ONE ISSUE TWO VOICES

THE RISK AND REGULATION OF DEEPWATER OFF-SHORE DRILLING:

American and Canadian Perspectives

AMY JAFFE + ALEXANDER MACDONALD

From the American authors Amy Jaffe and James Coan

- The United States would be better served with a more goal-based, goal-setting regulatory system for offshore oil development.
- The U.S. Bureau of Ocean Management, Regulation, and Enforcement must consider harsher penalties for problem companies.
- While important, countries should consider factors beyond the desires of local constituencies when deciding where and when to drill for oil.

From the Canadian authors Alexander MacDonald and Nicholas Crosbie

- The current Canadian regulatory system for offshore oil development has significant advantages over the model used in the United States.
- The United States should be wary in thinking more regulators will lead to safer offshore drilling.
- The decision to drill in the Arctic should ultimately rest in the hands of affected local populations.

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INTRODUCTION Americans and Canadians depend on oil to fuel their economy and maintain their standard of living. Conventional domestic sources fall far short of meeting this demand, so both countries rely on imports from often unstable countries in the Middle East, Africa, and South America and on environmentally disputed supplies from the Alberta oil sands. At present, no alternative energy supply powered by the sun, wind, or biofuel crops comes close to meeting North American requirements.

In the last three decades, deepwater drilling has supplied an increasing proportion of the world's oil, from almost none in 1980 to 5 million barrels per day in 2009. Vast supplies of crude oil are known to exist off both the east and west coasts of Canada and the United States and in the Arctic. In the wake of drilling disasters such as the 2010 Deepwater Horizon explosion in the Gulf of Mexico, environmental groups continue to campaign for an outright ban on all deep-sea exploration and drilling. Other authorities argue, however, that until a viable alternative source of energy is available, we have no choice but to tap into this offshore domestic supply. What is needed, they say, is not a ban on offshore drilling but strict regulation of the industry to ensure safe and efficient production.

The experts writing the two essays here set out their views on the regulatory regimes in place in both the United States and Canada. Professor Amy Jaffe (assisted by James Coan) outlines the major organizational and regulatory changes that are being instituted in Washington following the Deepwater spill—in particular, the establishment of three separate federal bodies, each with clearly defined responsibilities: to collect revenues, to manage development, and to enforce safety precautions. Lawyer Alexander MacDonald (assisted by Nicholas Crosbie) describes the Canadian system, which allows the provinces and territories to collect royalties; gives developmental, regulatory, and safety responsibilities to joint federal-provincial boards; and allots major decision-making power to local populations. There are significant differences between these two countries in national versus regional control, in prescriptive versus goal-based regulation, in penalties imposed on companies for infractions, and in the degree of independence granted to the safety regulator. Without doubt, government officials, oil industry representatives, and other interested groups in both the United States and Canada will benefit from a close study of the deepwater-drilling regulations and practices adopted by their neighbor.

This sharing of ideas and processes becomes critical as both countries begin to expand the range of deepwater drilling on all their coasts. At present most of the production has been in the U.S. Gulf of Mexico and off the coast of Newfoundland and Labrador—areas where the majority of the local population has accepted drilling in exchange for the revenues and employment it brings. But exploration in the Arctic presents huge new challenges because of the frigid waters and short open season in this environmentally delicate area. Simultaneously, the current ban on drilling off the coasts of both California and British Columbia raises questions about just who should make decisions concerning the exploitation of this natural resource—a commodity that is at present essential to our energy security and to citizens in all parts of our countries.

The Canada Institute thanks the authors for their critical perspective on a complex and vital issue in the ongoing bilateral dialogue. We would also like to recognize the late C. Warren Goldring and AGF Management for their initial support of this series.

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Cover Image: The Eirick Raude rig drilling for oil offshore Canada

Amy Jaffe and James Coan

OFFSHORE DRILLING REGULATION IN THE UNITED STATES: PROGRESS SINCE THE MACONDO DISASTER

The explosion on the Deepwater Horizon rig at Macondo in the Gulf of Mexico in April 2010 led to the largest oil spill in U.S. history and threatened Gulf ecosystems, the local Gulf coast economy, and the future of U.S. offshore drilling. Attempts to control the blowout captivated the public for more than two months, and both regulators and the oil industry are still in the process of fashioning concrete responses. The stakes are high because offshore oil production is a critical element in U.S. energy security and a major component in future increases in global oil supply.

History teaches us that change after a spill is inevitable and can be long-lasting. Previous major spills have resulted in substantial policy changes. The 1989 *Exxon Valdez* spill led to a mandate that all oil tankers built for use in U.S. ports must have full double hulls. Twenty years earlier, the Santa Barbara oil spill helped to galvanize the environmental movement, and drilling is still banned off California's coasts.

In the United States, the federal government has jurisdiction for waters more than 3 nautical miles from the coast of most states, with Texas and the Gulf Coast of Florida as the exceptions where the states have jurisdiction for the first 9 nautical miles. Even though states have little direct control, the federal government rarely allows offshore drilling near states, such as California, with substantial citizen opposition to drilling.

The state of Alaska, which favors expansion of drilling activities, is an opposite case in which citizens support drilling but new progress has been slow. In February 2008, the federal government leased 2.76 million acres of the Chukchi Sea, mostly to Shell.[1] Although the Obama administration has lifted its post-Macondo temporary drilling permit moratorium, courts and a federal appeals board have delayed Shell's plans.[2] Additional lease sales in the Chukchi Sea are currently on hold.[3]

The Deepwater Horizon accident has presented many new challenges for U.S. regulators and the oil industry, and a number of reforms are already under way. One critical development has been the implementation of new blowout containment systems that are now required for U.S. offshore operations. In addition, a reorganization of the U.S. agencies overseeing offshore drilling was undertaken to provide a stronger regulatory framework for oversight and enforcement of environmental and safety regulations. The reforms included dissolving the Mineral Management Service of the U.S. Department of the Interior and creating two new bodies, both in the Department of the Interior but with entirely different reporting structures and leadership: the Office of Natural Resources Revenue (ONRR) to collect revenues and the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) to regulate offshore drilling.[4]

On October 1, 2011, BOEMRE will itself divide into two new organizations— the Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE).[5] BOEM will be responsible for managing the development of offshore resources in an economically and environmentally secure manner, and its functions will include leasing, environmental studies, and economic analysis.[6] BSEE will enforce environmental and safety regulations, and its functions will include all field operations, such as permits, inspections, oil-spill response, and regulatory programs. BSEE will also have new training and environmental compliance functions.

History teaches us that change after a spill is inevitable and can be long-lasting.

A photo from May 2010 shows dispersant clotted oil and fresh crude floating on the surface nine miles from the Deepwater Horizon oil well spill in the Gulf of Mexico.

THE IMPORTANCE OF OFFSHORE DRILLING

The contribution of global offshore deepwater oil production to the world oil balance has been nothing short of miraculous: from virtually nil in the 1980s, global deepwater oil output climbed to 5 million barrels per day (b/d) in 2009. Today, deepwater activity accounts for the majority of new conventional oil production, and the International Energy Agency (IEA) projects that deepwater production will increase to 9 million b/d by 2035, or to almost 50 percent of total world offshore oil production—up from about one-third currently. Important offshore production areas will include the U.S. Gulf of Mexico, Brazil, West Africa, and the Arctic. The U.S. Geological Survey estimates that the area north of the Arctic Circle has an estimated 90 billion barrels of undiscovered, technically recoverable oil, making it one of the most prospective regions on the globe. The Arctic accounts for about 13 percent of undiscovered oil in the world, and about 84 percent of that is expected to be found offshore. More than half of the undiscovered oil resources are estimated to occur in three geologic areas—Alaska, the Amerasia basin, and the East Greenland rift basins.

In the United States, the deepwater contribution of the Gulf of Mexico to U.S. oil production has been substantial, helping total American oil output to rise from 6.734 million b/d in 2008 to 7.196 million b/d in 2009. The rebound in U.S. domestic oil supply would likely have gained further momentum but for the Macondo accident and the related drilling moratorium. Energy Intelligence Group, a respected analyst, projects that oil output growth in the U.S. Gulf of Mexico will amount to only 22,000 b/d in 2011. This total is five to six times smaller than increases might have been had the Macondo accident not forced a temporary

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moratorium on new projects. Total U.S. Gulf of Mexico output in 2011 is expected to average close to 1.5 million barrels per day.

Longer term, the United States has the potential to see strong growth in its domestic industry, as operations resume and companies get back to work. The U.S. offshore industry could see additional gains of 1 to 2 million b/d in the coming years, while Brazil is also expecting to double its offshore production by 2020.

REGULATION AND OVERSIGHT BEFORE DEEPWATER HORIZON

Before the Deepwater Horizon accident, offshore regulation by the Mineral Management Service (MMS) had generally been highly prescriptive.[7] There were hundreds of pages of technical requirements that offshore operators were supposed to follow on specific issues, including "pollution prevention and control, drilling, well-completion operations, oil and gas well-workovers (major well maintenance), production safety systems, platforms and structures, pipelines, well production, and well-control and -production safety training."[8] As offshore drilling became more technologically advanced, the MMS had difficulty keeping up, and these specific prescriptive regulations became increasingly outdated.

Attempts to alter the regulations to a more risk-based approach favored in major offshore oil-producing countries such as Norway and the United Kingdom had faltered for 20 years. In 1990, the Marine Board of the National Research Council proposed overhauling the MMS's regulatory program toward one that placed the burden for safety more on the operator.[9] The MMS solicited comments on a "safety and environmental management program" (SEMP) that was similar to programs in Norway and the United Kingdom, but it remained voluntary, and later attempts to institute similar policies were weak and met industry opposition.[10]

A host of environmental legislation passed during the 1970s provided MMS with some legal power to limit or demand high standards from the offshore permits it granted, but large loopholes were introduced for drilling in the western and central Gulf of Mexico. One major Act, the *Outer Continental Shelf Lands Act Amendments* of 1978, governed the procedures for leasing to explore, develop, and produce offshore leases. It generally required an oil and gas lease to be based on a "development and production plan" that triggered a *National Environmental Policy Act* requirement for an impact statement describing in detail the environmental consequences of that development and production. However, the *Outer Continental Shelf Lands Act Amendments* of 1978 exempted leases in the western and central Gulf from the "development and production plan" requirement and, therefore, the environmental review.[11]

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In addition to antiquated regulations and substantial loopholes, the MMS structure was not considered ideal because the agency was responsible for both regulation and the collection of royalties. The technical ability of the agency languished over time. Even as offshore drilling became more technically complex, MMS's budget in real terms had stayed roughly constant since the 1990s, and at levels below what the agency received in most of the 1980s.[12] This lack of resources led to a dramatic decline in unannounced inspections in the Gulf of Mexico, falling from about one-third of all inspections in the 1990s to less than 3 percent in 2009. Although overall inspections remained relatively constant, it became increasingly common for only one person to conduct them, even though most inspectors believed that working in pairs would increase efficiency and thoroughness.[13] MMS was understaffed, having only one inspector for every 54 offshore facilities in the Gulf of Mexico Region.[14] In terms of these inspections, the Outer Continental Shelf Safety Oversight Board in 2010 criticized MMS, saying the agency lacked "a formal, bureau-wide compilation

of rules, regulations, policies, or practices pertinent to inspections, nor does it have a comprehensive handbook addressing inspector roles and responsibilities."[15]

In addition, the MMS inspectors often lacked adequate training and skills. Salaries in MMS were uncompetitive with those in private industry, making it difficult to recruit and retain those knowledgeable about latest industry developments.[16] MMS frequently did not define the qualifications that new employees had to meet, had no certification program, inconsistently provided on-the-job training, and lacked formal training specific for the inspections process.[17] Employees were sometimes encouraged to process as many applications as possible.

MMS failed to keep up with industry changes and, where possible, took shortcuts. It did not closely scrutinize service companies even as they took a more prominent role in the industry.[18] MMS required little from oil-spill response plans, and it reduced the mandated frequency of blowout preventer tests.[19]

CHANGES TO THE MINERAL MANAGEMENT SERVICE SINCE DEEPWATER HORIZON

Many of the problems MMS faced have been addressed since Deepwater Horizon through both an organizational restructuring and the implementation of new rules. In September 2010, in an attempt to move away from the prescriptive regulations of the past, BOEMRE introduced the Workplace Safety Rule, which requires offshore oil and gas operators to create and maintain Safety and Environmental Management Systems (or SEMS).[20] SEMS obliges operators to identify risks and develop a safety and environmental management program complete enough that it identifies any potential hazards and risk-reduction strategies. The rule mandates all aspects of the previously voluntary American Petroleum Institute Recommended Practice (RP) 75, and it also includes a few additional elements.[21] This rule introduces performance-based standards that are similar to those in Norway and the United Kingdom.[22] Recently, BOEMRE director Michael R. Bromwich, who was brought in to lead the newly formed bureau in June 2010, said there will be third-party audits of these programs.[23]

BOEMRE is now establishing authority over all aspects of and activities relating to offshore leases, including actions of lessees, operators, and contractors.[24] This focus is broader than the previous purview of MMS, which primarily tried to regulate operators.

BOEMRE is trying to improve the system of submitting and processing Applications for Permits to Drill (APD), with the goals of providing "more clarity, transparency, and consistency to the permitting process."[25] Additionally, in their oil-spill response plans, operators now must include blowout and worst-case discharge scenarios specific to their wells and include relevant assumptions and calculations that will be verified by geologists and engineers at the agency.

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During the exploration and drilling phase, BOEMRE has instituted a Drilling Safety Rule. Part of this rule involves strict new standards for well design, casing, cementing, and well-control procedures and equipment, including blowout preventers.[26] Operators need to get third-party inspection as well as certification of their proposed drilling processes. The Ocean Energy Safety Advisory Committee was created as a permanent body of experts to provide guidance on offshore safety, well containment, and spill response.[27]

In order to try to improve the personnel issues facing the former BOEMRE, President Barack Obama proposed increasing funding for BOEMRE by 50 percent to $358.4 million in his fiscal year (FY) 2012 budget.[28] In the FY 2011 budget that was finally passed in April 2011, the Department of the Interior received $68 million more than FY 2010 funding levels, of which BOEMRE was slated to receive about $47 million.[29] However, at time of writing, Congress has

Offshore oil drilling platform being towed into the Gulf of Mexico

not yet passed the 2012 budget and may not continue to give BOEMRE increases in funding.

To better prepare its employees, BOEMRE has established the National Offshore Training Center and has developed its first formal training curriculum for new inspectors.[30] Ultimately, 24 additional courses will be developed for specific issues related to offshore drilling. A training director is being hired to develop training policies and programs. To recruit talent, Bromwich has conducted two nationwide recruitment tours to colleges and universities, and the agency is trying to encourage retired professional engineers to provide BOEMRE with expertise.[31] There is a new recusal policy to deal with perceived employee conflicts of interest.[32] The employees will also be better organized; inspectors, rather than working individually, will now begin to work in the multiple-person inspection teams they prefer.[33]

FUTURE POLICIES TOWARD OFFSHORE DRILLING

The majority of Americans (60 percent) still favor increasing offshore oil drilling and exploration activities as a key component to U.S. energy policy.[34] There are large differences between Republicans and Democrats, though, and the party leaders respond accordingly. The vast majority (83 percent) of Republicans support expanded offshore drilling, compared with only 40 percent of Democrats. Ironically, for the first time in years, Gallup also found that, nationally, there is more support than opposition for drilling in the Arctic

The majority of Americans (60 percent) still favor increasing offshore oil drilling and exploration activities as a key component to U.S. energy policy. The vast majority (83 percent) of Republicans support expanded offshore drilling, compared with only 40 percent of Democrats. For the first time in years, Gallup also found that, nationally, there is more support than opposition for drilling in the Arctic National Wildlife Refuge.

Unlike in other major developed nations such as Canada, the United Kingdom, and Norway, the U.S. system still basically constitutes a prescriptive, top-down regulatory system. It has trouble staying current in light of the rapidly changing nature of the offshore industry.

National Wildlife Refuge (49 to 45 percent), which may somewhat change the political dynamic on this hot-button issue.

It remains unclear what offshore areas currently inaccessible for drilling will be allowed. Less than a month before Deepwater Horizon, President Obama proposed opening up oil exploration in the Atlantic Ocean from the northern tip of Delaware to central Florida, the eastern Gulf of Mexico as close to 125 miles from the Florida coast, and much of the Chukchi and Beaufort Seas north of Alaska.[35]

These plans were shelved in the wake of Deepwater Horizon, but in May 2011 President Obama announced plans to speed offshore oil and gas drilling.[36] Leases in the Arctic and the Gulf of Mexico that were frozen post-Macondo will be extended, and the administration is accelerating an environmental review of drilling off the southern and central Atlantic coast. House Democrats and Republicans both supported the move, although Republicans felt the policy did not go far enough in promoting more offshore drilling.

MORE TO DO?

BOEMRE has made good progress as it begins to overhaul offshore regulation. Industry analysts have praised the introduction of the Workplace Safety Rule and its Safety and Environmental Management Systems (SEMS), which move away from emphasizing prescriptive regulations and toward a regulatory environment more similar to the safety case requirement in the United Kingdom. Such an approach gives operators the primary responsibility for ensuring safety, prompting companies to think more critically and creatively about how to drill in a safe and environmentally sound way.

As BOEMRE moves to refine the SEMS system and improve U.S. regulations, it should consider accelerating the shift to more goal-based, goal-setting regulations that have been used successfully in other major oil-producing regions. Unlike in other major developed nations such as Canada, the United Kingdom, and Norway, the U.S. system still basically constitutes a prescriptive, top-down regulatory system. While this prescriptive system has some benefits, particularly as it gives the federal government the authority to specify exact requirements, it has trouble staying current in light of the rapidly changing nature of the offshore industry. As the offshore industry invests heavily in research and development, drilling deeper and deeper, it is extremely difficult for a regulatory agency to rewrite regulations continually to address new technological challenges. Moreover, a strictly prescriptive approach discourages any innovation. By contrast, a goal-based system encourages operators to find better, more innovative ways to achieve safety standards.

By requiring companies to provide a comprehensive and statistically based risk assessment for every individual production platform, the government can ensure company involvement and participation in safety. Simply requiring a safety plan, as the SEMS system now does, is not enough; by contrast, a safety case requirement fundamentally transfers safety responsibility to each company. One suggested approach is that, before drilling begins, each company should be required to demonstrate comprehensively that each part of the installation is safe.

Another improvement that should be considered by BOEMRE is a harsher penalty structure for problem companies. According to a recent study by Lloyd's,[37] the most serious violations of regulations are given fines of only around $32,000 on average. It is important that fines and penalties be in line with levels that will

Tahiti platform in the deepwater Tahiti field in the Gulf of Mexico (2008)

absolutely discourage a breach of safety procedures. The liability cap for the United States remains ridiculously low at $75 million. The U.S. House of Representatives passed an overhaul that removed the cap in 2010, but the bill never passed the Senate.[38] By contrast, in the United Kingdom, for example, where average penalties are also relatively low, the potential penalty for a breach is unlimited. In addition, in both Norway and the United Kingdom, serious non-fatal safety breaches can be criminal charges punishable through imprisonment of key executives.

BOEMRE director Bromwich has said that he is studying the possibility of new regulations that would bar bad actors with repeated safety violations from drilling in the Outer Continental Shelf. One option would be to create a "death penalty" structure for companies whose records repeatedly fail to meet regulated standards.[39] Such a proposal would force companies to evaluate their safety procedures or risk forfeiting future revenues from new leases.

We conclude that the United States has made strong progress in strengthening the framework for offshore drilling but suggest that further improvements could be made. At stake is the fate of Gulf of Mexico ecosystems, the local Gulf Coast economy, and the future of U.S. offshore drilling. It is essential for the United States to tap its badly needed offshore resources in a manner that lowers environmental and safety risks as much as possible. Through continued improvements to new regulations, the United States can ensure that domestic drilling remains a safe and viable option for many years to come.

NOTES

1 Dan Joling, "Agency Releases New Chukchi Drilling Assessment," Associated Press, October 12, 2010, http://abcnews.go.com/Business/wireStory?id=11862331.

2 Julie Cart, "Shell Oil Company Nixes Drilling in Alaskan Arctic for 2011," Greenspace blog of the *Los Angeles Times*, February 3, 2011, http://latimesblogs.latimes.com/greenspace/2011/02/shell-oil-arctic-bp-spill.html.

3 "Chukchi Sea Oil and Gas Development," Ground Truth Trekking, http://www.groundtruthtrekking.org/Issues/AlaskaOilandGas/ChukchiSeaOilandGasDevelopment.html.

4 Michael R. Bromwich, "BOEMRE Director Discusses Strengthened Oversight of Offshore Oil and Gas Drilling and Development at the Baker Institute's Energy Forum," Bureau of Ocean Energy Management, Regulation and Enforcement, February 11, 2011, http://www.boemre.gov/ooc/pressreleases /2011/press0211.htm.

5 "The Reorganization of the Former MMS," The Bureau of Ocean Energy Management, Regulation and Enforcement, http://www.boemre.gov/reorganization.htm (accessed June 27, 2011).

6 "Salazar, Bromwich Announce Next Steps in Overhaul of Offshore Energy Oversight and Management," U.S. Department of the Interior, January 19, 2011, http://www.doi.gov/news/pres releases/Salazar-Bromwich-Announce-Next-Steps-In-Overhaul-of-Offshore-Energy-Oversight-and-Management.cfm.

7 Carolyn Kousky, "Managing the Risks of Deepwater Drilling," *Resources* 177, winter/spring 2011.

8 National Commission on the BP Deepwater Horizon Spill and Offshore Drilling, "Deepwater: The Gulf Oil Disaster and the Future of Offshore Drilling," January 2011, 68.

9 Marine Board of the National Research Council Committee on Alternatives for Inspection of Outer Continental Shelf Operations, Alternatives for Inspecting Outer Continental Shelf Operations (Washington: National Academy Press, 1990): 3, http://www.nap.edu/openbook.php?record_id=1517&page=1.

10 National Commission 2011, 70.

11 Ibid., 62.

12 Ibid., 73.

13 U.S. Department of the Interior, Outer Continental Shelf Safety Oversight Board, Report to the Secretary of the Interior (September 1, 2010), 8.

14 National Commission 2011, 78.

15 U.S. Department of the Interior 2010, 8.

16 Ibid., 11–12.

17 National Commission 2011, 77 and 79.

18 Ibid., 74.

19 "MMS Eases Rule for BOP Testing," *Oil and Gas Journal*, June 8, 1998, 32.

20 "Fact Sheet: The Workplace Safety Rule on Safety and Environmental Management Systems (SEMS)," Regulation and Enforcement, Office of Public Affairs, Department of Interior, http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=45791.

21 Interview with Alan Spackman and Steve Kropla, International Association of Drilling Contractors, July 2011.

22 "Bromwich Discusses the Future of U.S. Offshore Oil and Gas Development at OTC," Bureau of Ocean Energy Management, Regulation and Enforcement, May 2, 2011. http://www.boemre.gov/ooc/press/2011/press0502a.htm.

23 "BOEMRE Strengthens Offshore Inspection Program," OilVoice, June 14, 2011, http://www.oilvoice.com/n/BOEMRE_Strengthens_Offshore_Inspections_Program/4ef54ed04.aspx

24 "Bromwich Discusses," 2011.

25 Ibid.

26 "The Drilling Safety Rule: An Interim Final Rule to Enhance Safety Measures for Energy Development on the Outer Continental Shelf," The Bureau of Ocean Energy Management, Regulation and Enforcement, Office of Public Affairs, http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=45792.

27 "The Ocean Energy Safety Advisory Committee," http://www.boemre.gov/ooc/pdfs/faca/FACAfactSheet.pdf.

28 "Obama's budget includes $358.4 million for BOEMRE to strengthen offshore energy management & regulation," *The Maritime Executive*, February 16, 2011, http://www.maritime-executive.com/article/obamas-budget-includes-3584-m-boemre-strengthen-offshore-energy-management-regulation.

29 "Bromwich Discusses," 2011.

30 "BOEMRE Strengthens Offshore Inspections Program," The Bureau of Ocean Energy Management, Regulation and Enforcement, June 13, 2011, http://www.boemre.gov/ooc/press/2011/press0613.htm.

31 "USA: BOEMRE Improves Oversight of Offshore Operations," *Offshore Technology Today*, June 14, 2011, http://www.offshore-energytoday.com/usa-boemre-improves-oversight-of-offshore-operations/.

32 Michael R. Bromwich, "Policy Regarding Interference with the Performance of Official Duties and Potential Conflicts of Interest," August 30, 2010, http://www.boemre.gov/PDFs/Recusalmemo0830.pdf.

33 "BOEMRE Strengthens," 2011; National Commission 2011, 78.

34 Lydia Saad, "U.S. Oil Drilling Gains Favor with Americans," Gallup, March 14, 2011, http://www.gallup.com/poll/146615/oil-drilling-gains-favor-americans.aspx.

35 John M. Broder, "Obama to Open Offshore Areas to Oil Drilling for First Time," *New York Times*, March 31, 2010; Kevin Derby, "Florida Democrats Divided on Obama Drilling Plan," *Sunshine State News*, April 13, 2010, http://www.reefrelieffounders.com/drilling/2010/04/14/sunshine-state-news-florida-democrats-divided-on-obama-drilling-plan/.

36 John M. Broder, "Obama Shifts to Speed Oil and Gas Drilling in U.S.," *New York Times*, May 14, 2011.

37 "Comparative Review of HSE Requirements for Specified Offshore Fabrication Activities." Lloyd's Register, May 2004. Web. 13 Dec 2010.

38 "House Approves Oil Spill Legislation," *Associated Press,* July 30, 2010, http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/07/house_approves_oil_spill_legis.html.

39 Kenneth B. Medlock III, "A Death Penalty for Offshore Drilling Negligence," *FuelFix blog*, May 21, 2010, http://fuelfix.com/blog/2010/05/21/a-death-penalty-for-offshore-drilling-negligence/.

Alexander MacDonald and Nicholas Crosbie

OFFSHORE OIL: RISK AND REGULATION IN CANADIAN WATERS

THE RISKS

Companies drilling for oil offshore of Canada face some of the most challenging physical risks anywhere in the world. Physical risk, such as spills or injury to persons or property, is easily understood by most people, and we tend to focus on it. Environmental groups such as the Sierra Club Canada and the David Suzuki Foundation suggest we should simply ban drilling off the coasts of Canada. That would not reduce the risk to the global environment—it would merely export the risk to another region. If Canada is to produce the petroleum it needs, we must accept some degree of physical risk, not for its own sake, but in order to minimize those other risks that we cannot afford to ignore—the economic, political, ethical, and regulatory risks that come with a fossil-fuel dependent economy. Physical risk must therefore be considered alongside public policy risks—economic, political, ethical, and regulatory—if we hope to make prudent decisions.

Economic Risks

The physical risk cannot blind us to the economic risk, or the risk to our standard of living, if Canada does not drill. By ignoring an estimated 30 billion barrels of crude oil in areas currently subject to offshore moratoriums,[1] Canada and the United States both augment their trade imbalances and experience lost economic activity by importing crude rather than by developing domestic offshore oil. Only the rich have the luxury to focus on physical risk to the exclusion of all the other risks. It is interesting to note that in areas subject to offshore drilling moratoriums there is not a corresponding abandonment of the trappings of the petroleum economy.

Political Risks

The recent unrest in the Middle East and in Africa has reminded Canadians of the risks of doing business in politically unstable countries. Canadian oil producer Suncor has had to suspend all its operations in Libya in light of the uncertainty in that country. Although there is no physical risk to Canada of a spill from oil produced in Libya, there is now no supply from Libya. Moreover, a majority of the known remaining supplies of oil in the world is in the hands of sovereign states and state-controlled entities. As a result, the price and availability of oil is increasingly becoming a political tool.

Ethical Risks

Do Canadians want to be in a position where we are forced to support regimes that commit atrocities? Companies must include ethical considerations in their decisions simply because these issues can affect their bottom line. The Canadian oil producer Talisman Energy, for example, held an interest in a Sudanese oil field that never amounted to more than 12 percent of the company's operations. Once it attracted criticism, however, the company's shares fell from a 20 percent premium over its net asset value to a 20 percent discount.[2]

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An offshore drill ship sinks an exploration hole for Tenneco in the Beaufort Sea of Alaska.

Regulatory Risks

Countries with strong, mandated safety and environmental laws tend to promote safe drilling. In general, the higher the mandated safety and risk regulation, the lower the overall physical risk of the drilling. Isn't it better for the planet to allow offshore drilling in countries, such as Canada, with strong environmental standards?

REGULATORY OVERVIEW

In the early stages of the oil industry in Canada, offshore oil in each of Canada's three oceans—the Pacific, Arctic, and Atlantic—was considered to be an exclusively federal responsibility. As a result of amendments made to the Canadian Constitution in 1982, however, the federal government recognized a role for the adjacent provinces and territories in the management of offshore oil resources. In conjunction with this role, these provinces and territories are also primary beneficiaries of the resources through their entitlement to and collection of royalties. The establishment and collection of the royalties are the responsibility of the provincial and territorial governments, and not the regulatory agencies overseeing the industry.

The rights available in each ocean are the same regardless of the agency tasked with management of the resource. Companies place bids to acquire exclusive rights to explore for oil in defined areas. The successful bidder, in addition to the payment of rents, commits to undertake a certain amount of work over the course of the exploration license. Before the end of this period (typically seven years), in the event that it has found oil, the license holder may submit an application for a significant discovery declaration. Significant Discovery Licenses do not expire and do not typically require annual rents or drilling commitments (though this practice is now changing). Holders of a Significant Discovery License can eventually apply for a Production License, which allows the holder to produce oil.

Subject to boundary agreements with the United States and Greenland, Canada has claimed jurisdiction over all offshore oil resources extending to the greater

In general, the higher the mandated safety and risk regulation, the lower the overall physical risk of the drilling.

of either 200 nautical miles offshore or the boundaries of the continental shelf.

Atlantic Canada

In the 1980s Canada negotiated accords with two of its Atlantic provinces—with Nova Scotia and with Newfoundland and Labrador. These two accords led to the formation of joint federal-provincial boards to oversee the oil resources adjacent to these provinces. These boards are the Canada–Newfoundland and Labrador Offshore Petroleum Board (C-NL Board) and the Canada–Nova Scotia Offshore Petroleum Board. They generate guidelines, while the provincial and federal governments work together to draft amendments to legislation and regulations.

Arctic

In the Arctic, two departments of the federal government are responsible for offshore oil development. The National Energy Board (NEB) and the Department of Aboriginal Affairs and Northern Development Canada—North Oil and Gas Branch together manage the resource, in consultation with affected aboriginal groups.

Pacific Ocean

Development in the Canadian Pacific Ocean has been subject to a moratorium effectively since 1972, initially because of concerns about the fragile ecosystem in the area around the Queen Charlotte Islands. Negotiations between the provincial and federal governments to create an accord along the lines of the two Atlantic accords failed in the 1980s. In practice, the federal government has given deference to the views of the citizens of the adjacent province. The NEB is ostensibly responsible for overseeing the oil industry in British Columbia, but while the moratorium is in place there is no activity.

THE REGULATOR AND PHYSICAL RISK

Each of the NEB and the boards is tasked with the regulatory responsibility to ensure safety, protection of the environment, and proper exploitation of the resources. The boards' view of this responsibility is that "worker safety and environmental protection will be paramount in all Board decisions. The Board has no part in the establishment or administration of royalties or taxes for any offshore activity. We do not promote the industry. That is the role of governments. Our role is one of regulatory oversight of operator [petroleum producer] activity."[3]

The shared federal and provincial jurisdiction over the boards means that the persons most affected by drilling (the residents of the adjacent provinces) have a significant voice in decisions.

After the Deepwater Horizon incident in the Gulf of Mexico in April 2010, the Senate of Canada struck a committee to evaluate the regulation of the offshore oil industry in Canada. It concluded that the regulation of the industry is more than adequate:

> The committee wishes to assure Canadians that Canada's offshore oil industry is in good hands, that we could not identify any justification for a temporary or permanent ban or moratorium on current offshore operations, that Canada's regulatory regime is a good one, which is continually subject to upgrading and improvement based on experience such as the BP incident, and that any future offshore operations authorized to take place in Canadian jurisdiction, be they in Arctic waters, off the Pacific Coast or off Atlantic Canada, will be well and carefully regulated and controlled, given the experience of the Deepwater Horizon incident in the Gulf of Mexico.[4]

CANADIAN ADVANTAGES

The Senate Committee identified a number of differences between the Canadian and the American offshore regulatory regimes and found that the "current Canadian

Goal-oriented regulation is currently implemented or being implemented in the offshore industry in Canada and in other major producers such as the United Kingdom and Norway.

system is more cohesive and efficient."[5] It specified three Canadian advantages in particular: effective January 1, 2010, Canada moved from prescriptive to goal-oriented regulation; the boards each have a chief safety officer, who has the authority to shut down an operation for safety concerns; and all facilities are required to possess a certificate of fitness stating that the equipment on the facility is fit for its use and designated purpose. In addition, two other significant advantages can be identified: the shared federal and provincial jurisdiction over the boards means that the persons most affected by drilling (the residents of the adjacent provinces) have a significant voice in decisions; and the boards have no role in the collection of royalties.[6]

Goal-oriented regulation is currently implemented or being implemented in the offshore industry in Canada and in other major producers such as the United Kingdom and Norway. It involves the regulator setting goals and specifying outcomes, but not the means of achieving compliance. Operators can develop their own means for achieving compliance. In his testimony to the Senate Committee, the chair of the NEB described the goal-oriented regulations: "The old regulations represented an out of date, one size fits all system, sometimes labelled as 'check-box regulation.' The new regulations require companies to demonstrate that they can operate safely in specific situations, using the most advanced technology tailored to their circumstances."[7]

The chief safety officer appointed by each board has the responsibility to oversee the health and safety regulations of the offshore industry. This officer cannot be overruled by the board and has even more authority than the board to shut down an operation deemed to be unsafe.

A Certificate of Fitness issued by a third-party certifying authority (Lloyds, American Bureau of Shipping [ABS], and Det Norske Veritas [DNV]) is required and is but the highest-level certificate in a pyramid of certificates and permits necessary to operate all the equipment on a drilling installation. If a single underlying certificate or permit cannot be obtained, the Certificate of Fitness is canceled.

Because the regulatory boards are jointly appointed by the federal and the provincial governments, the provinces have considerable influence in the regulation of the industry. The effects of physical risk are necessarily borne disproportionately by the people living in the Atlantic provinces, but they also receive more of the benefits that accrue from these projects. Royalties are paid on a provincial level, and each province negotiates a benefits agreement with the producers.

Finally, the boards have no role in collecting the royalties paid to the provinces. In this way they are inoculated from arguments that they are trading safety or the environment for royalties.

BRITISH COLUMBIA: CANADA'S CALIFORNIA?

The ban on offshore drilling began in 1972 as a closure of the Queen Charlotte Region (in particular, the Dixon Entrance, Hecate Strait, and Queen Charlotte Sound) to tanker traffic, but quickly blossomed into an outright ban on oil activities in the region. A 2001 report by the Geological Survey of Canada estimates that 10 billion barrels of oil may be found off the coast of British Columbia.[8]

British Columbians, with their abundance of natural resources, have the luxury of ignoring the potential resources from offshore drilling along their coast. Although successive federal Liberal and Conservative governments have indicated a willingness

Oil-well drilling pipes stored in a yard in St. John's, Newfoundland

to lift the ban, the residents have adopted a "not in my backyard" attitude even as they maintain their energy-intensive lifestyles by exporting the risks and the responsibilities elsewhere.

ATLANTIC CANADA: PHYSICAL RISK IN THE CORRECT CONTEXT?

The Atlantic Ocean is the site of all Canada's current offshore production and all its offshore drilling. Production stands at 270,000 barrels per day[9] and accounts for about 10 percent of all Canadian crude oil production (nearly a third of all conventional [non–oil sands] crude production).[10]

Why is the attitude of people in Atlantic Canada to the potential for physical risk so different from that in British Columbia? The answer is probably that people living on the North Atlantic coast have a long history of fishing and earning income from the ocean. Risk is a way of life for mariners. As they have done for centuries, they see the risk in the larger context—including the risk to the economy and their way of life by not exploiting the ocean's resources.

Since the Deepwater Horizon incident, Chevron Canada Limited has drilled an exploration well nearly 258 miles (430 kilometers) off the shore of Newfoundland and Labrador in a water depth of approximately 8,535 feet (2,600 meters)—without incident. Drilling for this Chevron well began in early May 2010, days after the Deepwater Horizon incident. The C-NL Board struck a Special Oversight Committee to oversee the drilling and to work with Chevron to ensure the adequacy of the company's safety, environmental protection, oil-spill response, and contingency plans.[11]

The strong safety culture in the Atlantic Canadian offshore industry was developed in part as a result of the loss of the drilling rig Ocean Ranger on February 14, 1982, when it capsized in a severe storm, killing 84 people. This tragedy had a profound impact on the nascent oil industry in Atlantic Canada when, 15 years later, the first oil platform began production offshore.

The boards have no role in collecting the royalties paid to the provinces. In this way they are inoculated from arguments that they are trading safety or the environment for royalties.

Hibernia Platform, the Grand Banks, southeast of Newfoundland (circa 2000)

This focus on safety in drilling and production has yielded results. Offshore of Newfoundland and Labrador, where the bulk of the oil production occurs, the largest oil spill to date occurred in 2007, when roughly 1,000 barrels of oil were spilled.[12] This spill had minimal environmental effects, and there was no loss of life.

The commitment to safety was tested in 2009, when a helicopter transporting offshore workers crashed on its way offshore, killing 17 of the 18 people on board. In response to this disaster, a number of investigations and inquiries were launched, including the Offshore Helicopter Safety Inquiry (OHSI), appointed by the C-NL Board, and another by the Transportation Safety Board (the Canadian equivalent to the Federal Aviation Administration [FAA]). The OHSI investigation took months to complete and canvassed the opinion of international experts on safety and safety culture. It found that the industry has a strong safety culture: "In the past 27 years," it reported, "the C-NL offshore has experienced two catastrophic disasters with a combined loss of 101 lives, with huge fallout. The oil and helicopter operators are very aware of the consequences of the failure of safety, from whatever source it comes, and strive to keep their operations accident-free."[13] Notwithstanding its finding of a strong safety culture, the OHSI recommended in Phase I of its report the creation of an independent safety regulator or a standalone safety division within the C-NL Board. The provincial government has agreed in principle with the creation of a standalone safety board, but the federal government has remained silent on the issue to date.

THE ARCTIC: THE UNANSWERED QUESTION?

Although the Arctic is believed to hold substantial reserves, exploration and development have been slow. In 2010, a total of 5.5 million barrels of oil were produced in the entire Canadian Arctic.[14] No exploration wells were drilled, and only two companies conducted geophysical operations (surveys and seismic). Currently, super majors ExxonMobil (through its subsidiary Imperial),

Offshore of Newfoundland and Labrador, where the bulk of the oil production occurs, the largest oil spill to date occurred in 2007, when roughly 1,000 barrels of oil were spilled.[12] This spill had minimal environmental effects, and there was no loss of life.

BP, Chevron, Royal Dutch Shell, and ConocoPhillips, and Canadian majors Husky, Talisman, and Suncor all have outstanding offshore Exploration and Significant Discovery Licenses in the Arctic.

Fundamental policy decisions have yet to be made in the Canadian Arctic. Which way will the Canadian Arctic go? It is possible that the current agencies will be replaced with joint boards similar to those overseeing the offshore of the Atlantic coast. Although royalties for production in the Canadian Arctic are currently paid to the territorial governments, any increase in royalties frequently results in a reduction in support payments from the federal government. As a result, the practical benefits from offshore production are felt by the federal government rather than the adjacent territories. A similar situation was dealt with in Atlantic Canada through the negotiation of benefit agreements between the oil producers and the provinces. The federal government also agreed to exempt royalties temporarily from the calculations for eligibility for certain forms of federal support. Both of these options are available to the territories. Regardless of the structure, the decisions will be influenced by the local population.

The Arctic Ocean is similar to the northern Atlantic in that the ocean is very cold, seasonal ice is a constant issue, and the adjacent people have a long history of being economically disadvantaged. The most significant features of the Arctic Ocean are that it is extremely remote and has very short drilling seasons. At the same time, the Arctic is similar to British Columbia in that the offshore area is predominately straits rather than open ocean, the adjacent people have strong environmental connections, and the international environmental movement has targeted the area.

The success of operators in Atlantic Canada in their drilling and producing operations makes a strong case that environmental and safety risks can be managed in extremely challenging environments such as the Arctic. Offshore of Newfoundland and Labrador, 355 wells have been drilled since 1966, without the loss of a single well.[15] During that time, a total of just 1,100 barrels of oil have been spilled in that area. That works out to one barrel spilled per million barrels produced.[16]

The decision to develop an oil industry in the Arctic Ocean should ultimately rest with the adjacent people. With the experience of the Atlantic Ocean as an example, a good case can be made that the risks of drilling offshore can be well managed.

CONCLUSION

Canadian offshore drilling does not create unmanageable risks to our environment. Quite the contrary: offshore drilling policy is precisely a tool to manage other forms of risk. Although there is no doubt that the Deepwater Horizon disaster has made Canadian regulators more vigilant in regulating offshore drilling in general, Canadian law gives those regulators the power and authority to properly and safely regulate such drilling. Indeed, one wonders how an independent safety board could improve the situation, given that regulating offshore drilling is highly technical and the creation of two boards with parallel powers could in fact be worse than the current situation. The responsibility should rest with one regulator, not two.

A decision to ban offshore drilling must be made in the context of both managing the physical risk to the environment and considering the broader public policy risks. Otherwise, we export to other countries not only our ethical and environmental responsibilities but, to our detriment, our economic strength and the security of our very way of life.

NOTES

1 Interstate Oil and Gas Compact Commission's North American Coastal Alliance, "Untapped Potential: Offshore Oil and Gas Resources Inaccessible to Leasing" (2006), accessible at http://iogcc.myshopify.com/.
2 Stephen J. Kobrin, "Oil and Politics: Talisman Energy and Sudan," *NYU Journal of Law and Politics* 36 (2004): 2–3.
3 Testimony of Max Ruelokke, chairman of the Canada–Newfoundland and Labrador Offshore Petroleum Board, before the Standing Senate Committee on Energy, the Environment, and Natural Resources, Ottawa, May 27, 2010.
4 "Facts Do Not Justify Banning Canada's Current Offshore Drilling Operations: A Senate Review in the Wake of BP's Deepwater Horizon Incident," Eighth Report of the Standing Senate Committee on Energy, the Environment, and Natural Resources, August 2010 [Senate Report].
5 Senate Report, 27.
6 See, for example, Government of Newfoundland and Labrador, Department of Natural Resources, Mines and Energy Division, www.nr.gov.nl.ca/mines&en/exploration/offshore.stm.
7 Senate Report, 21.
8 Hannigan, P.K., J.R. Dietrich, P.J. Lee, and K.G. Osadetz, "Petroleum Resource Potential of Sedimentary Basins on the Pacific Margin of Canada," Geological Survey of Canada, *Bulletin* (2001), 564.
9 Monthly Production Totals—2011, CNLOPB website (last updated June 23, 2011).
10 National statistics from the 2011 Canadian Crude Oil Forecast and Market Outlook, June 2, 2011, Canadian Association of Petroleum Producers.
11 Testimony of Dr. Max Ruelokke before the Standing Senate Committee, May 27, 2010.
12 Canada–Newfoundland and Labrador Offshore Petroleum Board, "Oil Spill Incident Data: NL Offshore Area 1997–2011," available at www.cnlopb.nl.ca/pdfs/spill/spgt11.pdf.
13 Canada–Newfoundland and Labrador Offshore Helicopter Safety Inquiry, Phase 1, vol. 1: *Report and Recommendations*, 251.
14 Government of Canada, Department of Aboriginal Affairs and Northern Development, Northern Oil and Gas Division, "Northern Oil and Gas Annual Report, 2010," available at http://www.ainc-inac.gc.ca/nth/og/pubs/ann/ann2010/ann2010-eng.pdf.
15 Senate Report, 11 and 43.
16 Senate Report, 43.

Discoverer Spirit, a deepwater drillship, which had been drilling in a field in the Gulf of Mexico (circa 2000)

AMY JAFFE AND JAMES COAN'S RESPONSE TO ALEXANDER MACDONALD AND NICHOLAS CROSBIE

In their essay, Alexander MacDonald and Nicholas Crosbie describe the commendable regulatory structure that Canada now has in place. We agree that the U.S. offshore industry would benefit from following a similar goal-oriented regulatory framework. Other details of Canada's regulatory regime, particularly the power of the chief safety officer to shut down unsafe operations, may also be a positive model. However, we do not think that Canada's provincial-level experiences fit well with the U.S. offshore industry's desire for greater safety reform.

The authors note that "Canada moved from prescriptive to goal-oriented regulation." Similar approaches have proven successful in Norway and the United Kingdom. The United States is moving in this same direction with its Safety and Environmental Management Systems, though we argue that it needs to strengthen the regulatory enforcement of such provisions.

The role of a chief safety officer of the various Canadian boards (such as the Canada–Newfoundland and Labrador Offshore Petroleum Board and the Canada–Nova Scotia Offshore Petroleum Board) holds important lessons for U.S. regulators. According to MacDonald and Crosbie, the chief safety officer "has the authority to shut down an operation for safety concerns." No highly qualified person in the U.S. system currently has a similar role, and this innovation might be beneficial to operational safety in the U.S. offshore.

In the United States, the director of the Bureau of Ocean Energy Management, Regulation and Enforcement has publicly stated his support for regulations that would stop operators from drilling in the Outer Continental Shelf if they had repeated safety violations, but so far no substantive proposals have been advanced to achieve this purpose. We have advocated for a "death penalty" in which companies would forfeit their ability to bid for new leases if they had frequently engaged in unsafe practices.[1]

MacDonald and Crosbie point out that the provinces have a role in managing offshore oil resources in Canada and are responsible for collecting royalties. Both boards in the Atlantic region combine elements from the federal government and the provinces, and they "work together to draft amendments to legislation and regulations." The authors praise this provincial involvement as one of the "significant advantages" of the Canadian system because "persons most affected by drilling (the residents of the adjacent provinces) have a significant voice in decisions."

We do not see that this system would necessarily enhance safety in the United States. In some Gulf Coast states where much drilling occurs, many voters are in favor of only limited regulation and, therefore, it is not certain whether greater participation at the local level would promote better regulations. It seems equally possible that some local governments would be attracted by the revenue potential from drilling and might be less inclined to pass regulations that would inhibit this revenue. Although that has not been the experience in Nova Scotia and Newfoundland and Labrador, it remains unclear, given the cultural and political differences, whether there are lessons in those examples for U.S. states.

MacDonald and Crosbie's discussion of the geopolitical ramifications of limiting offshore drilling seems overdrawn. Canadians would not be "*forced* to support regimes that commit atrocities" if their government curbed offshore drilling. While diversity of supply is a key factor in limiting the petro-power of

The role of a chief safety officer of the various Canadian boards holds important lessons for U.S. regulators.

We do not believe that federal offshore drilling policy should be solely dictated by the desires of the limited constituency of local residents. A broader approach is needed that balances local and national priorities.

oil-producing countries, many different policies can be undertaken to reduce dependence on petro-states whose policies are detrimental to their populations or to the global community. Oil-consuming countries can lower demand through energy efficiency measures or switch to fuels that are not oil based.

MacDonald and Crosbie end with a discussion of the Arctic, which is an important potential area of cooperation between the United States and Canada. They make a very useful comparison between the Canadian experiences off the Atlantic coast in Nova Scotia and Newfoundland and Labrador, saying that both those areas and the Arctic are similar "in that the ocean is very cold, seasonal ice is a constant issue, and the adjacent people have a long history of being economically disadvantaged." With these similarities, the United States can likely learn from the successes in the Canadian Atlantic region and apply them to the Arctic.

The authors state that the decision to drill in the Arctic "should ultimately rest with the adjacent people." However, national interest must also be taken into account and, therefore, we do not believe that federal offshore drilling policy should be solely dictated by the desires of the limited constituency of local residents. A broader approach is needed that balances local and national priorities.

There is much to admire about Canada's regulatory system, and the United States will benefit from cooperation in the development of Arctic resources. However, cultural and political differences do exist between the two countries, and these differences must be considered in formulating successful regulatory approaches.

NOTES

1 Kenneth B. Medlock III, "A Death Penalty for Offshore Drilling Negligence," *FuelFix blog*, May 21, 2010, http://fuelfix.com/blog/2010/05/21/a-death-penalty-for-offshore-drilling-negligence/.

ALEXANDER MACDONALD AND NICHOLAS CROSBIE'S RESPONSE TO AMY JAFFE AND JAMES COAN

Change is often needed after a significant environmental or safety incident such as the Macondo (Deepwater Horizon) disaster. At the very least, some changes in legislation, regulation, or process seem to satisfy the public's desire to see that government and industry have tried to address the problem. These measures may not, however, actually reduce the likelihood of similar events happening in the future. Rather, the process by which changes are implemented will determine whether they lessen the likelihood of future incidents or merely alter things for the sake of change.

MANAGING CHANGE

The essay by Amy Jaffe and James Coan describes how one regulator (the Mineral Management Service) is being expanded to three new regulators: the Office of Natural Resources Revenue, the Bureau of Ocean Energy Management, and the Bureau of Safety and Environmental Enforcement. The short-lived Bureau of Ocean Energy Management, Regulation and Enforcement will have existed for less than 18 months.

Any rapid increase in the size of a regulatory bureaucracy presents a number of risks. More staff and the fundamental restructuring of multiple departments can easily lead to organizational chaos. Jaffe and Coan indicate that Mineral Management Service staff "often lacked adequate training and skills" and that the organization found it "difficult to recruit and retain those knowledgeable about the latest industry developments." How difficult will it be to staff and train three bureaus rather than one? If one bureau was ineffective, will three regulators necessarily be an improvement?

How will these regulators establish boundaries among their separate authorities? In Canada, the Offshore Helicopter Safety Inquiry recommended that separate independent safety boards be established. However, despite vocal public support for this recommendation, including from the premier of Newfoundland and Labrador, the federal government has held back because of concerns about overlapping jurisdiction and a multiplicity of boards. Only two of Canada 13 territories and provinces do not have coastlines. Will 11 potential boards with identical legal jurisdiction but different territorial jurisdiction, together with 11 additional safety boards, create a safer environment or simply chaos? The competition for human resources would be extreme. One must balance the potential risk that the existing regulators have conflicts of interest because of their responsibility for safety, protection of the environment, and proper exploitation of the resources against the risk of a multiplicity of regulators with overlapping and often conflicting mandates. Surely creating more regulators is not the only answer. Perhaps we should focus on making existing regulators more efficient and more competent.

Any rapid increase in the size of a regulatory bureaucracy presents a number of risks. More staff and the fundamental restructuring of multiple departments can easily lead to organizational chaos.

Prescriptive versus Goal-Oriented Regulation

The U.S. government is also moving from prescriptive regulation to goal-based regulation for the offshore oil industry. In the last two decades, this move has been considered a number of times.

With prescriptive regulation, the regulator stipulates the conduct that industry participants must follow. With goal-oriented regulation, the regulator establishes a series of objectives that industry participants must

achieve, and each player demonstrates to the regulator how it will achieve the stated goals. Industry participants have, in theory at least, wider flexibility to carry out their operations, and they are able to adopt new technologies that would not be permitted under prescriptive regulation until the regulator modernized the regulations.

Canadian regulators formally moved from a prescriptive regulation model to a goal-based model on January 1, 2010. The change did not arise from a specific incident, and preparations for managing the change took more than one year. The government, working with the regulators, drafted new goal-oriented regulations. The regulators developed new training programs to familiarize their employees with their new responsibilities. And, most important, industry participants had to be educated and trained about their new obligations and how best to comply with them. Even with the luxury of time and without the added burden of close public scrutiny, the rollout of goal-based regulation proved challenging.

Without a structured process, there is a considerable risk that the objectives in the new goal-oriented regulation will follow the old prescribed regulations, or even change for the sake of change. The American government faces a major challenge in managing the move from prescriptive to goal-based regulation while simultaneously adjusting to radically new structures.

CREATING AND FOSTERING A SAFETY CULTURE

The involvement of local parties has been one of the most significant factors in Canada's success in creating a strong safety culture in the offshore oil industry. By creating joint boards between adjacent provinces and the federal government, Canada has insured that the people closest to the activity have been involved in every step of the development process. As a result, the regulators are acutely attuned to local issues; equally so, the local groups are often well informed about the issues. However, the multiplication of regulators as more adjacent provinces and territories gain offshore jurisdiction will prove to be extremely challenging, if not untenable. A strong argument can be made that the Canadian "local advantage" over the United States could become a straightjacket. If policy makers are still inclined to introduce separate safety boards, perhaps they should consider one or more joint technical and safety departments to be shared across provincial regulators. Board composition and policy matters could still be left to each provincial board. However, this approach would be very unpopular with provincial governments, which would resist any erosion of authority from the locally based boards.

CONCLUSION

As long as North Americans maintain an energy-intensive lifestyle, participants in the oil industry will need to find sources of supply to maintain the expected standard of living. With increasing resistance to unconventional sources of supply such as Alberta's oil sands with its high carbon and water footprint, deepwater oil remains an attractive and stable domestic supply of energy. It is incumbent on government and industry to manage the changes in the offshore oil industry to ensure that they are effective in reducing the risk of future incidents, and not just designed to satisfy the public in the short term. Sensible change, such as a carefully monitored migration to goal-based regulation, is one such reform. A proliferation of regulators with overlapping jurisdictions and inadequate staffing is not.

About the Authors

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