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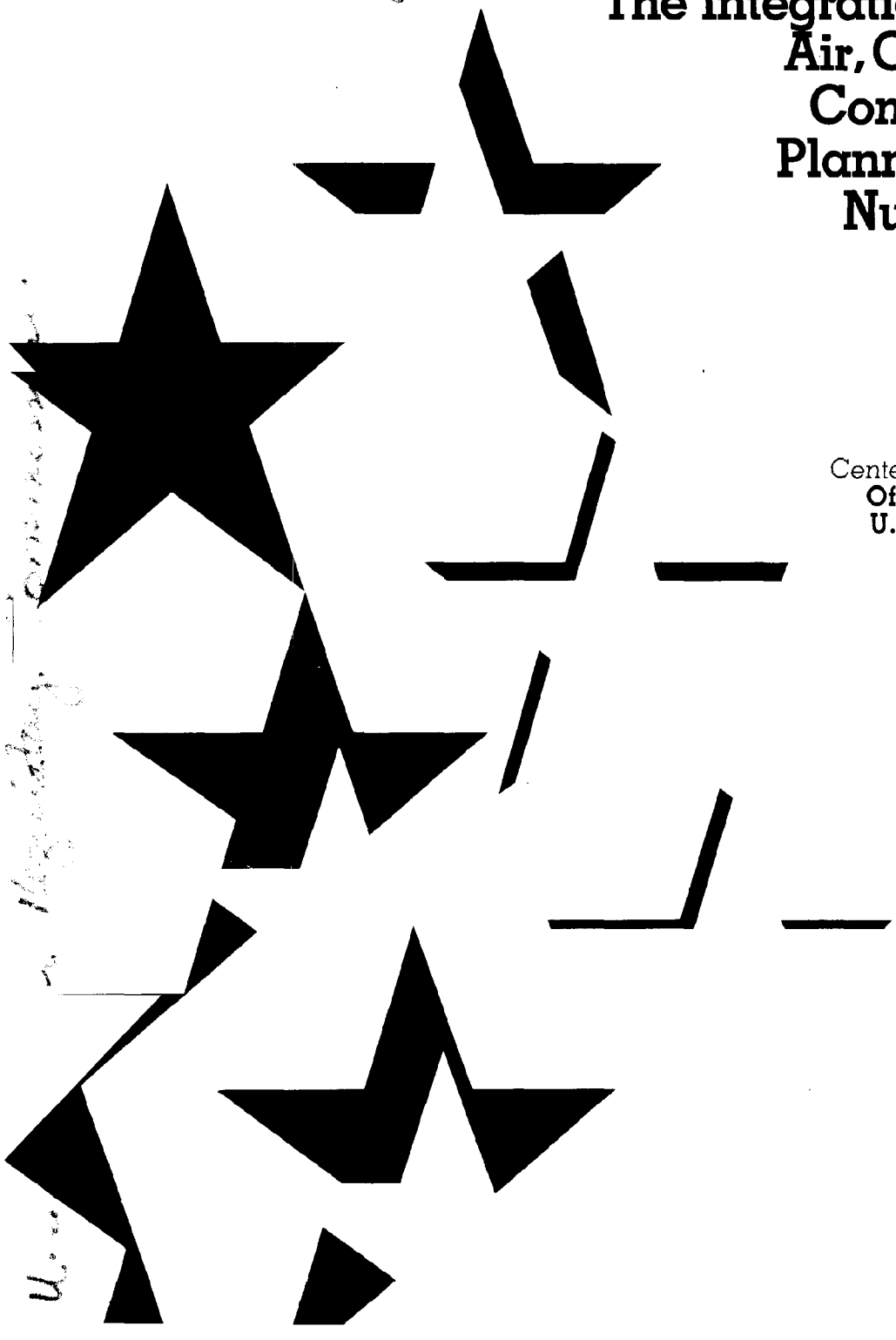
Environmental Planning and the Siting of Nuclear Facilities: The Integration of Water, Air, Coastal, and Comprehensive Planning into the Nuclear Siting Process



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Environmental Planning and the Siting of Nuclear Facilities: The Integration of Water, Air, Coastal, and Comprehensive Planning into the Nuclear Siting Process.

John B. Noble, John T. Epting, Michael C. Blumm, Stark Ackerman and David W. Laist

Improving Regulatory Effectiveness in Federal/State Siting Actions

Prepared for the U.S. Nuclear Regulatory Commission under contract No. DR-77-0539 by Center for Natural Areas, 1525 New Hampshire Ave., N.W., Washington, D.C. 20036

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John Epting was principally responsible for the portions of this report on the Clean Air Act and the 701 comprehensive planning program, in addition to serving as project coordinator. Michael Blumm was principally responsible for the Executive Summary and the section on NEPA, and, along with the assistance of David Laist, composed the chapter on the Coastal Zone Management Act. Stark Ackerman and John Epting combined in the writing of the Federal Water Pollution Control Section. John Noble guided research, contributed portions to all chapters, reviewed drafts of all the chapters, and ensured that the study was responsible to the needs of the Nuclear Regulatory Commission.

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Executive Summary

I. Overview

During the 94th Congress, bills were introduced in both the Senate (S. 3286) and the House of Representatives (H.R. 13512) that would have modified the Atomic Energy Act in order to allow for the separation of site approval from the Nuclear Regulatory Commission's (NRC) facility licensing actions. Although nuclear facility siting bills had been introduced several times before, these two bills contained the following provision (Section 102), not contained in previous bills:

> The Nuclear Regulatory Commission, in cooperation with other Federal and State agencies, shall conduct a study of methods to improve further the procedures for Federal and State participation in the review and approval, in areas other than protection against radiation hazards and protection of the common defense and security, of sites for utilization or production facilities. The study should give particular attention to methods for coordinating and reaching environmental decisions as efficiently as possible. The Chairman of the Nuclear Regulatory Commission shall submit the results of this study together with any recommended legislation to the Congress within twelve months of the date of the enactment of this Act.

Although these bills died with the adjournment of the 94th Congress, the NRC has directed its staff to proceed with the study entitled Efficiency in Federal State Siting Actions. The study is expected to be completed by this May. As outlined in the NRC's "detailed study plan," the study's overall objectives are:[1]

1. To identify key procedural and jurisdictional activity involved in reaching environmental decisions and relate this activity to Federal, State and private actions involving siting reviews;

2. To determine the extent to which coordinated activities and long range planning actions affect the efficiency of environmental decisionmaking;

3. To analyze options for coordinating and reaching environmental decisions more efficiently and suggest definitions and measurements of improved efficiency; and

4. To recommend, if appropriate bases can be justified, legislative options for consideration by the Congress and changes in the site approval procedures of NRC, other federal agencies and the states.

As part of the NRC's study, the Center for Natural Areas (CNA), which has had extensive experience in planning and helping to implement environmentally sensitive management programs at the federal, state, and local levels, was contracted to assist in the preparation of certain work elements. These work elements principally involve the identification of key procedural and jurisdictical activities related to the siting of nuclear facilities, and the development of an information base delineating ongoing activities that may affect future environmental decision-making.[2] Pursuant to its contract with the NRC's Office of State Programs,[3] CNA has undertaken a legal/institutional analysis of four major federal programs which affect the siting of nuclear facilities through the establishment of federal/state/regional planning processes. In addition to describing the interrelationship between nuclear facilities siting and the planning programs developed pursuant to the Coastal Zone Management Act (CZMA), the Federal Water Pollution Control Act (FWPCA), the Clean Air Act (CAA), and the Housing and Community Development Act ("701" program), CNA has also focused on the planning-related requirements imposed by the National Environmental Policy Act (NEPA), particularly as it has evolved through judicial interpretation and may continue to evolve as a useful mechanism to coordinate other

federal planning-related programs.

II. The Relationship of This Study to Increasing Federal/State Efficiency in the Siting of Nuclear Facilities

As expressed by Robert G. Ryan, Director of NRC's Office of State Programs, NRC's current efforts to improve efficiency have resulted largely from a "growing lack of coordination" in the federal/state regulatory processes that affect the siting of nuclear facilities.[4] One of the principal objectives of NRC in devising various options to increase efficiency in these regulatory processes is to define the term "efficiency," as it relates to environmental decision-making. The NRC's detailed study plan points out that while this term may indicate different things to different people, efficiency might be defined as:[5]

> elimination of unnecessary responsibilities, coordination to the extent practicable of necessary responsibilities, focusing on significant issues, and coordination of necessary data requirements.

To this, CNA would add the caveat, as is recognized in NRC's Staff Working Paper on alternatives to achieve efficiency,[6] that "efficiency" may be misleading if the term does not encompass the goal of effective decisionmaking, which results only from a broadly coordinated regulatory program, not merely from the development of a highly scheduled, technically oriented, standardized review procedure. In short, "efficiency" should be viewed as connoting effective and coordinated decisionmaking procedures that embrace all available alternatives and also that look beyond immediate short-term goals. This point was perhaps better made by Mr. Ryan, who, in a speech before a recent National Governors' Conference Workshop, stated that efficiency "connotes a public interest determination which, over the long term, is equitable and practicable."[7]

CNA believes that in its analysis of the federal/state/regional planning processes included in this study, it has identified mechanisms that can serve to make the nuclear facilities siting process more efficient, while maintaining and enhancing environmental safeguards. In order to utilize these mechanisms, however, CNA suggests that there must first be a general recognition of the inherent distinction between NRC's statutorily imposed "non-promotional" role in nuclear facilities siting and the necessity of considering relevant environmentally-related planning requirements at early stages of the nuclear facilities siting process.

If, as noted in NRC's Staff Working Paper, "utility plans only make coordinated sense if examined on a regional basis,"[8] then the various planning processes described in this study can also only make sense if there exist effective mechanisms to integrate them. While CNA believes that several mechanisms exist, their effective utilization depends, in no small measure, upon a general perception that NRC's proper role in the licensing and regulation of nuclear facilities extends to ensuring the environmental compatibility of proposed sites with ongoing planning processes, in addition to ensuring that proposed facilities satisfy radiological public health and safety criteria. NRC's role in assuring the long-term environmental compatibility of proposed nuclear sites, as well as in maintaining health and safety standards, was recently reiterated by the Commission's Assistant Director for Environmental Projects.[9] CNA submits that this role is clearly compatible with the NRC's "non-promotional" obligations.

Mention must be made of why a regulatory agency, such as NRC, should take into consideration plans formulated by other governmental entities,

in making its licensing and permitting determinations. First, although the planning programs described in this study vary as to their comprehensiveness and their methods of implementation, the resulting plans all constitute means to achieve commonly accepted public goals, such as improved air and water quality and better management of coastal and other resources. Since they are developed largely on the state and substate levels, the individual plans are a reflection of particular state, regional, and local resource management policies. Moreover, because they must meet certain minimum federally prescribed criteria, the individual plans also represent cornerstones for attaining the nation's expressed environmental goals.

Second, there is a discernible movement toward applying these plans more comprehensively, so that the plans not only guide the regulatory activities of the agency preparing and implementing the plan, but also require consistency of regulatory actions taken by other state-level agencies, and even agencies on the federal and local levels. For example, both the coastal and water quality planning processes contemplate the development of plans that, once approved and implemented, will restrict the ability of regulators to authorize activities that are not consistent with the plans. Because these plans may impose restrictions on the issuance of regulatory authorizations, such as required licenses and permits for nuclear facilities, they simply cannot be ignored, either from a legal or a public policy perspective.

III. The National Environmental Policy Act as a Positive Tool to Increase Efficiency in the Siting of Nuclear Facilities

In rejecting the notion that the results of the NRC's current efforts to improve efficiency in the nuclear facilities siting process will merely

lead to "another recycle of the NRC standard review plan," Director Ryan has stated that the NRC's study is devoted to:[11]

> a fundamental examination of the roles of the States and the Federal government in the entire process of environmental decision-making under the National Environmental Policy Act of 1969.

As part of this "fundamental examination," CNA has undertaken an analysis of the potential of NEPA to help satisfy the goal of increasing efficiency in the siting of nuclear facilities. CNA has found that by ensuring that its NEPA procedures are utilized to identify and encourage compliance with applicable federal/state/regional plans that affect nuclear facilities siting, the NRC has substantial opportunities to increase cooperation and understanding of the federal-state-utility interface. This, in turn, should result in significant reductions in duplicative administrative effort, and thus foster the goal of increased efficiency.

The starting point for employing the NEPA process as an effective coordinative mechanism is a realization that, once implemented, all of the federal/state/regional planning processes described in detail in this study will exert a considerable influence over the siting of nuclear facilities. Because the entities principally responsible for devising and implementing these plans are the states, when the various plans begin affecting the issuance of regulatory authorizations, the states will have powerful tools at their disposal with which to influence the siting of nuclear facilities.[12]

The state's increased involvement in environmental planning should not, however,be viewed as being incompatible with the goal of increased efficiency. As aptly put by Director Ryan, an essential prerequisite to

increasing efficiency in the nuclear siting process is to "return to the States the decision-making ability that we in the Federal establishment have preempted in our search for idealized solutions."[13] As the results of this study indicate, the states already possess sufficient authorities to plan for and regulate the siting of nuclear facilities from a greater than local perspective.[14] Thus, there is no compelling need for additional legislative action to provide the states with this authority.

What is needed, however, are mechanisms on the federal level to ensure that the states utilize their authority in a comprehensive and effective manner, and that they do not act arbitrarily or capriciously in their siting determinations. The findings of this study illustrate that in the case of the siting of nuclear facilities, the NRC already possesses, in its NEPA review procedures, a potentially effective mechanism to ensure that the states do not ignore the national interest in energy facilities siting when formulating their environmental planning programs. For example, before a coastal zone management plan or water quality plan developed pursuant to section 208 of the FWPCA can receive federal approval, the federal agencies responsible for the administration of the programs (the National Oceanic and Atmospheric Administration and the Environmental Protection Agency, respectively) must prepare and disseminate environmental impact statements (EIS's) on the programs. Consequently, the NRC, as well as interested members of the public, will have an opportunity to review and comment on these plans before they are implemented.[15]

Thus, the NEPA review process affords a significant opportunity for both the Commission and the public to assess the implications of proposed plans on the siting of nuclear facilities. The NEPA process also

provides an opportunity to review the plans in terms of how effective they may be in fulfilling the obligations imposed by the controlling statutes and implementing regulations, particularly the various requirements to coordinate with related planning activities.[16]

The NEPA process, therefore, can serve as a valuable mechanism for understanding both the contents of particular state (and substate) plans and their relationship to the federal goals and programs under which they were established. By developing mechanisms to effectively review these plans as to their potential impact on the siting of nuclear energy facilities, the NRC can take a substantial step towards fostering efficiency in siting determinations.

But the NEPA process can contribute a good deal more to the efficent siting of nuclear facilities than providing an understanding of state planning activities and their relationship to broader federal policies. One of NEPA's substantive policies, embodied in section 101(b), is "to improve and coordinate federal plans, functions, programs and resources."[17] While the judiciary has not yet moved to interpret this provision as mandating coordination of related federal programs,[18] such an interpretation would certainly appear to be consistent with the goals of NRC's current efforts to increase efficiency in nuclear facilities siting. Thus, by relying on the national policy established by section 101(b) of NEPA in its review of proposed plans that could affect siting determinations, the NRC can encourage the federal agencies administering the planning programs to strive for more efficient coordination between related planning activities. This would not only eliminate unnecessary administrative overlap in implementing the programs, and thus increase

their efficiency, but would also result in more effective and comprehensive environmental management.

Thus, the NEPA review process can be utilized as an effective means to encourage more cohesive environmental planning both on the state and federal levels. It can and should, moreover, be employed by NRC to ensure that its applicants establish effective coordination and consultation with the entities responsible for implementing environmentally related plans. This could be accomplished by making certain alterations in the Commission's regulations implementing NEPA and in its Regulatory Guides for applicants, as discussed in the chapter of this study on NEPA.[19]

The effective integration of these planning processes into NRC's review procedures may have an especially important role to play with respect to the Commission's still developing Early Site Review (ESR) provisions. In this regard, CNA would issue the caveat that the potential relationships between ESR, the NEPA review process, and other environmental planning programs have not been examined in detail in this study.[20] This was due largely to the fact that the Commission has not yet issued final regulations on ESR,[21] and because the potential of ESR to help increase efficiency in siting determinations is being considered under a separate work element of NRC's efficiency study.[22] CNA suggests, however, that a hard look be taken at the potential implications that ESR may have on the NRC's NEPA review process and on the other environmentally related planning processes discussed in this study.

While it appears that the NRC can take a significant step toward the goal of increased efficiency by altering its NEPA regulations and its Regulatory Guides, the need for legislative amendments is less

apparent. Legislative amendments to the existing statutory structure, such as the delegation of certain NEPA responsibilities to the states, are a principal source of concern for environmental interest groups.[23] It is, moreover, far from clear that delegation would serve to satisfy the desires of utilities to reduce administrative overlap and increase federal control over the dilatory state actions,[24] since it would effectively eliminate a potential means of federal oversight over state environmental planning activities. Furthermore, the ability of delegation to achieve the goal of increased efficiency in the siting of nuclear facilities is made even more doubtful by virtue of the fact that the national interest in the siting of these facilities will often require interstate considerations, and the states have indicated that they are opposed to the creation of interstate entities which have the power to make siting determinations.[25]

The effective utilization of the NEPA review process by NRC can, therefore, make significant strides toward achieving more efficient facilities siting determinations. It can do this in three ways. First, by providing an opportunity to review and comment on environmentally-related plans, the NRC can both better understand the implications of these plans upon nuclear facilities siting decisions and ensure that the plans do not arbitrarily exclude nuclear facilities. Second, by relying on the substantive policies declared in section 101(b), the NRC can encourage the federal agencies administering the planning programs to achieve more successful coordination with closely related programs. This would not only serve to foster the NRC's goal of efficient nuclear siting determinations, but would also help to achieve the national goal of more

coherent and cohesive environmental planning. Third, by providing strong incentives to its applicants to consult with and coordinate their activities with responsible state planning entities before submitting applications to the Commission, the NRC could at once acknowledge the significant role which the states must play in making nuclear siting determinations and also reduce administrative burdens on its own staff.

The NRC Staff Working Paper on potential alternatives to achieve increased efficiency in nuclear siting decisions, while noting that there appears to be no single cause for delays in the nuclear facilities siting process, makes the following observation:[26]

> ...NEPA related environmental laws are testing the democratic process resulting in overlapping and duplication of laws and procedures. This destabilizing effect on the regulatory process, is helpful to the extent that past experience allows improved focus on the diversity of issues. It now appears that we have reached the stage where environmental review can be reorganized into the effective management tool it was meant to be. (emphasis added)

While fully supporting the last sentence of the above quotation, CNA submits that the findings of this study illustrate that the NEPA process itself is not the cause of "duplication of laws and procedures." On the contrary, the NEPA process can serve to reduce unnecessary overlap of environmental review. In order to do so, however, it must be viewed quite differently than it generally has been in the past. As is illustrated by the judicial decisions discussed in the chapter on NEPA,[27] the NEPA process has been employed primarily as a reactive device to compel NRC and other Federal regulatory agencies to undertake certain environmental considerations in its decisionmaking processes. CNA suggests that this historical emphasis upon NEPA as a reactive device

has served to obscure its potential role as a positive mechanism to reduce duplicative administrative processes, and thus increase efficiency in environmental review.

The NEPA process will not, however, realize its full potential as a means to ensure that administrative economy is achieved, both on the federal and state levels, unless federal agencies, such as NRC, reevaluate the more positive possibilities which the process can offer to increase efficient decisionmaking. In order to do this, there must be a willingness to engage in the type of "fundamental examination" of the NEPA process which Director Ryan mentioned.[28]

IV. Quick Summaries of the Federal/State/Regional Planning Programs Affecting the Siting of Nuclear Facilities

The NEPA review process can be employed by NRC as an effective mechanism to review individual state and substate plans only if the Commission is first familiar with the policies and requirements embodied in the parent federal programs under which the plans are established. The final four chapters of this study are devoted to explanations of four principal, federally established, state (and substate) implemented planning programs which can affect the siting of nuclear facilities. CNA believes that an understanding of the policies, goals, and means of implementing these programs is an essential first step if the NEPA process is to realize its full potential as a mechanism to increase efficiency in energy facility siting decisions. The "quick summaries" which follow are not, however, substitutes for the detailed analyses contained in Chapters II-V of this study. The numbers in parenthesis are references to the analyses contained in those chapters.

A. The Coastal Zone Management Act (CZMA)

The CZMA constitutes the first major federal effort to encourage states to institute comprehensive land and water use planning processes. Under this program, coastal states, including Great Lakes states, are to develop and implement their own management programs for coastal regions. With the assistance of federal funds, these state programs must be developed in accordance with certain minimum federal criteria.

Following a program development period of up to four years, individual state programs must receive federal "306" approval in order to be eligible for continued federal funding. Those states receiving federal approval, which to date includes only the state of Washington, will also receive a considerable amount of leverage over federal activities that might affect land and water uses within their coastal zones. This increased leverage is the result of the CZMA's federal consistency provisions which require that all federal activities, including the issuance of licenses and permits and the granting of federal financial assistance, be conducted consistent with federally approved CZM Programs (pp. 41-48). In the case of the NRC's licensing and permitting functions, this unique attempt at federal accommodation of state interests means that an applicant must obtain a state CZM verification of consistency with its CZM plan before the NRC will issue a license or permit. This federal-state relationship established by virtue of section 307(c)(3)(A) of the CZMA, is in many respects similar to the certification requirements under section 401 of the FWPCA.

The federal consistency requirements make it highly advisable that federal agencies such as the NRC, take an active interest in the develop-

ment of state CZM programs before they receive federal approval. Only in this manner can the added state responsibilities envisioned in the CZMA be coordinated with the federal interests. In order to assure that the states' plans do not unnecessarily impose burdens on federal programs, the CZMA provides a number of opportunities for interested federal agencies to participate in development of state CZM programs. For example, states are required to provide interested federal agencies, including NRC, an opportunity to "fully participate" in the development of their CZM programs (pp. 50-51). In addition, after a state's program is submitted for federal approval the NRC will have an opportunity to comment upon its contents through the NEPA review process (p. 52). Before a state's program can receive federal approval, the CZMA requires that these comments receive "adequate consideration" (p. 51).

State CZM programs must also include certain planning elements that will affect the siting of nuclear facilities, including a boundary delineation of the coastal zone, definitions of permissible land and water uses, the development of guidelines on the relative priority of uses, and the designation of particular geographic areas for special consideration (pp. 58-62). Perhaps of even greater significance to the siting of nuclear facilities, states must give "adequate consideration to the national interest" in facilities siting and must ensure that uses of regional benefit are not arbitrarily excluded from the coastal zone (pp. 53-58).

Recent amendments to the CZMA require states to develop a planning process for the siting of energy facilities in or affecting the coastal zone (pp. 67-69). The amendments also authorize a Coastal Energy Impact

Fund to provide financial assistance to coastal states to plan for and respond to the consequences of increased energy-related activities in their coastal zones (pp. 63-67). Finally, the Amendments establish an interstate planning program, which could be utilized to encourage the development of interstate energy plans (pp. 69-70).

B. The Federal Water Pollution Control Act (FWPCA)

By virtue of certain provisions of the FWPCA, principally sections 316 (pp. 82-84) and 401 (pp. 84-89), the FWPCA has already exerted a considerable influence over the NRC's licensing and permitting functions. In the near future, however, statewide and areawide water quality management plans developed pursuant to sections 208 and 303(e) will also play a large role in nuclear facility siting decisions (pp. 89-102).

Designed to assist in achieving improved levels of water quality, water quality management plans are to include a regulatory program to control "the location, modification, and construction of any facilities" that might affect water quality (p. 90). And while no plans have yet received federal approval, once a plan is approved, no "402" effluent permits will be granted which are inconsistent with the plan (p. 98). Although the relationship between the 401 certification and approved 208 plans has not yet been clearly delineated by the Environmental Protection Agency, it is obvious that water quality management plans will play a crucial role in the siting of nuclear facilities which discharge thermal effluents.

Since water quality management plans are actually land-based mechanisms to achieve prescribed levels of water quality, including a statewide antidegradation policy, any future revision to prescribed water

quality levels must be reflected in the plans' management mechanisms (pp. 97-102). Thus, water quality management plans must be viewed as flexible, evolving regulatory programs which will exert a substantial influence over the siting of nuclear facilities.

The Second Memorandum of Understanding between NRC and EPA (pp. 102-06) provides an opportunity for the NRC to utilize information and analyses developed in connection with water quality management plans in making site suitability determinations. It should be noted, however, that unless a site review conducted under the applicable water quality plan is essentially equivalent in scope and depth to that required by NRC under NEPA, it will not serve to relieve the Commission of its duty to consider alternative sites (pp. 104-06).

C. The Clean Air Act (CAA)

The CAA establishes a regulatory framework for attaining and maintaining national ambient air quality standards (pp. 111-13) and for preventing significant deterioration in areas presently cleaner than required by the national standards (pp. 117-22). The primary mechanism for carrying out the provisions of the CAA is its requirement that each state develop and implement a "state implementation plan" (pp. 114-16).

Because there is at present no ambient air quality standard for radioactive particles (pp. 137-41), the CAA does not directly influence the siting of nuclear facilities. It does, however, have a substantial indirect affect, since federally established standards enforced through state implementation plans can control the siting of other energy facilities, such as fossil-fuel power stations (pp. 125-34).

Thus, in areas where the CAA precludes the siting of fossil fuel plants, nuclear facilities may offer an alternative for meeting electric energy demands that will not exceed established air quality standards.

Unlike coastal zone management and water quality plans now being developed, state implementing plans are already in effect. Indeed, the CAA's elaborate federal/state planning relationship is already in place.[29] It may, therefore, serve as a useful example of the potentials and pitfalls inherent in establishing a nation-wide federal/state planning program. The implementation of state air quality plans is also being coordinated with other federal-state planning programs, such as the HUD 701 program (pp. 136-137).

E. The HUD 701 Comprehensive Planning Assistance Program (701 Program)

The 701 program provides funds to states, large cities, urban counties, areawide planning organizations, Indian tribal groups or bodies, and other local units of government to development comprehensive plans. That will include, at a minimum, a housing element and a land use element (pp. 147-53). Unlike air, water, and coastal zone management planning, the 701 program lacks effective enforcement mechanisms to ensure that plans are implemented (pp. 153-55). Thus, individual 701 plans may vary widely in scope, method, and effectiveness.

701 planning does have the potential, however, for exerting considerable influence over energy facilities siting decisions (pp. 150-53). In this regard, 701 plans must address a number of factors concerning the interrelationships between land use plans, facilities siting, energy conservation, and future community growth.

Since one objective of the 701 program's land use element is to strengthen coordination of land use policies between various levels of government, there are significant opportunities for entities developing 701 plans to integrate their efforts with related planning activities (pp. 149-50). For example, agreements have been signed between HUD's 701 office and the Office of Coastal Zone Management, Environmental Protection Agency (Water and Air Programs), and the Department of Interior's Bureau of Land Management (p. 148). These agreements are designed to facilitate the coordination and preparation of land use policies and plans.

The NRC might wish to consider the potential role which an interagency agreement with the HUD 701 program might play in expediting facilities siting decisions. It would seem that 701 planning entities could assist NRC and its applicants by providing technical planning assistance and data sources to ensure that efficient siting determinations are made in light of applicable 701 plans. In this regard, it may be useful to study the experiences of jointly funded 701 - Federal Energy Administration demonstration projects which are designed to illustrate potential coordination mechanisms and relationships between energy siting and growth/land use policies (pp. 151-152).

Footnotes (Executive Summary)

1. Nuclear Regulatory Commission, Office of State Programs, Efficiency in Federal/State Siting Actions, Detailed Study Plan (NUREG - 0128, October, 1976) p. 2.

2. Id., detailed study tasks 1.3 and 2.3.

3. Purchase Order No. DR-77-0539, Dec. 16, 1976, as amended, Feb. 1, 1977.

4. Robert G. Ryan, "Efficiency in Federal/State Siting Actions: Perspective of a Federal Regulator" (speech presented at the National Governors' Conference Workshop on Efficiency in Federal/State Siting Actions, Atlanta, Ga., Dec. 15, 1976), p. 2.

5. NRC Detailed Study Plan, supra note 1, p. 6.

6. NRC Staff Working Paper, "Some Potential Alternatives To Achieve Efficiency in Federal/State Siting Actions" (Jan. 28, 1977), pp. 2-3.

7. Ryan, supra note 4, p. 7.

8. NRC Staff Working Paper, supra note 6, p. 4.

9. See Comments of the Nuclear Regulatory Commission on the Department of Commerce's Proposed Regulations Implementing the Coastal Energy Impact Fund (Dec. 2, 1976).

10. See, e.g. D. Mandelker, "The Role of the Local Comprehensive Plan in Land Use Regulation," 74 Michigan Law Review, 899 (1976); and Comment, "Comprehensive Land Use Plans and the Consistency Requirement," 2 Florida State U. Law Review 766 (1974).

11. Ryan, supra note 4, p. 5.

12. Even areawide water quality plans and "segmented" coastal zone plans must be coordinated with statewide water quality and coastal zone plans, respectively, once the state plans are implemented. One notable exception is the HUD "701" comprehensive planning program, which, while it does seek to establish plans on the state level, also provides assistance to exclusively local planning efforts. It should be noted, however, that coordination of these local plans with more state-oriented air, water, and coastal planning processes has received strong encouragement through the signing of interagency agreements. See, Part V, "HUD 701 Program," p. 148.

13. Ryan, supra note 4, p. 5.

14. For example, federally approved coastal zone management plans may, by virtue of section 306(c)(B) of the CZMA, in effect, override local zoning authority, after notice and an opportunity to comment is provided to local entities. See Part II, "CZMA," p. 73.

15. State implementation plans (SIP's) under the CAA and HUD "701" comprehensive plans stand on a somewhat different footing with respect to EIS preparation. Section 7(c)(1) of the Energy Supply and Environmental Coordination Act of 1974 (P.L. 93-319), which amended the CAA, exempts actions taken under the Act from mandatory compliance with NEPA. EPA, however, is voluntarily preparing EIS's on regulations which prescribe substantive criteria for SIP's (see 39 Fed. Reg. 16186, May 7, 1974). In addition for any revisions in SIP's proposed by the states, EPA will prepare a technical support document, which will be made available to the public.

    With respect to "701" plans, HUD's regulations require state and substate entities receiving federal planning assistance to prepare an environmental assessment when the plan would affect major community facilities, utility systems, and transportation systems (see 24 C.F.R. § 600.65). In addition, HUD expects to soon prepare a programmatic EIS on the entire "701" planning program.

    Thus, while neither SIP's nor plans developed under the "701" program are subject to the same kind of NEPA review as coastal and water quality plans, mechanisms are available to review the contents of these plans. It should be noted, however, that coastal and water quality plans are likely to exert more direct impacts on the siting of nuclear facilities.

16. Examples of requirements to coordinate the various planning programs described in this study are discussed throughout the study. See e.g., Chapter II, "CZMA," pp. 70-75; Chapter III, "FWPCA," pp. 93-94; Chapter IV, "CAA," pp. 122, 136; Chapter V, "701 Program," pp. 146, 148-49.

17. For a discussion of the potentials of section 101(b), see Chapter I, "NEPA," pp. 22-24.

18. See, generally, Chapter I, "NEPA," pp. 7-19.

19. See Chapter I, "NEPA," pp. 24-30. If the Commission does amend its NEPA regulations, it should utilize the procedures provided by the Office of Management and Budget's Revised Circular A-85 (Jan. 20. 1971), in order to allow the states an opportunity to review and comment on potential revisions.

ıssion of ESR in the context of NEPA review,
NEPA," pp. 29-30.

ɜed regulations on ESR on April 22, 1976
35). See also Nuclear Regulatory Commission,
r Reactor Regulation, Early Site Reviews
ear Power Stations: Policy, Procedures,
hnical Review Options (Sept., 1976).

dy Plan, supra note 1, study task 2.4.

ı of delegation of EIS preparation which has
ly authorized, see Chapter I, "NEPA," pp. 17-18.

ıg Paper, supra note 6, p. 2.

"NEPA," pp. 7-19.

ıpra, and accompanying text.

ɛcts of this relationship have however, been challenged by the states in the Supreme Court. The Court's forthcoming decision, in EPA v. Brown (Docket No. 75-909), should establish more firmly the respective roles of the federal government and the states in controlling air pollution.

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ENVIRONMENTAL PLANNING AND SITING OF NUCLEAR FACILITIES: THE INTEGRATION OF WATER, AIR, COASTAL, AND COMPREHENSIVE PLANNING INTO THE NUCLEAR SITING PROCESS

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I. The National Environmental Policy Act

A. Introduction and Overview

On January 1, 1970, as his first official act of the new decade, President Nixon signed into law the National Environmental Policy Act of 1969 (NEPA).[1] In announcing a comprehensive national policy for protecting, maintaining, and restoring environmental quality, NEPA ushered in a new era of legislative environmental initiatives, both on the federal and the state level.[2] Unlike other environmental protection statutes, such as the Clean Air Act Amendments of 1970 and the Federal Water Pollution Control Act Amendments of 1972, however, NEPA did not establish a comprehensive regulatory program. Rather, it supplemented the existing missions of all federal agencies by requiring that environmental factors be taken into consideration in federal policy-making and program activities.[3]

In the context of this study, it is important to understand the responsibilities which NEPA places upon federal agencies for several reasons. First, the broad sweep of NEPA's language, described as "almost constitutional" in its generality by one commentator,[4] has placed substantial procedural duties on all federal agencies. In doing so, it has served in large measure as an administrative reform statute, by forcing agencies to examine and explain their decisions in terms of potential impact on environmental resources. And by requiring widespread public notice of agency activities, NEPA, along with other recent developments, such as the expansion of requirements under the Freedom of Information Act and expanded judicial review under the Administrative Procedure Act, has helped to make federal agencies more accountable for

their actions to the public. Because of this, and because the duties imposed by NEPA have been largely implemented by the public through the courts, an understanding of its policies and the means it specified to carry out those policies is of special concern to agencies such as the Nuclear Regulatory Commission (NRC), whose activities affect the quality of the environment.

Second, by compelling federal agencies to alter their procedures in reaching decisions, NEPA has fostered the establishment of both legally enforceable regulations and administrative staffs to implement them in nearly all federal agencies. These regulations offer federal agencies the opportunity to establish procedures that encourage the consideration of environmental factors in the most comprehensive and efficient manner possible. Since the siting of nuclear facilities impacts upon numerous federal, state, and local planning processes, the procedures and regulations which NRC has established to implement NEPA may serve as an effective mechanism to ensure that the relationship between proposed nuclear facilities and these planning processes are taken into account at an early stage in the siting process.

The third reason NEPA is important to this study concerns the fact that among the substantive policies it announces, is the improvement and coordination of all federal plans and programs. While the coastal, water, air, and comprehensive planning programs discussed in succeeding portions of this study differ as to the amount of federal involvement, nevertheless they all involve substantial federal funding and are administered by federal agencies. It is conceivable, then, that as courts move toward reviewing NEPA's requirements in terms of its substantive

goals, federal agencies may be required to conduct their activities and programs in light of their potential effect on other federal and federally-assisted planning processes.

In order to fully appreciate the duties which NEPA imposes on federal agencies, it is necessary not only to examine its statutory requirements, but also to review some of the principal court interpretations of those requirements. This is particularly important because NEPA's broad language has proved to be a fertile ground for judicial review of the actions of federal agencies. As a result of the large role which the judiciary has played in implementing its mandates, especially with regard to the applicability and content of the Environmental Impact Statement (EIS) requirement, NEPA's impact on the federal bureaucracy has been evolutionary in nature. It is therefore necessary to understand this evolutionary process in order to project the role that NEPA may play in coordinating the diverse federal planning processes examined in subsequent portions of this report.

With this in mind, after detailing NEPA's statutory requirements, this study will review a number of its major judicial interpretations. It will then focus on NEPA's potential as a coordinative mechanism, an area in which the courts have yet to closely scrutinize. Finally, the study will review NRC's existing regulations implementing NEPA to ascertain whether they take full advantage of the opportunities which NEPA procedures can offer in coordinating those planning processes that affect the siting of nuclear facilities.

B. NEPA's Statutory Requirements

The nation's expressed environmental policy established by NEPA declares:[5]

> ... it is the continuing policy of the Federal government in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations. (emphasis added)

In carrying out this national policy, all federal agencies are directed by section 101(b) to use "all practicable means, consistent with other essential considerations of national policy, to improve and coordinate federal plans, functions, programs, and resources" in order to preserve, restore, and enhance environmental quality. Section 102(1) further requires that "to the fullest extent possible" the policies, regulations, and laws of the federal government are to be interpreted and administered in accordance with the national environmental policy.

In addition to establishing these broad policy goals, NEPA mandates that federal agencies undertake certain positive actions. The most notable of these "action forcing" provisions is section 102(2)(c)'s requirement of preparing an environmental impact statement (EIS) before undertaking major federal or federally assisted actions, including legislative proposals, which would significantly affect the environment. The legislative history of NEPA makes it clear that "major federal actions significantly affecting the quality of the human environment" may include

not only projects administered or funded by the federal government, but also regulations, policy statements, and expansions or revisions of on-going federal programs.[6]

The EIS must be circulated to state, local, and other federal agencies, as well as to the public, and must accompany the proposed action throughout the agency's decision-making process. It must address a number of specific elements, including environmental impact of the proposed action; any unavoidable adverse impacts; feasible alternatives to the proposed action; the relationship of short-term uses to long-term productivity; and any irretrievable commitments of resources involved in carrying out the proposed action.[7]

Although the EIS requirement has received the most attention, both from the federal bureaucracy and the courts, it is only one of a number of "action forcing" procedures required by section 102(2). For example, federal agencies are also called upon to utilize an integrated, interdisciplinary approach in addressing environmental problems; are required to develop methods to assure that unquantified environmental values are taken into account in their decision-making; and must consider alternatives to recommended courses of action where there exist unresolved conflicts concerning the use of available resources.[8] It should be noted that these requirements are in addition to the analyses which must be included in an EIS, and they therefore apply whether or not a contemplated activity is a "major federal action significantly affecting the environment."

An additional procedural step required of federal agencies in order to effectuate NEPA's environmental policies is found in section 103.

That section directs all federal agencies to review their authorities, policies, and procedures for the purpose of bringing them into line with NEPA. Although federal agencies were required to report any inconsistencies to the President by July 1, 1971, Executive Order 11514 makes it clear that agencies have a continuing responsibility to monitor their activities to assure the protection and enhancement of environmental quality.[9] Similarly, the NEPA guidelines promulgated by the Council on Environmental Quality (CEQ) state that "agencies should continue to review their policies, procedures, and regulations to ensure full compliance" with NEPA.[10] The CEQ guidelines therefore make it clear that NEPA is to be considered as a supplementary source of authority which is superimposed upon the policies and missions of all federal agencies.

Federal agency compliance with NEPA consequently requires more than merely the preparation of EIS's for major federal actions significantly affecting the environment. Properly viewed, the EIS requirement is only one of several means to effectuate NEPA's ends of protecting and enhancing environmental quality. Yet because of the great effect the EIS requirement placed on the manner in which federal agencies reach decisions, and because many federal agencies accepted this administrative reform with a good deal of reticence, federal agency implementation of the EIS requirement has been the principal focus of concern. And due to the general nature of NEPA's language and the lack of legislative indication as to how its requirements were to be enforced, the courts have proved to be the principal interpretors of the scope and meaning of its EIS requirements. To understand more clearly the influence that

NEPA's EIS process has played in modifying NRC's policies and procedures, it is therefore necessary to review some of the Act's major judicial interpretations.

C. Significant Judicial Interpretations

It is not the purpose of this study to perform an exhaustive study of the role which the judiciary has played in interpreting the mandates of NEPA.[11] It is, however, useful to overview some of the principal cases which have shaped the evolution of the statute, along with those cases in which the application of NEPA to NRC (and its predecessor, the Atomic Energy Commission) has resulted in the alteration of the agency's procedures.

The landmark case of Calvert Cliffs Coordinating Committee v. AEC[12] remains the starting point for considering the treatment of NEPA in the courts. In that case, which struck down the regulations that the AEC had promulgated to comply with NEPA, the Court of Appeals for the District of Columbia Circuit, in an opinion by Judge Skelly Wright, ruled that since NEPA establishes environmental protection as part of the mandate of every federal agency, the Commission had an affirmative duty to consider environmental values at every stage of its decision-making process. Since the court found that its procedures did not require such consideration, the Commission was ordered to promulgate new regulations consistent with the spirit and letter of NEPA.

Because of its exploration of the kind of "consideration" of environmental values required by NEPA, its distinction between the Act's procedural and substantive mandates, and its interpretation of the permissible deference which federal agencies may give to standards estab-

lished by other agencies with environmental expertise, the Calvert Cliffs decision deserves special attention. First, by focussing on the type of "consideration" which must be displayed in an EIS, the court went beyond previous judicial interpretations of NEPA, which were largely restricted to ascertaining whether an EIS had to be prepared and whether it contained the elements listed in the statute. Judge Wright concluded that the consideration mandated by NEPA required a balancing process, in which environmental costs must be weighed against economic and technical benefits on a case by case basis.

Second, to ensure that this balancing process is carried out, the court drew a sharp distinction between NEPA's substantive goals (or ends), and its procedural requirements (or the means to achieve its ends). Citing the Act's basic policy of "[u]sing all practicable means and measures to protect environmental values," the D. C. Circuit determined that federal agencies were granted a good deal of discretion in reaching decisions in accord with NEPA's substantive policy. On the other hand, since the "action forcing" provisions of NEPA, including the EIS requirement, were to be complied with "to the fullest extent possible," the court ruled that federal agencies must strictly employ NEPA procedures, unless there exists a clear conflict with their statutory authorities. In distinguishing procedural from substantive standards of judicial review of agencies actions under NEPA, the court delineated the parameters which most courts have come to adopt. In Judge Wright's words:[13]

> ... Section 102 of NEPA mandates a particular sort of careful and informed decision-making process and creates judicially enforceable duties. The reviewing courts

> probably cannot reverse a substantive decision on its merits, under Section 101, unless it be shown that the actual balance of costs and benefits that was struck was arbitrary or clearly gave insufficient weight to environmental values. But if the decision was reached procedurally without individualized consideration and balancing of environmental factors -- conducted fully and in good faith -- it is the responsibility of the courts to reverse. (emphasis added)

Third, the court ruled that the AEC's procedures for giving automatic deference to state certification of compliance with the water quality standards under the Federal Water Pollution Control Act were inconsistent with the Commission's duty under NEPA to consider all environmental factors in its licensing actions. Accordingly, the court held that NEPA required the AEC to assess water quality effects of nuclear facilities independently, regardless of state certification. Although Calvert Cliffs' holding as applied to water quality standards was specifically overruled by Congress in the 1972 Federal Water Pollution Control Act Amendments,[14] its reasoning remains applicable to the consideration of other environmental factors which have not been specifically exempted from NEPA balancing. In other words, except for specific exemptions provided by Congress, federal agencies have the responsibility of making an "individualized balancing analysis ...to ensure that, with possible alterations, the optimum beneficial action is finally taken."[15]

The principal issues discussed in the Calvert Cliffs decision have been the subject of numerous other judicial rulings. For example, the D. C. Circuit in NRDC v. Morton[16] expanded upon the kind of environmental considerations which federal agencies must undertake in their EIS's. The court carefully analyzed the Department of the Interior's discussion

of alternatives to the leasing of outer continental shelf tracts off the coast of Louisiana for oil exploration, and found the agency's EIS to be inadequate because it did not consider all reasonable alternatives, including those which the agency did not have the power to implement or which would not completely solve the problem. The court's reasoning was based on its belief that NEPA was designed as a basis for sound decision-making in the legislative as well as the executive branch. It therefore concluded that "the mere fact that a particular alternative would require legislative implementation does not automatically establish it as beyond what is required for discussion" in an EIS.[17]

The Morton court also undertook an examination of the thoroughness with which each alternative must be discussed, stating there must be enough detail "to permit a reasoned choice of alternatives so far as environmental impacts are concerned."[18] Although it ruled that this "requires a presentation of the environmental risks incident to reasonable alternative courses of action,"[19] the court noted that alternatives which are "remote and speculative" and those whose impacts" cannot be readily ascertained" need not be discussed.[20]

The kind of reasoning employed by the Calvert Cliffs and Morton courts as to the kind of consideration which must be displayed in an EIS was recently applied to NRC's EIS concerning a proposed nuclear power station in Midland, Michigan. In Aeschliman v. NRC[21] the D. C. Circuit ruled that the Commission failed to comply with NEPA because its EIS did not explicitly consider energy conservation measures to reduce the demand for electricity as an alternative to granting a license to the facility. The court held that since "energy conservation was clearly

a colorable alternative relevant to the goals of the project,"[22] the NRC's failure to discuss this as an alternative was arbitrary and capricious. The court also held that NRC could not compel intervenors in its administrative procedures to affirmatively prove that a given alternative is a "reasonable one." In reaching this conclusion Chief Judge Bazelon reasoned that once a "colorable alternative" is brought to the Commissions attention,[23]

> Thereafter, it is incumbent on the Commission to undertake its own preliminary investigation of the proferred alternative sufficient to reach a rational judgment whether it is worthy of detailed consideration in the EIS. Moreover, the Commission must explain the basis for each conclusion that further consideration of a suggested alternative is unwarranted.

On the same day that the D. C. Circuit rendered its opinion in Aeschliman, it also decided NRDC v. NRC.[24] In this case the court ruled that NRC violated NEPA by not discussing the environmental effects of radioactive waste disposal in its EIS on the proposed Vermont Yankee nuclear power station. The court rejected the Commission's contention that reprocessing and waste disposal issues need not be addressed in a decision on a construction permit for a nuclear station because they are too speculative and would be more appropriately addressed later in the licensing of reprocessing and waste disposal facilities themselves. Instead, the court ruled that NEPA requires agencies to make "reasonable forecasts of the future," and that delaying consideration of the environmental effects of nuclear wastes until after the station was constructed would amount to the kind of "incremental decision-making" which NEPA was designed to correct.[25] The court concluded that because NRC

had not yet dealt with waste disposal and reprocessing issues by generic rulemaking, these issues had to be addressed in individual licensing proceedings.

Taken together, this line of cases, beginning with the Calvert Cliffs decision, illustrates that the courts (and the D. C. Circuit in particular) will carefully review the response of Federal agencies to the procedural requirements which NEPA imposes on federal decision-making. By closely scrutinizing an EIS's assessment of all potential environmental impacts and its treatment of colorable alternatives to proposed actions, the courts attempt to ensure that the EIS reflects a "careful and informed decision-making process" designed to achieve comprehensive (as opposed to incremental) federal decisions. It should be noted, however, that so long as an agency's procedures reflect these considerations, its ultimate decision on a particular federal action will not likely be overturned by a court. This is due largely to the fact that, as noted above in connection with the Calvert Cliffs decision, the courts have construed NEPA as granting agencies a good deal of discretion in reaching decisions in accord with NEPA's broad substantive policies. For example, in Aeschliman the court did not hold that NEPA required that energy conservation measures be implemented instead of licensing the facility, only that NRC consider this as a feasible alternative. Similarly, in NRDC the ruling did not prohibit the licensing because of the risks involved in generating nuclear wastes -- it merely held that the Commission could not proceed until it gave adequate consideration to this issue. Admittedly, the distinction between judicial review of agency procedures and review of specific decisions becomes increasingly

blurred as the courts impose more exacting standards on the adequacy of the former. Yet it should be kept in mind that most courts remain extremely reluctant to "second guess" agency decisions on their merits, and that the arbitrary and capricious standard for overturning an agency decision on the basis of NEPA's substantive policies may be an especially difficult one to meet if the procedures the agency followed are adequate.

Another line of cases beginning with Scientists' Institute for Public Information (SIPI) v. AEC[26] confirms NEPA's role in combatting incremental decision-making by fostering a comprehensive approach to environmental management. In SIPI the D. C. Circuit required the AEC to file a programmatic EIS assessing the cumulative impacts of the research and development phase of the Liquid Fast Metal Breeder Reactor Program. This programmatic EIS was in addition to separate EIS's evaluating individual test projects. In becoming the first court to require an EIS on a major federal research program, the D. C. Circuit ruled that NEPA was intended to require early evaluation of large scale policy actions as well as specific projects that implement those policies. The court also established a four-part balancing test with which to determine when a program statement would be judicially required. This test has, however, been rejected by the Supreme Court at least in situations where a federal agency denies that its regulatory activities are part of a broader based program.[27]

In its first major NEPA decision, the Supreme Court in Aberdeen and Rockfish Railroad v. Students Challenging Regulatory Agency Procedures (SCRAP II)[28] reversed a lower court's ruling which held inadequate the Interstate Commerce Commission's EIS on the effect of railroad freight increases on the recycling industry. The court found that the ICC was justified in limiting the scope of its environmental con-

siderations in its EIS because it was considering the broader implications of its rate structures in another proceeding. The impact of this portion of the Court's ruling is, however, limited to a great extent by the peculiar nature of the ICC's "general revenue" proceedings. Of greater significance, particularly to the timing of programmatic EIS's was the Court's language indicating that an EIS is not required until "the time at which [a federal agency] makes a recommendation or a report on a proposal for federal action."[29] (emphasis the Court's). This language laid the groundwork for the Supreme Court's subsequent ruling in Kleppe v. Sierra Club.[30]

In Kleppe the Court reversed the D. C. Circuit's ruling which required the preparation of a regional EIS on coal leasing in the Northern Great Plains, even though the Department of the Interior claimed there was no region-wide federal program.[31] In reversing, the Supreme Court held that since all the proposed actions were either national or local in scope, there was no regional proposal on which to base an EIS. Citing SCRAP II, the Court reasoned that the statute does not give the judiciary the authority to compel the preparation of an EIS on "contemplated" but not "proposed" federal actions. The Court thus specifically overruled the balancing test announced by the Court of Appeals in SIPI as to when a program EIS would be required when a federal agency denies the existence of a program.

The Kleppe decision has implications both as to the timing and the scope of program EIS's. Although it clearly rejected the application of programmatic EIS's to contemplated federal actions before they reach the stage of "proposals," the Court does indicate that a final EIS must be prepared by the time an agency makes a recommendation or report on

a proposal for federal action. Since present administrative practice is to have only a draft EIS prepared at this time, the Court seems to be requiring earlier EIS preparation, at least where an action has reached the imminence of a "proposal." But because the Court announced no standards for identifying what constitutes "a report or recommendation," the precise timing of programmatic EIS preparation remains unclear.

As to the scope of program EIS's, by limiting their applicability to only actions which have reached the proposal stage, the Supreme Court appears to grant substantial discretion to federal agencies in defining what is a proposal and consequently in the scope of their EIS requirements. Yet while the Court restricted program EIS's to pending programs, it explicitly affirmed the concept of programmatic EIS's. Mr. Justice Powell, writing for a seven member majority, stated:[32]

> We begin by stating our general agreement with [the] basic premise that § 102(2)(c) may require a comprehensive impact statement in certain situations where several proposed actions are pending at the same time... When several proposals for coal-related actions that will have a cumulative or synergystic environmental impact are pending concurrently before an agency, their environmental consequences must be considered together. Only through comprehensive consideration of pending proposals can the agency evaluate different courses of action. (emphasis added)

While upholding the concept of programmatic EIS's, the Supreme Court noted that in certain circumstances, where approval of one proposal is not intimately related to other proposed actions, action may proceed on an individual project before a program EIS is prepared, so long as there is an adequate project EIS and the project's effects will be considered in a subsequent program EIS.

In light of the above, NRC recently attempted to have the Second Circuit Court of Appeals reconsider its earlier decision which blocked the Commission's interim licensing of mixed oxide (uranium and plutonium) fuel for commercial use until the Commission completed a program EIS.[33] The Second Circuit refused in NRDC v. NRC (GESMO)[34] and distinguished Kleppe on two grounds. First, the court stated that because of NRC's streamlined individual EIS's were limited to site specific effects, without a program statement there would be no way to assess the cumulative impacts of individual actions. The court therefore concluded that NRC's individual EIS's were not "adequate" under the Kleppe exception. Second, the Court distinguished Kleppe on the ground that individual coal leases had independent utility, while the NRC's interim licensing was "clearly tied to anticipated wide-scale use of mixed oxide fuel and would commit substantial resources to the mixed oxide fuel technology."[35]

Thus, this line of cases indicates that while programmatic EIS's remain a central means by which to achieve NEPA's objective of fostering comprehensive environmental decision-making, federal agencies will probably not be compelled to prepare program EIS's where they do not concede the existence of a federal plan or program. This situation is most likely to occur where the agency is merely licensing or authorizing private actions, such as NRC in the case of an individual power station. On the other hand, where the federal role is much larger or there exists a federal plan, such as in the transportation, disposal, and reprocessing of nuclear material, programmatic EIS's will still be required, in addition to individual project EIS's. As to the question of under what circumstances an individual federal project action may proceed prior to

the completion of a programmatic EIS, the Council on Environmental Quality has recently issued a memorandum for the guidance of federal agencies.[36] In CEQ's view, interim actions may proceed without a programmatic EIS only if all of the following three tests are met:[37]

1. the federal agency determines there is no significant interdependence between the individual project and other projects in the program;

2. an adequate project EIS has been prepared; and

3. the agency makes a commitment to assess the project's cumulative effects in the forthcoming programmatic EIS.

Until 1975, the issue of the propriety of federal agencies' delegating their responsibility for EIS preparation to state and local entities was as a fertile ground for judicial review as the scope and content of an EIS and the applicability of programmatic EIS's. The 94th Congress, however, adopted an Amendment to NEPA which served to clarify the uncertainties regarding EIS delegation.[38] The Amendment specifies that delegation is permissible only if the federal activity involves a grant-in-aid program and only if the following conditions are met:

1. the recipient is a state agency with statewide jurisdiction;[39]

2. the federal agency furnishes guidance and participates in the EIS preparation;

3. the federal agency independently evaluates the EIS before it is approved and adopted; and

4. if the action or any proposed alternatives would affect other states or federal land management entities, the federal agency must ensure that they are notified and that their views are solicited.

The Amendment also makes it clear that the federal agency is in no way relieved of its duty to ensure that the scope, content, and objectivity

of the EIS are adequate and is also not relieved of its other NEPA responsibilities. Since the Amendment is specifically limited to federal grant-in-aid programs, it is not presently applicable to the activities of NRC.

There are two other situations in which federal agencies are relieved of EIS responsibilities. One concerns the expenditure of general revenue sharing funds, which is exempted by CEQ's guidelines.[40] The other involves the Department of Housing and Urban Development's community block grant program under the Housing and Community Development Act of 1974.[41] Section 104(h) of that Act provides that when these grants are used by local governments for major actions which would significantly affect the human environment, the local government in effect assumes all NEPA responsibilities that would otherwise be HUD's. Because this block grant program does not involve federal approval of specific projects, but only broad categories of projects, it closely resembles federal revenue sharing where the only federal act is dispersing federal funds. Since both of these programs involve very limited federal control over the use of funds, they constitute narrow exemptions to NEPA which do not appear to be applicable to the activities of NRC.

Finally, a developing area of NEPA litigation concerns the applicability of the EIS requirement to annual budget requests of federal agencies to Congress. In EDF v. TVA[42] the Sixth Circuit Court of Appeals construed the phrase "proposals for legislation" in section 102(2)(c) of NEPA to embrace TVA's annual appropriation requests for the construction of the Tellico Dam. As a result, the Court held that an EIS was required on the continuing construction of the project, even though construction had begun prior to the enactment of NEPA.

More recently, in Sierra Club v. Morton[43] the District Court for the District of Columbia ordered the Department of the Interior to prepare an EIS on its annual budget requests concerning the National Wildlife Refuge System. The Court cited the Tellico Dam case, CEQ's guidelines,[44] and DOI's own regulations[45] in concluding that annual requests for appropriations are subject to EIS requirements. The Court also ruled that the Office of Management and Budget, also a defendent in the suit, must develop formal methods and procedures to identify budget proposals for which EIS's must be prepared.

The ramifications of these rulings on the procedures of federal agencies, including OMB, have yet to be fully felt. If the reasoning of these courts is employed in other cases, however, it is likely that the impact of NEPA on the annual budget requests of federal agencies could be a substantial one.

D. Future Directions — NEPA as a Coordinative Mechanism

NEPA's legacy in the area of improving coordination among federal agencies has already proved to be a substantial one. In this regard, the procedures for preparing and circulating draft and final EIS's have served to increase awareness among federal agencies of the activities and responsibilities of other federal agencies. By forcing agencies to describe the consequences of their actions, the EIS requirement has put other federal agencies on notice of potential impacts on their own program missions. And by providing an opportunity for other federal agencies to comment on projects, programs, and policies discussed in EIS's, NEPA has allowed the reviewing agencies to interject their concerns before major federal actions are undertaken.

NEPA has also fostered the establishment of specialized administrative staffs to review and assess EIS's. Most prominent among these are the Council on Environmental Quality (established by NEPA[46]) and the Office of Federal Activities in the Environmental Protection Agency (under section 309 of the Clean Air Act[47] EPA publicly evaluates EIS's). But ly all federal agencies have established mechanisms by which they may review and comment on EIS's. For example, 22 different federal agencies, including NRC, submitted comments on the Federal Power Commission's Draft EIS concerning the proposed Alaska natural gas transportation systems.[48]

In addition to increasing awareness throughout the federal government of agency activities, NEPA has promoted greater realization of the impacts which federal actions may have on state and local activities. State and local review and comment on federal EIS's is accomplished through notification to state and areawide clearinghouses, under the procedures established by the Office of Management and Budget's Revised Circular A-95.[49]

The increased intergovernmental awareness resulting from NEPA is, however, only the first step toward establishing effective intergovernmental coordination. While an understanding by the government's right hand of what its left hand is doing is necessary to achieve comprehensive decision-making, it is not in itself sufficient. What is needed are mechanisms to ensure that a comprehensive approach to formulating decisions is adopted at all stages of the decision-making process. Fortunately, agency regulations implementing NEPA would appear to be sufficiently flexible to serve as vehicles for interjecting comprehensive

planning considerations at an early stage of major federal activities.

The Council on Environmental Quality's guidelines on EIS preparation place a heavy emphasis upon viewing the proposed action in light of other federal activities. The guidelines state that in describing a proposed action's environmental impacts, an EIS:[50]

> should also succinctly describe the environment of the area affected as it exists prior to a proposed action, including other federal activities in the area affected which are related to the proposed action. The interrelationships and cumulative environmental impacts of the proposed action and other federal projects shall be presented in the statement. (emphasis added)

More specifically, and more important to the objective of employing the NEPA process as a mechanism to coordinate diverse planning processes, the siting of nuclear facilities, the CEQ guidelines note that among the points an EIS should address is:[51]

> the relationship of the proposed action to land use plans, policies and controls for the affected area. This requires a discussion of how the proposed action may conform or conflict with the objectives and specific terms of approved or proposed Federal, State and local land use plans, policies, and controls, if any, for the area affected including those developed in response to the Clean Air Act or the Federal Water Pollution Control Act Amendments of 1972. Where a conflict or inconsistency exists, the statement should describe the extent to which the agency has reconciled its proposed action with the plan, policy, and control, and the reasons why the agency has decided to proceed notwithstanding the absence of full reconcilation. (emphasis added)

The CEQ guidelines thus expressly declare the interrelationship between the EIS process and other approved or proposed planning processes. It should be observed that while these guidelines do not carry the force of law, they are granted considerable deference by the courts. And

despite the ruling in Kleppe v. Sierra Club regarding the scope of programmatic EIS's, in that case the Supreme Court explicitly affirmed comprehensive planning as a primary goal of the EIS process.[52]

It is therefore quite conceivable that, for example, if an EIS on the licensing of a nuclear facility failed to consider the relationship of that facility to the planning processess described in succeeding sections of this report, a court might find the EIS to be inadequate. NRC can avert this situation by requiring the kind of considerations specified by CEQ's guidelines in its EIS regulations.

It is also conceivable that NEPA could be interpreted to require more than merely consideration of other existing or proposed planning processes. If the courts move to reviewing federal decisions in light of NEPA's substantive policies, rather than merely carefully scrutinizing the procedures they employ in implementing NEPA, coordination of federal activities with other plans could be compelled. Section 101(b) of NEPA requires:

> the Federal government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs and resources [to preserve and enhance environmental quality]. (emphasis added)

A court reading this policy in terms of substantive duties could therefore strike down an agency decision which conflicted with existing or proposed plans, in spite of the fact that consideration was given to those plans in the agency's EIS. Of course, the agency might be able to show compliance with NEPA by demonstrating that its decision was "consistent with other essential considerations of national policy."

As previously noted, however, courts have been reluctant to interpret NEPA in terms of substantive requirements. While a federal agency's action has never been explicitly enjoined as being in violation of NEPA's substantive policies, six Circuit Courts of Appeal have indicated that a court could do so if it found an agency's decision to be arbitrary and capricious in light of NEPA's substance.[53] For example, in EDF v. Corps of Engineers (Gilham Dam) the Eighth Circuit stated:[54]

> The language of NEPA, as well as its legislative history, makes it clear that the Act is more than an environmental full disclosure law. NEPA was intended to effect substantive changes in decision-making...
>
> The unequivocal intent of NEPA is to require agencies to consider and give effect to the environmental goals set forth in the Act, not just to file detailed impact studies which will fill governmental archives. (emphasis added)

A court adopting a substantive standard of review could therefore enjoin an NRC action if it determined that, for example, the action was not coordinated to the fullest extent practicable with other federally assisted planning processes, such as the coastal, water, air, and comprehensive plans described in this report. It could do so by determining that the failure to coordinate was arbitrary and capricious "or clearly gave insufficient weight to environmental values."[55] And it should be noted that under a substantive standard of review such a conclusion could be reached even though the NRC's EIS was procedurally adequate.

There are therefore good reasons for the NRC to develop mechanisms to ensure that its activities are coordinated with other planning processes. First, under the generally accepted standard of procedural NEPA

review courts may require, at a minimum, consideration of applicable plans in the facility siting process. Second, substantive coordination with plans that affect the siting process could be required if the courts move to reviewing federal activities in light of NEPA's policies. Third, apart from the threat of judicial intervention, this type of coordination would help to reduce potential conflicts between NRC actions and existing environmental planning. And by serving to clarify, at an early stage of the facility siting process, the relationship between the roles of NRC and the entities which implement these planning functions, NRC can help to increase efficiency in the siting of nuclear facilities, which is, after all, the principal goal of NRC's current efforts.

The concluding section of this discussion of NEPA will focus on NRC's procedures implementing NEPA, in order to determine how effective these regulations are at integrating coastal, air, water, and comprehensive planning considerations into the nuclear facility siting process.

E. The Nuclear Regulatory Commission's Existing NEPA Procedures

The NEPA process affords substantial opportunities for NRC to effectively integrate the various planning processes subsequently discussed in this report at early stages of the nuclear facility process. By requiring that its EIS review of an applicants' proposal carefully scrutinizes the relationship of the application to existing state and local plans, the NRC can encourage its applicants to take those plans into consideration before proposals are submitted. This can serve to increase efficiency in siting determinations by fostering close communication and consultation between potential applicants and state and

local planning authorities prior to the submission of applications to NRC.

The principal mechanisms for assuring early coordination between potential applicants and relevant state and local planning processes are the NRC's regulations implementing NEPA[56] and the Commission's Regulatory Guides 4.2 (Preparation of Environmental Reports)[57] and 4.7 (General Site Suitability Criteria).[58] As recognized by the Commission in its Regulatory Guide 4.2, one of the principal goals of NEPA concerns improving coordination of all federal agency programs to enhance environmental quality.[59] This section will focus on NRC's implementation of that directive.

The basic mechanism presently employed by NRC in ascertaining the relationship of applications to relevant planning processes is the applicant's construction permit stage environmental report. This report is required of all construction permit applications which the NRC has determined require an EIS.[60] The Commission's regulations implementing NEPA state that this report must include:[61]

> a discussion of the status of compliance of the facility with applicable environmental quality standards and requirements (including, but not limited to, applicable zoning and land-use regulations and thermal and other water pollution limitations or requirements promulgated or imposed pursuant to the Federal Water Pollution Control Act) which have been imposed by Federal, State, regional, and local agencies having responsibility for environmental protection. The discussion of alternatives in the Report shall include a discussion whether the alternatives will comply with such applicable environmental quality standards and requirements. The environmental impact of the facility shall be fully discussed with respect to matters covered by such standards and requirements irrespective of whether a certification or license from the

> appropriate authority has been obtained (including, but not limited to, any certification obtained pursuant to section 401 of the Federal Water Pollution Control Act).

The regulations also inform applicants that:[62]

> No permit or license will, of course, be issued with respect to an activity for which a certification required by section 401 of the Federal Water Pollution Control Act has not been obtained.

These requirements are incorporated into Regulatory Guide 4.2, concerning the preparation of environmental reports, in a number of places. For example, chapter 12 of the Guide states that applicant's environmental reports must list and give the status of all required federal, state, local, and regional authorizations, including those related to air, land, and water use planning.[63] Applicants are further directed to "note the state, local, and regional planning authorities contacted or consulted."[64]

Similarly, sections 4.3 and 6 of Regulatory Guide 4.7, designed to help applicants select potential sites for nuclear power stations, call for discussions of water quality and land use considerations in terms of national and state requirements.[65] Section 4.3 notes the importance of satisfying the water quality criteria "and other requirements" of the Federal Water Pollution Control Act,[66] while section 6 calls upon applicants to resolve conflicts between potential sites and land use plans adopted by federal, state, regional, or local governmental entities.[67]

Since the basic purpose of both the regulations and the Guides is to foster early interaction between the applicant and the state and

local regulatory agencies, they have a potentially large role to play in increasing efficiency in nuclear siting determinations. In order to fulfill this role, however, both the regulations and the Guide should be made more explicit. For example, where applications could "affect" the coastal zone of a state with a federally approved coastal zone management program, a state CZM certification is required, in addition to the certification required by section 401 of the Federal Water Pollution Control Act (FWPCA). Section 307(c)(3) of the Coastal Zone Management Act (CZMA)[68] requires a certification of consistency with a state's CZM program before NRC can issue a license or permit for actions that would affect the state's coastal zone. Therefore, wherever the regulations or the Guide note the applicability of the 401 requirement, they should also mention the certification of consistency required by 307(c)(3) of the CZMA.

The Commission's regulations and the Guides should also make more explicit mention of applicable state and areawide water quality plans developed pursuant to section 208 of the FWPCA[69] and state implementation plans developed pursuant to section 110 of the Clean Air Act (CAA).[70] Although the regulations do note that "applicable zoning and land use regulations" of the FWPCA must be discussed, they appear to emphasize water quality "standards and requirements." Yet because approved water quality plans will control the issuance of section 402 NPDES permits, compliance with these plans will be of particular concern to NRC applicants. The Commission should, therefore, endeavor to put potential applicants on notice of the importance of applicable water quality plans by supplying specific reference to them in its regulations, as well as

in chapter 12 of the Regulatory Guide 4.2 and sections 4.3 and 6 of Regulatory Guide 4.7.

State implementation plans under the CAA are less directly related to the concerns of NRC applicants. But because these plans, in most areas of the country, will incorporate the CAA's restrictions against "significant deterioration" of air quality, they may serve to preclude the siting of energy facilities which have greater impacts on air quality than nuclear stations, such as fossil fuel generating plants. This potential siting restriction should not, however, be taken as circumscribing the consideration of alternatives under NEPA, since NEPA clearly requires the consideration of alternatives which may be beyond the capability of the reviewing agency to implement.[71] In addition to limiting the available options a potential applicant has to generate electric power, the interrelationship between state implementation plans and nuclear facility siting may become more significant in the future. For example, if under the CAA, EPA were to prescribe an ambient standard for radioactive particles, all applicants for nuclear authorizations would then have to demonstrate compliance with this standard. By incorporating explicit mention of applicable state implementation plans into its regulations and the Guides, the NRC can help to ensure that the potential for conflicts is minimized.

The NRC should also amend its regulations concerning the preparation of draft and final environmental impact statements[72] to ensure that applicants have considered and are in compliance with applicable coastal, water and air quality planning, as well as local land use regulations. While the latter are explicitly mentioned, as is the

certification under section 401 of the FWPCA,[73] there is no mention of the consistency certification required by section 307(c)(3) of the CZMA or of compliance with water quality planning under 208 of the FWPCA or state implementation plans developed pursuant to section 110 of the CAA. More explicit reference in these regulations would serve to reinforce the important role which these planning processes will play in helping to determine the suitability of potential sites for nuclear facilities.

By incorporating these recommended changes into its regulations and Guides, the NRC would not only help to increase efficiency in the siting of nuclear facilities by identifying at an early stage of the siting process potential conflicts with applicable plans, but would also help to ensure that the policies established by NEPA are fulfilled. This is because section 101(b) of NEPA,[74] which declares the national policy to improve and coordinate federal plans, functions, and programs, appears to be entirely consistent with the goal of NRC's current efforts to increase efficiency in the facility siting process. In this regard, it would seem that the Commission's regulations implementing NEPA, which call upon the presiding officer of public hearings to determine whether certain elements of section 102 of NEPA have been complied with,[75] could be amended to include also a determination as to whether the policies expressed in section 101(b) have been fulfilled. In this manner, NEPA can be effectively utilized by NRC as a mechanism to coordinate the diverse planning processes that impact on the siting of nuclear facilities.

The effective integration of these planning processes into NRC's

siting procedures may be especially crucial with respect to the Commission's still developing regulations on early site review.[76] Unfortunately, the procedures to be followed under early site review remain somewhat uncertain,[77] perhaps due largely to the fact that, unlike the Energy Research and Development Administration,[78] the NRC has not yet developed explicit guidelines on the preparation of programmatic EIS's, and no EIS was prepared on the proposed regulations. It does appear, however, that improved coordination between potential NRC applicants and applicable coastal, water, air, and local land use planning could go a long way toward ensuring that the early site review process results in more efficient facilities siting, while at the same time increasing the effectiveness of environmental planning. For example, the integration of applicable planning considerations into the early site review process should allow the long-range implications of the siting of nuclear power stations, such as the potential impacts of "de-commissioning" the station, to be considered at an early stage of NRC's review process.

By amending its NEPA regulations and the ensuing Regulatory Guides to provide for close coordination between potential applicants and the applicable coastal, water, air, and land use planning processes, the NRC can employ its NEPA procedures as a positive tool to ensure that potential applicants are put on notice of their obligation to meet and satisfy relevant environmental planning considerations before NRC reviews their applications. This will serve to alleviate administrative burdens on NRC's staff and therefore can be a valuable mechanism by which to increase efficiency in the siting of nuclear facilities.

Footnotes

1. P.L. 91-190, 42 U.S.C. §§ 4321, 4331-61 [hereinafter citations will be to the sections of the Act - e.g., NEPA, § 101(a)].

2. Although NEPA is aimed exclusively at federally-related activities, the Council on Environmental Quality reports that as of April, 1976, 26 states had enacted legislation resembling NEPA in order to require environmental analyses of state-related activities. Council on Environmental Quality, Environmental Quality, Seventh Annual Report 135 (1976).

3. NEPA § 105.

4. E. Schaechter, "Standards for Evaluating a NEPA Environmental Statement," 90 Public Utilities Fortnightly 29 (Aug. 31, 1972).

5. Id., § 101(a).

6. Senate Report No. 91-296, 91st Cong., 1st Sess., 5 (1969).

7. NEPA, § 102(2)(c).

8. Id., §§ 102(2)(A); (B); and (E).

9. Executive Order 11514, § 2(a), 35 Fed. Reg. 4247 (March 5, 1970).

10. 40 C.F.R. § 1500.4(a), 38 Fed. Reg. 20551 (Aug. 1, 1973).

11. For comprehensive, if dated, reviews of judicial interpretations of NEPA, see F. Anderson, NEPA in the Court (1973); and F. Anderson, "The National Environmental Policy Act," in Federal Environmental Law (E. Dolgin and T. Guilbert, Eds., 1974).

12. 449 F.2d 1109 (D.C. Cir. 1971).

13. 449 F.2d at 1115.

14. § 511(c)(2) of the Federal Water Pollution Control Act Amendments of 1972 [33 U.S.C. § 1371(c)(2)].

15. 449 F.2d at 1123.

16. 458 F.2d 827 (D.C. Cir. 1972).

17. Id., at 837

18. Id., at 836.

19. Id., at 834.

20. Id., at 838.

21. ____ F.2d ____ (D.C. Cir. July 21, 1976), 6 ELR 20599

22. Id., at 20602.

23. Id.

24. ____ F.2d ____ (D.C. Cir. July 21, 1976), 6 ELR 20615.

25. Id., at 20617.

26. 481 F.2d 1079 (D.C. Cir 1973).

27. See following discussion of Kleppe v. Sierra Club.

28. 422 U.S. 289 (1975).

29. Id., at 320.

30. ____ U.S. ____ (June 28, 1976), 6 ELR 20532.

31. The lower court's decision is found at 514 F.2d 856 (D.C. Cir. 1975).

32. 6 ELR at 20536-37.

33. NRDC v. NRC, ____ F.2d ____ (2d Cir. May 26, 1976), 6 ELR 20513.

34. ____ F.2d ____ (2d Cir. Sept 8, 1976), 6 ELR 20723.

35. Id., at 20723.

36. Council on Environmental Quality Memorandum on Kleepe v. Sierra Club and Flint Ridge Development Co. v. Scenic Rivers Ass'n of Oklahoma [where the Supreme Court exempted property disclosure statements under the Interstate Land Sales Full Disclosure Act from NEPA requirements because of a "clear and unavoidable conflict" between the two statutes], Sept 16, 1976.

37. See Comment, "Second Circuit, CEQ Clarify Permissibility of Interim Actions Prior to Completion of Programs EIS," 6 ELR 10244-45 (1976).

38. P.L. 94-83, 42 U.S.C. § 4332(2)(D).

39. It is not entirely clear, however, whether the Amendment forbids delegation to state agencies with less than statewide jurisdiction, since it states that "this subparagraph does not affect the legal sufficiency of statements prepared by state agencies with less than statewide jurisdiction."

40. 40 C.F.R. § 1500.5(a)(2).

41. P.L. 93-383, 42 U.S.C. §§ 5301 et. seq.

42. 468 F.2d 1164 (6th Cir. 1972).

43. 395 F.Supp 1187 (D.D.C. 1975).

44. 40 C.F.R. § 1500.5.

45. 36 Fed. Reg. 19342 § 516.2.5.A.

46. NEPA, §§ 201-09.

47. 42 U.S.C. 1857h-7.

48. Federal Power Commission, Alaska Natural Gas Transportation Systems, Final Environmental Impact Statement, Vol. IV (April, 1976).

49. 41 Fed. Reg. 2052 (Jan. 13, 1976).

50. 40 C.F.R. § 1500.8(a)(1).

51. Id., § 1500.8(a)(2).

52. See text accompanying note 32, above.

53. See Calvert Cliffs Coordinating Committee v. AEC, 449 F.2d 1109, 1115 (D.C. Cir. 1971); EDF v. TVA, 470 F.2d 289, 300 (8th Cir. 1972); Sierra Club v. Froehlke, 486 F.2d 946, 953 (7th Cir. 1973); Conservation Council of North Carolina v. Froehlke, 473 F.2d 664, 665 (4th Cir. 1973); Silva v. Lynn, 482 F.2d 1282, 1283 (1st Cir. 1973); Jicarilla Apache Tribe v. Morton, 471 F.2d 1275, 1281 (9th Cir. 1973). For a contrary conclusion, see National Helium Corp. v. Morton, 455 F.2d 650 (10th Cir. 1971).

54. 470 F.2d at 297.

55. Calvert Cliffs Coordinating Committee v. AEC, 449 F.2d at 1115.

56. 10 C.F.R. § 51 (1976).

57. U.S. Nuclear Regulatory Commission, Regulatory Guide 4.2, Revision 2, Preparation of Environmental Reports for Nuclear Power Stations (July, 1976). [hereafter cited as Regulatory Guide 4.2].

58. U.S. Nuclear Regulatory Commission, Regulatory Guide 4.7, Revision 1, General Site Suitability Criteria for Nuclear Power Stations (Nov. 1975). [hereafter cited as Regulatory Guide 4.7].

59. Regulatory Guide 4.2, p. V.

60. A list of those actions requiring the preparation of an EIS is contained in 10 C.F.R. § 51.5(a) (1976).

61. 10 C.F.R. § 51.20(c) (1976).

62. Id., note 2.

63. Regulatory Guide, 4.2, p. 12-1.

64. Id.

65. Regulatory Guide 4.7, pp. 4.7-5-4.7-7 and 4.7-9-4.711.

66. Id., p. 4.7-9.

67. Id., p. 4.7-11.

68. 16 U.S.C. § 1455(c)(3).

69. 42 U.S.C. § 1857c-5.

70. 33 U.S.C. § 1288.

71. See text preceeding note 17, supra.

72. 10 C.F.R. §§ 51.23, 51.26 (1976).

73. Id., § 51.23(c).

74. 42 U.S.C. § 4331(b).

75. 10 C.F.R. § 51.52(c)(1) (1976).

76. See proposed regulations at 41 Fed. Reg. 16835 (April 22, 1976). See also Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, Early Site Reviews for Planned Nuclear Power Stations, Policy, Procedures, and Possible Technical Review Options (Sept., 1976).

77. See, e.g., comments of the Environmental Protection Agency on Early Site Reviews and Limited Work Authorizations (July 13, 1976).

78. See 10 C.F.R. § 711, 42 Fed. Reg. 4826 (Jan. 26, 1977), particularly §§ 711.43 and 711.45.

NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

II. The Coastal Zone Management Act

A. Introduction

The Coastal Zone Management Act of 1972, as amended in 1976 (CZMA),[1] reflects the findings of a series of reports completed in the late 1960's and early 1970's. These reports examined the growing conflicts in the nation's coastal areas reflected in increasing pressures for development and a simultaneous deterioration in environmental quality. The first and perhaps most important of the studies was completed in 1969 by the Marine Science, Engineering and Resources Commission, better known as the Stratton Commission, entitled Our Nation and the Sea. In addition to recognizing the extreme value of coastal areas for both their natural and development qualities, this report also recognized that rapid growth in coastal areas has produced a multiplicity of overlapping jurisdictional responsibilities that lacked the central focus necessary to achieve effective management.

By the end of 1970, two additional reports had been completed: The National Estuarine Pollution Study, which enumerated the particular development pressures threatening the national integrity of coastal estuarine environments, and The National Estuary Study, which depicted the alarming extent to which damage had already been inflicted on our estuaries. During this period of increasing concern over the plight of the nation's coasts, the idea of comprehensive land use planning was gaining acceptance. Largely as a result of two reports, One Third of the Nation's Land and Model Land Development Code, many government officials recognized public support for a more authoritative state role in land use planning and for strong Federal legislative support for

these new state efforts.[2]

The motivating forces for the CZMA, as outlined in the Senate Commerce Committee Report accompanying the Senate's version of the Coastal Zone Management bill, included the following:[3]

1. the extensive degradation of highly productive estuaries and marshes;

2. burgeoning populations in coastal areas (53% of the U.S. population lived within 50 miles of the coasts in 1970), with resulting demands for commercial, residential, and recreational development;

3. the fact that 70% of the nation's commercial fishing takes place in coastal areas; and

4. the fact that most estuarine areas equal or double the food production rates of the best upland agricultural areas, and are 15-20 times more productive than ocean waters.

In enacting the CZMA, Congress intended to create a mechanism to strike a balanced approach for resolving conservation and development interests in the coastal zone. As the Act declares, its purpose is to "...preserve, protect, develop and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations...."[4] The Act therefore represents the first national effort to employ comprehensive land use planning as a tool to resolve conflicting interests, and remains the principal federal land use program. Significant interest nevertheless exists with the goal of extending federal land use efforts to the remainder of the country.

B. The Role of the States in Developing CZM Plans

Basically, the CZMA establishes a federal grant-in-aid program for coastal states to encourage the development[5] and support the adminis-

tration[6] of a program to manage the land and water uses of the nation's ocean and Great Lakes coasts. The Act vests responsibility for administering the program with the Secretary of Commerce, who has delegated his responsibilities to the Administrator of the National Oceanic and Atmospheric Administration. The Administrator, in turn, established the Office of Coastal Zone Management (OCZM) to ensure that the provisions of the CZMA are carried out. Under the terms of section 305, states are allowed up to 4 years to develop a coherent CZM program. During this development period, a participating state can receive federal funding in the amount of 80% (increased from 66 2/3% by the 1976 CZMA Amendments) of the costs incurred during its development process. Individual states may then submit a plan to the Secretary of Commerce for his approval. The Secretary's review is primarily a determination as to whether the minimal provisions required of state programs by the Act and its accompanying regulations have been met. Those states which receive the Secretary's approval are then eligible for continued federal funding under section 306 for the implementation and administration of their CZM programs. The amount of the funding provisions under section 306 are also 80% of the state's cost. In addition to signalling the beginning of the implementation of the states' CZMA programs, the transition from "305" to "306" funding creates a milestone that allows the Secretary of Commerce to insure that each participating state CZM program has met the policies and provisions set forth in the federal statute.

By selecting the states to implement the CZMA, Congress encouraged state governments to assume a larger responsibility for specific land and water use decisions. The Senate Commerce Committee Report reveals

that this was done for two reasons. The first was the number of complex issues involved in managing the coastal zone, including its fragile ecological nature and its economic importance. The Senate Report points to a "sharp contrast" between land utilization within the coastal zone and land utilization in other areas. The Report notes that this "sharp contrast" results from a unique contest between public and private interests that is brought about by the great number of people living in coastal areas, an abundance of jurisdictional overlaps, and pressures for commercial and industrial development. The Report states, "the fact is that the waters and the narrow strip of land within the coastal zone is where the most critical demands, needs, and problems presently exist."[7]

The second reason for placing primary responsibility at the state level involved a basic lack of confidence in the ability of local governments to adequately deal with the complex issues mentioned above. The Report states:[8]

> At present local governments do possess considerable authority in the coastal zone. However, frequently their jurisdiction does not extend far enough to deal fully and effectively with the land and waters problems in that zone. Additionally, there have been numerous examples of commercial development taking precedent over the protection of land and waters in the coastal zone. There has been an understandable need to create new revenues to provide governmental services demanded by a growing population, thus creating pressures for commercial, residential, and other economic development.

The Senate Commerce Committee Report therefore concluded that the states should serve as the fulcrum of the program:[9]

> The Committee has adopted the States as the focal point for developing comprehensive plans and implementing management programs in the coastal zone. It is believed that the states do have the resources, and constitutional authority on which to build a sound management program. (emphasis added)

Although the focus of the CZMA is on the state level, this does not necessarily mean that local authorities will be preempted by state planning actions. In addressing the nature of the proposed state-local relationship, the CZMA requires that one or a combination of the following three techniques of controlling land and water use in the coastal zone be used:[10]

1. State establishment of criteria and standards for local implementation but subject to state administrative review and enforcement of compliance;

2. Direct state land and water use planning and regulation; or

3. State administrative review for consistency with the management program of all development plans, projects or land and water use regulations proposed by any state or local authority or a private developer.

It appears that most state CZM programs are emphasizing the first option listed above but complementing it with concepts from the second and third alternatives.[11] Under the first option, state programs develop guidelines to be followed by local governments in devising their own plans, including zoning ordinances, regulations, and enforcement mechanisms. After the local plans are prepared, they must then be submitted for state review and approval prior to its implementation. While this option allows the states to ensure that local plans are consistent with the state guidelines, local governments retain their traditional role in implementing specific land and water use decisions.

The second option listed above does preempt the traditional local planning role and permits the state to become directly involved in establishing detailed land and water use regulations; however, few states have elected to use this option as its primary method of control. Instead, some states are relying on this option as an alternative to be used only if local governments fail to prepare their own plans, or fail to adhere to the state's guidelines.

The final option leaves local governments free to adopt their own plans without the guidance of specific state guidelines. The state must, however, have provisions for review of any local plan, land or water use regulations or individual development projects. Because this option is too cumbersome to administer as the sole method of control by a state government, it has been used only sparingly in some states. When it has been employed, it is generally applied to large developments or "developments of regional impact." Here, although local governments have a strong voice in the ultimate decision, the final ruling usually rests with the state government.

The planning provisions required of state plans under the CZMA have been interpreted in the federal regulations[12] promulgated by the Office of Coastal Zone Management to be process oriented. The federal regulations therefore do not stipulate incorporation of specific substantive elements in plans in order to achieve the Secretary's approval for funds to implement state programs. What is required is that certain broad areas be addressed to the satisfaction of the Secretary. Only in this manner could the CZMA accommodate the extreme complexities of dealing with vastly different types of environments, the unique problems

and pressures of different geographic areas, and the separate governmental and institutional arrangements found in different states. The result of this approach has been to have each state develop a unique program with its own inherent strengths and weaknesses. Significantly, these flexible requirements grant states a wide latitude in which they can formulate plans. Conceivably, approved state plans could emphasize either end of a spectrum, running from extreme conservation to extreme development.

Most of the actual planning provisions which state plans must address are listed in section 305(b) of the CZMA. The 9 requirements described in this section are listed below, with an asterisk before those which have the greatest bearing on the siting of nuclear facilities:[13]

*1. an identification of the boundaries of the coastal zone subject to the management program;

*2. a definition of what shall constitute permissible land uses and water uses within the coastal zone boundary which have a direct and significant impact on the coastal waters;

3. an inventory and designation of areas of particular concern within the coastal zone;

4. an identification of the means by which the state proposes to exert control over the land uses and water uses referred to in 2 above;

*5. broad guidelines on priorities of uses in particular areas including specifically those uses of lowest priority;

6. a description of the organizational structure proposed to implement such a management program;

7. a definition of the term "beach," and a planning process for the protection of, and access to, public beaches and other public coastal areas of environmental, recreational, historical, esthetic, ecological or cultural value; (added under the 1976 CZMA Amendments)

*8. a planning process for energy facilities likely to be located, in or which may significantly affect, the coastal zone, including but not limited to, a process for anticipating and managing the impacts of such factilities (added under the 1976 CZMA Amendments); and

9. a planning process for 1) assessing the effects of shoreline erosion, and 2) studying and evaluating ways to control or lessen the impacts (added under the 1976 CZMA Amendments).

Three additional planning requirements of relevance to the siting of nuclear facilities are contained in section 306:

1. The management program must have been developed with the opportunity of full participation by relevant federal agencies; 14/

2. The management program must provide for adequate consideration of the national interest involved in planning for, and in the siting of, facilities which are necessary to meet requirements which are other than local in nature; 15/ and

3. The management must [have] developed and applied a method for determining uses of regional benefit and established a method for assuring that local land and water use controls in the coastal zone do not unreasonably or arbitrarily restrict or exclude those uses of regional benefit. 16/

The CZMA Amendments of 1976 also added two sections to the Act that provide various forms of assistance to encourage and aid state CZM programs in undertaking certain planning processes. The most important of these, at least in terms of available funding, is the Coastal Energy Impact Program (CEIP).[17] This section of the Amendments was enacted in response to the important role being thrust upon coastal states in dealing with the "energy crisis." The CEIP is authorized to expend $1.2 billion to assist states in planning and compensating for the effects of energy facilities and activities that take place in the coastal zone.

The financial assistance is in the form of loans, grants, and bond guarantees. Although portions of the CEIP pertain to nuclear facilities, much of the funding allowances are restricted to OCS fossil fuel related development and are thus not available in connection with nuclear facilities and activities. The second funding provision added by the 1976 Amendments concerns the distribution of interstate grants.[18] Designed to encourage states to coordinate their coastal zone planning, policies, and programs with those of neighboring states, the provisions of this section allow for funding of up to 90% of the cost of such coordination, study or implementation. Each of these sections is also discussed later in this chapter.

At present, all of the 30 coastal states, as well as the four territories eligible for participation in the federal coastal zone management program, are receiving federal funding. All but one state are receiving funds under section 305 for program development. These states are in either their 2nd, 3rd or 4th (and final) year of eligibility under this section. One state, Washington, has had its CZM program approved by the Secretary and thus is implementing its plan with the assistance of 306 funding. Several other states, or portions thereof, are in the process of submitting or are about to submit CZM plans for 306 approval. It is, however, likely that not all state CZM programs will survive to 306 implementation due to their inability to meet the conditions required for federal approval.

The two major forms of encouragement for state participation in the federal program are the funding provisions mentioned above and the federal consistency provisions. The latter are designed to serve as a

form of guarantee to participating states, that any federal program or activity in that state's coastal zone -- including the granting of any federal license -- will not be undertaken unless it is consistent with a state's approved CZM plan. Although the funding provisions of the Act were probably of greater importance in attracting initial participation by coastal states and territories, the consistency provisions are probably of greater value as encouragement for assuring their continued participation. The novel approach and authority exercised under the consistency provisions may make their long term importance greater than the attraction of federal funding. Indeed, the consistency provisions are quite possibly the most important innovations in the Act as they add a new dimension to federal-state relations.

C. Federal Consistency

Perhaps the most important reason for NRC to be aware of the content of state CZM programs lies in the fact that approved State CZM programs will exert considerable influence on the ability of the Commission to take certain actions. After a state's program receives federal approval from the Secretary of Commerce, NRC cannot issue a license for an activity that would "affect" the state's coastal zone until the state certifies that the activity is consistent with its CZM program. The duties which the federal consistency provisions of the CZMA place upon federal agencies are therefore of central importance to NRC. These provisions, which essentially alter federal-state relations in the coastal zone by promising federal accommodation to state interests, are perhaps the most complex aspect of the Act.[19] An indication of the complexities involved in implementing this novel approach

to federal-state decision-making is provided by the fact that the Office of Coastal Zone Management, which promulgated proposed federal consistency regulations,[20] is in the process of redrafting the regulations and will be reissuing them in proposed form. Consequently, it is not yet possible to predict precisely how OCZM will implement the federal consistency provisions. It is possible, however, to review the statutory requirements in terms of their potential impact on NRC activities.

When NRC is considering an application for a required permit or license under its regulatory authority, the applicable consistency requirements are those contained in section 307(c)(3)(A) of the CZMA, which reads:

> After final approval by the Secretary of a state's management program, any applicant for a required Federal license or permit to conduct an activity affecting land or water uses in the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the state's approved program and that such activity will be conducted in a manner consistent with the program. At the same time, the applicant shall furnish to the state or its designated agency a copy of the certification, with all necessary information and data. Each coastal state shall establish procedures for public notice in the case of all such certifications and, to the extent it deems appropriate, procedures for public hearings in connection therewith. At the earliest practicable time, the state or its designated agency shall notify the Federal agency concerned that the state concurs with or objects to the applicant's certification. If the state or its designated agency fails to furnish the required notification within six months after receipt of its copy of the applicant's certification, the state's concurrence with the certification shall be conclusively presumed. No license or permit shall be granted by the Federal agency until the state or its designated

> agency has concurred with the applicant's certification or until, by the state's failure to act, the concurrence is conclusively presumed, unless the Secretary, on his own initiative or upon appeal by the applicant, finds, after providing a reasonable opportunity for detailed comments from the Federal agency involved and from the state, that the activity is consistent with the objectives of this title or is otherwise necessary in the interest of national security. (emphasis added)

There are several things to note about this provision. First of all, it is applicable only to federal licenses and permits and only to those issued after a state's CZM plan has received approval from the Secretary of Commerce. The prospective nature of this requirement is supported by the legislative history of the CZMA.[21] Second, consistency attaches to all permit or licensed activities that affect the state's coastal zone. While neither the CZMA nor its legislative history defines the term "affect," it would seem to clearly imply that the activity need not be within the defined boundaries of the state's coastal zone. For example, an applicant for a construction permit or an operating license for a nuclear power station outside the coastal zone but affecting it would still be required to obtain certification from the state.

The initial determination of whether consistency attaches is vested in the state. OCZM's proposed consistency regulations suggest that this be accomplished by the state developing and transmitting to Federal agencies a listing of all federal license and permit activities that require state review for consistency.[22] Both the proposed California[23] and Oregon[24] CZM plans, for example, have listed licenses and permits issued by NRC for the siting and construction of nuclear power stations among the federal activities which will require state certification. Therefore, if these plans receive federal approval, NRC will not be able to issue

such licenses and permits until the state certifies that the proposed activity is consistent with its program.

When consistency is required, an applicant for an NRC authorization will have to prepare and transmit to NRC, along with his application, a certification attesting to the fact that the proposed activity will be consistent with the content of the state plan. This does not mean that the proposed activity must be specifically mentioned in the state's CZM plan, but rather that it must be in compliance with the requirements set forth therein. A copy of both the application and the certificate must also be sent to the state CZM agency in order to allow the state to verify the applicant's findings. When the state receives the applicant's certification, it issues public notice of the proposed activity and may hold public hearings.[25] The state then has a maximum of six months to announce its decision concerning the consistency of the proposed activity. After this maximum period of time, failure to forward a decision to NRC and the applicant amounts to a decision concurring with the applicant's certification statement. According to the proposed consistency regulations, most consistency decisions should be reached within 30 to 90 days. Only in "extraordinary cases" should a decision not be reached until the end of the six month period.[26]

If a state determines than an NRC applicant's activity is not consistent with its approved program, the applicant may appeal the state's denial of certification to the Secretary of Commerce on the basis that the activity is consistent with the objectives or purposes of the Federal CZMA, or is necessary in the interest of national security. OCZM's proposed consistency regulations define "consistent with objectives of

purposes of the Act" to require that a three-part determination be made by the Secretary:[27]

1. The proposed activity is compatible with the objectives of the federal CZMA (although not with the state's specific program requirements);

2. Complete adherence to the state's program cause the applicant to suffer a substantial burden; and

3. The decision, if permitted, would not have a significant negative impact upon the integrity of the state's program.

"Necessary in the interest of national security" is defined by the proposed regulations as requiring a determination by the Secretary independent of the views of Defense Department agencies.[28] It should again be emphasized, however, that the final form of OCZM's consistency regulations has yet to be determined, and that there may be substantial changes in the subsequent draft, expected to be issued in March.

If a state does certify an activity requiring an NRC license or permit as being consistent with its CZM program, or if the Secretary overrides the state's denial, it must be noted that this does not relieve NRC of its duty to review the application in light of its own regulatory policies and objectives. In other words, NRC is in no way precluded from denying the application if it determines that the applicant has not satisfied the Commission's own licensing and permitting requirements.

The CZMA contains three other federal consistency provisions relating to activities "conducted or supported" by federal agencies,[29] federal development projects,[30] and federal grant-in-aid programs.[31] Because NRC responsibilities regarding nuclear activities are limited by the Energy Reorganization Act of 1974[32] exclusively to licensing and

permitting activities, it is not necessary to examine these consistency provisions here. It should be noted, however, that these provisions will be applicable to the activities of other federal agencies, such as the Energy Research and Development Administration, which are actively involved in the construction of nuclear facilities or in the transportation or disposal of nuclear materials. Since these agencies will have to obtain an NRC license or permit to carry out their activities, both the specific activity and the NRC authorization will be subject to consistency with approved state CZM programs. In this instance, the proposed consistency regulations encourage consolidated review by the states.[33]

One aspect of the CZMA's federal consistency provisions that has particular importance to other planning processes examined in this study concerns an exception to the consistency requirements. Section 307(f) of the CZMA states:

> Notwithstanding any other provisions of this title, nothing in this title shall in any way affect any requirement (1) Established by the Federal Water Pollution Control Act, as amended, or the Clean Air Act, as amended, or (2) Established by the Federal Government or by any state or local government pursuant to such Acts. Such requirements shall be incorporated in any program developed pursuant to this title and shall be the water pollution control and air pollution control requirements applicable to such program. (emphasis added)

Thus, rather than having to demonstrate consistency with approved state CZM programs, air and water quality requirements are to be incorporated into CZM plans. While it is clear that a state's CZM program cannot adopt less stringent air and water quality standards than those established pursuant to the Clean Air Act or the Federal Water Pollution

Control Act, the question of whether more rigorous standards could be adopted has specifically been left open by the proposed consistency regulations.[34]

A related question concerns how the state CZM plans are to be coordinated with the air and water quality planning processes described in subsequent sections of this study. Largely because the Office of Coastal Zone Management and the Environmental Protection Agency have been unable to agree on precisely what elements of the air and water quality planning processes constitute "requirements" within the meaning of section 307(f), no effective mechanisms have been developed to integrate the planning processes. It is likely, however, that steps will be taken to coordinate the various plans affecting particular areas before they are implemented.

One final note on the CZMA's consistency provisions concerns the exclusion of federal lands from the Act's definition of the state's coastal zones.[35] This exclusion has recently been interpreted by the Attorney General to extend to all federal lands. While this effectively removes from the states much of their ability to plan for and regulate activities that take place on lands that would otherwise be considered to be within their coastal zones, it does not necessarily preclude the application of the consistency requirements.[36] This is because, at least with respect to the consistency provision of greatest concern to NRC, the test for whether consistency attaches is an "affecting" standard. Consequently, proposed activity on federal lands, which by definition would be outside of the state's coastal zone, could nevertheless be subject to consistency with the state's approved CZM program, if the

activity would affect land or water uses within the coastal zone. For example, if an NRC license or permit were required for an activity taking place on excluded federal lands, and if the activity would affect the land or waters of the state's defined coastal zone, a certification of consistency from the state would be a prerequisite to NRC's authorization.

The consistency regulations proposed by OCZM do not attempt to clearly define the scope of the "affecting" standard. They state:

> ...it shall be presumed that a proposed activity will affect land or water uses in the coastal zone if the activity is to take place within, adjacent, or in close proximity to the boundaries of the coastal zone.... 37/

It may therefore be difficult to determine in a given case whether consistency is required. This may be particularly true with respect to the siting of nuclear power stations, where thermal water discharges could conceivably be shown to "affect" a very large surrounding area, perhaps even an entire estuary. Consequently, NRC and the relevant states should seek to develop mechanisms that will serve to put applicants for required NRC authorizations on notice as to when their activities will require state certification in spite of the fact that they will not take place within the defined coastal zone.

D. Federal-State Cooperation and Coordination

It must be emphasized that consistency of NRC-issued authorizations with a state's CZM program is required only after the state's program has received federal approval from the Administrator of NOAA. As previously mentioned, at the present time, only the state of Washington has received federal approval and is implementing its CZM program. All of the other states are in varying stages of program development. It

is at this stage that federal-state interaction can play a crucial role in the ultimate shape of a state's CZM plan, and consequently, influence the ultimate impact which the federal consistency provisions will exert on federal agency program missions.

In contrast to the federal consistency requirements, which essentially place the burden on federal agencies to assure that their actions are in conformance with the state's approved CZM program, the federal-state coordinative mechanisms before program approval basically operate to compel the states to consult and cooperate with federal agencies. If a state fails to adequately involve interested federal agencies in the development of its CZM program, its program can be denied federal approval. And if this occurs, not only will the state be deprived of federal funding to assist in implementing its program, but the federal consistency provisions will not be available to help the state implement a comprehensive land and water use program for its coastal zone. There are, therefore, strong incentives for the states to initiate and maintain close cooperation with federal agencies, such as NRC, throughout the development stage of their CZM programs.

The nature of the CZMA's goal of close communication and coordination between federal and state efforts is first described in two passages in the Act's declaration of findings and policy. Section 302(h) states:

> The key to more effective protection...of the coastal zone is to encourage the states to exercise their full authority over the lands and water in the coastal zone by assisting the states, in cooperation with Federal and local governments...in developing land and water use programs for the coastal zone,... (emphasis added)

The need for close state-federal agency ties is again raised in section 303(c), which declares the national policy:

> for all federal agencies engaged in programs affecting the coastal zone to cooperate and participate with state and local governments and regional agencies in effectuating the purposes of this title. (emphasis added)

These passages make it clear that federal agencies and the states are to work together in satisfying the policies of the Act. These sections also place the burden of initiating any contact on the states rather than the federal agencies, although federal agencies may also be asked to respond to requests from the federal Office of Coastal Zone Management on some matters.

To ensure that close federal-state cooperation is maintained throughout the development of state CZM programs, and that these programs reflect a two-way give and take exchange between federal and state interests, the CZMA described procedures which must be followed in order for the states to receive federal approval of their CZM programs. Federal-state coordination before the state's program is approved is essentially a two-step process. The first step involves the requirement of section 306(c)(1) that "relevant federal agencies" be afforded "the opportunity of full participation" in the development of the state's program. The Nuclear Regulatory Commission is specifically listed as a "relevant" agency in the implementing regulations.[38] The "opportunity of full participation" has been interpreted by OCZM to mean "requiring participation at all appropriate stages of management program development."[39] It should be emphasized that this does not require participation by federal agencies, only the opportunity for it.

The second step of Federal-state cooperation occurs after the state's program has been submitted for federal approval. Section 307(b) states that "the Secretary shall not approve the management program... unless the views of federal agencies principally affected have been adequately considered." "Principally affected agencies" have been construed by OCZM to mean "relevant agencies," and this includes NRC. Section 307(a) further provides that "the Secretary shall consult with, cooperate with, and, to the maximum extent practicable, coordinate his activities with other interested federal agencies." OCZM's regulations provide that if a state's program which is submitted for federal approval appears to comply with the criteria established for federal approval, the Administrator of NOAA will prepare a draft environmental impact statement and forward it, along with a copy of the state's management program, to each relevant federal agency for review and comment.[40] Only after these comments are received, are given "adequate consideration" by the Administrator, and a final environmental impact statement prepared, can the state's program receive federal approval.

Because many states are reaching the end of the development phase of their CZM programs and are or will shortly be seeking federal approval to implement their programs, initial contacts between individual state programs and NRC should have already occurred. OCZM's regulations stipulate that "early in the development of its state program" each state should contact all relevant federal agencies (including NRC) to establish procedures for assuring that "full participation" does take place.[41] Before the Administrator can consider a state's program for federal approval and prepare a draft environmental impact statement on it, the

state must submit to OCZM a list of the federal agencies with which it has worked in developing the program, along with the names of the principal contacts in each agency and the agency's views regarding the state's program.[42]

If during the development stage, NRC and the state cannot agree on certain aspects of the state's program, section 307(b) of the CZMA[44] and the ensuing regulations[45] provide mechanisms to resolve the differences. First, after being informed of the disagreement in writing by either NRC or the state, OCZM will endeavor to reconcile the differences through informal assistance. If this fails to result in an adequate resolution, the Administrator of NOAA will solicit statements from both NRC and the state and recommend a solution. If the parties refuse to accept the Administrator's recommendation, the Office of Management and Budget then may also recommend a solution. If this recommendation is not accepted, the regulations state that the Administrator must determine and communicate to the parties "the extent to which the inclusion in the state program of the state agency's position in the disagreement would affect his ability to approve the state program."[46]

After a state's CZM program has been developed and is submitted for federal approval, the NEPA process affords NRC an additional opportunity to express its view on the content of the state's program. Copies of both the draft EIS and the state's program are to be submitted to NRC for review and comment. In addition, NRC has an opportunity to submit comments on the final EIS, to be prepared after the initial comments are received. Before the Administrator of NOAA can approve the program, he must review and consider the comments on both the state's program and the final EIS.[43]

Similar mediation procedures are provided in section 307(b) for federal-state disagreements that arise in the context of the administration of an approved state program. These disagreements, however, are likely to involve the impact of the federal consistency requirements on federal "conducting and supporting activities" and federal development projects.[47] Since, as pointed out above, NRC's role is limited to licensing and permitting functions, disputes between NRC and a state after a state's program receives federal approval should not occur. It is possible, however, that an NRC applicant could appeal a state's consistency determination to the Secretary of Commerce, as mentioned in the previous discussion of federal agency.

Potential areas of disagreement between NRC and the states in the development of their CZM programs could concern two elements required of all state programs. The first is embodied in section 306(c)(8), which stipulates that state programs must provide:

> for the adequate consideration of national interest involved in planning for, and in the siting of facilities (including energy facilities in, or which significantly affect, such state's coastal zone) necessary to meet requirements which are other than local in nature.

OCZM's regulations identify energy production and transmission facilities as being among those for which national interest consideration is necessary and specifically lists nuclear power stations.[48] Because "requirements which are other than local in nature" has been interpreted to include facilities "clearly designed to serve more than one locality,"[49] other facilities in the nuclear fuel cycle should also be considered as falling within the scope of this provision.

The implementing regulations stress that this required element of a state's program does not compel a state to site "national interest" facilities in its coastal zone, only that its program give "adequate consideration" to these facilities. The regulations state:[50]

> The requirement should not be construed as compelling the States to propose a program which accommodates certain types of facilities, but to assure that such national concerns are included at an early stage in the State's planning activities and that such facilities not be arbitrarily excluded or unreasonably restricted in the management program without good and sufficient reasons...Management programs must recognize the need of local as well as regional and national populations for goods and services which can be supplied only through the use of facilities in the coastal zone in order to make reasonable provisions for such facilities in light of the size and population of the State, the length and characteristics of its coast and the contribution such State is already making to regional and national needs. This will require the State to enter into discussions with appropriate Federal agencies and agencies of other States in the region, a process which should begin early in the development of the management program so that the full dimensions of the national interest may be considered as the State develops its program. (emphasis added)

During state program development and administration, "national interest" facilities are to be considered in the same manner as any other coastal use. In fact, the consideration of these facilities is intended to be part of the same procedure used for permissible and priority use determinations, described in the following section of this chapter. The one difference comes when a state program submits its plan for federal approval. At that time the program must present evidence that during the review of "national interest" facilities appropriate consultation with relevant federal agencies (e.g. the NRC, regarding

nuclear power stations, fuel reprocessing plants, etc.) has been conducted. In this manner, OCZM anticipates that national views, as represented by these federal agencies, will be incorporated into state CZM plans. The regulations encourage the states to "actively seek ... guidance from these federal agencies, particularly in view of the fact that all management programs will be reviewed with the opportunity for full comment by all Federal agencies prior to [federal] approval."[51] They also note that OCZM will encourage federal agencies to develop and make available to the states policy statements regarding their perception of the national interest in the coastal zone.

Interstate cooperation is just as significant as close federal-state cooperation in assuring that "national interest" facilities are given adequate consideration. OCZM's regulations strongly suggest that a state's CZM program must look beyond its own boundaries and consider the needs of nearby states in order to fulfill this requirement.[52]

> The States should also consult with adjacent and nearby States which share similar or common coastal resources or with regional interstate bodies to determine how regional needs may be met in siting facilities. Specific arrangements of "trade-offs" of coastal resource utilization should be documented with appropriate supporting evidence. The importance of this type of interstate consultation and cooperation in planning cannot be overemphasized for it offers the States the opportunity of resolving significant national problems on a regional scale without Federal intervention. (emphasis added)

It should be noted that the requirement of giving adequate consideration to siting "national interest" facilities will now be directly related to certain planning processes to be developed pursuant to the Coastal Zone Management Act Amendments of 1976. The most prominent of

these, which are discussed in the following sections of this chapter, is the newly required energy facility siting process.

If all the procedures available to NRC and the states to develop close consultation regarding the siting of "national interest" nuclear facilities are utilized, there is little likelihood of disagreements arising between the Commission and the states. Thus, the mediation procedures need not be invoked. This is particularly true in light of the large role already played by the states in the siting of nuclear power stations. By effectively utilizing its opportunities to assist states in the development of their CZM programs (e.g., by providing relevant information, data, or studies), NRC can, moreover, help to make the role of the states in planning for the siting of nuclear facilities in the coastal zone more efficient and more responsive to the national interest.

The second potential area of conflict between NRC and the states regarding the content of their CZM programs could involve the requirement in section 306(e)(2) of the CZMA that state programs must include:

> a method of assuring that local land and water use regulations within the coastal zone do not unreasonably restrict or exclude land and water uses of a regional benefit.

The implementing regulations define uses of a regional benefit to mean those "that typically provide benefits to a significant area beyond the boundaries of a single unit of the lowest level of local, general-purpose government."[53] The regulations also stipulate that in carrying out this requirement the states "must first identify those uses which [they perceive] will affect or produce some regional benefit."[54] While the states are given considerable discretion in making this determination, the reg-

ulations do provide that all "national interest" facilities "should" be included as uses of a regional benefit. After these uses are identified, the states must incorporate in their CZM programs mechanisms to guard against their arbitrary exclusion by localities.

> There should be no blanket exclusion or restrictions of these uses in areas of the coastal zone by local regulation unless it can be shown that the exclusion or restriction is based upon reasonable considerations of the suitability of the area for the uses or the carrying capacity of the area. The requirement of this section does not exclude the possibility that in specific areas certain uses of regional benefit may be prohibited. However, such exclusions may not be capricious. The method by which the management program will assure that such unreasonable restrictions or exclusion not occur in local land and water use decisions will, of course, be up to the State, but it should include the preparation of standards and criteria relating to State interpretation of "unreasonable restriction or exclusion," as well as the establishment of a continuing mechanisms for such determination./55 (emphasis added)

This requirement may serve as an effective means to ensure that coastal states employ regional considerations, including the interests of areas outside the geographic boundaries of their coastal zones, in the siting of facilities which are other than local in nature. For example, if siting restrictions for a nuclear power station could cause an unmanageable interface with respect to transmission interconnections on an area-wide power grid, an approved state CZM program should have in place mechanisms whereby such regional interests can be voiced and appropriate action can be initiated. If, however, a particular state has not effectively incorporated such mechanisms into its CZM program, or has not identified certain "national interest" facilities as falling with-

in the purview of "uses of a regional benefit," then NRC could invoke the mediation provisions outlined above.

Finally, in addition to providing for close federal-state cooperation in the development of state programs, the CZMA requires that members of the public have the opportunity to participate in the formulation of the states' CZM programs. Section 306(c)(3) of the CZMA requires the states to hold public hearings in the development of their programs. The implementing regulations establish procedures for public notice, public hearings, and comprehensive summaries of the hearings which are to be submitted to OCZM at the time the state requests federal approval.[56] The regulations also encourage less formal means of public involvement.[57] They further stipulate that a state's program will not be approved:[58]

> unless there has been a full and effective opportunity for public involvement in every portion of the plan. The key to compliance with the provisions of the Act is the assurance that the public has had an adequate opportunity to participate in the development of the plan.

It would seem that the public forum might be an especially useful means for federal agencies to assess a state's developing program in terms of their perceptions of the national interest. It could also serve as an effective mechanism for federal agencies to provide information of utility to a state's program. The potential of both formal and informal public involvement techniques to encourage close federal-state cooperation, therefore, should not be overlooked.

E. Required Planning Elements of CZM Programs

Two of the required planning elements which must be reflected in state CZM programs before they can receive federal approval -- the ade-

quate consideration of "national interest" facilities and the method to ensure against unreasonable local restriction of "uses of a regional benefit" — have already been detailed. There are, however, five additional elements which must be incorporated into a state's program.

First, section 305(b)(1) of the CZMA requires the states to identify the boundaries of its coastal zone. This boundary identification is important to federal agencies, such as the NRC, because the boundaries of the state's coastal zone will effectively determine the scope of applicability of the consistency provisions. It is logical to assume that in a state with an expansively defined coastal zone a greater number of federal activities will "affect" its coastal zone, and thus must be consistent with the CZM program, than in a state with a more restrictive boundary delineation.

Although the seaward boundary of all state coastal zones is statutorily established as the outer limit of the territorial sea (at present 3 miles), the inland boundary can vary significantly from state to state and even within states. This is because the landward boundary is to extend to "shorelands, the use of which has a direct and significant impact upon coastal waters."[59] Due to the variety of biological, topographical, political and other factors in the various states, the inland boundary may penetrate as little as a few hundred yards or as far as 20 miles or more. OCZM's regulations note that the key to fulfilling this requirement is the utilization of a procedure which results in the selection of a landward boundary that bears a "reasonable relationship" to the statutory definition of shorelands.[60] In addition, the states must utilize this procedure to identify particular coastal features, such as transitional and intertidal areas, salt marshes, wetlands, and beaches, that

are to be included.[61] Excluded from the parameter of the states' coastal zones, however, are federal lands, as noted previously in the discussion on federal consistency.

The second planning element which must be incorporated into state CZM programs is section 305(b)(2)'s requirement of defining "permissible land and water uses within the coastal zone that have a direct and significant impact on coastal waters." This requirement has obvious implications for potential applicants for NRC authorizations. In order to fulfill this requirement OCZM's regulations specify that the states must first establish which uses have a "direct and significant impact on coastal waters." Then they must determine which of these uses are permissible in light of the nature and location of the area. In making the latter determination, the states are to employ a procedure that includes an inventorying of coastal resources; a means of analyzing the capability and suitability of each resource type inventoried to accommodate existing, projected, or potential uses; and a means of assessing the environmental impact of reasonable resource utilizations.[62]

The implementing regulations state that where a particular use is prohibited, the above analyses should be employed as evidence to support the prohibition. The regulations also stipulate that:[63]

> In determining permissible uses, States should give consideration to "requirements for industry, commerce, residential development, recreation, extraction of mineral resources and fossil fuels, transportation and navigation, waste disposal, and harvesting of fish, shellfish, and other living marine resources.

The third required planning element involves section 305(b)(3)'s "inventory and designation of areas of particular concern within the

coastal zone." These areas are established largely as a result of data accumulated in the inventory of coastal resources conducted in connection with the designation of permissible uses. It should be emphasized that these specifically designated geographic areas may include not only areas of significant natural value, but also areas especially suited to intensive use or development and developed areas where reclamation, restoration, and public access measures are especially needed.[64] OCZM's regulations indicate that the development of state-wide policies and actions regarding those areas is encouraged.[65]

The fourth required planning element concerns section 305(b)(5)'s "broad guidelines on priority uses in particular areas, including specifically those uses of lowest priority." This requirement is closely tied to both the identification of permissible uses and the designation of areas of particular concern. These guidelines establish a state's policies as to the relative priorities of permissible uses in given areas throughout the coastal zone. Their purpose is to provide a framework in which a state or its localities can deal with specific development activities in various areas. OCZM's regulations specifically note the relationship between this requirement and the siting of energy facilities:[66]

> [the state's] program should establish special procedures for evaluating land use decisions, such as the siting of regional energy facilities, which may have a substantial impact on the environment. In such cases, the program should make provision for the consideration of available alternative sites which will serve the need with a minimum adverse impact. (emphasis added)

The fifth required planning element involves section 306(c)(9)'s "procedures whereby specific areas may be designated for the purpose

of preserving or restoring them for their conservation, recreation, ecological, or esthetic values." This requirement actually represents particular types of "areas of particular concern." Recognizing this similarity, the implementing regulations provide that "unless the state can make a compelling case to the contrary," all areas designated for preservation and restoration will also be considered as areas of particular concern.[67]

Taken together, these five required planning elements enable a state to designate specific geographic areas and regulate permissible uses in these areas by establishing guidelines on priorities of uses. While in some areas states may exclude certain types of development to preserve important environmental qualities, in other areas they may preserve a particularly well suited industrial site from preemption by other uses. In this manner, power stations or other permissible uses may be restricted from some coastal sites and encouraged in others. For example, the California coastal plan includes a map that divides its coastal zone into four broad categories prioritizing areas for nuclear power station development into those that are favorable, possible, require special consideration (due to earthquakes), and are prohibited.[68]

F. Planning Elements Added by the Coastal Zone Management Act Amendments of 1976

The Coastal Zone Management Act Amendments of 1976[69] signed into law on July 26, 1976, made substantial changes in the CZMA. In addition to extending the federal consistency requirements to outer continental shelf activities and establishing a $1.2 billion Coastal Energy Impact Program to assist states in meeting the needs stemming from energy de-

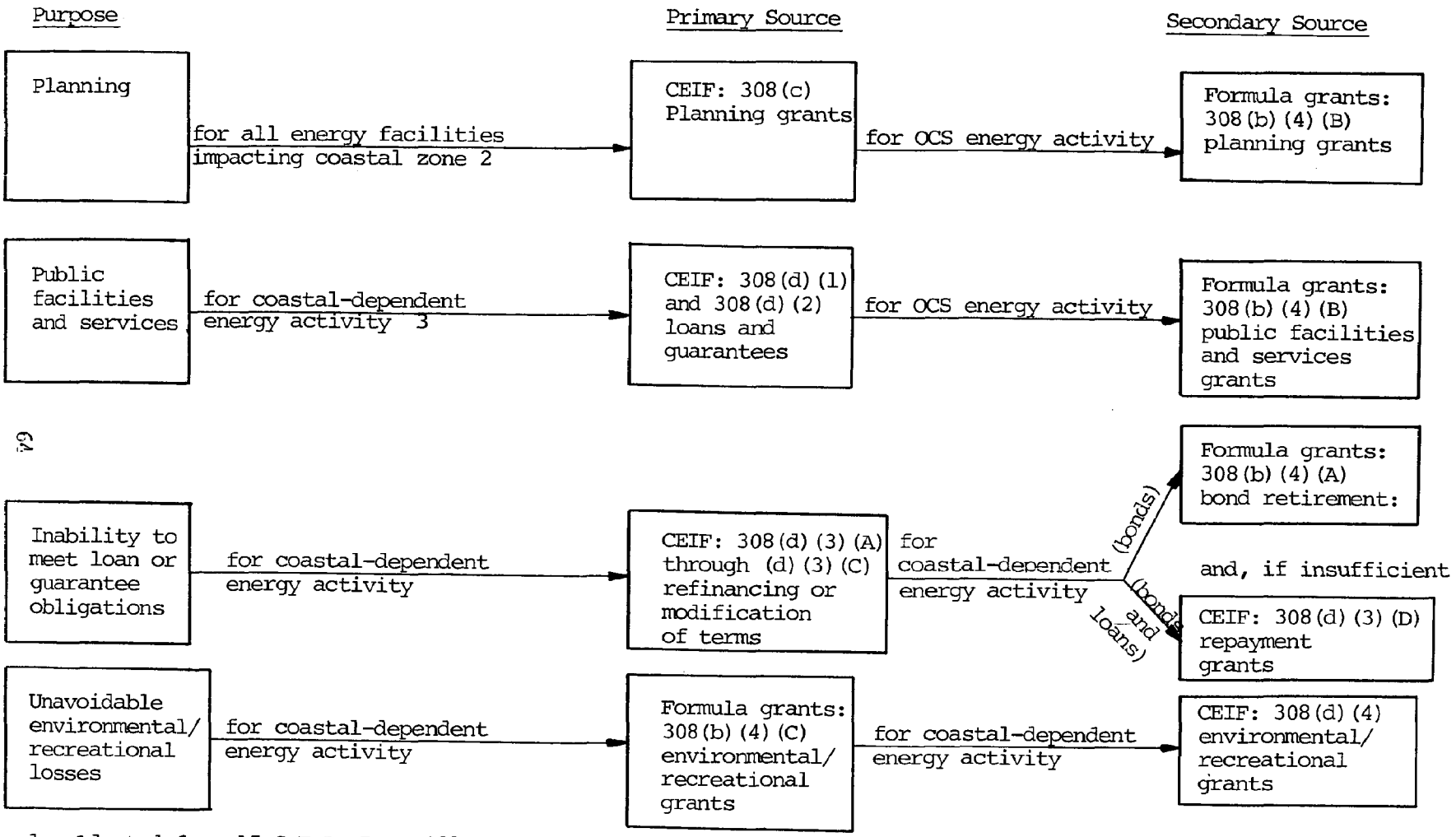
velopment activities in their coastal zones, the Amendments contain a number of provisions which might effect the siting of nuclear energy facilities. The most important of these involve section 309's federal assistance to encourage interstate planning and coordination; section 305(b)(8)'s required energy facility planning process; and section 308(c)'s planning grants to assess the economic, social, and environmental consequences of siting new or expanded energy facilities in the coastal zone.

The planning grants authorized by section 308(c) are a part of the new $1.2 billion Coastal Energy Impact Program (CEIP). The CEIP makes available to state and local governments a total of $1.2 billion dollars to be distributed in the form of loans, grants and bond guarantees from two separate but interlocking sources. Although its creation was in large part a response to state and local concerns over potential onshore impacts caused by accelerated OCS oil and gas development, portions of the CEIP funds are also available to plan for the effects generated by other forms of energy development, including nuclear power stations, uranium enrichment facilities, and nuclear fuel reprocessing plants.

From a somewhat complicated system, states can seek to obtain money from an $800 million Coastal Energy Impact Fund (CEIF) and/or a $400 million pool of money allocated as "formula grants." As depicted in accompanying Figure 1, the source of funding assistance is determined by what type of energy related activity precipitates the need for assistance and to what purpose the assistance will be applied. Under the terms of the CEIP interim-final regulations,[70] state or local governments can

Figure 1.

Coastal Energy Impact Program: Primary and Secondary Funding Sources [1]



1. Adopted from 15 C.F.R. Part 931,
2. Any facility which plays a part in the energy process, including nuclear facilities, whether or not located in the coastal zone, which has a significant affect on the coastal zone.
3. Includes only OCS energy activity and coastal-dependent activities involving liquified natural gas, oil, natural gas, or coal.

receive assistance relating to nuclear facilities under the first option in Figure 1 (planning for energy facilities impacting the coastal zone). Each of the other three options are restricted to coastal energy "activities," which are defined by section 304(4) of the amended CZMA to include only fossil fuel energy related activities.

The amount of planning and assistance available to each state under section 308(c) is determined annually by OCZM according to a list of proposed new or expanding energy facilities (including nuclear facilities) in each state and the application of a standardized planning-need factor, which estimates the amount of planning necessary for each facility based on the amount of employment generated, potential environmental impacts, and safety considerations.[71] It also should be noted that a proposed energy facility, such as a nuclear power station, need not be located in the coastal zone in order for the coastal state to qualify for a study and planning grant. Section 308(c) requires only that the new or expanded energy facility have, or be likely to have, a significant effect on the coastal zone.

OCZM's regulations specifically allow section 308(c) grants to be used for inter alia:[72]

> 1) conducting analyses required for state or local regulatory decision related to energy facilities;
> 2) conducting risk management studies, hazard analyses, emergency contingency planning and coordination studies, and assessments of mitigating measures for maintaining or improving public safety threatened by the energy facilities; and
> 3) devising strategies for public purchase of land or establishment of other enforceable land use controls for land upon or near which energy development is to take place.

Financial assistance under the CEIP is tied to the requirements of the CZMA by virtue of section 308)(g)'s eligibility requirements. Eligible states are only those:

1) with an approved management program under section 306;
2) receiving a development grant under section 305; or
3) which have been judged by the Secretary to be making satisfactory progress towards the development of a management program consistent with the policies of the CZMA.

Because most of the financial assistance made available by the CEIP concerns compensating coastal states for the costs involved in siting fossil fuel and related facilities, such as those accompanying OCS development, one of the principal effects of the CEIP, therefore, appears to be encouraging the states to site these facilities in their coastal zones. On the other hand, incentives for states to site nuclear facilities are less apparent, since federal assistance is limited to planning for their consequences. Still, by encouraging the states to set aside areas for non-nuclear energy development, the CEIP may encourage the states to site nuclear facilities in these areas, if nuclear facilities are determined to be compatible with other energy-related activities. Thus, the CEIP may in effect foster the development of "energy centers."

One aspect of the CEIP which may be of interest to the NRC concerns the manner in which OCZM plans to meet the requirements of NEPA in dispersing funds to the states. The CEIP regulations state that OCZM anticipates performing EIS's only with regard to forms of assistance which are not available in connection with the siting of nuclear facilities. That is, EIS's will probably not be prepared with respect to the dispersal of planning funds. The regulations do note, however, that the

agency "will monitor the uses of assistance [for, e.g., the planning of proposed nuclear facilities] with the requirements of NEPA in mind."[73] In this regard, OCZM will require the entity receiving the planning funds to provide "initial data and information on environmental impacts" of proposed projects, according to guidelines to be developed by OCZM.[74] The NRC may wish to encourage OCZM, in developing these guidelines, to require information that will facilitate the Commission's review of site suitability under NEPA.

The second major addition to the CZMA resulting from the 1976 Amendments concerns section 305(b)(8)'s requirement that state programs develop:

> a planning process for energy facilities likely to be located in, or which may significantly affect, the coastal zone, including but not limited to, a process for anticipating and managing impacts from such facilities. (emphasis added)

Under section 304(5)'s operational definition of "energy facilities" all facilities involved in the nuclear energy fuel cycle would be subject to the provisions of this planning process, including mining and milling, conversion, reprocessing, enrichment, and power station facilities. Moreover, the planning process would embrace not only nuclear facilities located within a state's coastal zone, but also those which would "significantly affect" it.

This planning element, along with two other newly added planning processes, concerning beach access[75] and shoreline erosion,[76] must be incorporated into all state programs approved after October 1, 1978.[77] States may receive federal approval before October 1, 1978, without these additional planning elements, provided they incorporate these requirements by that date.[78]

The newly required energy facility siting process is related to the adequate consideration of "national interest" facilities requirement, discussed above, since it may ensure that the latter requirement is fulfilled, at least with respect to energy facilities. It is also tied to the CEIP's planning funds for energy facilities, since the proposed implementing regulations state that CEIP planning funds may be used to apply the energy planning process to proposed energy facilities that qualify for CEIP planning assistance.[79]

OCZM's proposed regulations also state that this planning process should include:[80]

> (1) A means of identifying energy facilities which are likely to be located in or which may significantly affect the coastal zone;
> (2) A procedure for assessing impacts for such facilities;
> (3) Development of State policies and other techniques for the management of energy facility impacts; and
> (4) A mechanism for coordination and/or cooperative working arrangements, as appropriate, between the State coastal management agency and other relevant State, Federal, and local agencies involved in energy facility planning.

These provisions represent minimal requirements for states that are process oriented. Thus, states are given considerable lattitude within which to develop energy facility requirements. Since they reinforced the state CZM role in energy facility decision-making, the effect of the energy planning provisions will most likely be expressed in terms that restrict facility siting options to areas that state CZM programs have determined are suitable and appropriate for energy development. This, in turn, should reflect the pattern and direction of development desired by the state, based on existing and projected environmental,

social, and economic conditions.

Perhaps the most significant aspect of this planning provision in terms of NRC's current efforts to increase efficiency in the siting of nuclear facilities involves the third and fourth elements listed above. The development of statewide policies and coordinative mechanisms should serve to increase the flow of information between federal agencies and the states, between the states and localities, and among different states. In this regard, the implementing regulations call upon the states to establish cooperative arrangements that will increase the information exchange between state and federal energy agencies, interstate planning entities (discussed below), energy industries, and state utility commissions.[81]

The third major change resulting from the enactment of the 1976 Amendments involves funds authorized by section 309 to encourage coastal states to address coastal zone management issues which are interstate in nature in a cooperative manner. A total of $5 million per year in interstate grants is available to approved interstate entities. These entities include executive agencies established by interstate compacts or agreements, temporary entities created by two or more states, or existing regional interstate entities designated by the affected states.

Interstate grants are to be utilized only for purposes consistent with sections 305 and 306 of the Act. More specifically, the regulations proposed to implement section 309 require that the grants be used for the following purposes:[82]

> 1) the coordination of state coastal planning, policies and programs with respect to areas in or affecting the coastal zone;

2) the study, planning and/or implementation of unified coastal policies in such areas; and/or
3) the establishment of effective federal-state coordinative mechanisms to deal with mutual problems with respect to marine and coastal areas.

Interstate grants may provide up to 90% of the cost of these activities.

In light of the fact that section 306(c)(8) requires that state programs give "[adequate] consideration to any applicable interstate energy plan or program," if interstate grants are employed to develop interstate energy plans, these plans could serve an important role in assuring that adequate consideration is given to the siting of "national interest" energy facilities. Interstate energy plans also have an important relationship to the newly required state energy facility siting process, since OCZM's regulations explicitly require that the states take interstate plans into consideration when formulating coordinative mechanisms between their CZM agencies and other pertinent federal, state, and local agencies involved in energy facility planning.[83]

G. Potential Mechanisms to Coordinate Coastal Zone Planning with Air, Water, and Comprehensive Planning

The CZMA contains express requirements which compel state CZM programs to coordinate their planning efforts with other ongoing planning processes. Efforts to integrate the various plans are important elements in increasing efficiency in the siting of energy facilities because they can help to eliminate duplicative administration in the implementation of the plans and thus serve to increase certainty in siting determinations.

Efforts to integrate and rationalize the various planning activities described in this report have been initiated by the various federal agencies charged with administering the programs and have resulted in a num-

ber of interagency agreements.[84] However, since all of the planning processes will be implemented by states or localities, and since most of the plans are still in the development stage, it is not yet possible to assess how effectively these coordinative mechanisms will operate in practice. Still, in the context of CZM planning, it is useful to understand the obligations placed upon the states by the CZMA and the implementing regulations to integrate their CZM planning efforts with other related planning activities. Such an understanding should allow NRC, in reviewing CZM plans submitted for federal approval, to assess how well the states have met their obligations. If the states have not provided effective mechanisms to coordinate other related planning activities, NRC should encourage OCZM to ensure that they do so. This will not only serve the purpose of increasing efficiency in the siting of nuclear facilities in the coastal zone, but also will help to fulfill the CZMA's national policy of "[e]ncouraging cooperation among various state and regional entities, including cooperative procedures and joint action, particularly regarding environmental programs."[85]

There are two basic statutory directives of the CZMA which involve integrating planning efforts. The first, already mentioned in the discussion on federal consistency, concerns section 307(f)'s requirement that the "requirements" of the Clean Air Act and the Federal Water Pollution Control Act be incorporated into all CZM plans. In interpreting this provision, OCZM's regulations explicitly require coordination of CZM plans with air and water quality plans.[86]

> The basic purpose of this requirement is to ensure that the management program does not conflict with the national and State policies, plans and regulations mandated by the Federal Water Pollution Control Act, as amended, and

> the Clean Air Act as amended. The policies and standards adopted pursuant to these Acts should be considered essential baselines against which the overall management program is developed. This is a specific statutory requirement that reflects the overall coastal zone management objective of unified state management of environmental laws, regulations and applicable standards. To this end, management programs should provide for continuing coordination and cooperation with air and water programs during subsequent administration of the approved management program. (emphasis added)

In view of the strong language employed by its regulations, OCZM should not approve a state CZM plan which is not effectively coordinated with the state's air and water quality planning.

The second statutory mandate involves section 306(c)(2)(A)'s requirement that before a state's CZM program can receive federal approval, it must demonstrate that it has "coordinated its program with local, areawide, and interstate plans applicable to areas within the coastal zone existing on January 1 of the year in which the state's management program is submitted" for federal approval. This directive will embrace not only state air and water quality plans, but also state and local comprehensive plans developed under the "701" program. In interpreting this requirement OCZM's regulations state that:[87]

> The objective of this provision is to seek and achieve as complete coordination and intergration as possible at the State level of all local State and Federal programs that lead to the setting of policy or the development of public and private works, facilities or programs in the State's defined coastal zone. (emphasis added)

Among the programs with which the CZM plans must "seek and achieve" this coordination and integration are:[88]

> State programs dealing with land use controls in the coastal zone or other regulatory, licensing, permit or operating programs in the coastal zone including, but not limited to, activities such as mineral extracting, power plant siting and harbor construction. (emphasis added)

OCZM's regulations also specifically note the importance of establishing coordinative planning mechanisms regarding those portions of the CZM plan that deal with power transmission lines.[89]

While the regulations define the local, areawide, and regional plans to which the statutory provision applies as those "officially adopted" or "commonly recognized as a guide for action," they do draw a distinction regarding the amount of deference to be given to local plans, such as those which might be developed under the "701" comprehensive planning program:[90]

> ...the State management program must be coordinated with existing local, areawide and interstate plans applicable to portions of the coastal zone. It should be noted that this section does not demand compliance of the State program with local plans... (emphasis added)

That local plans stand on a somewhat different footing than areawide or interstate plans is further evidenced by the fact that section 306(c)(B) of the CZMA allows the state CZM agency to effectively override local zoning authority, so long as the local government is provided notice and an opportunity to comment on the state's action in advance.

It should be noted that although the CZMA and the implementing regulations are replete with provisions requiring coordination of CZM plans with other planning activities, unlike in the case of federal activities, consistency is not required. OCZM's regulations define coordination as:[91]

> [implying] a high degree of cooperation and consultation among agencies, as well as a mutual willingness on the part of the participants to accommodate their activities to the needs of the others in order to carry out the public interest.

It must be noted that there is a difference between requiring a "high degree of cooperation and consultation" and requiring consistency. Even with respect to air and water quality planning, it is not completely clear that consistency is required, since it is uncertain whether the entirety of air and water quality plans fall within the "requirements" that must be incorporated into a CZM plan. It does appear, though, that these environmental plans are to be accorded a higher degree of deference by CZM plans than other planning efforts, since the regulations explicitly state that CZM plans "must not conflict" with air and water quality plans.[92]

Thus, while CZM plans certainly offer substantial opportunities to develop a framework in which to foster more cohesive planning, their success in doing so will largely depend upon the efforts of the individual states. The state of Washington, for example, the only state which has received federal approval for its CZM program, has established mechanisms to coordinate various planning efforts within the state through its Environmental Coordination Procedures Act.[93] These mechanisms and those developed by other state CZM programs, may serve as an effective means to coordinate diverse planning processes in areas affecting the coastal zone. By doing so, they could go a long way toward increasing efficiency in the siting of energy facilities, including nuclear facilities.

The NRC has numerous opportunities to review state CZM efforts to coordinate planning functions which impact on the siting of nuclear facilities. Not only must the states provide NRC with an opportunity

to "fully participate" in the development of their programs, but before they can receive federal approval, NRC's views must be accorded "adequate consideration" by OCZM. In view of the fact that federally approved CZM programs, through the federal consistency provisions, will exert substantial impact upon NRC's licensing and permitting functions, the Commission should not take its opportunities to review and comment on state programs lightly. In this regard, OCZM's NEPA procedures afford an excellent opportunity for NRC to assess proposed CZM programs in terms of their effectiveness in achieving coordinated energy facility siting plans and procedures. NRC should, therefore, carefully scrutinize the EIS's prepared by OCZM, as well as the proposed state CZM plans, to ensure that the coordinative mandates of the CZMA and the implementing regulations have been met and satisfied.

This may be particularly important because the contents of CZM programs will have a large bearing on the options which may be available to applicants under NRC's still developing procedures for early site review.[94] NRC should investigate the relationship between CZM energy facilities planning and the early site review process to determine whether, in fact, the latter may result in duplicative administrative effort.

Footnotes

1. P.L. 92-583, 16 U.S.C. §§ 1451-64 [hereinafter cited as CZMA § __]. The 1976 Amendments were enacted by virtue of P.L. 94-370. In addition, minor amendments were made in 1974 through P.L. 93-612.

2. For a review of the events leading to the passage of the CZMA, see Senate Committee on Commerce, Legislative History of the Coastal Zone Management Act, Committee Print, 94th Cong., 2d Sess. (Dec. 1976), pp. 1-8.

3. Senate Report No. 92-753 (April 19, 1972), pp. 2-3. [hereinafter cited as Senate Report].

4. CZMA, § 303(b).

5. Id., § 305.

6. Id., § 306.

7. Senate Report, p.4.

8. Id.

9. Id., pp. 5-6.

10. CZMA § 306(e)(1).

11. See Ann H. Berger, "Methods of Control of Land and Water Uses in The Coastal Zone" (Office of Coastal Zone Management, 1975).

12. See OCZM's development grant regulations, promulgated at 15 C.F.R. § 920, 38 Fed. Reg. 33044 (Nov. 29, 1973) and 41 Fed. Reg. 53418 (Dec. 6, 1976); and the administrative grant regulations promulgated at 15 C.F.R. §923 (40 Fed. Reg. 1683, Jan. 9, 1975).

13. CZMA, § 305(b)(1)-(9).

14. Id., § 306(c)(1).

15. Id., § 306(c)(8).

16. Id., § 306(e)(2).

17. Id., § 308. See also proposed implementing regulations, 15 C.F.R. § 931, 41 Fed. Reg. 46724, (Oct. 22, 1976).

18. Id., § 309. See also proposed implementing regulations, 15 C.F.R. § 932, 41 Fed. Reg. 55786 (Dec. 22, 1976).

19. For a detailed analysis of the federal consistency provisions, see M. Blumm and J. Noble, "The Promise of Federal Consistency Under Section 307 of the Coastal Zone Management Act," 6 Environmental Law Reporter 50047 (1976).

20. See 15 C.F.R. § 921, 41 Fed. Reg. 42878 (Sept. 28, 1976).

21. Senate Report, p. 9.

22. 15 C.F.R. 921.6(a), 41 Fed. Reg. 42888 (Sept. 28, 1976).

23. Department of Commerce, National Oceanic and Atmospheric Administration, State of California CZM Program, Draft Environmental Impact Statement, p. 64.

24. Department of Commerce, National Oceanic and Atmospheric Administration, State of Oregon CZM Program, Draft Environmental Impact Statement, p. 56.

25. 15 C.F.R. § 921.6(d), 41 Fed. Reg. 42888 (Sept. 28, 1976).

26. Id., § 921.6(e), 41 Fed. Reg. 42889.

27. Id., § 921.6(p), 41 Fed. Reg. 42885.

28. Id., § 921.1(g).

29. CZMA, § 307(c)(1). See also proposed regulations at 95 C.F.R. 921.5, 41 Fed. Reg. 42887 (Sept. 28, 1976).

30. Id., § 307(c)(2). The proposed regulations for this provision are incorporated into those implementing § 307(c)(1).

31. Id., § 307(d). See also proposed regulations at 15 C.F.R. § 921.7, 41 Fed. Reg. 42890 (Sept. 28, 1976).

32. 42 U.S.C. § 5801-91.

33. See Introduction to Federal Consistency Regulations, § 2(B)(ii)(b)(2), 41 Fed. Reg. 42883 (Sept. 28, 1976).

34. Id., § 2(B)(iv).

35. CZMA, § 304(h).

36. Office of Legal Counsel, U.S. Department of Justice Opinion on the Excluded Federal Lands Provision of Section 304(a) of the Coastal Zone Management Act (Aug. 10, 1976).

37. 15 C.F.R. § 921.6(e), 41 Fed. Reg. 42889 (Sept. 28, 1976).

38. Id., § 925.3(a), 40 Fed. Reg. 8546 (Feb. 28, 1975).

39. Id., § 923.31(b)(2)(ii)(a), 40 Fed. Reg. 1692 (Jan. 9, 1975).

40. Id., § 925.5, 41 Fed. Reg. 8547 (Feb. 28, 1975).

41. Id., § 925.3(b).

42. Id., § 925.4. See also 923.3.(b)(2), 40 Fed. Reg. 1692 (Jan. 9, 1975).

43. Id., § 925.5(d).

44. This provision was formerly part of 307(b) until amended by the Coastal Zone Management Act Amendments of 1976 (P.L. 94-370).

45. 15 C.F.R. § 925.6, 40 Fed. Reg. 8547 (Feb. 28, 1975).

46. Id., § 925.6(e).

47. See 15 C.F.R. § 921.5, 41 Fed. Reg. 42887 (Sept. 28, 1976).

48. 15 C.F.R. § 923.15, 40 Fed. Reg. 1688 (Jan. 9, 1975).

49. Id., § 923.15(b).

50. Id.

51. Id.

52. Id.

53. Id., § 923.2, 40 Fed. Reg. 1684 (Jan. 9, 1975).

54. Id., § 923.17(b), 40 Fed. Reg. 1689 (Jan. 9, 1975)

55. Id.

56. Id., § 920.31, 38 Fed. Reg. 33049 (Nov. 29, 1973).

57. Id., § 920.32.

58. Id., § 920.31(c).

59. CZMA, § 304(a).

60. 15 C.F.R. § 923.11(b)(1), 40 Fed. Reg. 1686 (Jan. 9, 1975). See also 15 C.F.R. § 920.11, 38 Fed. Reg. 33045 (Nov. 29, 1973).

61. Id., § 923.11(b)(3).

62. Id., § 923.12.

63. 15 C.F.R. § 920.12, 38 Fed. Reg. 33046 (Nov. 29, 1973).

64. Id., § 920.13, 38 Fed. Reg. 33046 (Nov. 29, 1973).

65. Id., § 923.13, 40 Fed. Reg. 1687 (Jan. 9, 1975).

66. Id., § 923.14, 40 Fed. Reg. 1688 (Jan. 9, 1975). See also 15 C.F.R. § 920.15, 38 Fed. Reg. 33047 (Nov. 29, 1973).

67. Id., § 923.16, 40 Fed. Reg. 1689 (Jan. 9, 1975).

68. California Coastal Zone Conservation Commission, California Coastal Plan (Dec., 1975) p. 113.

69. P.L. 94-370, 90 Stat. 1013 (1976). Citations to particular sections added or revised by the 1976 Amendments are to the CZMA as amended.

70. 15 C.F.R. § 931.19, 42 Fed. Reg. 1175 (Jan. 5, 1977).

71 15 C.F.R. § 931.36(b), 42 Fed. Reg. 1177 (Jan. 5, 1977).

72. Id., § 931.33.

73. Id., 931.34, 42 Fed. Reg. 1186 (Jan. 5, 1977).

74. Id.

75. CZMA, § 305(b)(7). See also proposed implementing regulations at 15 C.F.R. § 920.17, 41 Fed. Reg. 53420 (Dec. 6, 1976); and 15 C.F.R. § 923.18, 41 Fed. Reg. 57006 (Dec. 30, 1976).

76. CZMA, § 305(b)(9). See also proposed implementing regulations at 15 C.F.R. § 920.19, 41 Fed. Reg. 53422 (Dec. 6, 1976); and 15 C.F.R. § 923.20, 41 Fed. Reg. 57007 (Dec. 20, 1976).

77. CZMA, § 305(b).

78. 15 C.F.R. § 920.60(b), 41 Fed. Reg. 53424 (Dec. 5, 1976).

79. Id., § 920.18(b)(3), 41 Fed. Reg. 53422 (Dec. 5, 1976).

80. Id., § 920.18(a). See also 15 C.F.R. § 923.19, 41 Fed. Reg. 57006 (Dec. 20, 1976).

81. Id., § 920.18(d), 41 Fed. Reg. 53422 (Dec. 6, 1976).

82. Id., § 932.3(a), 41 Fed. Reg. 55788 (Dec. 22, 1976).

83. Id., § 920.18(b)(4), 41 Fed. Reg. 53422 (Dec. 6, 1976).

84. See, e.g., Joint Agreement for Coordination of Planning Between the Office of Community Planning and Development. (HUD) and the Office of Coastal Zone Management (February 19, 1975); Interagency Agreement Between the Department of Housing and Urban Development and the Environmental Protection Agency (March 24, 1975); OCZM/EPA Water Programs Coordination Principles (August 26, 1975).

85. CZMA, § 303(d).

86. 15 C.F.R. § 923.54(b)(1) [formerly § 923.44(b)(1); redesignated by virtue of 41 Fed. Reg. 57009 (Dec. 30, 1976)].

87. Id., § 920.55(f) [formerly § 920.45(f); redesignated by virtue of 41 Fed. Reg. 53420 (Dec. 6, 1976)].

88. Id., § 920.55(f)(5).

89. Id., § 923.42(b), 41 Fed. Reg. 57008 (Dec. 30, 1976).

90. Id.

91. Id.

92. See text accompanying note 86, supra.

93. See State of Washington, Department of Ecology, Washington State Coastal Zone Management Program (Jan., 1976) pp. 47-50.

94. See proposed early site review regulations, 10 C.F.R. §§ 2, 50, 41 Fed. Reg. 16835 (April 22, 1976).

III. Federal Water Pollution Control Act

A. Introduction

The passage of the Federal Water Pollution Control Act Amendments of 1972[1] (hereafter "Amendments") marked a turning point in the approach toward water pollution control in the United States. Prior to these Amendments, the Act focused on ambient water quality - permissible discharges were calculated using the estimated assimilative capacity of the receiving body of water. Unfortunately, violations were hard to pinpoint and enforcement was slow and cumbersome. The 1972 Amendments, however, rewrote all existing federal water pollution control laws.[2] Not only did the Amendments extend federal responsibility to all "navigable waters", but they switched the focus from water quality and assimilative capacity to more easily enforceable discharge requirements.

Instead of allowing certain segments of a river or stream to remain polluted, the Amendments were established "to restore and maintain the chemical, physical, and biological integrity of the nation's waters."[3] The prohibition of pollution is emphasized by the Senate Report on the bill which states:

> This legislation would clearly establish that no one has the right to pollute--that pollution continues because of technological limits, not because of any inherent right to use the nation's water-ways for the purpose of disposing the wastes. 4/

The Amendments established two national goals:

1. (T)hat discharges of pollutants[5] into navigable water 6/ would be eliminated by 1985, 7/ and

2. (T)hat whenever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in or on water be achieved by July 1, 1983. 8/

To meet these goals the Amendments require industrial discharges to achieve an initial set of effluent limitations by 1977, and more stringent limitations by 1983. [9]

The purposes of the Amendments may be summarized as follows:

(1) to regulate discharges of pollutants from "point sources;"

(2) to regulate the discharge of vessel sewage;

(3) to regulate oil spills and hazardous substances;

(4) to regulate dredge and fill activities in the waters of the United States;

(5) to require states to have a continuous planning process for all water pollution-related activities, both point and non-point sources; and

(6) to financially assist states in waste water management planning and the construction of waste facilities.

The Amendments approach water quality management from two perspectives: regulation and planning. The regulatory program established by the law basically revolves around the issuance of permits under the National Pollutant Discharge Elimination System (NPDES) permit program (§ 402). Those states that meet requirements set by the Environmental Protection Agency (EPA) can administer the NPDES program, issuing permits to dischargers consistent with guidelines established by EPA for major categories of discharges, and subject to EPA review.

The second major focus of the 1972 Amendments is on planning. The Amendments specify that the states should set up a continuing planning process to develop a management program and procedures to carry out the water quality planning and implementation requirements of the Act. The continuing planning process is the state's management approach for organizing the activities undertaken to fulfill the Act's requirements, and for coordinating those activities with other state and local policies and programs.

The continuing planning process can itself be divided into a two-pronged approach: a continuing water quality planning process under Section 303(a) and a continuing area-wide waste treatment management planning process under Section 208. The Section 303 water quality management plans, dealing primarily with the effluent limitations necessary for point sources to meet established water quality standards, were to have been submitted to EPA by July 1, 1975, unless an extension of up to one year was granted. The Section 208 planning process, which calls for a more comprehensive water management analysis, is just now approaching the implementation stage.

B. The Permit Process

The regulatory program authorized by the Amendments has a direct and major impact on all nuclear facilities discharging "pollutants" into navigable waters, since the discharge of any pollutant is unlawful unless in compliance with the requirements under this statute.[10] Moreover, the broad definition of "pollutant"

in Section 502(6) includes heat, bringing thermal discharges from nuclear power stations within the purview of the Amendments.

The actual regulation of discharges is based upon the establishment of water quality standards and the implementation of these standards through the permit program mandated by Section 402. Water quality standards are founded upon effluent limitations--restrictions and conditions placed upon the discharge of pollutants.[11] Pursuant to Section 301(b), the effluent limitations limiting the maximum amounts of specific pollutants that may be discharged into waterways is based upon the availability of control technology. Specific limitations are applied to each category of industrial discharges and to municipal wastewater treatment plants. The first set of limitations on industrial discharges, requiring the "best practicable treatment control technology currently available," must be met by July 1, 1977.[12] By July 1, 1983, more stringent effluent limitations, requiring "best available technology economically achievable," must be met.[13]

Effluent limitations based upon the 1977 and 1983 levels of technology provide the basic tool in regulating discharges. But in a number of situations effluent limitations will be stricter than the 1977 and 1983 standards. Under Section 302(a) the Administrator of EPA has the authority to establish more stringent limitations if the 1983 standards interfere with the achievement of water quality on a specific portion of a navigable water. In addition, Section

303(d) sets out a procedure for states to identify those waters where the 1977 and 1983 effluent limitation criteria do not achieve water quality standards for that stretch of water. Once identified, those waters can, upon approval by the Administrator of EPA, be subject to maximum daily load allocations.

"New sources" that is, those sources upon which construction began after EPA promulgated "standards of performance" under Section 306, are subject to more stringent requirements than those imposed by the 1977 and 1983 standards. These stricter requirements--the standards of performance--are intended to reflect the best available demonstrated control technology, including where practicable, a standard permitting no discharge of pollutants.[14]

Stricter than national standards can also be imposed by the states, political subdivisions thereof, or interstate agencies, since all three are not precluded from adopting any effluent limitation or other restriction more stringent than those required under the Act.[15] On the other hand, however, Section 301(c) provides that in some circumstances the best available technology criteria (1983 standard) can be lifted as long as water quality does not suffer.

Effluent limitations are implemented through the National Pollutant Discharge Elimination System (NPDES) permit program authorized by Section 402 of the 1972 Amendments. Under this law the discharge of any pollutant is unlawful unless a permit that complies with all appropriate Sections of the Amendments has been

obtained. Each source of pollution must be regulated by a permit, although several sources may be included in one permit (e.g., several pipes emanating from the same plant). The permit,valid for up to five years, specifies the rules under which the discharger can continue to discharge. Each permit contains effluent limitations specific to that source, as well as a legally enforceable Schedule of Compliance. The purpose of the Schedule of Compliance is to ensure that the discharger meets the permit requirements in a timely fashion.

Section 402 of the amended Act envisions the NPDES Permit Program being administered by the Administrator of EPA unless a State meets the requirements of Section 402(b) for its own program. To gain approval the State must convince the Administrator that its program will implement all the requirements set forth in the Act, and that the State has adequate authority to enforce these requirements. Even where States have assumed the responsibility for the permit program, however, the approval for that program can be withdrawn if the Administrator determines, after a public hearing, that the State is not fulfilling the requirements of the Act.

The Environmental Protection Agency, in its transition papers submitted to the Carter Administration, described the status of the NPDES Permit Program as follows:

> The NPDES Permit Program has identified approximately 65,000 dischargers (22,000 municipal and 43,000 industrial) and has issued permits to over 50,000 of those dischargers (19,000 municipal and 31,000 industrial). Of those dischargers, about 9,000 have been identified as major dischargers (4,600 municipal and 4,400 industrial), and all but a few of them have been issued permits. A recent survey projected com-

> pliance with BPT by the deadline of July 1, 1977, by as many as 90% of the major industries. Compliance by major municipalities with secondary treatment is highly dependent upon resolution of funding problems. Authority to issue NPDES permits has been given to 28 States. Many of the major industrial and heavily populated States are now managing the NPDES program. Several other States either have cooperative NPDES agreements or are anticipated to assume the NPDES program in the near future. Approximately half of the issued permits are in NPDES States. 16/

A nuclear facility that discharges into a navigable waterway will, like any other discharger, be required to obtain an NPDES permit. Following the issuance of that permit the facility will be required to follow the rules and compliance schedule specified in the NPDES permit. However, the permit process with respect to nuclear facilities, and especially nuclear units, is modified by two additional sections of the 1972 Amendments:

(1) Section 316, which establishes special procedures to deal with thermal discharges; and

(2) Section 401, which requires all applicants for federal licenses or permits to show state (or EPA) certification that any discharges from the activity will not adversely affect water quality. These two sections are discussed in more detail below.

C. Section 316 - Thermal Discharges

Section 316(a) provides a procedure by which thermal dischargers can be granted a variance from the effluent limitations of Section 301 or the performance standards of Section 306. The Administrator of EPA (or the State, if appropriate) can suspend the applicable standards if the discharger persuades him that the

proposed standards are more stringent than necessary to guarantee "the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on that body of water."[17] The burden of proof is on the owner or operator of the source of thermal discharge. If the Administrator is persuaded, he can impose a lesser limitation that will still assure the "balanced indigenous population" standard. The regulations governing this procedure are found at 40 C.F.R. § 122.

Section 316(b) of the Amendments stipulates that any standard for point source discharges required by Section 301 or 306 must require "that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact."[18] EPA's procedure for implementing this requirement is to ask thermal dischargers applying for a 402 permit to conduct a detailed study and submit a report on the impact of the cooling water intake on the environment. Based on this report, and its own understanding of the available technology, EPA will determine what design features are required for the cooling water intake structures. Depending upon the changing state of technology and conditions in a particular body of water, an additional study might be required when a 402 permit comes up for reissuance, and an upgrading of a cooling water intake structures could be necessary.

Section 316(c) provides for a 10 year moratorium on stricter standards for certain thermal discharging point sources modified

after the enactment of the Amendments. Any such modified thermal point source which meets effluent limitations that assure a balanced, indigenous population of fish, shellfish and wildlife in the discharge area, will not be subject to any more stringent effluent limitations on its thermal discharge for 10 years.

This section, in applying to point sources modified after the enactment of the Amendments, would seem to subject any existing thermal discharger (such as an operating nuclear facility) to no more than one upgrading of standards in any 10 year period. However, new facilities appear subject to more stringent standards at any time after beginning initial operation. Only after some modification of the facility (e.g., to meet revised effluent limitations), would the discharger profit from the Section 316(c) grace period.

It should be noted that the special treatment given thermal discharges in Section 306 is founded upon an assurance of the protection and propagation of a balanced and indigenous ecological community. None of the variances from other standards can take effect absent an assurance of this continued protection.

D. Section 401 - Certification

Section 401 of the 1972 Amendments establishes a procedure to guarantee that activities requiring a federal license or permit are assured, at the earliest possible moment, of compliance with applicable state and federal water quality standards. Before any applicant can be granted a federal license or permit to conduct an activity which may result in a discharge into navigable waters, the applicant

must receive certification from the appropriate certifying agency that the discharge will comply with the relevant provisions of Sections 301, 302, 306 and 307 of the 1972 Amendments.[19]

The appropriate certifying agency in these matters is that person or agency designated by a state to certify compliance with applicable water quality standards. Where an interstate agency has exclusive authority to certify, it is the appropriate agency. And where water quality standards have been promulgated by the Administrator of EPA under Section 303(b) of the Amendments, or where no state or interstate agency has authority to certify, the Administrator shall be the certifying agency.[20]

No license or permit can be granted by the federal agency until certification is provided. The denial of certification by the certifying agency prevents the issuance of a permit or license. However, where the certifying agency does not act on a request for certification within a reasonable time,[21] the certification requirements are deemed to be waived.[22] In those instances where no standards have been promulgated under Sections 301, 302, 306 or 307, the agency shall so certify and a license will be granted.

The certifications prepared pursuant to Section 401 are not simple statements of compliance, but must include any effluent limitations and monitoring or other requirements necessary to assure that the applicant will comply with applicable federal or state water quality standards. These conditions upon which certification is granted become conditions upon the federal license or permit

itself, and are subject to all the compliance requirements of Section 401.[23]

The Nuclear Regulatory Commission could not grant a license to construct a nuclear generating facility, for example, until that applicant received a Section 401 certification from the proper agency that the facility's discharges met all applicable water quality standards. If the certifying agency denied certification, the project could not proceed. If certification was granted or waived, NRC could grant its license, but any conditions placed upon certification would have to be included as conditions to the NRC license.

In addition to the certification requirements of Section 401(a)(1) that must precede the granting of certain federal permits and licenses, there are three additional conditions under which states can review the compliance of federally licensed or permitted activities with applicable water quality standards. Section 401(a)(2) provides an opportunity for any other state whose waters are affected by discharges certified under Section 401(a)(1) to review those discharges for compliance with its own water quality standards. Under this procedure a federal licensing or permitting agency, must notify the Administrator of EPA when it receives an application and the accompanying certification. If the Administrator determines that the discharge in question will affect the quality of the waters of any other state, and if the adjacent state determines that the discharge will result in a violation of its water quality requirements,

that state can object to the issuance of that license or permit and request a public hearing on the matter. The licensing or permitting agency must then hold a hearing on the objection, and, based upon available recommendations and evidence, condition its permit to ensure compliance with applicable water quality standards. If no conditions can ensure such compliance, the agency cannot issue its license or permit.

It would seem, however, that the above scenario could only take place in those states that had water quality standards stricter than the national standards, and even then only where the standards in the affected state were more stringent than any stricter-than-national standards in the certifying state.

The second additional right to review previous certification is found in Section 401(a)(3). This right of review involves the granting of federal permits or licenses for the operation of facilities that have received certification at the time of the application for construction permits or licenses. Generally, the construction-related certification will also fulfill the certification requirements for the granting of a permit or license for operation. The certifying agency must, however, be given notice of the application for a permit or license to operate. If there have been changes since the construction-related certification in (1) the construction or operation of the facility; (2) the condition of the receiving water; (3) the applicable water quality criteria; or (4) applicable water quality standards; and the certifying agency determines that there is no

longer a reasonable assurance that the relevant provisions of Section 301, 302, 306, and 307 will be complied with, the construction-related certification will not be sufficient to fulfill the certification requirements for the license or permit to operate. Nor will such previous certification suffice if the applicant for the operating license or permit has not advised the certifying agency of changes in the permitted or licensed project that may result in violation of the applicable water quality standards.

A further opportunity for reviewing the compliance of federally permitted and licensed activities is provided by Section 401(a)(4). Under this Section, those projects which have been certified under Section 401(a)(1) at the construction stage are subject to a review of their compliance with water quality standards at the operation stage, even if the activity is not subject to a federal operating permit or license. If the certifying agency notifies the permitting or licensing agency that the activity will violate applicable standards the licensing or permitting agency may, after public hearing, suspend the license or permit until further certification is received.

The certification provisions outlined above provide a framework for the early detection and avoidance of federally permitted or licensed projects that do not comply with water quality standards. These certification requirements do not apply to actions by federal agencies themselves,[24] or to activities requiring permits or licenses from state or local authorities. Nor are the certification procedures necessarily applicable to the issuance of 402 permits, since permits

granted by States under the 402 program are not federal but rather
25
State permits.

The significance of Section 401 for the Nuclear Regulatory Commission lies in the additional opportunity it provides the states for review of applicants' projects, and an additional step an applicant must take to secure a permit or license. This certification, however, does not really impose an additional requirement on most applicants, since compliance with applicable water quality standards would be required at a later date anyway. This process is simply a further means of ensuring compliance, and also ensuring that considerations of compliance are dealt with early in the planning process of a given project.

E. Section 208 and 303: Planning Requirements

1. Introduction

Section 208 and 303 of the Amendments are considered together
26
because EPA's revised regulations consolidated their planning requirements and outlined the elements of water quality planning and management required by the two sections. Specifically, the revised regulations established a single state process (the Continuing Planning Process (CPP)) to direct the development of WQM Plans (Section 208 plans), as well as implementing programs prepared pursuant to Sections 208 and 303(e) of the Amendments and 40 C.F.R. § 131.

To set the tone for discussing the continuing planning process, Section 208 and 308 will be briefly reviewed.

i. Section 208

The purpose of Section 208 is to develop and then implement new areawide waste treatment management and regulatory programs to clean up the waters in polluted areas and basins and to prevent pollution from degrading relatively unpolluted areas. The Section 208 planning agencies are to develop a "continuing areawide waste treatment management planning process"[27] which is to result in a water quality management (WQM) plan containing, among other elements:

"the establishment of a regulatory program to -

> regulate the location, modification, and construction of any facilities within such area which may result in any discharge in such area; 28/(emphasis added) and

"the identification of measures necessary to carry out the plan (including financing), ...the costs of carrying out the plan...and the economic, social, and environmental impact of carrying out the plan... 29/(emphasis added)

The 208 (Water Quality Management) plans are to develop comprehensive strategies to combat both "point" and "nonpoint" sources of water pollution. "Point sources" are defined as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged."[30]

Although "nonpoint" pollution is not explicitly defined in the Act it embraces all pollutants which do not originate from "point" sources. The Director of the Water Planning Division of EPA has stated that "nonpoint" pollution:

> implicitly is man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water that is not introduced via a discernible, confined or discrete conveyance such as a pipe, well or container, or not introduced by discrete, readily discernible sources of pollution. Examples of nonpoint pollution are sediment introduced by runoff from agricultural land or construction sites, acid mine drainage, or salt water intrusion of ground water. 31/

There are presently no approved Section 208 Water Quality Management Plans. Several plans are, however, scheduled to be approved before the end of February, 1977.[32]

ii. Section 303

Section 303(e) provides that each state prepare a continuing planning process which will result in plans for all navigable waters within the State to include, but not be limited to:

> "effluent limitations and standards of compliance...;[33]
>
> "the incorporation of all elements of any applicable areawide waste management plans under Section 208...; 34/ (emphasis added)
>
> "total maximum daily load for pollutants...; 35/
>
> "adequate authority for intergovernmental cooperation, 36/ and
>
> "adequate implementation, including schedules of compliance, for revised or new water quality standards...;" 37/

iii. Development of the Continuing Planning Process.

Due to the decision in Natural Resources Defense Council v. Train,[38] EPA's revised regulations consolidated the requirements of sections 208 and 303 and provided for the establish-

ment of a continuing planning process (CPP).

In developing the continuing planning process, Section 130.10(a) of the regulations requires that the state and designated areawide planning agencies include:

> public participation during plan development, review, and adoption...; 39/
>
> Adequate intergovernmental input in the development and implementation of water quality management plans...; 40/
>
> The cooperation and integration of the water quality management planning in State planning area and in designated areawide planning areas ...and coordination of water quality management planning with related Federal, State, interstate, and local comprehensive, functional, and other developmental planning activities, including land use and other natural resources planning activities...; 41/
>
> The preparation, adoption, and revision, of water quality management plans for the appropriate areas of water within the State... 42/(emphasis added); and
>
> The establishment and implementation of regulatory programs identified in approved water quality management plans...; 43/

Moreover, the state agency's planning process must also provide for:

> The development, review and adoption of water quality standards... 44/(emphasis added);
>
> The development, adoption and implementation of a Statewide policy on antidegradation...45/;
>
> The review, and certification of plans for designated areawide planning areas..46/; and
>
> The annual preparation of the State strategy...47/

The requirements of the CPP related to water quality management plans, water quality standards and antidegradation are discussed more fully in subsequent parts of this section. Each of these requirements will affect the siting of any facilities which discharge into navigable waters. The aspects of the CPP emphasizing intergovernmental cooperation will, however, be mentioned here. The CPP is to assure that State WQM plans are coordinated with plans for designated areawide planning agencies within the State, with Section 208 planning in adjacent states, and with affected State, local and Federal programs, and any other applicable resource and developmental programs including:

(1) State and local land use and development programs.

(2) Activities stemming from applicable Federal resource and developmental programs including:

(i) The Solid Waste Disposal Act, as amended (Pub. L. 91-512).

(ii) The Safe Drinking Water Act (Pub. L. 93-523).

(iii) The Clean Air Act, as amended (Pub. L. 91-604).

(iv) The Coastal Zone Management Act. (Pub. L. 92-583).

(v) The Watershed Protection and Flood Protection Act. (Pub. L. 83-455).

(vi) The Rural Development Act of 1972 (Pub. L. 92-419).

(vii) Land and Water Conservation Fund Act, as amended (Pub. L. 88-578).

(viii) The National Historic Preservation Act (Pub. L. 89-665).

(ix) The Fish Restoration Act (Pub. L. 81-681) and the Federal Aid in Wildlife Restoration Act (Pub. L. 75-415).

(x) The Endangered Species Act (Pub. L. 93-205).

(xi) Wastewater Management Urban Studies Programs administered by the U.S. Army Corps of Engineers (Pub. L. 685, 1938, Pub. L. 429, 1913).

(xii) Transportation Planning administered by the Department of Transportation (Pub. L. 87-866, Pub. L. 93-366, Pub. L. 93-503.

(xiii) The Housing and Community Development Act of 1974 (Pub. L. 93-383).

(xiv) Other Federally assisted planning and management programs. 48/

In addition, in developing the CPP, the State or areawide planning agency must consider "level B" studies prepared pursuant to Section 209 of the Amendments. Of particular importance are the portions of the level B plan relating to "energy development and production factors."[49] If the level B plan, pursuant to Section 209, has not been initiated, the State or designated areawide planning agency is to identify constraints on water quality management due to "(e)nergy development and production factors,"[50] as well as other considerations.

2. Water Quality Management (WQM) Plans

A water quality management plan or Section 208 plan is "...the plan for managing the water quality, including consideration of the relationship of water quality to land and water resources and uses, on an areawide basis, for each EPA/State approved planning area and for those areas designated pursuant to section 208(a)(2),(3), or (4) (the areawide planning agencies).... Preparation, adoption, and implementation of water quality management plans... shall constitute compliance with State responsibilities under Sections 208 and 303(e) of

the Act (Amendments) and areawide responsibilities under Section 208 of the Act (Amendments)."[51] (emphasis added)

Thus, in each State there will be two kinds of Water Quality Management Plans - plans for specially designated local areas (areawide) and the state plan for the remainder of the state. The WQM plans in the designated areas will be prepared by local authorities while the state is responsible for developing WQM plans in the nondesignated areas of the state. The regulations (40 C.F.R. § 131) describe the requirements for the state and areawide planning agency planning and implementation under Section 208 of the Amendments. The WQM plans to be developed pursuant to these regulations and the implementation of these WQM plans must be in full compliance with the requirements of Section 208.[52] The state has the ultimate responsibility for the outcome of the state and areawide planning efforts.

The primary objective of the water quality management plan is "...to define the programs necessary to achieve the 1983 national water quality goal established in Section 101(a)(2) of the Act (Amendments)"[53] As stated previously, the national goal is "...wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on water be achieved by July 1, 1983."[54]

The regulations (40 C.F.R. § 131.11) specify many elements that must be included in a WQM plan. Only those elements of specific relevance to this study, however, will be discussed.

First of all, the WQM plan must contain an element on "water quality assessment and stream classification."[55] The WQM plan is to assess existing and potential water quality problems within the state planning area or designated planning area. This assessment is to include: "an identification of the types and degree of problems and the sources of pollutants (both point and nonpoint sources) contributing to the problems." Certain segments with existing or potential water quality standards violations may require controls more stringent than Best Practicable Waste Treatment Technology (BPWTT)[56] or Best Available Technology (BAT).[57] Areas where it is expected that (BAT/BPWTT) will not be sufficient to meet the 1983 water quality goals will require detailed planning for both point and nonpoint sources.

In general, it seems that applicants for a license to construct or operate a nuclear facility that would discharge into navigable waters should avoid locating within areas with current or potential water quality problems. It seems that these restrictions may tend to focus development on locations with no water quality problems. However, the regulations include an antidegradation policy to insure that high-quality waters are protected from becoming polluted. (See part 3 of this section).

The WQM plan is to contain an inventory of municipal and industrial sources of pollutants, a summary of existing land use patterns, demographic and economic growth projections for at least a 20 year planning period so that potential water quality problems can

be identified, a projection of future minicipal and industrial waste loads, and a projection of future land use patterns.[58] It seems that this data on existing and future sources of pollution and land use could be of relevance to electric utilities who are preparing assessments of future energy needs, as well as determining those locations where increased energy needs must be met.

The WQM is also to provide mechanisms for meeting applicable water quality standards,[59] including the Statewide antidegradation policy, established pursuant to Section 303(a)(b) and (c) of the Amendments, as well as any plans to revise such water quality standards. It appears that standards may need to be revised in two general situations: (1)"to adequately protect existing beneficial uses (including high quality waters for which existing standards are not stringent enough)," and (2) "to propose upgrading of existing use classifications in order to achieve the 1983 goal in Section 101(a)(2) of the Act (Amendments), wherever attainable."[60]

Water quality standards and the antidegradation policy, and their relevance to this study, are discussed more fully in part 3 of this section.

The requirement that the WQM plan include a description of existing state/local regulatory programs which are or will be utilized to implement the plan is very important to this study. Of particular relevance to applicants for a license to construct or operate a nuclear facility is that the WQM plan should assure that:

> (t)he location, modification and construction of any facilities, activities, or substantive changes in use of the lands within the approved planning area, which might result in any new or deleterious discharge directly or indirectly into navigable waters are regulated. 61/(emphasis added).

The WQM plan must also demonstrate that it has identified and evaluated all sources of pollution in the area and that it has developed appropriate control alternatives for existing and potential pollution sources. The WQM plan is also required to demonstrate that an adequate regulatory program for each category of pollutant source identified in the continuing planning process is included in the plan.[62]

These provisions of the WQM plan are of direct importance to persons seeking to construct and/or operate a facility that will discharge into navigable waters. Once the WQM plan is approved, facilities within the plan's jurisdiction discharging into navigable waters, must be consistent with the plan before a Section 402 NPDES permit can be issued.[63] Thus, those planning to construct a facility (including a nuclear facility) that will discharge into navigable waters should be aware of the requirements of the applicable 208 Water Quality Management Plan. Steps to insure that the facility is consistent with this plan should be taken at an early stage in facility development.

Finally, in the development of the WQM plan, the environmental, social and economic impacts of meeting the plan must be assessed.[64] This assessment is required to meet the requirements, in part, of Section 102(2)(c) of the National Environmental Policy Act of 1969 (see Section I of this study on NEPA) and the requirements of Section 208(b)(2)(E)

of the Amendments. The WQM plan should identify the existing conditions in the area and evaluate the likely impacts on these conditions with respect to the alternative WQM plans.

As noted previously, no WQM plans have been approved by the federal EPA. Several plans should, however, be approved by the end of February, 1977. Thus, the precise effects of these plans on applicants for licenses to construct or operate a nuclear facility or the NRC, in general, cannot be evaluated at the moment.

3. Revision of Water Quality Standards and the Antidegradation Policy.

Water quality standards, perhaps best described as "the combination of designated uses of a stream segment (such as fishing, drinking water, etc.) and pollutant criteria necessary to achieve those uses,"[65] are not static, but are in a continual reevaluation and revision process. Together with the federally required state nondegradation policy,[66] the states have an established planning objective upon which to base their day-to-day decisions regarding the permitting of potential sources of water pollution.

In November of 1975, the EPA promulgated revised regulations which, in part, set forth a strict policy to prevent any degradation of high quality waters and set forth the criteria and procedures for significantly upgrading state water quality standards. Due to the fact that the general requirements and implications of revisions of water quality standards and the antidegradation policy are adequately described in existing publications,[67] and since the requirements were

also discussed in detail in part 3 (concerning Section 208 and 303), the remainder of this part will focus on those aspects of the EPA regulations of most relevance to this study.

The essential elements of the regulations regarding revision of water quality standards have been described as follows:

> States must review their water quality standards every three years and revise them where appropriate.
>
> Water quality standards must protect public health and welfare and provide protection for downstream water quality standards.
>
> States must upgrade existing water quality standards where current water quality supports higher uses than those presently designated.
>
> States must upgrade existing water quality standards to achieve the Act's 1983 goal of fishable, swimmable waters, where attainable, with attainability premised on environmental, technological, social, economic, and institutional factors.
>
> States must downgrade existing water quality standards upon a demonstration that (a) existing standards are not attainable because of natural conditions (such as high background due to leachate from natural heavy metal deposits); (b) existing standards are not attainable because of irretrievable man-induced conditions (such as where known control methods are incapable of restoring the water to the designated uses); or (c) application of existing standards would result in substantial and widespread adverse economic and social impact (such as a large increase in unemployment not due to other factors in a large area for over one year.) 68/ (emphasis added).

Through the 401 Certification process and the 208 areawide wide

waste treatment plans, higher water quality standards will directly affect the siting of nuclear facilities. Thus, the NRC needs to ensure that its guidelines for renewal of applications for nuclear facilities, both at the construction permit stage and at the operating permit stage, take careful consideration of any ongoing revisions of water quality standards.

The state antidegradation policy must contain, at a minimum:

1. In all cases, existing instream beneficial water uses must be maintained and protected. Any actions that would interfere with or become injurious to existing uses cannot be undertaken. Waste assimilation and transport are not recognized beneficial uses;

2. Existing high quality waters must be maintained at their existing high quality unless the State decides to allow limited degradation where economically or socially justified. If limited degradation is allowed, it cannot result in violation of water quality criteria that describe the base levels necessary to sustain the national water quality goal uses of protection and propagation of fish, shellfish and wildlife and recreation in and on the water;

3. In all cases, high quality water which constitute an outstanding national resource must be maintained and, protected;

4. Any determinations concerning thermal discharge limitations under Section 316(a) of the Act will be considered to be in compliance with the antidegradation policy. 69/

EPA's regulations provide for implementation of the antidegradation policies in three stages. First, the continuing planning process that each state must develop and submit to EPA must contain a schedule for the "development and adoption of a statewide policy on antidegradation." 70 Second, after public hearings, each state is

required to adopt a new statewide policy on antidegradation between April and December, 1976. The new policy is to be submitted to EPA for approval. The requirements are to be at least as restrictive as the national policy. On July 1, 1977, state antidegradation policies are to go into effect. After that date, all proposed activities that result in increased water pollution will have to be screened for consistency with the federal-state antidegradation requirements.[71]

It should be noted that the antidegradation policy expressed in the regulations has been challenged by a group of public utilities.[72] The outcome of this litigation is uncertain.

F. The Second Memorandum of Understanding between NRC and EPA

The express purpose of the "Second Memorandum of Understanding Regarding Implementation of Certain NRC and EPA Responsibilities"[73] is "to clarify the respective roles of EPA and NRC in the decision-making processes concerning nuclear power plants and other facilities requiring an NRC and EPA license or permit."[74] While the procedures established by the Second Memorandum address cooperative evaluation, review, and processing of a variety of activities, it is clear that the Second Memorandum is not intended to restrict the statutory authority of either agency.[75] The opportunities this agreement provides for the two agencies to more effectively fulfill their respective responsibilities by increasing efficiency in the gathering and processing of data does provide, however, a positive example of two federal agencies with distinct missions cooperating to

minimize duplication of effort and maximize sound decision-making. The Second Memorandum provides moreover, a concrete illustration of how federal agencies can attempt to introduce the expressed concerns and views of the states into the decision-making process for siting of nuclear energy facilities. In this context, and for the purposes of this study, the provisions of the Second Memorandum of most significance relate to the state certification (Section 401) of the acceptability of an NPDES permit (Section 402), in light of the Section 208 areawide and state-wide waste treatment management plans.

As mentioned in the preceding sections of this chapter, once a 208 Water Quality Management plan has been an approved, an NPDES permit cannot be issued if it would conflict with the plan.[76] Thus, a proposed nuclear facility which will discharge into navigable waters and which is to be sited in an area within the purview of an approved 208 plan will not be issued an NPDES permit if it is in conflict with the plan. Of particular importance to the siting of nuclear facilities is the requirement that all 208 plans must provide for the regulation of "the location, modification and construction of any facilities within such area which may result in any discharge in such area."[77] The operative effect of this provision is somewhat unclear because no 208 plan has been formally approved by EPA. The Second Memorandum and the supporting correspondence, however, do specifically address this provision in terms of its implications on the scope of the required examination of alternatives in NRC's impact statements.

In "Appendix A--Policy Statement on Implementation of Section 511 of the Federal Water Pollution Control Act"[78] the NRC established its policy concerning the effect of Section 511 of the FWPCA upon its statutory responsibility and authority under NEPA in licensing actions. Of particular importance is the statement contained in Part 4.C:

> Neither alternative sites, facilities or activities, nor alternative systems will be considered by NRC pursuant to NEPA if and to the extent that a determination made with respect to the facility or activity under Sections 208(b)(2)(C)(ii) and 303(c)(3)(B) of the FWPCA requires a condition that a particular site, facility or activity, or system be adapted. 79/

Employing this reasoning, NRC's consideration of alternatives, for example, would be restricted by the contents of applicable water quality plans developed pursuant to the FWPCA. The legal defensibility of this approach was, however, drawn into question by the Council on Environmental Quality, which resulted in the following statement from the NRC:

> The paragraph reflects the constraint on NRC's authority under NEPA imposed by section 511(c)(2) of the FWPCA. The paragraph limits the authority of NRC under NEPA to review and evaluate alternative sites where a State or EPA, acting under section 208(b)(2)(C)(ii) of the FWPCA, establishes and implements in the particular case a regulatory program which includes review and analysis of sites and which is essentially equivalent in its scope and depth of review of environmental factors and alternatives to that required of Federal agencies, such as NRC, under NEPA.

> NRC is not relieved of its responsibility to review and evaluate alternative sites under NEPA to the extent that the State or EPA review program under section 208 (b)(2)(C)(ii) is narrower in scope of review of environmental factors than required of Federal agencies by NEPA. For example, if environmental impacts of transmission lines or if land use impacts were not considered. NRC would consider such impacts in its review of the application. 80/ (emphasis added)

Thus where prior state or EPA site review under an applicable water quality plan is narrower in scope than that required of NRC under NEPA, it will not serve to relieve the Commission of its NEPA imposed duty to consider environmental factors and alternative sites. But because one requirement for approval of a 208 plan by EPA is the "identification of...the economic, social, and environmental impact of carrying out the plan,"[81] and because EPA will prepare an EIS on the proposed 208 plan before approving it,[82] a great deal of information will be available for use by NRC in its licensing process.

It must be noted, however, that this information, standing alone, would not satisfy the requirements set forth in Appendix A to the Second Memorandum, since these environmental assessments would not normally address a specific site use. This is so primarily for two reasons. First, the 208 plan will not usually contain a designation of permissible uses on a map, let alone a positive statement that nuclear facilities will be allowed at specific locations within the planning area. Second, the primary purpose of the EIS for a proposed 208 plan is to assess the environmental implications of the process by which decisions under the plan will be made,

in light of certain physical and biological parameters within the planning region.

It is, therefore, highly unlikely that either the 208 planning process or the EIS's prepared on approved plans will serve as viable substitutes for the kind of careful environmental considerations required of NRC in its license and permit decisions. It is possible, however, that the environmental information and analyses developed in connection with water quality plans can be effectively and efficiently employed by NRC in reaching its own independent judgment of site suitability.

Footnotes

1. P.L. 92-500, 33 U.S.C. § 1251 et. seq. (hereafter FWPCA).

2. Statement by John Blatnik, Chairman, Committee on Public Works, in United States House of Representatives, Committee on Public Works. Laws of the United States Relating to Water Pollution Control and Environmental Quality, 93d Cong., 1st Sess., March 1973, p. 3.

3. FWPCA § 101(a)

4. A Legislative History of the Water Pollution Control Act Amendments of 1972, 93d Cong., 1st Sess., January 1974, p. 1286.

5. The term "pollutant" is defined by Section 502(6) to mean: "dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, and agricultural waste discarded into water."

6. The term "navigable waters" is defined by Section 502(7) to mean "the waters of the United States including the territorial seas."

7. FWPCA § 101(a)(1).

8. Id., § 101(a)(2).

9. Id., §§ 301(b)(1)(A)(i) and 301(b)(2)(A)(i).

10. Id., § 301(a).

11. Id., § 502(11).

12. Id., § 301(b)(1)(A)(i).

13. Id., § 301(b)(2)(A)(i).

14. Id., § 306(a)(1).

15. Id., § 510.

16. "Environmental Protection Agency Transition Papers to Incoming Carter Administrator on Areas of Agency Jurisdiction," 7 En. Reporter 1322 (1/7/77).

17. FWPCA § 316(a).

18. Id., § 316(b)

19. Id., § 401(a)(1).

20. 40 C.F.R. § 123.1(e) (1976).

21. What constitutes a "reasonable time" is determined by the licensing agency and is generally six months but less than one year. 40 C.F.R. § 123.1 (1976).

22. FWPCA § 401(a)(1).

23. Id., § 401(d).

24. Id., § 401(a)(6).

25. U.S. Congress, Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendment of 1972, 93d Cong., 1st Sess., January 1973, p. 814.

26. 40 C.F.R. §§ 130 & 131 (November 28, 1975). These regulations were promulgated in accordance with a court ruling, Natural Resources Defense Council v. Train (D.C. D.C. Civ. Act. No. 74-485) which found that Section 208 planning must be conducted by the States in all areas of the State, not just those areas designated by the Governor as areawide planning agency, pursuant to Section 208(a)(2)-(4) of the FWPCA. Designated areawide planning areas" are areas "...which, as a result of urban-industrial concentrations or other factors, has substantial water quality control problems."

27. FWPCA § 208(b)(1).

28. FWPCA § 208(b)(2)(c)(ii).

29. Id., (b)(2)(E).

30. FWPCA § 502(14).

31. Mark Pisano, "208: A Process for Water Quality Management" in Environmental Comment, (Urban Land Institute, Jan., 1976), p. 16, footnote 1.

32. Conversation with Ginger Patterson, U.S.E.P.A., Water Planning Division, February 4, 1977.

33. FWPCA § 303(e)(3)(A).

34. Id., (e)(3)(B).

35. Id., (e)(3)(C).

36. Id., (e)(3)(E).

37. Id., (e)(3)(F). Note: for the purposes of the FWPCA, the term "Water quality standards" includes thermal water quality standards (FWPCA § 303(e)(3)(h)).

38. D.C. D.C. Civ. Act. No. 74-1485.

39. 40 C.F.R. § 130.10(a)(1).

40. Id., (a)(2).

41. Id., (a)(3).

42. Id., (a)(4).

43. Id., (a)(5).

44. Id., (b)(1).

45. Id., (b)(2).

46. Id., (b)(3).

47. Id., (b)(4).

48. Id., 130.34(a)(1)(i)-(xiv).

49. Id., (c)(7).

50. Id., (d)(3).

51. 40 C.F.R. § 130.2(f).

52. 40 C.F.R. § 131.1(b)

53. Id., § 131.10(a).

54. FWPCA § 102(a)(2).

55. 40 C.F.R. § 131.11(b)(1).

56. Best Practicable Waste Treatment Technology (BPWTT) - "Waste treatment management plans and practices shall provide for the application of the best practicable waste treatment technology before any discharge into receiving waters, including reclaiming and recycling of water and confined disposal of pollutants so they will not migrate to cause water or other environmental pollution...." (FWPCA, Section 208(b)).

57. Best Available Technology (BAT) - "Not later than July 1, 1983, effluent limitations for categories and classes of point sources, other than publicly owned treatment works...shall require application of the best available technology economically achievable for such category or class, which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants as determined in accordance with regulations issued by the Administrator pursuant to section 304(b)(2) of this Act..." (FWPCA, Section 301(b)(2)(A)).

58. 40 C.F.R. § 131.11(c)(1)-(5).

59. Id., (e)

60. U.S.E.P.A., "Guidelines for State and Areawide Water Quality Management Program Development." p. 3-13, November, 1976.

61. 40 C.F.R. § 131.11(n)(ii).

62. Supra, note 57 at 3-63.

63. FWPCA § 208(e).

64. 40 C.F.R. § 131.11(p).

65. D. Donley & K. Hall, "Section 208 and Section 303 Water Quality Planning and Management: Where is it Now?", 6 ELR 50115, 50118 (Oct. 1976)

66. 40 C.F.R. § 130.17(e).

67. See supra., note 65; Environmental Protection Agency, Guidelines for Developing and Revising Water Quality Standards, April, 1976.

68. Supra, note 65, at 50118.

69. 40 C.F.R. § 130.17(e)(2).

70. Id.

71. Supra, note 60 at 5-15.

72. Commonwealth Edison v. Train, No. 75-64127 (N.D. Ill., filed Dec. 5, 1975).

73. 40 Fed. Reg. 60115 (1975), as amended by.

74. 40 Fed. Reg. 3515 (1976).

75. 40 Fed. Reg. 60118 (1975).

76. Id., at 60120.

77. FWPCA, 208(e).

78. 40 Fed. Reg. 60120 (1975).

79. Id.

80. Id., at 60121.

81. FWPCA, § 208(b)(2)(E).

82. 40 Fed. Reg. 16814 (1975).

IV. The Clean Air Act Amendments[1]

A. Overview

Although presently having only indirect affects on the siting of nuclear facilities and the transmission of electricity, the Clean Air Act Amendments of 1970, generally referred to as the Clean Air Act (CAA), contain important provisions affecting land use planning and energy facility siting at the state, regional, and local levels. Moreover, the achievement and maintenance of national air quality standards and the prevention of significant deterioration in air quality will determine where and to what extent new energy production sources will be allowed. Thus, the CAA raises several significant questions for examination. One aspect of particular relevance to this study is the requirement that each state develop and implement a State Implementation Plan (SIP). The SIPs establish a planning and regulatory process for attaining and maintaining the national air quality standards (NAAQS), as well as preventing significant deterioration. The SIPs play a significant role in affecting the siting of many energy and related facilities. Through the enforcement of federally established national air pollution standards and regulations, the SIPs place substantial restrictions on fossil-fuel fired electric power facilities. Moreover, the Clean Air Act's provision for an elaborate federal/state relationship where the federal EPA sets air quality standards and each state enforces these standards through a federally approved implementation plan (SIP) provides one illustration of a mechanism for achieving improved federal/state relationships and coordinated planning on a nationwide scale. To the extent that this mechanism is workable and trans-

ferrable, it can serve as an example of an existing federal/state planning framework to the Nuclear Regulatory Commission and other agencies.

There is presently no CAA air quality standard for pollutant emissions from naturally occurring radiation, although it seems that radioactive particles could be the basis for an ambient air quality standard as well as a hazardous air pollutant. Presently, EPA is proposing a legislative initiative to give the Agency the authority to protect the public health and the environment from naturally occurring radioactive materials. One activity which might be regulated is phosphate mining in Florida. In this case, it appears that the mining is causing an increase in naturally occurring radiation levels due to exposure to materials that would otherwise have remained buried. The proposal would authorize EPA to promulgate standards for the development of acceptable state programs to control radionuclides from naturally occurring sources.[2]

EPA has also been developing a Uranium Fuel Cycle Standard. This standard would address the planned releases of the uranium fuel cycle in producing electrical power, including milling operations, fuel enrichment, and fabrication of nuclear power reactors (light-water cooled only). Waste disposal and mining operations are not included in the standard. The standard is to be enforced by the NRC.[3] Although not developed pursuant to the Clean Air Act, the proposed Uranium Fuel Cycle Standard is important and is mentioned as another consideration for future review.

A significant problem may arise with respect to the control of naturally occurring radiation. Any discussion of the pros and cons of

such control should consider how the control of naturally occurring radiation (in the atmosphere or at the source) will differentiate between the naturally occurring radiation's emissions and those emissions from nuclear power facilities and supporting activities, explosions of nuclear test weapons, etc. For instance, if ambient standards are set for naturally occurring radiation, care must be taken to insure that radiation emission increases are due to naturally occurring radiation sources, and not to other sources of radiation (such as nuclear power facilities).

One recent court ruling, NRDC v. Train,[4] is of importance in any discussion of a possible national ambient air quality standard for radioactive particles. The ruling found that if a pollutant meets the conditions of §§ 108(a)(1)(A) and (B) of the Clean Air Act pertaining to National Ambient Air Quality Standards (NAAQS), then the Administrator of EPA, must establish national ambient air quality standards for the pollutant. The states are required under § 110(a)(1) to make provisions in their air quality implementation plans (SIPs), for attaining and maintaining these standards within three years. Thus, if radioactive particles are found to meet the conditions of a NAAQS, the Administrator is required to establish national ambient air quality standards. In turn, the states are required to make provisions for the attainment and maintenance of this standard within three years.

Finally certain aspects of the CAA may be of increasing importance to the nuclear power industry in the future. In areas where more energy is needed, but proposed fossil-fuel electric power facilities will violate a NAAQS or other applicable standards, nuclear facilities offer one energy alternative. Although it should be recognized that a trade-

off from one energy source to another involves more than just air quality considerations -- such as safety issues, efficiency, cost, and water requirements -- the choice between nuclear and fossil-fuel power facilities (particularly coal) may become a very important issue in the near future. This issue has already been recognized in the NRC's nuclear energy center site survey which found that "it is clearly important, both for regional and national reasons, for Midwest and Plains states to consider explicitly the balancing of nuclear versus coal-fired electric generating stations in the coming decade. The importance of the trade-off in this area might, indeed, be recognized legislatively."[5]

B. Provisions of the Clean Air Act of Interest to the NRC

The Clean Air Act (CAA), represents the first comprehensive federal/state program designed to attain and maintain clean air nationwide. To achieve its goals, the CAA directs that:

1. National ambient air quality standards (NAAQS) be established;[6]
2. Performance standards[7] for new or modified stationary sources[8] be established;
3. Emissions standards[9] for hazardous air pollutants be developed; and
4. State implementation plans[10] to insure compliance with these air quality standards be created.

Each of these requirements is discussed below.

1. National Ambient Air Quality Standards (NAAQS) (Section 109)

The Clean Air Act requires the Administrator of EPA to establish national ambient[11] air quality standards.[12] The CAA provides for two levels of standards:

1) Primary standards, which are defined as "...ambient air quality standards the attainment and maintenance of which...are requisite to protect the public health;"[13] and

2) Secondary standards, which are defined as "...ambient air quality standards...the attainment and maintenance of which...is requisite to protect the public welfare...."[14]

For a wide variety of reasons, the air quality control effort continues to focus on meeting standards that protect public health. As a result, the standards designed to protect against air quality impacts on public welfare (such as those that damage plant and animal life, degrade visibility in pristine areas, or inflict physiochemical damage to various

materials), have not received the attention or commitment intended in the CAA.[15] The Clean Air Act established two statutory deadlines for meeting these standards:

1) July 1, 1975; to attain primary ambient air quality standards for protecting public health,[16] and

2) to attain secondary ambient air quality standards for protecting public welfare within a "reasonable time."[17]

2. Performance Standards for New Stationary Sources (Section 111)

Section 111 of the CAA gives the Administrator of EPA the authority to establish federal standards of performance for new or modified stationary sources of air pollution.[18] Standards of performance are distinct from ambient air quality standards. While an ambient standard applies to the total concentration of a pollutant in the atmosphere from all sources, standards of performance constitute the maximum permissible emission levels for specific pollutants at their source.[19] The establishment of standards of performance takes into account the application of the best system of emission reduction (considering cost) that has been adequately demonstrated.[20]

The Administrator is required to publish a list of stationary sources covered by this section[21] (see footnote 38 for the list). After the standards of performance are established and the list of stationary sources approved, "each state may develop and submit to the Administrator a procedure for implementing and enforcing standards of performance for new sources located in such state."[22] This section provides that if the Administrator finds a state's procedure adequate, "...he shall delegate to such State any authority he has under this Act to implement and

enforce such standards (except with respect to new sources owned or operated by the United States)."[23] If the state does not enforce the standards, the Administrator retains the authority to enforce them.[24]

The standards of performance apply to new and modified sources. The Act also provides a procedure for a state to set standards for existing sources. The Administrator of EPA establishes a procedure, similar to that under Section 110 (State Implementation Plans) that requires each state to submit to the Administrator a plan which "...establishes emission standards for any existing source for any air pollutant..."[25], and "...provides for the implementation and enforcement of such emission standards."[26] Similar to the provisions of Section 110(c) of the Act, the Administrator has the authority "to prescribe a plan for a state in cases where the State fails to submit a satisfactory plan...,"[27] and "...enforce the provisions of such plan in cases where the State fails to enforce them...."[28]

3. Emission Standards for Hazardous Air Pollutants

Section 112 of the CAA requires the Administrator to set national emission standards for "hazardous air pollutants."[29] As defined in the Act, "hazardous air pollutant" means "...an air pollutant to which no ambient air quality standard is applicable and which in the judgment of the Administrator may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness."[30] This section requires the Administrator to publish "...a list which includes each hazardous air pollutant for which he intends to establish an emission standard..."[31] and "...proposed regulations establishing emission standards..." for the pollutants on the list.[32]

The emission standards are to be established "...at the level which... provides an ample margin of safety to protect the public health from such hazardous air pollutant."[33] They apply to both new and existing sources.

Of importance to this study is the fact that emissions of naturally occurring radiation from activities such as phosphate mining and coal-fired industrial facilities are not presently covered by an emission standard. A proposed standard for naturally occurring radiation, though, is being studied by the EPA (see part D.5.c. of this report).

4. State Implementation Plans (Section 110)

The mechanism for achieving the ambient air quality standards (and all other provisions of the CAA) is the state implementation plan (SIP).[34] Although the NAAQS are set by the federal EPA, the primary responsibility for air pollution control is with the states. Each state is to formulate a state implementation plan "...which provides for implementation, maintenance, and enforcement..."[35] of air quality standards in each air quality control region of the state. The states are divided into one or more air quality control regions. In effect, the SIPs formalize the control strategy(ies) to be followed by a state in achieving a NAAQS. Measures to prevent excessive increases in future emissions are required so as to insure that the NAAQS are maintained and that significant deterioration of air quality in areas cleaner than required by the NAAQS is prevented.

Each state must provide for the attainment of primary standards within three years of EPA's approval of the state plan, and secondary standards within a "reasonable time."[36] To insure attainment and main-

tenance of primary and secondary standards, the state plans are required to include, among other things: "emission limitations, schedules, and timetables for compliance with such limitations, and other such measures as may be necessary..., including but not limited to land use and transportation controls."[37]

In addition, the state plan must include a procedure "...for review (prior to construction or modification) of the location of new sources to which a standard of performance will apply."[38] The purpose of this review is to insure that the proposed source's impact on air quality does not interfere with the attainment or maintenance of the NAAQS or other ambient air quality goal.

While the Clean Air Act places the primary responsibility on the states to develop air pollution controls through its SIP, the Act requires the Administrator of EPA to prepare an implementation plan, or portions thereof, for a state if:

> the state fails to submit an implementation plan for any national ambient air quality primary or secondary standard within the time prescribed; the plan, or any portion thereof,...is determined by the Administrator not to be in accordance with the requirements of this section; or the state fails...to revise an implementation plan as required...."/39

Once the standards and implementation plans are in effect, EPA is required to oversee the state's enforcement.[40] While most of the responsibility for enforcing air pollution requirements, including emission limitations, does remain at the state and local level, if a state fails to act, EPA itself may step in to enforce abatement.[41]

It is important to note that as a planning process, the SIPs are dynamic and require constant review to insure they are up-to-date and

flexible. The Clean Air Act, as well as EPA's implementing regulations concerning SIPs (40 C.F.R. 52) include important provisions for reviewing, updating, and changing SIPs to accommodate changing social, economic, demographic, and technological conditions. Such changes will be made to the extent that they are consistent with the Act's essential goal -- to achieve air quality levels consistent with the protection of the public health and welfare within realistic time frames and to preserve the nation's air resources.

C. Land Use and Siting Implications of the Clean Air Act

1. Background

Public agencies and private industries involved in the planning, licensing, and/ or operation of energy facilities (nuclear and non-nuclear), as well as other major stationary sources of air pollution, should be aware of the land use implications of the CAA. Certain provisions of the Act and the implementing regulations may have significant land use implications, particularly in polluted areas and in areas of the U. S. with air cleaner than national standards. These impacts are especially important with respect to energy facility siting.

The significant provisions of the Act, which may affect land use include:

1) those defining the meaning of "significant deterioration" of air quality in areas which presently have relatively pure air (40 C.F.R. 52.21);

2) those defining new source performance standards, which determine the amount of pollution that new facilities, such as factories or

power plants can emit (40 C.F.R. 60); and

3) those providing for approval of "indirect sources" -- facilities which are not themselves polluters, but attract large volumes of traffic (40 C.F.R. 52.22).

The national ambient air quality standards establish a minimum requirement for the nation's air quality. Operating alone, it seems that these ambient standards would tend to induce the polluting sources to locate in areas with relatively clean air so as to minimize the cost of pollution abatement. This incentive to locate away from existing industrial and/or polluted areas is at least partially offset by the new source performance standards and the significant deterioration regulations.

The existing new source performance standards require 19 categories of new or modified stationary sources, regardless of location, to employ a very high level of pollution control. The use of the uniform standards of performance for the new sources insures that the cost of pollution control is not affected by location. Thus, the incentive to locate in clean air areas is significantly reduced. The new source performance standards are to insure that new sources do not interfere with any region's attainment or maintenance of air quality standards.

2. SIPs and Significant Deterioration

Primary and secondary air quality standards were established to mark the concentration of pollutants beyond which human health (primary) and welfare (secondary) are endangered. Certain areas of the country, however, enjoy better air quality than that required by these national standards. On November 9, 1972, the EPA disapproved all state imple-

mentation plans insofar as they failed to provide for the prevention of significant deterioration of existing air quality. This action was in response to the ruling in Sierra Club v. Ruckelhaus[42] that no state could permit significant deterioration in areas where air quality is already cleaner than that required by ambient standards. EPA was required to publish regulations incorporating the District Court's opinion into state implementation plans.[43]

This ruling emphasizes the twin objectives of the CAA -- to improve the air quality where pollution levels do not meet national standards, and to protect the quality of the air that is already cleaner than the national standards. In order to prevent "significant deterioration," the regulations separate areas of the U.S. into "classes" of different allowable incremental increases in total suspended particulates (TSP) and sulfur dioxide (SO_2). All land areas with air quality presently better than required by national standards for TSP and SO_2 are subject to the area classification procedure. EPA estimates that this accounts for approximately 75 percent of the U.S.'s land area.[44]

The regulations establish three classes of areas. Each class is associated with a different incremental allowance in levels of ambient air pollution concentrations. In no case, however, can national standards on air quality be exceeded.

The classifications are based on the overall land use intended for the area. Thus, they reflect the amount of growth and development desired. The three classes are:

Class I: areas where almost any deterioration of current air quality is prohibited. This classification would be used for preserving areas

of unusual beauty and aesthetic value -- such as the Grand Canyon.

Class II: areas where individual industrial facilities (but not concentrated development) are to be located.

Class III: areas where substantial energy or industrial development is intended. In these areas, increases in the ambient concentrations up to, but not exceeding, the national standards would be allowed.[45]

All areas subject to the significant deterioration regulations are initially designated as Class II. The states (and local units of government) are primarily responsible for determining an area's final classification. The regulations contain provisions allowing states to reclassify areas to accommodate the social, economic, and environmental needs and desires of the public. Federal land may also be redesignated, but only to a more restrictive classification than that provided by the state(s) in which it is located.[46] The redesignation of federal land cannot be proposed without consulting with officials of the affected state(s).[47] In either case, the Administrator of EPA may disapprove a redesignation by a state or the Federal Land Manager (on federal lands) if it is found that the redesignation has "...arbitrarily and capriciously disregarded relevant considerations set forth..." in the regulations.[48]

The regulations[49] concerning significant deterioration only apply to specific types of new or modified sources which have not started construction or modification prior to June 1, 1975. The stationary sources subject to review are the same as those subject to new source performance standards and review.

Owners or operators of a source specified in the list (see note 38 for the complete list) cannot start construction or modification[50] un-

less it is determined in a preconstruction review that:

> 1) the effect on air quality concentration of the source or modified source, in conjunction with the effects of growth and reduction in emissions...of other sources in the area affected by the proposed source; will not violate the air quality increments applicable in any other areas; and
>
> 2) the new or modified source will meet an emission limit...which represents that level of emission reduction which would be achieved by the application of best available control technology (BACT)...for particulate matter and sulfur dioxide./51

The preconstruction review of new proposed sources is to be conducted by the Administrator of EPA or a regional office of EPA, or if so delegated, by the states or local government units.[52]

It should be pointed out that the above three-level classification scheme is not absolutely binding on the states. The states retain the option of proposing alternative methods as long as they are adequate to prevent significant deterioration. The Administrator of EPA has strongly encouraged the states to accept delegation of the responsibility for carrying out the new source review procedure under these regulations, or to develop their own procedure.[53]

The regulations concerning significant deterioration will have substantial impacts on local land use planning and zoning. The significant deterioration regulations are designed to inject the consideration of air quality into land use decisions. The regulations are not intended, however, to mandate that land use decisions be based solely on air quality. The regulations provide that it is the responsibility of the states and local government units to review land use decisions and determine whether or not the air pollution by-products of the decision (for instance,

greater emissions) will interfere with the attainment or maintenance of air quality standards. It is expected that the regulations will have prime importance on the future development of relatively clean air areas of the U.S., particularly as the regulations relate to potential fossil-fuel energy development with its resultant high emission levels.

3. Review of New Stationary Sources

Section 110 of the CAA[54] requires that the SIPs include a procedure for reviewing the location of the 19 new or modified sources for which a standard of performance is to apply (see footnote 38 for the list of sources). The SIP must provide adequate authority for preventing the construction of a new source at any location, if it is determined that such source will hinder the attainment or maintenance of a primary or secondary standard.[55] The review of new sources is a particularly important control mechanism. Once the emissions of existing sources are cleaned up and the NAAQS attained, new sources must be controlled to insure that the standards are maintained.

4. New Source and Significant Deterioration Review

In the previous section on significant deterioration, it was pointed out that the Administrator of EPA urged the states to accept the delegation of authority under the significant deterioration regulations or to develop their own similar regulations.[56] If the states accept the delegation of significant deterioration review authority, then the new source review procedures and the significant deterioration review can probably be performed at the same time. The benefits of such a combined review would include elimination of overlap (e.g. if the state prepares

the new source review, while the federal EPA prepares the significant deterioration review), simplification of procedures for the applicant, and the possibility of a more comprehensive look at the affects of the proposed source of the area's air quality, land use, growth implications, and energy supply. In addition, to the degree that this joint review can be coordinated with the energy and land use-related components of 701 comprehensive plans, coastal zone management plans, and EPA Section 208 Water Quality Management Plans (where applicable), the impact of a proposed source on these various interrelated variables (water quality and quantity, energy needs and energy facility siting, desired growth objectives, etc.) can also be assessed from a comprehensive perspective.

A joint review would be possible because the reviews are nearly identical since the same 19 sources are covered. The basic difference between the two reviews is in the tests required for permit approval. Under the new source review procedures, sources must meet only the emission limitations which are part of the applicable SIP. Sources subject to the significant deterioration review, however, must also meet an emission limitation consistent with the application of best available control technology (BACT). In addition to not causing a violation of any national standard, sources subject to the significant deterioration procedures must not cause an applicable air quality increment to be exceeded.[57]

5. Indirect Sources

The control or regulation of "indirect sources" may also have considerable impacts on land use within an air quality control region. As a result of the court ruling in NRDC v. EPA,[58] the Administrator of

EPA reviewed all of the SIPs and determined that no state plan contained all of the measures necessary to assure maintenance of the air quality standards.

The Administrator determined that all SIPs were deficient in insuring maintenance of the standards -- particularly for pollutants emitted largely by motor vehicles. As one means of correcting this deficiency, the Administrator determined there should be a review of "indirect" sources of air pollution in addition to the existing provisions for a preconstruction review of new sources of air pollution.[59]

Regulations pertaining to indirect sources were promulgated on July 9, 1974. The regulations define an indirect source as "...a facility, building, structure, or installation which attracts or may attract mobile source activity that results in emissions of a pollutant for which there is a national standard. Such indirect sources include, but are not limited to:

(1) highways and roads;

(2) parking facilities;

(3) retail, commercial, and industrial facilities;

(4) recreation, amusement, sports, and entertainment facilities;

(5) airports;

(6) office and government buildings;

(7) apartment and condominium buildings; and

(8) education facilities."[60]

An indirect source, itself, does not emit pollutants, but tends to attract a substantial volume of mobile source activity (principally automobiles) that results in emissions of a pollutant for which there

is a NAAQS. Thus, the primary criteria for determining what is an indirect source is the generation of large volumes of traffic. Presently, energy facilities (both nuclear and non-nuclear) are not considered indirect sources. Further, it is not expected that EPA will consider electric power facilities for indirect source review in the foreseeable future. Electric power facilities are generally not viewed as significant generators of automobile traffic.[61]

EPA's regulations[62] require an indirect source review and approval prior to construction or modification -- if the source is likely to generate automobile traffic above a specific number of car trips per hour or per day. EPA's authority is derived from Section 110(a)(2)(B) of the CAA.[63] This section provides that the Administrator of EPA shall approve SIPs only if he determines that they include adequate measures "...to insure the attainment and maintenance of such primary and secondary standards, including but not limited to, land use and transportation controls."

Presently, the federal EPA's regulations are not being implemented. EPA is, however, working on the regulations concerning indirect sources in the event that they are reinstated. Despite the inaction at the federal level, there are presently several states implementing their own indirect source reviews. Of the 16 states, 2 localities, and 2 territories with regulations pertaining to indirect source review, approximately 10 of them are presently implementing the regulations.[64]

Since the indirect source review does not affect the siting of electric power facilities and the regulations are presently in a holding pattern at the federal level, the land use planning implications

of these regulations will not be covered in detail in this study. The techniques offered by the indirect source regulations for reviewing and regulating a facility based on its growth inducing potential should, however, be kept in mind for future reference.

6. Federal, State, and Local Air Quality Planning: Preserving Air Quality and Permitting Growth -- A Dilemma

The SIPs, through the significant deterioration provisions and the review of new sources, have significant land use impacts -- particularly on the 19 specified stationary sources (see footnote 38 for the list). These procedures provide for the review of a new source, before construction or modification, to insure that its impact on air quality does not interfere with the attainment of the NAAQS or any other applicable air quality goals (such as prevention of significant deterioration).

The provisions in the Clean Air Act requiring the SIPs to review new sources and prevent significant deterioration (in areas presently having air cleaner than that required by national standards) place a substantial level of control at the state and local government level. Many tough choices, as to which sources to permit and which to exclude, must be made. These decisions should be made, to the greatest extent possible, on the basis of adequate information, comprehensive planning processes, and through cooperation with affected localities, regions and states.

In areas having difficulty attaining the national air quality standards, revisions of the SIP are generally required. Difficult choices as to the types of and amount of new sources to be permitted into the region must be made to insure that the standards are attained

and then maintained. Areas having no substantial attainment problems must take steps to avoid future emission increases that would violate standards or significant deterioration increments.

The Clean Air Act provides for governmental cooperation in pollution control activities. The Act requires that "(t)he Administrator shall encourage cooperative activities by the States and local governments for the prevention and control of air pollution; encourage ...uniform state and local laws relating to the prevention and control of air pollution; and encourage the making of agreements and compacts between states for the prevention and control of air pollution."[65] Such cooperation will be particularly important where one area under the significant deterioration regulations is seeking to reclassify to Class I or III. Air pollution in adjacent regions can have significant adverse affects on a Class I area. Because of the small air quality increment allowed in Class I areas, a source located many miles inside an adjacent Class II or Class III area could violate the Class I increment. For instance, according to EPA, a fossil fuel power plant, just meeting the Class II increment for SO2, could -- under some rare conditions -- cause a Class I violation for SO_2 of an area up to 60 miles away.[66]

Under the regulations for preventing significant deterioration, a new source cannot be constructed if it would violate an air quality increment either in the area where it is to be located or in any neighboring area. Thus, when a Class I area adjoins a Class II or Class III area, the potential growth restrictions extend well beyond the Class I area's boundaries. In these instances, areas within less restrictive

classifications should include a buffer zone to insure the protection of the adjacent "cleaner" area. Therefore, while a Class I area may be quite small, adjoining Class II or Class III areas would need to cover a substantial area to fully utilize the allotted Class II or III increment. In summary, the Class II or Class III increment can be fully utilized only toward the area's center. At the periphery, the allowable air quality deterioration would be dictated by the adjacent Class I area. In these situations, siting decisions must be based on a comprehensive planning process and cooperation with other states and/or adjoining areas.

Comprehensive air quality planning, at the state and local levels, can prevent a fragmented, step-by-step approach to pollutant emission growth. For instance, the review of new sources provides a case-by-case basis for examining the emission limitations of a single source. The cumulative impact, though, of a group of sources, individually approved, should not be ignored. The new source review alone does not provide adequate consideration for the small individual source's contribution to overall air pollution, although the modeling does try to account for these small sources. Even though the emissions of the small source may be insignificant on an individual basis, the aggregate contribution of these types of sources could be significant. In addition, a source-by-source review procedure allocates the air resources on a first-come, first-served basis. Once the limit is surpassed, all sources exceeding a NAAQS -- whether desirable or undesirable to the area -- must be excluded. Thus, a comprehensive plan that considers the impacts of the air quality standards on the area's land use is desirable. Where

applicable, comprehensive plans prepared under the 701 Comprehensive Planning Assistance Program (see section V) should be coordinated with the air quality plans. Those 701 plans with provisions for energy facility siting and other energy-related matters will be of particular significance to the air quality planning process. To the extent that the comprehensive air quality plan specifies types of sources desired for the area, the necessary emissions can be planned for in advance.

Thus, agencies concerned with air quality planning, as well as the public in general, are faced with a dilemma -- how to control air pollution while at the same time allowing for growth in a desirable fashion. This dilemma may be of particular relevance to the entire nuclear industry over the coming years -- particularly in the clean air areas of the U. S. In cases where more energy is required by proposed fossil fuel facilities that will violate the NAAQS or other applicable standards, nuclear facilities offer one energy alternative. The air pollutant emissions from a nuclear facility are negligible compared with those of a fossil fuel plant. Although a switch from one type of energy source to another involves more than just air quality considerations -- such as safety issues, efficiency, cost, and water requirements -- the choice between nuclear and fossil fuel power facilities (particularly coal) may become a very important issue in the near future. This issue has already been recognized in the NRC's nuclear energy site survey which found that "(i)t is clearly important, both for regional and national reasons, for Midwest and Plains states to consider explicitly the balancing of nuclear versus coal-fired electric generating stations in the coming decade. The importance of the trade-off in this area might,

indeed, be recognized legislatively."[67] Several other examples of the dilemma between controlling air pollution and maintaining desirable growth and means of dealing with it are illustrated below.

As recognized above, air pollution agencies and the public in general are faced with a very complex dilemma which involves the attainment and maintenance of clean air, while at the same time accommodating social and economic demands such as housing, jobs, industrial development, and energy. The Clean Air Act may inadvertently result in an exaggeration of growth on the suburban-fringe areas of presently polluted areas. In many cases, these suburban fringe areas are finding such growth very distasteful. It seems that this growth may be partially due to the fact that the CAA places constraints on new polluting source development both in the highly urbanized areas (primarily due to the NAAQS) and in very rural areas with clean air (primarly due to the significant deterioration policy). New sources are not allowed in an area if they would interfere with the attainment of national air quality standards.

One response to this issue of growth is EPA's recent ruling on an emission "tradeoffs"[68] policy. The tradeoffs policy would establish ways for industry to grow in areas that presently exceed the ambient air quality standards for one or more pollutants. EPA's present regulations[69] concerning preconstruction review of new sources require that new or modified sources be disapproved if they would interfere with attaining or maintaining the air quality standards. The tradeoffs policy sets the ground rules for permitting at least some additional growth in these areas.

Section 110 of the CAA requires State Implementation Plans to in-

sure that primary national ambient air quality standards are attained as expeditiously as practicable. Once the standards are attained, they must be maintained. Since the NAAQS attainment dates have passed, or will soon pass, and the ambient standards have not been attained in many areas of the country, questions arise as to whether and to what extent new sources will be permitted in non-attainment areas. The interpretative ruling is in response to these questions.[70]

The ruling reflects EPA's judgment "...that the Clean Air Act does not prohibit the construction of major new sources in areas that exceeds a National Ambient Air Quality Standard (NAAQS), provided that the net effect of the new emissions together with reductions from existing facilities below that required by the applicable SIP does not exacerbate current primary (health) standard violations, but instead contributes to reasonable progress in attaining such standards(commonly referred to as tradeoffs)."[71] The conditions for allowing such new growth involve an emission tradeoff. The new source can be permitted only if the emissions from the new source are more than offset by a reduction in emissions from existing facilities. Thus, reasonable progress in attaining air quality standards from existing facilities will be made along with some additional growth.

For a new or modified source to be allowed to locate in an area presently violating health standards, "the lowest achievable emission rate" for such source would be required.[72] Thus, a new source will be allowed into a non-attainment area only if its contribution to the health violation is reduced to the greatest extent possible.

The EPA ruling in no way requires a state or local community to approve a source meeting the requirements for an emission tradeoff.

Section 116 of the Clean Air Act allows states to set requirements stricter than the minimum federal ones. The emission tradeoff concept is viewed by EPA as one option for allowing more growth, but only at the discretion of the state and local governments affected.[73]

The principle behind the "tradeoff" concept has been outlined by EPA.[74] The concept is designed to insure that emissions from the new source are more than offset by emission reductions from existing sources. Normally, such greater reductions from existing sources would not be accomplished by the Clean Air Act. Thus, the tradeoff is not on a one-for-one basis, since reductions must exceed the new source's emissions.

The significant deterioration regulations also impose some tough choices on state and local agencies with respect to future growth and preservation of air quality. Since the significant deterioration regulations involve a new source review requirement, new sources can be approved up to the point that the air quality increments applicable to the area are exhausted. When the air quality increment is exhausted, the area can be reclassified, if additional growth in emissions is desired. The secondary NAAQS, however, can at no time be exceeded.

Certainly, the significant deterioration regulations can have many impacts on an area's land and future growth potential. Several of these impacts are explored below.

A hypothetical example can be used to illustrate the land use and facility siting implications of the significant deterioration regulations. Take for instance, two adjacent regions, X and Y, both designated as Class II. The concentration of pollutants (TSP and/or SO_2) for area Y is very near the established increment for Class II areas. Thus, the

emissions available to new polluting sources is small. Therefore, it seems that potential sources would tend to seek to locate in area X (with less pollution).

In this example, it seems that area Y has several available options:

(1) if more growth is desired, area Y could seek to be reclassified to a Class III designation which would allow more emissions (either TSP or SO_2); or

(2) area Y could attempt to attract non-polluting sources of growth. One example would include nuclear power facilities to meet the area's energy needs, since the emissions from nuclear sources do not significantly affect the air quality standards.

In area X, growth could also continue up to the Class II cutoff. Since each new polluting source permitted in the area subtracts from the remaining increment, area X should be careful to only permit the type of sources that are deemed the most desirable or most necessary. To the greatest degree possible, the decision about which sources to permit should be based on a comprehensive air quality plan. As noted previously, the comprehensive air quality plan should try to balance the costs and benefits (economic, environmental, social, etc.) of various types of sources -- such as energy facilities -- with the future needs and requirements of the area. If possible, air quality plans should be coordinated with applicable HUD 701 Comprehensive Plans, EPA Section 208 Water Quality Management Plans, and Coastal Zone Management Plans.

One potential problem with the significant deterioration regulations can be illustrated by expanding the above example. If area Y was reclassified as a Class III, its pollutant emissions would be allowed to increase up to the national air quality standards.[75] Intensive develop-

ment could occur in a Class III area. To insure that adjacent area X's air quality is not degraded, new sources in Y would have to locate near the center of the Class III area. In addition, strict development controls in the periphery areas adjacent to Class I or Class II areas would be necessary. The basic problem is that air pollution does not recognize political boundaries. While the regulations provide a procedure for area Y to reclassify from Class II to Class III, this change cannot be allowed to adversely affect adjacent areas with more restrictive classifications.

The provisions for prevention of significant deterioration can have a potentially important impact on fossil-fuel energy development — particularly in the clean air areas of the U.S. Future increases in domestic energy production through increased utilization of our natural fossil-fuel supplies will significantly affect the growth and development in extraction and energy production areas. Growth associated with these activities (extraction and power production) has the potential to cause violations of the NAAQS and significant deterioration increments. This is due to the fact that in the clean air areas rated as Class I -- very little growth in pollutant emission would be allowed. In Class II areas, well-controlled and managed growth would be permitted up to the Class II increment, but intensive development would not be allowed. The problem for future fossil-fuel power is that these facilities produce large amounts of pollutants. Nuclear power facilities, which do not adversely affect air quality, are one example of an alternative energy source.

D. Other Provisions of the Clean Air Act and Significant Issues

1. Energy Supply and Environmental Coordination Act[76] (ESECA)

The energy crisis has led to a close scrutiny of the Clean Air Act. In general the CAA influences the generation of electricity through the significant deterioration and new source review regulations by regulating the emissions from fossil fuel power plants. Thus, the Act directly affects the siting of these and other facilities.

To comply with ambient air quality standards, many states had directed power plants to use cleaner, low sulfur fuel (oil, gas, and coal) to minimize emissions. The switch to clean fuels requires very little modification of a plant's operation or hardware. The availability of these fuels is, however, rapidly decreasing.

In reaction to the oil embargo of 1973-1974, Congress passed the Energy Supply and Environmental Coordination Act (ESECA) in June of 1974. The ESECA mandates the implementation of a national program to conserve petroleum products and natural gas by increasing the use of coal or other fuels by the major fuel consumers.

The ESECA requires the Federal Energy Administration (FEA) to direct power plants to switch from oil or gas to coal in certain cases. The conversion to coal must be practical, coal must be available, and plant reliability must not be impaired. Before an FEA order becomes effective, EPA must be consulted. EPA is to insure that the conversion meets certain air pollution requirements. The EPA can extend compliance deadlines set by the CAA to allow a power plant to convert to coal only under certain conditions. These conditions[77] are:

the use of coal will not violate any primary air quality standard;

. if a plant is located in an Air Quality Control Region where the primary standards for any pollutant are being violated, the plant must be able to meet state emissions limitations established for that pollutant;

. if the burning of coal will result in the increase of any pollutant for which no standards exist but which may threaten public health, EPA can force cancellation of the FEA order after the compliance date has been set. The ESECA requires that all plants converted to coal comply with state emissions limitations no later than January 1, 1980. This compliance may necessitate the installation of expensive equipment. If these conditions are not met, the compliance deadline can not be extended.

2. Section 116 and Section 118 of the CAA

Section 116 of the Act provides for federal enforcement if necessary. The Administrator has the authority to force a violator to comply with the requirements of a state implementation plan or the Administrator may bring a civil suit against the violator.[78] On the other hand, if the Administrator finds that the state is failing to enforce the plan effectively, he can, after notifying the state and giving public notice, enforce any requirement of the state's plan "by issuing an order to comply with such requirement"[79] or "by bringing a civil suit...."[80]

It is also important to point out that each state retains the right to set standards stricter than those set by EPA.[81] Section 118 also provides that federal facilities are subject to the federal, state, interstate, and local air pollution requirements.[82]

3. Citizen Involvement in the CAA

The CAA also provides for strong public involvement. The "citizen suit" provision[83] of the CAA provides that suits may be brought against any person (including the United States, its agencies, and any state or local government instrumentality) alleged to be in violation of an emission standard or limitation or a compliance order issued by the Administrator of EPA if EPA has not already commenced a civil enforcement action under § 113.[84] Additionally, an action may be brought against the Administrator himself where he is alleged to have failed to perform any non-discretionary duty under the statute. This provision's purpose was to encourage, as well as to supplement, federal and state efforts at enforcement.[85]

4. EPA/HUD Agreement

Although not a provision of the Clean Air Act, a recent EPA/HUD agreement is relevant to the workings of the SIPs. The agreement provides that local agencies preparing community development plans in order to comply with the HUD 701 Comprehensive Planning Assistance Program must allow local air quality agencies the opportunity to review the plans for consistency with the SIPs. On the other hand, local air quality agencies must allow local community development agencies to review the SIPs for consistency with the corresponding land use provisions in the comprehensive plan.

The agreement states that "neither HUD nor EPA will approve a land use element (of a comprehensive plan) or a land use related provision of a SIP, respectively, unless "an opportunity for local plan review is afforded. The Office of Management and Budget's A-95 clearinghouse

procedure will be used in making the review.[86]

E. Control of Radioactive Emissions

1. Introduction

It is important to note for the purposes of this study that there seems to be a long-term and growing concern over the harm that may be caused by radiation. EPA has the authority to protect the public health and the environment from adverse effects due to radiation exposure. At present, EPA's emphasis on controlling radiation exposure is focused on two source areas: nuclear energy applications and naturally occurring radioactive materials. Each of these types of sources of radiation will be discussed with reference to the EPA/NRC interaction and the possible planning implications of controlling this radiation.

2. Nuclear Energy Facilities

The radiation control problems resulting from nuclear electric power generation requiring evaluation and control include not only those due to nuclear reactors, but also uranium milling conversion, enrichment, fuel fabrication, fuel reprocessing, waste disposal, and all transportation of radioactive materials. The projected growth in the number of these facilities by the year 2000 increases the need for adequate controls to govern their design, construction and operation. Presently, there are 56 nuclear reactors and 53 other fuel cycle facilities in operation.[87] By the year 2000, however, EPA estimates that there will be 500 nuclear reactors and 175 other fuel

cycle facilities operating in the United States alone. Such an increase in facilities carries with it the increased likelihood of population exposure to radioactive materials released into the environment.[88]

EPA has identified three major ways in which people and the environment may be exposed to radiation from all phases of nuclear power generation:

> "1) Planned releases of radioactive material to air and water as part of the routine operation of the facility.
>
> 2) Accidental releases which have a low probability of occurrence but high environmental and public health consequences.
>
> 3) Leakage of long-lived waste materials caused by accidents or inadequate environmental barriers." [89]

Each of these is discussed briefly below.

a. Planned Releases

EPA states that it is "...technologically unfeasible to produce nuclear energy without discharging some small quantities of liquid and gaseous material to the environment."[90] With the projected growth in the number of facilities, the probability that some members of the population will be exposed to planned radioactive releases from these facilities increases. In order to aid in the protection of the population, EPA has the authority to establish "generally applicable standards" for the protection of the environment from radioactive material. This authority was transferred to the EPA by the Reorganization Plan of 1970.[91] "Standards" as referred to in the

reorganization plan "...means limits or quantities of radioactive material, in general environment outside the boundaries of locations under the control of persons possessing or using radioactive material."[92] Presently, EPA is involved in setting proposed standards for operations in the uranium fuel cycle, "...to (i)nsure that population exposure from planned releases of radioactive effluents is limited to 25 millirem per year to an individual in the general population, regardless of the number of facilities impacting on him. This standard also sets a limit on the quantity of long-lived radionuclides that may be emitted in order to prevent a buildup of these substances in the environment."[93]

The NRC has the authority to implement and enforce the standards set by EPA for operations in the uranium fuel cycle. NRC does this through its licensing of individual facilities. EPA is to assure that the standards are being complied with.

b. Accidental Releases

Nuclear power generation involves some risk of accidental release of radioactivity. The possibilities of this risk are the subject of much debate among proponents and opponents of nuclear power. The NRC regulates engineering design, facility siting and plant operations to minimize risk from accidental releases. The EPA's objectives are to minimize the probability of accidents and to minimize population exposure to those accidents that do occur.[94]

c. Radioactive Waste Management

While a small amount of radiation is released into the air and

water (planned releases), the bulk of the radioactive by-product is collected and retained. This remaining waste must then be disposed of through the use of environmental barriers, and other containment methods. EPA is responsible for setting standards which must be met in connection with waste management activities. These standards are to be coordinated with ERDA, NRC, and the U.S. Geological Survey (USGS).[95]

d. Naturally Occurring Radioactive Materials

Presently, naturally occurring radioactive materials represent the largest single source of population exposure to radiation. For instance, many industries mine and process raw materials containing significant concentrations of uranium, thorium, and their products. These industries include phosphate mining, and other types of mining industries, as well as oil shale development and geothermal energy production.

EPA asserts that these radioactive materials can affect man and the environment in four ways:

> "First, gaseous and particulate radioactive materials are released to the air, becoming available for human inhalation. Second, the radioactive materials from the ores or the associated by-products can enter ground and surface waters by effluent discharges, land runoff, and leaching from waste piles. Third, an effect is caused by the close contact of workers with the radioactive material. Fourth, a potential impact is contamination of the food chain, which may result in man's ingestion of radioactive materials." 96

EPA groups the problems involving naturally occurring radioactive materials into three categories:

"1) Structure related sources, such as construction materials and building sites.

2) mineral mining, milling, and utilization sources such as phosphates, rare earths, copper and titanium, and

3) energy-related sources, such as coal, oil shale, geothermal, uranium, and thorium mining and milling." 97

Natural radiation sources account for approximately 60% of the total exposure received by the U.S. population. Although much of the exposure to natural radiation is unavoidable, control of the activities that redistribute natural radionuclides into the environment could reduce some of this exposure.[98] It is EPA's objective to minimize population exposure to these sources of radiation. There is, however, no comprehensive Federal program directed to control naturally occurring radiation. EPA, through its federal guidance function is, however, mandated to address this issue.[99]

EPA is presently preparing a legislative initiative giving the agency the authority to protect the public health and the environment from the adverse effects of naturally occurring radioactive material. This proposal would authorize EPA to promulgate standards for the development of acceptable State programs for controlling radionuclides from natural sources.[100]

3. Summary

EPA has the authority to set generally applicable environmental standards for radioactivity from activities in the uranium fuel cycle. These standards appear to be a cross between the national ambient air quality standards and the point source standards established under the Clean Air Act. It is important to point out,

however, that these standards are promulgated pursuant to the Atomic Energy Act of 1954,[101] not the Clean Air Act.

The possibility of establishing a NAAQS for radiation, through the provisions of the Clean Air Act, is of direct significance to this study. One recent ruling, Train v. Colorado Public Interest Research Group, Inc.[102] found that the Federal Water Pollution Control Act Amendments of 1972 do not remove the NRC's authority over nuclear materials in nuclear power facility effluents. In light of this ruling, it seems that the Clean Air Act could be interpreted to regulate only naturally occurring radiation--radiation that is not from "source materials",[103] "special nuclear materials",[104] or "by-product materials".[105] The above ruling, however, may not apply to the Clean Air Act, particularly in view of the ruling in NRDC v. Train[106] requiring the Administrator of EPA to establish a NAAQS if a pollutant is found to meet the specified conditions for such a standard. The conditions of § 108(a)(1)(A) and (B) of the CAA for establishing a NAAQS are--that it has an adverse effect on public health and welfare, and that the presence of the pollutant in the ambient air results from numerous or diverse mobile or stationary sources. If radiation is found to meet these conditions, a NAAQS must be established. A national ambient air quality standard for radiation would affect not only sources involving naturally occurring radiation, but also nuclear power facilities and possibly the manufacture and testing of nuclear weapons.

Footnotes

1. 42 U.S.C. 1857 et seq., as amended (hereinafter cited as CAA).

2. "Environmental Protection Agency Transition Papers to Incoming Carter Administration on Areas of Agency Jurisdiction", Environment Reporter, Vol. 7, No. 36, 1/7/77, p. 1289 and pp. 1307-1308.

3. Id., pp. 1307-1308.

4. NRDC v. Train, No. 76-6075 (2d Cir., Nov. 10, 1976).

5. U.S. Nuclear Regulatory Commission, Nuclear Energy Center Site Survey (1975), Vol. IV, p. 3-32., January 1976.

6. CAA, § 109.

7. Id., § 111.

8. Stationary sources are defined as "...any building, structure, facility, or installation which emits or may emit any air pollutant", CAA, § 111(a)(3).

9. CAA, § 112.

10. Id., § 110. Id.

11. Ambient refers to the outdoor air (atmosphere). Thus, ambient standards are limits on the amount of pollutant permitted in a region's air.

12. CAA, § 109(a)(1).

13. Id., § 109(b)(1).

14. Id., § 109(b)(2).

15. Council on Environmental Quality (CEQ), Seventh Annual Report, p. 254, 1976.

16. CAA, § 110(a)(2)(A)(i).

17. Id., § 110(a)(2)(A)(ii).

18. Id., § 111(b)(1)(A).

19. Conservation Foundation, A Citizens Guide to Clean Air, p. 42.

20. CAA, § 111(a)(1).

21. Id., § 111(b)(1)(A).

22. Id., § 111(c)(1).

23. Id.

24. Id., (c)(2)

25. Id., (d)(1).

26. Id.

27. Id., (d)(2)(A).

28. Id., (d)(2)(B).

29. Id., § 112(a)(1).

30. Id.

31. Id., § 112(b)(1)(A).

32. Id., § 112(b)(1)(B).

33. Id.

34. CAA, § 110.

35. Id., § 110(a)(1).

36. Id.

37. Id., § 110(a)(2)(B).

38. Id., § 110(a)(2)(D). The sources subject to the new source review requirements are:

    1) Fossil-fuel steam electric plants of more than 1000 million B.T.U. per hour heat input

    2) Coal cleaning plants

    3) Kraft pulp mills

    4) Portland cement plants

    5) Primary zinc smelters

6) Iron and steel mills

7) Primary aluminum ore reduction plants

8) Primary copper smelters

9) Municipal incinerators capable of charging more than 250 tons of refuse per 24 hour day

10) Sulfuric acid plants

11) Petroleum plants

12) Lime plants

13) Phosphate rock processing plants

14) By-product coke oven batteries

15) Sulfur recovery plants

16) Carbon black plants (furnace process)

17) Primary lead smelters

18) Free conversion plants

19) Ferroalloy production facilities commencing construction after October 5, 1975.

Note: these sources are also subject to the significant deterioration regulations.

The Conference Report on the Clean Air Act Amendments of 1976 (September 30, 1976), added 9 additional sources to the above list. It would be reasonable to assume that the list of 19 sources will be increased in the near future.

39. CAA, § 110(c)(1).

40. Id., §§ 113(a)(1) and (2).

41. Id., § 113(a)(2).

42. Sierra Club v. Ruckelshaus, 344 F.Supp. 253 (1972).

43. CEQ, Sixth Annual Report, p. 50.

44. "Environmental Protection Agency Transition Papers to Incoming Carter Administration on Areas of Jurisdiction." Environment Reporter, Vol. 7, No. 36, 1/7/77, p. 1292.

45. Id.

The standards for significant deterioration are:

Pollutant — Increments (U/m^3)

		I	II	III	Class III Ceiling
TSP	annual	5	10	-	60
	24 hr.	10	30	-	150
SO_2	annual	2	15	-	80
	24 hr.	5	100	-	365
	3 hr.	25	700	-	1300

46. CAA, § 52.21(c)(3)(iv).

47. Id., (c)(3)(iv)(b).

48. Id., (c)(3)(vi)(a) and (b).

49. 40 C.F.R. § 52.

50. Modification of the source is not subject to these regulations if (1) such modification does not involve the amount of sulfur oxides or particulate matter emitted or (2) if the source is modified in order to utilize an alternative fuel, or higher sulfur content fuel.

51. 40 C.F.R. § 52.21(d)(2)(i) and (ii). "Best Available Control Technology" (BACT) is defined as equivalent to the new source performance standards promulgated under § 111 of the Clean Air Act (42 U.S.C. § 1857c-6). If no standard of performance has been promulgated for a source, best available control technology is determined on a case-by-case base. (40 C.F.R. § 52.01(f) (1975)).

52. 40 C.F.R. § 52.21(f)(1)-(4).

53. Comments on 40 C.F.R. § 52, Federal Register, Vol. 39, No. 235, (December 5, 1974), p. 42512.

54. CAA, § 110(a)(2)(D).

55. Id., § 110(a)(4).

56. 40 C.F.R. § 52.21(f)(1)-(4), and comments on 40 C.F.R. § 52, Federal Register, Vol. 39, No. 235.

57. Id.

58. 475 F.2d 968, D.C. Cir. (1973).

59. Conversation with Jane Mitchell, Air and Waste Management, U.S.E.P.A., Washington, D.C., January 18, 1977.

60. 40 C.F.R. § 52.22(b)(1)(i).

61. Conversation with Jane Mitchell, Air and Waste Management, U.S.E.P.A., Washington, D.C., January 18, 1977.

62. 40 C.F.R. § 52.22.

63. CAA, § 110(a)(2)(B).

64. Supra, note 59

65. CAA, § 102(a).

66. U.S.E.P.A. Office of Transportation and Land Use Policy "Guidelines on Reclassification of Areas Under EPA Regulations to Prevent Significant Deterioration of Air Quality," June 1975.

67. U.S. Nuclear Regulatory Commission, Nuclear Energy Center Site Survey (1975), Vol. IV, p. 3-32, January 1976.

68. Comments on Interpretative Ruling for Implementation of the Requirements of 40 C.F.R. 51.18. December 21, 1976, Federal Register, Vol. 41, No. 246, pp. 55524-55527.

69. 40 C.F.R. 51.18.

70. Supra, note 68.

71. Supra, note 44, at p. 1302.

72. Supra, note 68, at p. 55528.

73. Id.

74. Supra, note 44, at p. 1302.

75. Supra, note 66, at p. 27.

76. 15 U.S.C. §§ 791-798.

77. CAA, § 119(d)(2)(A), (c)(2)(C), and (d)(3)(B)(iii).

78. CAA, § 113(a)(1).

79. Id., (a)(1)(A).

80. Id., (a)(1)(B).

81. Id., § 116.

82. Id., § 118.

83. Id., § 304.

84. Id., § 304(b)(1)(B).

85. Id., (a)(2).

86. HUD/EPA agreement. (Nov. 1, 1976).

87. U.S.E.P.A. Office of Radiation Programs, "Radiation Protection Program Strategy" (Draft), p. 7.

88. Id., p. 8.

89. Id.

90. Id.

91. 5 U.S.C. App. II; 35 F.R. 15623, 84 Stat. 2086.

92. Id.

93. U.S.E.P.A. Office of Radiation Programs, supra note 87 at p. 8.

94. Id.,p. 9.

95. Id.,p. 9-10.

96. Id.,p. 13.

97. Id.

98. Id.

99. Id.

100. "Environmental Protection Agency Transition Papers to Incoming Carter Administration on Areas of Jurisdiction." Environment Reporter, Vol. 7, No. 36, 1/7/77, p. 1289.

101. 42 U.S.C. §§ 2011 et. seq. (1970).

102. Train v. Colorado Public Interest Research Group, Inc., ___U.S.___, 6 ELR 20549.

103. These are the raw nuclear materials essential to the production of fissionable ("special") nuclear materials, 42 U.S.C. § 2014 (z).

104. These are substances capable of sustaining a chain reaction and thus usable as nuclear fuel, 42 U.S.C. § 2014(aa).

105. These are materials yielded in or made radioactive incident to production or use of special nuclear materials, 42 U.S.C. § 2014(e).

106. NRDC v. Train, No. 76-6075, (2nd Cir., November 10, 1976).

V. Housing and Urban Development (HUD) 701 Comprehensive Planning Assistance Program

A. Overview

The "701" program has been the major source of federal financial support for comprehensive planning. The program began in 1954 as section 701 of the Housing Act of 1954.[1] Funds from the 701 program have financed the comprehensive planning activities of various state, multi-state, metropolitan, regional, and local governmental planning bodies. The 701 program seeks to aid in the establishment of comprehensive planning processes to guide rational decision-making. 701 funds may be used for undertaking activities necessary to:

1. "[s]upport and strengthen overall governmental capability of state and local governments...";
2. "[d]evelop energy conservation measures and facility siting plans...";
3. "[d]evelop and carry out a comprehensive plan...";
4. "[d]evise methods for obtaining effective citizen involvement..."; as well as other objectives./2

Although the 701 program has been in existence for over twenty years, the 1974 Amendments[3] to the Housing Act, for the first time, required the planning process to result in a tangible product. Now the ongoing comprehensive planning process must result in the preparation of a land use element. This is of particular importance to this study. The required land use element is to include: "[s]tudies, criteria, standards, and implementing procedures necessary for effectively guiding and controlling major decisions as to where growth shall take place" and "...general plans with respect to the pattern and intensity of land use for residential, commercial, industrial, and other activities."[4] After August 22,

1977, no 701 planning funds will be available unless the requirements of the land use element are satisfied.

Participation in the 701 program is voluntary.[5] Although financial assistance to state and local governmental units for developing an ongoing comprehensive planning process is provided, the program provides no regulatory controls. Thus, the implementation of the comprehensive plan is dependent upon existing state and local regulatory tools. The 701 funds may, however, be terminated if adequate progress toward implementing the plan is not demonstrated.

B. Provisions of the 701 Comprehensive Planning Assistance Program of Interest to the Nuclear Regulatory Commission

1. Introduction

The primary objectives of the 701 Comprehensive Planning Assistance Program are to assist grant recipients in:

1. developing and improving the overall governmental capability of state and local governments. This task would include efforts to "[i]mprove public service productivity...; modernize state and local government institutions...; use natural resources wisely...; and develop a policy-planning-evaluation/6 capacity."/7

2. addressing special problems or opportunities including: "[p]lanning for the recovery from and to lessen the impact of floods and other natural or man-caused incidents; developing energy conservation measures to reduce energy consumption and to assist communities facing substantial impact due to exploitation of energy resources situated within or adjacent to the community; and planning for adequate energy supplies and siting of necessary supporting facilities./8 (emphasis added)

3. developing coordinative mechanisms to facilitate planning on a unified basis for states, metropolitan and non-metropolitan areas, counties, municipalities and Indian tribal groups or bodies./9

4. developing and carrying out a comprehensive plan which considers energy and environmental needs and impacts and includes: "the development of land use plans...; the development of housing plans...; and public facility, utility, recreational, conservation, and other plans and regulatory measures to achieve state and local goals and objectives."/10 (emphasis added)

Eligible applicants[11] for 701 grants include "...a state, large city, urban county, locality, areawide planning organization, or Indian tribal group or body." The Governor or chief executive may designate one or more agencies to undertake the comprehensive planning and management assistance in whole or in part.[12]

Recognizing the need to coordinate 701 activities with other federal assisted programs, the Housing and Community Development Act of

1974 states that:

> The Secretary shall consult with the heads of other federal departments and agencies having responsibilities related to the purposes of this section including...the protection and enhancement of the Nation's natural environment with respect to (1) general standards, policies, and procedures to be followed in the administration of this section and (2) particular grant actions or approvals which the Secretary believes to be of special interest or concern to one or more of such departments and agencies./13 (emphasis added)

To seek greater coordination, interagency agreements have been signed between HUD and the Department of Interior (for its outdoor recreation program), the Federal Energy Administration (FEA), the Environmental Protection Agency (EPA) (for its water and air quality planning programs) and the Office of Coastal Zone Management (NOAA, Department of Commerce).

2. Comprehensive Planning

Each recipient of 701 planning assistance must develop an "ongoing comprehensive planning process." The regulations define "ongoing comprehensive planning process" as "...a process...that involves the development and subsequent modification of a comprehensive plan and provides for at least biennial review of the elements thereof..."[14] (emphasis added). At a minimum, the comprehensive plan "...shall include a housing element and land use element." The elements are to be consistent with each other and with the stated national growth policy objectives. According to the regulations, "[t]he elements shall specify broad goals and annual objectives (in measurable terms wherever possible); programs designed to accomplish the objectives; and procedures, including

criteria set forth in advance, for evaluating programs and activities to determine whether the objectives are being met."[15] (emphasis added)

701 grants will not be made to any applicant after August 22, 1977, unless the applicant has satisfied the requirements of the housing and land use elements required in the comprehensive planning process.[16]

According to the notice "Land Use and Housing Elements Guidelines," published February 1, 1977,[17] "[o]n a two year cycle, each grantee (planning agency) is to review and update its comprehensive plan and evaluate progress in meeting the planning objectives set for itself." These review and evaluation aspects of the comprehensive plan provide an opportunity for those interested in the plan, including applicants to NRC for licenses to construct or operate nuclear facilities, to participate in the plan's evolution.

a. Land Use Element

The requirement that the comprehensive plan include a land use element is of particular importance to this study. The intent of the land use element is "...to enable states, units of general local government and areawide planning organizations to integrate all existing land use policies and functioning planning activities impacting land use and to involve Federal, State, and other public agencies charged with significant functional planning or land management responsibilities in the development of the land use element required...as part of the comprehensive plan."[18] The integrated land use policies and plans of a State, unit of general local government and areawide planning organization should be prepared to "...serve as a guide for Federal, State, and local govern-

mental decision-making on all matters related to the use of land, including, for example, air and water quality concerns, waste disposal, transportation, protection of control areas, open space, agricultural food and fiber production, environmental conservation, development, and housing."[19]

A further objective of the required land use element is to strengthen the coordination of land use policies among the various levels of government. To aid in this coordination, the regulations[20] provide that "recipients will have latitude to develop the land use element in a form which will allow them to meet the requirements of other federal programs requiring comparable land use elements or components thereof."

In response to these regulations, HUD's Office of Community Planning and Development (the 701 Office) has signed interagency agreements with the Office of Coastal Zone Management and EPA which are designed to facilitate the coordination of land use policies and the preparation of land use plans.[21]

Pursuant to HUD's 701 regulations promulgated February 1, 1977, each recipient of HUD 701 comprehensive planning assistance is to submit a summary statement containing a brief description of how each of the requirements of the land use and housing elements are satisfied. The statement is to include a description of and citation to other federally supported plans and program documents which are used to satisfy all or a portion of the 701 land use and housing elements.[22] It seems that these other plans and program documents would include, among others, those being implemented pursuant to the Coastal Zone Management Act of 1972, as amended; the Clean Air Act of 1970, as amended; and the Federal

Water Pollution Control Act Amendments of 1972. The summary statement is also to determine if the required housing and land use elements are consistent with each other.[23]

In addition, HUD's 701 regulations provide that recipients of comprehensive planning assistance who have completed one or more of the plans required under the federal planning programs (listed below), must assure that the land use related provisions of such plans and the land use and/or housing elements prepared to fulfill the 701 program's requirements are consistent with one another. If such assurances cannot be made, these inconsistencies must be identified and steps taken to eliminate them. Moreover, recipients who are preparing, but have not completed plans required under the federal planning programs, must assure that such plans and the 701 land use and/or housing elements will be made consistent with each other.[24] The federal planning programs to be included are:

1. Comprehensive Management Program of the Coastal Zone Management Act of 1972, as amended;

2. Areawide Waste Treatment Management Planning Assistance Program (208) of the Federal Water Pollution Control Act Amendments of 1972;

3. State Implementation Plan (SIP) Program of the Clean Air Act, as amended;

4. Outdoor Recreation Program, Land and Water Conservation Fund Act of 1965, as amended.

The land use element also permits a recipient "...to address other significant land use problems which it determines to be of priority concern...."[25] Thus, the state and local recipients of HUD 701 funds have sufficient latitude to prepare plans suiting their needs and to insure that these plans are coordinated with other Federal, State or local planning requirements.

To assist states, areawide organizations, cities, and counties in satisfying the land use element (and housing element) of the comprehensive plan, HUD has issued a notice on "Land Use and Housing Element Guidelines."[26] This notice provides examples of the types of activities which may be undertaken to satisfy the statutory requirements of either element. The examples provided do not change or add any requirements to 24 C.F.R. Part 600. Moreover, the notice points out the "HUD Regional Office decisions to approve or disapprove land use and housing elements will be based on applicable requirements in 24 C.F.R. Part 600 and not these guidelines."[27]

b. The HUD 701 Comprehensive Planning Assistance Program and Energy-Related Considerations

One of the objectives of the 701 Comprehensive Planning Assistance Program is to assist recipients in planning for adequate energy supplies and siting of necessary support facilities.[28] Another objective of the program involves the development of energy conservation measures to reduce energy consumption.[29] Finally, as part of the on-going comprehensive planning process, energy and environmental needs and impacts are to be considered.[30]

To carry out the above objectives and as part of the comprehensive planning process, the development of "...energy conservation measures and facility siting plans to provide for the rational development of areas impacted by new energy extraction efforts or related activities"[31] is an eligible activity under the 701 program.

In preparing the required land use element, the 701 grant recipient is permitted to address significant land use problems of priority concern.

Many of the problems which can be addressed in the land use element can affect energy facility siting and future community growth. These include:

- Projections of land use needs and land resource development including energy facilities siting needs;/32 (emphasis added)
- Identification of public facilities, utilities, ...and other services required to support projected uses of land;/33 (emphasis added)
- The impact of the recipient's proposed policies (including tax policies) ...on air and water quality, coastal zone management, waste disposal, areas of critical concern, ...availability of and need for conserving natural resources and energy, and disaster mitigation activities;/34 (emphasis added)
- Distribution of growth including possible locations for new communities, large scale projects and key facilities;/35 (emphasis added)
- The conservation of energy through land use strategies designed to reduce energy consumption and the development of policies designed to facilitate the recovery of energy resources in a manner compatible with environmental protection and future reuse of lands;/36 (emphasis added) and
- The effect of major federal activities on State, areawide, and/or local planning and development./37 (emphasis added)

Recent demonstration projects, jointly funded by the HUD 701 program and FEA and/or OCZM, illustrate ways in which these energy and growth concerns are being addressed. One such project, funded by HUD 701 funds and FEA, is being prepared by the Mid-Atlantic Governors Coordinating Resources Council (MAGCRC) . This council is composed of the states of New York, New Jersey, Delaware, Maryland, and Virginia. The study is designed to assist the states in developing a coordinated response to the impacts resulting from offshore exploration and production activity. This project includes tasks to: "assess institutional systems and roles at all levels, develop a decision flow chart for significant and local information needs and management decisions relating to offshore resource

exploration activities from 1975 to 1985, and determine siting requirements and impacts of offshore developments."[38] A similar study is being prepared by the State of California.[39] A third demonstration project is ongoing in Utah. The Utah study, "A Guide to Decision-Making for the State of Utah" is designed "...to enable State and local officials to consider the long-range impacts and implications of energy projects...including trade-offs, benefits and costs, priorities of projects, and responsibilities for action.[40]

Other energy-related considerations are also of increasing concern to state and local governments. HUD 701 assisted comprehensive plans are not specifically required to be coordinated with the issuance of Certificates of Public Convenience and Necessity or licenses for the construction or operation of among others, nuclear power facilities. However, comprehensive plans should consider these licenses and the effects they may have on the area. Predicted growth in electric power facilities, transmission lines, and other supporting facilities should be reflected in the comprehensive plans.[41] Although not required by HUD in approving the plans, the coordination between the comprehensive plans and licenses for energy facilities can be important. This type of coordination would enable the required land use elements to address, in a knowledgeable fashion, important variables such as the projection of land use requirements for energy facility siting. On the other hand, electric utility companies and regulatory agencies could review the comprehensive plan's projections of land use to discuss the proposed policies' impact on energy requirements in the area. The regulatory agencies (such as NRC and FPC) could require that applicants for a license coordinate their activities and

future plans, to the greatest possible degree, with the declared plans and policies of the applicable units of government.

Another means of coordinating comprehensive plans with the needs of electric facilities (particularly with respect to siting) would include the review of HUD 701 plans by State Power Commissions or Public Utility Commissions. Although this has generally not been done, the means for achieving such coordination do exist. The requirement for 701 plan review would have to be established by a regulatory agency (such as FPC or NRC) or by the State (the Governor or the legislature) --depending on the type of action required.[42]

Finally, HUD 701 money can be used to coordinate regional and multi-state systems. Examples of multi-state systems which receive HUD 701 funds are the Appalachian Regional Commission, and the Mid-Atlantic state governments (MAGCRC) preparing the demonstration project assessing the OCS impacts on the states.[43]

c. Shortcomings of the Present HUD 701 program

In the 1970's, the HUD 701 program has been plagued with insufficient funding and lack of priority with HUD.[44] At the same time, many federal programs affecting state and substate governmental activities have created an even greater need for planning coordination among the various levels of government, particularly in the area of land use planning. These state and substate agencies have increasing needs for planning assistance.[45]

Another serious shortcoming of the program is the lack of regulatory powers to aid in implementing and enforcing the plan once it is developed. The regulations pertaining to the required land use element

discuss the implementation of plans,[46] but provide no mechanisms that specifically tie land use planning to a regulatory or any other type of implementation scheme.[47]

Although HUD 701 plans lack formal implementation provisions, implementation can sometimes be achieved indirectly. The 701 regulations provide several provisions which seek to coordinate 701 planning with other federal program requirements. For instance, eligible activities for 701 comprehensive planning include to: "[m]eet and carry out other HUD or other federal program objectives or requirements including but not limited to:

(1) [d]evelopment of housing assistance plans required by Title I and Title II of the Housing and Community Development Act of 1974;

(2) [n]ew community planning;

(3) [p]reparation of flood control studies and flood plain management measures to meet the standards for elibibility under the National Flood Insurance Program;

(4) [d]isaster mitigation and hazard reduction planning; and

(5) [s]upport for national growth and urban development objectives.[48]

The first four of these categories are other HUD programs with objectives closely related to those of the 701 program. The last category is broad enough in scope to include national objectives under other federal programs, such as the coastal zone management program, the clean air program and Section 208 of the Federal Water Pollution Control Act. Another section of the regulations permits the development of the land use element "in a form which will allow them to meet the requirements of other federal programs requiring comparable land use elements or components thereof."[49] As discussed in part B.2.a, Land

Use Element of this study, the HUD-EPA and HUD-OCZM agreements are designed to insure this. Thus, where the land use element is developed concurrently or is the same as portions of a 208 (water quality management plan), state implementation plan (SIP), or a state coastal zone management plan, the implementation or regulatory provisions of those Acts (FWPCA, CAA, CZMA, respectively) may insure greater conformity with 701 objectives.

In the absence of a connection to the implementation requirements of other federal planning programs (or state/local/regional programs), the 701 plan is implemented on a discretionary basis by the state and substate participants in the program.

Basically what all this means is that while 701 comprehensive plans can plan for energy facilities and siting, energy conservation, distribution of growth, and other energy-related considerations, the HUD 701 program requires no positive mechanisms to insure that the plans are implemented. Thus, while a community may have the best of plans, implementation is not a requirement of federal law.

d. Other Aspects of Coordination: HUD 701 Comprehensive Plans and A-95 Review

The purpose of Circular A-95 is to serve as a guide to "...federal agencies for cooperation with state and local governments in the evaluation, review, and coordination of federal and federally assisted programs and projects."[50] To insure intergovernmental cooperation and review of planning and management programs proposed for assistance, all applicants for 701 comprehensive planning grants (except federally recognized Indian tribes) "...are required to notify the State and regional or metropolitan clearinghouse (A-95) of the intent to submit

an application to HUD or to the State for comprehensive planning assistance."[51]

The A-95 review process established by the Office of Management and Budget (OMB) seeks to further the policies and directives of Title IV of the Intergovernmental Cooperation Act of 1968,[52] implement the requirements of Section 204 of the Demonstration Cities and Metropolitan Development Act of 1966,[53] and implement, in part, the requirements of Section 102(2)(c) of the National Environmental Policy Act of 1969.[54]

Section 401(c) of the Intergovernmental Coordination Act requires that: "to the maximum extent possible, consistent with national objectives, all federal aid for urban development purposes be consistent with and further the objectives of State, regional, and local comprehensive planning."[55]

Section 204 of the Demonstration Cities and Metropolitan Development Act requires that all applicants for federal loans or grants to assist a variety of activities such as public works planning, construction activities, and open space land acquisition in metropolitan areas, must be accompanied by the comments of an official State or regional planning agency with respect to the relationship of the proposed project to comprehensive planning in the area.[56]

The A-95 clearinghouse review must also include assurances, pursuant to the National Environmental Policy Act of 1969, "...that appropriate State, multi-state, areawide or local agencies which are authorized to develop and enforce environmental standards are informed of and given opportunity to review and comment on the environmental significance of proposed projects for which federal assistance is sought."[57] (Also see the section of this study on NEPA).

OMB's Circular A-95 is the product of efforts to implement the authority contained in the above Acts. Under the present Circular's Project Notification and Review System, applicants for federal assistance under programs on the A-95 Attachment D list must provide the appropriate A-95 "clearinghouse" agencies (usually state or regional planning agencies) with a description of the project for which assistance is sought. The clearinghouses then identify state and local agencies and jurisdictions which might be affected by the project, and notify them of the application. After a thirty day comment period, the applicant may submit its application, together with any written comments received, to the funding agency. The federal agency then informs the clearinghouses of its action, and if it approves an application for which a clearinghouse has recommended disapproval, the funding agency must state its reasons for doing so.[58] In addition, agencies undertaking direct federal development projects are required to consult with state officials and clearinghouses early in the planning stages, and to "assure that any such federal plan or project is consistent or compatible with State, areawide and local development plans and programs identified in the course of such consultations."[59]

For example, the summary statement prepared for the land use and/or housing elements is to be submitted for review and comment to the applicable state and regional or metropolitan clearinghouses simultaneously with the submittal to HUD. Each clearinghouse has a maximum of 45 days to provide comments on the summary statement to HUD.[60]

The A-95 process provides a means for reviewing and coordinating energy-related aspects of comprehensive plans. The impacts of the plans

on other areas' energy projections and needs, population growth, and other considerations can be brought out into the open. It must be recognized, however, that A-95 constitutes only a procedural mechanism for inter-governmental review and comment, and once complied with, federal agencies are free to disregard any comments received. Nevertheless, A-95 does provide an important means by which comprehensive planning under 701 may be integrated with other governmental planning policies.

Footnotes

1. Housing Act of 1954, 68 Stat. 590, 40 USC 461 (1965) P.L. 83-560.

2. 24 C.F.R. § 600.55(a),(b),(c), and (e).

3. Housing and Community Development Act of 1974, P.L. 93-383.

4. Id., § 701(c)(2).

5. Participation in the Coastal Zone Management Program is also voluntary. State participation in the programs mandated by the Clean Air Act, and the Federal Water Pollution Control Act is required.

6. "Policy-planning-evaluation" is defined in the regulations as the analytical ability to identify problems and needs in a more rational manner, set long-term policy goals and short-term policy objectives to meet these needs, to devise programs and activities to meet the policy goals and objectives, and to evaluate the progress towards meeting the goals and objectives. (24 C.F.R. 600.7(K).

7. 24 C.F.R. §600.5(a)(1)-(4).

8. 24 C.F.R. §600.5(b)(4). Note those regulations provide for planning "for adequate energy supplies and siting of necessary supporting facilities." While this provision is not included within the statutes or in the legislative history, Mr. Melvin Wachs (of the Department of Housing and Urban Development's 701 Comprehensive Planning Assistance Program) feels that such planning for energy siting is within the authority of a comprehensive plan.).

9. 24 C.F.R. §600.5(c).

10. Id., (d)(1)-(3).

11. Id., §600.35.

12. Id.

13. HCDA §401(k).

14. 24 C.F.R. §600.7(j).

15. Id., §600.67(b).

16. Id., § 600.67(c). (See Section 600.70 pertaining to the housing element and Section 600.72 pertaining to the land use element.) The housing and land use requirements are not applicable to applicants who have never received a comprehensive planning grant (other than a special needs grant pursuant to §600.50).

17. "Land Use and Housing Element Guidelines." Federal Register, Vol. 42, No. 21, 2/1/77, p. 6098.

18. 24 C.F.R. §600.72(a).

19. Id.

20. Id.

21. The HUD-EPA (§ 208) agreement was signed on March 24, 1975. The HUD-OCZM agreement was signed on February 19, 1975.

22. 24 C.F.R. § 600.73(a)(b) and (c). (February 1, 1977).

23. Id., (c)(1).

24. Id., (c)(6)(i)-(iv).

25. Id., § 600.72(a).

26. "Land Use and Housing Element Guidelines," supra, note 17.

27. Id., Part I.

28. 24 C.F.R. § 600.5(b)(4).

29. Id., § 600.5(b)(3).

30. Id., § 600.5(d).

31. Id., § 600.55(b).

32. Id., § 600.72(a)(2).

33. Id., § 600.72(a)(4).

34. Id., § 600.72(a)(5).

35. Id., § 600.72(a)(6).

36. Id., § 600.72(a)(7).

37. Id., § 600.72(a)(8).

38. Conversation with Dr. Melvin Wachs, 701 Comprehensive Planning Program, Office of Comprehensive Planning and Development, HUD, January 24, 1977 and Rapid Growth from Energy Projects, Ideas for State and Local Action: A Program Guide. 701 Comprehensive Planning Program in cooperation with the Federal Energy Administration, March 1976, p. 10.

39. Rapid Growth from Energy Projects, Ideas for State and Local Action: A Program Guide. HUD, Office of Community Planning and Development, 701 Comprehensive Planning Program in cooperation with the Federal Energy Administration, March 1976, p. 11.

40. Id.

41. Conversation with Dr. Melvin Wachs, 701 Comprehensive Planning Program, Office of Comprehensive Planning and Development, HUD, January 24, 1977.

42. Id.

43. Id.

44. The FY 1977 budget for the HUD 701 program is $67.5 million, but only $25 million of that was originally proposed. Again this year, former President Ford's proposed FY 1978 budget appropriates $25 million for the program. HUD 701 staff are hoping for a final FY '78 budget of $50-75 million. For contrast, the FY '69-70 budgets were $100 million. (In today's dollars, this figure would have to be inflated).

45. During 1974, the President ordered HUD to undertake a major initiative to coordinate the nearly three dozen separate Federal planning assistance programs. [Environmental Quality, Sixth Annual Report; Council on Environmental Quality, December 1975, p. 182.] Partially in response to this order, the HUD 701 program began entering into interagency agreements to coordinate funding and planning requirements.

46. For instance, States and area-wide planning organizations are to include in their land use element "...procedures that will facilitate the achievement of land use objectives." (24 C.F.R. § 600.72(b)(4).) Further, each applicant is required to "... describe the current status of land use related planning (e.g., coastal zone arrangement, air and water quality, transportation, solid waste planning, etc.) and related implementation activities within the applicant's planning jurisdiction and the relationship of the proposed program to past and current local, area-wide, and state planning and implementation efforts and how the applicant will satisfy the land use requirements of this

section..." (24 C.F.R. § 600.72(d).)

47. This distinguishes the HUD 701 program from the other three Federal planning programs discussed in this report. The CAA, FWPCA, and CZMA provide regulatory tools to assist in the implementation of plans.

48. 24 C.F.R. § 600.55(h).

49. Id., § 600.72(a).

50. Comments on Circ. A-95 (revised) 41 F.R. 2052 (Jan. 13, 1976).

51. 24 C.F.R. § 600.160(a).

52. 42 U.S.C. § 4231.

53. 42 U.S.C. § 3334.

54. 42 U.S.C. § 4332.

55. 42 U.S.C. § 4231(c).

56. 42 U.S.C. § 3334.

57. Circ. A-95, (revised); 41 F.R. 2052, Attachment A, Part I (1)(c) (Jan. 13, 1976).

58. Circ. A-95, (revised); 41 F.R. 2052 (Jan. 13, 1976).

59. Id., Attachment A, Part II.

60. 24 C.F.R. § 600.73(e)(2).

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