



Comisión

Nacional

de Energía

**INFORME SOBRE DIRECTRICES PARA EL  
VERTIMIENTO DE PLATAFORMAS Y OTRAS  
ESTRUCTURAS AL MAR.- PROTOCOLO  
SOBRE PREVENCIÓN Y ELIMINACIÓN DE LA  
CONTAMINACIÓN DEL MAR MEDITERRÁNEO  
CAUSADA POR VERTIDOS DESDE BUQUES  
Y AERONAVES O LA INCINERACIÓN EN EL  
MAR DEL CONVENIO DE BARCELONA  
(PROTOCOLO DUMPING).**

FECHA: 08/07/03

## **1.- INTRODUCCIÓN**

El Convenio de Barcelona para la protección del Mar Mediterráneo contra la contaminación marina (1976), es el marco jurídico para el Plan de Acción para el Mediterráneo (MAP) adoptado por el Programa de Naciones Unidas para el Medio Ambiente en 1975.

El texto del Convenio fue modificado por última vez en 1995, pero aun está en proceso de ratificación. Por tanto, actualmente está en vigor el Convenio para la protección del Mar Mediterráneo contra la contaminación que entró en vigor el 12 de febrero de 1978. Las Partes Contratantes de dicho convenio son: Albania, Argelia, Bosnia y Herzegovina, Croacia, Chipre, Egipto, Francia, Grecia, Israel, Italia, Líbano, Libia, Malta, Mónaco, Marruecos, Eslovenia, España, Siria, Túnez, Turquía y la Unión Europea.

El Convenio aporta un marco jurídico general de actuación, mientras que una serie de protocolos técnicos asociados aportan las líneas directrices de actuación para problemas específicos. Dentro del Convenio de Barcelona se enmarcan los siguientes protocolos:

- Protocolo para la protección del mar Mediterráneo contra la contaminación resultante de la exploración y explotación de la plataforma continental, el fondo del mar y su subsuelo (1994, Madrid).(PROTOCOLO OFFSHORE).
- Protocolo sobre la protección del Mar Mediterráneo contra la contaminación causada por fuentes y actividades situadas en tierra (1980, Atenas; enmendado en 1996).
- Protocolo sobre las zonas especialmente protegidas y la diversidad biológica en el Mediterráneo (1982, Ginebra, nuevo protocolo firmado en Barcelona en 1995).

- Protocolo sobre la prevención de la contaminación del mar Mediterráneo causada por los movimientos transfronterizos de desechos peligrosos y su eliminación (1996, Esmirna).
- Protocolo sobre cooperación para prevenir la contaminación por los buques y, en situaciones de emergencia, combatir la contaminación del mar Mediterráneo. (1976, Barcelona; nuevo protocolo firmado en Malta en 2002).(PROTOCOLO DE EMERGENCIA).
- Protocolo sobre prevención y eliminación de la contaminación del mar Mediterráneo causada por vertidos desde buques y aeronaves o la incineración en el mar (Barcelona, 1976; enmendado en 1995).(PROTOCOLO DUMPING).

Dentro del marco del Convenio firmado el 14 de marzo de 2001 entre la Comisión Nacional de Energía y el Ministerio de Medio Ambiente, con fechas 20 de febrero y 11 de mayo 2001, el Ministerio de Medio Ambiente remitió dos versiones del documento “Proyecto de Elaboración Líneas Directrices para la inmersión de plataformas y otras obras situadas en el mar” y solicitó de la CNE comentarios a las mismas. Estos documentos fueron los primeros borradores elaborados por la Secretaría del Convenio de Barcelona de acuerdo con lo previsto en el artículo 6 del “Protocolo sobre prevención y eliminación de la contaminación del Mar Mediterráneo causada por vertidos desde buques y aeronaves o la incineración en el mar” comúnmente denominado “Protocolo Dumping” aprobado en 1995.

El Consejo de Administración de la Comisión Nacional de Energía el 29 de mayo de 2001 aprobó el “Informe de líneas directrices para la inmersión de plataformas y otras obras situadas en el mar” y lo remitió al Ministerio de Medio Ambiente.

Con fecha 10 de febrero del año en curso el Ministerio de Medio Ambiente ha remitido una nueva versión de 22 de noviembre 2002 del documento “Proyecto de

Líneas Directrices para la inmersión de plataformas y otras obras situadas en el mar” para comentarios que son el objeto de este informe.

## **2.- SITUACIÓN DE LAS INSTALACIONES EN EL MEDITERRÁNEO ESPAÑOL.**

Si bien el proyecto en cuestión trata del desmantelamiento de cualquier tipo de estructura, las más afectadas por estas líneas directrices son las estructuras utilizadas en la explotación de hidrocarburos. A continuación se pasa a explicar la situación en el mar Mediterráneo español del sector de la explotación de hidrocarburos.

La plataforma Casablanca se instaló en 1981 a unos 30 kilómetros frente a las costas de Tarragona, en una zona con una profundidad de agua de 161 metros. Su peso total se sitúa entorno a las 15.200 toneladas.

La plataforma, cuya altura máxima sobre el nivel del mar se eleva a 78 metros, está compuesta por una estructura tubular reticulada de acero, denominada “jacket”, sobre la que se apoyan los equipos de cubierta.

El “jacket” tiene una altura de 170 metros y un peso total de 12.000 toneladas. Consta de ocho patas de 1,65 metros de diámetro. La plataforma está fijada al fondo del mar con doce pilotes clavados y cementados unos 90 metros bajo el mismo.

Los equipos de cubierta denominados comúnmente denominados “topsides”, son de forma modular. En Casablanca se dividen en: módulo de producción, módulo de potencia y control, módulo de alojamiento y helipuerto y módulo de perforación.

El módulo de producción dispone de una planta de proceso con una capacidad máxima de tratamiento de 60.000 barriles de crudo, donde se separan las tres fases (petróleo, gas y agua) que constituyen el fluido que surge del yacimiento. El petróleo separado, una vez medido, se envía a la refinería de REPSOLYPF en Tarragona a través de un oleoducto.

En el módulo de potencia y control se genera toda la energía eléctrica requerida para el funcionamiento de la plataforma, mediante grupos electrógenos que utilizan como combustible el gas separado del crudo producido.

El módulo de perforación constituye una unidad completamente autónoma del resto de la plataforma, con la que se han perforado varios pozos productivos, con desviaciones próximas a los 70 grados respecto a la vertical y longitudes totales de hasta 5.200 metros.

Además se produce y procesa a través de la plataforma Casablanca el crudo de tres campos mas, diferentes al que dio origen al primer desarrollo: “Rodaballo”, “Boquerón” y “Chipirón”. La producción total anual del conjunto de campos se sitúa entorno a 300.000 toneladas anuales de crudo lo que supone el 97% de la producción total del país.

La cuenca mediterránea es una zona de tradicional interés en la prospección petrolífera en España. Hay en la actualidad 15 permisos de investigación en vigor. Los titulares de esos 15 permisos existentes tienen objetivos de prospección muy variados. En algunos casos se buscan nuevos almacenamientos subterráneos y en otros yacimientos de crudo y gas natural por lo que cabe esperar descubrimientos y posibles desarrollos de nuevas instalaciones en el futuro que serían afectadas por estas líneas directrices en un futuro.

### **3.- ESTUDIO DE LA PROPUESTA DE 22 DE NOVIEMBRE 2002.**

El borrador de “Líneas Directrices para el vertimiento de Plataformas y otras obras situadas en el mar” elaborado por la Secretaría del Convenio de Barcelona consta de:

1. Una introducción al tema,
2. Una primera parte A referente a la evaluación y la gestión de las operaciones de desmantelamiento de plataformas y otras obras situadas en el mar,
3. Una parte B relativa a operaciones de vigilancia para el hundimiento de plataformas y otras estructuras en el mar,
4. Un Anexo A sobre tipos y fuentes potenciales de contaminantes en plataformas de perforación,
5. Un Anexo B sobre opciones para el desmantelamiento de plataformas,
6. Un Anexo C sobre técnicas de prevención de la contaminación y de limpieza para plataformas y otras estructuras.

En la introducción se explica que estas líneas directrices deben servir para que las autoridades nacionales evalúen las distintas opciones para el desmantelamiento de plataformas y otras obras situadas en el mar con objeto de evitar la contaminación en el Mar Mediterráneo de forma consistente con las provisiones del Convenio de Londres y el Protocolo de Barcelona. Se define y explica brevemente en qué consiste una plataforma y se define asimismo el término “otras obras situadas en el mar”.

En la parte A, relativa a la evaluación y la gestión de las operaciones de desmantelamiento de plataformas y otras obras situadas en el mar, primeramente se expone lo que establece el “Protocolo de Dumping” en relación con el tema.

Posteriormente, se explica cómo se debe realizar la evaluación de las características y composición de los materiales que se van a verter al mar, haciendo una distinción entre propiedades físicas, químicas y biológicas.

Se establece que las Partes Contratantes deben aplicar el criterio de la Mejor Práctica Medioambiental (“Best Environmental Practice”, BEP) para el desmantelamiento de plataformas y otras obras situadas en el mar, que significa la selección de la opción o combinación de medidas apropiadas que aseguren el mayor beneficio o el menor perjuicio para el medio ambiente en su conjunto, a un coste aceptable tanto a corto como a largo plazo.

Se presenta también una lista de las distintas opciones identificadas para el desmantelamiento de los diversos componentes de las plataformas.

Se establece que la evaluación de las opciones para el desmantelamiento de plataformas y otras obras situadas en el mar, debe basarse en la minimización de los impactos adversos en el medio ambiente mediante la aplicación de un plan de prevención de la contaminación y la Mejor Práctica Medioambiental. El propósito de dicho plan es asegurar que se eliminan en la mayor medida posible los residuos y otras sustancias que contaminan el medio ambiente marino, teniendo en cuenta que los contaminantes deben eliminarse antes de la inmersión de las partes que se consideren. En el documento se describen ciertas técnicas de prevención y limpieza de plataformas y otras obras situadas en el mar.

Para seleccionar la mejor práctica medioambiental, como mínimo habrán de considerarse las siguientes opciones de gestión:

- Planificación, incluyendo análisis de ingeniería / seguridad, económicos y medioambientales,

- La retirada de su emplazamiento de la totalidad o parte de la plataforma,
- La reutilización, reciclado o eliminación de los componentes que son retirados de su emplazamiento,
- La limpieza de los componentes que no son retirados,
- Las operaciones de cierre del emplazamiento, en su caso.

Se facilitan asimismo una serie de criterios para la selección del lugar en que se realizarán las operaciones de vertido, que deben tener en cuenta las características físicas, biológicas y de los sedimentos del lecho marino.

En el documento se enumeran los principales efectos adversos en el medio ambiente que es preciso evaluar y minimizar en relación con el vertido de plataformas y otras obras situadas en el mar y cuáles son los tipos de datos que dan una idea de dichos impactos.

Se establecen asimismo los requisitos para la autorización del vertido de plataformas y otras obras situadas en el mar.

Las diversas opciones de gestión de residuos para el desmantelamiento de plataformas se recogen en el Anexo B.

Antes de conceder un permiso para el vertido en el mar de una plataforma u otras obras situadas en el mar, la Parte Contratante en cuestión deberá:

- a) Cerciorarse de que se cumplen las condiciones establecidas en los puntos 2 a 6 de la parte A de las líneas directrices
- b) Proceder a una consulta con las demás Partes Contratantes de acuerdo con el procedimiento descrito en el punto 6.5 de la Parte A de las líneas directrices



- c) Formular un programa de vigilancia en los términos establecidos en la parte B de estas líneas directrices

#### **4.- COMENTARIOS AL DOCUMENTO DE 22 DE NOVIEMBRE 2002.**

Las líneas directrices presentadas el 22 de noviembre, se refieren al vertimiento de plataformas u otras obras situadas en el mar, para lo cual considera todo tipo de componentes de las mismas así como su posible vertido al mar.

El borrador de “Líneas Directrices para la inmersión de Plataformas y otras obras situadas en el mar” elaborado por la Secretaría del Convenio de Barcelona, enviado adolece de imprecisiones en la misma línea de los borradores anteriores de 2001. Estos errores hacen que la propuesta esté falta de coherencia en conjunto. Se considera, a pesar de las directrices indicadas, que estas líneas son una forma de poder verter al mar estructuras completas sin ningún tipo de discriminación y mezclando todo tipo de instalaciones sin tener en consideración en ningún caso por ejemplo la utilización de las mismas, sus fines o las diferentes legislaciones aplicables.

A la vista de este nuevo documento de 22 de noviembre, se ha efectuado en la CNE un trabajo de re-redacción de dichas las líneas directrices y se propone presentar al Ministerio de Medio Ambiente una contrapropuesta basada en dicho borrador, que dicho Ministerio podría proponer al Convenio de Barcelona como alternativa coherente.

La propuesta en cuestión se incluye en el Anejo 1.

## **5.- ANÁLISIS DE LA PROPUESTA DE LA CNE.**

La propuesta sigue el esquema de la Secretaría del Convenio y consta de:

1. Una introducción al tema,
2. Una primera parte A sobre cual ha de ser la recomendación concreta,
3. Una parte B sobre el marco en el que se debe actuar y los requerimientos para acceder a la obtención de una autorización de desmantelamiento en el que se prevea el vertido al mar de parte de las estructuras,
4. Una parte C sobre las operaciones de vigilancia en el desmantelamiento de instalaciones offshore no reutilizadas cuando se autorice el vertido de parte de las mismas,
5. Dos anejos uno sobre las opciones posibles de desmantelamiento en el mar con vertido al mar y otro sobre la prevención de la contaminación.

La propuesta en cuestión se refiere únicamente al desmantelamiento de instalaciones offshore que no van a ser reutilizadas. La inclusión de todo tipo de estructuras en un mismo paquete de líneas directrices no parece apropiado. Se definen perfectamente que son instalaciones offshore, sus tipos y qué deben ser consideradas como instalaciones offshore que no van a ser reutilizadas, así como las diferentes partes que pueden tener las mismas y cuales pueden ser objeto de vertido.

La propuesta básica es en que ninguna instalación offshore que no va a ser reutilizada puede ser dejada totalmente o parcialmente in situ o vertida al mar.

Se contemplan las siguientes excepciones a esta norma si cuentan con un permiso de la Autoridad Competente de la Parte Contratante bajo cuya jurisdicción se encuentre la instalación:

1.- Las instalaciones con un “jacket” de acero que pese mas de 10.000 toneladas podrán optar por desmantelamientos en la forma descrita en el Anejo 1.

2.- Las instalaciones flotantes o fijas de hormigón podrán optar por desmantelamientos en la forma descrita en el Anejo 1.

3.- Cualquier instalación offshore que no va a ser reutilizada puede ser dejada totalmente o parcialmente in situ o vertida al mar, siempre que por circunstancias excepcionales tenga daños estructurales o un deterioro tal que pueda demostrarse la inviabilidad de adoptar cualquier opción de desmantelamiento.

Antes de dar un permiso para estas excepciones la Parte Contratante en cuestión deberá:

- a) Cerciorarse de que se cumplen las condiciones establecidas en los puntos 1 y 2 de la parte B de las líneas directrices
- b) Proceder a una consulta con las demás Partes contratantes de acuerdo con el procedimiento descrito en el punto 2 de la parte B de las líneas directrices.
- c) Formular un programa de vigilancia de operaciones en los términos establecidos en la parte C de las líneas directrices.

El desmantelamiento de oleoductos y gasoductos asociados a las instalaciones offshore se regirán por lo establecido en el artículo 20 del Protocolo Offshore del mismo Convenio de Barcelona.

Se incluye así mismo la recomendación a las Partes Contratantes de mantener un inventario de instalaciones offshore actualizado. La actualización debería hacerse efectiva cada dos años.

La propuesta de la CNE es más avanzada desde el punto de vista medioambiental que la planteada por la Secretaría del Convenio de Barcelona originalmente y únicamente aplicable a las instalaciones offshore. Por otra parte dicha propuesta está más en línea con lo establecido en otros convenios internacionales firmados por España para el mismo tema. Adicionalmente las nuevas ideas contenidas en el borrador propuesto por la CNE están en la línea de actuación que el Ministerio del Medio Ambiente ha venido siguiendo en los últimos años.

## **6.- CONCLUSIONES.**

El borrador de 22 de noviembre, elaborado por la Secretaría del Convenio de Barcelona y remitido a la CNE por el Ministerio de Medio Ambiente, está en la misma línea de los borradores anteriores enviados en 2001. Como se ha venido exponiendo en este informe se estima una falta de coherencia en su conjunto.

Es por ello que se propone presentar al Ministerio de Medio Ambiente una contrapropuesta basada en dicho borrador, que dicho Ministerio podría proponer a su vez al Convenio de Barcelona como alternativa a la de 22 de noviembre y que se incluye en el Anejo 1.

# **ANEJO 1**



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**DRAFT**

**GUIDELINES FOR THE DISPOSAL OF  
DISUSED OFFSHORE INSTALLATIONS**

July 2003

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## **INTRODUCTION.**

### **1.- Preface.**

These guidelines are intended to assist the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) in the implementation of the Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea (the Dumping Protocol), hereinafter referred to as "the Protocol", with regard to the dumping of disused offshore installations into the Mediterranean Sea.

The Protocol was adopted on 16 February 1976 by the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea. The Protocol was amended and signed by 16 Contracting Parties on 10 June 1995.

These guidelines are intended for use by national authorities in evaluating applications for the dumping of disused offshore installations to prevent pollution in the Mediterranean Sea in a manner consistent with the provisions of the 1972 London Convention (Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, 1972) and/or the 1996 Protocol thereto.

### **2.- Background.**

It is recognized that the disposal of disused offshore installations at sea may have an adverse impact on human safety, health and the ecological and aesthetic value of the marine environment. For this reason, the Contracting Parties are urged to take all practicable measures to encourage the reuse, recycling or final disposal on land for the decommissioning of disused offshore installations in the Mediterranean.

These Guidelines consist of three parts. Part 'A' deals with the Recommendation to the Contracting Parties. This Recommendation should be followed to ensure that the disposal of disused offshore installations at sea is only considered as a special case when technically is not possible the reuse, recycling or final disposal on land. Part 'B'

deals with the assessment and management of disposal at sea. Part 'C' provides guidance on the monitoring of marine disposal sites.

### **3.- Requirements of the dumping protocol.**

In accordance with Article 4.1 of the Protocol, the dumping of wastes or other matter from ships and aircraft is prohibited.

Nevertheless, under the terms of Article 4.2(d) of the Protocol, an exception may be made to this principle for the dumping of platforms and other man-made structures, which may be authorized under certain conditions.

Under the terms of Article 5, the dumping of wastes or other matter listed in Article 4.2 requires a prior special permit from the competent national authorities.

Furthermore, in accordance with Article 6.1 of the Protocol, the permit referred to in Article 5 shall be issued only after careful consideration of the factors set forth in the Annex to the Protocol and taking into consideration article 20 of the Offshore Protocol.

Article 6.2 provides that the Contracting Parties shall draw up and adopt criteria, guidelines and procedures for the dumping of wastes or other matter listed in Article 4.2 so as to prevent, abate and eliminate pollution.

## **PART A**

### **RECOMMENDATION ON THE DISPOSAL OF DISUSED OFFSHORE INSTALLATIONS.**

**RECALLING** the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and the Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea (the Dumping Protocol),

**RECALLING** the relevant provisions of the United Nations Convention on the Law of the Sea,

**RECOGNISING** that an increasing number of offshore installations in the maritime area are approaching the end of their operational life-time,

**AFFIRMING** that the disposal of such installations should be governed by the precautionary principle, which takes account of potential effects on the environment,

**RECOGNISING** that reuse, recycling or final disposal on land will generally be the preferred option for the decommissioning of disused offshore installations in the Convention maritime area,

**ACKNOWLEDGING** that the national legal and administrative systems of the relevant Contracting Parties need to make adequate provision for establishing and satisfying legal liabilities in respect of disused offshore installations,

**THE CONTRACTING PARTIES TO THE CONVENTION FOR THE PROTECTION OF THE MARINE ENVIRONMENT AND THE COASTAL REGION OF THE MEDITERRANEAN (BARCELONA CONVENTION) RECOMMEND THAT:**

## DEFINITIONS.

1. For the purposes of this Guidelines,

"Offshore installation" means any man-made structure, platform, plant or vessel or parts thereof, whether floating or fixed to the seabed, placed within the Barcelona Convention maritime area for the purpose of offshore activities;

"Offshore activities" means activities carried out in the Barcelona Convention maritime area for the purposes of the exploration, appraisal or exploitation of liquid and gaseous hydrocarbons;

"Disused offshore installation" means an offshore installation, which is neither:

- a. serving the purpose of offshore activities for which it was originally placed within the maritime area, nor
- b. serving another legitimate purpose in the maritime area authorized or regulated by the competent authority of the relevant Contracting Party;

but does not include:

- c. any part of an offshore installation which is located below the surface of the sea-bed, or
- d. any concrete anchor-base associated with a floating installation which does not, and is not likely to, result in interference with other legitimate uses of the sea;

"Concrete installation" means a disused offshore installation constructed wholly or mainly of concrete;

"Relevant Contracting Party" means the Contracting Party, which has jurisdiction over the offshore installation in question;

"Steel installation" means a disused offshore installation, which is constructed wholly or mainly of steel;

"Topsides" means those parts of an entire offshore installation which are not part of the substructure and includes modular support frames and decks where their removal would not endanger the structural stability of the substructure;

"Steel jacket" means those part of the substructure of an offshore installation who gives most of the structural stability and it is constructed wholly or mainly of steel;

"Wastes or other matter" means material and substances of any kind, form or description.

"MAP" means Mediterranean Action Plan.

### **PROGRAMS AND MEASURES.**

2. The dumping, and the leaving wholly or partly in place, of disused offshore installations within the maritime area is prohibited.

3. By way of derogation from paragraph 2, if the competent authority of the relevant Contracting Party is satisfied that an assessment in accordance with Part B of these Guidelines shows that there are significant reasons why an alternative disposal mentioned below is preferable to reuse or recycling or final disposal on land, it may issue a permit for:

a. all or part of the steel jacket of a disused offshore steel installation weighing more than ten thousand tonnes in air; in accordance with the options listed in Annex 1, placed in the maritime area before {date to be decided},

b. a concrete floating or fixed installation or constituting a concrete anchor base, to be dumped or left wholly or partly in place as established in Annex 1,

c. any other disused offshore installation to be dumped or left wholly or partly in place, when exceptional and unforeseen circumstances resulting from structural damage or deterioration, or from some other cause presenting equivalent difficulties, can be demonstrated.

4. Before a decision is taken to issue a permit under paragraph 3, the relevant Contracting Party should first consult the other Contracting Parties in accordance with the Consultation Procedure established in Part B of these Guidelines.

5. Any permit for a disused offshore installation to be dumped or permanently left wholly or partly in place should accord with the requirements of Part B of these Guidelines.

6. Contracting Parties should report to MAP by {date to be established} and every 2 years thereafter, relevant information on the offshore installations within their jurisdiction including, when appropriate, information on their disposal for inclusion in the inventory to be maintained by MAP.

7. Contracting Parties should give a permit for the decommissioning of disused pipelines in accordance with article 20 of the Offshore Protocol.

#### **ENTRY INTO FORCE.**

8. This Recommendation enters into force {date to be decided}.

## **PART B**

### **1.- FRAMEWORK FOR THE ASSESSMENT OF PROPOSALS FOR THE DISPOSAL AT SEA OF DISUSED OFFSHORE INSTALLATIONS**

#### **1.1.- General Provisions.**

This framework applies to the assessment by the competent authority of the relevant Contracting Party of proposals for the issue of a permit under paragraph 3 of Part A of these Guidelines.

The assessment should consider the potential impacts of the proposed disposal of the installation on the environment and on other legitimate uses of the sea. The assessment should also consider the practical availability of reuse, recycling and disposal on land options for the decommissioning of the installation.

The assessment of the proposal for disposal at sea of a disused offshore installation should follow the broad approach set out below.

The assessment should cover not only the proposed disposal, but also the practical availability and potential impacts of other options. The options to be considered should include:

- a. re-use of all or part of the installation;
- b. recycling of all or part of the installation;
- c. final disposal on land of all or part of the installation;
- d. other options for disposal at sea.



## **1.2.- Assessment of the characteristics and composition of materials to be disposed at sea.**

The identification, description and characterization of potential sources of pollution is an essential prerequisite for any decision on whether a permit may be issued for the disposal at sea of a disused offshore installation. If a waste material is so poorly characterized that a proper assessment cannot be made of its potential impact on the environment, then that waste should not be dumped at sea and a permit should not be issued.

The characteristics of a waste or a mixture of waste materials from multiple sources should be evaluated in terms of their physical, chemical and biological properties. Different wastes require different considerations depending on the environmental transport, lifetime and fate of their components in the sea.

However, the characterisation of all types of wastes through chemical and biological analysis may not be necessary where the required pollution prevention plans are developed and implemented on the basis of best environmental practice (BEP). For example, waste analyses may be limited to appropriate measurements of the composition of major components, without it being necessary to determine the potential effects of specific materials where field observations are available on the impact of similar materials at similar sites in the vicinity.

### **1.2.1.- Physical characterization.**

The following physical properties of waste matter should be evaluated prior to dumping/disposal:

- the physical state of the waste as a solid, solid in suspension, sludge or liquid;
- the amount of the waste;
- the dimensions of the solid waste;
- the miscibility of the waste in water;
- the density or specific gravity of bulk materials and their ability to float or sink to the sea bottom;
- the rate of the physical deterioration of the waste in water;

- physical changes to the waste after release, including the possible formation of new compounds; and
- the characteristics of the waste in relation to:
  - its potential for re-floating and agglomeration as a result of surface water convergence;
  - its potential interference with fishing gear, shipping activities and amenities;
  - its potential impact in altering seabed sediments, grain sizes and consistency, resulting in adverse ecological effects on marine life; and the possibility of it washing up on beaches.

### 1.2.2.- Chemical characterization.

It is necessary to determine the chemical properties of a waste in order to assess its potential effects on water quality and on biota. Knowledge of the raw materials and production processes helps in identifying the probable composition of the waste.

The following chemical properties of waste matters should be evaluated prior to dumping/disposal:

- the chemical state of waste substances (inorganic-ionic, organic-complex, etc.);
- the chemical composition of the waste;
- the concentration of the waste;
- the acidity/alkalinity of the waste (pH);
- the chemical oxygen demand (COD) of the waste;
- the valence state of heavy metals in the waste;
- the flocculative and dispersive behavior of the waste in water;
- the degree of adsorption of the waste in seabed sediments;
- the solubilisation and/or mobilization of the waste in the seawater environment;
- and
- the rate of decomposition and formation of new alien compounds or other constituents in water.

### 1.2.3.- Biological characterization.

Wastes can have a biological impact in two ways. They may add biological material, and especially micro-organisms, or they may modify the physical and chemical environment, thereby affecting existing flora and fauna.

The following biological properties of waste matter should be evaluated prior to dumping/disposal:

- chronic and acute toxicity of the waste for marine organisms;
- the biological oxygen demand (BOD) of the waste;
- the bioavailability of the substances contained in the waste;
- the bioaccumulation and rate of uptake of the substances contained in the waste;
- the persistence of the substances contained in the waste;
- the biodegradability of the substances contained in the waste;
- the biotransformation of the substances contained in the waste;
- the probability of the production of taints or other changes to marine biota; and
- the probability of the development of fish discoloration and bacterial and viral fish diseases.

### **1.3.- Matters to be taken into account in assessing disposal options.**

The information collated in the assessment shall be sufficiently comprehensive to enable a reasoned judgment on the practicability of each of the disposal options, and to allow for an authoritative comparative evaluation. In particular, the assessment shall demonstrate how the requirements in paragraph 3 of Programs and Measures of Part A of these Guidelines are met.

The assessment of the disposal options should take into account, but need not be restricted to:

- a. technical and engineering aspects of the option, including re-use and recycling and the impacts associated with cleaning, or removing chemicals from, the installation while it is offshore;

- b. the timing of the decommissioning;
- c. safety considerations associated with removal and disposal, taking into account methods for assessing health and safety at work;
- d. impacts on the marine environment, including exposure of biota to contaminants associated with the installation, other biological impacts arising from physical effects, conflicts with the conservation of species, with the protection of their habitats, or with mariculture, and interference with other legitimate uses of the sea;
- e. impacts on other environmental compartments, including emissions to the atmosphere, leaching to groundwater, discharges to surface fresh water and effects on the soil;
- f. consumption of natural resources and energy associated with re-use or recycling;
- g. other consequences to the physical environment which may be expected to result from the options;
- h. impacts on amenities, the activities of communities and on future uses of the environment; and
- i. economic aspects.

In assessing the energy and raw material consumption, as well as any discharges or emissions to the environmental compartments (air, land or water), from the decommissioning process through to the re-use, recycling or final disposal of the installation, the techniques developed for environmental life cycle assessment may be useful and, if so, should be applied. In doing so, internationally agreed principles for environmental life cycle assessments should be followed.

The assessment shall take into account the inherent uncertainties associated with each option, and shall be based upon conservative assumptions about potential impacts. Cumulative effects from the disposal of installations in the maritime area and existing stresses on the marine environment arising from other human activities shall also be taken into account.

The assessment shall also consider what management measures might be required to prevent or mitigate adverse consequences of the disposal at sea, and shall

indicate the scope and scale of any monitoring that would be required after the disposal at sea.

#### **1.4.- Disposal at sea.**

In selecting the BEP for the disposal of disused offshore installations, the following range of management options should be considered as a minimum:

- planning, including engineering/safety, economic and environmental analyses;
- the removal of all or part of the disused offshore installation from the site;
- the re-use, recycling or disposal on land of parts which are removed from the site;
- the cleaning, where necessary, of parts which are not removed; and
- site clearance/shutdown operations, where appropriate.

##### **1.4.1.- Waste management options.**

The disposal options examined should include information on the characteristics of the installation and the conditions at the proposed dumping site. The economic and technical feasibility of the options under consideration should be specified and their potential effects on human health, living resources, amenities, other legitimate uses of the sea and the environment in general should be evaluated. The key aspects of the various management options identified for the decommissioning of disused offshore installations are presented in Annex 1.

The timing of decommissioning and disposal operations should be determined by the financial and strategic considerations of the individual operators of each installation.

Taking into consideration to the greatest extent possible the safety of workers, offshore installations should be cleaned of petroleum hydrocarbons and of other substances which are likely to harm the marine environment. Any other materials which may create floating debris should also be removed.

#### 1.4.2.- Assessment of management disposal plans.

The assessment of disposal options for offshore installations should be based on the underlying premise that any adverse impacts on the environment are to be minimized through the implementation of the pollution prevention plan and best environmental practice. The purpose of the pollution prevention plan is specifically to ensure that wastes and other substances which contribute to the pollution of the marine environment are removed to the maximum extent possible.

Contaminants should be removed from offshore installations prior to their disposal at sea and limitations on contaminating substances should be met through the implementation of the pollution prevention plan and best environmental practice. The vicinity of the offshore installation be cleared of debris that may interfere with other legitimate uses of the sea.

#### **1.5.- Selection of the dumping site.**

Matters relating to the criteria for the selection of the dumping site are addressed in greater detail in studies prepared by GESAMP (Reports and Studies No. 16: *Scientific criteria for the selection of waste disposal sites at sea*, IMO 1982).<sup>1</sup>

##### 1.5.1.- Assessment of the disposal site.

The criteria for selecting a new site for dumping operations should be determined so as to minimize interference with the environment and with other current and potential users of the sea. Basic information on the site under consideration should include the coordinates (latitude and longitude) of the disposal site, as well as its location with regard to:

- the nearest coastline
- recreational areas
- sport and commercial fishing areas
- areas of natural beauty or significant cultural or historical importance

- shipping lanes
- military exclusion zones
- engineering uses of the seabed (e.g. potential or ongoing seabed mining, undersea cables, desalination or energy conversion sites).

Finally, site selection criteria should include the physical, sedimentological and biological characteristics of the seabed and surrounding area in which the site is to be located.

#### 1.5.2.- Assessment of the site in the event of disposal *in situ*.

The basic characteristics of the site of the offshore installations have to be reassessed in the event of its use as a disposal site.

Consideration should also be given to any effects, which may be caused by an increase in certain constituents of the waste or by their interaction (e.g. synergistic effects) with other substances introduced previously into the area.

The risk needs to be examined of the material shifting from its position at the disposal site at some future time. The risk of the breakdown of the structure also needs to be assessed.

Any relevant information from baseline and monitoring studies at already established disposal sites should be taken into account.

#### 1.6.-Evaluation of the potential impacts of the disposal at sea of offshore installations.

Any adverse environmental impacts of the disposal at sea of disused offshore installations should be minimized through the implementation of the pollution prevention plan and best environmental practices. Such adverse effects should in any case be limited to the following:

- the disposal site of the disused offshore installation.
- the coastal and estuarine area of the Mediterranean Sea;
- onshore facilities for receiving and dismantling structures;
- recycling facilities; and,
- waste disposal facilities and sites.

Significant impacts at the disposal site of disused offshore installations disposed at sea may include:

- physical and chemical perturbation of seabed sediments;
- physical and chemical perturbation of the water column;
- short and long-term effects on pelagic and benthic invertebrates;
- short and long-term effects on fish and fisheries; and
- short and long-term effects on users of the sea.

When assessing the impact of disposal operations, it may be necessary to compare the physical and, where appropriate, the chemical or biological quality of the affected area with reference to sites located away from the disposal site. Experience of the selection of reference sites for biological and physical monitoring can be acquired from monitoring programs carried out in the vicinity of offshore installations. Such areas can be identified during the early stages of impact assessment.

Interference with the migration or spawning of fish or crustaceans, or with seasonal fishery activities, may be avoided by the imposition of timing restrictions on disposal operations.

### **1.7.- Overall assessment.**

The assessment shall be sufficient to enable the competent authority of the relevant Contracting Party to draw reasoned conclusions on whether or not to issue a permit under paragraph 3 of Programs and Measures of Part A of these Guidelines and, if such a permit is thought justified, on what conditions to attach to it. These conclusions shall be recorded in a summary of the assessment which shall also contain a concise summary of the facts which underpin the conclusions, including a description of any significant expected or potential impacts from the disposal at sea



of the installation on the marine environment or its uses. The conclusions shall be based on scientific principles and the summary shall enable the conclusions to be linked back to the supporting evidence and arguments. Documentation shall identify the origins of the data used, together with any relevant information on the quality assurance of that data.

## **2.- REQUIREMENTS FOR THE AUTHORIZATION OF THE DUMPING AT SEA OF OFFSHORE INSTALLATIONS.**

The Protocol establishes the permitting requirements for the sea disposal operations of a single disused offshore installation.

### **2.1.- Requirements for a permit application.**

Any application for a permit has to contain data and information specifying:

- The types, amounts and sources of the materials to be dumped;
- The location of the dumping site(s);
- History of previous dumping operations and/or past activities with negative environmental impacts;
- The method of dumping; and
- The proposed monitoring and reporting arrangements.

### **2.2.- Criteria for the evaluation of a permit application.**

Article 6.1 of the Protocol states that a permit shall be issued only after careful consideration of the factors set forth in the Annexes to the Protocol, article 20 of the Offshore Protocol or the criteria, guidelines and procedures adopted by the Contracting Parties. The criteria for the evaluation of a permit application, which should be applied on a case-by-case basis, include:

- reference data linked to particular methods of disposal or disposal sites, such as data on seabed conditions, quantities and position of discharged cuttings and concentrations of oil in sediments;
- the residual quantities of removed substances (cleaning efficiency) after completion of the cleaning of the installation to be disposed at sea; and,

- a comparison of the incremental impact of the disposal of a component in or around the stump of an installation as compared with the impact of its disposal at an alternative site.

Before considering the dumping of disused offshore installations, or parts thereof, at sea, every effort should be made to determine the practical availability of alternative land-based methods of treatment, disposal or elimination, as well as treatment to render the installation less harmful for dumping at sea, taking into consideration article 20 of the Offshore Protocol.

In special cases where it is decided the dumping of disused offshore installations, or parts thereof, at sea, this should be regarded as an exception. The practical availability of other means of disposal should be considered in the light of a comparative assessment of:

- their potential impact on the environment, including:
  - their effects on marine habitats and communities, and other legitimate uses of the sea;
  - the effect of their on-shore re-use, recycling, or disposal, including potential impacts on land, surface and groundwater and air pollution; and
  - the impact of the use of the necessary energy and materials (including an overall assessment of the use of energy and materials and the savings achieved through re-use, recycling or disposal options), including transportation and the resultant environmental impact.
- their potential impact on human health, including:
  - the identification of routes of exposure and the analysis of potential impacts on sea and land re-use, as well as of recycling and disposal options, including the potential secondary impacts of energy use; and

- the quantification and evaluation of the safety risks associated with disposal at sea, compared with onshore re-use, recycling and disposal,
- their technical and practical feasibility, including:
  - the evaluation of engineering capacities for specific types, sizes and weights of disused offshore installations; and
  - the identification of the practical limitations of disposal alternatives, taking into account the characteristics of the installation and oceanographic considerations.
- economic considerations, including:
  - an analysis of the full cost and savings of installation re-use, recycling or disposal alternatives; and
  - a review of costs in relation to benefits in such areas as resource conservation and the economic benefits of steel recycling.

Where the comparative assessment reveals that adequate information is not available to determine the likely effects of the proposed disposal option, including the potential long-term harmful consequences, then the precautionary principle should be applied. In addition, where analysis of the comparative assessment shows that the dumping option is less preferable than a land alternative, a permit should not be issued for the dumping.

Each assessment should conclude with a statement in support of a decision to either issue or refuse a permit for dumping.

Opportunities should be provided for public review and participation in the permit evaluation process.

### **2.3.- Conditions for issuing a permit.**

1. Every permit issued in accordance with paragraph 3 of Part A of these Guidelines shall specify the terms and conditions under which the disposal at sea may take place, and shall provide a framework for assessing and ensuring compliance.

2. In particular, every permit should:

a. specify the procedures to be adopted for the disposal of the installation;

b. require independent verification that the condition of the installation before the disposal operation starts is consistent both with the terms of the permit and with the information upon which the assessment of the proposed disposal was based;

c. specify any management measures that are required to prevent or mitigate adverse consequences of the disposal at sea;

d. require arrangements to be made, in accordance with any relevant international guidance, for indicating the presence of the installation on nautical charts, for advising mariners and appropriate hydrographic services of the change in the status of the installation, for marking the installation with any necessary aids to navigation and fisheries and for the maintenance of any such aids;

e. require arrangements to be made for any necessary monitoring of the condition of the installation, of the outcome of any management measures and of the impact of its disposal on the marine environment and for the publication of the results of such monitoring;

f. specify the responsibility for carrying out any management measures and monitoring activities required and for publishing reports on the results of any such monitoring;

g. specify the owner of the parts of the installation remaining in the maritime area and the person liable for meeting claims for future damage caused by those parts (if different from the owner) and the arrangements under which such claims can be pursued against the person liable.

3. Every report should set out:
  - a. the reasons for the decision to issue a permit under paragraph 3 of Part A of these Guidelines;
  - b. the extent to which the views recorded in the report of the special consultative meeting under paragraph 7 of the Consultation Procedure in Part B of these Guidelines, or expressed by other Contracting Parties during that Consultation Procedure, were accepted by the competent authority of the relevant Contracting Party;
  - c. the kind of permit issued.

#### **2.4.- Consultation procedure.**

1. A relevant Contracting Party which is considering whether to issue a permit under paragraph 3 of this Guidelines shall start this consultation procedure at least 32 weeks before any planned date of a decision on that question by sending to MAP a notification containing:
  - a. an assessment prepared in accordance with these Guidelines including the summary in accordance with Part B of them,
  - b. an explanation why the relevant Contracting Party considers that the requirements of paragraph 3 of Part A of this Guidelines may be satisfied;
  - c. any further information necessary to enable other Contracting Parties to consider the impacts and practical availability of options for re-use, recycling and disposal.
2. MAP shall immediately send copies of the notification to all Contracting Parties.
3. If a Contracting Party wishes to object to, or comment on, the issue of the permit, it shall inform the Contracting Party which is considering the issue of the

permit not later than the end of 16 weeks from the date on which the MAP circulated the notification to the Contracting Parties, and shall send a copy of the objection or comment to the MAP. Any objection shall explain why the Contracting Party which is objecting considers that the case put forward fails to satisfy the requirements of paragraph 3 of Part A of this Guidelines. That explanation shall be supported by scientific and technical arguments. MAP shall circulate any objection or comment to the other Contracting Parties.

4. Contracting Parties shall seek to resolve by mutual consultations any objections made under the previous paragraph. As soon as possible after such consultations, and in any event not later than the end of 22 weeks from the date on which the MAP circulated the notification to the Contracting Parties, the Contracting Party proposing to issue the permit shall inform the MAP of the outcome of the consultations. The MAP shall forward the information immediately to all other Contracting Parties.

5. If such consultations do not resolve the objection, the Contracting Party which objected may, with the support of at least two other Contracting Parties, request the MAP to arrange a special consultative meeting to discuss the objections raised. Such a request shall be made not later than the end of 24 weeks from the date on which the MAP circulated the notification to the Contracting Parties.

6. MAP shall arrange for such a special consultative meeting to be held within 6 weeks of the request for it, unless the Contracting Party considering the issue of a permit agrees to an extension. The meeting shall be open to all Contracting Parties, the operator of the installation in question and all observers to MAP. The meeting shall focus on the information provided in accordance with Part B of these Guidelines. The chairman of the meeting shall be the MAP Coordinator or a person appointed by MAP Coordinator. Any question about the arrangements for the meeting shall be resolved by the chairman of the meeting.

7. The chairman of the meeting shall prepare a report of the views expressed at the meeting and any conclusions reached. That report shall be sent to all Contracting Parties within two weeks of the meeting.

8. The competent authority of the relevant Contracting Party may take a decision to issue a permit at any time after:

a. the end of 16 weeks from the date of dispatch of the copies under paragraph 2 of this Consultation Procedure, if there are no objections at the end of that period;

b. the end of 22 weeks from the date of dispatch of the copies under paragraph 2 of this Consultation Procedure, if any objections have been settled by mutual consultation under paragraph 4;

c. the end of 24 weeks from the date of dispatch of the copies under paragraph 2 of this Consultation Procedure, if there is no request for a special consultative meeting under paragraph 5;

d. receiving the report of the special consultative meeting from the chairman of that meeting.

9. Before making a decision with regard to any permit under paragraph 3 of Part A of these Guidelines, the competent authority of the relevant Contracting Party shall consider both the views and any conclusions recorded in the report of the special consultative meeting, and any views expressed by Contracting Parties in the course of this procedure.

10. Copies of all the documents which are to be sent to all Contracting Parties in accordance with this procedure shall also be sent to those observers who have made a standing request for this to the MAP/MEDPOL.



## **PART C**

### **MONITORING OPERATIONS FOR THE DISPOSAL AT SEA OF DISUSED OFFSHORE INSTALLATIONS**

#### **1.- DEFINITION.**

For the purposes of assessing and regulating the environmental impacts of disposal operations, monitoring is defined as the repeated measurement of an effect, whether direct or indirect, on the marine environment and/or of interferences with other legitimate uses of the sea.

#### **2.- OBJECTIVES.**

In order to carry out the monitoring program in a resource-effective manner, it is essential for the objectives of the program to be clearly defined. The monitoring observations required at a disposal site tend to fall into two basic categories:

- predisposal investigations designed to assist in the selection of the site or to confirm that the selected site is suitable; and
- post-disposal studies intended to verify that:
  - the permit conditions have been met; this process is referred to as *compliance monitoring*; and,
  - the assumptions made during the permit issuing and site selection processes were valid and adequate to prevent adverse environmental effects as a consequence of disposal; this process is referred to as *field monitoring*, with the results of such reviews providing the basis for modifying the criteria for issuing a new permit for future dumping operations at existing and proposed disposal sites.

The ultimate purpose of monitoring is to assess the effects of the disposal activity on the biotic and abiotic environment.

### **3.- IMPACT HYPOTHESIS.**

The objectives of the monitoring program are dictated by the potential impacts of the disposal operation. The predicted consequences of these effects can be described as an *impact hypothesis*. This hypothesis is derived from the characteristics of the disused offshore installation to be dumped and the nature of the dumping site. The hypothesis should encompass spatial as well as temporal effects. The impact hypothesis forms the basis of the field-monitoring program.

In order to formulate an impact hypothesis, it may be necessary to conduct a baseline survey or surveys to describe the characteristics of the proposed receiving area and the variability of these characteristics over time. Ideally, initial observations should extend over at least one year so that seasonal variations can be detected. Observations will need to be carried out both in and around the disposal site and it must be accepted that it may prove necessary at any stage to change the position of the site in the light of observations made.

Survey observation results should identify primary areas of potential impact, namely those considered to be the most sensitive. Areas of impact should include alterations to the physical environment, the devaluation of marine resources and interference with other legitimate uses of the sea.

The predicted consequences of disposal activities are described in terms of effects on recipients (e.g. the nature of spatial and/or temporal change on the habitat, response or degree of interference with biological community use). The prediction of any relevant target/effect combination should be described in sufficient detail to guide field and analytical work in the subsequent monitoring program so that relevant information can be obtained in the most efficient and cost-effective manner.

## **4.- MONITORING.**

### **4.1.- Quality control.**

Quality control is defined as the operational techniques and activities that are used to fulfill requirements relating to quality. These include monitoring criteria and standards, sampling methods, sample locations and frequency, and reporting procedures.

Before any monitoring program is developed and implemented, the following quality control issues have to be addressed:

- What testable hypotheses can be derived from the impact hypothesis?
- What exactly should be measured?
- What is the purpose of monitoring a particular variable or physical, chemical or biological effect?
- In what compartment and at which locations can measurements be made most effectively?
- For how long should the measurements be carried out to meet the defined aim?
- With what frequency should measurements be carried out?
- What should be the temporal and spatial scale of the measurements made to test the impact hypothesis?
- How should the data from the monitoring program be managed and interpreted?

## **ANNEX 1**

### **OPTIONS TO BE CONSIDERED FOR THE DECOMMISSIONING OF DISUSED OFFSHORE INSTALLATIONS**

#### **Steel Jacket of disused offshore installations weighing more than ten thousand tones in air.**

1. Topple *in situ* in absence of cuttings
2. Partially remove and lay beside stump
3. Partially remove and deposit in controlled site
4. Partially remove and deposit at reef
5. Partially remove and deep sea dump
6. Partially remove, dismantle and dispose onshore
7. Totally remove in absence of cuttings and deposit in controlled site
8. Totally remove in absence of cuttings and deposit at reef
9. Totally remove in absence of cuttings and deep sea dump
10. Totally remove in absence of cuttings, dismantle and dispose onshore
11. Totally remove in presence of cuttings and deposit in controlled site
12. Totally remove in presence of cuttings, dismantle and dispose onshore

#### **Concrete Gravity Base Installations.**

1. Leave *in situ*
2. Re-float in absence of cuttings and deep sea dump
3. Re-float in absence of cuttings, dismantle inshore, dispose waste onshore

## **ANNEX 2**

### **POLLUTION PREVENTION IN DISUSED OFFSHORE INSTALLATIONS DISPOSAL.**

#### **Pollution prevention**

In matters relating to the protection of the Mediterranean Sea, it is essential for the Contracting Parties to cooperate with a view to promoting the effective and harmonized implementation of the Protocol for the Prevention and Elimination of Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft or Incineration at Sea.

For this purpose, the Contracting Parties should assist each other in investigating violations of anti-pollution measures that have occurred or are suspected to have occurred within the Mediterranean Sea area. This assistance should include public reports on findings and the lessons learned.

The Contracting Parties should encourage to consider the implementation of the following graduated range of preventive measures:

- the development and application of codes of good environmental practice covering all aspects of activities related to the disposal of disused offshore installations,
- mandatory labeling to inform users of environmental risks related to materials intended for disposal;
- the provision of suitable collection and storage media for various types of waste;
- the recycling, recovery and re-use of waste; and
- avoidance of the use of hazardous substances and products and the generation of hazardous wastes.

The Contracting Parties should consider the application to specific activities, products or groups of products of economic incentives and/or penalties to encourage the adoption of appropriate preventive measures and good environmental practices.

Furthermore, the Contracting Parties should consider the incorporation in licensing systems of appropriate preventive restrictions or prohibitions.