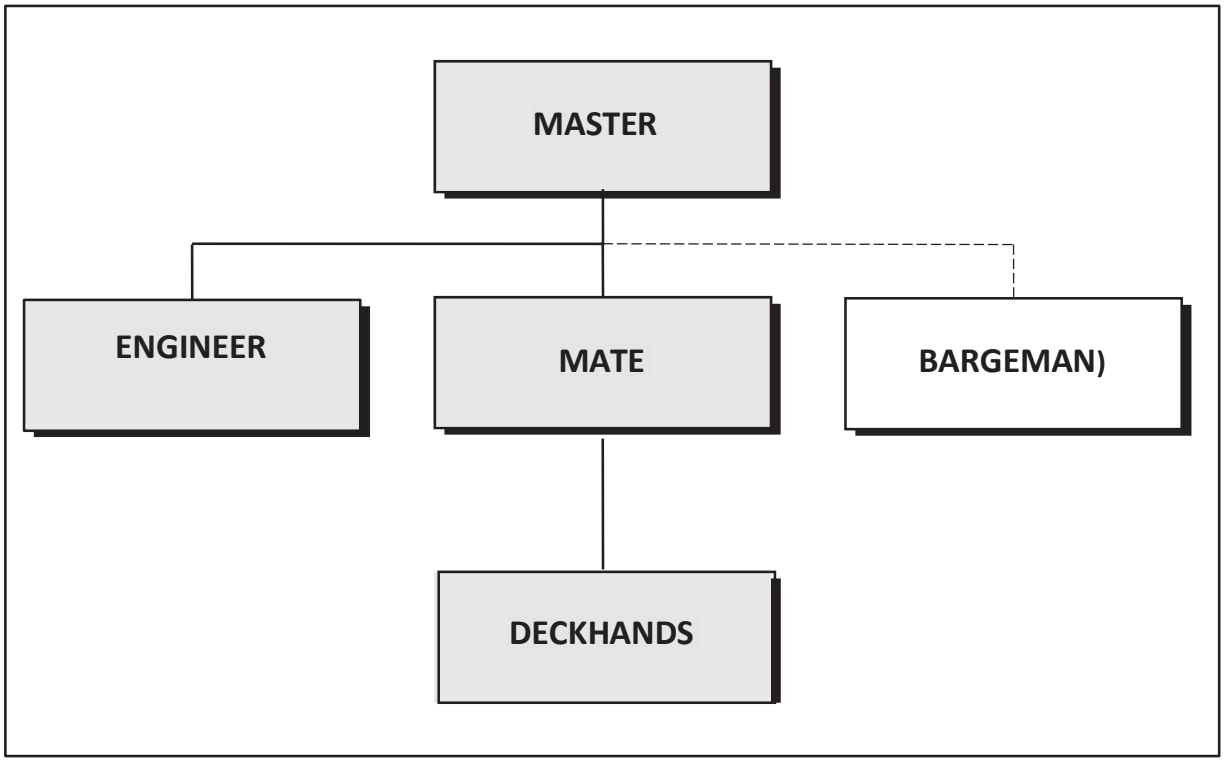


Figure D.1
Vessel Response Team (VRT) Organization

D.2 VRT EMERGENCY PRIORITIES

The VRT's immediate priorities are to:

- ➔ **Eliminate all safety hazards to the crew and public (e.g., risk of fire or explosion, issue safety equipment)**
- ➔ **Stop the flow / contain and control the spill if possible to do so SAFELY**
- ➔ **Stabilize the vessel to assess damage, undertake repairs, or proceed to nearest safe haven**
- ➔ **Notify / alert the proper authorities and the Response Management Team (RMT) to secure immediate assistance for vessel casualty and /or oil spill response**

D.3 VRT SHIPBOARD EMERGENCY DUTIES

The overall roles and duties of all crew members is described in *Figure C.2* on the following page.

D.4 RESPONSE MANAGEMENT TEAM (RMT) ORGANIZATION

The RMT provides vital support and assistance to the VRT throughout the response effort (see *Section 4.3 - Responsibility of the Response management Team*). The RMT organizational structure is outlined in the *Shipboard Oil Pollution Emergency Plan*. The roles and responsibilities of the Incident Commander and other key RMT positions are also described in detail.

D.5 VRT SHIPBOARD EMERGENCY DUTIES

The role descriptions provided below describe the overall roles and duties of shipboard personnel during an emergency response and do not limit the Master's or Person-In-Charge's authority to take whatever action he deems necessary to protect the crew and vessel. Specific tasks and priorities will be determined by the circumstances of each incident.

MASTER (VRT LEADER)	
Role:	In charge of the overall incident response. Responsible for the safety of the crew and vessel at all times.
Key Duties:	• Informs terminal authorities of incident / spill. • Alerts the Corporate Emergency Response Team (ERT) and activates emergency plan. • Notifies US Coast Guard as necessary and, if required, other government authorities/regulatory agencies. • Calls for necessary resources, personnel and assistance. • Assesses the situation and updates head office. • Consults with officers, RMT, Lead Agency senior representative (i.e., USCG) and emergency responders on matters pertaining to crew/vessel safety. • May offer assistance to terminal responders once vessel is secure.

MATE	
Role:	Responsible for all operations and response activities on deck including personnel safety.
Key Duties:	• Replaces Master as VRT Leader if Master is unable to perform his duties. • Ensures all personnel are present and accounted for (head count). • Responsible for towing equipment and operation (e.g., towline recovery, emergency repairs). • Initiates emergency actions to control incident and prevent worsening on deck. • Conducts hull and below decks damage assessment as necessary - vessel casualty. • Keeps Master regularly updated on status and progress of response actions taken. • Works with other response personnel from terminal or emergency agencies.

ENGINEER	
Role:	Responsible for all below-deck response activities including personnel safety.
Key Duties:	• Conducts hull and below decks damage assessment - vessel casualty. • Terminates and secures bunkering operations – operational spills. • Initiates emergency actions to control incident and prevent worsening. • Prepares for firefighting operations as required by the situation. • Ensures towboat is able to maneuver properly as required by the situation. • Keeps Master regularly updated on status and progress of response actions taken.

COOK - DECKHAND / BARGEMAN	
Role:	Implements appropriate emergency actions as directed by licensed officers.
Key Duties:	• Executes officer's directions quickly, and SAFELY. • Deploys and operate response equipment as instructed. • Observes all necessary safety precautions.

Figure D.2 - Continued
Vessel Response Team Shipboard Emergency Duties

E TRAINING AND EXERCISE PROGRAM

E.1 TRAINING AND EXERCISE POLICY

All vessel, management, and administrative employees will receive the training necessary to perform their assigned duties during an emergency incident SAFELY and EFFECTIVELY.

Emergency response training will be reinforced by a program of regular emergency response exercises or drills, both on the vessels and ashore in addition to standard shipboard drills (e.g., fire, boat drills).

E.2 TYPES OF RESPONSE TRAINING

Emergency Response training is broken down into three basic types:

Contingency Plan Familiarization

All employees will receive basic training to familiarize them with the goals, policies, and procedures contained in this *Shipboard Oil Pollution Emergency Plan* as well as other plans and emergency response documentation (e.g., *Vessel Standing Orders*), including how to use the Plan and to find information in it quickly.

Operational Emergency Training

All vessel and select shore operating personnel will receive hands-on training in various skills and tasks to protect themselves, and the vessel and to initiate effective oil spill control and containment measures.

Response Management Training

Supervisory and management personnel will be trained in the skills necessary to lead, manage and direct a marine emergency response effort.

Figure E.1 outlines the specific response skills that training should address for employees by position and according to their likely duties during an emergency.

	EMPLOYEES BY POSITION		
RESPONSE SKILLS	**Management**	**Masters, Mates, Engineers**	**Deckhands, Cooks, Bargemen**
Contingency Plan Familiarization			
• Reporting	**X**	**X**	**X**
• Vessel Casualty Procedures	**X**	**X**	**X**
• Operational Spill Procedures	**X**	**X**	**X**
• Safety	**X**	**X**	**X**
Operational Training			
• Use of PPE / SCBA		**X**	**X**
• TDG / WHMIS		**X**	**X**
• Basic Firefighting		**X**	**X**
• First Aid (MED)		**X**	**X**
• Basics of Oil Spill Response	**X**	**X**	**X**
Response Management Training			
• Situation Assessment	**X**	**X**	
• Strategy Development	**X**	**X**	
• Advanced Oil Spill Training	**X**		

Figure E.1
Response Training Matrix

E.3 PLANNING AND FREQUENCY OF EXERCISES

The company's approach to response exercises is to participate in, support, and promote any of the US Coast Guard's *National Marine Spill Response Exercise Program (NEP)* for vessel owners and operators when available and able.

The **Operations Manager** is responsible for planning and coordinating response training and exercising.

Masters are responsible for ensuring that appropriate training and exercises are conducted aboard the vessels as per company and regulatory standards.

Figure E.2 shows a copy of the *Shipboard Oil Pollution Exercise Log* that will be used to record response exercises conducted aboard or involving vessels.

Date	Type of Oil Pollution Drill	Location	Remarks Master's Signature

Figure E.2
Shipboard Oil Pollution Exercise Log

FORMS APPENDIX

INTITIAL INCIDENT REPORT FORM (Page 1)

HS	Harmful Substances Report (in bulk)	/HS//
AA	Ship Identity - vessel name, official number, call sign, flag, towing vessel name (if applicable), details of tow (if applicable).	AA/ **Other Info:**_____/
BB	Date and time of event	BB/ _____Z//
CC	Position (latitude / longitude) or	CC/ _____N/S/ _____E/W//
DD	Position (bearing & distance from landmark)	DD/ //
EE	True course	EE/ _____//
FF	Speed in knots and tenths of knots	FF/ _____//
LL	Route information (intended track)	LL/ //
MM	Radio communication (station(s) guarded)	MM/ //
NN	Next report (date, time of next report)	NN/ //
PP	Type & quantity of cargo / bunkers on board	PP/ //
QQ	Brief details of defect, damage, deficiency, other limitations	QQ/ //
RR	Description of pollution, including estimate of quantity lost	RR/ //
SS	Weather and sea conditions	SS/ //
TT	Contact details of ship's owner / operator / agent	TT/ //
UU	Ship size and type	UU/ Length: Breadth: Draught: Type:
XX	Remarks: Brief details of incident Current condition of the vessel Need for outside assistance Actions being taken Number of crew and details of any injuries Details of P&I Club and local representative Others	XX/ //

If no outside assistance is required, this should be clearly stated.

INTITIAL INCIDENT REPORT FORM (Page 2)

Additional information to be sent to the Emergency Response Team and/or other agencies at the same time as Page 1 of the *Initial Incident Report Form* or as soon as possible afterward (See *Section 2.2*).

Revision Request Form

FROM	DEPARTMENT	DATE

MANUAL NAME

REVISION TYPE: ADDITION ☐ DELETION ☐ CORRECTION ☐

REVISION TO: SECTION _____ SUBJECT _____
(ATTACH SEPARATE SHEET IF NECESSARY)

TEXT OF CHANGE: _____

REASON FOR CHANGE: _____

Reviewed by _____ Date _____

ACTION ISSUE AS REVISION ☐ DEFER ☐ REJECT ☐

SIGNATURE OF AUTHORIZATION