

# OFFSHORE OIL SPILLS: AN EVALUATION OF RECENT UNITED STATES RESPONSES

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## I. INTRODUCTION

A photograph of a girl holding a shivering, oil-soaked duck and pleading, "Don't die, Ducky, don't die . . ." highlighted a recent full page advertisement in the New York Times.<sup>1</sup> The ad, placed by the citizens of St. Petersburg, Florida, after an oil spill had fouled the beaches near their city, indicates the growing anxiety of coastal communities over the menace of oil pollution of the oceans.

Similar concerns have been expressed on a variety of issues on campuses and communities across the nation in a host of activities culminating recently with "Earth Day," on April 22.<sup>2</sup> The focus, though occasionally global, is primarily domestic, and the tone justifiably frantic, but many presentations are balanced—the issues are well-articulated, alternatives scientifically assessed, and recommendations for action are emerging.<sup>3</sup> In any event, the objective is "to bring home the facts of the environmental crisis," and to stir further demands for action.

"What action?" is the skeptic's rejoinder. One could perhaps argue that sincerity of purpose, without sustained efforts over a long period, is not likely to result in a dramatic restoration of the balance of nature or in providing answers to the mounting problems caused by water and air pollution and the growing population spiral. He might support his contention by forwarding, among others, the following reasons: 1) The sheer magnitude of

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1. N.Y. Times, March 12, 1970, at 35.

2. See, e.g., N.Y. Times, April 22, 1970, at 29; *id.*, April 23, 1970, at 1, col. 3, 30, col. 1 and 31, col. 1; Christian Science Monitor, April 24, 1970, at 1, col. 2, 3.

3. See, e.g., SATURDAY REVIEW, May 2, 1970, at 53-68; *id.*, March 7, 1970, at 47-66; 3 PSYCHOLOGY TODAY, March 1970, at 20, 31, 54, 58, 5 TRAIL 8-28 (Aug.-Sept., 1969), Kennan, *To Prevent a World Wasteland: A Proposal*, 48 FN. AFFAIRS 401 (1970); SOVIET LIFE, Jan. 1970, at 26-62; See also, THE ENVIRONMENTAL HANDBOOK (G. Bell ed. 1970).

the problems is staggering, especially when their nature and origin, and the various scientific, technological and biological, social and legal aspects are not even properly understood; 2) Competing and conflicting interests in society will not necessarily allow decision-making to be ecologically oriented; and 3) Too many environmental problems, by their very nature, cut across nation state lines and thus are not amenable to haphazard responses under a nation state system which is totally ineffective, almost archaic in dealing with problems which demand an immediate and concerted action. A case in point is the pollution of the sea, some aspects of which, especially those dealing with areas adjacent to coasts, will be discussed in this paper.

## II. THE PROBLEM

The *Torrey Canyon* disaster<sup>4</sup> and the more recent oil well blowouts in Santa Barbara<sup>5</sup> and the Gulf of Mexico<sup>6</sup> have highlighted three problem areas: 1) The nature of laws, regulations and procedures to provide for the optimum preventative steps to avert this kind of disaster; 2) The nature and effectiveness of the prescribing, applying, and enforcing machinery; and 3) Scientific and technological expertise and institutional structures necessary for restorative purposes, once such a disaster occurs. Above all, mineral resource exploitation should be carried out primarily with an overriding awareness of the environmental well-being.

This paper will briefly discuss the responses of the United States in the Santa Barbara and the Gulf cases, examining both the executive and the legislative action; it will analyze the institutional and procedural aspects of the United States responses, and evaluate their efficacy in view of their likely influence upon other states and international organizations involved in handling the pollution aspects of the sea. The problem of pollution from tankers, which has been examined elsewhere, will not be the focus of the present inquiry.<sup>7</sup>

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4. See, e.g., E. COWAN, *THE TORREY CANYON DISASTER* (1968); Nanda, *The "Torrey Canyon" Disaster: Some Legal Aspects*, 44 *DENVER L.J.* 400 (1967).

5. See *infra* notes 48-128 and the accompanying text.

6. See *infra* notes 129-142 and the accompanying text.

7. See Nanda, *supra* note 4.

### III. POLICY CONSIDERATIONS

The world's need for oil and natural gas is increasing at an accelerating rate. Presently, oil and gas supply most of the world's energy needs, and will in all probability continue to do so. For instance, oil and gas supply over 74 percent of the needs of the United States, the world's greatest consumer of energy, which in 1967 consumed 4.7 billion barrels of oil.<sup>8</sup> By the year 2000, the United States energy needs are projected to triple and, while an increased use of nuclear energy is envisaged, petroleum demand is still expected to more than double in this period.<sup>9</sup> Most experts agree that a large part of this increasing demand will be met from ocean reserves. For instance, while in 1967 the oceans supplied about 12 percent of the oil and 10 percent of the gas to meet United States needs,<sup>10</sup> the percentage is expected to rise considerably.<sup>11</sup> Although there is disagreement on how substantially this increased demand might affect offshore production (estimates range from doubling to quadrupling the output), it is generally accepted that there will be a significant increase in oceanic oil and gas activity in the next decade.<sup>12</sup> Presently offshore activities are in progress adjacent to 35 countries; 15 more are expected to start exploration soon.<sup>13</sup>

Undoubtly nations will further encourage exploration and exploitation to both supply domestic energy needs and provide revenue from such production. The corporations involved will probably be diligent in their efforts to maximize profits by keeping costs down.<sup>14</sup> This could well lead to a lack of adequate

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8. *Hearings on S. 1219 Before the Subcomm. on Minerals, Materials, and Fuels of the Senate Committee on Interior and Insular Affairs*, 91st Cong., 1st Sess., at 88 [hereinafter cited as *Senate Hearings on S. 1219*].

9. *Id.* See also, NATIONAL PETROLEUM COUNCIL, *PETROLEUM RESOURCES UNDER THE OCEAN FLOOR* 90 (1969); J. WINGER, J. EMMERSON AND E. GUNNING, *OUTLOOK FOR ENERGY IN THE UNITED STATES* (1968).

10. NATIONAL PETROLEUM COUNCIL, *supra* note 9, at 18.

11. 68 OIL & GAS J., March 16, 1970, at 123, 126.

12. Present world wide production from offshore areas is about 7 million barrels a day, or 17 percent of world output. Predictions vary from 20 million barrels a day by 1980 to 40 million barrels a day by 1984. Other estimates by experts in industry vary between 25 and 28 million barrels a day for 1980. However, all agree that there will be a tremendous increase in offshore activity. *Supra* note 11, at 126-27.

13. *Senate Hearings on S. 1219*, at 9.

14. *Hearings on S. 7 and S. 544 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 91st Cong., 1st Sess., ser. 91-2, pt. 4, at 988-89 (1969).

concern for not only the effects of pollution but equally for aesthetic well-being as well as a total environmental balance, two considerations which rise above economics. Additionally, there may be conflicting interests involved—those of the oil industry may be antithetical not only to mineral resource exploitation, but one must also take into account other uses of the oceans such as fishing, transportation and tourism.

#### IV. PAST TRENDS

The exploitation of offshore oil and gas deposits is a recent phenomenon. While it had been long suspected that there were enormous petroleum resources along the continental shelves, there was little effort or possibility to exploit them until the mid-1950's.<sup>15</sup> After World War II there was great interest in the offshore areas, but activity was hampered by legal battles between the states and the federal government concerning the ownership of the continental shelf. The Submerged Lands Act in 1953<sup>16</sup> more or less resolved the dispute and cleared the way for exploration and exploitation.

The growth of the petroleum industry on the continental shelves has been tremendous; from none in 1953, the production has risen to about 17 percent of the world's entire output of petroleum, and is projected to supply 30 to 35 percent of it by 1980.<sup>17</sup> The growth and spread of these activities has been impressive and the United States is by no means alone in these ventures. For instance, in the 1950's all activity was centered in the Gulf of Mexico,<sup>18</sup> but by 1960 three more areas were being explored—the Persian Gulf, the Gulf of Paria, and the Sea of Japan.<sup>19</sup> At the beginning of 1970, almost 200 mobile drilling rigs are exploring every body of water in the world in search of oil.<sup>20</sup> The last 15 years have seen the birth and development of a complex multibillion dollar industry.<sup>21</sup>

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15. 58 OIL & GAS J., June 6, 1960, at 100.

16. The Submerged Lands Act, 43 U.S.C. § 1301 (1964).

17. MEMORANDUM BY SENATOR HENRY M. JACKSON, 91st Cong., 1st Sess., SELECTED MATERIALS ON THE OUTER CONTINENTAL SHELF 44 (Comm. Print 1969) [hereinafter cited as SELECTED MATERIALS ON THE OCS].

18. 58 OIL & GAS J., June 6, 1960, at 100.

19. 64 OIL & GAS J., June 20, 1966, at 109, 110.

20. *Supra* note 11, at 123-29.

21. *Id.*

United States offshore activities are primarily governed by the Submerged Lands Act,<sup>22</sup> and the Outer Continental Shelf Lands Act.<sup>23</sup> However, in these two Acts Congress did no more than provide broad guidelines for the development of the continental shelf, while delegating the actual regulation of the exploration and exploitation to the Secretary of the Interior. The Submerged Lands Act set the seaward boundary of the coastal states to their "historic boundaries," but no farther than three miles from the line of mean high tide on the Atlantic and Pacific coasts, and three marine leagues in the Gulf of Mexico. This was to set at rest competing claims between the states and the federal government in coastal waters, the so-called "tidelands" dispute.<sup>24</sup> The Supreme Court has recognized an historic boundary of three marine leagues (10 1/2 geographic miles) for Texas and the west coast of Florida.<sup>25</sup> However, there is still some conflict over coast line demarcations, especially in Louisiana.<sup>26</sup>

Under the statutes, the Secretary of the Interior is to administer the leasing operations.<sup>27</sup> He is to prescribe the necessary leasing and conservation rules and regulations, which he is authorized to amend at any time "as he determines to be necessary and proper in order to provide for the prevention of waste and conservation of the natural resources of the outer continental shelf."<sup>28</sup> He is authorized to regulate or suspend hazardous operations,<sup>29</sup> or suspend operations in the interests of preservation.<sup>30</sup>

Any person who knowingly violates any rule or regulation of the Secretary pertaining to waste, conservation or correlative rights, is guilty of a misdemeanor which carries a fine of up to \$2000 or a sentence of six months.<sup>31</sup> Each day of violation is a

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22. The Submerged Lands Act, 43 U.S.C. § 1301-1315 [hereinafter cited as Submerged Lands Act].

23. The Outer Continental Shelf Lands Act, 43 U.S.C. § 1331-1343 [hereinafter cited as OCS Land Act].

24. For a short history, see SELECTED MATERIALS ON THE OCS *supra* note 17, at V.

25. *Id.*

26. *Hearings on S.7 and S.544 Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Public Works*, 91st Cong., 1st Sess., ser. 91-2, pt.3, at 794, 796 (1969) [hereinafter cited as *Hearings on S.7 and S.544*].

27. OCS Lands Act § 1334 (a)(1).

28. *Id.*

29. *Id.*

30. *Id.*

31. *Id.*,(a)(2).

separate offense. The issuance and continuance of any lease is conditioned upon compliance with the regulations in force and effect on the date of the issuance of the lease.<sup>32</sup> The Secretary is further authorized to prescribe rental provisions for a lease and any other terms and provisions.<sup>33</sup>

Thus, by the direction of Congress the exploitation of minerals on the outer continental shelf became an administrative function of the Secretary of the Interior. In order to administer his charge, the Secretary divided the outer continental shelf into four administrative areas: the Gulf Coast Region, the West Coast Region, the Eastern Region and the Alaskan Region.<sup>34</sup> A general code of regulations, contained in the Code of Federal Regulations, was drawn up to embrace all four regions.<sup>35</sup>

With regard to pollution and conservation, these regulations require that an operator submit a development and drilling program for approval before he is allowed to begin any work.<sup>36</sup> He must use reasonable means to keep wells under control,<sup>37</sup> he

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32. *Id.*

33. OCS Lands Act § 1337 (b)(4).

34. *Hearings on S.7 and S.544*, at 752-53.

35. Oil and Gas and Sulphur Operations in the Continental Shelf, 30 CFR Chapter II, part 250 [hereinafter cited as Title 30]; Outer Continental Shelf Mineral Deposits, 43 CFR Chapter II, Part 3380 [hereinafter cited as Title 43]. On May 7, 1969, the Secretary proposed amendments to this part to clarify and prescribe specific standards of compliance with the general operating regulations applicable to oil and gas and sulphur operations on all these areas. 34 Fed. Reg. 7381-7385.

36. Title 30 § 250.34:

Drilling and development programs. (a) Prior to the beginning of any operations on the lease, including the construction of drilling or production platforms or other structures, the lessee shall submit to the supervisor for approval an acceptable plan for the performance of such work. . . (b) After a discovery has been made on the lease, the lessee shall submit to the supervisor a plan of development for the lease or field . . .

37. Title 30 § 250.40:

Control of wells. (a) The lessee shall take all reasonable precautions for keeping all wells under control at all times and shall provide at the time any well is started the proper high-pressure fittings and equipment as the supervisor may prescribe or approve. A conductor string of casing must be cemented throughout its length, and all strings of casing must be securely cemented and anchored unless other procedure is authorized or prescribed by the supervisor. (b) The lessee shall take all reasonable precautions to prevent any well from blowing open and shall take immediate steps and exercise due diligence to bring under control any such well. Storm chokes or similar safety devices shall be installed in any well capable of flowing oil or gas: Provided, that if in the opinion of the Supervisor, upon a clear showing by the lessee, a storm choke

must not "pollute the waters of the high seas or damage the aquatic life of the sea or allow extraneous matter to enter and damage any mineral or water-bearing formation;"<sup>38</sup> he must give notices and reports on each individual well;<sup>39</sup> he must furnish a log and history of each well,<sup>40</sup> and must submit a monthly report of all operations.<sup>41</sup> Also, the Secretary is authorized to inspect any and all facilities.<sup>42</sup>

Within the guidelines set out in these regulations, the Regional Oil and Gas Supervisor had broad powers to issue supplemental rules and in some cases to waive certain requirements for operations in his region.<sup>43</sup> This type of discretion would allow each Regional Director to regulate activities, thus meeting the needs and requirements of each oil field or each individual well.<sup>44</sup>

Pursuant to these regulations, by January 31, 1969, over 11,000 wells had been drilled on the federal lands of the outer continental shelf.<sup>45</sup> There were 23 blowouts,<sup>46</sup> one of which, the

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or similar safety device is not needed for the protection of the well or is likely to cause damage to or loss of the well, the Supervisor is authorized to waive this requirement. [19 Fed. Reg. 2656, May 8, 1954, as amended at 25 Fed. Reg. 637, Jan. 26, 1960]

38. Title 30 § 250.42.

39. Title 30 § 250.91. Notices and reports pertain to a notice of intention to drill; notice of intention to change the condition of a well; subsequent report of changing the condition of a well; notice of intention to abandon well; subsequent report of abandonment.

40. Title 30 § 250.92.

41. Title 30 § 250.93.

42. Title 43 § 3387.3-3.

43. Title 30 § 250.11, 12; 67 OIL & GAS J., Feb. 17, 1969, at 63. *See also, Hearings on S.7 and S.544*, at 1026.

44. Title 30 § 250.11, 12; *see also* OCS Orders No. 1-9 issued for the Pacific Region; *Hearings on S.7 and S.544*, at 781-788.

45. *Hearings on S.7 and S.544*, at 990. There is some variance in the number of offshore wells drilled, depending upon the square. For example, in a statement by U.S. Representative McKelvey before the Economic and Technical Subcommittee of the U.N. Committee on the Peaceful uses of the seabed and ocean floor beyond the limits of national jurisdiction, March 20, 1969, contained in *Subsea Mineral Resources and Problems Related to their Development* (Geological Survey Circular 619, 1969) at 19, the number of wells is given at 7,642 as of January 21, 1969. Dr. William T. Pecora, Director, USGS, has stated that 10,243 wells were dug on Federal OCS lands, *Hearings on S.7 and S.544*, at 961. Solanas, Regional Oil and Gas Supervisor, Pacific Region puts the figure at 6,500 wells *Hearings on S.7 and S.544* at 797, while Mr. Udall, Former Secretary of the Interior, speaks of 12-14,000 holes drilled prior to the Santa Barbara lease sale. *Hearings on S.7 and S.544*, at 1288.

46. *Hearings on S.7 and S.544* at 1026-28. The list of blowouts from the USGS includes only those cases where well control was lost during drilling and workover operations. Blowouts caused by collision, hurricanes, etc. are not included.

Santa Barbara Spill, was considered to be very serious. In addition to the federal regulations, coastal states have adopted codes for their offshore areas.<sup>47</sup>

#### A. Santa Barbara Blowout

The federal government offered oil and gas leases for sale in the Santa Barbara Channel on February 6, 1968, despite considerable local opposition.<sup>48</sup> Following its normal procedure, the Interior Department allowed the oil industry to conduct exploration in the proposed areas before bidding on the leases.<sup>49</sup> The Channel leases brought the government a record \$602,719,261.60 in bonus monies for 71 leases representing 363,181 acres.<sup>50</sup> Earlier in December 1966, a 1,995-acre tract of federal lands in the Channel had already been leased for \$21,189,000.<sup>51</sup> The area in which the blowout took place was tract 402 for which four corporations, Union, Texaco, Gulf and Mobil, had joined to bid \$61.4 million, the largest amount offered for a Santa Barbara Channel lease.<sup>52</sup>

The Union Oil Company was responsible for the drilling program in tract 402. Platform A, approximately six miles off the coast of California,<sup>53</sup> was to be used for extensive drilling.<sup>54</sup> A development and drilling plan was submitted to the Regional Director and, after consultation, was approved.<sup>55</sup> The drilling plan, which was later criticized, apparently caused no technical difficulties until the fifth hole, which blew out.<sup>56</sup> The blowout was quickly controlled with blowout prevention equipment which is required on all offshore wells.<sup>57</sup> However, the complex geological

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47. See, e.g., CAL. PUB. RES. CODE §§ 6871-6878 (West Supp. 1969); See also *Hearings on S.7 and S.54* at 1025.

48. *Hearings on S.7 and S.544*, at 1285, 1291.

49. *Id.* at 704, 787, 812, 1283.

50. *Id.* at 793.

51. *Id.*

52. *Id.* at 552. See also 67 OIL & GAS J., Feb. 10, 1969, at 50.

53. *Hearings on S.1219*, at 61; *Hearings on S.7 and S.544*, at 544-46.

54. *Hearings on S.7 and S.544* at 584, 813. Multiple holes from one platform or drilling rig is the rule in offshore work. Some of the newer designs can accommodate 32 or more drill holes. WORLD OIL, OFFSHORE HANDBOOK, at 24, 50, 60 (1969).

55. *Hearings on S.7 and S.544*, at 592-605, 685, 797.

56. *Id.* at 552-53. See also 67 OIL & GAS J., Feb. 10, 1969, at 50-51.

57. *Hearings on S.7 and S.544*, at 579 (Daily Drilling Record of the well that blew out.)



formations of the Santa Barbara Channel,<sup>58</sup> more specifically, a combination of two factors—enormous pressures from the oil and gas deposits beneath the ocean beds, and the faulted nature of the strata above them<sup>59</sup> allowed oil and gas to leak out of the drill hole and find its way to the surface.

The blowout preventors (BOPs) operate on the assumption that the only way oil can get out of the ground is through the well head. The oil can thus be turned off and on like a water faucet. This assumption proved wrong in this case. The situation that Union Oil faced would be analogous to a man turning off a water faucet and finding water leaking out of the walls.

The amount of oil spilled, in what was termed the worst oil pollution disaster in the continental United States,<sup>60</sup> was initially placed somewhere between 6,000 and 78,000 barrels depending upon the source of information,<sup>61</sup> and the oil continued to escape

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58. *Hearings on S.7 and S.544*, at 338, 571, 677, 634-36. *See also* 67 OIL & GAS J. Feb. 10, 1969, at 50-51; *Hearings on S.1219* at 35. Apparently the federal government was unaware of the particular geological circumstances of the Santa Barbara Channel at the time the leases were let. Also, no public hearings were held in Santa Barbara at that time. *Hearings on S.1219*, at 13. *See, e.g.*, Pauley Petroleum, Inc.'s petition for damages in the U.S. Court of Claims contending that:

(1) The United States knew or should have known that the Santa Barbara Channel area was characterized by deeper water, greater tectonic activity, a great density of subsurface faults and fault zones, and more frequent and more intense earthquake and other seismic activity than most, if not all, other areas in which offshore exploration for and production of oil and gas had theretofore been attempted and that each of these conditions increased the likelihood of well blowouts, pipeline breakage, and other causes of inadvertent spillage or seepage of oil\*\*\*. (Pauley petition, par. 13.) It was generally understood in the petroleum industry that the possibility of well blowouts is, roughly inversely proportional to the available knowledge with respect to subsurface geologic conditions and that the geologic knowledge of the subsurface geologic conditions and that the geologic knowledge of the subsurface Outer Continental Shelf areas under the waters of the Santa Barbara Channel was even more sketchy and uncertain than the geologic knowledge available with respect to onshore oil-producing areas and most other submarine offshore oil-producing areas in the United States. (Pauley petition, Par. 14.)

59. *See, e.g.*, statement of Charles A. O'Brien, Chief Deputy Attorney General, State of California, *Hearings on S.1219*, at 30, 35: "We are dealing with a geological area in which faults come at the strangest angles, in which the encrustation sedimentary cap is extremely weak, and the fact that it might not occur in one area is no assurance whatsoever that it could not approach in others . . . ."

60. *Id.* at 30.

61. The estimates of the amount of oil which seeped out vary greatly. For example, in a statement before the Economic and Technical Subcommittee of the UN Committee on the Peaceful uses of the Seabed and Ocean floor Beyond the Limits of National Jurisdiction, March 20, 1969, U.S. representative McKelvey said: "The spill probably

from the ruptured well for about four months after the blowout.<sup>62</sup> The fight to halt the oil and leak and clean up the resulting mess was long and expensive. Union Oil claimed to have spent \$4,600,000 in the first five weeks of restorative operations.<sup>63</sup> The amount of damages to third parties and to the environment is still being hotly debated.<sup>64</sup>

The two contributing factors in causing the blowout should be noted: 1) The federal regulations were perhaps inadequate; according to the executive officer in charge of California's State Land Commission, compliance with the state regulations could have prevented this occurrence; 2) It was perhaps an unsound decision by federal authorities not to require an intermediate string of casing at the 1,000 or 1,200 foot zone.

### B. Political and Regulatory Results

The political and regulatory activities which followed the Santa Barbara oil spill were rapid and often overlapping. The federal response was divided between the Executive and the Legislative branches. Within the Executive there was action by both the President and the Secretary of the Interior. Legislative action was split between the House and the Senate. There was also activity at the state level even though the incident took place on federal lands.

Within a few days of the blowout the Secretary of the Interior, Walter Hickel, had made an inspection of the Santa Barbara Channel.<sup>65</sup> He imposed a "temporary drilling

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amounts to only 3,000-6,000 barrels or so." *Subsea Mineral Resources and Problems Related to their Development* 19, 21 (Geological Survey Circular 619, 1969). See also *Hearings on S.1219*, at 146, where the amount is placed "conservatively" at 78,000 barrels by the 100th day; and at 16 (Statement of former Senator Kuchel); and at 44, 48 (statement of Dole, an Assistant Secretary of the Interior).

62. *Supra* note 59, at 32:

One hundred and twelve days after the blowout, oil continues to escape from the ocean floor at the rate of at least 1,000 gallons per day. When will it stop? I know of no answer. Virtually every control method known has been attempted. There have been booms, and divers, and funnels, and two-man submarines, and dispersants and powdered cement diatomaceous earth, and perhaps other substances cast into, upon, or below the waters to stop the leak. It continues.

63. 67 OIL & GAS J., Aug. 25, 1969, at 33.

64. Various claims amounting to in excess of 1 1/2 billion dollars have been filed. A list of claims filed is set out in *Hearings on S.1219*, at 58, 59.

65. *Id.* at 18.

66. 67 OIL & GAS J., February 10, 1967, at 50.

moratorium” on existing drilling operations in the Channel and placed a total ban on new drilling.<sup>67</sup> There was also a temporary ban upon production<sup>68</sup> except in the area around the blowout.<sup>69</sup> Here Union was allowed to draw off oil and gas in an effort to reduce the pressure of the reservoir and slow down the rate of the leak.<sup>70</sup> The total production prohibition was lifted after the United States Geological Survey (USGS) personnel inspected the facilities.<sup>71</sup> However, after five days, the Secretary decided that there was a lack of sufficient geologic data for the area and ordered, on February 7, a halt to all drilling and production activities in the areas under federal jurisdiction, an order in which the President and the Department of Justice concurred.<sup>72</sup>

Ten days later, on the 17th of February, the Secretary announced new, tighter interpretations of previous regulations concerning pollution,<sup>73</sup> a moratorium on all offshore leasing,<sup>74</sup> and a proposed set of drilling and leasing rules, which were more stringent.<sup>75</sup> The thrust of the pollution rules was to impose strict and unlimited liability for any oil spill.<sup>76</sup> It was a moot point as to whether this rule applied to Union Oil as Union had already stated that it would bear the costs of any cleanup that was necessary.<sup>77</sup> Other oil companies complained that this was a new rule and that they were not bound by it, as it had not been in effect when they bought their leases.<sup>78</sup> This was disputed by the Secretary who said it was not a new rule but only a clarification of the existing pollution rules.<sup>79</sup>

The moratorium on offshore leasing was to continue until new drilling and leasing regulations were drawn up and adopted.<sup>80</sup>

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67. *Id.*

68. *Id.*

69. *Id.*

70. *Id.*

71. *Id.*

72. *Hearings on S.7 and S.544*, at 943; *Hearings on S.1219*, at 44.

73. Department of Interior News Release, contained in *Hearings on S.7 and S.544*, at 1028.

74. 67 OIL & GAS J., Feb. 24, 1969, at 44.

75. *Id.* These rules were put into operation as OCS Order No. 10, on March 28, 1969. *Hearings on S.1219*, at 49; *Hearings on S.7 and S.544*, at 976.

76. *Supra* note 73. See also 67 OIL & GAS J., Feb. 24, 1969, at 44.

77. 67 OIL & GAS J., Feb. 10, 1969, at 51. See also *Hearings on S.7 and S.544*, at 967.

78. *Hearings on S.7 and S.544*, at 967.

79. *Id.* at 973.

80. 67 OIL & GAS J., Feb. 24, 1969, at 44.

The proposed drilling regulations were the outcome of a safety review of all outer continental shelf regulations initiated by Secretary Hickel after the blowout, and dealt with casing requirements, variances, drilling mud standards, blowout prevention devices and other technical matters.<sup>81</sup> The oil industry was given two days to present written comments on the proposed rules.<sup>82</sup> California state oil and gas officials were also requested to review the revised procedures and regulations.<sup>83</sup> Additionally, geological survey earth scientists and a panel of scientists named by the President's science adviser conducted further inquiries and studies.<sup>84</sup>

Meanwhile, the drilling and production ban in the Channel was causing complications. The operators were incurring estimated losses of \$100,000 a day because of idled equipment.<sup>85</sup> Further, some experts contended that production from the area of the leaking well would be necessary to reduce the oil spill.<sup>86</sup> Phillips Petroleum asked for a five-day production permit to prevent damage to their wells.<sup>87</sup> Both of these production requests were granted.<sup>88</sup> More recently, Secretary Hickel has declared a lease moratorium off Santa Barbara.<sup>89</sup>

The Secretary remained active. On March 3 a new buffer zone was announced for the Santa Barbara Channel.<sup>90</sup> The lands named were withdrawn from mineral leasing and made a part of an ecological reserve.<sup>91</sup> The Secretary commented publicly that there was serious consideration of canceling the Union Oil lease on Block 402 along with adjoining Block 401 and including these lands in the new buffer zone.<sup>92</sup> On March 28, the new drilling regulations for the Santa Barbara Channel were released.<sup>93</sup> There was little adverse reaction to the new drilling rules. Operators felt

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81. *Id.*

82. *Id.*

83. *Hearings on S.1219*, at 45.

84. *Id.*

85. 67 OIL & GAS J., Feb. 24, 1969, at 59.

86. *Id.*, March 17, 1969, at 49.

87. *Id.*

88. *Id.*

89. 68 OIL & GAS J., March 2, 1970, at 31.

90. *Hearings on S.7 and S.544*, at 980; *Hearings on S.1219*, at 3.

91. *Id.*

92. 67 OIL & GAS J., March 31, 1969, at 36.

93. *Hearings on S.1219*, at 49.

that they were "workable" but foresaw a 15 percent increase in drilling costs, a matter of between \$15,000 and \$20,000 per well in their Channel operations.<sup>94</sup>

However, a much different reaction was generated by the oil industry on May 7 when the Secretary proposed new rules for the entire outer continental shelf.<sup>95</sup> In addition to more rigid drilling requirements, the proposed rules sharply reduced the discretionary powers of the regional officials, required the oil companies to disclose a great deal more of their geologic data prior to lease sales, and provided for making this hitherto confidential information public.<sup>96</sup> The latter two provisions caused most of the criticism.<sup>97</sup>

After much discussion the new rules for the outer continental shelf were adopted on August 22.<sup>98</sup> As compared with the earlier regulations, they were much stricter, especially in the areas of pollution prevention and environmental protection. For example, as foreshadowed in the earlier proposals,<sup>99</sup> they provided that in the case of pollution damaging or threatening to damage any phase of the environment, the lessee must control and remove the pollutant at his own expense wherever it may be.<sup>100</sup> Also, before a lease is offered for sale, there will be consideration of all environmental factors.<sup>101</sup> To this end public hearings may be held together with consultation with state agencies and interested organizations and individuals.<sup>102</sup> To prevent pollution, stiffer technical requirements for well drilling, casing, cementing, mud control and blowout prevention equipment were enacted.<sup>103</sup> The following week the detailed regulations for the Gulf Region were published.<sup>104</sup>

In November the Interior Department released its report on

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94. 67 OIL & GAS J., March 31, 1969, at 37.

95. *Hearings on S. 1219*, at 178.

96. *Id.*

97. For some examples of industry criticism, see 67 OIL & GAS J., June 9, 1969, at 48; June 16, 1969, at 45; July 14, 1969, at 44; Aug. 4, 1969, at 75, 100.

98. Department of the Interior News Release, August 22, 1969; Revised Title 30 and 43 CFR, Aug. 22, 1969; 67 OIL & GAS J., Aug. 25, 1969, at 52.

99. *See supra* note 95.

100. Revised Title 30 CFR § 250.43.

101. Revised Title 43 CFR § 3380.

102. *Id.*

103. Revised Title 30 CFR § 250.30, 34, 38, 41.

104. Department of the Interior News Release, August 28, 1969. OCS Orders Nos. 1 through 10, Gulf of Mexico, Aug. 28, 1969. For the anticipated effect of the new rules

the Santa Barbara Channel.<sup>105</sup> At the same time the Secretary announced that there would be no lease sales at all in the Channel, but he was approving full production of the controversial Union Oil lease.<sup>106</sup> This move had been recommended by the Presidential panel as a means of stopping oil seepage in the blowout area.<sup>107</sup>

Immediately after the blowout on January 28, the Secretary of the Interior suggested to the President that he order his own independent investigation of the oil spill problem.<sup>108</sup> On February 11, President Nixon ordered that a special panel be convened to conduct an extensive study. Their probe began on the 24th of that month.<sup>109</sup> On June 9, the President's panel released some preliminary studies with specific suggestions for the Santa Barbara problem.<sup>110</sup> They released their formal reports in the latter part of October, one on the oil spills,<sup>111</sup> and the other on the entire question of marine resources.<sup>112</sup>

Both houses of Congress conducted investigations on the Santa Barbara incident, as part of their wider discussion on pending water pollution bills. The House Committee on Public Works heard the testimony of the Secretary of the Interior on March 5, 1969,<sup>113</sup> and in the same week the Secretary met in closed session with the House Interior Committee to discuss the Channel buffer zone and the possibility of lease recall.<sup>114</sup> The Senate held hearings at Santa Barbara on February 24 and 25,<sup>115</sup> and spent the entire day of February 28 questioning the Secretary and members of his staff.<sup>116</sup> One special feature that perhaps

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on the petroleum industry, see 67 OIL & GAS J., Oct. 13, 1969, at 53; Oct. 20, 1969, at 44; Oct. 27, 1969, at 40.

105. *Id.*, Nov. 3, 1969, at 48; 68 OIL & GAS J., Jan. 12, 1970, at 28.

106. 67 OIL & GAS J., Nov. 3, 1969, at 48.

107. *Id.* June 9, 1969, at 58.

108. *Hearings on S.7 and S.544*, at 943.

109. 67 OIL & GAS J., Feb. 24, 1969, at 58.

110. *Id.*, June 9, 1969, at 58.

111. First Report of the President's Panel on Oil Spills, *THE OIL SPILL PROBLEM*, (Executive Office of the President, Office of Science and Technology, 1969).

112. Second Report of the President's Panel on Oil Spills, *Offshore Mineral Resources: A Challenge and an Opportunity*, (Executive Office of the President, Office of Science and Technology, 1969).

113. *Hearings on H.R. 418 and Related Bills Before the House Committee on Public Works*, 91st Cong., 1st Sess., at 299.

114. 67 OIL & GAS J., March 17, 1969, at 11.

115. *Hearings on S.7 and S.544*, part 3.

116. *Id.* part 4, at 942.

troubled the Senators most was the very small number of inspection personnel available to the USGS in their offshore work.<sup>117</sup> For instance, the Pacific Region, which includes Santa Barbara, had just four men acting as inspectors of the offshore operations,<sup>118</sup> and the Regional Director had stated that, "We make an attempt to inspect the drilling operation on every well that is drilled on a Federal lease in the Santa Barbara Channel at least once during its drilling operation."<sup>119</sup>

Again in May the Senate heard discussion of the Santa Barbara problem. This time it was the Interior Committee hearings on a bill to ban all drilling on federal leases in the Santa Barbara Channel, to suspend drilling in other areas off the coast of California, and to direct the Secretary of the Interior to study whether oil production on the outer continental shelf could continue without "the threat of pollution and other damage to the environment and ecological community."<sup>120</sup> The bill would also direct the Secretary to investigate the phasing out of oil production under federal leases in the Santa Barbara Channel.<sup>121</sup> The Interior witnesses testified against the bill saying that they had already initiated the extensive studies that the bill would call for and that they were tightening the already existing drilling and pollution regulations and were proposing new ones which would provide adequate preventive means and safeguards to protect the ecology.<sup>122</sup> A House bill would have provided for the cessation of drilling and production in the Santa Barbara Channel.<sup>123</sup>

A matter of continuing concern was whether or not new legislation was needed to cope with oil spills of this type on the continental shelf. The Secretary felt that he had sufficient regulatory powers under the existing laws to cope with the situation. The only change he recommended was the extension of federal pollution laws over the three-mile-wide state offshore zones.<sup>124</sup>

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117. *Id.*, at 661, 992, 1298.

118. *Id.*, at 661.

119. *Id.*, at 672. For recent moves to hire more inspectors, see 68 OIL & GAS J. May 25, 1970 at 41; New York Times, May 13, 1970 at 17, col. 3.

120. *Hearings on S.1219*, at 1.

121. *Id.* at 1-2.

122. *Id.* at 44, 61.

123. H.R. 7074. See reference in *Hearings on S.1219* at 39. See also, S.3516, 91st Cong., 2d Sess. (1970).

124. *Hearings on S.7 and S.544*, at 966, 974.

There was also reaction to the Santa Barbara spill at the state level, the most violent of which was understandably in California where there were series of legislative hearings and special panels. Initially, the State Land Commission, the body responsible for drilling oil production within the state jurisdiction of the three-mile offshore area, suspended drilling operations everywhere in California.<sup>125</sup> Also, the State Attorney General's Office filed a claim against the Interior Department under the Federal Torts Claims Act and a lawsuit against the oil companies.<sup>126</sup> In July the Governor approved a long series of new state regulations which paralleled their federal counterparts.<sup>127</sup> The appropriate regulatory agencies of Texas and Louisiana also upgraded their offshore regulations.<sup>128</sup>

### C. *Blowouts in the Gulf of Mexico*

In a thirteen month period after the Santa Barbara oil spill there were at least three well blowouts in the Gulf of Mexico.<sup>129</sup> The most publicized incident began on an unattended platform belonging to Chevron Oil which was producing both oil and gas. On February 10, 1970, an explosion and fire destroyed the platform and allowed all the wells to run wild.<sup>130</sup> While the platform was on fire, any oil which might have caused pollution was burned off.<sup>131</sup> However, after the fire was extinguished four

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125. *Supra* note 120, at 17, 23-24. Statement of Charles A. O'Brien, Chief Deputy Attorney General, State of California:

I am advised by the division of State lands that pending a full and complete review of both drilling standards and emergency measures, there is no new drilling on State-leased offshore drilling platforms. The State has gone further. It has cancelled the taking of lease bids for offshore parcels. It has canceled all permits to drill new wells. It has refused permission to carry on any exploratory activity offshore pending the full and complete review I have mentioned. The State is exploring every means of assuring that future drilling operations will proceed with maximum safety. The California State Legislature is reviewing and acting on numerous bills in this area. Assembly bill 413 will require the licensing by the State water resources control board of any chemical or substance used for the cleaning up of oils in the waters of the State, and will provide that such chemicals may only be used under the supervision of the State Department of fish and game. *Id.* at 33.

126. *Id.* at 34, 37.

127. 67 OIL & GAS J., July 7, 1969, at 100.

128. 67 OIL & GAS J., March 24, 1969, at 83.

129. For an account of these blowouts, *see, e.g.*, 67 OIL & GAS J., March 31, 1969, March 31, 1969, at 40; 68 OIL & GAS J., January 19, 1970, at 23.

130. *Id.*, Feb. 16, 1970, at 43; Feb. 23, 1970, at 65; March 2, 1970, at 41.

131. *Id.*, Feb. 23, 1970, at 65.



weeks later,<sup>132</sup> oil spilled for another three weeks before it was controlled,<sup>133</sup> resulting in an approximated release of 12,000 barrels. The "Oil and Gas Journal" called it the largest oil spill in U.S. history, and the giant oil slicks were a constant threat to the Louisiana coastline.<sup>134</sup> That there was not apparent damage to a large wildlife preserve or to the fishing industry was due to the wind which kept the slick off shore.<sup>135</sup>

This last incident is especially relevant to a review of pollution controls as it highlights a weakness in the U.S. system. The wells involved in the blowout were found to be lacking in basic blowout prevention equipment.<sup>136</sup> In particular, they were without "storm chokes" which, if present, would have prevented the spill.<sup>137</sup> The Secretary of the Interior ordered a thorough check of other Chevron equipment in the Gulf and found 347 violations by Chevron—137 for lack of downhole safety valves and 210 for breaches of other regulations. The Secretary further disclosed that in the past six months 17 federal inspectors had checked over 3,400 wells and had shut down over 300 for rule violations,<sup>139</sup> which he considered to be evidence of a pattern of widespread violation of the federal regulations by oil companies.<sup>140</sup> He asked that the Attorney General have a Federal Grand Jury investigate the situation.<sup>141</sup> The Grand Jury began its investigation in New Orleans on March 31,<sup>142</sup> and on May 5 indicted Chevron on charges of "knowingly and wilfully" failing to install safety devices on its wells.<sup>142.1</sup>

It would appear from the evidence that this oil spill was not caused by inadequate regulations, which might have been the case at Santa Barbara, but by lack of proper inspection and enforcement. The Senate in its hearings on Santa Barbara had

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132. *Id.*, March 16, 1970, at 97.

133. *Id.*, April 6, 1970, at 78.

134. *Id.*

135. *Id.* See also, *id.*, March 30, 1970, at 60; March 23, 1970, at 38.

136. *Id.*, March 30, 1970, at 76.

137. *Id.*

138. *Id.*

139. *Id.*

140. *Id.*

141. *Id.*

142. *Id.*, April 6, 1970, at 76.

142.1. *Id.* May 11, 1970 at 40; New York Times, May 6, 1970 at 1, col. 1.

already recognized the deficiencies. At that time, however, no evidence was present that there was any systematic violation of the regulations.

#### V. APPRAISAL AND RECOMMENDATIONS

All indicators point to the certainty that there will be an ever increasing development of offshore resources, with many more coastal nation states tapping their offshore areas in the near future.<sup>143</sup> Since the objective is to minimize the oil pollution menace, for oil spills by their very nature cannot be entirely eliminated—for instance, accidental pollution from tankers and natural seepage—it is imperative that all over the world preventative steps be taken at this stage. Some of these steps will have to be international while others will be regional, bilateral, and even unilateral.

The world community has on an international level already taken laudable first steps in dealing with the hazards of oil pollution from tankers. The 1954 International Convention for the Prevention of Pollution of the Sea by Oil,<sup>144</sup> is an example of the international concern. More recently, in November, 1969, an international conference amended this convention<sup>145</sup> and adopted two other conventions: 1) International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties,<sup>146</sup> and 2) International Convention on Civil Liability for Oil Pollution Damage.<sup>147</sup> President Nixon has recently asked the Senate to approve amendments to the 1954 Convention and consent to ratification of the two conventions.<sup>147.1</sup>

As was imperative, the *Torrey Canyon* disaster had prompted serious, urgent negotiations under the auspices of the International Maritime Consultative Organization (IMCO) to devise ways and means to meet new challenges posed by growing demands for oil and oil transportation, bigger tankers, and

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143. *Supra* notes 10-13.

144. 12 U.S.T. 2989; T.I.A.S. 4900, 17 U.S.T. 1523, T.I.A.S. 6109 [hereinafter cited as the 1954 Convention].

145. The amended version is conveniently contained in 9 INT'L LEGAL MATERIALS 1 (1970).

146. Signed at Brussels, Nov. 29, 1969. The text is conveniently contained in 64 AM. J. INT'L L. 471 (1970).

147. Signed at Brussels, Nov. 29, 1969. The text is conveniently contained in 64 AM. J. INT'L L. 481 (1970).

147.1. New York Times, May 21, 1970 at 1, col. 3; Wall Street Journal, May 21, 1970 at 4, col. 3.

crowded sea lanes.<sup>148</sup> Thus these two conventions and the revised 1954 Convention came as a result of an international legal conference on Marine Pollution Damage convened by IMCO which met in Brussels from November 10 to November 29, 1969.<sup>149</sup> The Conference also demonstrated a growing awareness of pollution hazards from agents other than oil by adopting a resolution which recommended that 1) contracting states should "cooperate as appropriate in applying wholly or partially the provisions of the [1954] Convention;"<sup>150</sup> and 2) IMCO should intensify its work in collaboration with other international organizations, "on all aspects of pollution by agents other than oil."<sup>151</sup> Undoubtedly IMCO, and other interested international organizations,<sup>152</sup> have a long way to go before providing adequate safeguards to prevent pollution of the seas and also in providing adequate compensation to victims of large scale oil pollution incidents.<sup>153</sup> However, these present activities of IMCO, the recently signed Tanker Owners Voluntary Agreement concerning Liability for Oil Pollution,<sup>154</sup> and the United Nations concern expressed recently in a General Assembly resolution<sup>155</sup> and a report by the Secretary General<sup>156</sup> are salutary first steps. Similarly, recent expressions of concern by U.S. and Canada,<sup>157</sup>

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148. See generally Comment, *Oil Pollution of the Sea*, 10 HAR. INT'L L.J. 316, 332-38 (1969); Mendelsohn, *Maritime Liability for Oil Pollution*, 38 GEO. WASH. L.R. 1, 27-29 (1969).

149. For the Final Act of the Conference, see 9 INT'L LEGAL MATERIALS 20 (1970).

150. *Id.* at 65.

151. *Id.*

152. For example, the following organizations participated in the Brussels Conference: International Labor Organization; International Atomic Energy Agency; Organization for Economic Cooperation and Development; International Institute for the Unification of Private Law; Committee Maritime International; International Chamber of Shipping; International Chamber of Commerce; Permanent International Association of Navigation Congresses; International Law Association; and International Confederation of Free Trade Unions. *Id.* at 21-22.

153. However, see *id.* at 66-67, for the text of a resolution adopted at the Brussels conference on Establishment of an International Compensation Fund for Oil Pollution Damage.

154. 8 INT'L LEGAL MATERIALS 497 (1969).

155. G.A. Res. 2566 (XXIV), contained in 9 INT'L LEGAL MATERIALS 424 (1970) (Unanimously adopted on Dec. 13, 1969).

156. Note by the Secretary-General, *Study on Marine Pollution which might arise from the exploration and exploitation of the sea-bed and the ocean floor and the subsoil thereof beyond the limits of national jurisdiction*, U.N. Doc. A/AC.138/13 (1969).

157. Letter on risks of oil pollution in Lake Erie, sent to the Chairman of the International Joint Commission, contained in 8 INT'L LEGAL MATERIALS 627 (1969). See also Jordan, *Recent Developments in International Environmental Pollution Control*, 15 MCGILL L.J. 279 (1969).

and multilateral arrangements, such as the 1969 Agreement for cooperation in dealing with Pollution of the North Sea by Oil,<sup>158</sup> to prevent and combat pollution of waters, show desirable tendencies.

Compared with the bilateral and multilateral arrangements mentioned above, unilateral steps will be essential in dealing with offshore production. Offshore activities have grown so rapidly over such a short span of time that laws have lagged behind technological developments. For instance, a review of the offshore legislation of the Caribbean countries points to a consistent lack in providing well articulated regulations necessary to confront pollution hazards.<sup>159</sup> The Jamaican Agreement of December 20, 1966, between the government of Jamaica and Signal Exploration (Jamaica) Company<sup>160</sup> typifies the provisions in which such rules are often generalized. It says:

*Pollution and Explosive*

7. (1) The Licensee shall adopt all practicable precautions (which shall include the provisions of modern equipment) to prevent pollution of the coastal waters by oil, mud or any other fluid or substance which might contaminate the sea water or shoreline.

(2) The Licensee of a submarine area shall, before using explosive in connection with seismic operations on the sea bed, obtain the approval of the Commissioner of Mines.<sup>161</sup>

By no means would the Caribbean be unique in lacking effective safeguards. Perhaps most developing countries are primarily concerned with economic growth and for good reasons. But unfortunately economic growth, defined in terms of immediate financial gains, rather than overall long-term development, takes precedence, and attractive royalties from offshore productions are likely to outshine a concern for ecological balance. However, the safeguards are not prohibitive. They will not even impose unnecessary hardships, nor are they likely to discourage further exploration since petroleum products are enjoying an ever increasing demand.

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158. Contained in 9 INT'L LEGAL MATERIALS 359 (1970).

159. Petroleum Legislation, CENTRAL AMERICA AND CARIBBEAN—BASIC OIL LAWS AND CONCESSION CONTRACTS (1967); and *id.* Supplements I-X.

160. *Id.*, Supplement No. IX, A-O (1969).

161. *Id.*, at A-11.

As a rough model, each nation state should establish an Offshore Resource Agency. The proposed Agency's role would be to grant and administer offshore leases and to regulate and supervise the production of resources. The Agency will be guided by offshore legislation which could be fruitfully modeled on the United States legislation. While the legislation should be fairly flexible to meet challenges of changing technology and changing conditions, it should specifically contain the following provisions on pollution control: 1) Imposition of an absolute liability for at least clean up operations and perhaps for damages too, resulting from pollution caused by any individual or company involved in offshore production; 2) A broad discretion of the Agency to prescribe and amend all rules and regulations as it deems necessary to provide for the prevention of waste and conservation of offshore resources; and 3) Provision for compulsory adjudicatory process to determine fault in pollution incidents to allow the individual or the company initially held liable to recover costs of clean up or damages from any other person or company that might have negligently caused the pollution.

The Agency's regulatory and supervisory functions should include the power to set regulations on all phases of oil well drilling and oil and gas production, for the legislation cannot be too specific and this regulatory power should allow for necessary variations in different situations. Regulations should specifically contain oil drilling and pollution prevention procedures such as those concerning well casing, cementing, and testing requirements; blow-out prevention devices and periodic blowout prevention tests; standby pollution control equipment such as chemical dispersants, booms, etc.; periodic installation, testing, and maintenance of well safety devices; pollution inspections; drilling mud characteristics and mud testing equipment; equipment and testing procedures for producing wells; procedures for reporting leakage of oil and liquid pollutants and oil spills; and standards for the construction of offshore structures. Enforcement machinery should be clearly set forth. Power to suspend or cancel leases should be entrusted to the Resource Agency.

As a special feature, the model should ensure adequate consideration of all ecological factors before any lease is granted. In the United States, following the Santa Barbara spill, three

important steps have been taken to ensure adequate protection of the environment: 1) The public will be consulted before letting leases. The purpose is to provide opportunities to all concerned to have a voice before a decision is made concerning the development of offshore resources; 2) Companies will be asked to disclose the pertinent geological and engineering information before leases are granted; and 3) The National Environmental Policy Act of 1969 was adopted which provides for establishing a Council on Environmental Quality and declares the Federal Government policy "to create and maintain conditions under which men and nature can exist in productive harmony."<sup>162</sup>

It may not be possible in many countries to have an elaborate machinery for holding hearings, or perhaps there may be a lack of enough awareness, rendering such hearings meaningless. Thus it is submitted that the presently available UN machinery on regional levels—Economic Commissions for regions, for instance, or some other appropriate body—should provide the requesting nation with competent expertise to study the ecological aspects of the area involved.

Each state should also establish a board on oil pollution which should have the operational responsibility to monitor and control oil spills. Finally, the machinery envisaged herein is to have sufficient flexibility with built-in self-evaluation devices and provisions for periodic reviews so that it is capable of meeting contingencies. Since there are no guarantees against future blowouts, regulatory steps at this stage to minimize pollution hazards and to ensure efficient exploitation are in the common interest.

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162. 83 Stat. 852, Public Law 91-190, 91st Cong., S.1075, Jan. 1, 1970.