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THE SIGNIFICANCE OF REGULATORY ORIENTATION IN OCCUPATIONAL HEALTH AND SAFETY OFFSHORE

JOHN PATERSON*

Abstract: The 2010 Deepwater Horizon disaster in the Gulf of Mexico has led to calls for the United States' prescriptive regulatory approach to offshore safety to be replaced with something closer to the safety case regime that was introduced in the United Kingdom following the Piper Alpha disaster in the North Sea in 1988. This Article traces the evolution of offshore safety regulation in the United Kingdom to explain the reasons for the abandonment of prescriptive regulation in favour of the safety case approach, and to outline the key features of the latter regime. Noting both the apparent strengths and weaknesses of the safety case, this Article concludes that while there may be good reasons for avoiding a wholesale transplant of the United Kingdom's approach, there may equally be important lessons to be drawn from the long and often difficult evolution of offshore safety regulation in that jurisdiction.

INTRODUCTION

In the aftermath of the Deepwater Horizon disaster, unprecedented attention is being paid to an area of law that would previously have been obscure for most. The regulation of health and safety in the offshore oil and gas industry is clearly a matter of considerable technical sophistication¹ that at other times remains the preserve of the specialists directly involved. But when something goes wrong on the scale that it did in the Gulf of Mexico in April 2010, it becomes apparent that such regulation is not only a matter of concern to those on the installations, but also to a much wider population indeed. As other contributions to this issue testify, the impact on the people of the Gulf Coast has already been significant, and the full effects both of the spill and the

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¹ See, e.g., NAT'L COMM'N ON THE BP DEEPWATER HORIZON OIL SPILL & OFFSHORE DRILLING, DEEP WATER: THE GULF OIL DISASTER AND THE FUTURE OF OFFSHORE DRILLING 73, 251 (2011) [hereinafter BP COMMISSION REPORT].

clean-up effort may take some time to become evident.² In such circumstances, as the investigation into what has happened proceeds, it is by no means unusual for the form and content of the relevant regulation to come into question, along with the identity and responsibility of the regulator, and this event is no exception. In the months following the disaster, the regulatory architecture has already undergone reform. The various functions of the former Minerals Management Service—promotion of energy development, regulation of offshore drilling, and the collection of revenues—have been separated out among three distinct bodies under the Department of the Interior, on the basis that there was previously a conflict of interest among them.³ Whether that is a sufficient adjustment to the regulatory architecture is an open question, but is beyond the scope of this Article. Attention is now turning to the question of regulatory orientation, with a number of observers suggesting that in place of the detailed prescriptive approach to offshore safety regulation,⁴ the United States should consider the goal-oriented safety case approach of the United Kingdom.⁵ This would constitute a radical reorientation of the regulatory approach currently used on the Outer Continental Shelf,⁶ and before any such step is taken it would be imperative to have a clear idea of how this approach has worked in the United Kingdom. Is this really an approach to regulation that would produce significant improvements? Or does its placing of the responsibility for the development of detail on the operator actually increase risk? Might it even be argued, as Rena Steinzor does in this issue, that BP's familiarity with the safety case approach on the U.K. Continental Shelf (UKCS) was a factor in that operator's attitude to risk that produced such disastrous results in the Gulf of Mexico?⁷

In order to contribute to this debate, this Article provides a review of the evolution of health and safety regulation on the UKCS in order to explain how and why a detailed prescriptive approach similar to the existing U.S. system was ultimately abandoned in favor of the goal-

² See *id.* at 173–95.

³ See U.S. Sec'y of the Interior, Order No. 3299, Establishment of the Bureau of Ocean Energy Management, the Bureau of Safety and Environmental Enforcement, and the Office of Natural Resources Revenue (May 19, 2010), available at <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=32475>; BP COMMISSION REPORT, *supra* note 1, at 55–56, 254.

⁴ See generally 30 C.F.R. pt. 250 (2010).

⁵ See BP COMMISSION REPORT, *supra* note 1, at 251–52.

⁶ See *id.* at 250–54.

⁷ See Rena Steinzor, *Lessons from the North Sea: Should "Safety Cases" Come to America?*, 38 B.C. ENVTL. AFF. L. REV. 417, 420–21 (2011).

setting, safety case approach in place today.⁸ It then offers an account of what the new regime involves in practice, as well as the lessons that have been learned during its implementation and the adjustments that have been necessary.⁹ While undoubtedly an approach that has produced positive results, there have in recent years been indications that call into question its complete efficacy.¹⁰ Do these indicate a fundamental flaw and perhaps lend weight to Rena Steinzor's argument? Or do they point to another aspect of a basically sound regulatory orientation that simply requires improvement? This Article argues in favor of the latter position and thus suggests that there are lessons to be drawn from the U.K. experience that could be of value as the United States considers what sort of regulatory reform may still be required.¹¹

I. THE EARLY EVOLUTION OF THE UNITED KINGDOM'S APPROACH TO OFFSHORE SAFETY

The challenge for any government in regulating the offshore oil and gas industry is considerable. Not only does the industry possess significantly greater knowledge and expertise than regulators,¹² but it is also characterized by constant technological progress as it endeavours both to increase the percentage of hydrocarbons recoverable from any reservoir, and to find and extract oil and gas from ever more difficult circumstances.¹³ Thus, not only does a government dealing with the industry for the first time start at a significant cognitive disadvantage, but it then embarks on a race to keep pace with developments that it realistically has no hope of winning.¹⁴ The experience of the United Kingdom in this regard is no exception. Tracing that experience is instructive because the United Kingdom has confronted the reality of its regulatory shortcomings on several occasions, and has had to reorient its approach radically more than once.

When the United Kingdom became aware in the early 1960s that natural gas might be present under its continental shelf, its goal to derive economic benefit as quickly as possible prompted it to take short-

⁸ See *infra* Part I.

⁹ See *infra* Part II.

¹⁰ See, e.g., HEALTH & SAFETY EXEC., KEY PROGRAMME 3: ASSET INTEGRITY PROGRAMME 5 (2007) [hereinafter KP 3 REPORT], available at <http://www.hse.gov.uk/offshore/kp3.pdf>.

¹¹ See *infra* Conclusion.

¹² See, e.g., BP COMMISSION REPORT, *supra* note 1, at 67, 76–77.

¹³ See, e.g., *id.* at 73, 251.

¹⁴ See, e.g., *id.* at 73.

cuts in establishing the legal regime for its exploitation.¹⁵ Once the Continental Shelf Act of 1964 was passed, the United Kingdom simply lifted the existing onshore regulatory regime for the exploration and production of oil and gas, which dated from the 1930s,¹⁶ and transferred it to the offshore environment.¹⁷ This vested all mineral resources in the Crown and required the relevant government department to issue a license to explore or exploit mineral resources.¹⁸ The grant of licenses for onshore operations had been governed by regulations passed in 1935.¹⁹ These regulations contained Model License Clauses and were more or less copied verbatim for the new offshore licenses.²⁰

The Model Clauses required that: “[t]he Licensee shall comply with any instructions from time to time given by the Minister in writing for securing the safety health and welfare of persons employed in or about the licensed area.”²¹ The United Kingdom’s lack of experience and expertise was immediately evident when the Minister instructed the industry to follow the Institute of Petroleum Model Code of Safe Practice in the Petroleum Industry (“IP Code”).²² There were, therefore, neither any substantive legal provisions relating to safety issues, nor any detailed oversight of this aspect on the part of the government.²³ And the inadequacy of this hands-off approach to offshore safety became clear within a very short time when the Sea Gem drilling rig operated by BP sank in December 1965, resulting in the loss of thirteen lives.²⁴

¹⁵ See W.G. CARSON, *THE OTHER PRICE OF BRITAIN’S OIL: SAFETY AND CONTROL IN THE NORTH SEA* 140–41 (1982).

¹⁶ See generally Petroleum (Production) Act, 1934, 24 & 25 Geo. 5, c. 36.

¹⁷ See Continental Shelf Act, 1964, c. 29, § 1.

¹⁸ See *id.* § 1(1)–(3).

¹⁹ See generally Petroleum (Production) Regulations, 1935, Stat. R. & O. 1935/426.

²⁰ Compare *id.* sched. 2 (model license clauses for the *onshore* Petroleum Production Regulations), with Petroleum (Production) (Continental Shelf and Territorial Sea) Regulations, 1964, S.I. 1964/708, sched. 2 (model license clauses for the *offshore* Petroleum Production Regulations).

²¹ See Petroleum (Production) (Continental Shelf and Territorial Sea) Regulations, 1964, S.I. 1964/708, sched. 2, ¶ 18.

²² See MINISTRY OF POWER, REPORT OF THE INQUIRY INTO THE CAUSES OF THE ACCIDENT TO THE DRILLING RIG SEA GEM, 1967, Cmnd. 3409, ¶ 6.2 (U.K.) [hereinafter SEA GEM REPORT]. The IP Code was issued in October 1964. See *id.* at i.

²³ See *id.* ¶ 8.2 (noting that the IP Code delineates only practical recommendations and is not regulatory in nature).

²⁴ W.G. Carson, *The Other Price of Britain’s Oil: Regulating Safety on Offshore Oil Installations in the British Sector of the North Sea*, 4 CONTEMP. CRISES 239, 250 (1980).

The Sea Gem Inquiry (the “Inquiry”), established by the Minister of Power,²⁵ lacked formal powers because an offshore installation was only regulated by license, and fell outside of any statutory authority.²⁶ Its recommendations led in due course to the establishment of a comprehensive prescriptive regulatory regime for safety offshore.²⁷ The approach to safety offshore at the time of the Sea Gem accident undoubtedly possessed some obvious weaknesses. Insofar as the IP Code lacked legal authority, it would have been difficult to enforce; the only sanction open to the Minister in the event of a failure to comply with the Code would appear to have been the potentially grossly disproportionate revocation of the license.²⁸ The quasi-contractual nature of the license²⁹ would have made it impossible for the Minister to intervene—even assuming that he had some appropriate regulatory apparatus to effect an inspection—where unsafe activities were being carried out by actors not party to the license, a potentially wide group given the extent of subcontracting in the offshore industry.³⁰

The Inquiry’s recommendation with respect to a prescriptive regulatory approach undoubtedly addressed these shortcomings.³¹ However the Inquiry’s unique rationale provides an early insight into why such prescriptive rules are attractive to lawyers and regulators, without necessarily being well-adapted to a fast-developing and technologically intensive industry. In short, while the Inquiry recognized that the IP Code fell short of legislative and regulatory standards and thus called for “a code of [statutory] authority supported by credible sanctions,”³² it equally found that the offshore industry was “so large and the evidential material so complex” that “generalisations could well be both inapt

²⁵ *Id.* at 1.

²⁶ See SEA GEM REPORT, *supra* note 22, at 1–2.

²⁷ Carson, *supra* note 24, at 251.

²⁸ See SEA GEM REPORT, *supra* note 22, at 2.

²⁹ See Greg Gordon, *Petroleum Licensing*, in OIL AND GAS LAW: CURRENT PRACTICE AND EMERGING TRENDS 27, 27–68 (Greg Gordon & John Paterson eds., 2007).

³⁰ See R.W. Bentham, *The United Kingdom Offshore Safety Regime: Before and After Piper Alpha*, 9 J. ENERGY & NAT. RESOURCES L. 273, 275 (1991); Steve Hargreaves, *BP, Subcontractors: Spill is the Other Guy’s Fault*, CNNMONEY (May 11, 2010, 5:22 PM), http://money.cnn.com/2010/05/11/news/companies/BP_hearings/index.htm (illustrating the extent of subcontracting in the offshore oil industry).

³¹ See Carson, *supra* note 24, at 250–51 (noting that the Inquiry’s recommendation led to the replacement of the contract-based licensing system with a more powerful prescriptive system under statutory law).

³² SEA GEM REPORT, *supra* note 22, ¶ 10.2(i) (“In some other countries, notably the United States of America, there are statutory provisions The Tribunal is of the opinion that a code of similar authority . . . ought to be made applicable to British structures of like kind.”).

and dangerous.”³³ Nevertheless, that is precisely what it was recommending should be done in the context of a detailed statutory code.³⁴

This, then, was the background to the Mineral Workings (Offshore Installations) Act 1971 (the “1971 Act”), which was the statute eventually enacted to enable the detailed safety regulations called for by the Sea Gem Inquiry.³⁵ Legislators reasoned that addressing details of the program in secondary legislation would allow regulations to be changed more rapidly to keep pace with evolving technology.³⁶ While the legislators clearly had some idea of the complexity of the task they were giving to the regulators, even they would surely have been surprised that it took some eight years for the full set of regulations to be produced.³⁷ Between 1972 and 1980, eleven statutory instruments were introduced.³⁸ It is noteworthy that it was 1976 before any regulation dealing with substantive issues of health and safety appeared³⁹—over a decade after the Sea Gem disaster—and even this was regarded later by the regulator as having been done “hurriedly” and on the basis of “inadequate consultations.”⁴⁰ Regulations dealing with emergency procedures did not appear until later in 1976,⁴¹ and the full set⁴² was not in place until after some of the large, first-generation platforms were in

³³ *Id.* ¶ 10.1.

³⁴ *See id.* ¶¶ 10.1–3 (finding that a prescriptive statutory system is preferred despite the complex and multifarious nature of the industry).

³⁵ Bentham, *supra* note 30, at 275.

³⁶ *See* 816 PARL. DEB., H.C. (5th ser.) (1971) 648 (U.K.) (statement by the Under-Secretary of State for Trade and Industry).

³⁷ *See* CARSON, *supra* note 15, at 154–55 (noting that even the Under-Secretary of State expected to publish the regulations more quickly).

³⁸ *See infra* notes 39–44 and accompanying text.

³⁹ Offshore Installations (Operational Safety, Health and Welfare) Regulations, 1976, S.I. 1976/1019.

⁴⁰ *See* DEP’T OF ENERGY, OFFSHORE SAFETY: REPORT OF THE COMMITTEE, 1980, Cmnd. 7866, submission 37, ¶ 7 (U.K.) [hereinafter BURGOYNE REPORT].

⁴¹ Offshore Installations (Emergency Procedures) Regulations, 1976, S.I. 1976/1542.

⁴² Offshore Installations (Registration) Regulations, 1972, S.I. 1972/702; Offshore Installations (Managers) Regulations, 1972, S.I. 1972/703; Offshore Installations (Logbooks and Registration of Death) Regulations, 1972, S.I. 1972/1542; Offshore Installations (Inspectors and Casualties) Regulations, 1973, S.I. 1973/1842; Offshore Installations (Construction and Survey) Regulations, 1974, S.I. 1974/289; Offshore Installations (Public Inquiries) Regulations, 1974, S.I. 1974/338; Offshore Installations (Operational Safety, Health and Welfare) Regulations, 1976, S.I. 1976/1019; Offshore Installations (Emergency Procedures) Regulations, 1976, S.I. 1976/1542; Offshore Installations (Life-saving Appliances) Regulations, 1977, S.I. 1977/486; Offshore Installations (Fire-fighting Equipment) Regulations, 1978, S.I. 1978/611; Offshore Installations (Well Control) Regulations, 1980, S.I. 1980/1759.

place and producing from the North Sea's largest fields.⁴³ Very significantly, regulations dealing with well control were the last to appear in 1980.⁴⁴

The difficulties attending the prescriptive regulatory *orientation* under the 1971 Act were therefore already becoming apparent, and problems with the regulatory *architecture* were also beginning to emerge. While responsibility for health and safety offshore under the 1971 Act was transferred between a number of departments, observers of the industry have noted that this responsibility always went hand in hand with granting exploration and production licenses, leading to a potential conflict of interest.⁴⁵ For most of the period between the passing of the 1971 Act and the aftermath of the Piper Alpha disaster, this dual—and potentially conflicted—responsibility lay with the Department of Energy's Petroleum Engineering Division (PED).⁴⁶

Interestingly, these problems of regulatory architecture and orientation were almost concurrently under review in relation to health and safety in onshore industries.⁴⁷ As the 1971 Act was passing through Parliament, a government-sponsored committee chaired by Lord Robens was considering the regulation of occupational health and safety generally.⁴⁸ Reporting in June 1972,⁴⁹ the Robens Committee essentially called into question the assumptions about safety regulation that underpinned the newly adopted approach offshore.⁵⁰ The Committee was concerned that: (1) the detailed prescriptive approach had the effect of

⁴³ For example, production began from the Forties field in 1975, from Brent in 1976, from Piper in 1976, and from Ninian in 1978. *THE GEOLOGY OF SCOTLAND* 463 (Nigel H. Trewin ed., 4th ed. 2002).

⁴⁴ Offshore Installations (Well Control) Regulations, 1980, S.I. 1980/1759.

⁴⁵ See CARSON, *supra* note 15, at 163–66; Bentham, *supra* note 30, at 276; Kenneth Miller, *Piper Alpha and the Cullen Report*, 20 *INDUS. L.J.* 176, 178–79 (1991).

⁴⁶ See CARSON, *supra* note 15, at 163–64 (noting that the PED came into existence in 1977, taking over the potentially conflicting responsibility for both offshore safety and licensing); DEP'T OF ENERGY, *THE PUBLIC INQUIRY INTO THE PIPER ALPHA DISASTER*, 1990, Cm. 1310, ¶ 15.2 (U.K.) [hereinafter CULLEN REPORT] (explaining that the PED retained this responsibility leading up to and in the aftermath of the Piper Alpha disaster). The regulatory structure in the United States leading up to the Deepwater Horizon disaster presented a similar conflict, as the Minerals Management Service possessed sole responsibility for regulatory oversight, as well as leasing, permitting, and revenue collection. See BP COMMISSION REPORT, *supra* note 1, at 56, 254.

⁴⁷ See Miller, *supra* note 45, at 178.

⁴⁸ See *id.*

⁴⁹ See generally COMM. ON SAFETY & HEALTH AT WORK, REPORT: 1970–72, 1972, Cmnd. 5034 (U.K.).

⁵⁰ See *id.* ¶ 28 (“[P]erhaps [the] most fundamental defect of the statutory system is simply that there is too much law.”).

producing too much health and safety law, and of giving the impression that health and safety was a matter of governmental rather than individual responsibility; (2) it produced law that was irrelevant to real problems; and (3) it depended on a large number of different industry-specific regulators which produced problems of coherence in the approach to health and safety at work.⁵¹ The overall conclusion was that:

There are severe practical limits on the extent to which progressively better standards of safety and health at work can be brought about through negative regulation by external agencies. We need a more effectively self-regulating system. This calls for the acceptance and exercise of appropriate responsibilities at all levels within industry and commerce. It calls for better systems of safety organisation, for more management initiatives, and for more involvement of workpeople themselves. The objectives of future policy must therefore include not only increasing the effectiveness of the state's contribution to safety and health at work but also, and more importantly, creating the conditions for more effective self-regulation.⁵²

This starkly different approach to health and safety at work led to the Health and Safety at Work etc. Act 1974 (the "1974 Act").⁵³ The 1974 Act embodied the non-prescriptive and goal-setting approach to regulation proposed by Robens, and also did away with industry-specific regulators in favour of a single body, the Health and Safety Executive (HSE).⁵⁴ This very different regulatory approach to health and safety was a challenge to those already engaged with the difficult task of drafting detailed regulations for the offshore industry under the 1971 Act.⁵⁵ Of all the possible responses, the one regulators ultimately chose was particularly unfortunate. It involved a partial application of the 1974 Act⁵⁶ simultaneous with the application of the 1971 Act and its detailed prescriptive regulations, with the responsibility for both resting with the

⁵¹ See *id.* ¶¶ 28, 30, 32–33.

⁵² *Id.* ¶ 41.

⁵³ See CULLEN REPORT, *supra* note 46, ¶ 16.7.

⁵⁴ See *id.* ¶ 16.8.

⁵⁵ See *id.* ¶ 16.36.

⁵⁶ Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order, 1977, S.I. 1977/1232 (applying the general duty from the 1974 Act on the part of the employer to ensure, so far as is reasonably practicable, the health, safety and welfare of employees).

offshore industry's own regulator, the PED.⁵⁷ At best this was untidy, at worst it was incoherent. Nor was the opportunity taken to resolve the inconsistencies when, in the aftermath of the Ekofisk Bravo blowout in the Norwegian sector in 1977, a further committee⁵⁸ was established by the U.K. government to look at offshore safety.⁵⁹ The Burgoyne Committee, while undoubtedly identifying the problems that arose from attempted implementation of two inconsistent regulatory regimes, did not follow these observations to their logical conclusion and recommend bringing the regulation of offshore health and safety into line with the new approach onshore.⁶⁰ Instead, the Burgoyne Committee kept faith both with the problematic dual implementation of the 1971 Act and 1974 Act regimes and with the potentially conflicted industry-specific regulator.⁶¹ The tenacity of the PED in hanging onto a regulatory role⁶² perhaps explains the suggestion made by the dissenting members of the Burgoyne Committee that between the regulator and the industry there was the “possibility of shared values and membership of closed groups.”⁶³

⁵⁷ See CARSON, *supra* note 15, at 207–08 (explaining that the North Sea oil industry had been partially exempted from regulations under the 1974 Act and that the PED retained safety inspection responsibility); CULLEN REPORT, *supra* note 46, ¶¶ 16.10–11 (explaining that only selected portions of the 1974 Act itself—not the regulations passed thereunder—would be applicable to offshore installations). The PED carried out the HSE's inspection function under an agency agreement between the HSE and the Department of Energy. See Miller, *supra* note 45, at 178. For the agency agreement, see BURGoyNE REPORT, *supra* note 40, app. 11.

⁵⁸ That further committee was called the Burgoyne Committee, and its terms of reference were as follows:

To consider so far as they are concerned with safety, the nature, coverage and effectiveness of the Department of Energy's regulations governing the exploration, development and production of oil and gas offshore and their administration and enforcement. To consider and assess the role of the Certifying Authorities. To present its report, conclusions and any recommendations as soon as possible.

BURGoyNE REPORT, *supra* note 40, ¶ 1.1.

⁵⁹ See CARSON, *supra* note 15, at 195.

⁶⁰ See Miller, *supra* note 45, at 178–79.

⁶¹ See *id.*

⁶² See CARSON, *supra* note 15, at 202.

⁶³ BURGoyNE REPORT, *supra* note 40, at 59 (“Note of Dissent by Mr. Lyons and Mr. Miller”).

II. THE PIPER ALPHA DISASTER, THE CULLEN INQUIRY, AND THE SAFETY CASE APPROACH

A. *The Piper Alpha Disaster and the Cullen Report*

The significance of the opportunity missed by the Burgoyne Committee became apparent some eight years after the completion of its report. On July 6, 1988, a series of explosions and subsequent fires almost entirely destroyed the Piper Alpha oil production platform in the North Sea.⁶⁴ 167 men were killed, making this by far the worst accident in the history of the offshore industry in terms of lives lost.⁶⁵ An inquiry, chaired by Lord Cullen, a senior Scottish judge, was asked to answer two questions: “What were the causes and circumstances of the disaster . . . and . . . [w]hat should be recommended with a view to the preservation of life and the avoidance of similar accidents in the future?”⁶⁶

The answer to these deceptively simple questions emerged in an extremely thorough two-volume report that painted an unedifying picture of safety on the UKCS.⁶⁷ The disaster was caused primarily by a failure of the permit to work (PTW) system, particularly in the context of communication between shifts.⁶⁸ This failure allowed equipment to be used when maintenance work on it had not been completed, resulting in an escape of gas and an explosion.⁶⁹

An already serious incident was exacerbated by several other factors, which even individually would have raised serious doubts about the fitness for purpose of the then-current regulatory regime. First, two sister platforms that shared pipeline infrastructure with the Piper Alpha continued to pump hydrocarbons after the initial explosion, thus feeding the fires.⁷⁰ Second, the Offshore Installation Manager attempted “no initiative in an attempt to save life.”⁷¹ Third, the initial explosion destroyed or incapacitated emergency systems, such as fire control.⁷² Fourth, despite the fact that, by chance, a fire-fighting vessel was close by in addition to the platform’s dedicated standby vessel, neither effectively

⁶⁴ See CULLEN REPORT, *supra* note 46, ¶¶ 4.1–17.

⁶⁵ See *id.* ¶ 2.1; John M.T. Balmer, *The BP Deepwater Horizon D  b  cle and Corporate Brand Exuberance*, 18 J. BRAND MGMT. 97, 100 (2010).

⁶⁶ See CULLEN REPORT, *supra* note 46, ¶ 1.1.

⁶⁷ See generally *id.*; *infra* notes 69–77 and accompanying text.

⁶⁸ See CULLEN REPORT, *supra* note 46, ¶¶ 6.188–.194, 11.1–.14.

⁶⁹ See *id.*

⁷⁰ See *id.* ¶¶ 7.34–.35, 7.47. The two sister platforms were Claymore and Tartan. See *id.*

⁷¹ See *id.* ¶ 8.35.

⁷² See *id.*

mitigated the disaster.⁷³ Lord Cullen criticized the platform's operator, Occidental Petroleum (Caledonia) Ltd., as being unprepared for a major emergency, and for having adopted a superficial attitude to such risks.⁷⁴ The appropriate safety arrangements were frequently not in place, and even when present were often ignored—the PTW system being a clear example.⁷⁵ The regulator was also the subject of stern criticism. Lord Cullen described the PED's inspections as “superficial to the point of being of little use as a test of safety on the platform”⁷⁶ and not really an effective means of assessing the management of safety.⁷⁷ Taken together, these criticisms essentially undermined the assumptions on which the existing regulatory approach was based.

B. *Safety Case: The Move from Prescriptive to Goal-Setting Regulation*

Lord Cullen made 106 recommendations with regard to the improvement of the regulation of safety offshore.⁷⁸ In terms of regulatory architecture, he recommended removal of responsibility from the PED and its transfer to the HSE.⁷⁹ With regard to regulatory orientation, Cullen's approach called for the operator of each installation on the UKCS to submit a “safety case” to the HSE.⁸⁰ This document would make the case to the regulator that the installation was safe both in terms of its design and its operation.⁸¹ It would thus demonstrate that certain objectives had been met, including: (1) the operator's safety management system is adequate to ensure the safe design and the operation of the installation; (2) it utilizes safe equipment; (3) potential major hazards to the installation are identified, and preventive or mitigation measures adopted; and (4) there is adequate provision to ensure, in the event of a major emergency affecting the installation, a temporary safe refuge for personnel and their full evacuation, escape, and rescue.⁸²

To be clear, this approach involved an abandonment of any notion that safety rules developed by government agencies, no matter how flexible the form, could provide a detailed and comprehensive code

⁷³ *Id.* ¶¶ 9.41–42, 9.49.

⁷⁴ CULLEN REPORT, *supra* note 46, ¶ 14.52.

⁷⁵ *See id.*

⁷⁶ *Id.* ¶ 15.48.

⁷⁷ *See id.* ¶ 15.50.

⁷⁸ *Id.* at 387.

⁷⁹ *Id.* at 392 (Recommendation 25).

⁸⁰ CULLEN REPORT, *supra* note 46, at 387 (Recommendation 1).

⁸¹ *Id.* at 387 (Recommendation 2(i)).

⁸² *Id.* at 387–88 (Recommendation 2).

covering all aspects of the industry.⁸³ In its place, Cullen placed the key responsibility on the *operator*. The latter would be required by means of a “Formal Safety Assessment” to identify risks to occupational health and safety, both catastrophic and mundane; to show to the regulator, including where necessary by means of “Quantified Risk Assessment,” that such risks had been minimized; and to indicate in practical terms how this risk minimization had been or would be achieved.⁸⁴ Lest there be any doubt about the extent of this shift in thinking, Cullen stated that “a regulator cannot be expected to assume direct responsibility for the ongoing management of safety . . . [this] is and remains in the hands of the operator.”⁸⁵ This approach, of course, implied that the orientation of safety regulations would change. Cullen wanted the existing prescriptive regulations to be replaced as far as possible with goal-setting regulations.⁸⁶ He was concerned that prescriptive regulation had actually 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.⁸⁷ According to Cullen, prescriptive regulations were ill-suited to potential risks arising from the interaction of components, as had been the case with the Piper Alpha disaster.⁸⁸ Insofar as Cullen supported the view of one witness to the Inquiry who suggested that safety could not be legislated,⁸⁹ one may readily appreciate the extent to which there was a break with the pre-existing approach.

⁸³ See *id.* ¶ 21.4.

⁸⁴ *Id.* ¶¶ 17.40, 17.53.

⁸⁵ *Id.* ¶ 21.4.

⁸⁶ CULLEN REPORT, *supra* note 46, ¶ 21.69–70. The recommendation was that the Construction and Survey Regulations, the Fire Fighting Regulations, the Life-Saving Appliances Regulations, and the Emergency Procedures Regulations should be revoked and replaced by:

- (i) Construction Regulations, covering *inter alia* the structure and layout of the installation and its accommodation; (ii) Plant and Equipment Regulations, covering *inter alia* plant and equipment on the installation and in particular those handling hydrocarbons; (iii) Fire and Explosion Protection Regulations, covering *inter alia* both active and passive fire protection and explosion protection; and (iv) Evacuation, Escape and Rescue Regulations, covering *inter alia* emergency procedures, life-saving appliances, evacuation, escape, and rescue.

Id. Each of these sets of regulations should include goal-setting regulations as their main or primary provisions and should be supported by guidance notes giving non-mandatory advice. *Id.* at ¶¶ 21.67, 21.71.

⁸⁷ See *id.* ¶ 21.51.

⁸⁸ See *id.* ¶ 21.42.

⁸⁹ *Id.* ¶ 21.4. The witness was Mr. R.E. McKee, Chairman and Managing Director of Conoco (UK) Ltd. *Id.*

The Government accepted all of the 106 recommendations.⁹⁰ The foundation for Cullen's new regulatory orientation was laid by the Offshore Safety Act 1992,⁹¹ which finally extended the Health and Safety at Work etc. Act 1974 offshore in its entirety, and permitted regulations to be made to repeal those made under the Mineral Workings (Offshore Installations) Act 1971.⁹² There then followed the Offshore Installations (Safety Case) Regulations 1992,⁹³ requiring operators to prepare safety cases for each installation on the UKCS,⁹⁴ which the HSE must accept before operations are permitted.⁹⁵ The responsible party preparing the safety case has to include sufficient particulars to demonstrate that: (1) the management system is adequate to ensure that relevant statutory provisions would be complied with; (2) adequate arrangements are in place for auditing and reporting; (3) all hazards with the potential to cause a major accident are identified; and (4) risks are evaluated and measures taken to reduce them to the lowest level reasonably practicable.⁹⁶ The idea that the safety case should be a "living document"⁹⁷ was embodied in Regulation 9, which provided that an operator or owner should revise the safety case as often as required.⁹⁸ If a proposed revision would make the safety case "materially different" from the latest version submitted to the regulator, then further acceptance by the HSE is required.⁹⁹ The same regulation also requires resubmission of the safety case every three years and reacceptance by the regulator before operations continue.¹⁰⁰ As an indication of the extent to which responsibility for the development of detail had passed from the regulator to the operator, it is noteworthy that Regulation 10 imposes a duty on the operator or owner to ensure that health and safety procedures and arrangements contained in the safety case

⁹⁰ *Safety on RasGas Alpha*, RASGAS MAG., Dec. 2006, at 24, 25, available at <http://www.rasgas.com/rg/files/articles/RGMagazine16.24-27.pdf>. For the parliamentary debate, see 187 PARL. DEB., H.C. (6th ser.) (1991) 472-567; 180 PARL. DEB., H.C. (6th ser.) (1990) 329-45.

⁹¹ See generally Offshore Safety Act, 1992, c. 15.

⁹² *Id.* § 1.

⁹³ Offshore Installations (Safety Case) Regulations 1992, S.I. 1992/2885.

⁹⁴ *Id.* art. 4 ¶ (1).

⁹⁵ *Id.* art. 4 ¶ (2), (5)-(6).

⁹⁶ *Id.* art. 8. This ALARP standard (As Low As Reasonably Practicable) is derived from the Health and Safety Work, etc. Act, 1974, c. 37, § 2(2)(a).

⁹⁷ CULLEN REPORT, *supra* note 46, ¶ 17.46.

⁹⁸ Offshore Installations (Safety Case) Regulations 1992, S.I. 1992/2885, art. 9.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

are actually followed, and should there be a breach of that duty, criminal liability could arise.¹⁰¹

The safety case was, of course, only one component of the new regulatory orientation envisaged by Lord Cullen. New goal-setting regulations to replace the existing prescriptive ones were also required.¹⁰² These were introduced progressively between 1995 and 1998.¹⁰³ At first sight, the level of detail in these regulations can give the impression that they are really prescriptive rather than goal-setting regulations. On closer inspection, however, while it is undoubtedly true that some elements of prescription remain, significant issues are in fact subject to a goal-setting approach.

III. THE RECENT EVOLUTION OF THE SAFETY CASE APPROACH

A. 2005 Regulations

The 1992 Safety Case Regulations and the supporting goal-setting regulations were of course a significant innovation in the offshore environment, so it is perhaps not surprising that they did not get everything right first time around. Noting difficulties with the operation of the 1992 regulations, the HSE repealed and replaced them with an updated set in 2005.¹⁰⁴ That said, given the flexibility of the safety case approach and the fact that the safety case itself was supposed to be a living document, it might appear surprising that any such modification would be required. The regulator had observed, however, that the 1992 regulations were increasingly perceived to impose an excessive bureaucratic burden.¹⁰⁵ Furthermore, even if there had been a significant improvement in health and safety offshore in the period since the new

¹⁰¹ *Id.* reg. 10.

¹⁰² CULLEN REPORT, *supra* note 46, ¶ 21.69.

¹⁰³ Offshore Installations and Pipeline Works (Management and Administration) Regulations, 1995, S.I. 1995/738; Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations, 1995, S.I. 1995/743; Pipelines Safety Regulations, 1996, S.I. 1996/825; Offshore Installations and Wells (Design and Construction, etc.) Regulations, 1996, S.I. 1996/913; Diving at Work Regulations 1997, 1998, S.I. 1997/2776; Lifting Operations and Lifting Equipment Regulations, 1998, S.I. 1998/2307.

¹⁰⁴ Offshore Installations (Safety Case) Regulations 2005, 2006, S.I. 2005/3117.

¹⁰⁵ HEALTH & SAFETY COMM'N, PROPOSALS TO REPLACE THE OFFSHORE INSTALLATIONS (SAFETY CASE) REGULATIONS 1992, at 4 (2004).

approach was introduced, there appeared to be a diminishing return with each successive triennial resubmission of the safety cases.¹⁰⁶

Under the 2005 regulations, accordingly, the triennial resubmission requirement was replaced by a five year “thorough review” with the option for the HSE to direct otherwise.¹⁰⁷ In regards to the problem of diminishing returns from the 1992 approach, the 2005 regulations introduced changes to the requirements relating to workforce involvement. The new regulations require the safety case to summarize consultation with the workforce not only with regard to its preparation, but also its revision and review.¹⁰⁸ The HSE is trying to ensure that the workforce is directly engaged in the safety case process on an ongoing basis.

The HSE also issued new guidance concerning risk assessment.¹⁰⁹ Here the regulator notes that the 1992 regulations focused attention on Quantified Risk Assessment (QRA), which often required specialist consultants to be involved.¹¹⁰ While this appeared to be useful in the post-Piper Alpha era, the HSE states that the understanding of offshore risks is now mature. Accordingly, it urges risk assessment to focus on adding value and to be management-owned rather than consultant-owned.¹¹¹ The guidance notes that risk assessment should be proportionate to the complexity of the problem at hand and the magnitude of risk.¹¹² QRA thus applies only where the risk level and the complexity of a problem are high, with qualitative and semi-quantitative approaches being identified as appropriate for lower level situations.¹¹³

With the appearance of the 2005 regulations, therefore, it is reasonable to assume that the regulatory regime for health and safety at

¹⁰⁶ See generally HEALTH & SAFETY COMM’N, A STRATEGY FOR WORKPLACE HEALTH AND SAFETY IN GREAT BRITAIN TO 2010 AND BEYOND (2004); HEALTH & SAFETY COMM’N, *supra* note 105.

¹⁰⁷ Offshore Installations (Safety Case) Regulations 2005, 2006, S.I. 2005/3117, art. 13. Note that there is an exception to this rule where there are “material changes” which will still require acceptance. See *id.* art. 14; see also HEALTH & SAFETY EXEC., OFFSHORE INSTALLATIONS (SAFETY CASE) REGULATIONS 2005, REGULATION 13: THOROUGH REVIEW OF A SAFETY CASE, OFFSHORE INFORMATION SHEET No. 4/2006 (2006); *Offshore Safety Case Handling & Assessment Manual Thorough Review Summaries*, HEALTH & SAFETY EXECUTIVE, <http://www.hse.gov.uk/offshore/scham/reviewsummaries.htm> (last visited Apr. 15, 2011).

¹⁰⁸ Offshore Installations (Safety Case) Regulations 2005, 2006, S.I. 2005/3117, sched. 2, ¶ 3 (amending, consequently, the Offshore Installations (Safety Representatives and Safety Committees) Regulations, 1989, S.I. 1989/971).

¹⁰⁹ HEALTH & SAFETY EXECUTIVE, GUIDANCE ON RISK ASSESSMENT FOR OFFSHORE INSTALLATIONS, OFFSHORE INFORMATION SHEET No. 3/2006, at 1 (2006).

¹¹⁰ *Id.* at 2.

¹¹¹ *Id.*

¹¹² *Id.* at 3.

¹¹³ *Id.*

work offshore had reached a stage of maturity commensurate with the maturity of the UKCS as an established hydrocarbon province. In fact, there is evidence that the safety case approach recently faced its most significant challenge.

B. *Recent Evidence of Problems with the Safety Case Approach?*

During inspections of offshore installations for efforts to reduce hydrocarbon releases between 2000 and 2004, the HSE became concerned that the condition of the infrastructure was deteriorating.¹¹⁴ It therefore established an initiative to consider asset integrity, designated Key Programme 3 (KP 3).¹¹⁵ The new regulations required the inspection of some 100 installations on the UKCS, with specific attention paid to the maintenance management of safety critical elements.¹¹⁶ Insofar as there is a close link between this issue and Lord Cullen's concept of the safety case as a "living document," the findings of this initiative make for troubling reading.¹¹⁷ The inspections found, for example, that the quality of maintenance management varied considerably across the industry and even between installations operated by the same company.¹¹⁸ These problems appeared to be due to difficulties in tracking which equipment was defective or overdue for maintenance.¹¹⁹ The regulator uncovered "a poor understanding across the industry of [the] potential impact of degraded, non-safety-critical plant and utility systems on safety-critical elements in the event of a major accident,"¹²⁰ and that "[t]he role of asset integrity and [the] concept of barriers in major hazard risk control" was "not well understood."¹²¹ With respect to the condition of the infrastructure as a whole, there was some positive news, as structural integrity and the main hydrocarbon boundary were both "reasonably well controlled."¹²² However, there were also more worrying findings to the extent that other parts of the infrastructure, such as pipes and valves, were in decline.¹²³

¹¹⁴ KP 3 REPORT, *supra* note 10, at 5.

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *See id.*; Offshore Installations (Safety Case) Regulations 1992, 1993, S.I. 1992/2885, art. 9 (U.K.).

¹¹⁸ KP 3 REPORT, *supra* note 10, at 6.

¹¹⁹ *Id.* at 11–13.

¹²⁰ *Id.* at 6, 13.

¹²¹ *Id.* at 6.

¹²² *Id.*

¹²³ *Id.*

The HSE's explanation for these findings lay in three underlying problems relating to *learning*, the *engineering function*, and *leadership*. First, in relation to learning, there were problems both of inadequate auditing and monitoring and of a lack of processes to allow for embedded learning.¹²⁴ Second, the engineering function appears to be declining in strength relative to other functions within oil companies.¹²⁵ While the HSE did not spell out which other functions engineering had lost out to, the inference is that these were financial.¹²⁶ This conclusion is supported by the third underlying problem identified by the regulator—leadership. While senior management must inevitably balance safety and financial risks in making spending decisions, the HSE was concerned that there was inadequate understanding of the impact on such decisions of operating with “degraded [safety critical elements] and safety-related equipment.”¹²⁷

Taken together, the findings of the *KP 3 Report* raise the question of how, if the safety case was operating as it was intended to, such a situation could have arisen. Do these findings indicate a fatal flaw in the safety case approach? Or does the exposure of problems by HSE suggest that the approach remains robust, provided that it is supported by a regulator whose attention is appropriately focused? Before these questions can be answered, it is necessary to consider what impact the events of April 2010 in the Gulf of Mexico might themselves have on offshore health and safety regulation on the UKCS.

C. *Possible Effects of the Deepwater Horizon Disaster on United Kingdom Offshore Safety Regulation*

Whether or not one is persuaded that oversight by the HSE is sufficient to mitigate any risks associated with the safety case approach, it appears certain that there will be no effort on the part of either government or regulator to reverse the trend away from prescriptive regulation on the UKCS.¹²⁸ Even the occurrence of the Deepwater Horizon disaster has not shaken the confidence of the various interested parties in the suitability of the current regulatory approach. Following the disaster, the Secretary of State for Energy and Climate Change announced

¹²⁴ KP 3 REPORT, *supra* note 10, at 8.

¹²⁵ *Id.*

¹²⁶ *See id.* at 12.

¹²⁷ *Id.* at 8.

¹²⁸ *See* Press Release, U.K. Dep't of Energy & Climate Change, UK Increases North Sea Rig Inspections (June 8, 2010), available at http://www.decc.gov.uk/en/content/cms/news/pn10_067/pn10_067.aspx.

a review of U.K. law and regulation relating to offshore health and safety.¹²⁹ This review fairly quickly concluded that the existing regime was “fit for purpose.”¹³⁰ There was, however, no denying that lessons might be learned, and to this end both the regulator and the industry are currently engaged in further investigations. The HSE has established the Deepwater Horizon Review Group, which is considering the findings of the investigation into the accident with a view to making “recommendations as necessary with regard to the control of wells and the safety of the exploitation of offshore oil and gas in the UK.”¹³¹ Oil & Gas UK, the principal body representing the industry on the UKCS, has set up the Oil Spill Prevention and Response Advisory Group, bringing together industry, regulators, and trade unions “to provide a focal point for the sector’s review of the industry’s practices in the UK, in advance of the conclusion of investigations into the Gulf of Mexico incident.”¹³² Finally, at the level of the legislators, the House of Commons Energy and Climate Change Select Committee has heard oral evidence and received written submissions from a range of stakeholders in relation to deepwater development.¹³³ Their recently published report clearly finds that the United Kingdom’s safety case approach is superior to the regulatory regime under which the Deepwater Horizon operated in the Gulf of Mexico.¹³⁴ However, the report concurrently found “concern[] that the offshore oil and gas industry is responding to disasters, rather than anticipating worst-case scenarios and planning for high-consequence, low-probability events,” which is particularly troublesome given that the safety case approach was supposed to encourage precisely that sort of anticipation and foresight.¹³⁵ Legislative or regulatory change as a result of all these investigations and reviews cannot, therefore, be ruled out, but the general impression is that it will be business as usual.¹³⁶ There has been a sense in both government

¹²⁹ *Id.*

¹³⁰ *See id.*

¹³¹ *Deepwater Horizon Incident in the Gulf of Mexico*, HEALTH & SAFETY EXECUTIVE, <http://www.hse.gov.uk/offshore/deepwater.htm> (last visited Apr. 15, 2011).

¹³² *Knowledge Centre: Oil Spill Prevention and Response Advisory Group (OSPRAG)*, OIL & GAS UK, <http://www.oilandgasuk.co.uk/knowledgecentre/OSPRAG.cfm> (last visited Apr. 15, 2011).

¹³³ *See* ENERGY & CLIMATE CHANGE COMM., UK DEEPWATER DRILLING—IMPLICATIONS OF THE GULF OF MEXICO OIL SPILL, 2010–11, H.C. 450-I, ¶ 71, available at <http://www.publications.parliament.uk/pa/cm201011/cmselect/cmenergy/450/450i.pdf>.

¹³⁴ *Id.* ¶ 34.

¹³⁵ *Id.* ¶ 35.

¹³⁶ *See id.* It is perhaps not insignificant that this Committee was not only concerned with the adequacy of the regulatory regime, but also with knowing more about the contri-

and industry that the safety case approach on the UKCS makes it less likely that an accident like the Deepwater Horizon could occur.¹³⁷

It is a question, however, whether this confidence is shared by European Union institutions. Both the European Parliament and the European Commission have taken a close interest in what has happened in the Gulf of Mexico and in any ramifications for the industry operating in, or indeed from, the European Union. Each has indicated in recent months—through a Parliament resolution and a Commission communication, respectively—that legislative change at the European Union level may be necessary.¹³⁸ References in the Parliament resolution and the Commission communication to existing best practices¹³⁹ might, of course, indicate that other Member States will be expected to adopt the United Kingdom's approach. On the other hand, the United Kingdom may not be the country these institutions have in mind when they refer to existing best practices. The Parliament, for example, makes mention of only one Member State in its resolution—the United Kingdom—and that is a negative reference to the latest serious injury and fatality statistics reported by the HSE.¹⁴⁰ As a consequence, it is possible that the safety case approach itself may be under very close scrutiny from Europe in the months ahead, and the European Union may reach very different conclusions with very different implications for the United Kingdom's regulatory approach to health and safety offshore.¹⁴¹

CONCLUSION

The evolution of the regulation of health and safety on the UKCS is a rich source of inspiration for any jurisdiction considering reform in this regard. The occurrence of serious accidents forced the United

bution that will be made by deepwater resources to the United Kingdom's energy security. *See id.* ¶ 138. In this regard, it concluded that any moratorium on deepwater drilling on the UKCS would harm energy security and diminish the contribution of the offshore oil and gas industry to the British economy more generally. *See id.*

¹³⁷ *See Deepwater Horizon Incident in the Gulf of Mexico, supra* note 131.

¹³⁸ *See Communication from the European Commission to the European Parliament and the Council: Facing the Challenge of the Safety of Offshore Oil and Gas Activities*, § 1, SEC (2010) 1193 final (Dec. 10, 2010) [hereinafter *Commission Communication*]; Resolution of 7 October 2010 on EU Action on Oil Exploration and Extraction in Europe, EUR. PARL. DOC. P7_TA(2010)0352 ¶ 16 [hereinafter E.U. Parliament Resolution].

¹³⁹ *See, e.g., Commission Communication, supra* note 138, at 3, 5.

¹⁴⁰ *See* E.U. Parliament Resolution, *supra* note 138, ¶ 25; *see also Offshore Safety Statistics Bulletin 2009/10*, HEALTH & SAFETY EXECUTIVE, <http://www.hse.gov.uk/offshore/statistics/tat0910.htm> (last visited Apr. 15, 2011).

¹⁴¹ *See* E.U. Parliament Resolution, *supra* note 138, ¶ 25; *see also Offshore Safety Statistics Bulletin 2009/10, supra* note 140.

Kingdom to examine closely the previously existing approaches, and to consider what alternatives might represent improvements. As a consequence, over the four-and-a-half decades of hydrocarbon operations on the UKCS, three distinct approaches to health and safety regulation have been implemented: first, the original self-regulatory approach under the license;¹⁴² second, the detailed prescriptive approach under the 1971 Act and the subsequent regulations;¹⁴³ and finally, the goal-setting, safety case approach following Lord Cullen's post-Piper Alpha recommendations.¹⁴⁴ The first two approaches each had their shortcomings revealed in the context of a serious accident. The third approach has not been without its difficulties, but has so far not been tested by the occurrence of a major disaster.

That is not to say that goal-setting regulation and safety cases have been uncontroversial. The problems with asset integrity revealed by the HSE in 2007¹⁴⁵ could be read as a fundamental questioning of the assumptions underpinning the safety case approach—in particular, the notion of the instrument as a living document, subject to ongoing modification based on monitoring and review of the operator's safety management system.¹⁴⁶ The question, therefore, is whether this problem fatally undermines the goal-setting, safety case approach, calling instead for a further stage of regulatory development.

The conclusion reached by this Article is that it does not. It is certainly the case that the appearance of asset integrity problems is deeply troublesome. A failure to properly manage the maintenance of safety critical elements and to strike an appropriate balance between safety and financial risk could well have been the precursor to a serious accident. But the first question to be answered by anyone proposing to replace the safety case approach is: replace with what? It is not obvious that any system would constitute an improvement beyond the current approach, nor is it clear that a return to a previous approach would unquestionably represent progress. As a consequence, it may be suggested that it is not so much the safety case approach in and of itself that is problematic, but rather the way it is implemented.¹⁴⁷ The level of analysis possible within the confines of this brief Article does not allow

¹⁴² Petroleum (Production) Regulations, 1935, Stat. R. & O. 1935/426.

¹⁴³ See Bentham, *supra* note 30, at 275.

¹⁴⁴ See CULLEN REPORT, *supra* note 46, ¶ 21.69; see also *id.* ch. 23.

¹⁴⁵ KP 3 REPORT, *supra* note 10, at 5.

¹⁴⁶ See Offshore Installations (Safety Case) Regulations 1992, 1993, S.I. 1992/2885, art. 9 (U.K.).

¹⁴⁷ See CULLEN REPORT, *supra* note 46, ¶ 21.51.

more than a relatively superficial appraisal. There is nevertheless clear evidence from the 2007 asset integrity report that the degree of freedom afforded the industry by the safety case approach allows the deployment of its expertise and experience in the identification of hazards and risks and in their mitigation and control.¹⁴⁸ But the 2007 asset integrity report equally presents the possibility, even inadvertently, that the industry will strike a problematic balance between safety and financial risks. If there is a lesson from the experience of the 2007 report, therefore, it is that the role of the regulator is in no way diminished in the context of the safety case approach compared to the prescriptive regulatory approach. Rather, a safety-case regulator must be refocused on ensuring that the industry remains open to the appropriate range of risks faced in the operation of its safety management systems, and does not allow the inevitable concern with cost to blind it to the reality of safety risks.¹⁴⁹ The critic may well conclude that the very possibility that such a situation could arise is evidence that a return to prescriptive regulation is warranted. However, consider the cognitive burden that such an approach imposes on the regulator, compared to the safety case approach. Prescribing in detail for the safety of an industry that is considerably more complex now than it was when Lord Cullen prepared his report represents an impossible task for any regulator, whereas focusing on what it is that the industry is not seeing as it operates its safety management systems is a much more straightforward demand. As the United States considers whether the changes already made to the regulatory architecture, which mirror those in the United Kingdom after Piper Alpha, should also be followed by changes to regulatory orientation, it should not feel compelled to follow the British example slavishly. There may nevertheless be an opportunity for a selective borrowing of some of the regulatory ideas that represent the product of a long and difficult evolution on the UKCS.

¹⁴⁸ KP 3 REPORT, *supra* note 10, at 5.

¹⁴⁹ *See id.*

