NATURAL RESOURCES JOURNAL

Volume 21
Issue 1 *Winter 1981*

Winter 1981

Coastal Energy Siting Dilemmas

Russell V. Randle

COASTAL ENERGY SITING DILEMMAS

RUSSELL V. RANDLE*

INTRODUCTION

Discussions about coastal management and energy facility siting often belie the complexity of the problem. The federal coastal management program was designed to assert control over development of thousands of miles of shoreline, and the mental picture of endless beach seems to have influenced Congress' deliberations on this statute.[1] This mental picture is vast and impressive, yet it, like the statute it informs, is largely irrelevant to the siting of necessary, dirty, and occasionally dangerous facilities like refineries and liquid gas terminals. The construction of these facilities at a few dozen ports depends on difficult political decisions about energy, environment, safety, and social effects, and difficult legal decisions about how to reconcile conflicting statutory objectives while deciding what roles the states and the federal government will play. This article discusses these political and legal decisions and suggests how they should be made.

The combination of the large scale and destructive potential of presently contemplated energy facilities, and the acute vulnerability of the coastal environment and port cities, seems to assure angry political confrontations over the construction of these facilities. In heavily populated and developed port areas, refineries and oil terminals may violate minimum environmental standards because of air and water quality degradation already caused by existing facilities. Similarly, liquified natural gas terminals in these areas may place hundreds of thousands of lives at risk because of accidental detonation.

In less developed port areas, the problems will be different, but the confrontations may be no less angry. In these areas the local populace often depends on tourism and fishing for its survival. These

*B.A., Princeton University, 1977; J.D., Yale Law School, 1980; admitted to District of Columbia Bar, 1980. The author thanks Professor John D. Costlow, Professor Quintin Johnstone, the Duke University Marine Laboratory, and the Yale Environmental Law Association for support, counsel, and encouragement through this work. The views expressed here are the author's own.

1. Federal Coastal Zone Management Act of 1972 (FCZMA), 16 U.S.C. § § 1451-1464 (1976).

labor intensive, seasonal industries are especially vulnerable to water pollution and aesthetic degradation. Capital intensive, dirty facilities like refineries may threaten the livelihood of these areas without helping the people displaced from fishing and tourism. While liquid gas terminals place fewer people at risk in these less developed ports, an explosion of one of these facilities still might kill hundreds or thousands of people. Thus the construction of energy facilities in any port seems to assure a bitterly contested political decision, and paralysis or delay in the siting of necessary energy facilities.

Analysis of this confrontation and delay is important in evaluating the federal government's present approach to coastal energy siting. Part I of this article examines the rural and urban patterns of opposition which have brought siting to a near standstill. Part II explores the possibility of using a tradeoff principle as a means to compromise these disputes and expedite siting.

Parts III, IV, and V examine disputes over the siting of a liquid propane gas (LPG) terminal and an oil refinery in coastal North Carolina in order to understand the obstacles to using a tradeoff approach. These sections present three major obstacles to a successful tradeoff policy for siting: preemption of important regulatory matters by the federal government; fragmentation of permit processes and appeals; and failure of these state and federal regulatory programs adequately to address liability and insurance aspects of these facilities. Finally, this article suggests the sort of institutional arrangement necessary to site these facilities at an acceptable speed in an acceptable manner through the use of the tradeoff principle, consolidated permit and appellate proceedings, and appropriate substantive protections.

I. PATTERNS OF OPPOSITION

When Congress enacted the Federal Coastal Zone Management Act (FCZMA) in 1972, coastal facilities needed to handle rapidly increasing oil imports were not being built. They remain unbuilt today, largely because coastal residents on the Atlantic seaboard have blocked their construction for environmental reasons. These residents correctly see environmental degradation from oil spills and air and water pollution as threats to the livelihood of the fishing and recreation industries, and to health and property.

From a national standpoint, however, a de facto ban on coastal installations has serious economic, environmental, and energy drawbacks. Economically, the defeat of east coast deepwater port proposals means that the eastern United States cannot be served directly by supertankers, thus doubling transportation costs and hindering

United States' merchant marine attempts to compete in the world market.[2] Likewise, the defeat of east coast refinery proposals increases dependence not only on foreign refineries, but on older, less efficient domestic refineries as well.[3]

Neither are environmental consequences of a de facto ban on deepwater port construction wholly benign. Oil spill chances may be increased overall because oil cannot be directly transferred from supertankers to port terminals. Instead, oil must be transferred twice: once from the supertankers at sea to a lightering tanker, and once from this smaller tanker to a conventional port. Reliance on these smaller ships increases tanker traffic in congested coastal areas, where collisions, groundings, and resultant spills are most likely.[4] The defeat of refinery siting proposals also has had environmental drawbacks by hindering efforts to supply low sulfur residual oil required in urban areas along the east coast.[5]

Given these environmental, energy, and economic drawbacks, a de facto ban on coastal energy installations is not likely to be the wisest long run national policy. Since coastal residents have promoted this policy through successful opposition to these facilities, it seems appropriate to examine some of these siting disputes in order to discern

2. Both the U.S. Department of Commerce and Department of Treasury opposed Delaware's attempts to block deepwater port construction in its waters. This opposition was based on concern for the merchant marine industry and for the balance of payments. A deepwater port would have made it possible for supertankers to serve the United States directly, cutting shipping costs and possibly promoting United States shipping interests. *See* N.Y. Times, June 27, 1971, § 3, at 3, col. 5 (Commerce and Treasury positions); INSTITUTE FOR WATER RESOURCES, U.S. ARMY CORPS OF ENGINEERS, 5 U.S. DEEPWATER PORT STUDY: TRANSPORT AND BENEFIT-COST RELATIONSHIPS 123-99 (1973) (comparing costs by ship size) [hereinafter cited as CORPS STUDY].

3. Reliance on older, less regulated refineries will prevent this inherently dirty refining capacity from being phased out with cleaner, more modern equipment. For a variety of reasons, including possible heavy use, refinery maintenance has decreased substantially over the past twenty years, with resultant deterioration in the physical condition of the refineries and the quality of the surrounding air. Walker & Storper, *Erosion of the Clean Air Act of 1970: A Study in the Failure of Government Regulation and Planning*, 7 B.C. ENVT'L AFF. L. REV. 189, 249-50 (1979).

4. Analysis of past major oil spills shows that these spills usually occur within ten miles of shore and 25 miles of port. ENVIRONMENTAL PROTECTION AGENCY, EPA-600/7-77-016, ACCIDENTS AND UNSCHEDULED EVENTS ASSOCIATED WITH NON-NUCLEAR ENERGY RESOURCES AND TECHNOLOGY 82, 91 (1977).

5. Rapid increases in eastern U.S. demand for low sulfur residual oil in 1969 and 1970 created shortages, primarily because of insufficient refinery capacity. N.Y. Times, Sept. 27, 1970, § 4, at 12, col. 1. Only the addition of a new refinery at Freeport in the Bahamas helped avert severe low sulfur fuel shortages during the winter of 1970. *Id.*, Nov. 17, 1970, at 47, col. 8. The Freeport refinery can accommodate 300,000 ton supertankers, unlike United States refineries on the east coast. *Id.*, Aug. 10, 1970, at 44, col. 2. More recently, insufficient refinery capacity to produce unleaded gasoline may have contributed to fuel shortages in 1979.

the reasons for coastal communities' uniform hostility to these installations.

Machiasport and Hilton Head: Rural Opposition

During 1970 and 1971, proposals to build refineries and a deepwater port at Machiasport, Maine, and a petrochemical complex near Hilton Head, South Carolina, were abandoned. There are few better examples to show why rural coastal communities so strongly oppose construction of energy facilities in their midst.

It would be difficult to find two more physically different coastal areas than Hilton Head and Machiasport. Hilton Head is a sandy barrier island along the marshy South Carolina coast. Behind it are Port Royal Sound and Victoria Bluffs, the site proposed by BASF, Inc. in 1969 for factories producing dye, plastics, and eventually, petrochemicals.[6] The sound and surrounding waters are shallow, warm, sluggish and productive.[7]

Machiasport lies on a rocky, glaciated headland on the Maine coast, not far from the Canadian Border. The waters along the Maine coast are cold, deep, and productive, with strong tides and rapid currents. The weather is frequently foul and foggy.[8] Occidental Petroleum proposed in 1968 to construct at Machiasport both a deepwater port capable of handling large supertankers, and a 300,000 barrel/day oil refinery.[9] In 1969, Atlantic Richfield proposed a 100,000 barrel/day refinery for the same area.[10]

The cultural differences between the two areas are as sharp as the physical differences. Machiasport is "down east" Maine; the area

6. *Id.*, Feb. 1, 1970, at 40, col. 4 (details of BASF proposal; local background).

7. *Id.*

8. The climate in Maine "is harsh and the seas are rough. The state has a heavy economic dependency on tourism and fishing, especially shellfishing." These industries are endangered by oil spills, and especially so because "Maine's harsh winters inhibit the natural bacterial dispersion of oil spills. As a result, a spill in Maine could last much longer than one in an area with a warmer climate." Comment, *Maine's Coastal Conveyance of Oil Act: Jurisdictional Considerations,* 24 ME. L. REV. 299, 307-08 (1972).

9. N.Y. Times, Jan. 10, 1969, at 65, col. 3; *id.*, Apr. 21, 1969, at 6, col. 4 (details of proposal). Machias Bay and Casco Bay near Portland are the two best natural anchorages in Maine. Other sites which might be equally serviceable are more or less "foreclosed because of already developed recreational activities, narrow approaches, or inadequate space. The configuration of Machias Bay is such that . . . a docking facility attached directly to the land could be constructed without dredging." COUNCIL ON ENVIRONMENTAL QUALITY, 2 POTENTIAL ONSHORE EFFECTS OF DEEPWATER OIL TERMINAL-RELATED INDUSTRIAL DEVELOPMENT 3-2 (1973) [hereinafter cited as CEQ REPORT].

10. N.Y. Times, July 3, 1969, at 39, col. 5 (details of Atlantic Richfield proposal).

around Hilton Head, "deep south." The areas did have common economic characteristics: high unemployment and heavy dependence on tourism and fishing.[11]

The Machiasport and Hilton Head proposals followed reasonably predictable political patterns: the Machiasport backers sought to breach the federal oil import barrier[12] and South Carolina officials tried desperately to lure new industry into the state.[13] In late 1969 and 1970, environmental concerns began to change familiar politics drastically, overriding the differences between communities to produce strikingly similar patterns of opposition.

Similar vulnerabilities produced similar responses. In both communities, tourism and fishing were the backbone of the economy. Both industries were labor intensive, employing many unskilled laborers, and both were acutely vulnerable to oil spills and air and water pollution.

In Maine the environmental response came in February 1970 when the state legislature enacted a bill to set up an Environmental Improvement Commission to determine whether proper sites had been proposed for refineries, fuel terminals, and other utilities.[14] In addition, a tax of one-half cent per barrel was imposed on oil shipped into the state in order to pay for oil spill clean-up costs.[15] Not surprisingly, the bill's initial supporters were the tourism and fishing industries, which had been mobilized in opposition to the Machiasport proposal.[16] By the time the bill came to a vote, general enthusiasm for environmental legislation easily swept the legislation through.[17] The state legislation, coupled with the Nixon administration's further

11. The Machiasport unemployment rate was 11.5% when the national rate was 4.0%, *id.*, Apr. 21, 1969, at 6, col. 4; unemployment in Beaufort County (where Hilton Head is located) was also worse than the national average, especially among the black one-third of the population. *Id.*, Feb. 1, 1970, at 40, col. 4. Illiteracy and malnutrition were also severe problems in the county. *Id.; Nutrition and Human Needs: Hearings on Part 4–South Carolina Before the Senate Select Committee,* 91st Cong., 1st Sess. 1162-67 (1969) (statement of Senator Hollings).

12. *See, e.g.*, N.Y. Times, Jan. 10, 1969, at 65, col. 3; *id.*, Feb. 11, 1969, at 41, col. 4; *id.*, Feb. 21, 1969, at 1, col. 4.

13. *See id.*, Jan. 11, 1970, at 48, col. 4; *id.*, Feb. 1, 1970, at 40, col. 4; *id.*, March 15, 1970, at 57, col. 3; *id.*, Apr. 8, 1970, at 70, col. 3 (giving political background).

14. ME. REV. STAT. ANN. tit. 38, § § 481-488 (1978 & Supp. 1980-81).

15. *Id.* tit. 38, § 551 (1978 & Supp. 1980-81).

16. N.Y. Times, Jan. 15, 1970, at 44, col. 2 (editorial). *See also* Message of Governor Kenneth M. Curtis to the Legislature of Maine (Jan. 6, 1970), *reprinted in* 1971 Me. Acts 1471, 1484 (discussing proposals for laws governing the coastal conveyances of oil and industrial site location).

17. N.Y. Times, Feb. 6, 1970, at 1, col. 6.

delay in considering the oil import quota application,[18] blocked the Machiasport project.[19]

South Carolina Governor Robert E. McNair announced the BASF proposal early in October 1969. By January 1970, an unlikely coalition had formed in opposition, comprised of fishermen from the large all-black fishing cooperative, resort owners from Hilton Head, two integrated civic associations, and national environmental groups.[20] Although the project's backers argued that it would create 600 permanent jobs, including 160 for unskilled labor, the black community was skeptical of claims that local residents would be hired and trained to replace the skilled German workers who would initially operate the plant.[21] Moreover, there was considerable doubt that the jobs brought into the county by the plant would replace all those eliminated in fishing and tourism. Black fishermen pointed to the demise of shell fishing in the nearby Savannah River caused by pollution from chemical factories.[22] One civic association claimed that for every job created by the plant, three would be lost in fishing and tourism.[23]

This unlikely union of opponents fought the BASF proposal skillfully and with an intensity foreign to South Carolina politics.[24] Counsel experienced in environmental matters were retained, and in February, one of the first suits under the National Environmental Policy Act (NEPA) was filed.[25] On March 15, despite backing for the

18. *Id.*, Feb. 21, 1970, at 1, col. 3.

19. After the Fuel Desulfurization proposal to build a refinery at Long Island was defeated, see page 132 *infra*, the company proposed construction at South Portland and then Searsport, Maine. The first alternative was rejected by the South Portland City Council in 1970; the second by Maine's Environmental Improvement Commission (EIC) in 1971 after extensive hearings. N.Y. Times, March 23, 1971, at 36, col. 2. The EIC administered the state's industrial site location law, ME. REV. STAT. ANN. tit. 38, §§ 481-488 (1978), which requires persons proposing to construct industrial installations larger than a certain size to obtain a permit to do so. *Id.* § 482(2) (1978) (size requirements). The permit applicant has the burden of proving that the installation will comply with a variety of environmental criteria specified in the statute. *Id.* § 484(1)-(4) (1978) (criteria); In the Matter of Maine Clean Fuels, Inc., 310 A.2d 736, 747 (Me. 1973) (burden of proof).

The EIC rejected the Searsport application because of insufficient financial capacity to pay for pollution controls and a likelihood of continuous oil spillage in violation of water quality standards. *Id.* at 752-57 (findings supported by substantial evidence). The Searsport dispute is a classic example of the patterns of opposition seen in other rural coastal areas. *See* L. CALDWELL, L. HAYES, I. MACWHIRTER, CITIZENS AND THE ENVIRONMENT: CASE STUDIES IN POPULAR ACTION 210-18 (1976) (importance of fishing and tourism interests in Searsport dispute) [hereinafter cited as CITIZENS AND THE ENVIRONMENT].

20. *See* CITIZENS AND THE ENVIRONMENT, *supra* note 19, at 61-63; N.Y. Times, Jan. 11, 1970, at 48, col. 3; *id.*, Feb. 1, 1970, at 40, col. 4.

21. N.Y. Times, Feb. 1, 1970, at 40, col. 4 (attitudes of black community).

22. *Id.*

23. *Id.*

24. *Id.*

25. *Id.*, Feb. 12, 1970, at 42, col. 8.

project from the governor and the legislature, the South Carolina Pollution Control Authority announced that it would delay for one year issuing BASF a water pollution discharge permit in order to study the effects of the discharge on receiving waters. The real reason may have been to allow the state legislature time to finish rewriting the state's lax water pollution control law.[26]

On March 27, Secretary of Interior Walter Hickel forcefully intervened and informed BASF that the Department of Interior would oppose the project in a variety of ways. To begin with, the Federal Water Pollution Control Administration, which was then part of the Department of Interior, would veto any permit which did not assure nondegradation of the Colleton River, into which the plant would discharge.[27] Although the federally approved water quality standard for the river (which discharged into Port Royal Sound) was quite lax, the state's agreement with Interior included a nondegradation clause which the FWPCA would assuredly invoke to veto the discharge permit.[28] Secretary Hickel further informed BASF that under authority of the Fish and Wildlife Coordination Act,[29] he would oppose the dredging proposed to make the project accessible to naphtha tankers bringing feedstock for the petrochemical portion of the facility.[30] Hickel also stated that he had no authority under the oil import quota programs to permit the importation of the 40,000 barrels per day of naphtha BASF proposed to bring in.[31] BASF capitulated. Early in April construction was suspended; in July further delay was announced; and in January 1971 the project was abandoned.[32]

Thus Machiasport and Beaufort County, two very different rural coastal communities, reacted in a strikingly similar fashion to block proposals for major coastal energy or industrial installations. These projects promised severe environmental degradation and threatened the survival of the tourism and fishing industries, and thus the livelihood of many, including the poorest residents. The coalition among the tourism and fishing industries and environmentalists which emerged was a pattern of opposition which would reappear in other

26. *Id.*, March 15, 1970, at 57, col. 3. A stricter water pollution control statute was before the legislature at that time.

27. *Id.*, March 27, 1970, at 47, col. 6.

28. *Id.*

29. 16 U.S.C. § § 661-666c (1976). Section 662(a) requires public or private agencies proposing to impound, divert, or deepen the channel of any stream or waterbody to consult first with the U.S. Fish and Wildlife Service.

30. BASF proposed to dredge a channel 25 feet deep, 400 feet wide, and 13½ miles long, in order to accommodate small, 200-foot long naphtha tankers. N.Y. Times, March 27, 1970, at 47, col. 6.

31. *Id.*

32. *Id.* at Apr. 8, 1970, at 70, col. 3; *id.*, Jan. 15, 1971, at 14, col. 1.

energy disputes in small coastal communities. In larger, more urban coastal communities, the patterns of opposition would be different, but equally effective.

Long Island and Delaware: Urban Opposition

Both Machiasport in coastal Maine and Beaufort County in South Carolina are similar: more or less poor and more or less rural. In contrast, Delaware and eastern Long Island, the only feasible deepwater port sites on the east coast besides Maine, are both reasonably prosperous and facing rapid urbanization. Neither Delaware nor eastern Long Island depends upon commercial fishing, but both have thriving recreation industries and many full or part-time residents who live there precisely because the areas were not industrialized. Consequently, refineries and deepwater ports, with their promise of severe air and water pollution and oil spills, are not welcome neighbors.

The hostility first appeared on Long Island. On March 27, 1970, the same day that Secretary Hickel helped defeat the BASF proposal for Beaufort County, the Northville town planning board rejected a rezoning proposal to permit construction of a 100,000 barrel/day refinery.[33] Northville is a small town on eastern Long Island Sound, and one of the few sites on the east coast with the potential of handling supertankers. (The refinery would have been served from supertankers unloading by pipeline three to five miles offshore).[34] Local residents formed an environmental group called "It Stinks" to oppose the refinery.[35] Ironically enough, Fuel Desulfurization, Inc., which had proposed the refinery, had secured its 100,000 barrel/day import quota for the express purpose of desulfurizing residual oil to meet air pollution control regulations.[36]

The rejection of the Northville proposal had serious policy implications, as did the opposition to proposals to dredge Port Jefferson, Long Island to accommodate supertankers,[37] but it was Delaware's

33. *Id.*, Apr. 1, 1970, at 45, col. 1.

34. *Id.*

35. Local residents cited air and water pollution problems, including the effects of oil spills on the local recreation industry. *Id.*

36. For the long and intricate history of Fuel Desulfurization, Inc.'s successful attempts to secure the oil import quota from the Department of Interior for desulfurizing fuel oil to meet Clean Air Act standards, see J. ESPOSITO, VANISHING AIR 248-58 (1970).

37. The Corps of Engineers had authorization since 1968 to dredge Port Jefferson Harbor, but no money had been appropriated. N.Y. Times, Mar. 28, 1972, at 85, col. 1. The Mayor of Port Jefferson opposed the project, *id.*, Aug. 29, 1971, at 71, col. 3, as did Senators Javits and Buckley, who instead persuaded Congress to appropriate money for a Corps study of east coast port needs. Consolidated Oil proposed a similar dredging project for Port Jefferson, in order to accommodate supertankers and reduce the number of marine oil terminal sites on Long Island from 40 to 12. The timing of the proposal was inauspicious: it was announced the day a tanker broke in two and sank in the harbor. *Id.*, Jan. 11, 1972, at 48, col. 3.

statutory rejection of deepwater port and refinery proposals which raised the most serious national policy questions about coastal energy siting. In July, 1971, the Delaware Legislature enacted a coastal area zoning bill which forbade construction of oil refineries, petrochemical complexes, steel mills, and pulp and paper mills anywhere on the Delaware coast.[38] The statute also forbade construction of deepwater port facilities in Delaware's half of Delaware Bay and three miles out into the Atlantic Ocean.[39]

Passage of the statute ended a dispute which had begun in 1969 when Shell Oil Company proposed to construct on a 5600-acre site it owned near Smyrna, Delaware, a refinery which was to be served from a deepwater port three miles from shore on the Delaware Bay.[40] At approximately the same time that Shell proposed its refinery, Zapata Norness proposed a large deepwater port in Delaware Bay for the export of coal and import of iron ore in massive ore-bulk-oil (OBO) vessels.[41]

These proposals were thought to threaten the unspoiled character of the southern two-thirds of the state's coast in three ways. The first threat was pollution from the refinery and port; the second, rapid industrial growth and additional pollution from the heavy industry attracted by the port and petrochemical complex; and third, rapid urbanization to accommodate the influx of workers needed to construct and operate the new facilities.[42] These threats were very real to Delaware residents, for the northern third of the coast was the site of a major refinery, several chemical works, a steel mill, and a power plant.[43] Air and water pollution from these facilities were severe problems, and that area of the Delaware coast was of little use for recreation.[44] The development of the state's coast threatened both

38. DEL. CODE ANN. tit. 7, § § 7001-7013 (1974) (prohibition).

39. *Id.*, tit. 7, § 7003 (1974).

40. SEN. COMMERCE COMM., LEGISLATIVE HISTORY OF THE COASTAL ZONE MANAGEMENT ACT OF 1972, AS AMENDED IN 1974 AND 1976, at 256-81 (1976).

41. N.Y. Times, June 27, 1971, § 3, at 3, col. 5. Zapata had proposed to construct a 300-acre offshore island, 9000 feet long and 1500 feet wide, capable of storing three million tons of coal sent by barge from Newport News, Virginia. *Id.* This coal probably would be coking or metallurgical coal from the southern Appalachians. The terminal's construction would have cut transportation cost to Japan and would have allowed American producers to compete more effectively with the Australian metallurgical coal now dominating the Japanese market.

42. *Id.*, June 27, 1971, § 3, at 3, col. 5; *id.*, June 29, 1971, at 1, col. 2.

43. For location of existing facilities see 2 CORPS STUDY, *supra* note 2, at 27, figure 6.

44. "The Bay waters have contained a high level of pollution for many years. The bay is subject to pollution from industrial chemicals, oils, insecticides, and domestic wastes. This pollution is primarily associated with the heavily populated and industrialized region in the upper estuary and along the Delaware River." 4 CORPS STUDY, *supra* note 2, at 137. For discussion of air pollution problems around Wilmington and the bay area, *see* CEQ REPORT, *supra* note 9.

Despite these severe air and water pollution problems, the most serious environmental

to ruin the state's recreation industry and to exacerbate the severe environmental problems caused by existing industrial facilities.

Governor Russell W. Peterson forcefully sponsored the coastal zoning bill, and secured its passage largely because of intense citizen opposition to these installations.[45] "I have become convinced," he said, "that performance controls are not an effective enough safeguard for refineries and related petrochemical industries or steel and paper mills."[46] Both the recreation industry and those concerned with abating existing pollution problems in Delaware supported the governor in this judgment.

The Delaware statute was vigorously opposed and disputed, not only by Shell and the other companies hoping to build in the area,[47] but by the U.S. Treasury and Commerce Departments, which were anxious to keep Delaware Bay open for deepwater port development in order to promote U.S. export trade, cut oil transportation costs, and make the U.S. merchant marine more competitive.[48] The affected industries, labor groups, and federal agencies lobbied intensively against the statute's enactment. Shell took the state legislature on a tour of its "clean" refinery in Louisiana; Secretary of Commerce Maurice Stans publicly questioned Governor Peterson's patriotism.[49] Neither approach succeeded in reversing the general perception that development of major energy facilities along the coast would inevitably lead to severe environmental and aesthetic degradation. The statute was enacted and made a great part of Delaware and Delaware Bay (perhaps the best refinery and deepwater port locations on the east coast) off-limits for major energy development.

II. TRADEOFFS

Although the FCZMA was enacted in 1972, it was to have remarkably little effect upon coastal energy siting disputes in the 1970s. There were several reasons for this. To begin with, states had to pre-

---

threat posed by the proposed refinery and deepwater port would be the destruction of the state's extensive coastal wetlands along the bay. These wetlands are close to being in original condition south of the Chesapeake and Delaware Canal, and are the most sensitive link in the bay's ecosystem. *See* 4 CORPS STUDY, *supra* note 2, at 139-40.

45. N.Y. Times, July 16, 1972, § 3, at 1, col. 6 (Governor's discussion of extraordinary citizen support).

46. *Id.*, June 29, 1971, at 61, col. 1.

47. Shell, Zapata Norness, and Bechtel opposed the bill because it would block proposed construction. Bechtel had proposed a liquid natural gas (LNG) terminal. *Id.*, June 29, 1971, at 61, col. 1; *id.*, June 27, 1971, § 3, at 3, col. 5.

48. *Id.*, June 27, 1971, § 3, at 3, col. 5.

49. *Id.*, July 16, 1972, § 3, at 1, col. 6; *id.*, June 29, 1971, at 1, col. 2; *id.*, June 27, 1971, § 3, at 3, col. 5.

pare elaborate and enforceable plans for their coastal zones, a lengthy and delicate task. The Nixon administration slowed things further by impounding the money appropriated for the first year of the program.[50] Thus federally approved coastal management plans were not in place for the major refinery and fuel terminal siting disputes in the later 1970s: those at Long Beach, California; Portsmouth, Virginia; and Eastport, Maine.[51]

Yet even if such plans had been in place, it is doubtful they would have changed these disputes substantially, because the dispute concerned substantive environmental standards promulgated under other federal statutes. The Long Beach and Portsmouth projects threatened a large increase in hydrocarbon emissions in areas which already violated federal standards for photochemical smog.[52] Moreover, potential oil spills from the proposed Portsmouth project could eliminate blue crabs from commercial fishing in the Chesapeake Bay,[53] while pollution from the proposed Eastport refinery would threaten bald eagles and whales, both endangered species.[54]

The Long Beach and Portsmouth disputes are especially good examples of the pattern of opposition discernible in the Delaware and Long Island controversies, where urban or urbanizing areas react against the threat of additional air or water pollution. In the Long Beach and Portsmouth situations, the disputes were more sharply focused because the proposed facilities threatened severe air and water pollution in areas already in violation of federal standards.

The FCZMA specifically did not affect any requirements of the

50. Zile, *A Legislative-Political History of the Coastal Zone Management Act of 1972*, 1 COASTAL ZONE MANAGEMENT 235, 273-74 (1974).

51. California had a state coastal zone management program and Maine had an industrial site location statute, *see* note 14 *supra*, but neither of these programs was federally approved under the FCZMA at the time these disputes arose and state agencies made their decisions. The Maine Board of Environmental Protection approved the Eastport refinery's application. *See* In the Matter of Pittston Co. Oil Refinery, 375 A.2d 530 (Me. 1977) (challenges by other state agencies not permitted). The California Coastal Resources Commission approved the Long Beach Terminal, but not accompanying storage tanks. *See* 9 ENVIR. REP. (BNA) 1309 (1978).

52. Hydrocarbon emissions are the chemical precursor of photochemical oxidants (now expressed in EPA standards as ozone).

53. The National Oceanic and Atmospheric Administration (NOAA) opposes the Portsmouth refinery, and did so in the EIS review, because of the threat to the blue crab population of the Chesapeake Bay, which congregates on the shoals near the mouth of the bay (and near the refinery site) during the winter months for spawning. A spill at this time could devastate the Chesapeake crab fishery, a $39,000,000 per year industry responsible for three-quarters of the crab caught on the Atlantic and Gulf Coasts. 9 ENVIR. REP. (BNA) 1647 (1979).

54. The Fish and Wildlife Service of the Department of Interior opposes granting an NPDES permit to the Eastport refinery because of the threat to whales. 10 ENVIR. REP. (BNA) 234-35 (1979).

Clean Air and Clean Water Acts,[55] nor did it set any kind of siting standards. Congressional political considerations aside, there were sensible reasons not to impose specific siting standards on energy facilities at the time the statute was enacted. To begin with, it is unclear whether workable national siting or zoning standards could have been written at that time. Considerable legal uncertainty surrounded other federal environmental regulations and statutes,[56] and there was no clear national energy policy. Moreover, two important technical uncertainties made the setting of uniform standards difficult; these were the effect of site-specific factors on environmental impacts[57] and present and future control technology capabilities.[58]

Second, intelligent siting of energy installations required flexible balancing of a great many factors. Because sites were limited by engineering and commercial considerations, and because the facilities could inflict severe damage even when they complied with air and water pollution control requirements, difficult decisions were inevitable. These kinds of decisions requiring detailed analyses are more easily made where there is sufficient flexibility to account for the legitimate interests of coastal opponents to these facilities.

These difficult decisions have not been made under the FCZMA, but under the Clean Air and Clean Water Acts, under NEPA, and under other environmental statutes. It would be instructive to examine these decisions to see if workable principles have evolved to decide these hard cases.

Long Beach: Evolution of the Tradeoff Principle

Of eight major oil companies that combined to build the Trans-Alaskan Oil Pipeline, only one, Standard Oil of Ohio (SOHIO), lacked refinery capacity on the west coast to process its Alaskan crude. From 1975 to 1979, SOHIO attempted to obtain the approvals necessary to build a supertanker terminal at Long Beach, California, in order to ship its oil to Gulf Coast refineries by pipeline instead of by tanker through the Panama Canal. SOHIO finally obtained the neces-

55. 16 U.S.C. § 1456(f) (Supp. III 1979).

56. At the time the FCZMA was enacted, Congress was extensively amending the Federal Water Pollution Control Act, Pub. L. No. 92-500, 86 stat. 816 (1972). State implementation plans (SIPs) had recently been filed (Jan. 1972) under the Clean Air Act, and were being challenged in every U.S. court of appeals, the courts of first instance for such challenges.

57. The proximity of Great Dismal Swamp (an excellent natural emitter of hydrocarbons) to the Portsmouth refinery site is an example of these site specific factors.

58. Forcing rapid control technology improvements through stringent regulation is a deliberate and to some extent successful strategy of the Clean Air Act. *See* Note, *Forcing Technology: The Clean Air Act Experience,* 88 YALE L.J. 1713 (1979).

sary permits in 1979, but abandoned the project because regulatory delay had increased project costs substantially and because the permits would be the object of extended litigation.[59]

The SOHIO dispute arose in the following fashion. The company sought to construct a supertanker terminal at Long Beach, California, in order to land its Alaskan crude, and to ship the oil through a gas pipeline to Midland, Texas, where it would be shipped via existing pipelines to SOHIO's Gulf Coast refineries.[60] The proposal would have permitted drastic reductions in transportation costs by shortening the distance to the refineries and by permitting the substitution of supertankers and pipelines for the more expensive tankers used to ship oil through the Panama Canal. The proposal also had significant environmental advantages because the possibility of oil spills was lower for this route than for shipment into other west coast ports or through the canal.[61] Unfortunately, Long Beach, like the rest of the South Coast Air Basin, was and is in violation of national standards for ozone, and hydrocarbon emissions are a precursor of ozone.[62]

Under the Clean Air Act as administered in 1975, the Long Beach terminal probably could not have been built, for it would have exacerbated severe violations of air quality standards.[63] It was in 1975 and 1976, as SOHIO, California, and the federal EPA sought to accommodate construction of the terminal without violating the air act, that the emission offset or tradeoff concept was first approved by the federal government.[64] Construction of the terminal would be permitted if SOHIO would control a sufficient quantity of emissions from other sources to offset the remaining emissions from its terminal after stringent controls were applied to it. Although the specific tradeoffs between the terminal operations and other sources were hotly disputed in California air quality permit hearings through 1977 and 1978,[65] the emission tradeoff principle developed in those disputes was embodied in an EPA interpretative ruling for the whole country in 1976,[66] and in the Clean Air Act Amendments of 1977,[67]

59. *See* 9 ENVIR. REP. (BNA) 2099-2100 (1979) (announcement of abandonment and statement of reasons).

60. *Id.*, at 1309 (1978).

61. Telephone interview with Capt. Dan Charter, Chief, Port Safety and Law Enforcement Division, U.S.C.G. H.Q., Washington, D.C. (Dec. 12, 1978).

62. 40 C.F.R. § 81.305 (1979) (nonattainment area designations).

63. *See* Walker & Storper, *supra* note 3, at 237-38 (discussing SOHIO dispute).

64. *Id.*

65. *See, e.g.*, 8 ENVIR. REP. (BNA) 1457-58 (1978) (detailing elaborate tradeoff requirements laid down in the course of the hearings).

66. 41 Fed. Reg. 55,524 (1976).

67. Clean Air Act, § § 170-178, Pub. L. No. 95-95, 91 Stat. 685 (codified at 42 U.S.C. § § 7501-7508 (Supp. II 1978)).

and was used to resolve several difficult disputes about the air quality impacts of siting other installations.[68]

One of the most notable uses of the tradeoff policy has been to facilitate the possible siting of the proposed Portsmouth refinery.[69] The Portsmouth area, like Long Beach, is a nonattainment area for ozone. Under the tradeoff principle, a variety of offsets have been arranged in order to accommodate the refinery's emissions, which will themselves be stringently controlled. The State of Virginia will pave its roads in the area with concrete instead of asphalt; other hydrocarbon emissions will also be controlled.[70] Although the details of the offsets are still a matter of dispute between environmentalists, EPA, and the refinery,[71] these disputes about air quality impacts will probably be settled within the framework of the tradeoff policy.

Extensions and Limitations of the Tradeoff Principle

The tradeoff principle is now embodied in the nonattainment area provisions of the Clean Air Act, and has removed a serious obstacle to the siting of coastal energy installations. Before the principle may be applied generally to break the deadlock over coastal energy siting, two major alterations must be made. In order to apply the tradeoff in small coastal communities, some basis besides environmental *damage* must be used to make the offset. And in order to use the tradeoff principle to resolve other kinds of environmental protection and safety disputes about coastal energy installations, some difficult practical problems must be confronted. Finally, some limitations of the offset principle itself must be acknowledged.

In rural coastal communities, such as Hilton Head and Machiasport, there is seldom sufficient air or water pollution from other sources to work as a basis for a tradeoff. Even though a proposed installation meets stringent standards, and provides controls for any other pollution sources amenable to control, there is still likely to be a large quantum of environmental damage from air and water pollution. The fishing and recreation industries are likely to remain threatened, and thus vehemently opposed to siting the installation nearby.

A variety of tradeoffs are possible, the simplest being payment of

68. In particular, this offset arrangement was used to facilitate the siting of a GM auto assembly plant in Oklahoma City, Oklahoma, and a Volkswagen plant in New Stanton, Pennsylvania. Both these cities are in nonattainment areas for ozone. Assembly plants are major hydrocarbon sources because of paint spraying operations. *See* 8 ENVIR. REP. (BNA) 220 (1977).

69. 8 ENVIR. REP. (BNA) 1351-52 (1978).

70. *Id.*

71. *See, e.g.*, Comments of the Natural Resources Defense Council on Virginia's Proposed State Implementation Plan Revisions 1-6 (detailing deficiencies of the refinery offsets).

damages to the fishermen and recreation interests harmed by the installation. For a number of reasons, however, damages are not likely to be a satisfactory solution. Valuation would be quite difficult; many interests, such as those of endangered species, would go unrepresented. A second form of tradeoff might be more feasible: the refinery or other installation might make some other environmental improvement such as creation of a wildlife refuge or marine sanctuary, or operation of a fish hatchery.

It may be objected that "environmental improvement" is a contradiction in terms, natural systems are best left undisturbed, and a refinery should not be permitted to destroy one natural system by "saving" another one which should have been left alone anyway. The practical counterpart of this objection is that the refinery might get off easily by "protecting" an area so remote or undesirable from a commercial standpoint it was never in danger of development. This kind of improvement would be of no tangible benefit to the coastal interests threatened by the installation, and little help in mollifying them. Therefore any wilderness, sanctuary, or hatchery protected in a tradeoff would have to be reasonably close to the area threatened by the energy installation.

Thus the tradeoff principle may be workable in resolving siting disputes in rural coastal communities as well as in more urban areas. Can this principle also work to resolve siting problems involving threats to entire animal species, and danger to human life?

The tradeoff principle might work in the wildlife situation if the installation threatens animals from a widely scattered but endangered species, as may be the case of the Eastport refinery's threats to bald eagles and whales. Some form of offset may be possible there, such as taking additional protective measures for the species in other areas. However, in the case of a menace to most of a particular species, endangered or not, as in the case of the Portsmouth refinery's threat to the entire blue crab population of the Chesapeake Bay,[72] it is unclear whether any offset is possible once risks have been reduced as much as possible. In the latter case, the only solution may be to abandon both the site and the tradeoff principle, and to build the installation somewhere else.[73]

The endangered species problems simply may be impossible to

72. *See* 9 ENVIR. REP. (BNA) 1647 (1979).

73. One possible mitigation measure would be to restrict oil deliveries and shipments sharply during January and February, the time of greatest vulnerability. Refinery maintenance might be performed then; operations might be curtailed; oil might be shipped in and out by pipeline or drawn from extra storage capacity. Some of these solutions present air quality problems.

solve with the tradeoff principle, especially if there is a relatively large number of endangered species, each concentrated in a small geographic (coastal) area. In that case offset might be impossible. There is, however, an administrative mechanism provided in the Endangered Species Act Amendments of 1978,[74] which would permit endangered species obstacles to be overridden once "reasonable mitigation and enhancement measures" were taken.[75] The mechanics of this process are now entangled in litigation over the Eastport refinery, which has sought an exemption from the act.[76]

Conceptually, the evaluation of human safety risks on a tradeoff basis may be much easier, since the tradeoff simply may be between safety risks and liability insurance costs. Insurance requirements for liquid natural gas (LNG) and liquid propane gas (LPG) terminals feasibly may be used to make safety tradeoffs needed to site these terminals. If terminal operators were required to obtain sufficient insurance coverage to pay the damages caused by the worst-case accident—terminal detonation—then terminals would probably not be located in heavily populated areas like Staten Island and Boston, both the sites of controversial facilities.[77] Imposition of this kind of insurance requirement might mean that *no* terminals would be built at all because of the difficulty of obtaining insurance for an accident of that magnitude, no matter how remote the chance. A sensible alternative would be imposition of substantive safety standards and of a governmentally administered liability fund supported by a conveyancing tax on the industry. In that situation, terminals like the one at Cove Point, Maryland, would be built—installations removed from population centers, buffered by a substantial land area, and built to strict safety standards.[78] Congress may soon require that

74. Pub. L. No. 95-362, 92 Stat. 3751 (codified at 16 U.S.C. § § 1532-1542 (Supp. III 1979)).

75. *Id.*, § 3(h)(1)(B) (codified at 16 U.S.C. § 1536(h)(1)(B) (Supp. III 1979)). These measures include but are not limited to "live propagation, transplantation, and habitat acquisition and improvement, as are necessary and appropriate to minimize the adverse effects of the agency action upon the endangered species, threatened species, or critical habitat concerned." *Id.* The Endangered Species Committee must also find on the record that

> (1) there are no reasonable and prudent alternatives to the agency action;
> (2) the benefits of such action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat, and such action is in the public interest; and
> (3) the action is of regional or national significance.

Id., § 3(h)(1)(A) (codified at 16 U.S.C. § 1536(h)(1)(A) (Supp. III 1979)).

76. *See* 10 ENVIR. REP. (BNA) 658, 786 (1979) (discussion of filed litigation).

77. GENERAL ACCOUNTING OFFICE, EMD 78-28, 1 REPORT TO CONGRESS: LIQUIFIED ENERGY GASES SAFETY (1978) [hereinafter cited as GAO REPORT].

78. *See* 3 ENVIR. REP. (BNA) 911 (1972) (discussing terms of consent agreement between the Sierra Club and the gas company in litigation over the terminal).

safety standards for terminals be set.[79] The imposition of liability insurance requirements would help assure that proper tradeoffs were made in siting.

The sort of flexible balancing needed to make the tradeoffs required for siting is precisely the kind of consideration NEPA imposes upon federal agencies.[80] Yet while case law recognizes that agencies have an independent duty to reject permit applications for projects whose environmental costs clearly outweigh overall benefits,[81] such case law has not adequately addressed the intermediate case, where the damage is severe, but not so great as to require permit rejection.[82] Agencies such as the Environmental Protection Agency have imposed the mitigation measures indicated in the Environmental Impact Statement (EIS) by means of the National Pollution Discharge Elimination System (NPDES) permit and other permits, writing into the permit mitigation measures covering all kinds of environmental damage, and so making them legally enforceable.[83] This approach does not clarify the extent to which various permits, such as Corps of Engineers' dredge-fill permits, can be used as the vehicle for those requirements.[84] Although the authority to impose mitigation measures would seem necessarily implicit where there is authority to deny the permit altogether,[85] no court has ruled on the issue, and the Council on Environmental Quality (CEO) has not made its policy clear in the EIS regulations.[86] The adoption of such regulations would help ex-

79. *See* Pipeline Safety Act of 1979, §§ 151-156, Pub. L. No. 96-129, 93 Stat. 998 (to be codified at 49 U.S.C. §§ 1671, 1674a, 1674b, 1679a, 1682) (safety standards for marine LNG terminals).

80. *See* 42 U.S.C. § 4332 (1976).

81. Environmental Defense Fund, Inc. v. Corps of Engineers, 470 F.2d 289, 300 (8th Cir. 1972); Calvert Cliffs' Coord. Comm., Inc. v. AEC, 449 F.2d 1109, 1115 (D.C. Cir. 1971) (discussing balancing requirement).

82. *See* Calvert Cliffs' Coord. Comm., Inc. v. AEC, 449 F.2d 1109, 1123 (D.C. Cir. 1971).

83. Although hundreds of cases have been litigated under NEPA, few explicitly consider mitigation measures. *See, e.g.*, Public Service Co. of N.H. v. N.R.C., 582 F.2d 77 (1st Cir. 1978). Cases that do, limit required mitigation measures to those within the agency's authority. *Id.*

84. The EPA so used a permit in the case of the Eastport refinery. *See* 9 ENVIR. REP. (BNA) 371, 704 (1978) (discussing many permit conditions, including certain measures to prevent and contain oil spills, and even to begin vocational training for local residents).

The practice of writing mitigation measures into permits is common, but it is not explicitly authorized by the statutory sections governing permits. *See, e.g.*, Clean Water Act § 402, 33 U.S.C. § 1342 (1976 & Supp. III 1979).

85. *See* Clean Water Act § 404, 33 U.S.C. § 1344 (Supp. III 1979) (limited grounds for denying dredge-fill permits).

86. *See* 40 C.F.R. § 1500.8(a)(4) (1978). This regulation details the required EIS discussion of alternatives, which implicitly include mitigation measures. *Id.* The regulations are silent concerning how mitigation measures should be imposed and enforced. *See* Note, *Implementation of the Environmental Impact Statement*, 88 YALE L.J. 593 (1979) (discussing approach for substantive implementation of mitigation measures).

pedite siting by avoiding the problem of requiring agencies simply to approve or disapprove projects without a chance to modify proposals.[87]

Thus, the tradeoff approach may accommodate coastal residents' and environmentalists' interests in the proper siting of energy installations, and NEPA could be interpreted to require such tradeoffs.

III. PREEMPTION PROBLEMS

An important element in the energy problems of the United States has been its inability to provide modern coastal facilities either to receive the large quantities of foreign and Alaskan oil and gas now used by Americans or to refine imported crude oil into the low-sulfur oil and unleaded gasoline needed to comply with air pollution standards. These facilities were not built in the 1960s because of the oil import quota program which restrained oil imports.[88] They were not built in the 1970s because of environmental restrictions and federal oil pricing regulations. Failure to construct these facilities over the past twenty years is now perceived as a crisis and a justification for the Energy Mobilization Board.

Although the FCZMA in theory should control coastal energy siting disputes, it has proven largely irrelevant. Those disputes which have come closest to resolution allowing construction of the disputed facility have done so using tradeoff principles in other statutes.

Two lessons must be learned from experience with the present statutory scheme, however, before either the tradeoff principle or the Energy Mobilization Board will be more than polite names for the application of brute political force. The first lesson is this: the uncoordinated presence of several federal agencies with exclusive regulatory jurisdiction over some component of a coastal energy project makes principled tradeoffs, and thus project approval, almost impossible. This is especially true where LNG and LPG terminals are concerned.

The second lesson is this: unless fragmented state and federal environmental permitting procedures are consolidated into a coherent system, decisionmaking regarding siting will remain an agonizingly slow and expensive process. Present permitting procedures foster relitigation or evasion of issues and do not help officials make intelligent siting decisions.

An analysis of proposals to build a liquid propane gas terminal and a small oil refinery at Morehead City, North Carolina, a small coastal

87. *See* text accompanying notes 93-119 *infra.*
88. *See* notes 12, 31, and 36 and accompanying text *supra.*

port, will illustrate these problems of federal exclusivity and fragmented permitting procedures. Morehead City is heavily dependent on tourism and fishing, and so resembles other small coastal communities like Machiasport and Hilton Head. North Carolina has a fully approved (and well-regarded) program under the FCZMA and has been delegated almost full permitting authority under the Clean Air and Clean Water Acts. Consideration of these siting proposals and the problems they are likely to encounter will show the limitations of the present federal statutory scheme for siting such installations, and the restraints on state attempts to resolve these difficulties.

LPG Terminal Siting: The Pitfalls of Federal Exclusivity

Early in March, 1978, North Carolina Governor James P. Hunt announced that Gulf Interstate, Inc., a Houston firm, proposed to construct a large LPG terminal on Radio Island in Morehead City harbor.[89] The terminal, he said, would be "a great addition to North Carolina's energy resources," allowing the importation of large quantities of Algerian propane to serve the North Carolina market.[90] Local residents who learned about the record of explosions and fatalities associated with LPG transportation and storage[91] argued that

89. *Propane Company Office Goes Up: Firm Invests Without Permits,* Carteret County News-Times, Aug. 21, 1978, at 1, col. 1 (giving background).

90. *Id.*

91. Spills of LPG are very dangerous, probably more so than a similar spill of LNG. Like an LNG spill, LPG will spread as a ground-hugging vapor cloud. Unlike LNG, LPG is heavier than air; it ignites at a lower temperature than LNG, and at lower concentrations; and it has a higher heat content. 1 GAO REPORT, *supra* note 77, at 2-4. A most disturbing propensity of an LPG spill is its tendency to explode spontaneously in the open air (even sitting over water), and to do so with tremendous explosive force resulting in a huge fireball. An LNG spill would probably not so explode. *Id.* at 13-2 to 13-3. There have been spectacular disasters associated with every phase of LPG and LNG shipment: tanker, terminal, railroad car, and truck. Most of the disasters involved LPG. In 1974, 30 people were killed in a Tokyo Bay collision between the freighter *Pacific Ares* and the LPG/naphtha tanker *Yuyo Maru 10.* The tanker exploded and burned for three weeks, until it was towed to sea, still afire, and sunk by naval gunfire and torpedoes. LPG aggravated a fire attributed to naphtha. *Id.* A Cleveland LNG terminal, less than one-tenth the size of the LPG terminal proposed for Morehead City, failed spectacularly in 1944, causing explosions and fires that killed 128 people. *Id.* at 10-2.

Transshipment of LPG by railroad tank car is probably the most dangerous aspect of the terminal proposed for Morehead City. Between 1973 and early 1978, when the terminal was proposed, there were four major LPG tank car accidents in the U.S. killing 34 people and injuring more than 450 others. *Id.* at 18, 19; HOUSE COMM. ON INTERSTATE AND FOREIGN COMMERCE, FUELS TRANSPORTATION SAFETY ACT OF 1978, H.R. REP. NO. 1167, 95th Cong., 2d Sess. 22-23 (1978). There have been several railroad accidents since then involving LPG, including the 1979 evacuation of a quarter of a million people from Missaugua, Ontario, for fear that burning LPG tank cars would rupture tanks of chlorine gas and endanger the town. In addition to the tank car accidents, there have been at least three severe LPG truck accidents since 1975 involving explosion of LPG. These accidents killed 24 people and injured 45. 1 GAO REPORT, *supra* note 77, at 8-5. Moreover, two LPG truck accidents in Spain and Mexico in 1978 killed more than 190 and injured several hundred more. Edward Markey, Boston Globe, July 24, 1978.

the terminal would be a great danger to life and property, and should not be built.[92] After construction of an office building on the site, opposition became sufficiently intense that work was stopped.

Should work resume on the terminal in the future and Gulf Interstate seek the necessary governmental approvals, the company and its opponents would find that regulatory authority has been divided between the state's Coastal Resources Commission (CRC), which administers the state's federally approved coastal zone management program, and several federal agencies with exclusive jurisdiction over some aspect of the design, operation, and safety of the terminal.

The division of regulatory authority in this fashion increases the chances not only that a project might be disapproved, but that if it is built, it may be built to inadequate standards. This worst-of-both worlds situation is traceable largely to Congress' failure to reconcile the exclusive federal regulatory jurisdiction over many elements of coastal energy development with the veto power over federal permits given the states under the FCZMA.[93] In the case of the LPG terminal, this would leave state officials the unpalatable choice of allowing the terminal to be built to concededly inadequate federal safety standards[94] or disapproving it entirely. The statutory scheme would leave little room for tradeoffs and political compromise, the essence of any workable permitting system.[95]

Division of authority in this fashion has other unfortunate effects: inadequate federal safety standards may preempt, or at least hinder, state attempts to issue more adequate ones, and jurisdictional disputes among federal regulatory agencies could slow federal attempts to improve inadequate standards.

Each feature of the Gulf Interstate LPG terminal proposal would be subject to exclusive federal safety regulation. In theory, the design and operations of LPG tankers would be regulated by the Coast

92. Carteret County News-Times, Aug. 28, 1978, at 1, col. 6.

93. 16 U.S.C. § 1456(c)(3)(A) (1976) (veto).

94. Present codes and standards, including the National Fire Protection Association NFPA Standard 58 used by North Carolina, are more stringent than those used at Cleveland, but they still are designed to handle only the same limited leakage. 1 GAO REPORT, *supra* note 77, at 16-1 to 16-5. The only regulation governing the marine LPG terminal's operations at the time the terminal was proposed, 33 C.F.R. § 126.15(o) (1978), set relatively general requirements for liquid cargo transfer systems. A general permit for all facilities handling LPG (and other listed substances) has already been issued, conditioned on the observance of these safety requirements. 33 C.F.R. § 126.27 (1978). The Coast Guard concedes that this regulation is not adequate to assure safe handling of LPG and is developing a more specific regulation. Telephone interview with Capt. Dan Charter, Chief, Port Safety and Law Enforcement Division, U.S.C.G.H.Q., Washington, D.C. (Dec. 12, 1978).

95. *See* NATIONAL COMMISSION ON WATER QUALITY, STAFF DRAFT REPORT at V-30 (1975) (water pollution control permitting a process of bargaining) [hereinafter cited as NCWQ Draft].

Guard;[96] the design and operation of LPG tank cars would be regulated by the Materials Transportation Bureau (MTB) and the Federal Railroad Administration (FRA) (both agencies of the U.S. Department of Transportation);[97] and the design and operation of the LPG terminal facility would be regulated by both the Coast Guard and the MTB.[98] At the time the LPG dispute came to a head in October, 1978, the Coast Guard regulated the operations of LPG tankers,[99]

96. The Coast Guard has authority over vessel design and operations, and terminal design and operations under the Port and Tanker Safety Act of 1978, Pub. L. No. 95-474, 92 Stat. 1471 (codified at 33 U.S.C. § 1221-1232, 46 U.S.C. § § 214, 391a (Supp. II 1978 & Supp. III 1979)), which extensively amended the Port and Waterways Safety Act of 1972, Pub. L. No. 92-340, 86 Stat. 424, and the Coast Guard's earlier authority over tankers. Act of June 23, 1936, ch. 729, 49 Stat. 1889, as amended.

In addition, the Coast Guard has authority under § 1 of the Espionage Act and § 1 of the Magnuson Act, 50 U.S.C. § 191 (1976), to regulate vessel anchorage in order to prevent sabotage. This latter authority has been used to establish safety zones around vessels.

97. The Materials Transportation Bureau (MTB) has the authority to set design standards for terminals and railroad cars under the Safety Appliance Act, 45 U.S.C. § § 1-43 (1976 & Supp. II 1978), and the Hazardous Materials Transportation Act, 49 U.S.C. § § 1801-1812 (1976 & Supp. II 1978). The Federal Railroad Administration enforces these as well as certain operational standards for railroads. Most LNG and LPG terminals are connected to pipelines and regulated under the Natural Gas Pipeline Safety Act of 1968, 49 U.S.C. § § 1671-1684 (1976), which Congress recently amended to tighten standards for these terminals. *See* Pipeline Safety Act of 1979, § § 151-156, Pub. L. No. 96-129, 93 Stat. 998 (to be codified at 49 U.S.C. § § 1671, 1674a, 1674b, 1679a, 1682). The Morehead City terminal would not be subject to these standards because its product would be shipped inland by rail.

98. *See* notes 96 and 97 *supra.*

99. The Coast Guard had promulgated regulations governing the design of U.S. flag LPG vessels, 46 C.F.R. § 38 (1977), and certification of the cargo containment portion of foreign flag LPG vessels under the letter of compliance (LOC) program. 46 C.F.R. § 154 (1976). The vessel owner must request LOC certification from the Coast Guard at least 90 days before the vessel is due to enter its first U.S. port. The Coast Guard reviews the design, issues an LOC with appropriate instructions, and inspects the vessel when it enters the port. *Id.*

Required operational precautions for an LPG ship entering Beaufort Inlet (Morehead City Harbor) would be likely to include (1) Coast Guard boarding and inspection of the vessel before it entered port; (2) escort vessels; and (3) establishment of safety or security zones around the ship which no unauthorized vessel could enter. These precautions would be decided by the Coast Guard Captain of the Port of Wilmington, North Carolina, who has jurisdiction over Morehead City. 33 C.F.R. § 3.25-20 (1977). This official has ample authority to order establishment of a security zone, 33 C.F.R. § § 6, 127 (1978), under § 1 of the Espionage Act and § 1 of the Magnuson Act, 50 U.S.C. § 191 (1976), and safety zones under the Port and Waterway Safety Act, 33 U.S.C. § § 1221-1232, 46 U.S.C. § 391a (Supp. II 1978 & Supp. III 1979); *see also* 33 C.F.R. § 165 (1978). Safety zones differ in that they may be declared for marine environmental protection purposes as well as for the prevention of accidents and sabotage, and may be enforced by civil penalties. 42 Fed. Reg. 63368 (1977).

Operationally, these zones are likely to have the same sort of disruptive impact on the livelihoods of fishermen and charter boat operators, and it was the likely establishment of these zones which aroused much citizen opposition. *See Researcher Warns Propane Terminal Could Be Time Bomb,* Carteret County News-Times, Aug. 24, 1978, at 2A. Since these zones are declared by the Captain of the Port, on short notice, and since these orders are exempt from notice-and-comment rulemaking under the appropriate Administrative Procedure Act provision, 5 U.S.C. § 553(b)(B) (1976), there is little opportunity for the public to com-

the MTB regulated the design of LPG railroad tank cars,[100] and both agencies were fighting over jurisdiction to regulate marine LPG terminal design and operations.[101] With the exception of an inadequate and general Coast Guard regulation concerning the safety of unloading operations,[102] no federal regulation governed the design and operation of the LPG terminal itself. Since no permits were required, there would be no public hearings, no notice-and-comment rulemaking, no EIS, no judicial review, and most importantly, little federal scrutiny of the terminal design and operations beyond what was required of the Corps' EIS.

Had Gulf Interstate applied to the state Coastal Resources Commission (CRC) for a permit under these circumstances, the CRC might well have considered the imposition of more stringent safety standards on the tankers, terminal, and on rail design and operations. The legal tests for deciding whether a state regulatory standard is preempted under the supremacy and commerce clauses can be seen in the Supreme Court's recent decision in *Ray v. Atlantic Richfield Co.*[103] The Court struck down the State of Washington's attempts to bar large supertankers from Puget Sound and to impose design and equipment standards on smaller ones,[104] but upheld state attempts to impose certain operation requirements on the ships.[105] Congress must intend to override state standards for the Court to find preemption under the supremacy clause, and that intention may be inferred from any of three factors: whether the federal regulatory scheme is

---

ment on the general practice of establishing these zones. The only public opportunity for comment would be to request that safety zones be established or to comment on the Corps of Engineers dredge-fill EISes associated with the terminal's construction.

100. All LPG tank cars built after 1977 must have special safety devices which probably would have prevented most of the previous major LPG tank car accidents. 49 C.F.R. § 179. 105 (1977) (justifying regulation). Existing LPG tank cars must be retrofitted with these devices by the end of 1980; this target date is two years earlier than the date initially proposed because the MTB accelerated the schedule after 15 people were killed in a railroad tank car explosion in Waverly, Tennessee. *Id.;* 43 Fed. Reg. 20250 (May 11, 1978).

Although these and other regulations enforced by the Federal Railroad Administration cover a bewildering array of safety issues under a variety of statutes, these "railroad safety regulations extend only to personnel and handling procedures at the transfer point, and not the design of the transfer system itself between the storage facility and the connecting mode of transportation." 2 GAO REPORT, *supra* note 77, App. XVI-3, at 91.

101. The Coast Guard and the MTB spent three years resolving jurisdictional disputes over marine LNG terminals. *See* 2 GAO REPORT, *supra* note 77, App. XVI-3, at 85 (memorandum of understanding). Although a memorandum of understanding concerning marine LPG terminals was signed in March 1979, it does not cover railroad as opposed to pipeline terminals.

102. *See* note 94, *supra.*

103. 435 U.S. 151 (1978).

104. *Id.* at 166-68 (design standards), 173-78 (tonnage limitations).

105. *Id.* at 168-73 (tug escort).

pervasive, whether the federal interest in the subject is dominant, and whether implementation of the state standard will interfere with federal standards designed to achieve the same objectives.[106] If the subject matter of the state regulation is one requiring a uniform national rule, Congress need not have acted for the state standard to be preempted under the commerce clause.[107]

The *Ray* decision would control any attempt by North Carolina to regulate LPG tanker traffic into Beaufort Inlet, both because of the similarities in facts and because the Coast Guard would be regulating this traffic under authority of the same statutes as those involved in *Ray*.[108] Under *Ray*, the state could not close Beaufort Inlet to LPG tankers or impose design and equipment standards.[109] North Carolina probably could not impose operational requirements either, for the Coast Guard regulates LPG tanker operation in the most minute detail. Indeed, the imposition of safety zones around LPG tankers under Coast Guard regulations raised much of the opposition to the LPG terminal, for the zones would likely interfere with the operations of other vessels in the harbor and inlet.[110] Under Coast Guard regulations there is no opportunity for persons affected by LPG tanker operations to comment on or oppose them.[111] Thus, there would be very little that the state or local residents could do about these tanker operations.

Gulf Interstate's proposal would have involved shipment of up to 9000 railroad tank cars per year of LPG through Morehead City. Judging by recent casualty figures on LPG transportation, this may be the most hazardous aspect of the proposed terminal, and the state might well consider regulating it.[112] Given the long history of fed-

---

106. *Id.* at 157-58.

107. *Id.* at 179.

108. Port and Waterways Safety Act of 1972, 33 U.S.C. § § 1221-1232, 46 U.S.C. § 391a (Supp. II 1978 & Supp. III 1979) *as amended by* Port and Tanker Safety Act of 1978, Pub. L. No. 95-474, 92 Stat. 1471.

109. Ironically enough, the states *do* have the authority to regulate air pollution emissions from tankers and barges. Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440 (1960); Texas v. EPA, 499 F.2d 289, 316-17 (5th Cir. 1974) (hydrocarbon emissions from tank barges). The rationale for allowing states to regulate air pollution from ships, but not ship safety, is that safety is subject to an extensive body of federal rules, and uniform rules are necessary in the safety field, while no such extensive, uniform federal rules have been issued for air pollution from ships. *See* EPA Memorandum, *reprinted in* 123 CONG. REC. 18507 (1977).

110. *See* note 99 *supra.*

111. *See* note 99 *supra.* Local residents may request the imposition of safety or security zones, 33 C.F.R. § § 127.20, 165.15 (1978), but since these zones would interfere with fishing and boating, local residents are likely to be reluctant to do so.

112. This estimate of rail traffic is based on the Chesapeake, Virginia LPG terminal, which has almost exactly the same storage capacity as the Morehead City terminal, and

eral railroad safety regulation, however, there might be precious little the state would be permitted to regulate. The design and safety equipment of railroad rolling stock has long been subject to exclusive federal regulation under the Safety Appliance Act and now under the Hazardous Materials Transportation Act.[113] Fortunately, safety standards for LPG tank car designs and safety equipment have been promulgated, and these standards require refitting of existing LPG tank cars with the requisite safety improvements.[114] Although the state may, in the absence of federal regulatory action on the subject, impose operational requirements like speed limits on the LPG trains,[115] these requirements may not impose an excessive burden on interstate commerce. State attempts to limit train length or control the number of LPG tank cars to be sent in a train might be barred by the commerce clause, even in the absence of federal regulatory action on the matter.[116] Thus there might be little that state or local authorities could do besides order more frequent track inspection or low speed limits.

Both the Coast Guard and the MTB have statutory authority to regulate the design and operation of marine LPG terminals, but with the exception of a general regulation governing the safety of liquid cargo bulk transfer systems (ship-to-shore), no standards have been issued.[117] This inaction is traceable to a long jurisdictional battle between these agencies, to conceptual problems with initial Coast Guard proposals in this area,[118] and to bureaucratic inertia.

This regulatory morass will present obstacles to any CRC attempt to regulate the design and operations of the terminal. Any state at-

---

which can handle up to a million cubic meters per year. North Carolina demand is almost a million cubic meters a year, much of it from farmers using LPG for crop drying and curing. *See* 2 GAO REPORT, *supra* note 77, App. XIV-1, at 6, 12, 19. The estimate of tank car movement is generated by dividing these figures by the capacity of the average LPG tank car, approximately 115 cubic meters. These tank cars would be dispatched for three miles down a rail line which runs between the lanes of Arrendel Street, Morehead City's main road. This places most of the town's residents within a few blocks of the shipments. *See* notes 91 *supra* (giving casualty figures).

113. *See* Pennsylvania R.R. Co. v. Pub. Service Comm'n, 250 U.S. 566 (1919) (interpreting Safety Appliance Act and federal regulations to preempt state safety equipment standards); Conrail v. City of Dover, 450 F. Supp. 966, 973-74 (D. Del. 1978) (interpreting Hazardous Material Transportation Act regulations to preempt city hazardous materials transportation ordinances).

114. *See* note 100 *supra.*

115. *See* Erb v. Morasch, 177 U.S. 584 (1900) (city speed limits not preempted in absence of federal regulation).

116. *See* Southern P. Co. v. Arizona, 325 U.S. 761 (1945) (commerce clause preemption of state train length regulation).

117. Telephone interview with Capt. Dan Charter, Chief, Port Safety and Law Enforcement Division, U.S.C.G.H.Q., Washington, D.C. (Dec. 12, 1978).

118. *Id.*

tempt to impose design standards will have to contend with partial preemption by Coast Guard regulations for tankers and MTB regulations for railroads, and with practical conflicts between possible state regulations and Coast Guard regulations concerning terminal design and operations. However, the practical difficulties of developing state standards in the context of a permit proceeding may still lead to unworkable or inadequate state standards. Thus the easiest course for the CRC might be to reject the permit application until the federal government managed to develop acceptable standards.

Preemption might be more of a problem on the operational side, given the Coast Guard's propensity to regulate by means of orders issued by the Captain of the Port, orders not generally subject to the procedural niceties of the APA or NEPA.[119] Here, exercised federal authority may preempt any state regulatory efforts, but may do so in a fashion which prevents the CRC from satisfying itself in advance that operational safeguards will be adequate. Although the authority to make quick regulatory decisions is essential to deal with potential emergencies, the failure to issue operational standards as federal rules would make it difficult for the CRC to assure local residents' safety, and provide another reason to reject the terminal.

Thus, because of the fragmentation of regulatory authority between state and federal agencies, and because of the preemptive effect of federal standards, there may be little the CRC can do besides rejecting the terminal, in the way of independently assuring the safety of local residents.

IV. FRAGMENTED PERMIT PROCEEDINGS

Exclusivity is related to a second problem of equal importance: the fragmentation of state and federal environmental permitting procedures and appeals. Fragmentation promotes needless relitigation of some issues. It also encourages the evasion of other issues, especially the most important: whether, considering the dangers and benefits, a particular installation ought to be built at a particular site.

Consideration of a second recent siting dispute at Morehead City, involving a small oil refinery, illustrates this fragmentation and shows limitations on the ability of states to remedy the problem. The chief restraint is Congress' failure to devise a rational system for the appellate review of permit decisions.

On July 20, 1978, Carolina Refining and Distributing Company applied for a prevention of significant deterioration (PSD) air quality permit to construct a 30,000 barrel/day refinery across the Newport

119. *Id.*

River estuary from Morehead City.[120] The company filed its application just two weeks before the Clean Air Act's more stringent monitoring requirements became effective.[121] After a hotly disputed public hearing in June 1979, the state ordered the company to conduct four months of ozone monitoring, something the company has so far refused to do, despite the apparent application of the Clean Air Act's full PSD requirements because of their continued delay.[122]

The company has applied for other permits as well, including, presumably, a water pollution discharge permit, coastal zone development permit, dredge-fill permit, and a state refinery siting permit.[123] An EIS is being prepared for the Corps of Engineers to use in deciding whether to issue a dredge-fill permit.[124] The dispute on the ozone monitoring has delayed the EIS and other permits.[125]

So far, the refinery dispute has followed the pattern seen in other small coastal communities, with local residents who are heavily dependent on fishing and tourism strongly opposing the refinery, and with development interests in and out of state government supporting it.[126] The political situation is complicated by an application by Crown Petroleum to build a much larger refinery at Wilmington, North Carolina.[127]

Several elements of this dispute are worth noting for what they show about coastal energy siting in general and states' power to im-

120. N.C. Dept. of Natural Resources and Community Development, Division of Environmental Management, Hearing Report, Conclusions, Discussion and Recommendations Concerning PSD Permit for Carolina Refining and Distributing Company, Inc., for Refinery Proposed near Morehead City, Carteret County, N.C., at 1 (August 21, 1979) [hereinafter cited as Hearing Record].

121. *See* 42 U.S.C. § 7475(e)(2) (Supp. II 1978).

122. The Clean Air Act commands that completed permit applications "shall be granted or denied not later than one year after the date of filing of such completed application." 42 U.S.C. § 7475(c) (Supp. II 1978). Carolina Refining's application was completed July 20, 1978, Hearing Record, *supra* note 120, at Conclusions, ¶ 2, but the company's adamant refusal to conduct ozone monitoring has led to a delay until at least September, 1981, more than two years past the time that the monitoring was ordered and that the statute required a decision. The state ordered four months of ozone monitoring in order to determine if the National Ambient Air Quality Standard (NAAQS) for ozone, 40 C.F.R. § 50.9 (1979), would be violated. The company's deliberate delay means that the application is no longer exempt from the monitoring requirements of the PSD provisions, and must be denied.

123. An NPDES permit is required under the Clean Water Act § 402, 33 U.S.C. § 1342 (1976 & Supp. III 1979), and a dredge-fill permit under § 404, 33 U.S.C. § 1344 (Supp. III 1979). The coastal zone development permit is required under the state's Coastal Area Management Act (CAMA), N.C. GEN. STAT. § 113A-118 (1978) (major development permit for energy installations), and the refinery siting statute, N.C. GEN. STAT. § 143-215.101 (1978).

124. Hearing Record, *supra* note 120, at Conclusions, ¶ 14.

125. The environmental impact statement must address the air quality issues and incorporate the air quality monitoring data. *Id.*; Clean Air Act § 309, 42 U.S.C. § 7609 (Supp. II 1978) (EIS coordination).

126. Hearing Record, *supra* note 120, at Conclusions, ¶ 14.

127. *See* 9 ENVIR. REP. (BNA) 1751 (1979) (Wilmington refinery proposal).

prove it. There are two positive aspects. First of all, North Carolina has been delegated authority over NPDES and PSD permits under the Clean Air and Clean Water Acts.[128] These statutes permit, explicitly or implicitly, the "case-by-case" tightening of control technology requirements,[129] thus authorizing state officials working with coastal residents to seek compromise solutions allowing standards more stringent than federal minimums.

The second positive aspect shown by this dispute is the requirement under North Carolina law that state officials make an overall cost-benefit analysis of a facility in order to decide if a refinery siting permit should issue.[130] This statute, like the state's environmental laws and Coastal Area Management Act, is administered by the Department of Natural Resources and Community Development (DNRCD). Under recently adopted regulations the department must not only assure compliance with air and water pollution requirements; it also must assure the prevention of substantial adverse effects upon marine fisheries, wildlife, and parkland.[131] Perhaps most important, the statute and regulations authorize the department to impose special permit requirements to prevent or mitigate adverse effects.[132] The department has explicit authority to compromise, using the tradeoff principle in solving these siting disputes.

Thus the North Carolina approach helps make a principled tradeoff policy a real possibility. Officials have the authority to tighten standards in order to help work out compromise solutions. Moreover, state officials must make a considered public decision on the overall merits of the refinery. (This state approach also helps overcome a problem under NEPA, namely how to make mitigation measures enforceable.)[133]

At the administrative level, delay and relitigation of issues will be reduced. Although major permit issues will have to be considered three times—once in the permit decision, once in the EIS, and once in

128. 40 C.F.R. § 52.1770(16), (17) (1978) (air act delegation for portions of PSD permitting); 40 Fed. Reg. 51493 (1975) (NPDES delegation).

129. The Clean Air Act's PSD provisions mandate the case-by-case tightening of the best available control technology requirement by the permitting authorities. 42 U.S.C. § 7479(4) (Supp. II 1978). For discussion of the bargaining which occurs on NPDES permits, see note 94 *supra.*

130. *See* N.C. GEN. STAT. § 143-215.101 (1978); 15 N.C. ADMIN. CODE 1F (Oil Refining Facility Permit Regulations) (1980).

131. 15 N.C. ADMIN. CODE 1F.0006(d) (1980).

132. 15 N.C. ADMIN. CODE 1F.006(e)(2) (1980).

133. Under present NEPA case law there is an independent duty on the part of federal officials to deny permits where the EIS indicates unacceptable damage despite compliance with statutory air or water pollution control requirements. *See* Calvert Cliffs' Coord. Comm., Inc. v. AEC, 449 F.2d 1109, 1123 (D.C. Cir. 1971). Under present law it is unclear whether federal officials must or may impose substantive mitigation measures under NEPA.

the refinery siting permit decision—as a practical matter, the information generated in the permit proceedings will be incorporated into the EIS, and the EIS data into the record of the refinery siting decision. The refinery siting decision may help organize the other permit proceedings into a more coherent system, and encourage opponents to make the overall case against the refinery in the siting decision and not in each permit proceeding.

On the federal level, EPA's proposed consolidation of permit processes might prove a strong encouragement to the states to adopt some form of general siting statute like Maine's, or like North Carolina's refinery statute.[134] This important consolidation not only will help force an official decision on the overall merits of the project, but also will allow the consolidation of appellate review into a single action. As discussed above,[135] the possibility of interminable appellate litigation over state and federal permits was a key factor in the demise of the SOHIO pipeline proposed in Long Beach, California.

The fragmentation of potential appellate proceedings is more pronounced than fragmentation at the administrative level. Consideration of the possible appeals in the Carolina Refining case will illustrate this appellate confusion rather well. If environmentalists were to contest the issuance of a PSD permit because of the company's and state's failure to comply with appropriate monitoring requirements, at least two and as many as five different procedural routes would be open to them. They could sue in state trial court to enjoin the Secretary of the Department of Natural Resources and Community Development from issuing the permit. In addition, they could seek review of the state decision and EPA's approval of it in both the U.S. District Court for the Eastern District of North Carolina, and in the U.S. Court of Appeals for the Fourth Circuit.[136]

Filings in state and federal court, however, raise the possibility that the federal court might abstain, staying the action until a final decision by the state court on related issues of state law.[137] The resultant delay could be substantial, prejudicing all parties to the dispute.[138]

134. ME. REV. STAT. ANN. tit. 38, § § 481-488 (1978 & Supp. 1980-81); N.C. GEN. STAT. § 143-215.101 (1978).

135. *See* notes 59-68 and accompanying text *supra.*

136. *See* 42 U.S.C. § 7604(a)(3) (Supp. II 1978) (district court jurisdiction over citizen suit over PSD); 42 U.S.C. § 7607(b)(1) (Supp. II 1978) (Court of Appeals jurisdiction over challenges to state implementation plan revisions).

137. *See, e.g.,* United States v. Interlake, 429 F. Supp. 193, 198 (N.D. Ill. 1977) (abstention pending state clarification of emission limitation).

138. "One of the principal costs of abstention is the prolonged delay it often brings in its wake." P. BATOR, P. MISHKIN, D. SHAPIRO & H. WECHSLER, HART AND WECHSLER'S THE FEDERAL COURTS AND THE FEDERAL SYSTEM 994 (2d ed. 1973). *See, e.g.,* England v. Louisiana State Bd. of Medical Examiners, 375 U.S. 411, 418 (1964) (noting many years' delay).

Several other federal courts might have jurisdiction as well. Because EPA has not fully delegated PSD permit authority to the state, its reservation of final authority raises the possibility that either the refiner or local residents opposed to the installation might sue EPA's regional administrator for Region IV in Atlanta, or the EPA administrator in Washington, D.C., in order to force EPA to issue or deny the permit. Thus plaintiffs might file suit in the federal district courts for the District of Columbia and for the Northern District of Georgia, seeking injunctive relief and relief in the nature of mandamus.[139] Courts have split over whether such jurisdiction is available under the Clean Air Act, but at least some authority indicates that such actions will lie in district court.[140] If these actions were permitted, abstention might be a problem here as well. The bottom line of all these combinations is delay and expense to all parties.

The situation regarding the NPDES permit may be just as bad, since jurisdiction to review any state decision on the permit will lie not only in state court, but in the federal district court and in the Fourth Circuit Court of Appeals as an original action.[141] An artful pleader for either side might frame the action to give other courts jurisdiction as well. To complicate things further, it should be noted that challenges to the air and water permits would proceed as separate actions since there is no guarantee that the administrative decisions on these permits would be simultaneous.

A challenge to the EIS would lie in the federal district courts both for the eastern district of North Carolina and for the District of Columbia. To complicate any NEPA challenge is the possibility that a decision by the state court under the refinery siting statute, which requires much the same sort of balancing as NEPA, might collaterally estop some of the issues.[142] A NEPA decision might also be viewed

139. *See, e.g.*, Environmental Defense Fund v. Costle, 448 F. Supp. 89 (D.D.C. 1978) (by implication, district court mandamus jurisdiction extends to nondiscretionary actions of local applicability); Clean Air Act, 42 U.S.C. § 7604(a)(3) (Supp. II 1978) (district court review of PSD permits under citizen suit provision).

140. *See* note 139 *supra.*

141. *See* Chesapeake Bay Foundation v. United States, 453 F. Supp. 122 (E.D. Va. 1978).

142. Collateral estoppel, also known as issue preclusion, makes issues of fact decided against a party in an earlier proceeding binding against that party in a later action involving substantially the same incident or transaction. Issues of fact which will be given this effect must have been actually litigated and necessary to support the judgment in the first action. Collateral estoppel need not be mutual, i.e., once an issue is decided against a party, that party may not relitigate that issue in an action against a third party. *See* Bonder-Tongue Laboratories, Inc. v. University of Illinois Foundation, 402 U.S. 313 (1971) (abolishing mutuality); Bernhard v. Bank of America Nat. Trust & Sav. Ass'n, 19 Cal. 2d 807, 122 P.2d 892 (Cal. 1942) (leading state case abolishing mutuality requirement; now followed in a majority of states).

as collateral estoppel by the state court in a challenge under the refinery siting statute.

The possibilities for challenging other permits in court, for example the coastal zone permit,[143] are just as numerous and intricate. The present system for appellate review of these environmental permit decisions adds a great deal of complexity, delay, confusion, and expense, little of which is necessary to the protection of substantive rights under these statutes. The intelligent siting of coastal energy installations, and the health, property, and environmental interests that turn on these decisions are too important to subject to these capricious arrangements.

An intelligent siting system would resurrect the idea of a form of action from common law pleading in order to bring some coherence to the system. One of the chief attributes of the forms of action at common law was the fact that the form of action itself defined jurisdiction. Thus if Congress (or a state legislature) were to define a special form of action to review siting decisions on the basis of the record made in the consolidated permit proceedings, much of the confusion about jurisdiction and venue, and thus much of the confusion and expense associated with the current siting system, could be eliminated.

V. INSURANCE

An important but frequently ignored element in any workable tradeoff policy for industrial siting is the provision for adequate liability protection for the public should the installation have a catastrophic failure. In the event of a large explosion or major oil spill, the damage might well exceed the resources of the company responsible. Under present law, coastal residents are better protected from oil spills than from potential LPG or LNG explosions. The inadequacy of present liability arrangements may prove to be a considerable impediment to siting such facilities. Few if any states have authority to impose liability insurance requirements as part of the siting decision.

The case of the Morehead City LPG terminal illustrates these problems. In the event of a major explosion destroying the terminal, the company might well be judgment proof, since the terminal and LPG in it are likely to be the company's chief assets.[144] In that situation,

143. Issuance or denial of a state coastal zone permit may be appealed not only in state but in federal administrative and judicial proceedings. Under the FCZMA, 16 U.S.C. § 1456 (c)(3)(A) (1976), a decision under a state coastal zone management plan may be appealed to the Secretary of Commerce. The Secretary's decision in turn may be reviewed in the Federal District Court for the District of Columbia.

144. Carteret County News-Times, Aug. 24, 1978, at 1A, col. 1.

the Federal Tort Claims Act[145] would not permit recovery against the federal government for the Coast Guard's failure to promulgate and enforce appropriate safety regulations. As a matter of law, failure to promulgate that sort of regulation is not negligence within the meaning of the act,[146] even where the failure to do so may have contributed to catastrophic explosions, such as those in the Texas City Disaster.[147] As Mr. Justice Jackson said in dissent, the act means that the "King can only do little wrongs."[148] Moreover, the act does not provide for absolute liability where the government conducts an ultrahazardous activity.[149] Thus in the event of a disastrous accident in the present regulatory situation, the possibility of severe uncompensated damage is quite real. This possibility would remain even if, as has been proposed,[150] the federal government establishes a special liability fund for marine LNG/LPG terminal accidents. Although such a fund would assure easier and more complete recovery, funds of this nature can also function as effective limitations on liability, and leave substantial uncompensated damage.[151]

The present statutory scheme governing oil spills provides better protection and is better suited to a workable tradeoff policy. Tanker and oil barge operations and design are closely regulated by the Coast Guard under a variety of statutes, including the recent Port and Tanker Safety Act, which further tightens regulatory standards.[152] This Coast Guard regulatory scheme is sufficiently thorough to preempt most state regulatory efforts,[153] and sufficiently stringent to reduce chances of large oil spills. Coast Guard strike forces are responsible for coordinating clean-up operations in the event of any spill, and have proven reasonably effective over the past eight years in limiting damages.[154] Under the Clean Water Act, those responsible

145. 28 U.S.C. § § 2671-2680 (1976).

146. Dalehite v. United States, 346 U.S. 15, 43-44 (1953).

147. *Id.*

148. *Id.* at 60 (Jackson, J., dissenting).

149. *Id.* at 44-45; Nelms v. Laird, 406 U.S. 797 (1972). Thus the federal government is subject to a laxer standard of care when it conducts or regulates an ultrahazardous activity than a private party engaged in the same activity would be. *Nelms* involved sonic boom damage to a home in North Carolina from military aircraft. North Carolina law was held to make the plane owner (the United States) liable in the absence of sovereign immunity.

150. *See, e.g.*, H.R. 1414, 96th Cong., 1st Sess., § § 341-353 (1979) (liability fund for liquid gas terminals; includes liability limitations).

151. *See* Duke Power Co. v. Carolina Env. Study Group, 438 U.S. 59 (1978) (upholding liability limitations in the Atomic Energy Act, which involved a mechanism for pooling claims in that fashion).

152. 46 U.S.C. § 391a (Supp. II 1978).

153. *See* Ray v. Atlantic Richfield Co., 435 U.S. 151 (1978); *see also* notes 108-111 and accompanying text *supra.*

154. *See* R. WINSLOW, HARD AGROUND: THE STORY OF THE ARGO MERCHANT OIL SPILL (1978) (background on Coast Guard oil spill clean-up program).

for causing an oil spill are liable without fault for the costs the federal government incurs in cleaning up the spill and for the costs of restoring the environmental damage.[155]

Fortunately for those threatened by possible spills, the federal clean-up fund does not preempt either state remedies against those responsible for spills[156] or state clean-up funds raised through a tax on conveyancing.[157] Thus the state may impose additional requirements for oil spill control on oil terminals, may require terminal operators to support clean-up funds, and may provide state law remedies against those responsible for the spills.[158]

North Carolina has elected to institute a state clean-up fund, which like the federal fund, operates on a revolving basis instead of being financed by a conveyancing tax.[159] The state may bring an action for damages against any person causing the spill for the costs the state incurs in clean-up and environmental restoration.[160] In addition, local citizens may bring an admiralty action for damages to their commercial fishing and resort operations.[161] Thus under present law, the possibility of severe oil spills is reduced by federal regulation, the possibility of severe spill damage by federal clean-up teams, and the possibility of uncompensated damage by state and federal restoration efforts and citizens' damages actions against those responsible.

---

155. The only exceptions to the liability without fault requirements are (1) acts of God, (2) acts of war, (3) negligence on the part of the United States, or (4) an act or omission of a third party. *See* 33 U.S.C. § 1321(f)(1) (Supp. III 1979). Predictably, the fund has not proven self-sustaining, as clean-up costs regularly exceed recoveries because of liability limitations, judgment-proof defendants, compromised claims, etc. *See, e.g.*, Steuart Transp. Co. v. Allied Towing, 596 F.2d 609, 618 (4th Cir. 1979) (United States recovers only 25% of clean-up costs in barge oil spill because of libility limitation).

156. Steuart Transp. Co. v. Allied Towing, 596 F.2d 609, 620-21 (4th Cir. 1979) (ruling that Clean Water Act did not preempt state tort remedies against those responsible for spills, even where recoveries would have been barred to the federal government by the liability limitation).

157. *See* Portland Pipeline Corp. v. Env. Improvement Comm'n, 307 A.2d 1 (Me.), *appeal dismissed*, 414 U.S. 1035 (1973) (tax); Askew v. American Waterway Operators, Inc., 411 U.S. 325, 330-36 (1973) (financial responsibility).

158. *See* Askew v. American Waterway Operators, Inc., 411 U.S. 325, 336-37 (1973) (no per se preemption of control gear requirements in absence of demonstrated conflict with federal regulations).

159. N.C. GEN. STAT. § 143-215.87 (1978).

160. *Id.* § 143-215.90 (1978); 33 U.S.C. § 1321(f)(5) (Supp. III 1979) (authorizing similar federal right of action).

161. Clean Water Act § 311(o)(1), 33 U.S.C. § 1321(o)(1) (1976) (preserving private rights of action for oil spill damage). Recoveries against vessels for oil spills are limited under the Federal Limited Liability Act, 46 U.S.C. §§ 181-189 (1976), to the value of the ship and cargo. Askew v. American Waterway Operators, Inc., 411 U.S. 325, 330 (1973). However, since the costs of clean-up and environmental damage are apparently not covered by this limitation and do not count against it, there might be a sufficient sum to cover damage to private property and loss of business. *See id.*, at 331.

CONCLUSION AND RECOMMENDATIONS

Coastal residents have brought coastal energy siting to a standstill because of the threats these installations pose to their livelihoods, lives, and property. Unless these dangers are adequately addressed through some form of tradeoff policy, and the resultant political compromise turned into enforceable legal requirements, this opposition is not likely to yield to brute political force or energy crisis incantations.

In order to make a tradeoff policy work, significant gaps in federal safety standards and liability requirements for gas terminals and environmental requirements for refineries must be filled. Two other problems, however, are the primary obstacles to a workable tradeoff policy for rapid siting: first, exclusive federal regulatory authority over many aspects of these facilities; and second, the needless fragmentation and proliferation of permitting procedures and routes for appellate review.

These obstacles may be overcome by consolidating decisions about necessary permits into a single proceeding before a forum with adequate authority to order additional protections or appropriate offsets. The consolidation would help assure that appropriate enforceable permits would incorporate these requirements. The decision on all permits, state and federal, and on the EIS and mitigation measures should be directly reviewable in one action in the U.S. court of appeals for the circuit in which the project was to be located. All questions of federal *and* state law relevant to the project's siting would have to be raised in that action or foregone. Participation in a permit proceeding would be a prerequisite for a party to litigate, and all issues not raised below would be waived.

The consolidation of many of these permit proceedings on the administrative level can and is being accomplished by EPA and by the states under existing statutory authority. The consolidation of appellate proceedings, however, will require congressional action. The chief objection to consolidation is likely to be the requirement that the court of appeals decide state law challenges as well as federal ones. If federal claims were consolidated, however, the doctrine of pendent claim jurisdiction would authorize the court to decide state law claims with "a common nucleus of operative facts."[162] The federal appellate court, of course, is constitutionally bound to apply the state law as interpreted by the state's appellate courts. By definition, almost any colorable state environmental law claim would have a fed-

162. United Mineworkers of America v. Gibbs, 383 U.S. 715 (1966).

eral counterpart which would be raised in the federal proceeding. Since it would involve the same facility and evidence, the interests of judicial economy and speedy decision sought to be advanced by the doctrine of pendent claim jurisdiction would be well served here.

Pendent claim jurisdiction is discretionary with the courts, however, and some judges might decline to decide these issues on abstention or other grounds. Given the strong national interest in reaching rapid, intelligent, and *final* siting decisions for these facilities, it would be sensible for Congress to command the courts to decide, foreclosing these opportunities for delay. Certainly federalism is better served by the rapid and careful consideration of litigants' full legal claims than by the interminable delay and expense abstention often entails.[163]

Congress' broad definition of the cause of action here would guarantee a final decision by the reviewing court since the doctrine of res judicata (claim preclusion) prevents the litigants from "splitting their cause of action" between different courts and proceedings while the doctrine of collateral estoppel (issue preclusion) will prevent the relitigation of issues in other forums by litigants, whether or not they were parties to the original action.[164]

This consolidated permit proceeding on the administrative level would best be conducted by the state, since state officials may be sensitive enough to electoral pressure to give coastal residents some bargaining leverage in the proceeding. Where the state had a federally approved consolidated permit program (pursuant to EPA's proposed permit consolidation regulations) and a refinery or oil terminal were proposed, the state should be delegated the authority to issue the dredge-fill permit for the project *and* the responsibility to prepare the EIS on the entire project.[165] The delegation could require the state to consider certain specific mitigation measures in the EIS, and would empower the state to order those or other mitigation measures and offsets under authority of NEPA. Where the state had a federally approved coastal program, and a gas terminal were proposed, the state would be delegated the dredge-fill permit and NEPA responsibilities in a similar fashion.

Where the state did not have the requisite federally approved programs, a federal consolidated permit proceeding would be conducted to consider offsets and mitigation measures under NEPA. In the case of refineries, the EPA administrator would make these decisions; in the case of gas terminals, the commandant of the Coast Guard would.

163. *See* note 138 *supra.*

164. *See* note 142 *supra.*

165. Under present law, decisions on dredge-fill permits in tidal waters may not be delegated to the states. 33 U.S.C. § 1344 (Supp. III 1979).

(These agencies have primary responsibility for the safety and environmental aspects of these facilities.) In a case of a jurisdictional dispute between federal agencies over aspects of these projects, the director of the Office of Management and Budget would resolve the jurisdictional issue.

Appeals of the state or federal decision would be as follows. The adequacy of the EIS and mitigation measures would be reviewed by the federal Council on Environmental Quality and written opinions issued; the adequacy of mitigation measures or offsets concerning endangered species would be reviewed by the cabinet level committee on endangered species issues, which has the power to order additional mitigation measures or to reject the project entirely. Other federal agencies would already have participated in the proceeding at the administrative level.

The court of appeals would review these administrative decisions in an expeditious fashion, in order to assure that the decisions to grant, deny, or modify the permit were based on substantial evidence. Offsets would be reviewed and modified where the permit applicant could show that they would make the installation financially infeasible. No modification of offsets would be permitted, however, where opponents showed that the offset was substantially related to the prevention of greater financial losses to other local residents and industries or where they were substantially related to the preservation of an endangered or commercially important animal species.

The details of this proposal are less important than its recognition that the fragility of the coastal environment will make coastal residents and environmentalists formidable opponents of coastal energy installations. Unless a forum is provided for the full and fair litigation of all issues concerning permits, a forum with the authority to make appropriate and enforceable permit modifications, these interests will continue to paralyze, or at least delay, the siting of necessary coastal energy installations.