Guidelines for bunding of temporarily stored liquids offshore

energy institute

GUIDELINES FOR BUNDING OF TEMPORARILY STORED LIQUIDS OFFSHORE

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1 INTRODUCTION

This guidance sets out recommended good practice in determining bunding requirements for temporary storage of liquids in oil and gas operations offshore. These liquids are, in the main, contained within temporary equipment or storage containers that are brought on to the installation and can be moved to a point of use. Some examples are 25 litre containers, 205 litre drums and intermediate bulk containers (IBCs). Fixed, permanent bulk storage tanks and fixed equipment are outwith the scope of this document.

The guidance is intended to allow a bunding policy to be developed and as a practical tool for operations personnel. It is risk-based to allow flexibility in application to all situations likely to arise offshore, while recognising there may be other operational imperatives. It is intended to help support the demonstration of risk reduction to as low as reasonably practicable (ALARP) and of using best available technique (BAT) to prevent marine pollution.

1.1 RELEVANT LEGISLATION AND GUIDANCE

At the time of preparing this guidance, there was no specific legislation or regulatory guidance providing direction on offshore bunding requirements. However, under the provisions of the *Offshore Petroleum Activities (Oil Pollution Prevention And Control) Regulations* (OPPC) and *The Offshore Chemicals Regulations,* it is an offence to release oil or chemical to sea and, additionally, OPPC permits include a condition to prevent releases.

This guidance has drawn on the principles from various regulatory sources including the *Petroleum Act* and associated regulations, Health and Safety Executive guidance and the Marine Pollution (MARPOL) Convention. As a high-level summary, the key themes taken into account are:

– releases/spills to sea, and discharges without a permit, are an offence;
– good oilfield practice helps prevent spills and minimise pollution;
– BAT should be used to prevent pollution, and
– safety risks must be controlled and reduced to ALARP.

1.2 KEY MESSAGES

Key messages include:

– Stock control, including minimisation of inventory, is advantageous.
– New, sealed containers are not a significant source of risk, though siting in areas of high risk (e.g. on open grating, adjacent to drains to sea or in areas where there is risk of damage) increases this risk.
– Controls should be focused on hazardous liquids and on activities involving opened containers, particularly when filling or decanting.
– Bunding should be provided where possible, and maintenance and inspection embedded in installation procedures.
– Bunding should never significantly increase occupational safety or process safety risks, and issues such as handling and fire management should always be considered.

A bunding policy should optimise bunding resources along with drainage, procedures and personnel awareness and training to minimise the risks by focusing on the most hazardous or likely releases, with an ongoing improvement programme. New installations should be designed to minimise the risk of pollution as an integral part of layout design, logistics planning and handling operations.

1.3 OTHER BARRIERS AND CONTROL MEASURES

Bunding is one method to minimise risk of releases to deck or sea. Many other controls or barriers are at least as important. Before a decision on bunding is made in a particular circumstance, the other barriers and controls present should be evaluated and the most appropriate combination should be used to demonstrate that risks are minimised to ALARP and that BAT has been employed.

It is anticipated that the approach outlined will enable focusing of audits, such as via the operator's environmental management system (EMS), towards prioritisation of the reduction of containment risks and the implementation of action plans for continuous risk reduction.

1.4 THE GUIDELINES

The guidelines are structured by the flow chart in Figure 1 that illustrates the bunding decision process. Section 3 provides best practice pre-bunding controls that should be employed before bunding is considered.

Section 4 provides details on specific measures and controls as referenced in the flowchart for bunding decision process, including design and operation of bunding, low, medium and high risk controls, specific measures to be addressed in planning and assurance processes, bunding design and equipment, as well as specific guidance on chemical storage.

The annexes of the guidelines are provided to illustrate their context, including examples of how the guidance may be applied. These are generic and should not be read as direct recommendations for any specific situation, since site-specific judgements are required.