

Topic: Generation of a Quality Guideline for the Treatment of Unexploded Ordnance Faced During Offshore Wind Park Construction

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Summary

Old ammunition poses a threat during the construction of offshore wind parks. The increase in knowledge about the potential impacts of the ammunition has led to an urge to address the problem on a strategic level. In order to tackle the challenge, a quality guideline for the handling of ammunitions in the offshore environment was developed. This was achieved through an iterative and cooperative process that involved relevant stakeholders.

1. Background

Old ammunition, commonly referred to as unexploded ordnance (UXO), poses a considerable threat during the construction of offshore wind parks. If activities surrounding the detection and clearance of UXO are executed erroneously, managed poorly or even overall omitted, UXO threaten the lives of construction workers, the construction schedule, marine fauna and the public image of the involved parties. At the same time, preserving comprehensively high quality during UXO operations in the offshore environment, has turned out to be a challenging endeavour for a number of reasons. As players from diverse sectors enter into this attractive market, significant cost pressure has developed, which is ultimately threatening to deteriorate operational quality. In addition, the alluded judicial areas are manifold and oftentimes not rigorously regulated.

The successive increase in knowledge about the potential impacts of the UXO legacy has led to an urge to address the problem on a strategic level. In order to tackle the challenges raised above, the Institute for Infrastructure and Resources Management (IIRM) of Leipzig University has developed a quality guideline for the handling of UXO in the offshore environment. This quality guideline is posed to serve as a normative reference framework for all stakeholders involved in UXO operations, that are part of wind park development.

2. Method

The key to the composition of a widely recognized normative document is stakeholder involvement. Initially, a comparative analysis of existing workflows addressing the domain was

conducted and the four phases of handling offshore UXO were identified. The generation of a representative quality guideline must be conducted in an iterative and cooperative manner. Ultimately, stakeholder involvement is the foundation for wide future recognition and application of the document. Accordingly, workshops with emphasis on different aspects of offshore UXO operations were organized. During these workshops quality drivers and requirements of the four individual phases were identified. A primary version of the quality guideline was drafted, which was then made available to domain experts for annotation. These comments were subsequently evaluated and for the greatest part considered in the secondary version of the document. As the last step, expert groups discussed final details and the release version of the quality guideline was authored.

3. Results

The quality guideline for the handling of UXO in the offshore environment addresses the four phases of the desk based pre-investigation, the technical investigation, the investigation of suspected UXO points as well as the clearance and disposal. For each of these phases a detailed process workflow was identified. These processes are then characterized by their involved stakeholders as well as those stakeholders' requirements and responsibilities. On a process level the prerequisites for involved personnel, for utilized technology as well as for requirements regarding reporting and documentation are laid out. The final chapter is a comprehensive delineation of relevant technical and natural quality drivers and their threshold values, which serve as operating limits during offshore UXO operations.