

Lessons from the North Sea: Should “Safety Cases” Come to America?

By Rena Steinzor*

ABSTRACT: The catastrophic oil spill in the Gulf of Mexico last spring and summer has triggered a frantic search for more effective regulatory methods that would prevent such disasters. The new Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) is under pressure to adopt the British “safety case” system, which requires the preparation of a facility-specific safety plan that is typically several hundred pages long. This regulatory scheme is described as a “goal oriented” approach that inculcates a “safety culture” within companies that operate offshore in the British portion of the North Sea because it overcomes a “box-ticking” mentality and constitutes “bottom up” implementation of safety measures. Safety cases are strictly confidential: only company officials, regulators and, in limited circumstances, worker representatives, are allowed to see the entire plan. This paper argues that the safety case approach should not come to America because this confidentiality and the risk levels tolerated by the British system conflict with the both the spirit and the letter of American law.

British regulations allow the plans to be no more protective than preventing one in 1,000 worker deaths and require operators to spend no more than \$1.5 million per life saved. These standards are far more lax than comparable American legal requirements. The use of quantitative risk assessment and cost benefit analysis within the plans means that they must be prepared by technical experts far removed from an oil rig, suggesting that safety cases are not “bottom up” vehicles for ensuring best operational practice. The U.S. now fields only 55-60 inspectors to cover 3,500 facilities in the Gulf. To be even minimally effective, a safety case regime would require increasing available overseers by orders of magnitude, a prospect that is unlikely given the political climate in Washington. Lastly, a British study of conditions in the North Sea suggest alarming neglect of the physical infrastructure that ensures safety, further undermining claims that the safety case system is as effective as its advocates claim.

This paper was presented at a symposium organized by the Boston College Environmental Affairs Law Review and will be published in any upcoming issue of that publication. Comments should be addressed to rsteinzor@law.umaryland.edu.

* Rena Steinzor is a professor at the University of Maryland School of Law. She also serves as the president of the Center for Progressive Reform and was a co-author, along with symposium participants Alyson Flournoy and Holly Doremus and several other CPR member scholars, of its publication *Regulatory Blowout: How Regulatory Failures Made the BP Disaster Possible, and How the System Can Be Fixed to Avoid a Recurrence* (2010), available at http://www.progressivereform.org/articles/BP_Reg_Blowout_1007.pdf. She is grateful for the invaluable editorial assistance of Alice Johnson, research fellow at the Thurgood Marshall Law Library; the research assistance of Andrew Goldman and Summer Hughes Niazy; and the wise advice of Holly Doremus, Thomas McGarity, Robert Percival, and Matthew Shultz.

The Search for New Regulatory Approaches

In the aftermath of the catastrophic oil spill at British Petroleum's (BP) Deepwater Horizon facility in the Gulf of Mexico, American officials have launched a frantic search for more effective regulatory methods that would prevent such disasters. The European Union has also gotten into the act, threatening to write its own set of prescriptive regulations.¹ Experts familiar with oil production in the North Sea have advocated that Americans take a close look at the British regulatory system, which relies on one core mandate: every offshore operator shall prepare and update at five-year intervals a "safety case" tailored to the risks posed by its individual facility.²

As explained by John Paterson and Greg Gordon, Scottish legal experts on oil and gas regulation in the North Sea, the British system developed in the wake of catastrophes offshore, beginning with the collapse of the Sea Gem platform in 1965, killing 13 workers, and culminating in the worst offshore accident in history—the 1988 explosions aboard the Piper

¹ See Press Release, European Union, Offshore Drilling: European Commission Envisages EU Safety Rules (Oct. 13, 2010), available at <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/1324>; Sylvia Pfeifer, *Europe Proposes New Oil Safety Standards*, FIN.TIMES, Oct. 13, 2010 ("Oil & Gas UK is extremely concerned that once again, the EU Commission is calling for a suspension of new licensing. . . . It is also deeply worrying that in addition, it now proposes to implement centralized and prescriptive safety regulation" (citing Malcolm Webb, Oil & Gas UK chief executive)). Oil & Gas UK is the leading trade association that claims to represent the entire offshore sector. For more information about the group, see *About Us*, OIL & GAS UK, <http://www.oilandgasuk.co.uk/aboutus/aboutus.cfm> (last visited Dec. 16, 2010).

² For examples of such advocacy, see *History and Expansion of Offshore Drilling Before the Nat'l Comm'n on the BP Deepwater Horizon Oil Spill & Offshore Drilling* (Aug. 25, 2010) (testimony of Robin West), available at <http://www.oilspillcommission.gov/sites/default/files/documents/Robinson%20West%20Written%20Statement.pdf>; Letter from Deepwater Horizon Study Grp. to Nat'l Comm'n on the BP Deepwater Horizon Oil Spill & Offshore Drilling (Nov. 24, 2010), available at <http://www.oilspillcommission.gov/sites/default/files/documents/DHSG%20letter%20to%20National%20Commission.pdf>. See also the proceedings of a conference entitled *The Great Debate: A Safety Case Regime for U.S. Offshore Drilling and Production?*, sponsored by the Society of Professional Engineers and held in Houston, Texas on September 16, 2010. Proceedings of The Great Debate: A Safety Case Regime for U.S. Offshore Drilling and Productions, SPE INT'L, <http://www.spegcs.org/en/cev/1795> (last visited Dec. 17, 2010) [hereinafter Great Debate Conference]. See also H.R. 3534, introduced by Rep. Nick Rahall (D-WV) and passed by the House during the One Hundred and Eleventh Congress, Second Session, which requires that a "safety case" be prepared in conjunction with each new application for a drilling lease in the Outer Continental Shelf. H.R. 3534, 111th Cong. § 211 (2010) (Safety Regulations).

Alpha platform that claimed 167 lives.³ The system traveled an arduous trajectory from the “Early Phase” of a primitive licensing regime where the authority responsible for promoting development was also expected to ensure safety; to a “Middle Phase” that Professor Paterson characterizes as an unsuccessful, short-lived experiment with traditional, prescriptive regulation; to the “Late Phase” in which “duty holders” were told to craft and implement their own detailed plans for avoiding catastrophe.⁴ The British call this approach “goal-oriented” regulation⁵ or a “permissioning” system,⁶ although in American lexicon it would be described as a hybrid mix of “performance-based” regulation and voluntary self-regulation. This shift of emphasis from prescriptive regulatory requirements to duty holder hegemony and relative autonomy was quite deliberate; the trade-off for the offshore industry was considerable flexibility in formulating the details of its compliance obligations.

Safety cases are defined as a “structured argument, supported by a body of evidence that provides a compelling, comprehensible and valid case that a system is safe for a given application in a given operating environment.”⁷ They are prepared either by consultants or company employees in accordance with a set of elaborate guidelines mandating that each document address in detail such disparate topics as: (1) procedures for controlling risks; (2) the selection and training of key personnel; (3) installation of preventive technologies such as emergency cut-off equipment; (4) procedures to control higher-risk events such as change of

³ See also OIL AND GAS LAW—CURRENT PRACTICE AND EMERGING TRENDS (Greg Gordon & John Paterson eds., 2007) [hereinafter OIL AND GAS LAW].

⁴ OIL AND GAS LAW, *supra* note 3, at 116. Duty holders are the designated corporate entity that is responsible for the operation of offshore facilities.

⁵ *Id.* at 132–44 (describing the rise of goal-oriented regulation in the aftermath of Piper Alpha).

⁶ “Permissioning” is the term used by the British Health and Safety executive to describe the approach it uses to all high-hazard industries: companies cannot build one without receiving government permission but remain responsible for developing facility-specific safety cases that govern both conduct and equipment. HEALTH & SAFETY COMM’N, POLICY STATEMENT: OUR APPROACH TO PERMISSIONING REGIMES (2003), available at <http://www.hse.gov.uk/enforce/permissioning.pdf>.

⁷ J.R. Inge, Ministry of Defence, The Safety Case, Its Development and Use in the United Kingdom 2 (n.d.), available at http://safety.inge.org.uk/20070625-Inge2007_The_Safety_Case-U.pdf.

shifts, design, or production goals; (5) the operating firm's control over the activities of subcontractors; and (4) how the entire crew of a given facility should respond in an emergency.⁸

Safety cases are expected to reduce safety risks to a level “as low as reasonably practical” (ALARP).⁹ Guidance from the supervising agency, the British Health and Safety Executive (HSE), has translated this verbal formulation into two sets of numbers: (1) “an individual risk of death of 10^{-3} [1 in 1,000] per year”¹⁰ and (2) an “implied cost of averting a statistical fatality (ICAF) generally measured as six times the value of each life saved, with a life worth £1 million” (about \$1.58 million in December 2010).¹¹ One final feature of overriding importance in the British system is that all safety cases are held in the strictest confidence. No one except the consultants, top level management, the assigned agency official, and—in limited circumstances—a worker representative is allowed to see the finished document in its entirety.

I have no doubt that the British regulatory system has much to teach American regulators. The awkward fact remains, however, that BP has historically been one of the biggest operators of deep wells in the North Sea¹² and is a veteran of that system. If safety cases truly inspire a pervasive safety culture that is based on a deeply ingrained corporate recognition of the high costs of neglecting such procedures, how could this quintessentially British company have failed so abjectly to internalize these practices when it expanded its operations to the Gulf of Mexico? One response could be that BP's top managers in London oversee a sprawling empire that has

⁸ See generally HEALTH & SAFETY EXEC., ASSESSMENT PRINCIPLES FOR OFFSHORE SAFETY CASES (APOSC) (2006), available at <http://www.hse.gov.uk/offshore/aposc190306.pdf> [hereinafter APOSC REGULATIONS].

⁹ ALARP “at a Glance”, HEALTH & SAFETY EXECUTIVE, <http://www.hse.gov.uk/risk/theory/alarplance.htm> (last visited Dec. 17, 2010).

¹⁰ APOSC REGULATIONS, *supra* note 8, princ. 5, ¶ 39, at 12.

¹¹ *Id.* (defining risk level of 1 in 1,000 lives); *id.* princ. 12, ¶ 58, at 14.

¹² See, e.g., Rowena Mason, *Oil Spill: BP Reassures over Russian, North Sea Assets*, TELEGRAPH, June 22, 2010 (reporting on BP's promises not to withdraw its major investments in the North Sea); Rowena Mason, *BP: A Beginners Guide to the Company*, TELEGRAPH, June 22, 2010 (reporting that until the Deepwater disaster, BP was the second largest oil company in the world and Britain's biggest company but that as of June 2010, it had slipped to sixth largest company worldwide; further reporting that BP obtained eight percent of its oil from the North Sea).

developed a multiplicity of management styles and values appropriate for the country where subsidiaries are operating. But remarkably insightful investigative journalism motivated by the Gulf spill, as well as independent reports on BP's management style onshore, suggest that BP London headquarters maintained iron clad control over operations elsewhere, imposing a rigorous cost-cutting regime that very likely contributed to the Gulf catastrophe.¹³ In this context, it is fair to ask whether BP's problems indicated that the British regulatory system fell short of inspiring the institutional metamorphosis claimed by its proponents.

An effort to answer these questions, which I just manage to begin here, should inform American efforts to learn from British system. Ultimately, this article argues that far from providing a perfect model for future regulation, as its proponents suggest, overall, the British safety case system is the wrong choice for America.

Oil rigs can be analogized to apartment houses operating on top of unpredictably active volcanoes. Rather than relying on facility-specific and abstract demonstrations that risk levels in certain circumstances will result in the deaths of a certain number of workers, American regulatory reform should focus on mandating the installation of the best available "failsafe" technology and teaching workers how to use it. Compliance documents should be transparent and available not just to regulators, but to private sector overseers who can hold them

¹³ *Frontline: The Spill* (PBS television broadcast Oct. 26, 2010), available at <http://www.pbs.org/wgbh/pages/frontline/the-spill/> (explaining that Don Parus, the plant manager of BP's largest refinery in the U.S., located in Texas City, Texas, made repeated trips to London to plead for relaxation of cost-cutting edicts because he was concerned about their implications for safety, and that at one point he even presented a power point showing pictures of workers who had died at the refinery in an effort to bolster his case. All these efforts were fruitless and on March 25, 2005 an explosion occurred that killed 15 people). See also Siobhan Hughes & Ben Casselman, *BP Took Risk on Well Job: Investigator*, WALL ST. J., Nov. 9, 2010 (reporting that BP removed a safeguard of heavy drilling mud before fully sealing the well with a cement plug, with the result that a crucial backup device was never installed); Siobhan Hughes & Stephen Power, *BP Spill-Panel Staff Cites Management Failings*, WALL ST. J. (Dec. 3, 2010) (reporting that BP's cost-cutting moves in the years leading up to the spill created the maintenance conditions that contributed to it).

accountable, including inspectors general, the Government Accountability Office, public interest groups, the insurance industry, and investment firms.

The remainder of the paper describes in more detail how the guidance governing safety cases encourages a preoccupation with number-crunching that results in insufficiently protective and likely ineffective plans. It examines evidence indicating that the safety case regime is in serious trouble, including a self-audit by the British Health and Safety Executive (HSE) in 2005 that indicated profound gaps in the system's effectiveness. The paper considers why the specific cost-benefit and secrecy aspects of the British system are inappropriate in the context of American law. It concludes that given the resource constraints plaguing the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE)—at the moment, it has 55 inspectors to cover 3,500 offshore facilities—wholesale adoption of the safety case regime will prove an expensive and negative distraction to American efforts to strengthen regulation offshore.¹⁴ Instead, the imposition of strong civil and criminal liability is far more likely to alter industry complacency and produce real safety improvements.

“It Can Get Very Complicated”

The British government has grappled with the safety of deep well drilling for close to half a century, ever since the discovery of vast oil reserves in the North Sea in the late 1960's. The discovery was perceived as an economic miracle in Britain, staving off grave financial hardship and allowing the country to reclaim its position as an industrial powerhouse within the European community.¹⁵ Few people looked this providential gift horse in the mouth and regulation in the

¹⁴ Leslie Eaton, Stephen Power & Russell Gold, *Inspectors Adrift in Rig-Safety Push*, WALL ST. J., Dec. 3, 2010, at A1 (reporting on the extraordinarily difficult challenges U.S. inspectors encounter when policing safety in the Gulf of Mexico).

¹⁵ OIL AND GAS LAW, *supra* note 3, at 117.

North Sea was quite lax for many years because the government had no interest in interfering with the rapid development of oil resources.¹⁶

Two catastrophic accidents—Sea Gem in 1965 and, especially, Piper Alpha in 1988—provoked political and social upheaval throughout Britain.¹⁷ Especially influential was a report by Lord W. Douglas Cullen¹⁸ regarding the Piper Alpha tragedy, which roundly condemned the flaws of the regulatory system.¹⁹ Lord Cullen concluded that although the British Department of Energy had inspected the facility in June 1987 and again in June 1988—only weeks before it blew into pieces—

[t]he findings of those inspections were in striking contrast to what was revealed in evidence at the Inquiry. Even after making allowance for the fact that the inspections were based on sampling it was clear to me that they were superficial to the point of being of little use as a test of safety on the platform. They did not reveal a number of clear cut and readily ascertainable deficiencies. While the effectiveness of inspections has been affected by persistent under-manning and inadequate guidance, the evidence led me to question, in a fundamental sense, whether the type of inspection practiced by the [Department of Energy] could be an effective means of assessing or monitoring the management of safety by operators.²⁰

Among the most important consequences of Lord Cullen's report was the transfer of responsibility for controlling offshore safety hazards from the Department of Energy, which was also regarded as the oil industry's "sponsoring" department, to the Health and Safety Executive

¹⁶ *Id.* at 123–24. See also CHARLES WOOLFSON, JOHN FOSTER & MATTHIAS BECK, PAYING FOR THE PIPER, CAPITAL AND LABOUR IN BRITAIN'S OFFSHORE OIL INDUSTRY 19 (1997) ("British oil was to be extracted at the fastest rate possible, with limited state control and in conditions of close commercial partnership between American oil companies and banks and those of Britain.").

¹⁷ WOOLFSON, FOSTER & BECK, *supra* note 16, at 106–29, 301–27 (describing the Piper Alpha tragedy and its aftermath, especially the impact of these events on the British labor union movement).

¹⁸ Lord Cullen is former member of the Scottish judiciary with an impeccable reputation for public service and integrity. See, e.g., *High Profile Judge's Lockerbie Role*, BBC, Jan. 22, 2002, http://www.simonbaker.me/2/hi/in_depth/1775558.stm.

¹⁹ LORD CULLEN, THE PUBLIC INQUIRY INTO THE PIPER ALPHA DISASTER (1990) [hereinafter CULLEN REPORT] (on file with author) (presented to Parliament by the Secretary of State for Energy by Command of Her Majesty).

²⁰ *Id.* at 3.

(HSE), the English equivalent of the U.S. Occupational Safety and Health Administration (OSHA).²¹

At the time of Piper Alpha, the HSE was already in the throes of adopting “goal-oriented” regulation to replace prescriptive regulation. Proponents justified this transformation as superior to the old regime because making individual companies responsible for designing their own safety systems would instill a “culture of safety” far more effectively than developing rigid rules that devolve to mindless “box ticking.”²² To develop redundant systems capable of preventing accidents on facilities operating in such a hostile environment would take bottom up, fully integrated cooperation by everyone on a rig, or so British policymakers reasoned.

The core requirements of such planning depend heavily on quantitative risk assessment and cost-benefit analysis conducted as an integral part of the document and designed to reduce the cost of preventive measures. The application of both methodologies in the context of safety cases is based on the statutory requirement that employers provide protection “so far as is reasonably practicable” (SFAIRP), which was originally established in the Health and Safety at Work Act of 1974.²³ HSE has adopted its own regulatory mandate that risk offshore be reduced

²¹ OIL AND GAS LAW, *supra* note 3, at 124.

²² *Id.* at 125. The term “box ticking” is a label intended to connote profound disdain for a bureaucratic mindset that saps individual initiative and usurps corporate autonomy to the ultimate disadvantage of true safety. *See, e.g.,* Angela Henshall, *Deep Water, Deep Trouble, The Oil Industry Must Rethink Risk Management Procedures*, WALL ST. J., Oct. 6, 2010 (“Piper Alpha caused the UK industry to evolve in a very different direction to the U.S. It adopted a principals (sic) base approach rather than more prescriptive rule setting. Risk experts argue a more flexible ‘goal-setting’ strategy has proved far better suited to achieving cost-effective solutions to offshore safety. They believe there are a number of disadvantages to a prescriptive approach that will need to be addressed in the Gulf of Mexico, not least it encourages a box-ticking mentality.”). *See also* ECONOMIST INTELLIGENCE UNIT, BEYOND BOX-TICKING: A NEW ERA FOR RISK GOVERNANCE (2009), available at http://openspace.ace-ina.com/public/Attachments/EIU_risk_survey-report-Sept_09%5B1%5D.pdf (reporting on a worldwide survey of business leaders who decry the perils of the rigid “box-ticking” mentality for the management of corporate financial risk that was prepared by staff of British magazine *The Economist*).

²³ Health and Safety at Work Act, 1974, c. 37, § 2(1), available at <http://www.statutelaw.gov.uk/legResults.aspx?LegType=All+Legislation&title=health+and+safety+at+work+etc+act+&Year=1974&searchEnacted=0&extentMatchOnly=0&confersPower=0&blanketAmendment=0&TYPE=QS&NavFrom=0&activeTextDocId=1316700&PageNumber=1&SortAlpha=0>. HSE asserts that the statutory formulation—SFAIRP—and the regulatory formulation—ALARP—are “interchangeable,” but warns duty holders

“as low as reasonably practical” (ALARP).²⁴ At least so far as these verbal formulations go, their cost-benefit balancing approach is in rough alignment with the analogous standard in the U.S. Occupational Safety and Health Act (OSH Act).²⁵

HSE documents are replete with exhortations that sound safety-minded:

In essence, making sure a risk has been reduced to ALARP is about weighing the risk against the sacrifice needed to further reduce it. The decision is weighted in favour of health and safety because the presumption is that the duty-holder should implement the risk reduction measure. To avoid having to make this sacrifice, the duty-holder must be able to show that it would be grossly disproportionate to the benefits of risk reduction that would be achieved. Thus, the process is not one of balancing the costs and benefits of measures but, rather, of adopting measures except where they are ruled out because they involve grossly disproportionate sacrifices.²⁶

But the regulations go considerably further to circumscribe expectations of how much companies are required to spend on limiting risk, preventing accidents, and providing protection.

In an “Information Sheet” designed to explain how safety cases should “demonstrate compliance with the relevant statutory provisions,” HSE disclaims the “precautionary principle,” viewed by many conservative commentators and industry representatives as the source of needlessly expensive regulatory requirements that protect against risks that are far from certain:

[I]nvocation of the precautionary principle may be appropriate in addressing the introduction of genetically modified plants where there is good reason to believe that the modifications could lead to harmful effects on existing habitats, and there is a lack of knowledge about the relationship between hazard and consequence. In the offshore industry the hazards and consequences are well understood and hence conventional assessment techniques can be used to evaluate the risks, using a *cautionary approach* rather than application of the precautionary principle.

to mind their terminology when referring to either standard in “legal” documents. *ALARP “at a Glance”*, *supra* note 9.

²⁴ *ALARP “at a Glance”*, *supra* note 9.

²⁵ 29 U.S.C. §§ 652(8), 655(b)(5) (2006).

²⁶ *ALARP “at a Glance”*, *supra* note 9.

Therefore invocation of the precautionary principle is extremely unlikely to be appropriate offshore.²⁷

HSE made the decision to relax the rules in 2005 to require that duty holders review safety cases once every five years, as opposed to once every three years.²⁸ The rules were also loosened to provide that a safety case—paradoxically described as a “living document”—lasts the life of a facility without being resubmitted for explicit approval to HSE, although duty holders continue to have the obligation to revise them “as appropriate.”²⁹

But at the heart of cost control efforts are the dual expectations that duty holders will perform quantified risk assessments and cost benefit analyses as an integral part of their demonstration that individual safety cases will provide adequate protection. HSE instructs that safety cases should contain number crunching demonstrating that risks in any given area are not higher than one in 1000 fatalities and that preventive measures (e.g., the installation of equipment and training programs) do not result in expenditures greater than £1 million (about \$1.6 million).³⁰ Duty holders, who range from the company or companies that own the rig to the multiple contractors brought in to install and maintain drilling equipment, are mandated by further guidance to calculate whether these numbers are met quantitatively, using algorithms that

²⁷ HEALTH & SAFETY EXEC., OFFSHORE INSTALLATIONS (SAFETY CASE) REGULATIONS 2005: REGULATION 12 DEMONSTRATING COMPLIANCE WITH THE RELEVANT STATUTORY PROVISIONS, No. 2/2006, at 7 (emphasis added), available at <http://www.hse.gov.uk/offshore/is2-2006.pdf>.

²⁸ HEALTH & SAFETY EXEC., A GUIDE TO THE OFFSHORE INSTALLATIONS (SAFETY CASE) REGULATIONS 2005, at 7 (3d ed. 2006), available at http://www.hseni.gov.uk/130_a_guide_to_the_offshore_installations_safety_case_regulations_2005.pdf [hereinafter GUIDE TO OFFSHORE INSTALLATIONS].

²⁹ *Id.* at 12.

³⁰ APOSC REGULATIONS, *supra* note 8, princ. 5, ¶ 39, at 12 (“An individual risk of death of 10^{-3} per year has typically been used within the offshore industry as the maximum tolerable risk.”); *id.* princ. 12, ¶ 58, at 14 (“HSE’s ‘Reducing Risks Protecting People’ document sets the value of a life at £1,000,000 and by implication therefore the level at which the costs are disproportionate to the benefits gained.”).

appear to be largely the province of a cottage industry of consulting firms.³¹ They are also encouraged to refer to what is generally considered “good practice” at facilities like theirs.³²

“It can get very complicated,” HSE adds, in a throwaway sentence that is inadvertently both humorous and exasperating.³³ Safety cases are often “bulky.”³⁴ A recent PowerPoint presentation by Kevin Kinsella, a safety case expert at Environmental Resources Management, a global consulting firm, estimates that the typical safety case for a medium-size North Sea production platform covers anywhere from 390-610 pages.³⁵ The entire system is summarized in the following diagram:

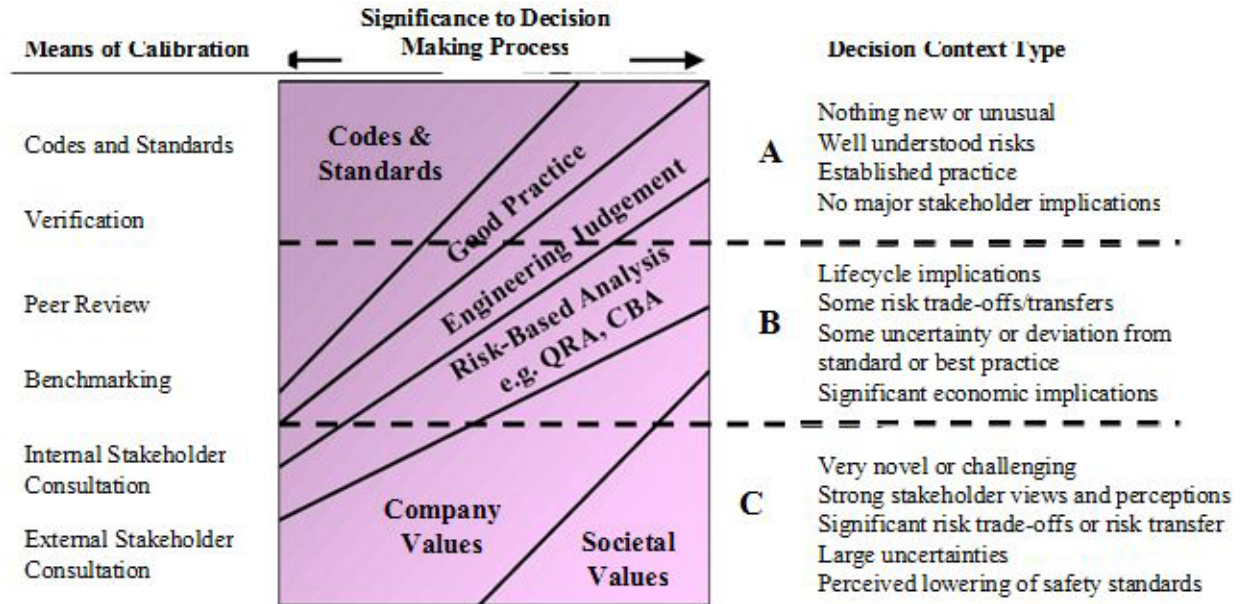
³¹ See, e.g., *Principles for Cost Benefit Analysis (CBA) in Support of ALARP Decisions*, HEALTH & SAFETY EXECUTIVE, <http://www.hse.gov.uk/risk/theory/alarpcba.htm> (last visited Dec. 17, 2010); *Cost Benefit Analysis (CBA) Checklist*, HEALTH & SAFETY EXECUTIVE, <http://www.hse.gov.uk/risk/theory/alarpccheck.htm> (last visited Dec. 17, 2010). The 2005 revisions to the ALARP guidance somewhat deemphasized the performance of quantitative risk assessment, acknowledging that some risks could be described qualitatively and that HSE had also prescribed requirements that must be implemented regardless of site-specific risk assessment. APOSC REGULATIONS, *supra* note 8, at 5.

³² ALARP “*at a Glance*”, *supra* note 9 (“In most situations, deciding whether the risks are ALARP involves a comparison between the control measures a duty-holder has in place or is proposing and the measures we would normally expect to see in such circumstances i.e. relevant good practice. . . . We decide by consensus what is good practice through a process of discussion with stakeholders, such as employers, trade associations, other Government departments, trade unions, health and safety professionals and suppliers.”).

³³ *Id.*

³⁴ GUIDE TO OFFSHORE INSTALLATIONS, *supra* note 28, at 11.

³⁵ For further information about ERM, see *About Us*, ENVTL. RESOURCE MGMT, <http://www.erm.com/About-Us/> (last visited Dec. 17, 2010). Mr. Kinsella’s presentation appears at the web site for the Great Debate Conference, *supra* note 2.



Source: HEALTH & SAFETY EXEC., OFFSHORE INSTALLATIONS (SAFETY CASE) REGULATIONS 2005: REGULATION 12 DEMONSTRATING COMPLIANCE WITH THE RELEVANT STATUTORY PROVISIONS, No. 2/2006, at 5, available at <http://www.hse.gov.uk/offshore/is2-2006.pdf>.

No lawyer can credibly object to lengthy documents; they are, after all, our stock and trade. The real question is whether safety cases are actually translated into meaningful changes in behavior offshore. Without having an opportunity to get a sense of how they are typically written because they are kept secret, it is tempting to hypothesize that they reach a level of abstraction that may help management to make big decisions about what kinds of equipment to install but have only marginal impact influence on whether the equipment is maintained or workers know how to use it.

But Does the Safety Case System Work?

Because no major catastrophes have occurred in the British section of the North Sea since Piper Alpha, proponents of the regime contend that the safety case system is working, at least to the extent of preventing such hazards. Of course, the causes of an accident as spectacularly tragic as Piper Alpha are not on a linear continuum with the reasons why a company has a high injury rate. Moreover, a strong regulatory system does not necessarily mean that major accidents will never occur. Rather, such situations get complicated, as HSE would say.

For one thing, rates of routine injuries are far from a perfect proxy for “process safety,” a term of art in the engineering profession that connotes the failure of manufacturing systems involving the use or extraction of extremely hazardous substances.³⁶ Or, in other words, the fact that an individual worker slips and falls on an oily deck cannot be used as a proxy for whether a facility has in place the considerably more sophisticated management systems that are required to prevent major mistakes in the system for processing chemicals or producing oil offshore.³⁷ And, of course, accidents can happen, even at companies that have a strong culture of paying attention to all kinds of safety issues. Only in the aftermath of such fiascos, with the benefit of 20-20 hindsight, can we reach definitive conclusions about the relationship between the proximate causes of an accident, a firm’s overall safety culture, and the efficacy of pre-accident regulatory intervention.

Yet it is difficult to think of a single instance where analyses of the aftermath of major industrial catastrophes have ever concluded that a ship shape company, with a strong safety culture, operating in a rigorous regulatory environment, was in fact ambushed by a freak instance

³⁶ See, e.g., Andrew Hopkins, *For Whom Does Safety Pay? The Case of Major Accidents*, 32 SAFETY SCI. 143 (1999) (explaining the differences between calculating the costs and benefits of minimizing common workplace and averting major catastrophe).

³⁷ See, e.g., Andrew Hopkins, *Thinking About Process Safety Indicators*, 47 SAFETY SCI. 460 (2009) (explaining the differences between process safety and personal safety at work).

of bad luck. Instead, report after report concludes that the absence of a strong regulatory presence and corporate neglect of safety at the highest levels were *quid pro quos* for accidents that were waiting to happen. If not on a straight linear continuum with poor maintenance, inordinate daily injuries, and poorly designed regulatory controls, catastrophes are a foreseeable implication of the cumulative consequences of neglect in those areas.

At least in the offshore arena, Britain lacks the independent auditing structure provided by the Government Accountability Office and inspectors general in the United States. Once again, the secrecy surrounding offshore safety cases and the difficulties of gaining access to offshore facilities make it difficult, if not impossible, for academics or public interest groups to fill this gap. Despite these challenges, two indicators suggest that the safety case system is not nearly as effective as its supporters suggest. The first is a damning indictment of overall safety consciousness offshore prepared by HSE auditors on the basis of inspections of 100 individual facilities.³⁸ The second involves figures compiled by the International Association of Drilling Contractors (IADC) showing injury rates offshore in Britain and the United States. These figures show a less disparate safety record than we might expect given the supposed superiority of the British regulatory system.

The Government's Self-Audit

In 2005, prompted by concerns that the North Sea infrastructure was aging rapidly and that new, relatively inexperienced companies were assuming control of many facilities as the largest players moved to more lucrative production sites around the globe, HSE reviewed the efficacy of the safety case system.³⁹ Its report, entitled *Key Programme 3 (KP 3)*, was extremely

³⁸ HEALTH & SAFETY EXEC., KEY PROGRAMME 3: ASSET INTEGRITY PROGRAMME (2007), available at <http://www.hse.gov.uk/offshore/kp3.pdf> [hereinafter KP 3 REPORT].

³⁹ “The offshore oil and gas industry in the UK Continental Shelf (UKCS) is a mature production area. Much of the offshore infrastructure is at, or has exceeded, its intended design life. During the 1990s low oil prices and initiatives

troubling, concluding that at more than 50 percent of the 100 installations inspected, the state of the physical plant was “poor.”⁴⁰ The report’s anonymous authors dismissed out of hand the oil industry’s defense that these problems occurred only in non-safety-critical aspects of the infrastructure: “This [claim] illustrates a lack of understanding in many parts of the industry that degraded non-safety-critical plant and utility systems can impact on safety critical elements in the event of a major accident reducing their performance.”⁴¹

Beyond concerns such as whether rusting external stairs could collapse in the event of a fire, *KP 3* inspectors found that systems critical to the survival of the workforce during major accidents were in terrible shape. For example, HSE inspectors tested so-called “TR HVAC” systems, the technical term of art for the mechanical means by which a compartment containing people can be closed off from the incursion of flammable and toxic gases during an explosion or fire.⁴² Such systems failed to some degree in *64 percent* of such tests, revealing a “picture of inadequate testing and very poor reliability” for a critical component of emergency response.⁴³

As for the notion that safety cases are living documents that instill an ongoing commitment to the prevention of major hazards, the *KP 3* report concluded that managers of offshore facilities rely far too extensively on “operational risk assessments”—that is, theoretical modeling of how workers are supposed to react—to compensate for degraded infrastructure.⁴⁴ The report also noted that at many facilities, “performance standards”—the fundamental building block of safety cases and their implementation—were

to reduce costs led to a reduction in the offshore workforce. This in turn led to reductions in levels of maintenance and, as a result, an overall decline in the integrity of fabric,” HSE explained. *Id.* at 8.

⁴⁰ *Id.* at 7.

⁴¹ *Id.* Unlike most American government reports, HSE documents are devoid of the names of individual officials who wrote them or can be contacted for further information.

⁴² *Id.* at 16.

⁴³ *Id.* at 17.

⁴⁴ *Id.* at 6.

generic in nature without being specific and measureable. Examples of measureable criteria are valve maximum closure times and maximum allowable leak rates. An example of not being specific was where *a duty holder used the same performance standard across all their installations* and there were differences in the actual systems on the installation that required changes to functionality.⁴⁵

Of course, the problem of cut-and-paste generic standards in safety protocols emerged with savage irony in the aftermath of the BP Gulf spill, when the Associated Press discovered that the company's spill prevention control plan included a discussion of the consequences for walrus of a spill when such animals do not live in the area; the name of a deceased consultant on a list of experts to consult in the event of a spill; and a series of disconnected or wrong phone numbers as contacts during an emergency response.⁴⁶

In addition to over-reliance on cookie-cutter prototypes of critical documentation, the HSE team mentions repeatedly that severe "skills shortages" in engineering disciplines have accelerated corporate inattention to infrastructure maintenance.⁴⁷ The shortage, described as a "problem of the industry's own making," began in the 1990s when low oil prices prompted companies to "shed significant numbers of onshore and offshore workers."⁴⁸ This kind of short-sighted reaction is a strong indicator of a weak and ineffective regulatory regime that does not exert sufficient pressure on corporate decisions to eliminate, for profit-driven reasons, the human and technological resources essential to achieving compliance.

⁴⁵ *Id.* at 22 (emphasis added).

⁴⁶ *BP's Gulf Oil Spill Response Plan Lists the Walrus as a Local Species*, CHRISTIAN SCI. MONITOR, June 9, 2010, <http://www.csmonitor.com/From-the-news-wires/2010/0609/BP-s-gulf-oil-spill-response-plan-lists-the-walrus-as-a-local-species.-Louisiana-Gov.-Bobby-Jindal-is-furious>.

⁴⁷ KP 3 REPORT, *supra* note 38, at 29. *See also id.* at 12–13 (describing the dearth of technicians offshore, both because facility operators do not have enough employees with such skills and because of a dearth of "bed space"—rooms that can accommodate visitors in addition to the permanent crew—aboard such facilities).

⁴⁸ *Id.* at 29.

British and American Safety Records

In the aftermath of the Deepwater Horizon spill, investigations of the disconcerting chain of events that produced the disaster came to mortifying conclusions about the American regulatory system.⁴⁹ All of these reports were scathing in their conclusions that the Minerals Management Service (MMS) was a captive of the U.S. oil industry.⁵⁰ In short order, the benighted agency renamed the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE).⁵¹ The admittedly harsh, and somewhat impression left by these accounts is that MMS regulation and regulatory oversight were approaching the end of the continuum where no effective government controls were maintained over offshore operations.

It is somewhat disconcerting, then, to discover that, according to statistics compiled by the International Association of Drilling Contractors (IADC), a trade association with scant motivation to exaggerate safety problems, the rates of offshore injuries in the United States and Europe were not as disparate as one might suppose given the claims made about the efficacy of the British regulatory system. The IADC reports cover only the drilling industry, are submitted voluntarily, and are *not* audited, and therefore must be viewed in perspective, as rough indicators of safety trends. The refinement of systems for tracking injuries and fatalities offshore should be a priority for BOEMRE. Here are those statistics, for reporting periods in 2007-2009:

⁴⁹ See, e.g., Jason DeParle, *Minerals Service Had a Mandate to Produce Results*, N.Y. TIMES, Aug. 7, 2010 (“The causes of the spill remain unclear, but a number of the agency’s actions have drawn fire The story has gained a bacchanal gloss because agency employees in Louisiana and Colorado took meals, gifts and sporting trips paid for by the industry, and several Colorado officials had sex and used drugs with industry employees.”).

⁵⁰ *Id.*

⁵¹ Order from the U.S. Sec’y of the Interior (Order No. 3302) on Change of the Name of the Minerals Management Service to the Bureau of Ocean Energy Management, Regulation, and Enforcement (June 18, 2010), available at <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=35872>.

U.S. Waters	2009	2008	2007	European Waters	2009	2008	2007
Total Man Hours	33,501,661	39,665,560	39,701,950	Total Man Hours	32,947,340	38,049,523	35,007,255
Total Medical Treatment Incidents	72	118	115	Total Medical Treatment Incidents	48	95	81
Total Restricted Work Incidents	40	100	97	Total Restricted Work Incidents	24	43	42
Total Lost Time Incidents	32	20	56	Total Lost Time Incidents	48	51	72
Total Fatalities	2	3	0	Total Fatalities	1	0	0
Total Recordables	146	237	268	Total Recordables	121	189	195
LTI* Incidence Rate	0.20	0.15	0.28	LTI Incidence Rate	0.30	0.27	0.41

Source: International Association of Drilling Contractors, Incident Statistics Program, *available at* <http://www.iadc.org/asp.htm>.

* “Lost time incidence” defined as a work-related incident (injury or illness) to an employee in which a physician or licensed health care professional recommends days away from work due to the incident.

The 2009 statistics were reported in a PowerPoint presentation by Ken Arnold, senior technical advisor to Worley Parsons, a global engineering firm. His presentation was part of a conference sponsored by the Society of Professional Engineers and held in Houston, Texas on September 16, 2010.⁵² The conference appears to have been designed to provide an opportunity for global consultants familiar with the British system to sing its praises before American oil industry professionals. But Arnold opposed adoption of the safety case regime, arguing that

⁵² See Great Debate Conference, *supra* note 2, Ken Arnold, WorleyParsons, Production Operations—The Need for a Safety Case (Sept. 20, 2010) (PowerPoint), *available at* http://www.spegcs.org/attachments/studygroups/12/2010_09_SE_%20-%202.%20Ken%20Arnold_Safety%20Case%20Process%20in%20Production%20Operations.pdf.

“accidents are avoided by people operating in supportive organizations” and that the oil industry in America “does NOT need another level of analysis and documentation.”⁵³

Conflicting Values in the Law

The fundamental principles of British and American worker protection laws are superficially similar: agencies are instructed to balance anticipated risks against the costs of reducing them.⁵⁴ These mandates have produced a pervasive reliance on quantitative risk assessment in both countries. But as implemented in the context of offshore regulation, these surface similarities diverge in two key respects. Substantively, the British are willing to embrace a risk standard—1 in 10⁻³ (1 in 1,000)—that is significantly less protective than what American regulators, instructed by court decisions, should accept. Procedurally, the British are willing to delegate to industry the role of performing quantitative risk assessments on individual facilities, while American regulators generally conduct their own analyses and apply them in the context of industry-wide rulemaking. The two countries’ efforts to regulate worker safety began at roughly the same time with the passage of two authorizing statutes, although the British Parliament looked backward twenty-five years to a seminal court opinion to inform its work, while Congress improvised only to have its intentions clarified by a subsequent court opinion explaining what it must have meant.

The British Health and Safety at Work Act of 1974 required protection “so far as is reasonably practicable” (SFAIRP).⁵⁵ This standard was based upon a 1949 case, *Edwards v.*

⁵³ *Id.*

⁵⁴ Compare Health and Safety at Work Act, 1974, c. 37, § 2(1), available at <http://www.statutelaw.gov.uk/legResults.aspx?LegType=All+Legislation&title=health+and+safety+at+work+etc+act+&Year=1974&searchEnacted=0&extentMatchOnly=0&confersPower=0&blanketAmendment=0&TYPE=QS&NavFrom=0&activeTextDocId=1316700&PageNumber=1&SortAlpha=0>, with Occupational Safety and Health Act, 29 U.S.C. §§ 652(8), 655(b)(5) (2006).

⁵⁵ Health and Safety at Work Act § 2(1). HSE asserts that the statutory formulation—SFAIRP—and the regulatory formulation—ALARP—are “interchangeable,” but warns duty holders to mind their terminology when referring to either standard in “legal” documents. ALARP “*at a Glance*”, *supra* note 9.

National Coal Board, decided by the Court of Appeal, that country's equivalent of the American Supreme Court.⁵⁶ The case involved a worker in a coal mine who was killed by a collapsing wall of coal mining waste on the side of a road where he was walking; his widow won the case in the highest court after having lost it below. In the passage commonly considered to be the most significant in the opinion, Judge Asquith wrote:

'Reasonably practicable' is a narrower term than 'physically possible' and seems to me to imply that a computation must be made by the owner, in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other; and that if it be shown that there is a gross disproportion between them - the risk being insignificant in relation to the sacrifice - the defendants discharge the onus on them. Moreover, this computation falls to be made by the owner at a point of time anterior to the accident.⁵⁷

As discussed earlier, the agency charged with implementing the statute obtained jurisdiction over offshore work in 1992 and was immediately confronted with the need to further interpret what level of risk was acceptable in an industry that represented a crucial engine for the country's economy but that was compelled to operate in an environment as dangerous as it was unforgiving. As explained above, the result was the "as low as reasonably practicable standard" (ALARP) standard that has been interpreted to establish 1 in 1,000 deaths and expenditures of £1 million as the maximum level of risk that offshore facilities must meet.⁵⁸

The British comfort with such numbers, albeit in a regulatory regime that is significantly less visible than a Parliamentary debate, is striking, as is HSE's willingness to delegate the chore of calculating them to regulated parties. In thirty-five years of experience with statutes and regulations that establish through verbal formulations the levels of protection to be provided to

⁵⁶ *Edwards v. Nat'l Coal Bd.*, [1949] 1 K.B. 704. Excellent background on the British Court system is provided by the Library of Congress. *Legal Research Guide: United Kingdom*, LIBR. OF CONGRESS, <http://www.loc.gov/law/help/uk.php> (last updated Aug. 30, 2010).

⁵⁷ *Edwards*, [1949] 1 K.B. at 712.

⁵⁸ See *supra* notes 9-11 and accompanying text.

the public as a whole and workers in particular, I have been able to find only two examples where an American agency even came close to using numerical risk levels within their explanations of how a binding rule was intended to operate.⁵⁹ Of course, risk levels in deaths per thousands and the costs and benefits of a proposed control expressed as dollars per statistical life are routinely incorporated in documents used as the basis for regulation, including a wide array of quantitative risk assessments and regulatory impact assessments prepared by agencies and their stakeholders. Embracing such numbers in safety cases to a large extent as substitutes for regulation reflects comfort with the level of reliability of the methodologies that are used to produce such numbers that American regulators are rightly unwilling to accept.

In fact, American health, safety, and environmental protection statutes contain only two examples of such numerical standards, both of which tolerate no more than a one in 1,000,000 level of risk. The first is section 408(b)(2)(A)(ii) of the Food Quality Protection Act, interpreting the statutory standard of a “reasonable certainty of no harm,” and the second is section 112 of the Clean Air Act, setting the maximum level of exposure for the “most exposed” individuals in the

⁵⁹ Consulting with my colleagues Thomas McGarity, Robert Percival, and Matthew Shutz, I was able to find only two relevant examples where agencies came close to using numerical risk levels within a binding rule. The first is EPA’s efforts to set a lifetime exposure risk for airborne benzene for the general population where it set up a system that established a “maximum level of a pollutant for a lifetime” (“MIR”) of 1 in 10,000 as “acceptable” and then promised to consider other health and safety factors in making a final regulatory determination. National Emission Standards for Hazardous Air Pollutants; Benzene Emissions from Malaeic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants, 54 Fed. Reg. 38,044 (Sept. 14, 1989). “The presumptive level provides a benchmark for judging the acceptability of maximum individual risk (“MIR”), but does not constitute a rigid line for making that determination.” PERCIVAL ET AL., ENVIRONMENTAL REGULATION, LAW, SCIENCE, AND POLICY 291 (6th ed. 2009) [hereinafter PERCIVAL]. The second is OSHA’s use of such figures in explaining how it sets permissible exposure levels (PELs) for toxic chemicals, which is typified by its *Federal Register* notice for the final rule controlling workplace exposures to hexavalent chromium. Occupational Exposure to Hexavalent Chromium, 71 Fed. Reg. 10,100 (Feb. 28, 2006). The rule’s preamble contains a table showing the risk estimates following the imposition of OSHA PELs for a series of chemicals, including ethylene oxide, asbestos, benzene, formaldehyde, methylenedianiline, cadmium, 1-3, butadiene, methylene chloride, and chromium VI. *Id.* at 10,225. The table indicates risks as high as ten per 1000 workers that would occur if a worker was exposed continuously to benzene at a level equivalent to the relevant PEL over a 45-year period, although most of the estimated recorded risks were significantly lower than this figure. OSHA does not assert that this level of risk is acceptable. Rather, it states that these levels of risk are “significant,” but were nevertheless tolerated in its past rules.

context of limiting exposure to carcinogens.⁶⁰ Both of these provisions appear in the portions of the statutes that do not allow the balancing of costs and benefits, and they involve the protection of the general public, not the working class. All the same, congressional unwillingness to embrace a higher numerical level of risk is worth noting.

As for the specifics of the leading American worker protection statute, for reasons that cannot withstand rigorous ethical—or even logical—scrutiny, non-elderly, adult Americans receive considerably more protection in their capacity as citizens than they receive as soon as they enter the workplace. The primary argument in defense of the discrepancy would appear to be that because workers get paid to spend time in an environment—either inside or outdoors—they are somehow compensated for the greater risks they assume in the form of wage premiums. This justification assumes that workers have perfect, or at least very good, information about those risks and are able to bargain for premiums that fully compensate them for any injuries they suffer. These suppositions are not very convincing on their face, especially given the rapidly declining rate of unionization, which provides the only vehicle for collective bargaining. Nor have they been proven empirically in any industrial context. The fact that we routinely make official government decisions to value a parent's, son's, or daughter's life less when they die as a result of workplace hazards than if they die as a result of walking down the street would surprise most Americans.

Nevertheless, Congress decided to make the OSH Act a cost-benefit balancing statute and it provides the most trenchant comparison to the British offshore regime. The central judicial interpretation of the levels of protection it requires is the 1980 Supreme Court decision in *AFL-*

⁶⁰ 21 U.S.C. § 346a(b)(2)(A)(ii) (2006) (Food Quality Protection Act); 42 U.S.C. § 7412(c)(9) (2006) (providing for the delisting of source categories that emit carcinogens); *id.* § 7412 (f)(2) (authorizing the EPA administrator to regulate sources of carcinogens if Congress does not act).

CIO v. American Petroleum Institute, commonly known as the Benzene decision.⁶¹ The case involved an OSHA decision to set the “permissible exposure level” (PEL) for benzene at one part per million (ppm) in air. The Court reversed and remanded the decision, concluding that OSHA’s evidence did not rise to the level of proving a “significant risk”—its interpretation of the statutory standard that the agency should adopt rules that are “reasonably necessary or appropriate” using the “best available evidence” to assure that “to the extent feasible” that “no employee will suffer material impairment of health or functional capacity.”⁶² The Court also discussed the question of how to measure risk levels numerically:

The requirement that a ‘significant’ risk be identified is not a mathematical straitjacket. It is the Agency’s responsibility to determine. . . . If, for example, the odds are one in a billion that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2% benzene will be fatal, a reasonable person might well consider the risk significant and take appropriate steps to decrease or eliminate it.⁶³

Seven years after the remand, OSHA lowered the benzene limit after the International Agency for Research on Cancer concluded that workers exposed to 10-100 ppm of benzene faced an excess leukemia risk of 170 per 1000.⁶⁴

As for the British regulatory system’s decision to limit oil industry expenditures to £1 million (about \$1.58 million in December 2010), this figure is 5.5 times lower than the \$8.8 million “Value of Statistical Life” (VSL) used by the Environmental Protection Agency (EPA) in recent rulemakings.⁶⁵ The figure is one-third of the lowest VSL used by other agencies such as the Departments of Transportation and Health and Human Services in conducting cost-benefit

⁶¹ 448 U.S. 607 (1980).

⁶² This paraphrase of the statute’s mandate is based on sections 3(8) and 6(b)(5) of the OSH Act. 29 U.S.C. §§ 652(8), 655(b)(5) (2006).

⁶³ *Benzene*, 448 U.S. at 655.

⁶⁴ PERCIVAL, *supra* note 59, at 211.

⁶⁵ U.S. Env’tl. Prot. Agency, Regulatory Impact Analysis for EPA’s Proposed RCRA Regulation of Coal Combustion Residues (CCR) Generated by the Electric Utility Industry 121 (Apr. 30, 2010), available at <http://www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480ae5d01>.

analyses, according to a 2008 article written by John Graham, the director of the Office of Information and Regulatory Affairs (OIRA) responsible for reviewing the economic impact of proposed regulations for President George W. Bush.⁶⁶

Last but not least, we have the question of how the U.S. system deals with permitting regimes—the closest analogy to a safety case—from a confidentiality perspective. Individual permits under the Clean Air Act or Clean Water Act, as well as other federal environmental statutes, are written to govern how regulated activities must be conducted at the specific facility—for example, how many and what types of air pollutants may be emitted, the content and amount of effluent discharged to surface waters, etc.⁶⁷ Those permits are always available to the public. Similarly, Congress has evidenced a clear intent that rulemaking remain as transparent as possible.⁶⁸ In accord is President Obama’s often stated commitment to “open and transparent” government.⁶⁹ A secret system for offshore safety cases would flout all of these well-established regimes, practices, and policies.

Future Directions

⁶⁶ John D. Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. PA. L. REV. 395, 497 (2008). Graham writes that OIRA advised agencies in 2003 to use VSLs ranging from \$1 million to \$10 million, but states that the lower-end figures actually used ranged from \$3-5 million. In a recent report on the costs and benefits achieved by the Clean Air Act, EPA used \$7.4 million as the value of a statistical life (VSL) in 2010. EPA, *The Benefits and Costs of the Clean Air Act: 1990 to 2020, Revised SAB Council Review Draft*, at 5-20 (August 2010), available at <http://www.epa.gov/oar/sect812/aug10/fullreport.pdf>.

⁶⁷ See, e.g., 42 U.S.C. § 7503 (2006) (Clean Air Act permitting requirements for nonattainment areas) and 33 U.S.C. § 1342 (2006) (establishing the Clean Water Act’s national pollutant discharge elimination system permitting program).

⁶⁸ See, e.g., *Natural Res. Def. Council, Inc. v. EPA*, 859 F.2d 156, 175 (D.C. Cir. 1988) (“The requirement of public participation in efforts to control water pollution is established in the congressional declaration of policy and goals of the Act The legislative history of the Act repeatedly echoes the desire ‘that its provisions be administered and enforced in a fishbowl-like atmosphere.’”); *Conn. Light & Power Co. v. Nuclear Regulatory Comm’n*, 673 F.2d 525, 530 (D.C. Cir. 1982) (“In order to allow for useful criticism [in rulemaking], it is especially important for the agency to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules. To allow an agency to play hunt the peanut with technical information, hiding or disguising the information that it employs, is to condone a practice in which the agency treats what should be a genuine interchange as mere bureaucratic sport.”).

⁶⁹ See, e.g., Memorandum for the Heads of Executive Departments and Agencies: Transparency and Open Government, 74 Fed. Reg. 4685 (Jan. 26, 2009) (“My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration.”).

Despite the supposedly momentous conversion of MMS into the BOEMRE, it is difficult to have much confidence that this conversion will translate into increased effectiveness in the actual policing of the over 3,500 oil platforms and drilling rigs now located in the Gulf of Mexico. Investigative reporting by the *Wall Street Journal* on December 6, 2010 was grim regarding the true significance of the reorganization, noting that BOEMRE was only able to field a “small cadre” of fifty-five inspectors armed with “checklists and pencils” to cover the entire offshore industry, resulting in the daunting ratio of one inspector for every sixty-three offshore facilities.⁷⁰

[T]hese inspectors have been overruled by industry, undermined by their own managers, and outmatched by the sheer number of offshore installations they oversee. Inspectors come into the job with little or no hands-on experience in deep-water drilling, learning as they go.

[They] are largely checking hardware [and] get good marks for reducing workplace injuries on rigs and platforms. But safety experts say the main causes of major accidents are almost always human error, not the mechanical failure that inspectors focus on. Inspectors aren’t looking for signs of systemic safety problems—poor decisions, cutting corners, muddled responsibilities—that investigators are linking to the Deepwater Horizon explosions. . . .

Republican lawmakers caution that throwing more money into the agency wouldn’t be a silver bullet and are likely to resist a major funding bump. . . .

While the causes of the Deepwater Horizon disaster remain in question, investigators are pointing to a complex series of human errors, including the design of the well and the failure to recognize problems with cement that was supposed to keep natural gas from flowing into the well. Crucial safety barriers, such as a final cement plug, were not installed or were removed; workers aboard the rig misinterpreted key tests and failed to notice warning signs.

No one knows if a more robust and sophisticated inspection program could have detected these problems or prevented the explosion. But there is broad agreement among safety experts that a massive overhaul is needed to create the kind of inspection program that can help avoid such disasters in the future.⁷¹

⁷⁰ Eaton, Power & Gold, *supra* note 14, at A1.

⁷¹ *Id.* (emphasis added).

I will go out on a sturdy limb and predict that a significant expansion of BOEMRE's budget is unlikely for the foreseeable future. My evidence for this prediction is fourfold: (1) the results of the 2010 election that granted conservative Republicans a decisive majority in the House of Representatives and a significantly stronger hand in the operation of the Senate; (2) congressional failure to pass legislation to strengthen the government's ability to police offshore and authorize higher funding levels, even in the wake of the worst environmental disaster in American history; (3) President Obama's refusal thus far to recognize the crisis in performance⁷² that afflicts every agency responsible for preserving public health, safety, and the environment; and (4) the oil industry's remarkable refusal to acknowledge problems offshore.⁷³ Assuming BOEMRE will be compelled to stumble along as best it can, what alternatives provide the best response to the situation in the Gulf?

In the aftermath of the Deepwater Horizon spill, the *Wall Street Journal* reported that investors around the world were anxiously demanding evidence that "companies have robust spill contingency plans and clear guidelines for contractor selection and oversight. Investors also want to make sure the compensation and incentive packages for senior management include

⁷² For a full description of this crisis, see RENA STEINZOR & SIDNEY SHAPIRO, *THE PEOPLE'S AGENTS AND THE BATTLE TO PROTECT THE AMERICAN PUBLIC: SPECIAL INTERESTS, GOVERNMENT, AND THREATS TO HEALTH, SAFETY, AND THE ENVIRONMENT* (2010).

⁷³ As mentioned earlier, the oil industry argues that BP is a rogue company and that it has safety issues well in hand. John M. Broder, *Oil Executives Break Ranks in Testimony*, N.Y. TIMES, June 15, 2010 ("The chairmen of four of the world's largest oil companies broke their nearly two-month silence on the major spill in the Gulf of Mexico on Tuesday and publicly blamed BP for mishandling the well that caused the disaster."). According to an October 15, 2010 *Federal Register* notice publishing a final rule that strengthens to a modest degree the existing requirement that all offshore facilities implement "environmental management systems," BOEMRE reported that "[m]ost comments expressed the view that the safety and environmental protection record of the offshore industry is excellent, and that imposing these new requirements is not justified." See *Oil and Gas and Sulphur Operations in the Outer Continental Shelf—Safety and Environmental Management Systems*, 75 Fed. Reg. 63,610, 63,612 (Oct. 15, 2010) (to be codified at 30 C.F.R. pt. 250) (strengthening the existing system of regulation that requires all offshore facilities to institute an environmental management system).

specific links to environmental health and safety targets.”⁷⁴ The investors’ lack of emphasis on the efficacy of regulatory regimes is telling, as is the concern that senior management can undermine ground-floor efforts to make safety and prudence a priority through inaction. Their concerns reflect an astute fingering of two of the most important problems now undermining offshore safety: the divided authority exerted onsite by diverse corporate entities that have conflicting economic interests and top management’s neglect of safety issues.

Divided authority occurs because, unlike the vast majority of industrial sites, offshore facilities house workers employed by the company that officially owns the rig or platform, along with a variety of independent contractors. In unraveling the causes of the Deepwater Horizon disaster, investigators have been compelled to disentangle the culpability of Transocean, the owner of the rig that was leased by BP; Halliburton, the company that provided the cement used to suppress volatile gases in the well; and BP itself.⁷⁵ Those reports indicate that BP wanted the drilling to be completed as quickly as possible, while its drilling contractors had minimal economic incentives to rush their work. Bickering over how to complete this work was one cause of the accident.⁷⁶ The distinct corporate entities involved in onsite decision-making obviously require overpowering incentives to come up with a crystal clear chain of command.

The problem of top management neglect is also well-illustrated by the findings of the British HSE’s *KP 3* report finding chronic maintenance problems throughout the North Sea,

⁷⁴ Angela Henshall, *Deep Water, Deep Trouble: The Oil Industry Must Rethink Risk Management Procedures*, WALL STREET J., Oct. 6, 2010, <http://online.wsj.com/article/SB10001424052748703453804575479643629599782.html>.

⁷⁵ See, e.g., Ben Casselman & Russell Gold, *Unusual Decisions Set Stage for BP Disaster*, WALL ST. J., May 27, 2010 (explaining the conflicting pressures and resulting dissonance among BP and its contractors in the events leading up to the spill).

⁷⁶ See, e.g., *There Was ‘Nobody in Charge,’ After the Blast, Horizon Was Hobbled by a Complex Chain of Command*, WALL ST. J., May 27, 2010 (reporting that the only person who noticed that the rig had not sent a “May day” call to onshore executives and took on herself the job of calling in the alarm was reprimanded for taking such action without the express authorization by other higher ranking officials who were milling around the deck). See also Casselman & Gold, *supra* note 75.

including many that compromise safety.⁷⁷ The problem is underscored by the conclusions of independent investigations of BP's operations in North America.⁷⁸ The common themes of these reports are best summarized by the findings of a review commission headed by former Secretary of State James A. Baker III that investigated explosion at BP's Texas City Refinery that killed fifteen people in March 2005. The report stated:

Although we necessarily direct our report to BP, we intend it for a broader audience. We are under no illusion that deficiencies in process safety culture, management, or corporate oversight are limited to BP. . . . The passing of time without a process accident is not necessarily an indication that all is well and may contribute to a dangerous and growing sense of complacency. When people lose an appreciation of how their safety systems were intended to work, safety systems and controls can deteriorate, lessons can be forgotten, and hazards and deviations from safe operating procedures can be accepted. Workers and supervisors can increasingly rely on how things were done before, rather than rely on sound engineering principles and other controls. People can forget to be afraid. . . .

BP has not always ensured that it identified and provided the resources required for strong process safety performance at its U.S. refineries. Despite having numerous staff at different levels of the organization that support process safety, BP does not have a designated, high-ranking leader for process safety dedicated to its refining business. The Panel also found that BP did not effectively incorporate process safety into management decision-making. BP tended to have a short-term focus, and its decentralized management system and entrepreneurial culture have delegated substantial discretion to U.S. refinery plant managers without clearly defining process safety expectations, responsibilities, or accountabilities.⁷⁹

Despite the prominence of the commission and the widespread publication of its findings, no changes were made on anything approaching a company-wide basis, as the Deepwater Horizon catastrophe well illustrates. The cynical but understandable instinct to respond that BP was simply too big to succeed—a thesis promoted in the Public Broadcasting System's *Frontline* report on the company⁸⁰—is not one that regulators or policymakers can afford to accept.

⁷⁷ See *supra* notes 38–48 and accompanying text.

⁷⁸ See, e.g., THE REPORT OF THE BP U.S. REFINERIES INDEPENDENT REVIEW PANEL (2007), available at http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/SP/STAGING/local_assets/assets/pdfs/Baker_panel_report.pdf [hereinafter BAKER REPORT]; *Frontline: The Spill*, *supra* note 13.

⁷⁹ BAKER REPORT, *supra* note 78, at i, vii.

⁸⁰ *Frontline: The Spill*, *supra* note 13.

What would the world look like if regulators, their overseers, and the country's political leadership embraced these insights into what government can do to give offshore operators the right incentives to prevent future disasters?

In a word, liability. Not theoretical liability on the books: we have tried that approach for forty years. Actual liability, imposed by high-profile lawsuits that are announced by the Attorney General and pursued with the full resources of the Justice Department behind them. Eric Holder, the current Attorney General, announced exactly such an action on December 15, 2010.⁸¹ The case seeks civil damages. Criminal charges are still pending and will pack a far more powerful deterrent wallop than civil penalties that can be absorbed by the mammoth company's new leadership, brought in to clean house after the spill. Still, it's a start, and the best hope of averting any more such tragedies.

⁸¹ John Schwartz, *U.S. Sues Company for Spill Damages*, N.Y. TIMES, Dec. 15, 2010 (explaining that the complaint filed in the case does not specify the amount of damages the Justice Department is seeking, the fines and penalties available under the law could total tens of billions of dollars).