

**ESTABLISHING A NATIONAL
ENVIRONMENTAL EMERGENCY
RESPONSE MECHANISM**

**ENVIRONMENTAL EMERGENCIES SECTION
EMERGENCY SERVICES BRANCH
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This document, *Establishing a National Environmental Emergency Response Mechanism*, and its companion publication, *A Guide for the Development of a National Environmental Contingency Plan*, are available from the:

Environment Emergencies Section
Emergency Services Branch
UN Office for the Coordination of Humanitarian Affairs
OCHA – Geneva
Palais des Nations
CH-1211 GENEVA 10
Switzerland

Tel. No. +(41 22) 917 11 42
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Website: www.reliefweb.int

The two documents are closely related and focus on preparedness at the national level. Reference material reviewed for the preparation of the two documents is listed in *A Guide for the Development of a National Environmental Contingency Plan*.

Readers who require information on preparedness at the local level are advised to contact the Industry and Environment Office of the United Nations Environment Programme, and the OECD (Organisation for Economic Co-operation and Development). More specifically, the publication, *APELL -- Awareness and Preparedness for Emergencies at the Local Level -- A Process for Responding to Technological Accidents*, is available from the:

Industry and Environment Office
United Nations Environment Programme
Tour Mirabeau -39-43 Quai André Citroën
75739 PARIS CEDEX 15 - FRANCE

Tel : +(33) (1) 44 37 14 42
Fax: +(33) (1) 44 37 14 74
Website: www.uneptie.org/apell/home.html

The publication, *Guiding Principles for Chemical Accident Prevention, Preparedness and Response -- Guidance for Public Authorities, Industry, Labour and Others*, also focuses on local level preparedness and is available from the:

OECD Environment Directorate
Environmental Health and Safety Division
2, rue André-Pascal
75775 PARIS CEDEX 16 - FRANCE

Tel: + (33) (1) 45 24 82 10
Fax: +(33) (1) 45 24 18 75
Website: www.oecd.org

INTRODUCTION

This document provides information and suggestions to countries that may wish to improve their capability for responding to environmental emergencies. The document discusses suggestions for developing a response capability in the form of a nucleus or an entity, such as a centre or an office, which can broker and coordinate necessary resources and expertise for a response to environmental emergencies.

After a short section that defines specific terms used extensively throughout this document, the information and suggestions offered are presented in three parts. Part I consists of a brief introduction to aspects of an environmental emergency programme commonly referred to as the preparedness component. Part II, the focus of this document, presents suggestions for creating the response component of an environmental response programme and offers three sample response options. The three options highlight the need for, and the benefits of, an environmental emergency response mechanism to be part of, or to work in partnership with, an overall emergency response system. Part III presents a summary and offers some concluding remarks.

The document also includes an appendix. Appendix A-1 contains suggestions for operating procedures for an office, a centre or any other nucleus that is tasked with fulfilling the response component of an environmental emergency programme.

Although this document focuses on the creation or the enhancement of a national response mechanism, many of the generalities provided in the text are applicable for the creation or enhancement of response mechanisms that serve more specific, local or regional priority areas. The reader who seeks information that was specifically developed for preparedness at the local level should also contact the United Nations Environment Programme, Industry and Environment Office, as well as the OECD Environment Directorate, both offices located in Paris, France; see page 2 opposite.

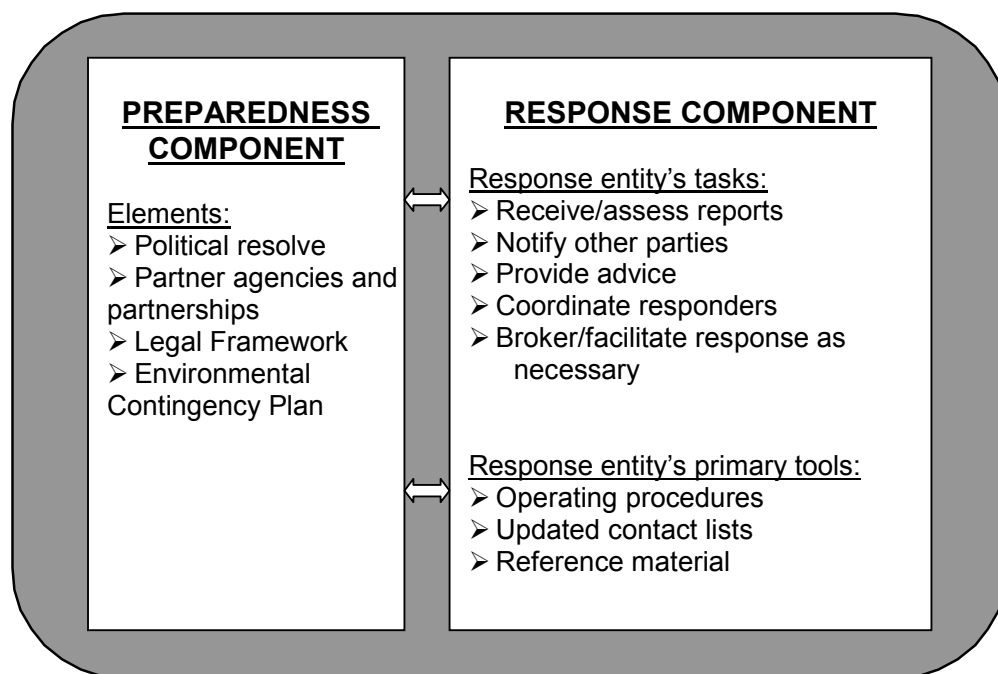
This document, *Establishing a National Environmental Emergency Response Mechanism*, is available from the Environmental Emergencies Section of the Emergency Services Branch, see page 2 opposite. As the title suggests, this document focuses on response. It combines suggestions from a selection of reference material with practical operational experience. Its companion document, *A Guide for the Development of a National Environmental Contingency Plan*, offers suggestions intended to be useful for the preparation of a national environmental contingency plan -- an important component of an effective environmental emergency programme. Many of the generalities of the companion document may also apply to environmental contingency plans intended to serve more specific, local or regional priority areas.

The term 'environmental emergencies', as the term is used in this document, refers to a broad range of events. Once a national environmental emergency programme is in place and a response mechanism has been created to receive and process reports of emergencies that threaten the natural environment, events of a magnitude below that of 'emergencies' then will also seek attention. It is reasonable to assume that the department, office or entity charged with managing environmental emergency response will need to deal with a variety of events, many of which will fall well short of traditional 'emergencies'. For this reason, suggestions offered in this document address a

response capability not only for environmental emergencies, but also for less serious events, events referred to as accidental pollution incidents. Accidental pollution incidents commonly occur at a greater frequency than emergencies, but these incidents also require the attention of society in order to prevent them from escalating to more serious events with potentially greater and often long-term consequences. The document thus looks at a response capability for a variety of events which are often industrial, commercial and transportation accidents including mishaps where precaution or prevention has failed, and where hazardous materials or contaminants are normally involved that pose a threat to people and/or to vulnerable ecosystems.

The document notes that the creation of a response mechanism for environmental emergencies, or the improvement of existing response capacities, can be phased-in over time. The Summary Discussion offers a few remarks on this suggestion.

Environmental Emergency Programme - Schematic



Aspects of an environmental emergency programme's Preparedness Component, above, are presented in Part I and serve as summary background material for this document. (The companion document, *A Guide for the Development of a National Environmental Emergency Plan*, elaborates these topics, and focuses on the content of a contingency plan.) The Response Component of an environmental emergency programme is the focus of this document and related aspects and suggestions are presented in Part II.

TERMS AND CONCEPTS

The following terms and concepts are defined for the purpose of this document:

Containment: Measures taken to control or to restrict the spread of hazardous materials or pollutants involved in an environmental emergency or in a pollution incident.

Countermeasures: Embraces all activities, including intentional *in-situ* burning and intentional *in-situ* chemical reactions, which are implemented to reduce the overall impact and the overall consequences of an environmental emergency or a pollution incident.

Emergency: A sudden and usually unforeseen event that calls for immediate measures to minimize its adverse consequences.

Emergency Response Team: A decision-making response group consisting of representatives of partner ministries and other government agencies or departments, and possibly someone representing the responsible party or parties involved, and assigned by their respective host entities or agencies to assist the On-Scene Coordinator with his tasks by focusing on political and policy implications and on complex technical matters.

Environment: The air or atmosphere, all surface and ground waters, and all land including sub-soils.

Environmental degradation or degradation of the environment: Unfavourable modification of the ecological state and environment through natural processes and/or human activities.

Environmental emergency: The degradation, or the threat of degradation of the environment to an extent that it creates or constitutes an emergency; often an event that involves hazardous materials and that, from a national perspective, is beyond the response capability of local or regional authorities and beyond the response capability of the discharger and others liable at law; and an event that calls for a response by several public authorities for immediate, coordinated, possibly pre-emptive, and large-scale countermeasures. (An environmental emergency from a regional or district perspective, of course, would be an event as defined within the concepts of this definition, but beyond the response capabilities of the smaller community or local authorities.)

Environmental emergency programme: A comprehensive response-oriented programme that focuses on preparing for and reacting to environmental emergencies and other pollution incidents. The programme typically consists of two main components. The first is the preparedness component. This includes commitments and products (political resolve, partnership arrangements, legislation, and the environmental contingency plan) that collectively underpin the public sector reactions to an event. The second component of the overall programme is the response component, specifically a response mechanism. This can be any effective and viable response-focused capability created to facilitate, coordinate or broker, as may be required, timely and appropriate interventions and actions that support, or lead to, a satisfactory resolution of the event.

Hazardous material or hazardous substance(s): Any substance, element, compound, mixture, solution, wastes, material or goods, including pesticides and petroleum oils and their associated products, which by itself, or in conjunction with other substances, elements, compounds, mixtures, solutions materials or goods as a result of incomplete, uncontrolled or inadvertent reactions, presents a hazard to man or adversely affects man, animals or other living things including plants or the environment in general, and property, or has the potential to do so under the circumstances of the emergency.

On-Scene Coordinator (OSC): The official who takes charge on-site of the environmental emergency or the pollution incident, and takes responsibility for operational decisions and for on-site coordination of response activities.

Pollutant, polluting substance or contaminant: Any material or substance, or the derivative of any materials or substances through incomplete, uncontrolled or inadvertent reactions, that if released to or into the environment, possibly in contravention of applicable laws, causes or may cause damage to public health and welfare, property, or to the environment; and any material or substance, including disease-causing agents which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through the food chains, will or may cause death, disease, behavioural abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.

Pollution incident: An unauthorized or accidental release of a hazardous material or a pollutant creating an event of a magnitude below that of an emergency, as defined, but that adversely effects public health and welfare, property, or the environment, or threatens such harm, and results in an event of a magnitude to necessitate a response by the discharger or others liable at law, and possibly by authorities.

From a national perspective¹, a more focused response-oriented interpretation for:

Major pollution incidents: Pollution incidents of a magnitude that require the direct, rapid and coordinated response, or the intervention, of national authorities in addition to local, district or regional authorities and the response capability of the discharger and others liable at law or their agent; or pollution incidents that require the response coordination function or operational intervention of national authorities because the incident is not addressed adequately by the discharger and others liable at law or their agent, nor by the local, district or regional authorities.

Minor pollution incidents: Pollution incidents of a magnitude that do not require a direct and coordinated response or intervention at the national level in order to supplement the response by local, district or regional authorities and the response capability of the discharger and others liable at law or their agent.

¹ These definitions would need to be adjusted in a similar manner as noted under the phrase "environmental emergency" on the previous page if they are to be interpreted from a regional or a district perspective.

PART I

PREPAREDNESS

The primary purpose of this document is to offer practical suggestions for countries that wish to improve their response to environmental emergencies. Although disaster, accident and spill prevention is an important component of a wider disaster and emergency management cycle, the topic of prevention itself is outside of the scope of this document. This document discusses information and ideas that may be suitable for the creation or the expansion of an entity, centre or office that is to broker or coordinate a response to events or accidents where normal precautions and prevention have failed and where hazardous substances or other pollutants pose a threat to people or the environment. Within the context of this document most environmental emergency programmes can be split into two main components: one that focuses on preparedness, the other on response. A very brief discussion on elements of the preparedness component² is presented in Part I of this publication and suggestions are made that they should be in place before an effective response mechanism can be created. Elements of the preparedness component highlighted in Part I include: political commitment, partnership arrangements, effective legislation, and a comprehensive emergency plan. Part II addresses the response component of an environmental emergency programme.

I-1 POLITICAL RESOLVE

Industry spill contingency plans and industry emergency plans are considered to be reliable, generally, if these plans contain a formal introduction in the nature of a policy statement that commits the company, a) to a high level of environmental awareness and a high level of environmental protection, and b) to repair any damage that may occur as a result of an inadvertent accident. Such statements of commitment are normally included in the first few pages of industry contingency plans in the form of a proclamation by the company's chief executive officer, or a statement by the company's most senior executive responsible for environmental affairs at the corporate level.

An effective public sector environmental emergency programme also should have the support at the highest possible level. This publication suggests that political commitment is imperative if an environmental emergency programme, or any component of such a programme, is to be successful. To be effective, an environmental response mechanism relies on several support elements, discussed briefly in Part I of this publication. But most importantly, an effective national response mechanism should be part of a wider environmental emergency programme that enjoys not just momentary support, but unmistakable political resolve.

It is recommended for countries that seek to improve their environmental emergency response capabilities to secure the necessary political commitment at the highest available level. In conjunction with suitable funding, the political commitment should: 1)

² Summarized from information reviewed for this and for the companion publication, "A Guide for the Development of a National Environmental Contingency Plan". See the latter document for a listing of related reference material.

call for the development, or as applicable, the expansion of legislation that supports an overall environmental emergency programme, 2) authorize the preparation of partnership arrangements amongst potential response partners, and 3) sanction the lead department to prepare and administer an effective environmental contingency plan.

I-2 PARTNERS AND PARTNERSHIPS

Few agencies have all of the physical resources, the diverse expertise, and recourse to the entire spectrum of legislation essential to take charge single-handedly of the diversity of chemical accidents and other environmental emergencies that occur in society today. The great variety and complexities of technological accidents at fixed facilities and in the transportation sector will not only require the response capabilities of the private sector, but most probably require the involvement, cooperation, expertise and response resources found in a number of government agencies, including (and possibly, in particular) expertise and resources found with authorities at the local and regional level. It is fair to conclude that the scope of an effective and an efficient national environmental response mechanism is most certainly multi-disciplinary and most likely multi-agency.

Having said that a response mechanism is complex in scope does not mean that several experts from several agencies rush to all accidents at once. It is a given that one agency or one department is most likely in charge of a very specific activity that has the highest priority at an accident at any one moment in time. A fire department, for instance, or an agency responsible for explosives, will most likely be in charge during the timeframe that their particular expertise takes precedence, in the same manner that a police agency takes charge of a site during a criminal investigation. Although overall coordination is essential, various experts take charge of specific on-site activities at different timeframes throughout the duration of the response.

An environmental emergency may occur as a result of any number of mishaps, including those that require several agencies to respond. It is also possible that several agencies may be required, or may want, to respond to an event virtually at the same time. Response coordination, then, becomes essential. This can be facilitated effectively through arrangements amongst potential response partners.

In the context of a coordinated environmental emergency response, it is suggested that understandings be reached amongst the various responders who may become involved, and that agreements, arrangements, or memoranda of understanding, as applicable, be concluded between response partners as part of improving overall preparedness. The development of these understandings and agreements facilitate improved dialogue amongst possible response partners. Once concluded, these arrangements form the basis for the preparation or the completion of effective contingency plans, and offer clear guidelines for on-site operational cooperation and for interpreting response priorities. Such agreements also provide an excellent platform for coordinated inter-disciplinary and inter-agency training exercises.

As part of improving the overall state of preparedness for environmental emergencies, it is suggested that every reasonable effort be made to reach understandings or agreements between potential response partners. Entities responsible for services that could be represented at complex environmental emergencies and that should participate,

where applicable, in the development of suitable understandings amongst response partners, include those responsible for:

- a) Potable water and water supply systems;
- b) Wastewater systems;
- c) Hazardous waste transport and disposal, and waste disposal practices;
- d) Overall environmental protection;
- e) Health concerns for the general population;
- f) The safety and welfare of responders and other workers;
- g) Water, road and rail transportation matters;
- h) Petroleum and other product pipeline systems;
- i) Product safety issues; and
- j) Direct and indirect enforcement matters related to any of the above.

It should be clear from the activity and responsibility areas listed above that a national environmental emergencies programme incorporates and relies on activities and responsibilities likely to be found at several levels of government including local and regional authorities. The enhancement of the state of preparedness of local and regional authorities in conjunction with industry, including the transportation sector, is the focus of the APELL process outlined in, *Awareness and Preparedness for Emergencies at the Local Level -- A Process for Responding to Technological Accidents*, see page 2 of this document. A high level of cooperation between local and regional authorities and the national entity, department or office in charge of a national environmental emergencies programme is, of course, imperative.

I-3 LEGAL FRAMEWORK

Effective response to environmental emergencies and other pollution incidents can be achieved best in the presence of strong laws.

The type of legislation that has proven effective for several authorities is legislation that:

- a) Supports a workable response mechanism for accidental releases of hazardous materials and other pollutants; and
- b) Minimizes public expenditures and the involvement of regulatory authorities by making best use of the polluter-pays-principle.

If legislation based on similar principles is considered as the basis for an environmental emergency programme, it should include, if possible, the following key features:

1. Definitions of applicable terms and concepts;
2. A general prohibition to discharge hazardous materials and other pollutants into the natural environment;
3. Clear identification of those deemed responsible and liable at law for accidental or unintentional releases of hazardous substances and other pollutants;
4. Defining the extent of legal liability, and/or defining the limits of liability, if any, for those deemed liable at law;
5. Duties to report to applicable authorities, as quickly as possible, accidental releases of hazardous materials and inadvertent releases of other pollutants;
6. Duties to contain, clean up and properly dispose of spilled hazardous materials and other pollutants;
7. Duties to ameliorate adverse effects caused by the accidental release;

8. An effective persuasion mechanism (reduced liability for those who operate under approved and current contingency plans);
9. An effective deterrent mechanism (fines or other punishments);
10. Rights of parties affected by the release, including accidental release, of hazardous materials or other pollutants;
11. The responsibility and authority of the regulatory entity; and
12. The authority and role for the entity that receives reports of accidental releases of hazardous materials and other pollutants.

Some of the twelve features of legislation that supports an effective environmental emergency response mechanism may be part of laws that exist already. For instance, existing legislation already may identify those deemed liable at law for pollution incidents, and existing legislation or regulations already may include some prohibition and deterrent mechanisms. However, the list of twelve key features above was compiled for possible legislation that could be drafted specifically for accidental releases of hazardous materials and other pollutants, even in the absence of related legislation. It is noted that legislation suitable for dealing with environmental emergencies can be developed independently from other laws, or as part of legislation that addresses far wider environmental or public safety issues.

The Environmental Emergencies Section, Emergency Services Branch, the UN Office of Humanitarian Affairs, see page 2 of this document, may be able to assist locating sample legislation that focuses on accidental releases of hazardous materials and other pollutants to the natural environment.

I-4 ENVIRONMENTAL CONTINGENCY PLAN

A comprehensive environmental contingency plan merges political resolve with support provided through applicable legislation and a variety of formal commitments, and combines partnership arrangements with the response capabilities of those involved to create an official document that serves as the operational pillar for response.

A comprehensive environmental contingency plan is an excellent platform for interpreting applicable legislation and clarifying the roles and responsibilities of the parties liable at law. An environmental contingency plan also identifies response partners, their expertise and resources, and the inter-relationship amongst these partners and all other parties involved or interested in the event. A contingency plan is also an excellent platform for outlining the basis for an effective response mechanism. In addition, an environmental contingency plan serves to guide the information flow between and amongst the office or response centre responsible for environmental emergencies and the response partners, and with all other interested parties. A formal environmental contingency plan should also be detailed enough to serve as the foundation for creating appropriate and effective operational procedures that influence decision-making processes for the lead agency and for other response partners.

An environmental contingency plan should outline the roles and responsibilities of all parties involved in the various events for which the plan is intended, and should identify the conditions and the types of events to which the plan applies, as well as the limitations of the plan. An environmental contingency plan should spell out the circumstances under

which expertise and resources are sought from other sources, including those outside of the geographical area for which the plan is designed. The environmental contingency plan should also provide a framework for coordinating and utilizing available public sector and private sector expertise and response resources in order to deal effectively with environmental emergencies. Such resources are often found at the local, area or regional level. This reality ties the development of an environmental contingency plan closely to the topic of partnership arrangements, discussed earlier under Section I-2.

Under some circumstances, it may be useful to have access to, and to be able to make use of, some aspects of emergency plans (or resources identified in them) prepared by others even though these plans were intended for completely different types of events. Therefore, it is important for an environmental contingency plan to include provisions so that a response under it can take advantage of expertise and resources from elsewhere without necessarily deferring to other emergency plans.

It is equally important that an environmental contingency plan includes the statement that it may have to defer to an emergency plan of a higher order, and identifies under which conditions a plan of a higher order is most likely to supersede the environmental plan.

In addition, the plan should include an information flow and action protocol for accidents and other events that are of a lower magnitude than environmental emergencies. Such events are important to many people, which means that these events will most probably be directed to the lead agency (or response centre) assigned to deal with environmental emergencies. At that point the office tasked with environmental emergencies at the national level will have to address these otherwise seemingly less-important events, or be in a position to deflect or to refer such events to regional, area or local authorities in a timely manner.

The subject matter of containment, cleanup and proper disposal of discharged hazardous materials or other pollutants should also be addressed clearly in the environmental contingency plan. If other authorities have jurisdiction over specific aspects that are part of an overall response, for example transportation rules connected with the movement of hazardous substances or contaminated soils, these need to be identified.

Finally, the environmental contingency plan should accommodate inter-agency agreements or other partnership arrangements; this includes arrangements that may extend specific authorities or assigns specific functions or duties to the centre or office that serves as nucleus for the environmental response mechanism. This includes intra-governmental and inter-governmental agreements, including arrangements with regional, area or local authorities, and any related understandings with neighbouring jurisdictions as well as the international community. With respect to all such agreements or undertakings, the contingency plan then contains a framework that allows the centre or office responsible for response to make timely use of these arrangements in order to broker response assistance – quite possibly one of its more important routine functions.

To summarize, an environmental contingency plan is an essential part of an effective emergency response mechanism and an indispensable part of the foundation that underpins the role of the centre or the office responsible for emergency response. Further, a comprehensive environmental contingency plan forms the basis for the development of effective operating procedures, especially procedures that pertain to responsibilities amongst response partners and their expertise and response capabilities.

The completion of an environmental contingency plan, therefore, should be considered an integral part of establishing a response mechanism for environmental emergencies.

Part I of this outline concludes with the suggestion that an important element of an effective environmental emergency programme is the preparation of an environmental contingency plan, preferably a plan supported by legislation.

A copy of the publication, "*A Guide for the Development of a National Environmental Contingency Plan*", and a generic 'sample' contingency plan, is available from the Environmental Emergencies Section, Emergency Services Branch, the UN Office for the Coordination of Humanitarian Affairs; see page 2 of this publication. Although the focus of that publication is the development of a national contingency plan, as the title suggests, many generalities may undoubtedly apply to the development of plans that could serve more specific regional or local priority areas. As already noted, the reader who seeks information and resource material that was developed specifically for preparedness at the local level may wish to contact the United Nations Environment Programme, Industry and Environment Office, as well as the OECD Environment Directorate, both offices located in Paris; see page 2 of this document.

PART II

RESPONSE

Within the concepts of this document, an environmental emergency programme consists of two main components, preparedness and response. As was indicated in Part I of this document, the four key elements of the preparedness component for a public sector programme are commitments at the political level, agreements and arrangements amongst potential response partners, suitable legislation, and a contingency plan that fuses key aspects of the other three elements into an action plan. It is this last element, the contingency plan, which shapes and facilitates a response, and it is response, as was indicated, that forms the second half of the total package referred to as an environmental emergency programme (see the Schematic, page 4). Part II offers suggestions for creating focused and practical response coordination capabilities.

A number of aspects of an environmental response mechanism are examined in Part II. Section II-1 looks at what the term environmental response may mean to the various parties who respond. Section II-2 addresses the scope of activities for a response mechanism entity, such as an office or a centre that is to facilitate or broker a response, and Section II-3 identifies three types or variations of such an entity, office or centre. Section II-4 looks at staffing and administrative implications as cost indicators for the three options presented that could serve as a country's or a region's environmental response mechanism. Section II-5 discusses operational tools, such as operating procedures, used by the entity responsible for environmental emergency response.

II-1 DEFINING ENVIRONMENTAL RESPONSE

The term "response" in connection with environmental emergencies refers to a number of activities, all of which may well be part of a response. The term "response" will most probably mean different things and represent different activities to a number of people or groups who "respond" to, or participate in, the event. Each group will have their own responsibility and mandate, usually the specific mandate of the response partner they represent. Each group will have a specific duty and bring unique expertise to the site. Collectively, the term "response" encompasses all activities necessary to deal with the event. But to the various groups involved, or to individual responders who participate in the event, the term "response" will take on specific characteristics. For example:

1. To the responsible party or the entity liable at law, the term "response" normally means all containment and countermeasure activities necessary to arrest the escape of the product involved in the event, and all activities necessary to reduce the impact of its consequences, as well as all statutory duties to advise authorities. To persons liable at law, the term "response" may also include repair, and restitution and other liabilities in connection with the event.
2. To response contractors, once the contractor has been commissioned, the term "response" in connection with environmental emergencies or pollution incidents

usually means carrying out containment and countermeasure functions on someone's behalf, normally the person or entity liable at law.

Collectively, to the entity or person(s) liable at law, and their agent or contractor, the term "response" usually means physical containment and countermeasure activities. For public authorities, "response" relates to very different tasks and activities.

3. For law enforcement agencies, the term "response" means investigating the event in order to determine if violations have occurred. To local or regional agencies responsible for safety issues, the term "response" probably means on-site inspections to determine what safety standards have been violated, or it may mean dealing with actual or potential threats to the public and to responders. Normally, neither law enforcement agencies nor agencies responsible for health and safety issues participate directly in physical containment or with countermeasures activities. But these public authorities respond.
4. To most public agencies responsible for matters related to the natural environment, the term "response" usually means determining the extent of environmental damage caused or likely to be caused. A "response" for environmental agencies may also include providing advice over the telephone, and providing on-site response advice. Environmental agencies may also have the mandate to establish the extent of cleanup to be undertaken. They may also have the mandate to determine acceptable cleanup and disposal methods and to identify and approve acceptable disposal sites. But these agencies seldom have the mandate, nor the staff and response equipment, to become physically involved in containment and countermeasure activities in a timely manner.

If environmental agencies at the national or regional level, or any other authorities including those at the local level, determine that containment or countermeasure activities are inadequate and that there exists an urgent need to intervene, these agencies may then become involved somewhat more directly. Where responsible parties default or respond inadequately, environment or other agencies may employ cleanup contractors to undertake the containment and countermeasure activity that should have been carried out by those normally liable at law. The term "response" then extends to include the process of commissioning someone else, and overseeing or supervising that physical response activity.

5. Lastly, another form of "response" takes place through a response mechanism at the national and sometimes at the regional or district level. This response activity takes place almost totally off-site, and these activities can be summarized as:
 - a) Receiving and assessing reports of events;
 - b) Notifying agencies, government departments, local or regional authorities and others likely to be concerned or interested in the events;
 - c) Providing over-the-phone information and response advice to those on-site;
 - d) Coordinating response agencies and other entities if necessary; and
 - e) Brokering or otherwise facilitating an appropriate and adequate response as may be dictated by the magnitude or the circumstances of the events.

There may well be other entities that respond, such the Red Cross and special interest groups including the media. Their response does not alter the concepts examined in this document, and such type of response is not elaborated further. The focus of this document is the creation of a response mechanism for the type of activities listed in

example 5, above. An environment or a health ministry could operate a response mechanism established for such activities, or such a response mechanism could be part of a response system that has responsibility for a far wider range of emergencies.

Once the preparedness component of a public sector environmental emergency programme has been initiated, the public and political focus will probably shift quickly to response. At minimum, a public sector environmental emergency response mechanism should serve as an information hub that has the responsibility to broker a suitable response. As will be seen later in this Part, there is merit to have a response mechanism for environmental emergencies connected to a larger emergency response system.

II-2 SCOPE OF ACTIVITIES FOR A RESPONSE MECHANISM

This Section looks at a range of functions of a nucleus within the government structure that is assigned the responsibility for environmental emergency response.

II-2.1 RESPONSE FUNCTIONS

The role of an environmental emergency response mechanism (the centre or office assigned “response” functions illustrated in example 5, page 14) should be to provide assistance to the lead on-site agency that takes operational control of emergencies especially where hazardous substances are involved. The role of this entity should be similar for events that involve accidental or unintentional releases of pollutants.

The nucleus that serves as environmental emergency response mechanism should be a reporting and information hub with responsibility for providing response coordination and brokerage services for environmental emergencies and other pollution incidents.

Staff of such an office should relay, in a timely manner, details of reported events to appropriate response partners and other response agencies. Operating procedures should reflect such information dissemination. In addition, staff of such an office should be tasked with the responsibility of providing over-the-phone technical information and response advice, and to broker the provision of on-site response as needed.

Those who may be dispatched to provide on-site response advice would likely serve as members of an on-site Emergency Response Team. Such a team will likely consist of response partner representatives tasked with providing assistance to the On-Scene Coordinator, the person who has overall on-site operational control. On-site response advice could be provided by any of the response partners, and it is the task of the Emergency Response Team collectively to establish response priorities from the information and suggestions provided. The Team must recognise that differing or competing priorities cannot overrule operational priorities, and that final operational decisions remain the sole domain of the On-Scene Coordinator. As the response in the field progresses, members of the Emergency Response Team may wish to receive additional input or other support from their respective agencies they represent. Again, the office or centre charged with response coordination and brokerage services for environmental emergencies can serve as the focal point that facilitates these needs.

Once environmental emergencies or accidental pollution incidents are reported to a nucleus (a centre or an office made responsible for environmental emergencies) the range of subsequent activities for that response focal point may include the following:

- a) Assess the nature and extent of damage caused by the incident from information received or supplemental information sought or obtained;
- b) Notify other agencies or partners in a timely manner as may be indicated by the event and in accordance with established operating procedures;
- c) In consultation with the agency that has taken charge of the event and in consultation with other response partners as may be necessary, determine as quickly as possible the nature of the event and the damage that may have been caused, or determine the threat of such damage;
- d) As applicable, consult with health and safety or labour agencies for the purpose of formulating appropriate response advice;
- e) Provide available technical information and response advice that may be requested, all in accordance with the office's capability and expertise, and broker additional response advice that may be available from other sources;
- f) Broker the provision of modeling and monitoring services that may be available in support of the response activities, as may be required;
- g) Broker or facilitate the provision of prompt containment and countermeasures for released hazardous materials or other pollutants, as necessary;
- h) Evaluate the need for the provision of on-site response advice and facilitate or broker same, as necessary;
- i) Broker the provision of additional response assistance as may be required by the agency that has taken on-site charge of the incident; and
- j) Accurately document all information and findings reported, authorities and partners advised, decisions and recommendations made, actions taken, and advice provided.

II-2.2 COOPERATION AMONGST RESPONSE PARTNERS AND OTHERS

This Section outlines how various parties might interact in a response to an event that involves hazardous substances or other pollutants. The purpose of this Section is to put into perspective the relationship between the centre or office responsible for environmental emergency response and the various response partners, and to note the most likely participation of and inter-relationships between these partners.

Participations and inter-relationships between various response partners are illustrated in the remainder of this Section by making arbitrary, and possibly quite simplistic, distinctions between the type, grade or perceived importance of events, namely emergencies and the normally less serious pollution incidents. However, the reader should note that such seemingly absolute distinctions between types of events might not be readily self-evident, especially during the early stages of a response.

II-2.2.1 PARTNERSHIPS FOR ENVIRONMENTAL EMERGENCIES

- a) The party responsible for the emergency and others assigned legal obligations should, as applicable:
 - In consultation with the On-Scene Coordinator and when safe to do so, take immediate measures to control and contain any discharged hazardous substance or other pollutants;

- Satisfy legal reporting requirements and notify as quickly as possible the centre or office in charge of environmental emergency response, as well as regional authorities and the district or local municipality, as appropriate;
 - Through their own resources, or those of contractors or those of industry response co-operatives, initiate as quickly as possible all countermeasure, cleanup and disposal activities necessary to minimize the adverse affects of hazardous materials or other pollutants involved in the emergency; and
 - Make every effort to restore affected property and the environment.
- b) The centre or office responsible for environmental response should:
- Determine the nature and extent of the emergency and the damage that may have been caused, or determine the threat of such damage;
 - Provide over-the-telephone information, recommendations and directions, and response advice, as required;
 - As soon as the emergency is reported, evaluate the need for on-site representation, including that of response partners, to provide timely on-site response advice, and broker same, as necessary;
 - Establish and maintain close communications with all local/regional authorities;
 - Assume the response coordination function for the brokerage of containment and countermeasures, as may be required; and
 - Broker essential enforcement activities that may be required in order to facilitate an appropriate response.
- c) Partner agencies should be prepared to provide advice, assistance and necessary services in accordance with agreements and undertakings and/or as reflected in applicable contingency plans or established operating procedures as indicated in such undertakings for emergencies.
- d) Public agencies at the community, local, district, or regional level are an integral component of a successful response to environmental emergencies and should coordinate their activities with the entity or agency that has taken overall on-site control of the emergency and provide response advice to the On-Scene Coordinator, and as they would for any other type of event, undertake essential response within their mandate and expertise, and maintain surveillance.

II-2.2.2 PARTNERSHIPS FOR MAJOR POLLUTION INCIDENTS

- a) The discharger responsible for the pollution incident or other parties assigned legal obligations, should:
- Take measures as quickly as possible to control and contain discharged hazardous substances or other pollutants involved in the pollution incident;
 - Satisfy legal reporting requirements and notify as quickly as possible the centre or office in charge of environmental emergency response, as well as regional authorities and the district or local municipality, as appropriate;
 - Through their own resources, or those of contractors or those of industry response co-operatives, initiate as quickly as possible all countermeasure, cleanup and disposal activities necessary to minimize the adverse affects of hazardous materials or other pollutants involved in the pollution incident; and
 - Make every effort to restore affected property and the environment.

- b) The centre or office responsible for environmental response should:
- Assess the nature and extent of damage caused by the incident from information received or supplemental information sought or obtained;
 - Provide over-the-telephone information, recommendations or directions, and response advice, as required;
 - Broker essential enforcement activities that may be required in order to facilitate an appropriate response;
 - Establish and maintain close communications with all local/regional authorities;
 - Assume the response coordination function for the brokerage of containment, clean-up and disposal services, as may be required; and
 - Evaluate the need for on-site representation of response partners to provide timely response advice, and broker same as may be necessary.
- c) Partner agencies should be prepared to provide advice, assistance and necessary services in accordance with agreements and undertakings and/or as reflected in applicable contingency plans or established operating procedures.
- d) On the basis of how major pollution incidents are defined in this document (see page 6), public agencies at the community, local, district, or regional level are most likely involved heavily in a response to such events and are an integral component of a successful response to a major pollution incident. These authorities are presumed to undertake essential response within their mandate and expertise, and to maintain surveillance.

II-2.2.3 PARTNERSHIPS FOR MINOR POLLUTION INCIDENTS

- a) The discharger and other parties responsible should:
- Take measures as quickly as possible to control and contain discharged hazardous substances or other pollutants involved in the pollution incident;
 - Satisfy legal reporting requirements and notify as quickly as possible the centre or office in charge of environmental emergency response, as well as regional authorities and the district or local municipality, as appropriate;
 - Using their own resources, or those of a contractor or an industry response co-operative, contain, clean up and properly dispose of any discharged hazardous substances and pollutants; and
 - Restore affected property and the environment.
- b) The centre or office responsible for environmental response should:
- Assess the nature of the pollution incident from information received or supplemental information sought or obtained;
 - Verify with local/regional authorities that the incident is under control;
 - Notify response partners, as may be warranted;
 - Provide over-the-telephone information, recommendations or directions, and response advice, if required; and
 - Broker the provision of on-site response advice if a request for this service is made. (By definition, see page 6, there should be little requirement for on-site response advice by agencies or entities representing the national government level for an incident of this magnitude.)

- c) Public agencies at the community, local, district, or regional level are likely involved in the response to minor pollution incidents (see page 6). They should undertake essential response within their mandate and expertise, maintain surveillance, and relay containment and cleanup requirements and response advice to the discharger and other parties legally responsible for the event.

II-3 OPTIONS FOR DEVELOPING A RESPONSE MECHANISM

The options for an environmental emergency response mechanism addressed in this document range from the option, at virtually no cost, of integrating environmental considerations and priorities into the decision-making processes of an overall emergency response system, to an option that involves creating a small office that is to focus on developing the preparedness component of an environmental emergency program before the focus can be shifted to response. The least-cost option would be more suitable for countries that already have in place most of the preparedness component of an environmental emergency programme and are ready to introduce the response component. The option of creating a separate office might be suitable for countries that are closer to the initial stages of introducing an environmental emergency programme.

Three basic types of response mechanisms that could carry out the functions of a reporting focal point with the responsibility of coordinating and brokering a timely and suitable response to environmental emergencies and other pollution incidents (see also example 5, page 14) are discussed in the remainder of Part II. Starting with the least-cost option, these options for an environmental emergency response mechanism are:

Option 1: Expanding the scope of a larger emergency centre that is already dealing with a range of emergencies by incorporating environmental priorities into that centre's operating procedures so that environmental emergencies can be addressed;

Option 2: Staffing a specific work area, such as an Environmental Desk, within a larger emergency centre that is already dealing with a range of emergencies. This Option would create a small, yet viable and reasonably visible focal point for environmental emergency response within the larger emergency centre. It may also be possible to task the Environmental Desk with the responsibility of completing some elements of the preparedness component; and

Option 3: The creation of a small Environmental Emergency Office that is to focus on the preparedness component of an environmental emergencies programme. This Office could be reporting to an environment or a health ministry. Once the tasks of the preparedness component reach completion and priorities shift to response, such an office and its remaining functions could be transferred to an emergency centre that has responsibility for a wider range of emergencies and downsized, and possibly re-named the Environmental Desk, to become a response-oriented focal point within a larger emergency centre as envisaged under Option 2 above.

These three options for the development of an environmental response mechanism are discussed in more detail in Section II-4 below. Undoubtedly, aspects of these options

could be combined in other ways, but the information and discussion presented should be of general assistance to those who may wish to establish an operational, and cost-effective, environmental emergency response capability.

II-4 STAFFING AND ADMINISTRATIVE CONSIDERATIONS

This Section looks at staffing implications as an indicator of probable costs for the provision of environmental emergency response, and offers a discussion on staffing requirements for the three response options suggested in Section II-3.

II-4.1 OPTION 1 -- EXPANDING THE SCOPE OF A LARGER EMERGENCY CENTRE

Environmental response capabilities can be provided as part of an overall emergency management system. The first of three options considered in this document consists of delivering environmental emergency response capabilities through a country's broader emergency response system that has responsibility for a wide range of emergencies. This option presumes that there is an existing emergency response capability already delivered through an emergency centre, and that environmental concerns can be integrated into that centre's operational procedures. Such an option would maximize a country's emergency response system by expanding the system's scope to include environmental emergency response without incurring additional operating costs.

This least-cost option could be achieved by enhancing the centre's operating procedures and integrating environmental priorities into the guidelines that steer the centre's decision-making processes. This option should not result in pressures to increase the staff of the emergency centre. However, there may be a short-term cost involved for the process of amending the centre's operating procedures.

This option relies on training staff of the emergency centre to deal with environmental emergencies and other accidental pollution incidents in addition to the other types of emergencies handled by the centre. This option presumes further that the basic preparedness component of an environmental emergency programme, consisting of political resolve and suitable legislation, are in place and that a viable environmental contingency plan has also been prepared, all of which can be used to amend or enhance the centre's operating procedures.

II-4.2 OPTION 2 -- AN ENVIRONMENTAL DESK WITHIN AN EMERGENCY CENTRE

The second option for setting up an environmental emergency response mechanism offered in this document suggests the creation of a workstation within a, presumably already-existing, emergency centre; the creation of an Environmental Desk that serves as focus for environmental emergencies. Such an Environmental Desk could provide a fully functional nucleus for receiving and processing reports of environmental emergencies and other accidental pollution incidents, for notifying other agencies and interested parties, and for providing related information, coordination and brokerage functions. Environmental questions that might be associated with any other type of emergency situation normally handled by the centre could also be directed to this Desk.

The Environmental Desk could be one of perhaps several task-oriented work areas in the emergency centre. This allows the Environmental Desk to rely occasionally on other staff to assist with functions that require more than one staff member. Conversely, staff at the Environmental Desk might be available to assist other work areas if required. The eventual staffing and cost implications of such a task-oriented work area or desk would be a function of the demand made of its services. Persons that have environmental training with emphasis on environmental emergencies could staff the designated desk.

The concept of an Environmental Desk within a larger emergency centre can have two small variations which accommodates the possibility of introducing response gradually:

- a) A desk staffed by a person during those hours of the day when the demand for services of information and brokerage functions are most likely to occur (the type of functions illustrated in example 5, page 14), and where the primary tasks of that person focus on dealing with events reported to the centre. This presumes that the elements of the preparedness component are in place allowing the Environmental Desk to focus on response-oriented tasks; or
- b) A desk that is initially assigned tasks related to the completion of some uncompleted elements of the preparedness component of an environmental emergency programme before the full focus can be shifted to the response functions. An "Environmental Coordinator" will likely be made responsible for the Environmental Desk under this variation.

To elaborate further on alternative b) above, the "Environmental Coordinator" could initially be responsible for completing the uncompleted elements of the preparedness component highlighted in Part I, for instance the preparation of a contingency plan. When these tasks reach completion, the "Environmental Coordinator" could become more available to address response-oriented tasks. The gradual increased involvement of the "Environmental Coordinator" in emergency response would also be of benefit, since practical lessons learned through his participation in the response component could then be incorporated into the final stages of the appropriate elements of the preparedness component as these elements are being concluded.

If there is a need for the emergency centre to become involved in the response phase of environmental emergencies even before all of the tasks under the preparedness component of an environmental emergency programme have been completed fully, the Environmental Desk could be staffed by a second person, possibly a technician. While this technician's functions would focus on response, the technician also may be able to assist the "Environmental Coordinator" with other tasks from time-to-time.

For either variation of this Option, the minimum staffing implications for creating an Environmental Desk within an emergency centre would be one staff member. That person might be called "Environmental Coordinator". The requirement for additional technician(s) is a function of the demand for the services required of an Environmental Desk. The employment of any additional technicians also could be phased-in over a period of time as the demand for this service develops.

Under Option 2, the "Environmental Coordinator" at an Environmental Desk within a larger emergency centre would have the following key responsibilities:

- ⇒ Complete as necessary, the preparedness package for an environmental emergency programme suitable for the environmental priorities of the geographic area served by the emergency centre, see Part I of this document;

- ⇒ Enhance partnership arrangements;
- ⇒ Develop and maintain operational procedures for the emergency centre to insure that environmental issues are addressed;
- ⇒ Train staff of the emergency centre in matters related to environmental topics and issues; and
- ⇒ Provide expertise to the emergency centre on environmental issues. This responsibility would become predominant once the preparedness package mentioned above has been completed.

II-4.3 OPTION 3 -- A SMALL ENVIRONMENTAL EMERGENCY OFFICE

This option looks at the staffing implications of creating a small Environmental Emergency Office responsible for initiating and/or developing the preparedness component of an environmental emergency programme. Such an office might report to an environment or health ministry during the initial phase of the programme, but no matter where located it is important for such an office to work closely with the ministry or agency that has responsibility for overall emergency response and with relevant local, district and regional authorities. This option may be suitable where an office with potentially high visibility is to be created that is to focus on environmental emergencies.

An Environmental Emergency Office would be responsible for the full range of activities associated with establishing a viable environmental emergency programme. The initial purpose of the Office would be to facilitate all aspects of the preparedness component of an environmental emergency programme (as presented in Part I).

The tasks involved during the development phase of the preparedness component would require the Environmental Emergency Office to be staffed by at least one competent person. There should also be the flexibility to provide additional assistance as the various tasks evolve and become progressively more complex. If the Office is to undertake all tasks associated with the preparedness component of an environmental emergency programme as outlined in Part I, the requirement for the second professional or technical person will most likely occur once work on the development of suitable legislation begins and the various other tasks are initiated. An Environmental Emergency Office will likely also need a secretary or an administrative assistant. This indicates a staff requirement of three people for a small office that is to be responsible for the development of a comprehensive environmental emergency programme.

As the various tasks of the preparedness component of the programme mature, it is reasonable to assume that pressures will mount for the Environmental Emergency Office to be drawn into at least the initial phases of response. Of course, a country has the option to transfer the response component to an emergency centre that has responsibility for a wider range of emergencies. Both alternatives have merit, but it is noted that lessons learned through first-hand experience could be very useful for fine-tuning the various elements of the preparedness component during their development. Therefore, it may be beneficial to have the Environmental Emergency Office involved in at least the initial response phase of the environmental emergency programme as the demand for such services grows. Once all, or the majority, of the tasks of the preparedness component reach completion, the Environmental Emergency Office could be transferred then to a larger emergency centre with responsibility for a wider range of emergencies. Long-term staffing implications for an Environmental Emergency Office, therefore, is a

function of the degree to which it is to become involved in the response phase of environmental emergencies and other accidental pollution incidents.

An Environmental Emergency Office as suggested with this option could provide some initial response-oriented services for environmental accidents. If two professionals are available for this Office as suggested, and if they are prepared to share in an off-hour duty system, then an Environmental Emergency Office could provide basic response-oriented services even during the off-hours. This arrangement should be quite adequate as long as the off-hour demand for this service is minimal.

In summary, even though Part II of this document focuses on environmental emergency response, it is noteworthy that the creation of a small office tasked initially with preparedness functions, such as an Environmental Emergency Office, may be an important first step for countries that wish to establish an office responsible for the development of their environmental emergency programme. An Environmental Emergency Office with the minimum staff of a manager supported by a second professional or technical employee and a secretary or an administrative assistant should be in an excellent position to carry out the various preparedness-related tasks for such a programme. This Office would also be well suited to become involved in at least the initial stages of environmental emergency response. Once work on the preparedness component concludes, the Office and its remaining functions could be transferred to a response centre responsible for a wider range of emergencies, and down-sized and re-named, if necessary, the Environmental Desk (detailed in Option 2).

II-4.4 IMPLICATIONS OF ON-SITE RESPONSE ADVICE

Receiving and processing reports of environmental emergencies and other accidental pollution incidents can be achieved quite successfully even at great distances from any specific event or accident. Such services can be coordinated from emergency centres responsible for a broad range of emergencies (see options 1 and 2), or from a small environmental emergency office as outlined in Option 3. The complementary services of timely on-site response advice, however, assume ready availability of technically competent staff. This implies that those who provide on-site response advice are readily available in geographical areas where the risks of accidents and spills are relatively high.

The staffing implication of on-site response advice is a function of the frequency of events that may give rise to the need for this service. It is noted that centres or offices that provide on-site response advice services directly rely on field representatives of their respective, often well-staffed, host agencies - - agencies that usually operate a variety of programmes, of which on-site response to accidents may be only one of several services. Such arrangements for the provision of on-site response advice normally do not have direct staff resource implications on the response centre.

Alternately, emergency centres or other environmental emergency response mechanisms provide on-site response advice by brokering such services with response partners within parameters outlined in inter-agency or inter-departmental arrangements and contingency plans. Such arrangements have no direct staff resource implications.

Aside from potential staffing implications, it is important to mention one other topic in connection with the provision of on-site response advice. That topic is the impact of on-

site representation of response partners on the staff of the centre or office responsible for coordinating and brokering environmental emergency response.

A centre's representatives or the field representatives of response partners who provide on-site response advice will most likely generate a significant demand for information and a demand for additional coordination and brokerage services. This may overwhelm, at times, the limited staff at the centre or office, especially if the event at hand is complex and if only one person is on shift at the facility at the time. The potential demands for information and other services that may be generated by persons providing on-site response advice favours the placement of a nucleus for environmental response within a larger emergency centre (see Option 2). Such an emergency centre is likely to have a larger staffing pool and thus is likely to have the capacity to provide additional assistance when it is required.

II-4.5 MANAGEMENT AND ACCOUNTABILITY

The topic of management and accountability applies little to Option 1, fully integrating environmental response into an existing emergency centre with responsibility for a range of emergencies. As the option is presented in this document, emergency centres with the task of providing environmental emergency services as an integral part of their overall coordination and brokerage functions will most likely not need to make changes to their existing management structure. This least-cost option assumes that essentially all preparedness functions had been completed prior to integrating environmental response into the emergency centre's mandate. Under these circumstances, the relatively minor expansion of services for the centre into the area of environmental response should not alter the centre's management functions or the accountability of involved staff.

However, the topic of management and accountability will most likely apply to the options that involve the creation of a visible entity that focuses on environmental emergencies, such as Option 2 - establishing an Environmental Desk within an emergency centre, or Option 3 - introducing an Environmental Emergency Office.

Option 2 suggests creating a specific work area such as an Environmental Desk within an emergency centre that has responsibility for a range of emergencies. Unless the emergency centre has other "desks" or work areas dedicated to specific functions, the person at an Environmental Desk may be doing at least some work that is unique to the centre, and in this regard the person at the Environmental Desk might have a distinctive work function. In this case, aspects of management such the reporting structure associated with that desk, as well the level of responsibility and accountability of the employee may be different from other employees of the centre.

As discussed further in Section II-4.2, one variation of Option 2 is to staff the Environmental Desk with a person who has responsibility, at least initially, for possibly some preparedness functions that normally precede response. To this end, the Environmental Desk could be staffed by what this document refers to as an "Environmental Coordinator" who may have work functions that might be substantially different to those of the majority of the centre's employees. There is the possibility that the "Environmental Coordinator" carries greater responsibility, and that this position may therefore be compensated differently from others at the centre. Section II-4.2 also mentions the possibility that an additional assistant could be added to the Environmental

Desk as the demand for response services escalate. This staffing situation also has management and accountability implications. In either variation for an Environmental Desk within an existing emergency centre, Option 2, it would be reasonable for the “Environmental Coordinator” to report directly to the centre’s manager at least while the Environmental Desk is responsible for aspects of the preparedness functions of the environmental emergency programme.

Adding to the complexity is the fact that the person at the Environmental Desk will most likely be accountable externally (external to the agency that houses the emergency centre) to one or more other government bodies, such as ministries responsible for environment or health matters. This type of accountability would remain throughout the period required to complete the tasks associated with the preparedness component of an environmental emergency programme. This aspect alone justifies having the person at this desk report directly to the centre’s manager.

Option 3 as presented in Section II-3 and discussed in more detail in Section II-4.3 suggests the creation of a small and independent Environmental Emergency Office. As suggested, such an office would likely be an entity within an environment or a health ministry, and could be a highly visible entity especially if it set up as a result of the aftermath of a significant event. A manager is presumed to head such an office. For this type of office, the manager should be technically as competent as, and probably, but not necessarily, technically superior to, his support staff. However, in recognition of the need for the manager to negotiate inter-agency and inter-departmental agreements, the manager should have superior interpersonal and negotiation skills, and be able to communicate and negotiate effectively with senior representatives of partner entities and agencies. Similar qualifications also might apply to an “Environmental Coordinator” responsible for an Environmental Desk in a larger emergency centre (Option 2), if that person’s tasks include the completion of elements of the preparedness component.

An Environmental Emergency Office, in all probability, should also have a secretary or administrative assistant. This position should report to the manager in the normal fashion, and be responsible for all secretarial and for administrative support functions. Shift scheduling as these may apply, and performance reviews, disciplinary actions, and personnel-related administrative matters should be the responsibility of the manager.

Some emergency centres may employ staff for the purpose of providing on-site advice directly. Such staff would likely be engaged as specialist. However, even as specialists, on-site response staff might be employed at a level and at a salary that is par with the senior technical staff on shift-work at the emergency centre. Whether in the field or in an office setting at a centre, every technical person will bring, most probably, unique expertise to the job. By the very nature of the work, all employees will need to rely on judgments and decisions made by their respective peers especially during critical moments of emergencies. This makes it difficult to place staff specifically hired by a response centre for on-site response advice functions into reporting structures that differ significantly from the reporting relationships of technical employees on shift within the centre. It is therefore suggested, for response centres that may hire staff directly for the provision of on-site response advice, that the reporting relationship for the hired staff be similar to that for other technical people of the centre.

The topic of management and accountability takes on a different format when response advice is provided indirectly through inter-agency or inter-departmental arrangements, or when emergency services are brokered through response partners. Since there is no

direct reporting relationship under these conditions between the centre responsible for environmental response and the response partners and those providing on-site response advice, matters that may relate to the topic of management and accountability should be addressed by agreements and other formal undertakings. However, official agreements and other formal undertakings are seldom burdened with a great amount of detail, and usually rely on cordial and professional work relationships. This suggests that those involved in negotiating inter-agency and inter-departmental arrangements and agreements need to be aware that operating procedures later prepared on the basis of such arrangements and agreements require close monitoring to ensure that such procedures accomplish not just the intent but also the spirit of the undertakings. Some of the more mundane details often presumed or understood by the negotiators of such undertakings are not likely detailed in formal agreements, such as who may request or require action and at what speed, and with what level of authority. However, such details can have implications on the management of the event at hand and on the very sensitive topic of eventual accountability. Thus response partners should review regularly all operating procedures that are based on or rely on agreements amongst partners.

II-5 OPERATIONAL TOOLS

This Section looks at tools such as operating procedures, contact lists and reference texts, all essential for the decision-making processes of any entity tasked with the responsibility to coordinate or broker a response to environmental emergencies.

II-5.1 OPERATING PROCEDURES

Operating procedures for an entity responsible for environmental response may contain a lot of important information including environmental priorities, but they should reflect, at a minimum, key operational aspects of the current environmental contingency plan or, as applicable, the environmental section of an overall emergency plan. It is also important that they reflect current inter-agency and inter-departmental undertakings. Subject-specific and department-specific response guides and related up-to-date staff and partner agency contact lists should also augment operating procedures.

For the purpose of illustration, this document refers to operating procedures related to environmental considerations that are prepared in a format of one-page cards. This format is well suited for providing instructions and suggestions for any number of particular types of events on one or more specific cards. The entire package of cards then would represent the centre's operating procedures for environmental emergencies and pollution incidents. A sample package is illustrated in Appendix A-1.

In addition to an index for the overall package, the first few cards of this package define important terms and concepts related to environmental considerations. Such an entry provides a ready reference for staff to basic environmental terms and concepts. Some of these terms and concepts may lead immediately to decision points that have to be considered by staff of the facility that is to use this package.

Once basic environmental terms and concepts have been defined, subsequent procedures, in the format of procedure cards, would then be developed on as many

procedure cards as may be necessary. It is suggested that several of the procedures that relate to environmental priorities could be scenario-specific, or be specific for a family or group of substances. It is suggested that procedure cards focus on basic decision points, including instructions and suggestions for a series of specific type of events, or for specific types or class of substances that might be involved in an event.

The types of events that lend themselves to scenario-specific procedure cards are derailments and road transport accidents especially those that involve hazardous substances. Other scenario-specific events include maritime shipping and harbour accidents, product pipeline breaks, and refinery or chemical plant fires. Operating procedures for specific substances also should reflect unique response arrangements amongst response partners that may exist for any family of substances under a special regulatory regime, such as pesticides, compressed gases, pharmaceutical products, or a family of liquid or liquefied petroleum products. Such cards should probably not repeat readily available technical information (see Sub-section II-5.2 below), but they might point to sources of technical information and to additional response-oriented information.

It is suggested that the various cards that comprise the operating procedures should be cross referenced with other cards in the complete package, as may be appropriate. This links all related instructions and suggestions that should be considered by staff. It also reinforces the reality that any one incident might have a number of characteristics that need to be taken into account and evaluated. For example, the response advice for a fire at a chemical plant may have to take into account not just the emission of poisonous gases, but also water runoff that may have an immediate affect on community drains, watercourses and water supplies, or may result in potential groundwater contamination.

Instructions or suggestions included in the package of response procedures can be augmented also with additional information that should be assembled in what might be called response guides. These response guides should include material that requires frequent updating, such as department notices and staff contact lists, all essential to the delivery of the response programme. Other material that lends itself to the format of response guides includes: reference to inter-agency and inter-departmental agreements and undertakings on which the response delivery depends, and reference to related environmental contingency plans or excerpts of important sections of such plans.

This document suggests that procedure cards, as well as response guides and contact lists that augment the operating procedures, for an office or a centre responsible for environmental emergency response should be assembled so that the material can be updated easily. For example, operating procedures, response guides and contact lists held together in a binder are more readily updated and at less cost than when bound. It is also suggested that the centre or office that has responsibility for environmental emergencies establishes a routine for regularly and frequently updating all information on which the decision-making processes rely.

II-5.2 OTHER TOOLS

Any entity created to coordinate or broker a response to environmental emergencies will most certainly require reference material in hardcover, loose-leaf paper, or in an electronic form. Access to the most recent on-line information is also desirable. The most basic types of reference books for a centre or office that may need to provide information and advice over the telephone are chemical dictionaries and technical texts

that focus on hazardous materials, and possibly texts or any other reference material that extends its technical information to include suggested actions and reactions for responders for some of the more common hazardous materials produced, transported, stored or used, or groupings or families of such materials. The information from such sources (often in hardcover form) can be augmented with reference material available from other government sources, the academic community, industry, trade or industry associations, a number of non-governmental organizations, and various agencies of the international community. A significant amount of information, useful to a response centre or office, is already available for desktop and laptop computer access, and more of it will most likely be available in the near future. It is important, for a centre or an office that is to facilitate and broker a response to environmental emergencies and to provide information and advice, that reference material of any kind be updated frequently and routinely.

The specific type of reference material that a centre may wish to obtain is also a function of the type information and the complexity of advice that the centre decides to provide. Once details of the tasks for the response centre or office have been identified, centres or offices in other countries or in other regions with similar tasks may be able to recommend suitable and then-timely reference material. The offices listed on page 2 of this document also may be able to make suitable suggestions.

PART III

SUMMARY DISCUSSION

This document was prepared for the purpose of offering information and suggestions potentially suitable for countries that wish to create a response mechanism for environmental emergencies. The material presented may also be suitable for countries that wish to enhance their existing emergency mechanism for chemical and technological accidents that pose a threat to the natural environment.

It is clear from the information offered in this document that there are several options available for creating an environmental emergency response mechanism or enhancing existing response capabilities. If the preparedness component of an environmental emergency programme is in place, this document suggests that the least-cost option for the delivery of the response component may be to extend the functions of an already-existing emergency centre, a centre that likely has responsibility for a range of emergencies. The least-cost option suggests that a centre that may already have responsibility for a range of emergencies could provide a response to environmental emergencies by incorporating environmental considerations into their decision-making processes. There should be no significant cost implications for this response option.

Another option is the creation of an Environmental Desk within a larger emergency centre that already has responsibility for a range of emergencies. This option offers the opportunity to introduce a small but visible entity for an environmental emergency programme at minimum cost. If the majority of the tasks associated with the preparedness component of an environmental emergencies programme have been completed, such an Environmental Desk could provide immediate and considerable focus to the topic of environment emergency response.

Alternately, if some tasks of the preparedness component of a national or a regional environmental emergency programme are incomplete, and if the remaining tasks are to be completed under the auspices of an emergency centre responsible for a wider range of emergencies, the Environmental Desk could focus on the most essential remaining tasks of the preparedness component. Under these conditions, the person(s) hired for this Desk would be available also, at least some of the time, to address questions and issues related to response while the preparedness component of the environmental emergency programme is being completed. There are two additional benefits in placing an Environmental Desk within a larger centre: the opportunity to integrate, over time, environmental considerations into the centres operating procedures used for other types of events; and to share tasks with other staff, especially at critical moments.

It would take a minimum of one person to operate an Environmental Desk within a larger emergency centre with responsibility for a range of emergencies. As noted, some of the initial tasks of this person could focus on those associated with the preparedness component of the wider environmental emergency programme. A second person could be hired when demand for the response component escalates significantly. Alternately, the staff of the emergency centre that handles all other types of emergencies could

provide some assistance. If it is important to eliminate long-term costs totally, the functions associated with the Environmental Desk could be integrated with other job functions of the emergency centre once all tasks of the preparedness component are completed and the centre's operating procedures reflect environmental concerns and response priorities. However, given the increased and still increasing public concern for the natural environment globally, it is suggested that once a focal point for environmental emergencies is established, it may be difficult to remove such a visible entity (see also additional comments at the end of this Summary Discussion). Besides, work may increase for the centre when the public's attention shifts to lesser events. Once they are reported, smaller events too will require resolution. Therefore, the minimum long-term cost of an Environmental Desk within an emergency centre that has responsibility for a range of emergencies should be considered to be the cost of one professional person.

For countries where an environmental emergency programme may be rather complex, it might be beneficial to create what this document refers to as a small Environmental Emergency Office. Such an Office as suggested in this document might report initially to a ministry responsible for environment or human health matters.

This document suggests that an Environmental Emergency Office could be made responsible for all aspects of developing an environmental emergency programme, but that it should focus at first on the preparedness component. This document also suggests that an Environmental Emergency Office might look after the initial response component as the demand for this service develops. First-hand experience with response would lead to lessons learned that can and should be incorporated into the final elements of the preparedness component before these are concluded. This document suggests further that once the preparedness component reaches conclusion, the entire response component could be transferred to an already-existing emergency centre.

The cost implication of a small Environmental Emergency Office, as presented in this document, would be a staff of three persons for the duration of the development stage of the environmental emergency programme. There should be no additional costs once the tasks of the preparedness component are concluded and the response component is assigned to an existing emergency centre. The continuation of the Environmental Emergency Office at that point would be a function of additional services that such an office could provide, for instance to serve as the focal point for new or evolving programmes related to environmental emergencies such as spill prevention.

The creation of a small Environmental Emergency Office provides the opportunity to give significant visibility to an environmental emergency programme. However, it is imperative for an emergency programme that deals with environmental matters to be an integral part of wider emergency services. For this reason it is important for a separate entity if it is created, such as an Environmental Emergency Office, to work very closely with the agency responsible for emergencies in general and with the national or any regional emergency centres that may have responsibility for a range of emergencies, especially those types of emergencies that may have an impact on the environment.

On-site service, such as providing on-site response advice, is another aspect of a response mechanism. Field staff of the agency that hosts the emergency response centre could provide on-site response advice services. This assumes that the host agency already operates a number of related field-oriented programmes, and that field staff of the host agency has the required expertise. Alternately, on-site response advice could be brokered through response partners within parameters established in relevant

contingency plans and inter-agency and inter-departmental agreements and undertakings. Although there are obviously cost implications to the agencies that provide the on-site service, neither alternative has to have direct cost implications for the centre or office responsible for environmental emergency response.

One concluding remark is offered from the material presented. Countries that wish to initiate an environmental emergency programme relatively quickly and possibly with a relatively high profile could consider to create initially an office similar to the Environmental Emergency Office, presented as Option 3 in this document. As outlined in Section II-4.3, such an office could focus on the various tasks of the preparedness component of a comprehensive programme: -- participate in the development of suitable legislation, initiate and prepare partnership arrangements, and write a viable environmental contingency plan (all of these elements are discussed in Part I). As indicated, it is likely that such an Office might originally reside in a ministry responsible for health or environmental matters. As a cost-saving measure, the entire Environmental Emergency Office could be transferred to an emergency centre that has responsibility for a wider range of emergencies once the preparedness component of an environmental emergency programme is completed, or is essentially completed, and priorities shift to response. At that point, the Environmental Emergency Office could well be renamed the Environmental Desk, and downsized as necessary. Such an overall process would provide a highly visible initial profile for the environmental emergency programme, albeit at an elevated, but relatively short-term cost. With the preparedness component completed quickly in this manner, the minimum long-term costs for response are then the same as those outlined in Option 2, the cost of a person to staff an Environmental Desk. This may satisfy increasing public emphasis on environmental protection and escalating concern for environmental emergencies at minimum cost. Once a visible entity, an Environmental Desk, has been created it might be difficult to eliminate that entity entirely as a further cost-saving measure. The almost certain indirect benefits of such a visible entity has to be considered as well: -- operators of potential pollution sources are likely to be more vigilant especially if local and regional authorities are willing response partners and the environmental emergency programme enjoys the support of effective legislation.

As greater attention is focused on the reduction and better control of technological accidents, a country may wish to make use of a proactive nucleus that focuses on environmental emergencies. Such a nucleus will have a significant influence on the level and quality of preparedness of all response partners. Such a nucleus will also have a positive influence on the state of preparedness of regional, district and local authorities. Even more importantly, an identifiable environmental emergency response mechanism, especially one that enjoys the support of a national environmental contingency plan in conjunction with other preparedness elements outlined in Part I of this document, is bound to have a positive influence on pollution prevention and on the state of preparedness of potential industrial pollution sources and on the transportation sector.

A positive influence on the state of preparedness of all potential pollution sources and responders will increase their collective response capabilities, while minimizing the involvement and the cost of a public sector response.

APPENDIX A-1

SUGGESTIONS FOR

OPERATING PROCEDURES

This Appendix contains a selection of aids that can be used in the decision-making processes of a centre or an office that has responsibility for dealing with environmental emergencies. Such aids are often referred to as operating procedures.

As noted in Section II-5 of the main body of the text of this document, operating procedures for environmental emergencies should reflect operational aspects of the current environmental contingency plan, or as applicable the environmental section of an overall emergency plan. It is also important that operating procedures for environmental emergencies reflect current inter-agency and inter-departmental undertakings.

The operating procedures illustrated in this Appendix are prepared in a format of one-page cards. This format is well suited for providing instructions and suggestions for any number of particular types of events on one or more specific cards. This format is inexpensive and well suited for updating. A package of such cards would represent the operating procedures for environmental emergencies and pollution incidents for a centre or an office that has responsibility for dealing with environmental emergencies.

The package of procedure cards for environmental emergencies illustrated in this Appendix consists of an index for the overall package, a card that defines important terms and concepts related to environmental considerations, and a selection of considerations that should guide staff of the centre or office responsible for environmental emergencies in the task of brokering a response. As discussed in the main text of the document, procedure cards that relate to environmental priorities can address basic decision points and instructions or suggestions for scenario-specific events, or for families of substances. This Appendix illustrates samples for both types.

Operating procedures may also be augmented by any number of subject-specific or department-specific appendages or response guides. Information that requires rather frequent updating is best suited to be included in such guides. In this manner, generic considerations, especially those that require infrequent updating, as found in operation procedures, are separated from details and specific contact points and contact lists that are often subject to frequent updating. Examples of information that is best suited to be included in response guides are internal staff contact lists, periodic department notices, contact points for response partners and their respective staff lists, and similar contact points for pertinent local and regional authorities.

APPENDIX A-1

Subsequent pages are prepared in a separate MS-Word file, called:
“Operating Procedures”

PLEASE NOTE: For the greatest **intended affect** of these cards:
The sample “Operating Procedures” that follow should be printed on

ONE SIDE ONLY

ps: For very practical reasons that have to do with how instructions and operating procedures are usually handled and replicated by staff of a centre, Procedure Cards should not have information printed on both sides. Information on a backside of a card tends to get lost or separated.

Please instruct the printers to print the sample cards one side only.

BEFORE SENDING THIS PACKAGE TO PRINT:

Remove this page and replace it with the appropriate pages from the above file.

Please assure that the layout and page numbering flows properly.