

# **“ENVIRONMENTAL PROTECTION PHILOSOPHY OF OFFSHORE OIL AND GAS PRODUCTION, PROCESSING PLATFORMS”**

## **1. Philosophy**

For complete details on the environmental protection philosophy, reference is made to the Waste, Emission and Noise Philosophy.

Details pertaining to implantation in design are defined in the above referenced document. The main criteria adhered to is described below.

## **2. Pollution by hydrocarbons**

- maximum oily water HC content from machinery space: 15 mg/liter
- maximum oily water content from drains:
- monthly average 15 mg/liter
- Oil content allowed in 4% of samples in one month 100 mg/liter

“Kuwait protocol” Regulation is also applicable: a maximum of 40 ppm of oil in water released to the sea shall be ensured.

Decks drainage:

Any contaminating equipment shall be fitted with retention devices such as retention basins. The retention devices shall be connected to the open drainage system from hazardous areas that shall be sized to handle rainwater, firewater and hydrocarbons spillage from any retention basin under any contaminating equipment. Rainwater and firewater from the decks outside the retention basins are discharged directly overboard.

## **3. Sewage**

A dedicated domestic sewage system shall be installed to collect and dispose water from any domestic areas. Sewage from domestic areas shall be totally independent from the process drain systems and from any drainage system in hazardous area. One package collects the “grey” and “black” water.

- "Grey" sewage, from kitchen, showers, laundry, etc.,
- "Black" sewage, from lavatories.

The discharge of non-pounded and non-disinfected sewage (“grey” and “black”) is permitted as the platform is situated at more than 12 nautical miles away from shore. Of consequence neither grey nor black sewage treatment is provided, except grinding for permitted value of floating solids. Effluents are routed overboard.

Due consideration shall be given to local regulations regarding the quality, quantity and discharge rates of processed sewage water to sea.

#### 4. Solids disposal

Waste shall be collected and stored before evacuation in a dedicated area, down the prevailing wind from the accommodations and with a minimum distance of raw food boarding path. Waste solids that can be hazardous, for any reason such as chemical, toxic, pollution, highly inflammable, radioactive, bacteriologic, etc. shall be managed by a specific procedure complying with local regulation.

Other types of solid wastes shall be handled as follows:

- The interim storage of solids waste shall be minimized.
- Neither compactor nor incinerator shall be provided.
- The normal procedure will be to evacuate solids waste by boat.

#### 5. NOISE POLLUTION

Noise of the equipment at offshore platform shall be limited by the control of Sound Pressure Level ( $L_p$ , measured in decibels (dB) reference  $20 \times 10^{-6}$  N/m<sup>2</sup>) and Sound Power Level ( $L_w$ , measured in decibels (dB) reference 10–12 watts), The noise criteria and limits established in this document are intended to reduce the risk of hearing loss to workers, provide satisfactory surroundings for communication in the work area and limit environmental impact of noise generated within the platform.

##### Hearing Conservation Limits

EEMUA 140 defines a “Work Area” as any position not less than 1m from equipment surfaces accessible to personnel, or any position where an operator’s ear may be exposed to noise in the normal course of duty. It includes any platform/walkway, ladder or stair. The noise levels in any Work Area shall not exceed the applicable noise limits given in table below, except where the area is defined as a Hearing Protection area.

##### OVERALL NOISE LIMITS

Type of Noise Limit	Limit Code	Area Description	Maximum Allowable SPL dB(A)
Off-shore platform	AL	Absolute Limit Any area in “upset” conditions	135
	R1	On-platform work areas in normal operation	95

Notes to TABLE:

1. Where equipment emits a fluctuating or intermittent noise:
  - a) The equivalent continuous sound level over the noisiest 8 hours shall meet the specified work area noise limits.
  - b) The maximum level shall not be more than 10 dB higher than the work area limits.

2. The work area noise limits shall not exceed under any conditions unless otherwise agreed. Conditions of operation include commissioning, start-up, production phase, shut-down of the platform.
3. The absolute limit shall not exceed in any situation excluding calamities. "Any situation" includes emergencies such as release from safety valves.

### **Hearing Protection Area Noise Limits**

Hearing Protection Areas are those on the platform where it is not reasonably practicable to reduce the noise at source below the Work Area Limit. The Absolute Limit remains valid in such areas. Areas around noisy equipment can be expected to become Hearing Protection Areas. If in localized areas, it is unavoidable that the Work Area Limit will exceed, agreement shall be obtained from Company to proclaim such area as a Hearing Protection Area. Company agreement may include a maximum allowable noise level for the area under consideration. Such a Hearing Protection Area Limit may be between 95 and 120 dB (A). At the boundaries of Hearing Protection Areas, permanent warning signs shall be displayed/erected of the type given in BS 5378.