

SOUTH AFRICAN INCIDENT RESPONSE PLAN FOR PREVENTION AND COMBATING OF POLLUTION AT SEA

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PART I: BACKGROUND AND LEGISLATION

1.1 Background

South Africa is situated at the interface of two of the vast oceans and on one of the oldest navigation routes of the world. It also has ready access to the Southern Ocean. Historically the Cape of Good Hope was named “Cape of Storms” for good reason, and many ancient and contemporary vessels have floundered off the hazardous South African coastline. South Africa’s 3000km coastline is situated on a major international shipping route with large volume of passing traffic that do not necessarily call at South African ports. In addition about 19 million tons of crude oil is imported into South Africa annually, whilst approximately 120 million tons pass around the Cape bound for world markets. In addition, large numbers of vessels, other than tankers, pass the South African coastline carrying large quantities of bunker oil. One of the largest crude oil spills to have occurred anywhere in the world took place off Saldanha Bay in 1983 when a Spanish registered tanker “Castillo de Bellver” broke in half and sank with 224 000 tons of light crude oil on board. More recent spills have involved the release of heavy bunker fuels from dry cargo vessels. Response actions may vary considerably depending on the types of oil that have been spilled and this plan covers those actions required in the event of a large spill of both light and heavier, more persistent oils, such as fuel oils.

All marine traffic, especially oil tankers, which are calling at South African ports or which are in transit around the continent present a risk of marine pollution resulting from collisions, groundings, oil cargo and bunker transfers, structural failure or any number of other maritime emergencies or accidents. Many cargoes carried by these vessels present an additional risk, as they may constitute any number or combination of harmful substances. Marine Pollution in general threatens recreation areas, sea birds, marine life, coastal installations and fisheries. It is worth to note that currently, South Africa does not have an officially documented national incident response plan for the prevention and combating of pollution at sea. Therefore it is essential to implement management tools that will ensure an effective prevention and minimization of pollution at sea. In this perspective, the elaboration of a national contingency plan (referred to throughout this report as ‘the Plan’), to prevent and combat pollution of the sea by oil and other noxious and hazardous substances comes as a fundamental prerequisite for an effective response to maritime casualties which threaten South Africa. The Plan ensures that appropriate action and proper response are taken to prevent or if it is not possible to combat such type of pollution. Response actions may vary considerably depending on the type of substance spilt and this Plan covers those actions required in the event of a large spill.

1.2 Scope and Purpose of the Plan

The purpose of the Plan is to outline the national arrangements for responding to pollution incidents in the marine and coastal environment thereby minimizing detrimental effects on the receiving environment. Although the generic term ‘hazardous substances’ is used in this Plan, its primary focus is oil spills.

Thus the general principles in this Plan apply to hazardous substances generally but it specifically deals with oil. The Plan accordingly delineates the responsibilities of the different parties involved in the national preparedness and response system, including both public and private sector for all hazardous substances but focuses on oil in the appropriate context.

The fundamental and primary aims of a spill response plan are:

- (a) to protect human health and safety;
- (b) to minimize detrimental environmental impacts; and
- (c) to provide for restoration of the environment, as nearly as is practicable, to pre-spill conditions.

In the event of a spill or risk of spill response should be formulated according to the following priorities:

- (i) Human health and safety;
- (ii) Natural environment;
- (iii) Commercial resources; and
- (iv) Amenities

The above priorities could be re-prioritized so as to align with local plans.

1.3 **Legislation**

1.3.1 The Constitution (Act No. 108 of 1996): Section 24 of the Bill of Rights (Chapter 2) provides that everyone has a right to an environment that is not harmful to their health or well-being and to have the environment protected for the benefit of the present and future generations through reasonable legislative and other measures that (i) prevent pollution and ecological degradation (ii) promote conservation and (iii) secure ecologically sustainable development and use of natural resources whilst promoting justifiable economic and social development. The section illustrates clearly that the government has a duty to protect the environment including providing for matters such as a marine pollution contingency plan.

1.3.2 Marine Pollution (Prevention of Pollution from Ships) Act, 1986(Act No. 2 of 1986). The Minister of Transport is assigned with a responsibility to provide for the protection of sea from pollution by oil and other harmful substances discharged from ships and for that purpose to give effect to the International Convention for the Prevention of Pollution from Ships, 1973 as amended by the Protocol of 1978(MARPOL 73/78) and to provide for matters incidental thereto.

1.3.3 Marine Pollution (Control and liability) Act, 1981(Act No. 6 of 1981) This Act provides for the protection of the marine environment from pollution by oil and other harmful substances. The Act is administered by SAMSA. Detailed regulations relating to the prevention and combating of pollution of the sea by oil have been made and the Act grants SAMSA extensive powers to take a variety of steps to prevent pollution of the sea where a harmful substance is likely to or is being discharged. More-over, there are regulations regarding criminal as well as civil liability after “discharge” causing pollution of the sea has occurred, and to provide for matters related to it.

1.3.4 *Marine Pollution (Intervention) Act, 1987*(Act No.64 of 1987) This Act gives domestic effect to both the Intervention Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties as well as the Protocol Relating to Intervention on the High seas in cases of Marine Pollution by Substances other than Oil, 1973. It does so by simply stating that, “subject to this Act, the Convention and Protocol shall have the force of law in the Republic”. It also empowers the Minister to make regulations to give effect to the Convention, but no regulations have been passed in this regard.

1.3.5 *South African Maritime Safety Authority Act, 1998*(Act No. 5 of 1998) The Act provides for the establishment of the South African Maritime Safety Authority (SAMSA) with the aim of implementing government maritime policy. Its objectives as set out in the Act are:

- to ensure safety of life and property at sea;
- to prevent and combat pollution of the marine environment by ships; and
- to promote Republics maritime interests.

1.3.6 *(International Convention on Civil Liability for Oil Pollution Damage, 1992. The Convention provides for the claims for compensation for oil pollution damage which may be brought against the owner of the ship or his or her insurer which has caused the damage. In certain circumstances claims may also be brought against the 1992 Fund under the International Oil Pollution Compensation Fund, 1992*(Fund Convention, 1992). These Conventions apply to pollution damage caused in the territory or territorial sea of a State which is Party to the Convention in question and to pollution damage caused in the exclusive economic zone (EEZ), or equivalent area of such a state.

(NB this convention is not yet in force in South Africa)

1.3.7 *International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990 (OPRC)*. The OPRC recognizes the importance of precautionary measures and prevention in avoiding oil pollution and the need for strict application of existing international instruments dealing with maritime safety and marine pollution prevention particularly the International Convention for the safety of Life at sea, 1974(SOLAS), as amended, and the International Convention for the Prevention of Pollution from ships, 1973 as modified by the Protocol of 1978 relating thereto, as amended, and speedy development of enhanced standards for the design , operation and maintenance of ships carrying oil and of offshore units. The OPRC advocates for prompt and effective action in order to minimize the damage which may result from an incident. Article 6 of the same Convention requires each party to establish a national and regional system for preparedness and response.

Details of other relevant legislation and Conventions are elaborated in Appendix I

PART II: POLICY AND PLANNING

2 Organisational Arrangements

2.1 National Organisation

SAMSA, as the legally designated party responsible for preventing and combating pollution in the context of this plan shall be the lead agency and therefore have the overall responsibility for responding to casualties and the overall implementation of this plan. However, it was seen necessary to separate the two functions of prevention and combating so that SAMSA and DEA&T could share respective responsibilities.

In effect, this means that DOT (SAMSA) is responsible for:

- The control of technical aspects of shipping casualties
- The supervision of transhipments
- Initiating prosecutions following deliberate unauthorised discharges of oil at sea and other substances.
- The legal and financial aspects pertaining to a shipping casualty or spill
- Administration of claims
- Developing the National Contingency Plan, SAMSA is specifically responsible for drawing up the contingency plan relating to the control of shipping casualties or potential casualties.
- Administration of the oil pollution acts
- Control of the tugs
- In charge of pollution prevention stores and certain specialized equipment

While DEA&T is responsible for:

- The co-ordination and implementation of coastal environmental protection and clean-up measures
- Clean-up measures during a spill incident
- The control of pollution combating
- The control of any dispersant spraying operations
- The maintenance and storage of any dedicated spill containment and prevention equipment and dispersant stocks.
- Drawing-up, implementation, up-dating and maintenance of Local Coastal Spill Contingency Plans and independent installations to combat any spills that have drifted ashore.

The above mentioned assignment does not limit any additional duties and/or functions which may be DEA&T's responsibilities under other environmental legislation.

2.2 Support agencies, private sector and other stakeholders

In addition there are other agencies and stakeholders that will be involved in the prevention and combating process. These include:

(a) Local Authorities

Local Authorities are guided by the DEA&T Coastal Plans and shall work under DEA&T instruction. The local/coastal contingency plans cover the following:

- Legal aspect of the oil spill response including liabilities, claims and costs;
- Reporting procedures and activation of the Plan;
- Organisational structures during an incident and job descriptions of role players;
- Available facilities and resources
- Geographic boundaries of responsibility;
- Site-specific protection and clean-up measures required during an incident;
- List of available equipment
- Contact details of all role players.

Further, these should also contain, inter alia, information which could be of assistance during a major spill including the following:

- Guidance on what equipment and personnel would be at the disposal of the National Response Unit when needed;
- Arrangements for establishing accommodation and catering for members of the response team who would be usually away from their base;
- Arrangements for communication purposes;
- Arrangements for accommodating the press conferences;
- Temporary, intermediate and final storage site and routes for disposal of waste;
- Maps clearly showing access points, terrain types etc.

(b) Other agencies:

Agency	Responsibility	Specific Duties in the context of the National Contingency plan	Representative	Supervisory Agency
OIL INDUSTRY (SAPIA)	Clean-up activities	<ul style="list-style-type: none"> - Facilitate communication between oil company and DEAT - Provide DEA&T with all relevant information - Mobilize and deploy oil industry response equipment - Facilitate the provision of Manpower for clean-up operation - Arrange for additional response equipment for international oil spill response - Assist with any other aspect of 	<p><u>The Oil Industry Environmental Advisor,</u> who will have to ensure the specific duties</p>	DEA&T

		the response as requested by DEAT		
CHEM. INDUSTRY (CAIA)	-Mitigate Potential adverse impacts on the environment	<ul style="list-style-type: none"> - provide personnel to advise and equipment - Facilitate communication between chemical industries and the authorities - Provide product related information to assist timely response - Assist with any other aspect of the response as requested by DEAT 	Adviser:CAIA (Chemical and Allies Industry Association)	DEA&T
NUCLEAR FUEL REGULATOR	Develop specific contingency plan	In the interim(together with SAMSA) keep the ships far offshore as possible. Advise SAMSA(together with DEA&T) during a nuclear incident.	National Nuclear Advisor	SAMSA DEA&T
SALVAGE COMPANIES	Sign salvage agreements with ship owner	Due to their contract with DOT, they are under the obligation to provide DOT with the service of a salvage tug which must, in terms of the contract, be available on the South African Coast	Salvage companies agent	SAMSA
DEFENCE FORCE	Logistic support; search and rescue	Provide transport and heavy duty equipment; aircraft for search and rescue	Unit commanding officer	SAMSA DEAT

INVESTIGATION UNIT	Casualty investigation	<ul style="list-style-type: none"> - Information gathering and consultation - Assistance in prosecution action 	Surveyor/s (SAMSA, Class, P&I etc)	SAMSA
LOCAL AUTHORITIES	Local Contingency plan	Cooperation and Assistance	Local Authority Officer	DEAT
WILDLIFE ORGANIZATION	National Oiled Wildlife Response Contingency Plan	<p>Which will provides</p> <ul style="list-style-type: none"> - guidelines for an immediate and effective protection - Rescue - Cleaning - Rehabilitation of birds, mammals 	Wildlife conservation organizations or NGO's	DEAT
CUSTOMS& EXCISE	Clearance of goods and persons	Facilitation of expedient clearance of imported combating equipment and foreign experts	Controller of customs	SAMSA&D EA&T
NATIONAL PORT AUTHORITY	Provision of any necessary assistance	<p>-Provide additional combating/containment equipment</p> <p>-provide information on vessels e.g. agent</p>	Harbour Master Pollution Officer	DEA&T
WEATHER BUREAU	Weather forecast	Provide forecast in terms of pressure, direction, rain tides etc	FAX	DEA&T SAMSA
SAPS	Policing	Crowd control	Station commander	SAMSA DEA&T
CUSTOMS & EXCISE	Immigration	Facilitation of entry of international assistance (International experts and equipment)	Responsible Customs Officer	DOT SAMSA

2.3 Implementation of the Plan

Until the termination of the shared responsibility the present arrangement of prevention and combating under different authorities will remain. Action to prevent marine pollution remains a function of SAMSA, nevertheless the Department of Environmental Affairs and Tourism and other stake-holders need to be closely involved as their areas of interest are or may be affected. Each one of them has a responsibility for marine environment and fisheries. In terms of the above, DEA&T is responsible for coordinating all the response actions once the oil has been released to the sea from the vessel or from any other source. In coordinating these actions, DEA&T's role is to ensure that all actions taken do not result in a greater environmental, social or economic impact than would have been the case should no action to combat the spill have been taken. DEA&T will initiate, approve, oversee and coordinate all activities taken by other role-players in responding to the spill. This is to ensure that all response activities are carried out in a coordinated manner and that they result in a nett environmental benefit.

PART III: PREVENTION STRATEGY

3 Pollution Prevention:

3.1 Casualty management

SAMSA's strategy in respect of casualty response can be described as "*risk based casualty management*". Ship casualties are an unfortunate and inevitable side effect of sea based trade and as both the largest trading country in the sub-continent as well as being a strategically placed coastal trade state(geographically), the South Africa can expect more than it's fair share of ship casualties. Risk based casualty management is based on a practical real-time evaluation of the benefits versus the risks, as the event unfolds, and where necessary and possible, active intervention.

SAMSA's priorities in managing a casualty are;

- Safety of Life at Sea (saving the lives of persons aboard or otherwise threatened by the casualty)
- The preservation of the vessel, or removal of the vessel from the shore, with harmful substances contained and intact, in order to prevent pollution
- The removal of oil and other harmful substances by the most practical means, from the vessel to prevent pollution, should the second option fail
- The preservation of property (coastal properties, cargo and/or ship)
- Removal of wreck

It is envisaged, and is indeed current practice (*after considering, inter alia, the risks of pollution and financial implications presented by any particular damaged vessel*) for SAMSA to allow the vessel to carry out repairs in the South African territorial waters or even carry out cargo transfers (under supervision) in a designated bay, where the benefits far outweigh the risk profile. Benefits in this context also mean assisting a vessel whilst there is opportunity and means, as opposed to dumping a developing situation upon a neighboring state that may not be afforded the same opportunity and may not even have the means. A major pollution incident in neighboring states has a possibility and is almost

certain to affect South Africa in due course. Where there is an imminent or possible threat of such incident, SAMSA will engage with DEA&T and other relevant authorities in the process of assessing the risk profile. If necessary, this will be via the Joint Response Committee.

The technical aspects of cleaning up spills originating from ships are contained largely (in the case of oil spills) in the DEA&T's Oil Spill Contingency Plans and they are responsible for their implementation.

SAMSA's strategy is therefore to ensure that its various legislated responsibilities and duties are being carried out. In effect, this means that whenever there is a spill of oil or any other harmful substance from a ship or offshore installation SAMSA will ensure that:

- There is an effective initial response, including communication with DEA&T.
- That there is effective communication and co-operation with affected authorities and parties by way of a Joint Response Committee

- That the methods and costs of carrying out the combating are in accordance with international practice
- That costs and expenses of such combating are audited throughout, in order to expedite any subsequent claims made in terms of Act 6 of 1981
- That state expenditure in respect of pollution combating is recovered from the owner in the most expeditious manner

[Note; In the case of offshore installations, an acceptable, effective and practical contingency plan, as well as the acceptance of direct financial responsibility for any clean-up, has already become part of the procedure for obtaining the statutory *Pollution Safety Certificate* from SAMSA]

3.2 Reporting and alerting systems

Marine Notice No. 2 of 1996(Appendix III) , as amended from time to time, deals with the reporting of spills and shipping casualties, which may be reported to either SAMSA, DEA&T or any contracted tug at the time. The initial report may come from any number of sources and be directed to whomever that source deems fit i.e. SAMSA or DEA&T.

Any SAMSA employee, who receives a report, hears or overhears any communication which indicates a possible maritime incident (whether a spill or a ship with problems) is duty bound to ensure that the information is transmitted to the Executive Manager: Operation, or his stand in. The said officer must ensure that the report is investigated until he is reasonably certain that the report or rumour is substantiated and verified.

3.3 SAMSA'S Action Plan

Wherever practicable and subject to safety and logistical considerations, the Executive Manager: Operations shall send a surveyor or a Principal Officer out to the vessel or the site of the incident to make an on site inspection and a report thereto. The first hand information received from qualified persons on site is critical to any reasonable risk assessment process.

It is of utmost importance therefore that the on site inspection be delegated to experienced ship surveyors. SAMSA has a responsibility to allocate a budget for airfares, helicopter hire, hotels etc to facilitate the intervention of surveyors and other officers whenever there is a reported incident.

In addition, the SAMSA Casualty Response Unit (CRU) team shall be tasked, as the Executive Manager: Operations determines, with carrying out the following actions:

- Determining the name and address of the vessels owner;
- Inquiring into the insurance status of the vessel and the name of the P&I Club, if any;
- Evaluating the specific threat of the pollution posed by the vessel in respect of bunkers and/or cargo aboard;
- Procuring any additional particulars, calculations or considerations required by the Executive Manager: Operations;
- Convening an appropriate Casualty Response Committee (*including arranging a suitable and convenient premises with communications and facilities*)
- Preparing press releases;
- Informing affected authorities and parties; and
- Where appropriate, representing SAMSA as part of any active intervention aboard the ship casualty

3.4 SAMSA: Casualty Response Unit (CRU)

The Unit shall consist of:

- Executive Manager : Operations
- Four Senior Surveyors(at least 1 deck officer, 1 engineer and 1 naval architect)
- Legal Officer
- Public Relations Officer

The officers should be volunteers from the existing cadre as an additional duty for which they should be available at short notice. The Unit shall prepare for casualties, be instructed and carry out exercises periodically in preparation for emergencies and interventions.

Arrangements need to be in place, whereby the officers are enabled to procure the necessary services and material in accordance with this plan, with the minimum of bureaucracy and paperwork, allowing for the fact that their services may be needed after hours.

PART IV: COMBATING STRATEGY

4 Responsibilities

4.1 *South African territorial waters:*

The Department of Environmental Affairs and Tourism (DEA&T) is assigned with the responsibility of combating accidental and operational spills. However SAMSA's Casualty Response Unit will still have duties in respect of the administration of other duties under Act 6, e.g. controlling and accepting responsibility for costs of clean-up through the mechanism of Joint Response Committee. The DEA&T shall as soon as notified of an oil pollution incident undertake clean-up action irrespective of the origin and circumstances of the pollution and for other substances SAMSA will contact the experts of that particular source of pollution e.g. chemicals.

4.1.2 *Ports:*

Port Authorities and oil and other substance handling facilities shall be responsible for combating oil, chemical and other spills within their own areas under the supervision of DEA&T.

In cases where the spills exceed the capacity of the contingency organization in the port or any other handling facility, external assistance shall be requested according to their relevant contingency plans. All spills, even though they can be taken care of by the port authorities or oil, chemical and other substance handling facilities alone, shall be reported to SAMSA and DEA&T: Marine & Coastal Pollution Management Unit (MCPM). Requests for external assistance shall be made to MCPM unit, provincial and local authorities.

4.1.3 *Terminals:*

The relevant Company or terminal operator, using industry arrangements as required shall respond. Should a situation develop where the necessary response is beyond the company or terminal resources, responsibility for control will transfer to the DEA&T: Marine and Coastal Management.

4.1.4 *Spills emanating from coastal waters and threatening to impact the shoreline:* In this case the relevant local authority assisted by the Provincial Environmental Affairs Department shall be responsible for the protection and clean-up activities as in their respective coastal areas. The activities of these local authorities shall be coordinated by the national Department of environmental Affairs and Tourism.

4.1.5 *Oil spill from Offshore Installations:*

Offshore installations are required to hold *Pollution Safety Certificate* issued by SAMSA. One of the conditions for the issue of such certificate is that the offshore installation operator must have in place a contingency plan for combating the pollution caused by any discharge of oil from a ship or tanker or from any other source in the immediate vicinity of such offshore installation, and, for preventing the pollution of the sea by any further discharge of oil. These plans have been approved and in the event of a discharge, SAMSA must ensure that these commitments are properly met.

The DEA&T's oil pollution combating plan is the guideline for actions to be undertaken in any Clean-up process and its active participation and direction is very much part of any response.

The SAMSA Joint Response Committee (see Appendix IV) is not part of these plans; however at least one member of the Joint Committee must be available to interact with the installation operators during an incident.

4.1.6 Spills of any other harmful substances

SAMSA has a specific responsibility to prevent and combat the threat of pollution arising from any harmful substances. Due to the diverse nature and endless possible combinations of harmful substances carried by vessels, any response will be determined by the situation as it presents itself and the real time availability of suitable combating measures.

The mechanism for solving any developing situation will be the Joint Response Committee responsibility i.e. SAMSA and the DEA&T, including any affected authorities in consultation with relevant experts and service providers. They will respond to any particular situation in the manner deemed fit but under SAMSA chairmanship.

4.2 LEVELS OF RESPONSE

Under this National Plan oil spill response shall be organized according to spill scenarios which result in the following categories:

(a)Tier One: a small spill by a tanker or from an oil related activity associated with ship transfer or bunkering operations at a terminal, a refinery or around waterside storage tanks. On the other hand, it could be a chemical or other substance incident that can be contained and responded to within boundaries of a vessel, berth or small geographical area and having no impact outside operational area but posing a potential emergency condition. Local authorities shall respond to and clean –up the spill using local resources. Should they need additional resources, the local port or national plan resources and industry operators could give the required assistance.

(b)Tier Two: A medium spill that may have been caused by a tanker accident which could be contained by concentration of all government and industry resources within the country. It could be near or some distance from operational centres. The incident are usually associated with shipping activities in ports or harbours, estuaries , coastal waters, pipelines , tank failures or near shore explorations and production operations.

(c)Tier Three: A large spill incident normally involving oil tankers or other vessels carrying large amounts of oil or other substances. Such spill requires a national or regional response and has a probability of causing severe environmental and human health problems. International assistance from specialised overseas response organisations such as Oil Industry Tier Three Centres could be requested to intervene. Such incident becomes a major international affair involving almost every aspect of government. To respond to a spill of this nature, only strategies outlined in the National Plan should be engaged.

4.3 RISK ASSESSMENT

(a) The Department of Environmental Affairs and Tourism and SAMSA shall, in order to keep this National Plan up to date as much as possible, keep on updating the risk factors in the South African marine environment. The following pollution risk factors are recognised as important in South African waters:

- Collisions;
- Groundings
- Navigational hazards
- Seaworthiness of vessels
- Negligence and competence of the owner/operator or master and the crew;
- Ageing of the fleet of vessels at sea (chemical, bulk and container)
- Size and type of vessels;
- Stowage and control of cargoes;
- Type/amount of chemical(s) and oil carried or any hazardous material;
- Traffic density; and
- Environmental factors including tidal flow and weather.

(b) The risk assessment reports by location i.e. the level of risk of pollution at sea, coastline and ports taking into account the following:

- Environmental sensitivity;
- Industry (e.g. fishing, tourism) which would be most adversely affected ecologically or financially by a spill.
- Commercial cargo ship size, frequency, trading patterns and amounts of oil carried as bunker fuel oil chemical tanker frequency, sizes, shipping patterns and quantities shipped.
- Properties of oil/chemicals or hazardous materials shipped as cargo;
- Type, density and movement of shipping including concentration of fishing vessels and tourism vessels;
- Areas that pose a high level of difficulty to safe navigation;
- Changes in the operation and construction of ships during the 1990's such as introduction of double hulls (through amendments to the International Convention for the Prevention of Pollution from Ships (MARPOL.73/74), International Safety Management Code etc.)
- Amount and properties of oil produced offshore and transported by pipeline;
- Location of offshore exploration drilling; and
- Future trends, including proposed new ports and projected changes to trading patterns.

4.4 RESPONSE POLICY

(1) The primary aims of a spill response are to:

- protect human life;
- minimize environmental impacts;
- make arrangements to restore the environment, as nearly as is practicable to pre-spill conditions.

SAMSA and Department of Environmental Affairs and Tourism shall be required to engage good managerial skills, planning as well as acceptable response in order to minimize environmental impact of any spill. Such actions will largely depend on several factors:

- the type of oil/chemical or hazardous material involved;
- the size of the spill;
- the location of the spill;
- prevailing sea and weather conditions at the spill site; and
- environmental sensitivity of the coastline/site impacted.

(2) Coastal sensitivity areas: The coastal sensitivity Atlas of Southern Africa gives a clear indication of the vulnerable areas of South African territorial waters. It consists of a series of 34 maps at a scale of 1:250 000. These maps cover the entire coastline which is colour –coded depending on the nature of the substrate and its associated sensitivity. Super-imposed on the maps are a range of symbols depicting both ecological and socio-economic resources. This atlas shall always be an essential back-up document to this contingency plan. For the purposes of reference, it shall always be available in the Department of Environmental Affairs and Tourism, MCM section.

(3) Overall protection priorities: Protection priorities to be employed during response to a spill are, in the order of preference determined by the following:

- human health and safety
- habitat and cultural resources
- rare and endangered flora and fauna
- commercial resources
- amenities

However, in assisting protection priorities, it is necessary to maintain a balanced view of the potential successes of the particular response strategies. Strategies that may be successful in meeting a higher priority could be highly successful in relation to a lower priority.

(4) Occupational Health and Safety: Response managers should always consider human life, health and safety as a priority. The degree of risk associated with clean-up operations will depend on the following:

- type of hazardous material spilled
- size of spill
- location of the spill
- circumstances of the spill; and
- weather and sea conditions

Fresh crude oil and refined petroleum products are capable of giving inflammable gases. Fire and explosion therefore remains a real danger to personnel and equipment particularly when fresh crude oil and certain refined products are situated in confined locations. At all times, response managers should be aware of the limitations and safe operating procedures for all equipment used throughout all phases of the clean-up operation. This should, where necessary include risk assessment and development of a formal site-specific management plan, including details for induction and briefing procedures.

Response managers should, in time, identify the following:

(i) Personnel and equipment

- personnel resources
- equipment and location
- cost, mobilisation times and contact numbers
- include the resource list in the data base directory

(ii) Personnel and logistics

- safety
- training
- protective equipment
- hygiene facilities

4.5 RESPONSE STRUCTURE

SAMSA, as a lead agency, has a responsibility of setting up a response team and to see to it that the whole operation is running smoothly. This will be done in consultation with DEA&T.

4.6 OPERATIONS AND PROCEDURES

Operational Command and control

A number of options exist for response to substances which have been released into marine environment. All may be effective to a degree according to conditions prevailing and sensitivity of the environment under threat.

These include:

- Surveillance
- Containment and recovery
- Application of dispersants
- Shoreline protection and clean-up
- Bioremediation

(1) Surveillance

If coastal or marine resources are not threatened or likely to be threatened, it may be best to do nothing other than continue to monitor the slick and its movements. If the oil is diesel or light crude, and it is far offshore, the majority of it will evaporate within 24-48 hours, and it will therefore have minimal impact. A fixed wing maritime surveillance aircraft (Coast Guard) shall be contracted; which will always patrol the shipping lanes with a view to apprehending vessels making illegal discharges. Pilots of the surveillance aircraft shall be required to report any sight of any substance in the sea for immediate onward transmission to the SAMSA or DEA&T and to monitor the movement and behaviour of the oil spill. If the assessment shows that another state is likely to be threatened, South African government will inform that state.

(2) Containment and recovery

Oceanographic conditions off the South African coastline are not generally conducive to the containment and recovery of oil at sea. Under exceptional circumstances though, this strategy can be attempted in some coastal embayments. Experience with spills in other parts of the world has shown that in the majority of cases it is unlikely that more than 20% of the spilled oil (for example) can be recovered at sea. Booms and skimmers are utilised in sheltered port and coastal areas in an attempt to protect sensitive areas using vessels with a weir skimmer incorporated into its structure.

(3) Dispersion

(a)Mechanical dispersion: For relatively small spills resulting in sheens, the speed of dispersion can be increased by driving a vessel through the slick, where turbulence created by the passage of the vessel will break up the oil. This can also be improved by dragging devices, known as breaker boards or nets behind the vessel. These further agitate the surface of the water and break up the slick.

(b)Chemical dispersion: The most common method of dispersion, however, is the use of chemical dispersants. Oil spill dispersants have frequently been used during response operations. Their use however is controversial as it has both advantages and disadvantages. Disadvantages include the fact that application of the dispersants result in increased concentrations of oil in the

water column and that oil dispersant mixtures are generally more toxic than the oil itself. Moreover, dispersants are only effective on certain types of oil and even then, only within a limited time span after the spill. It is very important therefore that their use is properly controlled; that they are used only when physical containment and removal is not possible, and that their use results in a net environmental benefit.

The dispersant policy sets out the criteria necessary for making rational decisions on the non-use of dispersants (Appendix V) The decision to use dispersants should only be taken by the governmental authority responsible for the coordination of oil spill i.e. DEA&T. In short the policy on dispersant usage requires and prohibits their use in water depths of less than 30 metres and within 5 nautical miles of the coast unless a net environmental benefit analysis suggests otherwise. Two dedicated 29 metre dispersant spray vessels, each carrying 60 tons of type 1 dispersants are on permanent standby in Durban and Cape Town. For the purposes of this National Plan, this arrangement shall remain until there other arrangement brought forward in future. Additional dispersant stocks are located in Cape town and Durban (including 20 tons of Type III concentrate dispersant, formulated to disperse heavy emulsified oils in Cape Town).

Dedicated aerial dispersant spraying resources are not readily available in South Africa, although these could be provided by the international oil spill response base in Southampton, UK or through the use of crop spraying aircraft which are locally available. Type I dispersants should not be used on emulsified or other viscous oils as they are not effective on these types of oils.

- (c) **Coastal protection:** Sometimes clean-up efforts contribute to environmental damage and for that reason it is often better to leave it to natural clean-up processes. In situations where some clean up must be attempted, it is important that methods selected are those which are at least not damaging to the environment. Decisions over clean-up will depend on the type of oil, degree of contamination and the type of habitat affected. Specific guidelines for protection and clean-up of coastal and marine resource areas are clearly outlined in the *local oil spill contingency plans*.

Booms and barriers can be used to protect coastal features such as estuaries, marinas, harbours and water intakes either by closing off entrances to these features or if this is not feasible by deploying them so as to deflect or divert the oil away from the area of concern. In the latter case the oil should be directed towards a sacrificial area where it can be collected and recovered. These sacrificial areas are identified in the local coastal contingency plans. In cases where the oil has already come ashore booms may be used to trap the oil for collection and to protect adjacent areas from becoming contaminated. In general, though it is not feasible to successfully place booms along straight sections of the beach. When floating booms are used to close off certain areas, they can be backed up by sorbent booms to pick up any oil which might penetrate the barrier. Bubble barriers are popular for the protection of yacht basins and marinas as they do not inhibit the movement of boats in and out of the facility.

Booms or barriers can also be improvised using “materials of opportunity” such as wood, bamboo, fishing nets and natural sorbents such as straw bales, coconut husks, reeds and sugar cane. In some cases bulldozers can also be used to construct sand bars across estuaries or lagoons to prevent oil from entering them. In such cases it may be necessary to insert pipes into the barrier to prevent a build up of water in the lagoon or estuary.

(d) Coastal Clean-up

If due to weather and sea conditions, response at sea is not feasible or protection of sensitive areas is not, or these have already been affected, appropriate clean-up priorities and other response measures should be determined. Priorities for clean-up and methods will depend on a number of characteristics including the following:

- The importance of the beach for recreational purposes;

- The ecological sensitivity of the area concerned;
- The amenability of the beach to natural cleansing;
- The degree of oiling;
- The accessibility of the beach; and
- Seasonal considerations.

Depending on the season, priority will normally be given to heavily contaminated beaches that are either of ecological significance or of high recreational value. The timing of the commencement of the clean-up operation also depends on a number of factors. In the early stages heavy concentrations of stranded oil which may be re-floated only contaminate other areas, should be cleaned soon as possible. This is also true if the oil is likely to be buried into the beach as a result of cyclical movements of sand onto and off the beach. On the other hand, if it is not likely to re-float or be buried, then it may be preferable to wait until all the oil has come ashore so as to avoid having to clean the same area twice. This is particularly true for contaminated rocks.

Manual clean up methods are generally preferred for sandy beaches, especially in environmentally sensitive areas although where there are huge accumulations of oil and oily debris it may be necessary to use mechanical equipment such as bulldozers and front –end loaders.

In either case it is important to remove as little as possible of the sand itself both to limit the volume of waste for disposal and to avoid creating erosion problems on the beach. Clean-up teams need to be closely supervised as much as possible.

Bioremediation of oiled shorelines in South Africa is considered an optional clean-up strategy for a percentage of areas, and a relatively narrow range of the shoreline (appendix VI Bioremediation policy). However, types of substrate beaches are also areas of considerable importance as wildlife habitat, biological diversity, recreation and subsistence resources. In these areas bioremediation would be considered a valuable option in the case of a spill to accelerate the natural bioremediation of the oil. This strategy would also apply to a narrow range of oil conditions and works best on moderately oiled shorelines. Even on beaches of the appropriate substrate bioremediation would be used as a secondary strategy after mechanical clean-up if the oil were deposited in heavy concentrations. In addition, natural recovery may be the appropriate strategy on shorelines with only a light coating of oil.

Oil coming onto the rocky shorelines will collect in rock pools from which it can be collected by using pumps or vacuum trucks. If the areas are inaccessible by road, it can be removed by mixing it with absorbent materials which can then be removed manually using forks or rakes to take it to a collection point. Once the liquid oil has been removed, it may be necessary to clean those rocks which have been left with surface film of oil. This is generally true for heavily utilised amenity areas, although in more remote areas the oil could be left to weather naturally.

Cleaning up can be undertaken using high pressure hoses with cold or hot water depending on the nature of the oil. In the case of very viscous oil it may even be necessary to use steam cleaning and to apply detergents or dispersants to the rocks prior to cleaning.

In extreme cases where oil has been baked onto the rocks, rocks may have to be sand-blasted. Whichever method is selected, provisions should be made to collect the oil that is removed either using booms and pumps or sorbent materials.

In selecting the clean-up method, consideration must be given to the fact that the more aggressive the method, the less likely that any of the marine organisms on the rocks will survive the treatment. Their use should therefore be restricted to amenity. As indicated above, the activities which are to be undertaken in the event of an oil spill impacting or threatening to impact any particular section of the coastline are outlined in the local coastal oil spill contingency plans.

4.7 OIL RESPONSE EQUIPMENT

In the meantime, most of the National Plan equipment shall be located in the Oil Pollution Store under the control of DEA&T: MCPM sub-directorate. Necessary transfers could be effected when another agency takes over. This equipment shall be stored and maintained by the responsible authority (list of equipment Appendix VII) or any organisation that is in charge of combating at the time of the incident. Release of this equipment shall always be authorised by the Director of that Combating Authority through equipment loan agreements outlined in (Appendix VIII). These agreements include details of the equipment, storage, security arrangements and maintenance requirements.

The oil industry and Port Authorities have stocks of oil spill equipment at various locations around the coast. The Strategic Fuel Fund Association, PetroSA maintain a large stock of equipment in Saldanha Bay. Full details of the National Plan and other industry equipment are contained in the Oil Spill Response Equipment database.

The Database contains listings of DEA&T, Port Authorities and oil industry equipment that is available for use when required or requested where necessary. Copies of database outputs are available directly from DEA&T: MCPM.

In contrast to the above, the equipment and materials used in the beach clean –up operations are, for most part, not specialised to oil spills. They shall, therefore be provided by local authorities themselves or from private contractors. For the purposes of this plan, an inventory of equipment held by local authorities is appended to the local coastal oil pollution contingency plans. All movements and use of National Plan resources shall be reported to the On-Scene coordinator within 24 hours to enable recording of information for management, cost recovery and stock taking/audit purposes and updating of equipment database, maintenance records and loan agreements. The term “use of National Plan Equipment” shall be defined to include operational deployment and placement on stand-by.

The shore logistic officer shall arrange recovery of all equipment and unused materials and arrange their prompt return to the Oil Pollution Store upon completion of an oil pollution response operation. The shore logistics Officer or area controller will ensure that all equipment is cleaned after use.

In the case of other substance, the necessary arrangements concerning equipment will be done with the experts of that kind of spill until such time that specific contingency plans are in place.

4.8 DISPOSAL OF OIL AND OILY DEBRIS

Clean-up operations can generate substantial quantities of oily debris. Temporary storage, transportation and final disposal methods shall be arranged to comply with the Department of Water Affairs and Forestry disposal approvals. This will usually be facilitated by the responsible local authority. The coastal oil spill contingency plans contain information on the disposal of oily waste. This should include any pre-designated arrangements for disposal sites and approved contractors. Ideally, disposal sites should be identified as close as possible to those areas where oil pollution could most likely occur.

4.9 TERMINATION OF RESPONSE

An incident response will be terminated when SAMSA is satisfied that effective completion of the response is achieved based on expert advice. SAMSA will be responsible for announcing the termination of the response. The DEA&T shall be responsible for compiling a situation report. Termination arrangements are outlined in the local coastal oil spill contingency plans (Appendix IX)

4.10 OTHER SPILLS

In the case of a spill of another substance the joint response committee will cooperate with the experts of that particular substance as much as possible especially in a situation where there is no contingency plan in place.

4.1.1 INTERNATIONAL COOPERATION

(a) International Convention on Oil Preparedness, Response and Cooperation, 1990(OPRC)

South Africa shall, once it becomes a party to this Convention, enter into bilateral agreements for cooperation with any country that is a party and willing to cooperate with South Africa in the case of an incident.

The purpose of such arrangements is to implement Article 7 (1) (2) and (3) dealing with international cooperation in pollution response. It should always be noted that South Africa will, subject to its capabilities and availability of relevant resources provide technical support and equipment only upon request by the affected or likely to be affected party to the Convention and above all having a bilateral agreement with South Africa.

(b) Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the East African Region and Related Protocols.

In the context of this Convention, Bilateral Agreements emanate from the provisions of Article 11. This National Plan is committed to the implementation of Article 11 as much as possible (South Africa is in the process of ratifying the Convention) The implementation shall be limited only to the provisions of Article 11(1) and (2) and shall not go beyond that unless there is an agreement to do so.

Convention and Protocol for Cooperation In the Protection and Development of the Marine and Coastal Environment of West and Central Africa (Abidjan Convention). 1981.

PART V: ANCILLARY ACTIVITIES

5 MEDIA RESPONSE UNIT (MEDDRU)

(1) Press conferences: As the major pollution incident is usually of immediate interest to both local and international media, it is in the public interest to keep the media fully informed and regularly as much as possible. Failure to do so at an early stage could result in seriously distorted information circulating both nationally and internationally. Media should receive reliable information promptly.

It is advisable though, that the Ministries (NDOT&DEA&T) concerned should get first hand information as soon as possible. From the onset, the Joint Response Committee should ensure that they have a media office in place. Media team and designated Public Relations Officers from both departments should take control of the media office. They should liaise with relevant Ministries and press as soon as required. They shall arrange press conferences as soon as they receive any accurate information. The response team should provide

information whenever they deem necessary. No journalists or reporters should have direct contact with the response team during operation as this can disturb urgent processes of operation. (see suggested procedure for dealing with media in a major spill in appendix X)

(2) Ministerial and VIP visits: It is usual that when a major incident occurs, the Ministers concerned wish to visit the scene. He/she is usually accompanied by Senior Officers and other VIP's. The public relations officers from such Ministries shall make the necessary arrangements for such visits and also try by all means to accommodate reporters and journalists when requested to do so on condition that the Ministers concerned agrees to such arrangement.

6 FINANCE AND COMPENSATION

6.1 Financial arrangement in a typical oil spill

Any response arising from a shipping casualty, whether an intervention of sorts, or an actual clean up exercise, can be very costly and the Republic has no dedicated state pollution contingency fund in place. Initially the costs of such operations fall to those involved in the operations and in line with the "polluter pays" principle may subsequently be claimed as costs and damages from the owner. It is however accepted that small service providers cannot be expected to carry the costs of providing services to the state for any time and SAMSA, as the responsible authority will assist in enabling a response to get under way, by way of underwriting such actions as it considers necessary in the early phases of any response. This undertaking is severely limited and a better arrangement regarding underwriting the costs will have to be made in the event. In many cases the owner will be identified and have P&I Club insurance cover, making the recovery of costs and damages a strong probability, especially if the claims are reasonable and any expenditure has been properly audited and controlled.. It is important to bear in mind the limitation of liability regime that is in place in the Republic. It is quite possible however that there might be no response from the owner and any interventions and clean-ups must be carried out nevertheless. These actions need to be tempered however with the reality that these costs may not be recoverable from the owner and that the state would need to be approached for compensation. SAMSA will make every effort to secure assets or funds associated with the owner in cases such as this in order to mitigate the cost to the state.

In any case, an independent auditor should be designated at a very early stage of the incident so that there is no confusion as to the accuracy of claims or exactly what has to be compensated for. He/she should keep records (and audit) actions approved by the Joint Response Committee (SAMSA) during operation. These records will be required to support the claims for cost recovery and to show that any action taken was a reasonable step without which the operation would have been a success. He/she must confirm that the action taken was solely meant to prevent or combat pollution that could end up being a threat or hazardous to the safety of health and environment. The clean-up exercise can be very expensive and funds are required during operations. Initially the cost of such

operations is directed to those involved in the operation. In line with the polluter pays principle, the costs should be directed to those responsible for polluting following cost recovery and compensation procedures (Appendix XI). Reimbursement of costs incurred shall be made following procedures as set in International Conventions together with a SAMSA designated officer, should be able to keep records of the operation and cost involved. Such records will assist to support the claims for cost incurred and to show that any action taken was a reasonable step without which the operation would have been a success.

The auditor must confirm that the action taken was solely meant to prevent or combat pollution that could end up being a threat or hazardous to the safety of health of the marine environment.

7 PROSECUTIONS

SAMSA shall bear the responsibility to secure evidence for possible use in court if the Principal officer has reason to believe that an offence has been committed and there is no admission of contravention on the part of the polluter(Appendix XII -SAMSA Circular). The gathering of such evidence must not interfere with operational activities of the salvors and other emergency services. It is necessary for SAMSA to establish an investigating Unit or team that will always be ready to follow up the events as they come.

8 TRAINING AND EXERCISES

It shall always be a requirement of this plan that SAMSA DEA&T and NDOT conduct regular training programmes and exercises for personnel, groups and shipping industry likely to be involved in a response to a spill from any source. These training programmes are designated to enable South Africa to have sufficient numbers of trained personnel to mount a credible and effective response to a pollution incident. Training programmes shall be conducted at three levels, which recognize the overall technical complexities of managing a spill response and that the associated knowledge required by personnel varies depending on their levels of responsibility. The following shall be the three levels of training to be conducted:

(1)Senior Management Level:-Level three: The focus of training shall be on the requirements of members of the National Response Team from DEA&T, NDOT and SAMSA responsible for high level of decision making.

(2) Middle management: Level Two: The focus shall be on the requirements of the middle management personnel including designated Shore logistics Officers& area controllers responsible for the preparation of contingency and response plans and the management and conduct of effective spill response operations and associated logistics, administrative and financial tasks.

(3)Operator: Level one: The focus shall be on the requirements of operational personnel, those undertaking on-site clean-up operations and operating spill response equipment.

The cost of this training shall remain with DEA&T as the authority with expertise and responsible for combating as delegated by section 52 of the SAMSA Act.

(4) Exercises should validate the plan and affected people should be allowed to practice, learn their roles and develop relationships. Personnel should familiarize themselves with the equipment and the plan in general. The equipment should be tested to ensure that it is in good working condition. Lessons learnt should be noted and improvements in the plan should follow. For the purposes of sharing responsibility the NDOT& SAMSA should share the responsibility and cost of an exercise as this could be very expensive. One should note that a real scenario is envisaged in the exercise.

9 MAINTENANCE AND REVIEW OF THE PLAN

9.1 Amendment

Contingency plans are evolving documents and as such require regular updating. All Contingency Plans therefore shall be subject to annual review taking into account policy changes and experience gained from incidents and exercises. Regular amendments should be made to reflect changes in contact, equipment and other details. Minor amendments to this Plan will be handled by SAMSA/DEA&T Liaison Committee according to suggestions by concerned and affected parties. Information for updating the Plan should be forwarded on a regular basis to SAMSA: Operations Manager.
