



# UXO Mitigation of Offshore Sites

EPI provide the support to help you mitigate maritime UXO hazards at your site. We used highly qualified and experienced ex-Navy bomb disposal experts with extensive commercial knowledge to support your Project Team. Following international best practice, we help you navigate the UXO risk management and mitigation process through the Project Phases.

## Site Selection Phase

*How do we ensure it is safe to operate on our site and how can the site can be assessed for UXO hazards so we can protect our personnel and assets?*

### UXO Preliminary Risk Assessment:

By conducting a desk top study the possible UXO hazards for the site can be indicated.

EPI can provide the preliminary information to decide if the proposed site requires further investigation for possible UXO contamination.

## Design & Engineering Phase

*The Preliminary Risk Assessment (PRA) indicates possible UXO contamination, how do we choose the right UXO specialists to advise the Project Team on the next stage and who can provide assurance that the information provided is valid?*

### UXO Detailed Risk Assessment:

If the PRA indicates the presence of UXO then a Detailed Risk Assessment may be required. With specialist support to the Project Team the UXO risk can be further defined. EPI is able to assist by providing:

- UXO technical specialists to help define possible UXO detection parameters
- Assistance in choosing the right geophysical survey contractor
- Assist with survey design
- Provide independent QA/QC for Survey and UXO data
- Written UXO Detailed Risk Assessment

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## Construction Phase

*The Detailed Risk Assessment has now identified possible UXOs at the Project site. How do we safely identify and if necessary, get rid of those hazards? Who and what do we need to help make the site safe to work on?*

### **UXO Risk Mitigation Strategy – Planning:**

Working closely with your Project Team EPI can, using expert marine UXO specialists, help plan the strategy required to identify the UXOs and what mitigation is required. Part of this process will be to provide independent advice on the best contractors to positively identify each pUXO before mitigation. To enhance the UXO mitigation planning EPI can also provide environmental specialists for acoustic and protected species monitoring, offshore HSE experts and vessel auditors.

*The Diving and/or ROV teams are about to start operations to identify and dispose of the UXOs. How do we ensure they are operating safely, following best practice and the requirements of the contract? Is there a safe level of UXOs?*

### **UXO Risk Mitigation Strategy – Delivery:**

An independent overview of the contractor's work will help provide confidence the site is being made safe (to ALARP level) from UXOs. EPI can provide independent experienced and expert UXO personnel for the following:

- UXO QA/QC (often called the UXO Client Representative)
- UXO Supervisor to monitor the safety aspects of the operations
- Confirmation the UXO risk reaches As Low As Reasonably Practicable (ALARP)
- Critique of the final UXO report

Additionally EPIs integrated services can provide:

- Environmental monitors – MMO's/PSOs, PAM operators, etc

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In the complex arena of marine munitions disposal most UXO companies opt for a high-explosive donor charge to detonate (high order) the UXO with little regard for the environmental damage to the sea bed or wildlife. EPI have partnered with a specialist disposal company that can provide sub-sonic low order deflagration techniques causing disruption not detonation. This technique is cost effective and uses grammes of explosives, not kilogrammes, and significantly reduces the seabed damage and acoustic pollution.