

An operational guide to improve preparedness and response to HNS spills

Josée Lamoureux <i>Transport Canada – Marine Safety</i> josee.lamoureux @tc.gc.ca	Benoit Philippe <i>Transport Canada - Marine Safety</i> benoit.philippe @tc.gc.ca	William Giraud <i>Cedre</i> William.giraud @cedre.fr	Mélusine Gaillard <i>Cedre</i> Mélusine.gaillard @cedre.fr	Christophe Rousseau <i>Cedre</i> Christophe.rousseau @cedre.fr
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Context

Through collaboration between Canada and France, an operational guide has been developed to provide information on preparedness and response to accidental spills of Hazardous and Noxious Substances (HNS) on waters. This international collaboration between Transport Canada and Cedre is a logical continuation and a partnership strengthening project, following the creation of an educational guide and a website, www.chemical-pollution.com, on better understanding chemical pollution at sea.

During a pollution incident involving HNS, many factors must be considered: behaviour and nature of substances, volumes, origin and cause of the incident, environmental conditions, environmental sensitivity, etc. HNS incidents are known to be usually more complex, and therefore, responders must be quick to react and well-organized to efficiently manage the response with respect to existing emergency response plans at different scales. With this objective in mind, the end users of the guide are both, on-site response team and authorities involved in the decision-making process.

Introduction

Incidents involving Hazardous and Noxious Substances (HNS) are a major challenge for modern society, particularly in the case of marine transport incidents. Such incidents entail aspects relating to health and safety (emergency responders, the public), pollution (air, water, soil), protection of property and economic damage.

When managing pollution involving HNS, numerous factors must be considered:

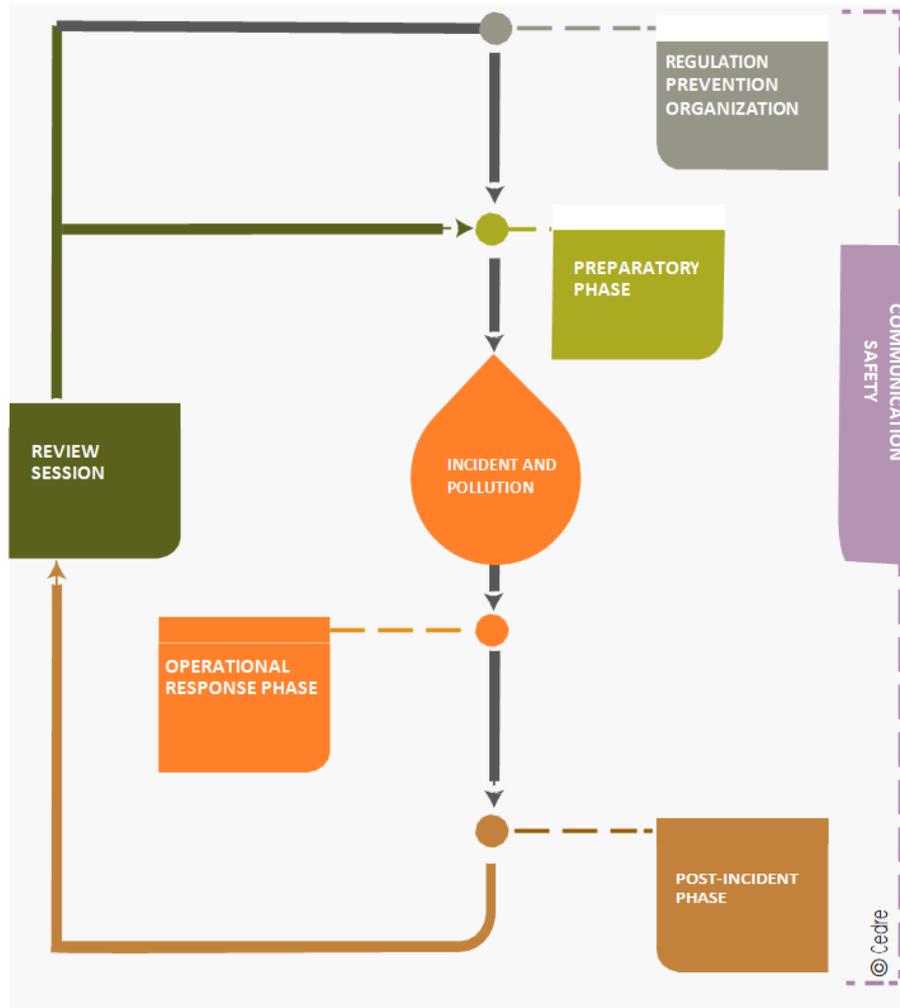
- the wide variety of substances transported, their properties and potential hazards;
- the various conditions specific to the incident (fire, spill on land or on a water body, shipwreck, etc.);
- the great range of volumes of material involved (from tractor trailers to the cargo holds of chemical tankers);
- environmental parameters (weather, hydrology, oceanography, etc.);
- the vulnerability of the sites impacted.

Consequently, authorities and emergency responders at all levels (operators, decision makers, etc.) must implement a response adapted to the incident while complying with the various existing plans (local, national, international levels).

This document is intended as an operational guide for professional responders who are called to deal with accidental spills of HNS. The purpose of the guide is to provide a decision support tool for the personnel of incident management centres as well as for those who respond to incidents in the field. The recommendations set out in this guide are based on the expertise of Cedre and Transport Canada in terms of approach, decision making and response in the event of a pollution. Regulations, prevention

and organization are not addressed in this guide. All modes of transportation are covered in the guide; however, air transportation is excluded.

The main focus of the guide is illustrated in the general framework for responding to an incident involving accidental pollution by HNS, as presented in the schema below.



General schema of the methodological approach

In order to provide an operational character, a clear and concise structure was chosen for the guide. The first part, based on methodological approach, briefly describes the different steps involved in managing HNS pollution. The second part contains technical and emergency response sheets. A third part gathers bibliography and glossary.

The first part of the guide also explains the essential phases of a spill event: preparatory phase, response and post-incident management. The preparatory phase section defines all actions necessary to be considered: preparedness, training and exercises, materials, equipment, data and information. Then, the response phase describes the sequence of events once a spill occurs, including the core of methodological approach: first observation, notification, first emergency response actions, assessment (modelling, teledetection, sampling and analysis), decision-making process and response. The post-incident phase describes environmental restoration, provides guidelines on storage, lessons learned and liability and compensation.

The second part of the guide gathers practical sheets allowing an access to useful and technical information in case of a chemical spill. The table of contents at the beginning of the guide provides an easy and rapid access to practical sheets. Each sheet was developed to be concise and to include all essential information. Among the fifty-five sheets suggested, here are some examples of different categories that can be found:

- Technical sheets on miscellaneous subjects such as elaboration of contingency planning, communication, response depending on the behaviour of the spilled product, remind of possible first emergency response, environmental restoration or compensation;
- Guidance sheets to acquire or choose equipment, understand a general modelling result or deploy techniques for precise scenarios;
- Decision-making sheets for observation, sampling, identification of risks, technique selection depending on the incident conditions;
- Collecting information sheets;
- Technical sheets including recovery techniques, possible actions on the source of spill, decontamination, response to specific and particular products (dilbit, liquefied gas) and to different environmental conditions (Arctic and ice conditions).
- Four scenarios, with different substances, have been developed in this guide.

In the third part, a glossary defines many terms and acronyms used in this guide.

Conclusion

The present guide was created in the framework of the partnership between Canada and France and has an innovative character in the field of chemical spilled in waters. The presence of many cross-references between the first and the second part makes it user-friendly. This is highlighted with the effort made to use visual imagery all along the guide.

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