



Offshore risk regulation: A comparative analysis of regulatory framework in Ghana, the United Kingdom and Norway



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ABSTRACT

This paper assesses Ghana's offshore health and safety regulatory regime in the context of international best practice in the upstream oil and gas industry. It contributes to the discussion of the emerging issue of offshore risk regulation in new petroleum producing countries. We present a comparative analysis contrasting two leading safety regimes namely the United Kingdom and Norway to Ghana's emerging regime to benchmark common features as well as weaknesses. Our findings indicate that Ghana requires a robust regulatory regime that ensures that health and safety risks are properly delineated if the country is to avoid catastrophic accidents. This is especially important as these risks are more pronounced with deepwater operations such as those prevalent in the country's petroleum basins. We propose the enactment of a general Health & Safety at Work law in Ghana backed by subsidiary regulations to harmonise the disjointed and sometimes incoherent health and safety provisions. Additionally, we propose that the health and safety regulatory function of the Ghana Petroleum Commission should be decoupled to form an independent Competent Authority as activity levels and the degree of complexity of operations increase to prevent conflict of interest between its regulatory and licensing functions.

1. Introduction

The complex nature of operations in the upstream oil and gas industry implies that substantial risks are bound to be created in all phases of the value chain from exploration to development and production, and eventual decommissioning. Drilling in sometimes up to 10,000 feet of water to reach complex sandstone reservoirs carries significant project risks. Globally, the industry has taken the initiative over the last decade towards minimising the effects of its operations on the health and safety of personnel and the environment with regard to spills and releases ([International Association of Oil and Gas Producers, 2012](#)).

Regulation based on welfare economics and public policy has been integral in reducing incidents and accident rates in the industry and remains the major regulatory tool. The common societal values stating that people should be protected against accident risks thus imply that no use of technology should damage individual or public interests (Baldwin and Cave, 1999 cited in [Lindøe and Engen, 2012](#)). The offshore oil and gas regulator's paradigm is thus set within the context of ensuring Pareto optimal outcomes for the wider society from a public policy perspective where clean air and environment are valued and considered public goods as well as ensuring that unnecessary cost

burdens that may delay projects to the extent of affecting the security of supply are not imposed on operators. Thus, a cost-benefit approach to regulation provides a good platform for balancing the respective needs of the wider society and operators towards meeting the set regulatory compliance standards.

The global oil and gas industry shares common features to the extent that major operators, sub-contractors and others within the value chain operate with similar equipment and similar exploration, drilling and production procedures that are subject to similar industrial standards and documentation created by a network of expert actors and an international scientific and technical community ([Lindøe et al., 2012](#)). Given that similar processes are involved in the extraction of hydrocarbon resources, why then would we expect occupational health and safety (OHS) statistics to vary across the different producing regions and to what extent do the regulatory provisions affect these outcomes? Past incidents such as the 1988 Piper Alpha platform explosion, in which 167 offshore personnel died in the North Sea and the 1980 Alexander Kielland disaster, a floating platform for off-duty workers which capsized in the North Sea, killing 123 people have been rallying points for industry reforms in terms of the way regulation of offshore risk is carried out ([Norwegian Petroleum Directorate, 2010](#)). The recent Deepwater Horizon accident in the US Gulf Coast, which led to 11 lives

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being lost with an estimated 206 million gallons (4.9 million barrels) of oil being spilt, has renewed calls for regulatory reforms and interventions in the industry (Ramseur, 2015).

Following the discovery of offshore hydrocarbon resources in Ghana in 2007, various legislation such as those that set up the Petroleum Commission, the industry regulator, has been enacted in an attempt to bring international best practice standards.¹ However, if Ghana is to avoid catastrophic accidents such as the explosion on the Deepwater Horizon drilling rig in the US Gulf of Mexico, a robust risk regulation regime that ensures that health, safety and environmental risks are properly delineated will be pivotal. This is especially important given the challenges that are often associated with deep water operations such as those prevalent in Ghana's offshore petroleum basins. Ghana is regarded as having a good regulatory regime in Africa when it comes to oil revenue management (Oxford Business Group, 2013). However, the regulation of offshore health and safety cannot be said to have the same level of clarity as we do with revenue management.

This paper discusses the offshore health and safety regulatory regime in Ghana and proposes a unified and cohesive health and safety management system and law based on goal-setting principles. It contributes to the discussion of the emerging issue of offshore risk regulation in new petroleum producing countries. We contrast two leading offshore health and safety regimes namely the United Kingdom and Norway to Ghana's emerging regime, and specifically analyse the regulatory regime in terms of the political, legal and administrative structures and HSE framework within the context of distilling the effective elements that facilitate greater industry and stakeholder collaboration.² If Ghana is to avoid catastrophic accidents such as the explosion on the Deepwater Horizon drilling rig in the US Gulf of Mexico, a robust regulatory regime that ensures that health and safety risks are properly delineated will be pivotal. Fundamentally, offshore regulatory standards must be informed by appropriate risk tools and risk analysis, and if properly tailored, they ultimately lead to a reduction in potential accidents, injuries, spills and environmental releases with lower social costs and externalities.

2. Background and international context to offshore risk regulation

2.1. Regulatory focus in the United Kingdom

Before the Piper Alpha accident, the regulatory focus in the UK offshore oil and gas industry was based on a set of prescriptive based rules that were complex in terms of reporting structures and had minimal risk weightings attached to them (Miller, 1991). The management of the safety and welfare of people in the workplace up till the 1970s was controlled by a plethora of prescriptive rules and regulations based on industry standards,³ knowledge and experience (Inge, 2007; Miller, 1991; Paterson, 2000). These prescriptive regulations developed during the early days of North Sea oil and gas operations in the 1960s were based on Model Licence clauses created on the back of an old onshore regulatory regime for the exploration and production of oil and gas dating from the 1930s (Paterson, 2011a).

¹ The major legislations covering the offshore oil and gas sector in Ghana with respect to health and safety are The Labour Act, 2003; Ghana Petroleum Exploration and Production Law 1984; Petroleum Commission Act, 2011 Act 821; and Factories, Offices and Shops Act of 1970. Two draft bills namely the Petroleum (Exploration and Production) Bill 2014 and the Offshore Petroleum (Health and Safety) Bill 2010 are currently being discussed at the ministerial level to be tabled before parliament for eventual ratification.

² The context for this is premised on a similar work carried out by the Ministry for Economic Development in New Zealand. See: Comparative Review of Health, Safety and Environmental Legislation for Offshore Petroleum Operations. [online] Available at: <http://docs.niwa.co.nz/library/public/Offshore%20Petroleum%20-%20Final%20Report.pdf> [Accessed 15 Mar. 2016].

³ The Institute of Petroleum (IP) Model Code of Safe Practice in the Petroleum Industry.

In 1965, the Sea Gem, Britain's first offshore drilling rig collapsed killing thirteen workers. This exposed the United Kingdom's lack of experience and ill-preparedness in dealing with offshore safety-related matters as there were no substantive legal provisions or detailed regulatory oversight present (Kemp, 2011). The subsequent Inquiry that was established developed a set of prescriptive regulatory codes which were not adapted to the technologically intensive and rapidly expanding industry (Paterson, 2011a). These developments highlight the direct correlation between an offshore regulatory regime and the probability of an accident occurring offshore.

Against the backdrop of these developments, the Mineral Workings (Offshore Installations) Act 1971, the major statute dealing specifically with health and safety on offshore installations was enacted. In the offshore context, the existing institutional setup as per the law mandated and placed duties on the concession owner (operator or duty holder of a facility) and installation owner to appoint an offshore installation manager (OIM) who had a general responsibility for safety, health and welfare on the installation and is required to maintain order and discipline on the rig (Miller, 1991). The Secretary of State was also empowered to appoint offshore inspectors with policing powers and privileges to monitor and conduct compliance checks.

This minimalist prescriptive approach to health and safety was highlighted in the work of the Roben's Committee (1970-72) report whose recommendations saw the setting up of a new regulator, The Health and Safety Executive (Simpson, 1973). This prescriptive, detailed secondary legislation remained in place the enactment of the Health and Safety at Work (HSWA) Act 1974, which became the central legislation for health and safety. The HSWA Act together with other Acts and Statutory Instruments (SIs) relevant to the working environment constitute the primary pieces of legislation covering occupational health and safety in the UK. It mandates The Health and Safety Executive, local authorities and other enforcing authorities with responsibility for enforcement.

The existing prescriptive regulation had contributed to problems insofar as it encouraged a compliance mentality rather than the sort of workplace-specific assessment of risks envisaged by the 1974 Act (Miller, 1991). There were no incentives for the companies to conduct an extensive workplace-specific assessment of risks to the extent that businesses were to have shown to have complied with the elements of the regime. These prescriptive regulations were ill-suited to potential hazards arising from the interaction of components as was to become evident with the Piper Alpha disaster in 1988. Following the events of the 1988 Piper Alpha disaster, a fundamental review of industry operations saw the establishment of a new basis for occupational health and safety regulatory interventions in the industry. The 1990 Cullen Public Inquiry and its recommendations led to the adoption of the Offshore Installations (Safety Case) Regulations (1992) and subsequent amendments in 2005 and 2015 (Kemp, 2011; Miller, 1991). The 2015 Safety Case Regulations are as a result of the enactment EU Directive on the safety of offshore oil and gas operations following the Deepwater Horizon accident in the Gulf of Mexico in 2010. A new Competent Authority called the Offshore Safety Directive Regulator is responsible for the regulation of major safety and environmental accident hazards, and their consequences, in the offshore oil and gas sector.⁴

The adoption of the Safety Case Regime ensured that operators (duty-holders) present a "living" document that demonstrated their understanding of the risks and hazards and adequate risk management measures put in place to minimise or mitigate the risks.⁵ This new goal-setting approach to regulation had performance-based regulatory models that incorporate economic and safety benefits providing

⁴ OSD is a partnership between The Health and Safety Executive's Energy Division and DECC's Offshore Oil and Gas Environment and Decommissioning Team. See <http://www.hse.gov.uk/osdr/>.

⁵ *ibid.*

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