



Transport  
Canada

Transports  
Canada



TP 14707E  
(07/2007)

# National Places of Refuge Contingency Plan (PORCP)

FIRST EDITION  
JULY 3, 2007



TC-1002332



Canada

<p><b>Responsible Authority</b></p> <p>The Director, Operations &amp; Environmental Programs is responsible for this document, including any change, correction, or update.</p>	<p><b>Approval</b></p> <hr/> <p>Richard Day Director, Operations &amp; Environmental Programs Marine Safety</p>
---	---

**Original Date Issued: 2007-07-03**

**Date Revised:**

**Please direct your comments, orders and inquiries to:**

The Order Desk  
MultiMedia Publishing Services  
Transport Canada (AARA-MPS)  
330 Sparks Street  
Ottawa ON K1A 0N8

Telephone: 1-888-830-4911 (in North America) 613-991-4071 (other countries)  
Fax: 613-991-1653  
E-Mail: MPS@tc.gc.ca

**© Her Majesty the Queen in Right of Canada, as represented by the Minister of Transport, 2007.**

Permission is granted, by Transport Canada, to copy this TP 14707E as required. While use of this material has been authorized, Transport Canada shall not be responsible for the manner in which the information is presented, nor for any interpretations thereof. This TP 14707E may not be updated to reflect amendments made to the original content. For up-to-date information, contact Transport Canada.

TP 14707E  
(07/2007)

TC-1002332

<b>DOCUMENT INFORMATION</b>			
<b>Title</b>	<b>National Places of Refuge Contingency Plan (PORCP)</b>		
<b>TP No.</b>	<b>14707E</b>	<b>Edition</b>	
<b>Catalogue No.</b>		<b>ISBN/ISSN</b>	
<b>Originator</b>	Program & Technical Training Services (AMSB)	<b>Telephone</b>	
	Tower C, Place de Ville	<b>Fax</b>	
	330 Sparks Street, 11th Floor	<b>E-mail</b>	<a href="mailto:MarineSafety@tc.gc.ca">MarineSafety@tc.gc.ca</a>
	Ottawa, Ontario - K1A 0N8	<b>URL</b>	<a href="http://www.tc.gc.ca/MarineSafety">http://www.tc.gc.ca/MarineSafety</a>

<b>REVISIONS</b>				
<b>Last Review</b>				
<b>Next Review</b>				
<b>Revision No.</b>	<b>Date of Issue</b>	<b>Affected Pages</b>	<b>Author(s)</b>	<b>Brief Description of Change</b>

## **National Places of Refuge Contingency Plan**

### **PURPOSE**

The purpose of the National Places of Refuge Contingency Plan (PORCP) is to establish a national framework and approach which, with associated regional measures, will provide for an effective and efficient response to requests from ships in need of assistance seeking a place of refuge.

The PORCP will help to ensure that a consistent approach is taken across the country to putting in place an effective response plan that will meet both Canada's national and international responsibilities.

The PORCP provides a decision-making risk assessment tool for Transport Canada Marine Safety Regional Directors which will help to ensure that a thorough and balanced assessment of the risks are made and the best risk control strategy can be decided on and implemented in a timely and safe manner.

The PORCP takes into account International Maritime Organization (IMO) Resolution A.949(23) "Guidelines on Places of Refuge for Ships in Need of Assistance."

### **BACKGROUND**

There have been a number of places of refuge type incidents that have taken place in Canada such as: Kurdistan – 1979; Dodsland – 1987; Trave Ore – 1989; Glenville – 1990; Eastern Power – 2000; Kitano – 2001. In the absence of a formal approach, such incidents were handled in an ad hoc manner, although more recently the Regional Environmental Emergencies Team (REET), port authorities and the provinces have also been engaged in the process.

In recent years, there have been a few high profile international incidents that have resulted in either a ship pollution disaster, or a near miss of one, involving ships that were refused a place of refuge (e.g., Erika in 1999, Castor in 2000, and Prestige 2002). Consequently, the issue of the provision of a place of refuge to a ship in need of assistance has become a priority for governments worldwide.

On December 5, 2003, the International Maritime Organization (IMO) adopted Guidelines on Places of Refuge for Ships in Need of Assistance (resolution A.949(23)).

The purpose of the IMO Guidelines is "to provide Member Governments, shipmasters, companies and salvors with a framework enabling them to respond effectively and in such a way that, in any given situation, the efforts of the ship master and the shipping

company concerned and the efforts of the government authorities involved are complementary. In particular, an attempt has been made to arrive at a common framework for assessing the situation of ships in need of assistance” (ss 1.12, A.949(23)).

The IMO Guidelines recommend that “coastal States endeavour to establish procedures consistent with these Guidelines by which to receive and act on requests for assistance with a view to authorizing, where appropriate, the use of a suitable place of refuge” (ss.3.4, A.949(23)).

Furthermore, the IMO Guidelines recognize that there are no international obligations for coastal States to provide a place of refuge; however, the Guidelines state that “the coastal State should weigh all the factors and risks in a balanced manner and give shelter whenever reasonably possible” (ss.3.12, A.949(23)).

Transport Canada is the lead agency for decisions related to a ship in need of assistance and requesting a place of refuge. As such, Transport Canada is responsible for ensuring the IMO Guidelines are taken into account and implemented to the extent possible.

---

## APPLICATION AND SCOPE

The PORCP applies to all situations where a ship is in need of assistance and requests a place of refuge within Canadian waters. This includes Canada’s internal waters, territorial sea and the Exclusive Economic Zone (EEZ).

The PORCP also applies in the case where a ship is destined for Canada and has reported a problem (a defect, deficiency or a casualty).

The PORCP does not apply to distress situations where the safety of life is involved. In such cases, established search and rescue procedures shall be followed. Any request that includes a requirement to rescue or to immediately evacuate the crew or other persons on board should be re-directed by the Maritime Assistance Service (MAS) to the Maritime Rescue Coordination Center (MRCC) without delay. Once the rescue has been concluded and there is no longer any risk to the safety of life, the PORCP can be activated.

In cases where ship damage has resulted in the discharge of a pollutant or there is an imminent threat of a discharge of a pollutant, the PORCP would be implemented in conjunction with current response procedures and contingency plans. While decisions concerning a place of refuge fall under the responsibility of Transport Canada, the Canadian Coast Guard (CCG) through the authority of the Minister of Fisheries and Oceans Canada has the responsibility for responding to ship-source pollution spills and will fulfill the federal monitoring and on-scene command role for the Government of Canada.

In urgent situations, the PORCP will be followed to the extent possible given the time available for decision making.

In applying the PORCP, every effort should be made by all involved to cooperate, work closely together, allow for an open exchange of information and build consensus in the decision-making process. Where consensus cannot be reached, the best decision will be made by TC as the lead agency, in conjunction with other authorities with jurisdiction.

The PORCP is to be applied within the framework of existing laws (local, national and international law).

## DEFINITIONS

### Hazard:

- Means a source of potential harm, or a situation with the potential for causing harm, in terms of human injury; damage to health, property, the environment, and other things of value; or some combination of these (CAN/CSA-Q850-97).

Note: General types of hazards are natural, technical/operational, economic and human. In the case of a place of refuge, some potential hazards could include; poor ship condition and maintenance, damage to the ship's structure or systems, pollution caused by the ship, an explosion, a collision, grounding, human factors, security risk (i.e., is ship properly certified as per the "International Ship and Port Facility Security (ISPS) Code"?). Additional hazards that may contribute to the potential consequences include; weather and sea conditions, current, tide, navigational hazards and seasonal affects (i.e., ice). A hazard may also generate new hazards.

### MAS:

- Means a maritime assistance service (MAS), as described in IMO Resolution A.950(23), responsible for receiving reports in the event of incidents and serving as the point of contact between the shipmaster and the authorities of the coastal State in the event of an incident (ss. 1.20, A.949(23)).

Note: The Canadian Coast Guard (CCG), through the CCG Marine Communication and Traffic Services (MCTS) centres, provides the Maritime Assistance Service (MAS) function in Canada.

### Place of Refuge:

- Means a place where a ship in need of assistance can take action to enable it to stabilize its condition and reduce the hazards to navigation, and to protect human life and the environment (ss. 1.19, A.949(23)).

### Risk:

- Means the chance of injury or loss as a measure of the probability and severity of an adverse effect to health, property, the environment, or something else of value. (CAN/CSA-Q850-97)

Note: Types of risks in place of refuge incidences could include: pollution, collision, grounding, stranding, sinking, fire, explosion, toxic risk, bio-hazards and security. Depending on the type of risk, the possible adverse effect or consequences could include: fatalities, injuries, damage to the environment, property loss, and economic repercussions (see **Annex 4** for areas that could be put at risk).

Risk Scenario:

- Means a defined sequence of events with associated frequency and consequences. (CAN/CSA-Q850-97)

Ship in need of assistance:

- Means a ship in a situation, apart from one requiring rescue of persons on board, that could give rise to loss of the ship or an environmental or navigational hazard (ss. 1.18, A.949(23)).

Stakeholders:

- Means any individual, group, or organization able to affect, be affected by, or believe it might be affected by, a decision or activity. (CAN/CSA-Q850-97).

## **AUTHORITY FOR DIRECTING SHIPS**

Transport Canada:

The *Canada Shipping Act (CSA)* and the *Canada Shipping Act, 2001 (CSA 2001)* provide certain powers to direct a vessel, which would be needed to support the decisions and necessary actions related to a place of refuge incident.

The authority for directing a ship within Canadian waters and the EEZ can be found under paragraph 662(1)(f) of the *CSA*. This section authorizes Pollution Prevention Officers (PPOs) designated by the Minister of Transport to direct a ship where there are reasonable grounds to believe that such direction is justified to prevent the discharge of pollution due to, among other things, the condition of the ship or any of its equipment, or any deficiency in its complement or the nature and condition of its cargo. The PPO may direct the vessel to proceed to a particular place, to moor, anchor or remain at that place, to proceed or remain out of Canadian waters and the EEZ.

Section 189 of the *CSA 2001* includes similar provisions to the above. This section authorizes the Minister of Transport to direct a vessel when there are reasonable grounds to believe that a vessel may discharge or may have discharged a prescribed pollutant. The authority to direct a vessel includes directing it to proceed through Canadian waters and the EEZ, or to a particular place, by a certain route and in a specified manner and to unload the pollutant or moor, anchor, or remain at a place. The Minister may authorize a marine safety inspector to exercise this authority pursuant to subsection 11(2) of the *CSA 2001*.

A marine safety inspector may also direct a vessel pursuant to subsection 211(3) of the *CSA 2001*. For the purpose of carrying out an inspection to ensure compliance with a relevant provision when necessary, a marine safety inspector may direct the master of a vessel to stop the vessel or proceed to a selected place and moor, anchor or remain there for a reasonable specified period.

With respect to marine security, the Minister may also direct a ship if it is believed to be a threat to security pursuant to section 16(1) of the *Marine Transportation Security Act*.

#### Fisheries and Oceans Canada:

While decisions concerning a place of refuge fall under the responsibility of Transport Canada, the CCG through the authority of the Minister of Fisheries and Oceans Canada has the responsibility for responding to ship-source pollution spills and will fulfill the federal monitoring or on-scene command role for the Government of Canada. In the case of a ship that has discharged or is likely to discharge a pollutant, the Minister of Fisheries and Oceans Canada has authority under section 678 of the *CSA* and under section 180 of the *CSA 2001*, to take such measures as necessary to repair, remedy, minimize or prevent pollution damage. In addition, in the *CSA 2001*, with respect to discharges or threats of discharges, Pollution Response Officers may direct a vessel pursuant to subsection 175.1(2).

Consequently, a place of refuge incident that also involves ship-source pollution or the imminent threat of pollution, decisions concerning a place of refuge will have to be in conjunction with Fisheries and Oceans Canada officials. The following excerpts from Annex D of the *Memorandum of Understanding Between Transport Canada and Fisheries and Oceans Respecting Marine Transportation Safety and Environmental Protection, April 1996* clarifies the roles and responsibilities for decisions between the two departments that would be relevant in a place of refuge incident:

- *Marine Communication & Traffic Services (MCTS) Centres are the recognised communication hubs and are responsible for issuance of clearances to all ships transiting or intending to transit Canadian waters.*



*No vessel, which has identified problems (defective, deficient or a casualty), shall be cleared without the approval of Transport Canada*

- *In the case of serious or potentially serious problems (defective, deficient or a casualty), the clearance will be discussed by the regional heads of the Canadian Coast Guard and Transport Canada Marine Safety.*
- *When necessary, Transport Canada and Fisheries & Oceans will jointly determine, together with the appropriate port authority, access of the foregoing vessels to ports of refuge. Transport Canada will determine whether the vessel is seaworthy for the transit to the specified port.*
- *Transport Canada and Fisheries & Oceans will jointly approve salvage operations, emergency lightering or discharge of cargo.*

## **PORT AUTHORITIES:**

It should be noted that section 58 of the *Canada Marine Act*, provides port authorities with the power to direct a ship with respect to ships about to enter or within the port or an area of the port in particular circumstances.

Considering the authorities and jurisdictions of the *CSA* and *CSA 2001* and those of the *Canada Marine Act*, there is a potential for conflicting directions being given to a ship concerning a specific port. In such situations, every effort must be made for the responsible authorities to agree on a required course of action.

## **RESPONSIBILITY FOR DECISIONS**

The Regional Director TC Marine Safety, in collaboration with the Director of Maritime Services, CCG in the applicable region, is responsible for the decision to grant or deny access to a place of refuge, the selection of the place of refuge and any operational instructions and conditions given to the master or salvors related to the decision.

In cases where the Transport Canada Situation Centre is activated such as when the overall risk level is determined to be high (see Notification and Reporting section and for risk levels see **Annex 5**), decisions will be subject to approval through the Transport Canada Crisis Management Structure and the Crisis Management Team

Decisions involving other authorities with jurisdiction (i.e., port authority, local municipal authority) will be subject to approval by the relevant authority.

## RESPONSIBILITY FOR THE PORCP

The Director, Operations and Environmental Programs, TC Marine Safety, Ottawa is responsible for the updating and maintenance of the PORCP.

Each Regional Director, TC Marine Safety is responsible for implementing the regional procedures and arrangements to take into account the PORCP.

## NOTIFICATION AND REPORTING

The CCG provides the Maritime Assistance Service (MAS) function in Canada (as per Maritime Assistance Service (MAS), IMO resolution A.950 (23)). This service is intended to act as the point of contact between the ship in need of assistance and the coastal State. All communications with the ship shall go through the appropriate CCG Marine Communication and Traffic Services (MCTS) centre. If considered necessary to facilitate the exchange of information, temporary direct communications may be established between the ship and the risk assessment team, provided both parties agree and the MCTS centre is informed. However, all formal reporting notifications and any other communications required by national and international instruments shall continue to be made through the MCTS centre.

Notification within TC will follow established notification procedures as per Marine Safety's *General Notification Matrix for a Major Marine Incident*. TC regional and national situation centres shall be activated in accordance with national (e.g., *Marine Safety Procedures for Activation of the Transport Canada Situation Centre (TCSC) in Ottawa*) and regional procedures and should be considered in all cases when either: 1) the overall risk level is considered high; 2) extraordinary measures and resources are needed to mitigate the risk; or 3) when coordinated action of several authorities is required. Where it is impractical to use the regional situation centre, alternative arrangements may be made. Alternative arrangements should be identified in the regional procedures.

The Director, Operations and Environmental Programs, TC Marine Safety and the Regional Director, TC Marine Security shall be notified of all places of refuge incidents.

As soon as a decision is made, the TC Marine Safety region should notify and inform all stakeholders as soon as practicable.

## INTERNATIONAL LIAISON

Close collaboration with other countries will be needed when responding to incidents in waters adjacent to neighboring countries. Each TC Marine Safety region shall make

arrangements for notifying and consulting applicable US, Danish and French authorities when dealing with incidents in boundary waters or where the outcomes could have an impact on the US, Greenland or St. Pierre and Miquelon. Transport Canada is aware of the responsibilities of the Canadian Coast Guard in circumstances when the *Canada-United States Joint Marine Pollution Contingency Plan (JCP)* is activated.

## **REGIONAL PROCEDURES, ARRANGEMENTS AND CONTINGENCY PLANS**

TC Marine Safety regional procedures and arrangements for places of refuge should be implemented in accordance with the PORCP. Procedures and arrangements should take into account and, where appropriate, build upon existing procedures and plans. Consideration should be given to identifying any specific needs, issues and concerns of stakeholders that would need to be taken into account in decisions related to a place of refuge.

Each TC Marine Safety region should bring the PORCP to the attention of the various port, local, regional authorities so that existing contingency plans and emergency procedures can be reviewed and updated as needed.

Contingency plans should take into account foreseeable accident scenarios that might result from the granting of a place of refuge and what measures might be taken to reduce the consequences. Foreseeable accident scenarios would include, pollution (oil, chemical, toxic), fire, explosion, radiation and biological accidents. Arrangements should be made to have the plans readily available to the risk assessment team (see Decision-Making Process) for consultation in an incident.

## **ADVANCE PLANNING AND ASSESSMENTS FOR PLACES OF REFUGE**

The most suitable place of refuge can only be determined after the details of the specific incident are known and thoroughly considered. To pre-designate places of refuge may be of limited value, as the limitations, operational considerations, hazards and associated risks will vary greatly with each incident. Experience in Canada has shown that because no two incidents, and the circumstance surrounding the incident, are very similar, the value of pre-planning lies primarily in ensuring information will be readily available (i.e., nautical charts and publications, port information, environmental and sensitivity data), along with the relevant specialists.

Therefore, to expedite the case specific analysis and decision-making process during an incident, each TC Marine Safety region should conduct a review of their coastal areas and assemble the information that would be needed to identify and compare suitable places of refuge and have this information readily available in the event of an incident.

**Annex 3** contains a list of criteria that could be helpful in identifying the most suitable places of refuge for a particular incident, taking into account the characteristics and facilities needed to address the problem.

In addition, information that will help to facilitate the process of evaluating the risks associated with a casualty at sea, along the coastline or in a place of refuge should also be compiled and measures taken to ensure this information is also readily available in the event of an incident. **Annex 4** contains a list of areas (e.g., environmental, socio-economic and safety) that could be put at risk in the event of a casualty.

The above advance planning and assessments for places of refuge will require the involvement and expertise of DFO and EC, and other stakeholders as necessary

## DECISION-MAKING PROCESS

In general terms, the following risk assessment decision-making process has three main elements; 1) the ship request (owner,/charterer/master/salvor), 2) the risk assessment of the situation and options and 3) the action plan and monitoring its implementation.

An integral part of the decision-making process is continuous consideration to communicate and consult with stakeholders. It is also essential that the process is well documented throughout. The use of a risk assessment team in the process provides for a joint assessment of the situation involving the necessary authorities, experts and advisers in the evaluation of the situation and the weighing of the risks of the different options.

The decision-making process should be followed to the extent possible under the circumstances. However, it is recognized that each incident will have unique characteristics, dynamics, challenges and circumstances. The decision-making process is intended to be flexible to allow for a case-by-case assessment and to accommodate incidents of all levels of complexities and risk. Therefore, in completing each step in the process, and in the selection of the risk assessment team, those involved in the process should be guided by the importance of the decision to be made and the level of concern regarding the situation.

Recognizing that the situation at sea could deteriorate rapidly with time, a decision should be made as quickly as possible and the situation closely monitored until it is adequately resolved. However, a place of refuge incident will not transpire at such rate that a collaborative decision making process of some kind cannot be followed.

The decision-making process will determine if access is to be allowed or not. Where access is granted, the most suitable place must be identified and appropriate risk control measures implemented. Where the risk is considered too great and access to a place of refuge cannot be granted, then the nature and degree of assistance to the ship offshore must be decided upon, along with any operational recommendations. The risk

assessment team and all involved stakeholders are to work towards the best operational decision possible fully aware that; (A) it is unlikely that one single option will be acceptable to everyone, and (B), not all the required information may be available or be completely reliable. Documentation of the process is critical.

The following process will facilitate effective and objective decision-making to determine the most suitable course of action:

<b><u>Places of Refuge Decision-Making Process</u></b>		
Element	Step and Description	Ongoing
Ship Request	1- Obtain the necessary ship information 2- Describe the problem and associated issues 3- Identify the risk assessment team and the stakeholders that may need to be consulted or kept informed	Document
Risk Assessment	4 – Preliminary analysis of current situation 4.1 Describe what can happen (risk scenarios, hazards, risks, consequences, probability, urgency) 4.2 Decide if any immediate action is necessary 4.3 Decide if an inspection team should be deployed 5- Identify the Options 5.1 Identify feasible places of refuge 5.2 Consider if anyone should be added to the risk assessment team or the stakeholder list 6- Estimate the risk for each option 6.1 Describe what can happen (risk scenarios, hazards, risks, consequences, probability) 6.2 Estimate the risk level (risk matrix) 6.3 Identify risk control measures and evaluate their impact on the risk level 7) – Evaluate and compare the options	
Action and Monitor	8) – Decide: <ul style="list-style-type: none"> <li>▪ Grant access to a place of refuge and specify what control measures need to be taken.</li> <li>or</li> <li>▪ Deny access to a place of refuge specifying the reasons why and indicate what assistance can be provided to the ship and what if any control measures are to be taken.</li> </ul> 9) - Review and agree on the ship's proposed action plan and monitor the implementation until the situation has been resolved. 10) - Obtain feedback on the effectiveness of the process.	Communicate

## **Places of Refuge Decision-Making Process**

### **The Ship Request**

#### **1- Obtain the necessary ship information**

The TC Marine Safety regional office, through the CCG-MCTS, ensures the ship and/or the owner/charterer/salvor/cargo owner(s) has provided all the initial information needed to assess the initial request and that is required under the IMO Guidelines. **Annex 1, Part 1** sets out the information that should be provided. For example, masters and salvors are to;

- 1) identify the assistance required;
- 2) identify the reasons for assistance; and
- 3) estimate the consequences of the potential casualty if the ship;
  - a) remains in the same position,
  - b) continues on its voyage,
  - c) reaches a place of refuge
  - d) is taken out to sea

In addition to the information provided by the ship in the initial request for a place of refuge, other information will be needed to support the decision-making process. Ship contact information, ship particulars and current status information will be needed, including information on the condition and capabilities of the ship and details of its cargo. **Annex 1, Part 2** contains a list of additional information that may be useful and should be obtained from the ship where relevant.

Regional Directors, TC Marine Safety should be prepared to validate any information using whatever means available using the resources of other federal departments, the provinces and territories. For example: Department of National Defense (DND) aircraft and ships, CCG helicopters and ships, Royal Canadian Mounted Police (RCMP) aircraft and small craft. With the involvement of the provinces and territories, it would be expected that we could call upon their equipment and infrastructure.

Much of this information may have already been provided by the ship because of mandatory reporting requirements of a number of international and national instruments. The international requirements are listed in **Annex 1** of the MAS Guidelines (A.950 (23)). Particularly relevant are the mandatory reporting requirements of the following;

- Article 8 and Protocol I of MARPOL sets out the requirements for a coastal State to be informed in the event of an incident involving actual or probable pollution,
- Assembly Resolution A.851(20) provides guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants,
- *CSA Pollutant Discharge Reporting Regulations, 1995* requires the master of a ship to report any discharge of a pollutant from the ship that occurs or the probability that such a discharge will occur and to provide additional information as requested.

These regulations incorporate Resolution A.851(20) and TP9834 “Guidelines for

Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants,” and

- *CSA Eastern Canada Vessel Traffic Services Zone Regulations* and the *CSA Vessel Traffic Services Zone (VTS) Regulations* require ships about to enter a VTS zone from seaward, and when within a VTS zone, to report such things as ship and route information, ship damage, defects and any discharge or threat of discharge of a pollutant.
- *Arctic Canada Traffic Zone (NORDREG)* – voluntary participation as per CCG publication *Radio Aids to Marine Navigation – Part 3*

## **2- Describe the problem and associated issues**

Based on the ship request and information provided, and taking into account Canada’s perspective as the coastal/port State, briefly summarize the problem or main concerns and other associated issues. This information becomes the key statement that will be used in the following steps and will help in identifying those people who can assist and who could be affected. **Annex 1, Part 1**, could be used to state the problem, issues and comments.

## **3 - Identify the risk assessment team and the stakeholders that may need to be consulted or kept informed**

### Risk Assessment Team

A regional risk assessment team should be established where possible to assess requests for places of refuge. Members are responsible for providing the technical expertise, guidance and research to the team so that the team can complete the necessary analysis and evaluations to advise the Regional Director, TC Marine Safety and to resolve the situation.

Members of the risk assessment team will be selected, as needed, depending on the particular incident. In all cases, the Regional Director, CCG shall be notified, who in turn will assign a CCG member to the risk assessment team as required. For potentially serious incidents, a *Ship Rapid Assessment Team* of marine surveyors will be established to correlate and evaluate shipboard data and plans to provide rapid technical guidance with respect to ship’s residual damaged stability and longitudinal strength. In environmental emergencies the multidiscipline *Regional Environmental Emergency Team (REET)* can provide environmental information and expertise and advise on the impacts of different courses of action. Additional members can be added as the analysis and decision-making process progresses. These may include experts and advisors from; other federal departments, provincial and territorial governments, other authorities with responsibility for areas likely to be affected and industry.

Each TC Marine Safety region shall make arrangements for a risk assessment team to be notified and assembled in the event of receiving a request for a place of refuge. The analysis, evaluations and decisions shall be documented.



### Stakeholders

Stakeholders who could be affected by the decision and that may have to be consulted or kept informed should be identified.

### List of Potential Risk Assessment Team Members and Stakeholders

**Annex 2** contains a list of potential members to the risk assessment team or stakeholders that could affect or be affected by a place of refuge request. To facilitate identifying and contacting risk assessment team members and stakeholders, each TC Marine Safety region shall maintain a contact list of government experts and authorities, organizations, experts and stakeholders that may need to be contacted and participate in a place of refuge incident.

## **RISK ASSESSMENT**

### **4 - Preliminary analysis of current situation**

**4.1 Describe what can happen (risk scenarios, hazards, risks, consequences, probability, urgency)**

**4.2 Decide if any immediate action is necessary**

**4.3 Decide if an inspection team should be deployed**

Based on the information provided, the Risk Assessment Team conducts a preliminary analysis of the ship's current situation.

The preliminary analysis is a cursory look at the situation, scoping out the risk problem and getting an indication of the potential risks at sea. The preliminary analysis should briefly cover the following:

#### **4.1 - Describe what can happen**

Consideration is given to what could happen at sea given the current situation. Risk scenarios can be used to help identify the hazards and the potential risks. From this, the possible adverse consequences of what could happen, and the likelihood of it happening are estimated. The urgency and time frame for decision-making should also be estimated. Examples of hazards and risks are given in the Definitions section.

#### **4.2 - Decide if any immediate action is necessary**

Depending on the preliminary analysis, immediate action may be necessary to start addressing the risk even though all the critical information and analysis may not yet be available. This might involve taking emergency measures as per existing contingency plans, notifying shipping, providing immediate instructions to the ship to address urgent risks or taking action to complement efforts already underway by the ship.

#### **4.3 - Decide if an inspection team should be deployed**

An inspection team should board the ship, when appropriate and if time allows, to gather additional evaluation data for further assessment and decision-making. Deploying an inspection team will depend on safety and the situation. Based on the team's evaluation, the information previously recorded on the ship and its current status (**Annex 1, Part 1**) is revised accordingly. The input and the analysis of the risks by the inspection team are integral to each of the remaining steps in the decision-making process. Team members may have to remain on board to provide advice, report on actions being taken by the ship or salvor, and to help monitor the condition of the ship.

Each TC Marine Safety region shall have arrangements in place for assembling an inspection team and placing them on the ship. A list of qualified personnel should be maintained that could be called upon to provide this expert shipboard inspection function bearing in mind the expertise required will depend on the situation.

## **5- Identify the Options**

### **5.1 Identify feasible places of refuge**

### **5.2 Consider if anyone should be added to the risk assessment team or the stakeholder list**

#### **5.1 - Identify feasible places of refuge**

Possible places of refuge are considered that could provide the ship with what it needs to address the problem and to minimize the threat of further damage. The most suitable ones are selected as options for further assessment. Depending on the circumstances, a suitable place of refuge could be a port, an anchorage or a sheltered location near the coast.

A place of refuge may be needed to;

- lighter or transfer the ship's cargo and bunkers,
- repair damage,
- provide shelter while the ship stabilizes or evaluates its condition, or
- limit the extent of damage or pollution.

The suitability of a place of refuge will also depend on a number of operational requirements specific to the situation such as, depth, distance, approaches, docking facilities and anchoring ground.

**Annex 3** provides a list of criteria for identifying places of refuge suitable to the ship.

#### **5.2 - Consider if anyone should be added to the risk assessment team or the stakeholder list**

Once the feasible options have been identified, the composition of the risk assessment team and list of stakeholders should be reviewed.

## **6- Estimate the risk for each option**

### **6.1 Describe what can happen (risk scenarios, hazards, risks, consequences, probability)**

**6.2 Estimate the risk level (risk matrix)****6.3 Identify risk control measures and evaluate their impact on the risk level**

**Annex 6** contains a table that could be used to record the risk assessment details from steps 6 and 7 for each option considered.

**6.1 - Describe what can happen (risk scenarios, hazards, risks, consequences, probability)**

As was done previously with the ship's current situation, for each place of refuge option, risk scenarios are developed by describing what accidents could happen, or what could go wrong. The risk scenarios should identify the underlying hazards and associated risks that may generate or contribute to the potential consequences of bringing the ship into the place of refuge. The voyage from the ship's current position to the place of refuge should be included in the scenarios. Examples of hazards and risks are given in the Definitions section.

Similarly, risk scenarios for the options associated with the ship remaining at sea are also to be prepared. Consideration should be given to the following options;

- 1) if the ship remains in the same position,
- 2) if the ship continues its voyage, and
- 3) if the ship is taken out to sea.

In some cases, more than one risk scenario may need to be identified for a particular option. This would be the case where very different accidents could happen or where a different sequence of events would lead to different risks. For example, one accident scenario may describe the worst foreseeable accident with a certain probability, while another accident scenario would describe an accident with less severe consequences but with a much higher likelihood of occurring. Depending on the severity and likelihood of the different scenarios for a particular option, the assessment team may select the ones for further risk estimation.

The potential consequences are then estimated for each option (i.e., each place of refuge and the 3 options at sea). The level of exposure to the hazard(s) will affect the potential consequence. For example, to understand the risk to the environment and the potential consequences from a pollutant (hazard), consideration needs to be given to; the type and quantity of the pollutant, the affect of weather, sea, current, and tide, and the waters and coastlines that will be exposed to the pollutant.

**Annex 4** provides a list of some areas that could be put at risk and suffer adverse consequences in the event of a casualty. Three broad categories have been identified:

- 1) health, safety and security 2) environmental, and 3) socio-economic.

Consideration is given to the probability of the risk scenario happening and estimated. The probability will be a function of such things as; the condition of the ship, exposure to hazards such as weather and sea conditions, and distance and time to a suitable place of refuge.

## **6.2 - Estimate the risk level (risk matrix)**

The overall risk associated with each option is estimated by considering the severity of the adverse consequences and the probability of the relevant risk scenario.

**Annex 5** provides a method of categorizing the potential consequences and probability. A risk matrix can then be used to assign an overall level of risk for each option. Having an estimate of the level of risk will help in determining appropriate risk control measures and in comparing the risk associated with different options.

## **6.3 - Identify risk control measures and evaluate their impact on the risk level**

Once the overall risk has been estimated for each scenario, control measures that could be implemented to reduce the risks to acceptable levels should be considered.

Examples of control measures are:

- use of tugs,
- pilots,
- alternate routes,
- temporary repairs,
- cargo transfer/lightering
- use of pollution response equipment,
- restrictions on access and sea areas,
- contingency plans,
- special conditions,
- operational procedures.

Control options may introduce new risks and costs that will also need to be factored in. Any other costs associated with implementing the options should be included with the consequences.

Control measures will serve to either help prevent the risk (reduce the probability), mitigate the risk (lessen the impact) or both. The control measures available and their effectiveness will also vary with the different options. The probability and the consequences should therefore be reassessed for each option to take into account the affect of the risk control measures and the overall level of risk re-evaluated.

### **Insurance and Financial Safeguards**

The impact of the consequences and the costs may be offset by insurance or other financial safeguards (i.e., financial bond, bank guarantee, indemnity fund, P&I Club). The limits of liability or financial guarantee should be considered and factored in.

## **7 - Evaluate and compare the options**

The overall risk levels of the various scenarios are then evaluated and compared and the advantages and disadvantages of each option carefully weighed. In weighing the advantages and disadvantages the following should be considered:

- The effectiveness of each option at addressing the ship emergency;
- The avoidance of the risks associated with the other options;
- The degree of difficulty in implementation of each option;
- The acceptability by the stakeholders of the residual risks and the proposed actions to be taken, including the proposed control measures;
- International and bilateral impacts;
- Legal issues (liability considerations);
- Security

## **ACTION AND MONITOR**

### **8 - Decide:**

- **Grant access to a place of refuge and specify what control measures need to be taken.**
- or**
- **Deny access to a place of refuge specifying the reasons why and indicate what assistance can be provided to the ship and what if any control measures are to be taken.**

Based on the evaluation, a decision is required of the risk assessment team on whether to grant or deny access. Where access is granted, the place of refuge and control measures must be specified. Where access to a place of refuge is refused, then the reasons should be specified to the ship. The ship should also be told what assistance is available to the ship and what, if any, control measures are to be taken.

Access should be provided whenever reasonably possible, depending on the risk. Access should be granted where, with appropriate risk control measures, the estimated level of risk is considered low (i.e., risk level 1-3), or the risk is reduced as much as possible and the risk would clearly be lower than if the ship were to remain at sea.

In the case where the risk is considered too great and access to a place of refuge must be denied, then all possible assistance must be offered to the ship offshore so as to prevent and control any environmental damage that may or will occur.

### **9 - Review and agree on the ship's proposed action plan and monitor the implementation until the situation has been resolved.**

The ship shall prepare an action plan, taking into account the decision reached, together with any control measures that have been decided-on.

Once an action plan is agreed on, all authorities and other stakeholders should be notified as soon as possible.

The implementation and the situation should be monitored closely to address changes in the situation that would increase the risks and possibly requiring new decisions and additional control measures. Monitoring should continue until the situation has been resolved.

#### **10 Obtain feedback on the effectiveness of the process.**

Once the plan is completed, those involved in the incident should be asked to comment on the event. The feedback can then be recorded and used to make recommendations to the Marine Safety Executive for changes in these guidelines.

**Annex 1 Part 1** (*Steps 2, 3, and 4*)**Information on the Ship and Its Current Status**  
**Information on the Request**

<b>INFORMATION ON THE SHIP REQUEST (AS PER A.949(23))</b>	
<b>Information Provided by the Ship</b>	<b>Marine Safety's Comments</b>
<b>What assistance is required from Canada?</b> (for example; lightering, pollution combating, towage, stowage, salvage, storage, repairs...)	
State the reasons for the ship's need for assistance.  Cause and extent of damage or problem (for example; fire, explosion, damage to ship, including mechanical or structural failure, collision, pollution, impaired stability, grounding...)	
<b>What are the hazards and associated risk and estimated consequences of potential casualty if the ship:</b> <ul style="list-style-type: none"> <li>• remains in the same position,</li> <li>• continues on its voyage,</li> <li>• reaches a place of refuge,</li> <li>• is taken out to sea.</li> </ul>	
<b>Describe the Problem and Associated Issues:</b> (Briefly summarize the problem and issues, from Canada's perspective)	

## **Annex 1 Part 2 (*Step 1*)**

### **Information on the Ship and Its Current Status**

#### **ADDITIONAL SHIP INFORMATION**

#### **SHIP CONTACT INFORMATION**

- Ship Identity – name, flag, identity/IMO/MMSI number
- Master's name and nationality – Still on board?
- Name of person on the ship making the request, date and time
- Last port of call
- Working language on board
- Security (certificate, level)
- Local representative of the company (name, address, telephone number, email address)
- Registered owner (name, address, telephone number, email address)
- Registered company (name, address, telephone number, email address)
- If bare-boat charterer (name, address, telephone number, email address)
- Classification society local representative (name, address, telephone number, email address)
- Is the ship insured? Ship's insurers and limits of liability available (name, address, telephone number, email address)
- Local P&I Club representative (name, address, telephone number, email address)

#### **SHIP PARTICULARS**

- Type of ship
- Size (tonnage), length, beam and draft of ship, air draft
- Year constructed
- Propulsion, thrusters
- Anchoring gear
- Towing Gear
- Fuel (type, quantity)
- Nature and condition of cargo, stores, bunkers, in particular hazardous goods, (type, quantity, condition)
- Ballast



**Annex 1 Part 2 – (continued)**

**Information on the Ship and Its Current Status**

**ADDITIONAL SHIP INFORMATION**

**CURRENT STATUS**

- Position of ship (and how determined)
- Course and speed (making way, adrift or at anchor) and route information
- Weather, sea and ice conditions, and forecast weather conditions
- Status of crew/salvors/other (number on board and assessment of human factors, including fatigue)
- Details of any casualties on board or in the vicinity of the ship
- Actual pollution or potential for pollution
- What is the urgency of the situation and the likelihood of the potential casualty
- Sea room (depth, drift, traffic density)
- Has the Classification Emergency Response Unit been contacted and supplied with information?

**SHIP CONDITION (DAMAGE/DEFECTS/DEFICIENCIES)**

- Seaworthiness of the ship (buoyancy, stability, list, trim)
- Status of propulsion and power generation, and steering
- Status of essential shipborne navigational aids
- Details of changes in ship condition since initial event

**ASSISTANCE INFORMATION**

- Master's/Salvor's intentions
- Names of vessels in vicinity or assisting in situation
- Response actions taken by a ship (i.e., salvors contacted, engaged, at scene)
- Distance and time to a place of refuge
- Details of what is required from a place of refuge
- Docking ability
- Is anchoring possible
- Can the ship be accessed by helicopter

**Annex 2 Part 1** (*Step 3*)**List of Potential Risk Assessment Team Members and Stakeholders**

- TC Marine Safety (Ship Rapid Assessment Team, ship technical and operational expertise, routing)
- DFO - CCG (response, spill and clean-up expertise)
- DFO (scientific and operational expertise on fisheries, ocean, habitat)
- Environment Canada (Regional Environmental Emergency Team input, weather forecast)
- Ship Inspection Team
- TC Legal Services
- TC Security
- TC Communications
- Provincial authorities
- Municipal authorities
- Port authorities/harbour master
- Classification society
- Emergency services (police, fire)
- Response organization
- Pilots
- Salvage companies
- Shipyards
- Surveyors
- Cargo handling facilities
- Health officials
- Chemical industry
- Canada Customs and Revenue Agency (CCRA)
- Seafarer associations
- Search and Rescue (SAR)
- Department of National Defense (DND)
- Foreign Affairs Canada (FAC)
- US/French/Danish authorities
- Flag State
- Parks Canada (marine parks)
- Aboriginal groups
- Shipping industry
- Fishing industry
- Recreational Boating industry

**Annex 3 (Step 5.1)****Criteria for Selecting a Suitable Place of Refuge**

What is needed by the ship to address the problem?		Suitability of Options		
Potential Requirements	Details	Refuge A	Refuge B	Refuge C
- Shelter (weather, sea, swell, ice)				
Safe anchorage (holding ground, depth)				
- Facilities/Equipment - reception facilities, transfer facilities i.e., pumps, hoses, barges, lightering				
- Repair facilities – shipyard, cranes, cargo gear, personnel				
- Salvage and Towage				
- Emergency facilities - fire fighting				
Docking requirements (draught, length, availability)				
- Sea room to manoeuvre				
- Other				
<b>Other Place of Refuge Considerations</b>				
- Navigation (traffic, unobstructed approach, pilots, tides, currents, ice, anchorage)				
- Assistance nearby, if needed (Oil and chemical response, salvage, towage)				
- Distance to refuge versus urgency				
- Accessibility by land, sea, and air				
- Ability of refuge to contain or limit the spread of pollution				
- Characteristics of refuge that would reduce the impact of pollution or facilitate clean-up				
- Emergency Response Capabilities (i.e., SAR, evacuation, medical, HAZMAT)				
- Is there a site suitable for beaching the problem ship if necessary.				
- Security, ability to restrict area, access				
- Weather and Sea Conditions (prevailing wind, tide, current, ice, weather , sea)				

**Annex 4** (*Step 6.1*)**Areas that could be put at risk in the event of a casualty****Health, Safety and Security**

- Public safety/security - consider distance to populated areas, size
- Persons on board
- Responders
- Salvors
- Persons in vicinity of ship
- Other ships – collision
- Air quality, contamination

**Environmental**

- Sensitive areas (habitat, species), ecological reserve or protected area,
- Wildlife (marine, terrestrial, avian)
- Waters in vicinity of ship
- Adjacent coastlines
- Neighboring countries (US, Denmark, France)

**Socio-Economic**

- Communities and business interests – consider distance to communities and industrial area
- Impact on fisheries – offshore, approaches, shellfish
- Tourism – coastline, beaches, sightseeing, hotels, waterfront activities
- Public and private property
- Infrastructure – bridges, channels, blockage, dock facilities, other installations
- Port delays/disruption
- Costs – i.e., salvage, environmental clean up, transport, cargo handling/lightering, surveying, pilotage, towage, moorage, harbour dues, specialists, special measures, waste disposal, material damage, personal damage, repatriation of crew/passengers, emergency services, repair and shipyard, removal of wreck
- Marine transportation system
- Offshore oil and gas activities
- The ship and its cargo

**Annex 5 (Step 6.2)****Probability and Severity of Adverse Consequences and the Overall Risk Level****Estimate Severity of Adverse Consequences:**

The severity of the overall consequences associated with a risk scenario can be categorized as follows:

- Catastrophic:* multiple deaths, multiple major injuries, extreme property or environmental damage, extreme negative impact on the economy, major national or long term impact.
- Severe:* death, major injuries, severe property or environmental damage, loss of the ship, major risk to safety or restriction to shipping, regional impact.
- Significant:* many injuries, significant property or environmental damage, short-term consequences, local impact
- Minor:* some minor injuries, some property or environmental damage, minor short-term consequences.

**Estimate Probability of Adverse Consequence:**

The overall probability associated with a risk scenario can be categorized as follows:

- Highly probable:* almost certain the accident will occur.
- Probable:* accident likely to occur.
- Unlikely:* accident could occur.
- Improbable:* accident not likely to occur.

**Estimate the Overall Risk Level**

The following risk matrix can be used to help determine and categorize the overall risk level for each option. This estimate can then be used to help compare one option with another.

<i>Severity of Adverse Consequence</i>	<i>Probability of Adverse Consequences Over Time</i>			
	HIGHLY PROBABLE	PROBABLE	UNLIKELY	IMPROBABLE
CATASTROPHIC	9	8	7	5
SEVERE	8	7	6	3
SIGNIFICANT	7	6	4	2
MINOR	5	3	2	1

**Risk Level:**      **Low (1-3)**      **Medium (4-6)**      **High (7-9)**

**Annex 6** (*Step 5 and 6*)**Assessment Details**

What is the problem and associated issues: (Step 2)			
Option (i.e., port / place / at sea in position / continues voyage / taken out to sea): (Step 5)			
Describe what could happen (risk scenarios, hazards, risks): (Step 6)			
Potential Consequences: (Step 6, Annex 4):			
Risk Estimation: (Step 6, Annex 5)	Consequence category:  Specify:	Probability category:  Specify:	Risk Level:
Control Measures: (Step 6)			
Risk Evaluation: (Step 7)	Advantages:	Disadvantages:	