

## HELCOM RECOMMENDATION 31/1

(supersedes HELCOM Recommendations 1/7, 4/3 and 11/13)

Adopted 4 March 2010  
having regard to Article 20, Paragraph 1 b)  
of the Helsinki Convention

### DEVELOPMENT OF NATIONAL ABILITY TO RESPOND TO SPILLAGES OF OIL AND OTHER HARMFUL SUBSTANCES

#### THE COMMISSION,

**RECALLING** the provisions of Regulations 1 and 2 of Annex VII to the Convention on the Protection of the Marine Environment of the Baltic Sea Area, 1992, (Helsinki Convention), concerning the ability of the Contracting Parties to the Convention to combat spillages of oil and other harmful substances at sea,

**RECALLING FURTHER** the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990, and the Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000;

**RECOGNIZING** the need for further development of the national ability of the Contracting Parties to the Helsinki Convention to combat spillages of oil and other harmful substances,

**BEING AWARE** of the great value of coordinating national efforts in this respect,

At the same time **BEARING IN MIND** sub-regional approach to building adequate emergency and response capacities as adopted by the Contracting Parties in HELCOM Recommendation 28E/12 as well as HELCOM Recommendation 24/9 on ensuring adequate emergency capacity,

**BEING MINDFUL** that the maximum tonnage of an oil tanker entering fully laden the Baltic Sea is up to 150 000 dwt and that traffic density in the Baltic has increased significantly and is expected to grow in future,

**RECOMMENDS** that Governments of the Contracting Parties to the Helsinki Convention should, in establishing national contingency plans, aim at developing the ability of their combating services,

- a) to deal with spillages of oil and other harmful substances at sea so as to enable them:
  - (i) to keep a readiness permitting the first response unit to start from its base within two hours after having been alerted;
  - (ii) to reach within six hours from start any place of a spillage that may occur in the response region of the respective country;
  - (iii) to ensure well organized adequate and substantial response actions on the site of the spill as soon as possible, normally within a time not exceeding 12 hours,
- b) to respond to major oil spillages
  - (i) within a period of time normally not exceeding two days of combating the pollution with mechanical pick-up devices at sea; if dispersants are used it should be applied in accordance with HELCOM Recommendation 22/2, taking into account a time limit for efficient use of dispersants;

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- (ii) to make available sufficient and suitable storage capacity for disposal of recovered or lightered oil within 24 hours after having received precise information on the outflow quantity,
  - c) to respond to spillages of harmful substances other than oil with suitable countermeasures:
    - (i) to consider hereby the provisions in Volume 2 of the HELCOM Manual on Co-operation in Response to Marine Pollution within the framework of the Helsinki Convention;
    - (ii) to make the necessary efforts within national abilities or sub-regional co-operation agreements to recover floating chemicals (floaters) with a reasonable retention time using adequate mechanical pick-up devices at sea normally not exceeding 2 days of combating at sea;
    - (iii) to use their best endeavours in research and development activities to develop suitable techniques or methods to recover such sunken chemicals from the sea bottom if they have a long retention time without dissolving tendencies,
  - d) should continue with the development and improvement of the combating services, in accordance to the HELCOM Baltic Sea Action Plan and taking into account:
    - (i) relevant factors such as the length and configuration of the coastline, safe haven harbour approaches, vulnerable ecological areas, probability of adverse weather conditions, ice, etc.;
    - (ii) that this capability should be considered in connection with the national salvage and lightering capacity; and
    - (iii) the targets specified above concerning oil response ability, to be reached as soon as possible;
    - (iv) the targets specified above concerning chemical spill response ability, to be reached as soon as possible.

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# **GUIDELINES FOR APPLYING DRAFT HELCOM RECOMMENDATION ON DEVELOPMENT OF NATIONAL ABILITY TO RESPOND TO SPILLAGES OF OIL AND OTHER HARMFUL SUBSTANCES**

## **1. INTRODUCTION**

The purpose of these guidelines is to specify detailed technical and operational demands concerning the implementation of HELCOM Recommendation 31/1 on development of national ability to respond to spillages of oil and other harmful substances.

It must be realized that due to adverse weather conditions and probable local limitations the demanded operational and technical means can not always ensure a successful cleaning operation at sea.

## **2. SPILL SPREADING**

### **2.1 Oil**

Oil spill spreading is a very fast process calling for immediate reactions with a maximum of recovery vessels in order to use effectively the first spreading phase with appropriate layer thicknesses. Experiences have shown that the key of effective recovery lies in the first 24 hours after a spontaneous outflow. The layer thickness in relation to the elapsed time and the potential surface sweeping performance must be used for the definition of the needed capacity, taking into account weathering of the oil, type and viscosity, sea state and wind influences.

### **2.2 Liquid substances**

Spreading, dispersion and dissolution of liquid chemicals in almost all cases runs much faster; the tracing of this process is often very difficult as many of the floating substances are colourless and odourless with a very low viscosity.

Response measures in case of chemical spillages often have to be limited to tracing the remnants of the released substance and to alert threatened population or ship crews.

Aerial reconnaissance flights, especially with helicopters, are hereby a very helpful tool to position the combating units in those areas where most of the outflow is concentrated.

## **3. DETECTION AND MONITORING**

The detectability of a discharged hazardous liquid substance includes the localizing, identification and tracing of the substance in the aquatic environment. This precondition for adequate response measures depends mainly on the density, vapour pressure, solubility, viscosity, surface and interfacial tension, colour and odour of the substance. Most of these properties are relevant also for the penetration in the sea bottom sediment. For their own safety and for supporting salvage and recovery actions response units must have a minimum standard of detection tools (detection kits) to ensure a minimum of risk for involved crew members.

For situation and safety analysis in case of response spills, several measurements and observations are needed, such as:

- identification of the polluter
- identification of the pollutant
- measuring the properties of the pollutant
- localizing the polluted area
- determining the dimensions of the polluted area
- hazard identification
- measuring details regarding the atmospheric conditions prevailing on the spill site.

To protect response personnel and the area immediately affected, the chemical spill and its hazards should be assessed prior to undertaking counter-pollution actions.

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#### **4. SKIMMER PERFORMANCE**

Based on a certain outflow quantity one might use the skimmer performances per hour in order to quantify the recovery capacity per day or within two days, but the manufacturers' figures are mostly based on extremely favourable circumstances with unrealistic layer thicknesses and assuming also a calm sea surface. Therefore, those figures are neither comparable nor reliable, as the Baltic Sea States operate various skimmer systems.

#### **5. CONTAINMENT BOOMS**

A provision of having a certain length of containment booms available could be an appropriate part of the specified equipment. The length of the boom capacity could be orientated on the fact that e.g. a spill caused by 10,000 m<sup>3</sup> of oil will after 24 hours cover an area of 30-60 km<sup>2</sup>. But the main part of the total outflow is concentrated mostly on an area covering only 10 percent of the whole contaminated surface. Assuming that this slick concentration is drifting within the down-wind side of the moving slick then a total length of 2,000 m is needed to ensure that most of the slick concentration is surrounded.

Additionally, at the sea areas having environmental high importance, as national parks or wildlife reserve areas, certain length of containment booms should be available for their protection.

But those countries which have based their recovery capacity on self-propelled skimmer ships with e.g. sweeping arms/spring-sweep systems or combination of deflecting containment booms with skimmer devices in the apex of the V-shape may prefer a higher sweeping capacity - see 6.2 - which can compensate large lengths of high sea booms in combination with various skimmer types.

Consequently, the following minimum requirements are demanded for:

- containment sea boom lengths, with auxiliary vessels to launch booms and deploy skimmers
- autonomous self driven skimmer ships with the definition of cleaning performance per day in km<sup>2</sup>
- performance per day of adhesion/suction devices like belt-disc skimmer/weir and vortex skimmers.

#### **6. CAPACITIES TO RECOVER VARIOUS PERSISTENT OIL TYPES**

The minimum requirements are as follows:

**6.1** 2,000 m of high sea booms for containment of oil and a sufficient number of sea booms to protect nature or wildlife reserve areas against oil spills (location of booms should be established as permanent sites close to these areas and – where possible – some necessary equipment to deploy booms should be available at such places, such as a boat, tug or other ship, depending on the distance to the nearest port or coastal station).

**6.2** 2.5 km<sup>2</sup> of sweeping performance. The calculated area is hereby based on a working speed of 1-2 knots of the sweeping or skimming vessels. A sweeping area of 4.5 km<sup>2</sup> has to be fulfilled by those countries which mainly use autonomous drive skimmer ships. The total boom length of 2,000 m can be diminished to 1,200 m if the sweeping capacity is considerably greater.

**6.3** Six (6) high performance sea skimmers with full sets of auxiliary equipment.

**6.4** Sufficient storage tank capacity should be available at sea for continuous operations. The land-based disposal arrangements of the recovered mixture close to the potential sea areas must also be ensured.

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## **7. REQUIREMENTS TO RECOVERY/RESPONSE VESSELS TO HARMFUL SUBSTANCES OTHER THAN OIL**

### **7.1 Minimum required measuring equipment on board a response vessel:**

**a)** Generally, response ships that could be involved in the release of hazardous materials should be permanently equipped with an adequate supply of protective clothing and breathing apparatus for those crew members likely to become involved in responding to an emergency spill situation. For the detection, the determination of the dimension or the determination of the concentration of a spill, several measuring devices will be needed.

It is recommended to have on board a response vessel the following safety and protection equipment:

- protective clothing (oilskins, gloves, full protective suit, breathing hood, goggles, respirators, canister-type mask, oxygen breathing apparatus, face mask or hood)
- devices for measuring toxic atmosphere (chemical reaction tubes)
- explosive meter
- photo or flame ionisation detector
- sampling devices
- flash point meter
- pH-meter
- electric conductivity meter
- radiation meter
- oxygen meter
- thermometer
- test kit.

**b)** In addition to this basic equipment it is advisable to be equipped with side scanning sonars and echo sounders with high sensitivity and high ground resolution. Bottom sampling devices and visual perception by remote controlled TV-cameras or TV-cameras operated by divers.

**7.2** Each Contracting Party should have precautions made to provide, in case of emergency lightering operations, sufficient tank capacity to ensure the refloating of a grounded vessel or to lighter endangered tank capacity, e.g. by settling a model contract with tankship owners or tankship owners' association.

### **7.3 Salvage and recovery of sunken or lost packaged dangerous goods**

The response unit should have or make arrangements for sufficient space on board to store recovered packages with leaking corrosive or toxic contents in a water-protected and air-tight space; alternatively special containers meeting the aforementioned properties can also be used for provisional storage of harmful packages.

A set of overpacks is needed to transfer leaking drums or cylinders with compressed or radioactive substances in emergency situations.

Each Contracting Party should ensure that in case of responding to a chemical spill including salvage or recovery of packaged goods the response unit and the strike teams on board must be equipped and/or protected to encounter the following hazards:

- combustibility
- corrosivity
- explosiveness
- flammability
- radioactivity
- toxicity in air and in water.