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Decommissioning of large offshore structures – The role of an Independent Review Group (IRG)

W.B. Wilkinson [a], T. Bakke [b], G.F. Clauss [c,*], R. Clements [d], W.D. Dover [e], J. Rullkötter [f], J.G. Shepherd [g]

[a] Millfield House, Leintwardine, Craven Arms, Shropshire SY7 0LB, United Kingdom
[b] Solliveien 48, NO-1366 Lysaker, Norway
[c] Division of Naval Architecture & Ocean Engineering, Technical University of Berlin, Sekr. SG-17, Salzufer 17–19, 10587 Berlin, Germany
[d] Rock Edge, 3, Windle Hill Church Stretton, Shropshire SY6 7AP, United Kingdom
[e] UCL Mechanical Engineering, University College London, Torrington Place, London WC1E 7JE, United Kingdom
[f] Institute for Chemistry and Biology of the Marine Environment, Carl von Ossietzky University of Oldenburg, P.O. Box 2503, D-26111 Oldenburg, Germany
[g] Ocean & Earth Science, National Oceanography Centre Southampton, University of Southampton Waterfront Campus, European Way, Southampton SO14 3ZH, United Kingdom

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ABSTRACT

Most proposals for the construction or decommissioning of large offshore structures will need to address a range of issues including the use of innovative technologies, environmental impact, health and safety risks, regulatory requirements and public acceptability. Usually, several options will be examined and run through a Comparative Assessment before a final selection. There is also the need to keep stakeholders informed as the project proposals develop. Many of the issues require complex scientific or engineering studies and risk assessments frequently outsourced to contractors. The information in their reports feeds the Comparative Assessment. However, it may be difficult for stakeholders, or even the regulating agency, to judge the veracity of such technically complex issues and feel confident that the evidence for the final project proposal is soundly based. Failure to adequately exchange information has led to open confrontation in the past. An approach which can provide greater transparency and confidence in the outcome is to set up a review group of independent professionals with wide expertise at the outset of a project. This paper discusses the benefits of an Independent Review Group (IRG) to the Commissioning Organisation, regulating authorities, the industrial sector and stakeholder public interests, and describes the experience of the authors with such a body.

1. Introduction

Over the last 15 years the authors have been involved, either individually or collectively, in giving independent, expert, objective advice to either the oil industry or regulating authorities on a range of activities concerned with the decommissioning of large offshore oil platforms, pipelines etc in the North Sea and beyond. These have included the Brent Spar storage buoy, the UKOOA Drill Cuttings Initiative, the Maureen platform, the NW Hutton platform and pipelines, the Ekofisk storage tank and the Brent platforms and pipelines. It is considered that the procedures developed in establishing and managing independent review bodies in relation to such activities and the lessons learned should be relevant to those concerned with proposals for large new engineering works or the decommissioning of existing structures, whether or not these are related to the marine sector of the oil industry.

Almost all proposals for the construction of new large engineering works or the decommissioning of existing works need to consider, for example:

- the use of existing, or the development of complex new, technologies (e.g. new materials, complex structural analysis, and methods for the assessment of degradation of strength);
- assessment of risks of project failure and the possibility of remedial actions;
- estimation of the probability of accidents or loss of life to the workforce and others;
- detailed consideration of a proposal's local and regional environmental impact;
- energy balance and CO2 emissions;
- estimates of very long-term changes and the eventual fate of structures;

* Corresponding author. Tel.: +49 176 96774740; fax: +49 30 314 22885.
E-mail address: clauss@naoe.tu-berlin.de (G.F. Clauss).

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- commitment to long term monitoring/maintenance as appropriate;
- minimisation of costs while meeting regulatory and/or other requirements;
- consultation with a wide range of stakeholders;
- assessment of societal impacts;
- public acceptability so that damage to a Commissioning Organisation's reputation may be avoided;
- approval by regulatory authorities;
- recycling of materials or reuse of facilities;
- compliance with national or international regulations.

2. Comparative Assessment

Public policy impact assessments are formal evidence based procedures concerned with constitutional, legislative and judicial decisions controlled by the state. These procedures assess the economic, social and environmental effects for a range of policy options. They have been adopted by OECD countries and the European Commission. Impact assessments at a project level have tended to focus on environmental issues. These resulted from the 1960s EIA legislation in the USA and the 1980s and subsequent European Directives. The Directives require an assessment of the effects of certain public and private projects which could have a significant impact on the environment before development is granted. There is a requirement to examine a range of options, pre- and post- development environmental impacts, monitoring and public consultation. However with most large projects, while environmental concerns need detailed consideration, there may be many elements which extend beyond these e.g. technical feasibility, new technologies, long-term structural stability, and costs. Thus with many large projects there will be a number of options to be explored and within each of these there will be a range of different engineering, scientific, cost, safety aspects to be considered before the Commissioning Organisation (CO) makes its final choice. These options will have differing outcomes in terms of the requirements listed above (Section 1) and consequently a Comparative Assessment of them needs to be undertaken, followed by a judgement as to the most acceptable compromise overall. With some projects there is a regulatory stipulation for a Comparative Assessment of options and this is to be presented when formal approval of the selected option is sought from the regulating agency. However, in some situations, the highest ranked option which emerges from the CA may not always be the option selected by the CO. Reputational considerations, business opportunities, stakeholder/public concerns etc. may influence the CO's final choice.

The finally selected and, if required, formally approved option may not be seen as fully acceptable to all interested parties; e.g. some stakeholder groups may consider that the environment will be less well protected than they would wish, others that societal factors have not been fully addressed, e.g. that there will be less local employment resulting from the selected option than from others examined in the Comparative Assessment. Other stakeholder groups, while not necessarily being totally satisfied with the proposed option, may be more willing to accept it if the CO has, during the development of its proposals and the associated Comparative Assessment process, kept them informed of the engineering, scientific and other investigations made and the rationale leading to the CO's final choice. Failure of the CO to enter into an adequate exchange of information with stakeholder groups and the public at large has led to open confrontation in the past.

One ‘cause celebre’ involved the disposal of the Brent Spar oil storage and tanker loading buoy located in the Brent Field of the northern North Sea. In 1995, this small structure was no longer needed and was towed towards North Feni Ridge (approximately 250 km from the west coast of Scotland), a 2.5 km deep site on the eastern North Atlantic continental margin, where it was to be sunk. Greenpeace actively interceded and occupied the Spar. One of its concerns was that they believed the structure contained large amounts of residual oil and other contaminants (heavy metals, polychlorinated biphenyls (PCBs), etc). The operation was curtailed by the CO following major public protests, especially in Germany, and the Brent Spar was returned to Norway for dismantling (an option that had previously been discounted) where several structural sections were used as foundations for a harbour construction (Owen and Rice, 1999; Woodham, 1999). The Greenpeace action attracted much public support and, in the short term, damage to the CO's reputation and sales (Anonymous, 1999). The subsequent enquiry, led by the Natural Environment Research Council, in which several of the authors were involved (Natural Environment Research Council, 1996, 1998) showed that the quantity of polluting material on Brent Spar was actually very small and that its impact on the marine environment would have been negligible (Owen and Rice, 1999). If detailed information on the proposal for disposal of Brent Spar and its content had been ascertained, and made available to stakeholder groups and discussed with them as concepts were developed, perhaps this method of disposal would have been accepted; or perhaps the CO, recognising the concerns against its preferred option, would have developed a more acceptable alternative.

Many of the issues to be considered during the development phase of a major project need complex scientific and engineering studies and risk assessments. Such work is frequently outsourced by CO's to consulting/contracting organisations with specific experience in the sector. These organisations report back to the CO's who use the information and analyses in these reports for their Comparative Assessments. The question inevitably arises as to the objectivity of such processes. CO's, albeit subconsciously, may draft the ‘Scopes of Work’ for such studies in a way that possibly favours their preferred outcome. The consultants/contractors, albeit subconsciously, may report in a way that will lead to a continuation of their work stream. How then can stakeholder groups and the regulating/accrediting agencies judge the worth/veracity of such technically complex issues over a very wide range of topics and feel confident that the evidence on which the CO decisions and final proposals are made is soundly based? A CO may hold public meetings to present the favoured option, but can the public or even well informed stakeholder bodies always be expected to understand the often scientifically or technically complex material which a CO has used in project selection?

Widespread concern may lead to the need for a public enquiry. Expert witnesses can then be employed by the concerned parties to examine the evidence base as provided by the CO. In some situations a public enquiry may be unavoidable and necessary but in the authors' experience public enquiries are sometimes very confrontational and decisions can be swayed by advocacy rather than carefully considered and soundly based engineering or scientific evidence. However, one approach which may avoid the need for a public enquiry or, if one is required, should lead to greater transparency, is for the CO or possibly a governmental or other body to establish and fund from the outset a group of independent professionals with a breadth of expertise and collective experience covering the range of issues likely to be encountered within the ambit of the project. The group should be in the position to consider in detail the information base as it grows during the period of the full Comparative Assessment process (which may take several years), and its eventual use by the CO in the final project selection.

Such a group needs to recognise the importance of bridging the gap between expert opinion and the public that may be