A REPORT ON THE NATIONAL INTEREST IN THE COASTAL ZONE

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I. Introduction and Philosophy

The coastal zone is one of the most productive and valuable areas on earth, in terms of resources for meeting human needs. It also sustains the largest concentration of habitation, industry, power-generation facilities, recreational activities, and wastes from these uses. Indiscriminate use of the resources of the coastal zone, instead of selective use, conservation, and just good management of this valuable area threatens the continued supply of food, energy, and minerals which come from this area; threatens our right to reside and work in this area; threatens the pleasures we derive from coastal recreational activities; threatens the enrichment we receive from the aesthetic values found there. For, while rich in resources, our coastal zones are fragile and vulnerable to human destruction. Many valuable natural areas, once lost, can never be retrieved.

> An insult to this coastal system, however minor, will eventually be paid for by decreased value of the system to man in the form of depleted resources or deteriorated water quality. In this light, harmony of man's uses with the physical, chemical, and biological functioning--in short, the total ecological functioning--of the system should be the overriding goal.[1]

About seventy-five percent of the population of the United States lives in states bordering the Atlantic, Pacific and Gulf coasts and the Great Lakes. This population is increasing

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[1] Ketchum, Bostwick H., ed., The Waters Edge: Critical Problems of the Coastal Zone. Cambridge, MA: The MIT Press, 1972, pp. 15-16.

faster than that of the nation as a whole.[2] Industries and power plants locate on the coasts, in response to available markets and for the large volumes of available water, which they need for manufacturing and cooling processes. Waterways have been used as transportation routes and sewage disposal systems since the country has been inhabited. Millions of people (the number is expected to be 77 million by 1975)[3] use the coastal zone for fishing, boating, swimming, nature-watching, and other recreational pursuits. A growing number of people are purchasing vacation or retirement homes by the water. Finfish, shellfish, and kelp provide an important food resource. Major petroleum and gas, sand and gravel, and other mineral resources lie off the coasts. Some of these resources lie miles from land, in areas less vulnerable to destructive alteration than the coastal zone, but they will affect the zone in terms of ancillary development. Outer continental shelf petroleum drilling, for instance, will require pipelines, refineries, tank farms, crew quarters, and other onshore facilities.

The development of these resources has already resulted

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[2] Science and Environment, Vol. I, Panel Reports of the Commission on Marine Science, Engineering, and Resources. Washington, D.C.: U.S. Government Printing Office, 1969, p. III-10.

[3] Ketchum, p. 84.

in degradation of the coasts. Marshes and wetlands have been dredged and filled, causing losses of fin and shellfish nursery and spawning grounds, grounds on which the majority of the nation's commercially valuable marine species depend for their existence.[4] Beach and bluff open space has been crowded with vacation homes and commercial establishments. Other aesthetic and natural values--scenic areas, wildlife habitat, solitary beaches--attributes which many seek in the coastal zone, have been lost or degraded. Increasing water pollution has closed shellfish beds and swimming areas. The litany can go on and on.

There are two major reasons why the coastal zone has suffered from degradation and destructive use. First, the management of the zone has been fragmented and overlapping, bringing jurisdictional authorities into conflict. Local municipalities have traditionally controlled their immediate land and some water areas with zoning and other regulatory powers. States have controlled the water, seabed and subsoil to three miles of territorial limit, and have acquired some degree of control on land in areas such as state taxation and regulation of wetlands. At sea, the federal government has reserved to itself only those Constitutional powers, within the three-mile limit, of interstate commerce, navigation, defense, and conduct of international affairs. On land, however,

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[4] Science and Environment, p. III-21.

and in some cases at sea, federal agencies carry out individual projects and administer grant programs dealing with coastal activities, as well as selling leases and licensing projects for other public or private bodies to perform. In addition, state/federal or regional/federal agencies, such as the River Basins Commissions, operate in this area along with regional (interstate) and area-wide (intra-state) planning agencies.

> The multiple political interests and power structures in the coastal zone have made it difficult to manage. Overlapping jurisdictions that we cannot ignore cause non-uniform guidelines and regulations. Furthermore, in traditional resource management or planning, man has dealt with each resource sub-system individually--the land, the water, and the submerged lands. We need to view the coastal zone as a natural system in order to utilize resources in harmony with the ecological web that characterizes this zone.[5]

This pattern of regulation has often led to decision-making based on local concerns, which can be detrimental to local, state, regional, and national concerns, and which tend to ignore the need to manage ecosystems as interrelated wholes. Hence, the result of such localized decision-making can be misallocation and unbalanced utilization of coastal zone resources.

A second reason for coastal zone ills is that the economic market, the system traditionally used in this country to allocate resources, suffers from an inability to handle those public or common goods which are difficult or impossible to price in dollar terms. Such goods include air and water,

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[5]Ketchum, p. 19.

and scenic, ecological, historic and cultural characteristics. Public goods also include certain kinds of developments such as public beaches, which would not return much to a private investor, and are, therefore, generally provided for publicly. The inability of the market to handle these goods is the result of the diversity of values in our society. Public goods are valued differently by different groups. Some people value beauty far more than others, for instance, and they would attach a much higher price to scenic values, if they would even admit a price might be possible. Land use decisions, which frequently involve considerations of these multi-valued commodities, come to be decided in the political process, where groups with differing values can compete to make the decision, or at least take part in it, thus assigning a certain value to the resource.

Thirdly, because common goods belong to an extremely disaggregated group, that segment of the general public which values them as a whole has had no strong interest group, until the recent emergence of the environmental movement, to articulate the value of these goods to society. Certain other values, however, notably economic development, have had strong groups to articulate them (i.e., to value them in terms of market price), so that the market could take them into consideration. Thus, because of divergence of societal values, our inability to deal with unpriced goods, and the disaggregation of groups benefitting from common goods, economic development values have been overrepresented in decisions about coastal zone use, while ecological, scenic, aesthetic and other such

values have been underrepresented.

In 1969, the Stratton Commission report, Our Nation and the Sea[6], first brought coastal zone problems into widespread public view. In order to allow for rational, integrated, and efficient management the Commission recommended establishment of a federal coastal zone program, with major authority for planning and management resting at the state level.[7] Congress responded first with information and discussion hearings,[8] then with several bills and further hearings.[9,10,11]

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[6]Report of the Commission of Marine Science, Engineering, and Resources. Washington, D.C., U.S. Government Printing Office, 1969.

[7]Science and Environment, p. III-2.

[8]United States Congress, House Committee on Merchant Marine and Fisheries. Subcommittee on Oceanography. Coastal Zone Management Conference. Hearings, Ninety-first Congress, first session, October 28, 29, 1969. Washington, D.C., U.S. Government Printing Office, 1969.

[9]United States Congress. Senate Committee on Commerce. Subcommittee on Oceanography. Federal Oceanic and Atmospheric Organization. Hearings, Ninety-first Congress, First and Second Sessions, on S. 2802, S. 2393...March 23; April 2, 9, 14, 16, 21; and May 4, 1970. Washington, D.C., U.S. Government Printing Office, 1970.

[10]United States Congress. Senate Committee on Commerce. Subcommittee on Oceans and Atmosphere. Coastal Zone Management. Hearings, Ninety-second Congress, first session, on S. 582, S. 632...National Coastal And Estuarine Zone Management Act of 1971, May 5, 6, and 11, 1971. Washington, D.C., U.S. Government Printing Office, 1971.

[11]United States Congress. House Committee on Merchant Marine and Fisheries. Subcommittee on Oceanography. Coastal Zone Management. Hearings, Ninety-second Congress, first Session, on H.R. 2492, H.R. 2493, H.R. 9229. June 22, 23, 34; August 3, 4, 5; November 1, 9, 1971. Washington, D.C., U.S. Government Printing Office, 1972.

At about this same time, Congress began to investigate federal aid to land-use planning for the entire country, not only for the coastal zone. For a time, the two programs evolved together in Congress, but eventually the coastal program became law, while recent events in Congress have shown that general land-use planning is some distance away. It is not far fetched to assume that the coastal zone management program, essentially one of land-use planning, succeeded because the problems, present and potential, are much more evident there than in other parts of the country, since the coastal zone is so heavily inhabited, industrialized, and used for so many other purposes.

The Coastal Zone Management Act was passed in October, 1972. As recommended by the Stratton Commission, it places authority for planning and management squarely at the level of state government (see Sections 302(h), 305(b), 306(d)(1), and 306(e) in the Act in Appendix D), with a federal office to provide guidelines, encouragement, and matching funds. The Act does not simply set up another federal grant program, however; it contains provisions to assure cooperation and coordination among the state coastal zone authorities and federal agencies with coastal zone responsibilities (see Sections 303(c) and 307(a-d)). By placing responsibility at the state level and requiring federal cooperation, the Act seeks to ameliorate the fragmentation that has heretofore plagued coastal management.

More is needed here, however. Although the Act encourages federal cooperation (Sections 307(a-d)) and begins to encourage interstate and regional cooperation (Sections 302(h), 303(d),

305(h)(6), and 306(c)(2)), stronger and more formal encouragement should be given to the states for regional and interstate cooperation, particularly (as mentioned later in this section) for the purpose of solving problems of less than national, but greater than state significance, many of which can be handled effectively at a regional level. Existing regional organizations, which are functionally effective, such as, in New England, the New England River Basins Commission, would be useful in this connection if given official authority to act in this capacity.

The Act seeks to control indiscriminate coastal development and calls for wise resource use (see Sections 302(c)(d)(e)(f)), declaring national policy to be "to preserve, protect, develop and where possible, to restore or enhance the resources of the Nation's coastal zone for this and succeeding generations...giving full consideration to ecological, cultural, historic, and aesthetic values, as well as to needs for economic development."[12]

Under the terms of the Act, two types of federal grants are allowed. The first is a development or planning grant, to assist states in drawing up a management program. The second grant is an administrative grant, to assist the states in implementing their management programs. Receipt of an administrative grant requires an approved state management program. To gain approval, a state management program must meet twenty-one statutory requirements. One of these provisions, Section 306(c)(8), requires that "the (state's) manage-

[12] P.L. 92-583, Sections 303(a) and (b).

ment program provides for adequate consideration of the national interest involved in the siting of facilities necessary to meet requirements which are other than local in nature." M.I.T.'s Center for Policy Alternatives is assisting the Office of Coastal Zone Management in the interpretation of this provision. Although it is only one of many requirements for the approval of a state's management program, its vagueness has caused widespread discussion and provoked some controversy. What is the national interest, state officers have asked, and how does it affect them? This study of the national interest was undertaken because the success of the coastal zone management effort, in part, depends on a clear understanding between the states and the federal Coastal Zone Office of where and when the national interest may be important in siting decisions, and how to handle it once it has become an issue. Since the coastal zone has so many widely valued attributes, it is inevitable that facilities will be sited there which will have impact beyond the state in which the facilities are located. Since the Act encourages the states to identify and develop controls for areas of statewide or "more than local" but less than national significance (Sections 302(h), 305(b)(2-6), "other than local in nature" in Section 306(c)(8) should be interpreted as activities that may affect other interests beyond state boundaries on a regional or national level. That is to say, those activities/facilities which have the heaviest consequences at the regional or national level are those "other

than local in nature." Thus, the activities/facilities which have a preponderance of effects at the national level will be those of national interest. Requirements "other than local in nature" with the greatest collectivity of consequences existing on the regional level should be handled at that level.

The Act does not intend a heavy-handed Federal presence, extending into every conceivable coastal activity. Functions of federal agencies with responsibilities touching on the coastal zone will to some extent determine the degree of national interest. Such agencies as the Environmental Protection Agency, the Department of Defense (particularly, the Corps of Engineers and the Navy), the Department of Transportation, the Department of Interior, HUD, and the Federal Energy Administration, among others, will have some programs which impinge on the coastal zone and have national interest implications. This will be discussed further in Part II, where a listing of facilities whose siting may involve the national interest will appear along with the relevant agencies.

In addition, many questions of national interest could be resolved at the regional level, by associations of states, particularly those involving requirements of a regional nature, since not all siting problems "other than local in nature" will actually involve the entire nation. Issues such as where in a region to site airports or large recreation facilities could be settled on the basis of interstate agreement without interference by the Federal government. Placing responsibility for such decisions at the regional level eliminates the need for the federal government's role, since its

interest is in having states cooperate. As mentioned above, more formal encouragement needs to be given to this idea.

Despite the list of facilities which may involve the national interest, (see Part II), the national interest is not static; it will change with changing national needs and conditions. Part of this study, therefore, has produced a model or suggested process for identifying and adequately considering the national interest in a proposed coastal zone siting of a project. The states may find this process useful, since Section 306(c)(8) encourages them to develop a method for dealing with the national interest element rather than merely drawing up a laundry list of facilities which will involve the national interest.

Part III of this study is an interpretation of Sections 307(c) and 307(d) of the Act. The issues addressed here relate to (1) interagency cooperation and federal-state cooperation; and (2) the circumstances under which the Secretary of Commerce can, on appeal, find, because of national security or consistency with the purposes of the Act, that a proposed activity denied by a state is allowable. The appeal in such a case may come directly from a public or private applicant for a Federal permit or license, or from a state or local agency applying for funds from a Federal agency to conduct an activity in the coastal zone. Here the role of the Federal government will be discussed.

II. Interpretation of the National Interest Provision of the Coastal Zone Management Act

Section 306(c)(8) of the Coastal Zone Management Act states that there should be adequate consideration of the national interest in siting decisions. This is, to reiterate, only one of twenty-one statutory requirements which must be met for the approval of a state's management program. It is a procedural requirement, asking that states incorporate a procedure for considering the national interest in their decision-making machinery.

Underlying the difficulty in achieving a clear understanding of the national interest provision are some fundamental conflicts which emerge from this legislation and should be resolved. These conflicts involve the concept of private ownership of property and the problem of overlapping jurisdictions within and among local, state, and federal government agencies concerning coastal zone use decisions. Because the call for management expressed by the Act may appear to be a threat to the concept of private property, it is important that these issues be clarified as much as possible.

The very passage of national legislation about the coastal zone implies that the coasts are of value not only to the approximately 75% of the nation's population who live there, but also to the other 25% who do not. Furthermore, the coastal zone is also of value to those coastal residents who desire access to parts of it in which they do not live. In effect, the Act declares the coastal zone to be, to some extent, a public good. This assumption is supported by the findings and

declaration of the policy of the Act itself, particularly Sections 302(a) and 303(a).

Here lies the problem. Because the idea of private property is basic to our society, those people who live in the coastal zone, or anywhere else for that matter, want to control decisions concerning their own areas. Private landowners resent the interference of others in their private land matters. Municipalities don't want people from neighboring towns, the state, or outside the state, influencing their affairs. States are often jealous of their jurisdictions as is the federal government, even though neighboring states and regions are frequently dependent on each other economically (e.g., the dependence of some states for income on tourists).

Nevertheless, states have, in the name of efficiency, established joint authorities with municipalities in some areas, and controlling authorities in others. Public transportation costs and decisions are often under joint authorities, such as the MBTA in Boston. State wetlands regulation is an example of controlling authority, where the state issues permits for dredging and filling, and has general oversight for the health of wetlands, even though they are located in individual towns.

In the same way that a state integrates certain functions for the whole state, the federal governement integrates certain functions for the entire nation. Interstate commerce, national defense, and international affairs are some examples.

In addition, there are areas of overlapping jurisdiction

at and among all three levels of government. These overlaps often result in complex regulatory processes and produce confusion and uncoordinated management in the coastal zone. Different federal agencies with an interest in the same resource or different resources which have conflicting uses, may clash, as may state and local agencies. Current controversies over fisheries and offshore oil illuminate this problem.

The Coastal Zone Management Act seeks to strengthen, coordinate, and reduce the conflicts among the overlapping jurisdictions by encouraging states to establish regulatory mechanisms through which advocacy and dissenting interests can participate in the planning, utilization and management decisions for particular areas of the coastal zone. The national interest provision was included in the Act to insure that those issues which are of consequence to the entire nation, and in which coastal facility siting is involved will be decided with proper input from the national level, and with appropriate consideration of the benefits and costs to the nation. And, although Section 306(c)(8) is an important provision of the Act, its exact meaning is unclear. The following sections of this report attempt to clarify some of the confusion.

Three phrases from Section 306(c)(8) need further interpretation. These are "requirements which are other than local in nature," "the facilities necessary to meet requirements...," and "adequate consideration."

A. "Requirements other than local in nature"

National interest guidelines were devised to address this point because it seemed counterproductive to try to anticipate the particular circumstances of every decision involving the national interest. Interpretation of the precise degree of involvement of the national interest, and how important a role it should play in a decision was left to the states and their decision-making and planning processes. While a detailed national interest guide can be found in Appendix A, an abridged version of the guide to national interests, or "requirements other than local in nature" follows. It is a set of conditions which (1) indicate national interest involvement, and (2) a set of guidelines to help determine the degree of national interest involvement. The term "facility" includes all activities in the coastal zone, from obvious ones, such as energy facilities, to less obvious ones, such as natural area preserves.

1. An affirmative answer to any of the following questions indicates potential national interests.
   a. Does the facility affect any part of an identified nation-wide requirement? Requirements which are clearly national in nature, based upon federal agency responsibilities and legislative mandates, statements of the executive branch, and national legislation are:
      1) Energy self-sufficiency
      2) Environmental protection

3) Adequate recreational facilities

4) Health and welfare

5) Transportation

6) National defense

7) Preservation of historic, cultural esthetic values.

b. Does the facility have national environmental, social, or economic impact, or regional impact where no regional authority exists?

✓ c. Does the facility involve the federal presence in government/legal jurisdiction, organizational authority, or financing?

2. Guidelines for determining the degree of national interest involvement.

a. Identify what resources are necessary to complete the facility and what the net impacts of the completed project will be on national needs.

b. Determine to what extent the resource commitments necessary to complete the facility and the net impacts of the facility will foreclose future options for alternative uses of the resources. Implicit here is an attempt to identify the irreversibility of the proposed activity. The extent of the impact at the national level, foreclosing national options, indicates the degree of concern with the national interest.

c. Having identified necessary input and expected output, as well as potential options foreclosed, determine to what extent other national needs are compromised and to what extent the collective impacts lie at the national level. The extent to which a proposed activity would obstruct or in some way hinder the satisfaction of a national requirement gives some indication of the significance of the national interest involved.

B. "Facilities necessary to meet requirements..."

The following is a list of coastal facilities whose future siting may at some point involve the national interest. It has been drawn up to correspond with the list of national requirements in the previous section.

1. Energy self-sufficiency[13]

   a. Deepwater ports/monobuoys, associated onshore facilities

   b. Refineries and pipelines

   c. On- and offshore oil and gas production activities

   d. Atomic, fossil fuel, and hydro-electric power plants

   e. High-voltage electricity transmission lines

   f. Radioactive waste disposal sites

2. Environmental protection

   a. Natural areas with crucial life-support systems

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[13]The legislative, executive, and administrative authorities for each of these activities is described at the end of the body of the report.

b. National parks, national seashores, etc.

c. Pollution control facilities--air, water noise, solid waste, pesticides, radiation

d. Research facilities for increasing baseline data on the coastal zone

3. Recreation

a. Public beaches and public access to beaches

b. National parks and seashores

c. Other public and private facilities for a variety of water-related sports and activities

4. Health and welfare

a. Food production and distribution, especially uniquely coastal zone products--shell- and finfishing, processing plants, etc.

b. Facilities for continued economic productivity of coastal industries--marine mining, fishing, forestry, kelp harvesting, etc.

c. Flood, storm, and hurricane warning systems

d. Public works facilities in water resources planning

5. Transportation

a. Public transport--intercity

b. Ports, harbors, traffic control systems

c. Airports

d. Interstate highways

6. National defense--military installations for all services, the Air Force, the Navy and the Coast Guard

7. Preservation of cultural, historic, and esthetic values

a. Areas of unique historical and/or cultural significance, including preservation of cultures unique to the North American continent (Amerindian and Alaska native)

b. Areas of unusual natural beauty

C. "Adequate consideration"

Because "adequate consideration" is such a subjective term, it is open to a wide range of interpretations. However, it obviously relates to the decision-making process which the state should follow in carrying out its total management program for local, state, and regional, as well as national interest considerations. Based on that assumption, a three-pronged definition of adequate consideration follows. 1 It includes a resource and needs assessment and planning component, so that decisions may be solidly based, 2 a political structure component, to assure the decisions can be carried out, and 3 an information dissemination component to assure that vested interests are well-informed. Some of these components have been drawn from program elements in the Act itself, as indicated in the parentheses.

This process, while contributing to carrying out the adequate consideration of national interest, would be usefully applied at all levels and should not be construed as a separate process for national concerns only. Constructed as it is from various program elements, and from logical and necessary steps in communication, which are essential to developing a management program, these guides should help to assure the inclusion of federal agencies, as well as those at other levels in issues which affect them. This is particularly important for several

reasons. Differences in viewpoint over the national interest may not come between state and federal agencies, but between federal agencies with different plans for using the same resource. It is recommended, therefore, that mechanisms be developed at the State level to allow early coordination and communication of such differences so that smooth development, and later implementation of a state's management program can ensue. Furthermore, field offices of federal agencies may have technical information and expertise on local resources that could be useful in developing and implementing management plans. Therefore, an additional mechanism should be provided for their input. The intent of adequate consideration is not to require a separate process for national interest considerations. The aim is to develop a way the national interest can be integrated into the state decision process as outlined in the Act.

The adequate consideration process should consist of the following elements:

1. Resource and Needs Assessment and Planning
   The state should:

   a. identify the resources and current and potential uses of its coastal areas (resources include land and water, as well as the other more obvious resources), (Sec. 305(b)(2),(b)(5).

   b. carry out a needs assessment to determine what will be necessary over a defined period of time to satisfy its projected population requirements.

   c. create a plan to utilize its coastal resources and evaluate potential coastal uses to meet the needs of its population by--

-determining what needs should be met in the coastal zone;

-determining what needs can alternatively be met inland and the possible intra-state trade-offs which can be made to help alleviate some of the pressure from the coastal zone;

-identifying what needs cannot be met by in-state resource capacity, identifying potential sources to meet the needs and determining what interstate trade-offs (e.g., regional) can be made to assure satisfying requirements;

-planning how to effectively use an unusually large resource over which a state may have jurisdiction, e.g., beautiful beaches, historic landmarks, living resources, non-living resources, special life support systems such as marshalnds and sloughs. This would include identifying the commitments necessary to obtain maximum use of the resources and where they must come from; what interstate coordinating mechanisms (e.g., regional) might be necessary to achieve effective development of the resource; what potentially useful regional organizations already exist. (Sec. 306(c)(8), 305(b)(3)).

-determining the impacts of proposed coastal activities. To assist in this function, we have developed the national interest guides, and a user's matrix, explained later in this section, which will assist the states not only in assessing impacts of a project, but in comparing impacts of alternative projects.

✓ 2. The states should establish viable political structures within their decision-making processes for carrying out coastal zone management programs--

-to insure a place for the federal advocacy role of lead agencies, particularly those not already required through federal legislation to be a part of a total decision process for a proposed coastal activity (Sec. 306(c)(1)).

-to coordinate interstate functions and/or activities so that resource utilization and resource needs can be effectively balanced at least regionally (Sec. 306(c)(1),(2), 306(e)(2)).

-to provide a vehicle for the disaggregated publics, as well as organized industry to make its voice heard on issues raised by proposed coastal activities.

-to consider carefully the inland trade-offs with the coastal zone through mechanisms for intrastate agency coordination.

3. Information Dissemination (Sec. 308, 306(c)(1), 306(c)(3)). States should carry out an educational function to make certain that all interested parties fully understand the issues involved in proposed activities, as well as the implications to the activities (e.g., secondary, tertiary, etc. effects). States should:

-continually inform citizens of the value and needs of the coastal zone and the threats to its health and stability.

-notify all affected citizens of any changes contemplated in the coastal zone through a formal notification process.

-establish formal communications channels to assure widespread attention to changes contemplated in the coastal zone.

-provide adequate time for citizens to respond to proposed changes.

As part of this study, a "User's Matrix" has been developed. This matrix shows the impact of the siting of a proposed project on a wide range of societal factors. It will be useful in a number of ways. First, it may be used by states to

identify the areas of impact in siting a proposed project at the national level as suggested in Section A on determining "requirements other than local in nature," above. Secondly, it may be used to identify impacts of a project suggested as part of the "adequate consideration" process, (for other projects as well as those involving national interest). Thirdly, as will be explained in Section III of this report, it may be used by the Secretary of Commerce as a guide in deciding appeals from state siting decisions.

We have included in the factors of the matrix a wide range of concerns, grouped under social, natural resource, economic, and constitutional-legal headings. The factors are of use in determining national interest impacts. Many of the factors in the other categories, however, can also describe local, state, and regional concerns as well, and the matrix could be used to indicate impacts at those levels. However, since the purpose of this study is to show where national interest is involved, the matrix presented here is limited only to national impact though the matrix concept and structure may be adapted for use as part of the "adequate consideration" process at other levels of government. The factors were designed to insure that those things which contribute to a liveable environment at a national as well as a more local level, among them employment opportunities, access to facilities for leisure and recreation, opportunities for education and training, adequate housing, and a healthy natural environment would be adequately considered in coastal siting decisions which affect

the national interest.

Since the matrix is a guide, not a set of hard and fast rules, the coastal decision-maker will have to tailor it to specific situations and select from the factors listed those which have relevance for that situation, adding perhaps others which seem appropriate. The matrix has several elements:

1. Categories of coastal activities, i.e. activities which can or do occur on the coastline. These categories cover a number of types of activities. Some examples are:

   a. offshore facilities
   b. resource extraction
   c. ecological preservation
   d. industry-transportation

   Each category has subheadings denoting activities which are component parts of the total activity. For instance, the specific entries under resource extraction are:

   a. commercial shrimp and finfishing
   b. commercial shellfishing
   c. onshore oil and gas wells
   d. onshore mining and quarrying
   e. sand, gravel, and shell mining
   f. seawater chemicals extraction
   g. desalinization

   (note: offshore oil and gas wells have been included in offshore facilities category)

2. Characteristics of coastal activities, i.e., an enumeration of specific projects, actions, or facilities resulting from a particular category of coastal activity. These actions impact on the factors of #3 below. Examples of these characteristics, again

under resource extraction include:

a. stock introductions
b. collection of species
c. temporary housing
d. processing plants
e. towers and platforms
f. excavation
g. dredging
h. wastewater
i. seawater intakes
j. pipeline
k. submerged fencing
l. evaporation beds
m. slips and berths
n. channels
o. breakwaters and jetties
p. fuel docks
q. docks and piers
r. boatyards
s. boats and barges

3. Societal factors--social, economic, natural resource, and constitutional-legal--which describe national interests.

The following two elements of the matrix are not as detailed as those above because they depend entirely on the particular situation being analyzed.

a. Consequent conditions. These are the conditions which indicate changes in the factors after impact by a coastal activity.

b. An element which does not appear directly on the matrix, but should be performed as a separate operation by the decision-maker, is an evaluation of the activity's contribution toward fulfilling or impeding the identified nation-wide needs listed on page 14.

The usefulness of the matrix lies in its provision of a graphic illustration of the impact of single components of an activity on the societal factors, allowing an assessment of the national interest involvement.

III. Section 307(c) and (d)--Interagency Coordination and Secretarial Powers

Once the first intention of the Act is carried out and grants are awarded, all coastal states will have an agency which will attempt to confront and manage the problems of the coastal zone which are within the designated responsibility of the state. However, the second intention of the Coastal Zone Management Act will not be so easily carried out. It is more complex and far reaching. It calls for a system of coherent reconciliation of the responsibilities, powers and programs of state and federal government in coastal policy. The previous section of this report recognized the necessity to provide a mechanism at the state level for the entrance into the decision process of the advocacy positions of vested interests--public or private, local, state or federal. The existence of such a mechanism for coordination would permit the state official to identify problems at an early stage of decision-making, allowing sufficient time to gather, distribute and analyze information for careful decision-making. In addition, this mechanism could provide the forum for bargaining and trade-offs between the advocacy and opposition positions, thereby avoiding the appeal of the state's decision to the Secretary of Commerce provided for in Section 307(c)(3) and (d) of the Act.

It is clear that Congress intended the state to be the focus of responsibility in managing the coastal zone. This is a theme running throughout the statute, legislative findings,

committee reports, and the Stratton Commission Report which acted as a spur to Congressional enactment of the bill. However, it is also clear that the Act does not give the state power to supercede already legislated federal powers and responsibilities such as the National Environmental Policy Act. The non-derogation clause, Section 307(e) of the Act, while normal procedure for any new legislation, taken together with the intention of Section 307, gives this Act a special thrust for government agencies to take new responsibility for interagency coordination on all levels regarding coastal zone matters. A provision setting aside some federal interests from the state's responsibility is found in the definition of the coastal zone which excludes "land, the use of which is by law, subject solely to the discretion of or which is held in trust by the federal government, its officers or agents." (Section 304(a)) [See the national interest test Appendix A, #6] This excludes some coastal land from the purview of state management plans.

Returning to the first intention of the Act to make grants, one provision, 306(c)(1), relates also to this responsibility to coordinate all vested interests. It requires that the state's program be developed with the opportunity of full participation by relevant Federal agencies, etc.

Given that Congress seems to have recognized the need for some representation of federal interest in the coastal zone, it is not clear how that role should be expressed. It seems from Section 307 that Congress was implying that the Federal agencies should coordinate their policies affecting the coastal

zone to make it easier for the state to deal with the interested Federal agencies. Section 307 thus modifies the procedure by which federal actions are determined with reference to state management plans.

Congress has outlined innumerable pieces of legislation which are at work in the coastal areas. Many of these laws are relevant because of their substance, such as the Fish and Wildlife Coordination Act or the Rivers and Harbors Act of 1899. Other legislation becomes important because of geographic applications (in coastal areas) of substantive legislation, such as housing programs or highway grants. Particularly because of the latter cases, where congressional policy concerning one type of problem encounters a different area of congressional policy--that of the protection of coastal environments--Congress enacted Section 307 of the Coastal Zone Act. It reflects an across-the-board judgment of Congress that it is concerned primarily with coastal zone environmental and development policy in a case of conflicting federal policies and tries to insure some reconciliation of the conflict.

Four specific types of state-federal interactions are provided for in the Act. These are:

1. Projects conducted or supported by a federal agency "directly affecting the coastal zone;"
2. Actual federal development projects within the coastal zone;
3. Activities requiring a federal license or permit; and
4. State or local government activities with federal assistance.[14]

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[14]Sections 307(c)(1-3)

In situations 1 and 2 above, the federal agencies must conduct or support their activities consistent with the state's management plan, "to the maximum extent practicable." Here the reservation of federal authority is somewhat vague, for operative federal agencies are encouraged to heed the state plan insofar as they judge "practicable."

In the case of secondary federal coastal activities (3 and 4), through either licensing or funding of local government projects, the federal agencies are actually subject to restraint by a state's plan. The state agency must agree that the activity to be conducted under the license, permit, or grant is consistent with its management program.

Congress has thus given the states a handle with which to lead federal involvement in these vital geographic areas, by preventing, by law, fedeal agencies from approving certain activities that affect the coastal zone unless an additional procedural condition--state approval has been met. The underlying intent of the Act appears to separate the duties of the states and the federal agencies. The Act gives clear authority to a state over its coastal zone, and it also gives a clear mandate to the federal agencies to coordinate their policies and promote policy consistency where any federal authority is involved in a proposal affecting a state's program. While the two responsibilities are literally separated in the Act, it would be naive to think that in reality they will not operate on a quid pro quo basis, though this may not have been the statutory intention. That is, a state might be expected to

be more flexible in its decision processes in return for a well-orchestrated federal advocacy role.

If the state agency opposes the activity, the federal agency must deny the applicant's permit, license, or grant. This state veto is not complete, for Congress also provides that if the underlying substantive matter is of sufficient importance, as determined by the Secretary of Commerce, then the Secretary may suspend the state authority provided under the Act to veto a project. The Secretary can inquire into the state's veto on his own initiative, or on appeal by the applicant, taking further facts and testimony, and making findings.

The last decade has seen the emergence of the concept and practice of environmental protection, especially in the coastal zone. The more recent resource supply crisis has led many to find exception to the application of established environmental policies, particularly in instances of proposals to states involving coastal siting of energy facilities. The Secretarial override provisions of Section 307 reflect a realization by Congress that its new environmental and development policy expressed by the interagency coordination and cooperation provisions of that same section (as well as by other sections) may not always be appropriate when more critical matters of national importance become involved. Therefore, Congress has reserved to the Secretary of Commerce the right to suspend the policy under those rare conditions.

The Secretary may declare a state veto invalid by finding

the proposed project consistent with the "objectives of this title," or by declaring it "otherwise necessary in the interest of national security." In the former case, this could mean consistency with the Act's statutory requirements, or with the state's own criteria based on federal guidelines and approved by the federal coastal zone office. In site-specific cases of a state's veto, it will be relatively easy to see whether the state has fulfilled the statutory requirements. In any case, instances of this nature will probably reach the Secretarial level only rarely, since the vested interests and the various problems associated with a site-specific facility will be fairly clear, and the various advocacy positions will be thrashed out satisfactorily in earlier stages of negotiation at the state level.

In non-site-specific cases, however, the issue of whether the state has followed its own guidelines and whether the project is truly inconsistent with its management plan may not be so clear. Guidelines cannot be applied and effects cannot be seen with as much precision in a non-site-specific project as they can in a project whose site has been chosen. In addition, the situation may not be as amenable to settlement at the state level, since some of the vested interests may not be clearly identified and could not be worked out. (E.g., Since a site would not have been chosen the municipality in which the facility might be located would not be identified and would therefore have no voice in the negotiations.)

While any of the statutory requirements may provide a basis

for questioning consistency, since this study deals with national interest, we will be concerned primarily with national interest considerations in the Secretary's override of state vetoes for purposes of consistency with the Act. In order to implement an override on this basis (or any other), the Secretary must have the support of strong criteria to avoid an arbitrary decision. In deciding whether or not to implement an override on national interest considerations, the Secretary should use the matrix explained in Section II of this report and in Appendix B, to analyze the effects the proposed project will have on the various areas of national policy. (We have provided an example of how the matrix might work in this connection at the end of Appendix B.) He must then weight these effects according to his understanding of the importance of the various national policies, as he has identified them in his coordination of coastal zone interests with those of other agencies. This operation will be particularly important in cases where he must deal with conflicting national policies (e.g., environmental protection vs. energy self-sufficiency). The Secretary must also keep in mind other possible constraints on his decision. These might include the attitude of the license- or permit-granting agency towards the specific project, the attitudes toward the project of other federal agencies whose interests will be affected, and the ability of the region for which the project is proposed to handle the siting decision itself.

If the proposed activity has implications beyond the state

in question, and the state has followed its own guidelines and coordinated its decision with other states in the affected region in making its decision, these facts will provide a severe constraint to a Secretarial override of the state's decision.

The Secretary may also declare the state's veto of a project invalid because the project is "necessary in the interest of national security." To ensure that such a decision would not be made for arbitary reasons or without careful consideration of all possible alternatives, the Secretary should be restrained by the same process and criteria used in the consistency case, above. In addition to those criteria, moreover, he should be compelled to show clear justification that the nation would be endangered without the proposed facility.

If the Secretary finds that the proposed activity is consistent with the "objectives of this title," or "otherwise necessary in the interest of national security," then the requirements of Section 307(c)(3) and (d) can lead to federal sanction for the project. Several alternative actions might result from such a situation. The issue may get thrown into the federal courts in a test of state-federal authority. Since this tends to retard both present and future cooperation between the state and the federal agency involved, however, it seems more likely that the parties involved would try to negotiate through the political process for what each thought it could get, based on their relative strengths and weaknesses.

Here again, the importance of state mechanisms to identify advocacy and opposition positions at an early stage of a proposal must be emphasized. In addition, through Section 307 of the Act, the Secretary of Commerce has also been given the responsibility to coordinate the other relevant federal agency interests as a way of avoiding counterproductive conflicts.

However, if a case does go into the courts, Section 307 of the Act insures that in any conflict between assertedly inconsistent provisions of the state and federal law regarding coastal development, the courts will look to the underlying substantive state law which is applicable to the federal license or activity involved. The Act has asserted the state's authority statutorily, thereby strengthening it. In addition, in a contest with state law, an applicant for a federal license would find itself in the context of a state v. (Federal v.Federal) situation, rather than a simple matter of supremacy between the state and federal levels of government. In this case, the usefulness of Section 307 in attempting to reconcile conflicting federal policies affecting the coastal zone, would again come into play, interpreting the underlying intention of Section 307 that Congress is concerned primarily with coastal zone environment and development policy. Excellent Points !

Legislative, Administrative, and Executive Authorities

for

List of National Requirements and Facilities

1. This whole category is covered by the President's message of July, 1973, in which he declared energy self-sufficiency a national goal. It is also covered by the creation of the Federal Energy Administration. Deepwater ports are included here because even in a self-sufficiency scenario, oil will have to be imported for some years, and because of the transport of oil from the trans-Alaska pipeline to the West Coast.

1-b. The Federal Power Commission regulates all gas pipelines, and the Interstate Commerce Commission regulates oil pipelines.

1-c. The Bureau of Land Management controls the leases for offshore oil and gas production.

1-d. The Federal Power Commission regulates the electric power industry and licenses hydroelectric plants. The AEC licenses nuclear power plants and regulates them in various ways, including regulating waste disposal. It conducts, in addition, a large research and development program on reactor technology and reactor safety. The Bonneville, Southeastern, Southwestern, and Alaska Power Administrations are maintained by the Interior Department, and the Tennessee Valley Authority is an independent government-owned corporation.

1-e. See 1-d.

2. This area is covered by the National Environmental Policy Act, the Environmental Protection Agency, the Council on Environ-

mental Quality, the Department of the Interior, and the U.S. Department of Agriculture. E.P.A. has responsibility for setting and enforcing standards for several kinds of pollution, especially air and water, performing and supporting research, and assisting states in controlling pollution through demonstration projects and technical assistance. C.E.Q., in the Executive Office of the White House, formulates and recommends national policies to promote the improvement of environmental quality.

2-a. The Bureau of Sport Fisheries and Wildlife maintains national wildlife refuges. Estuarine sanctuaries are provided for in the Coastal Zone Management Act and administered by the states with funding from the Office of Coastal Zone Management. The Forest Service of the U.S.D.A. manages millions of acres of public forest land. The Bureau of Land Management manages millions of acres of public land for wildlife habitat, open space, and watershed protection, among other objectives. NOAA administers the Marine Mammal Protection Act of 1972.

2-b. National parks, seashore, lakeshore, riverways, parkways, and reservoirs are administered by the National Park Service.

2-c. See E.P.A. in #2. The AEC sets standards for radiation levels. EPA regulates pesticides. The Coast Guard maintains a marine environmental protection program to prevent and control oil pollution.

2-d. Much of this work is performed and supported through NOAA, through the office of Sea Grant, the National Marine Fisheries Service, the National Ocean Survey, the National Weather Service, the Environmental Data Service, and others. Funds are also provided to the states for this purpose by the

Pittman-Robertson and Dingell-Johnson Acts. The Forest Service performs forestry research, and the Geological Survey collects information on the nation's earth resources. The Office of Water Resources Research provides research funds to a variety of public and private institutions, but performs no research itself.

3-a-b-c. The National Park Service maintains national seashores, parks, and lakeshores. The Bureau of Sport Fisheries and Wildlife allows recreational use of its National Wildlife Refuges (most of which are located on water of some kind) insofar as it is compatible with its ecological objectives. The Bureau of Outdoor Recreation coordinates the development of a national outdoor recreation program and administers the Land and Water Conservation Fund which provides funds and technical assistance to state and local governments for planning, acquisition, and development of recreation areas and facilities. Various other agencies and bureaus, such as the Army Corps of Engineers, the Bureau of Land Management, the Forest Service, the Farmers Home Administration, the Agricultural Stabilization and Conservation Service, and the Federal Power Commission include recreation as an objective in their plans and projects.

4-a. The National Marine Fisheries Service, a function of NOAA, performs a number of functions with regard to marine food products. These include marketing research and distribution of market news information, financial assistance to the fishing industry, national research programs in fishery products technology, a voluntary national program of

inspection and certification of fishery products, programs to improve marketing practices, extension services to improve the activities of commercial fishermen, processors, and distributors, and establishment of national guidelines for managing fisheries. The Food and Drug Administration regulates food products traded in interstate commerce, the Federal Trade Commission regulates false advertising of food products, and the Interstate Commerce Commission regulates the carriers which distribute marine food products.

4-b. Marine mining requires exploration permits from the Geological Survey, and prospecting or mining permits from the Bureau of Land Management, with clearances for the latter from the Coast Guard, the Navy, the Army Corps of Engineers, the National Marine Fisheries Service, and the Geological Survey. The Metcalfe Bill, now in the Congress, would provide government guarantees for investments in deep-sea mining. Farmers Home Administration provides operating loans to fish farmers and private forest landowners; the Forest Service provides technical assistance to private forest landowners. Mariculture, if it becomes a viable coastal industry, will be regulated by the FTC and the FDA (food purity and advertising) and the Environmental Protection Agency (water quality).

4-c. The National Weather Service develops and distributes forecasts and warnings of waves, tsunamis, sea ice, storms, and floods.

4-d. The two major agencies in the water resources field are the Water Resources Council with its associated River Basins Commissions, and the Army Corps of Engineers. The Water Resources Council performs a continuing analysis of the

adequacy of water supplies in each water resource region of the United States, and of the relationship of regional or river basin plans and programs to the requirements of the larger regions of the nation. The Corps engineers public works such as major dams, reservoirs, levees, harbors, waterways, locks, and other facilities for flood control, shoreline erosion control, water supply, hydroelectric power, recreation, navigation, and other purposes. Various other agencies and bureaus, such as the Farmers Home Administration, the Soil Conservation Service, the Agricultural Stabilization and Conservation Service, the Department of Housing and Urban Development, EPA, the Council on Environmental Quality, the Economic Development Agency, the Bureau of Sport Fisheries and Wildlife, and the Forest Service, have interests in water resources planning.

5-a. The Federal Railroad Administration in the Department of Transportation conducts research and development in support of improved intercity ground transportation, and consolidates federal support of rail transportation activities. The Urban Mass Transportation Administration, in the same department, assists in the development of improved mass transportation facilities, equipment, techniques, and methods; encourages the planning of and provides financial assistance to the states and local governments in establishing areawide urban mass transportation systems.

5-b. The Maritime Administration (MARAD) conducts programs to develop ports, other facilities, and intermodal transportation systems, and promotes domestic shipping with both building

and operating subsidies. The Coast Guard provides for law enforcement on the high seas and on navigable waterways, for merchant marine safety, aids to navigation, and port security. The Guard also does research and development on marine traffic control systems for harbors.

5-c. The Federal Aviation Administration regulates the safety aspects of air transportation and performs research and development in this area. Among other functions, it operates air route traffic control stations, develops air traffic rules and regulations, allocates airspace, maintains aids to navigation, and administers and finances airport planning and development programs. The Civil Aeronautics Board regulates the financial aspects of civil air commerce. It sets rates and fares, regulates intercarrier mergers and other relationships, and designs and administers a uniform system of accounts for carriers.

5-d. The Federal Highway Administration administers federal aid to states for highway construction, and constructs certain types of highways itself. It also performs research and development on highway safety and develops and administers safety standards, giving funding to the states to expand and improve their highway safety programs. Research is also done by the Administration on the social, environmental, and economic impacts of highway transportation.

6. The national defense is provided for by the various branches of the armed services in the Department of Defense and by the Coast Guard. Installations in the Army, the Navy, and the Air Force fall under the purview of the Assistant Secretaries for Installations and Logistics in the respective services.

7-a. The National Park Service is responsible for the preservation of historic and cultural sites of importance to American history, and maintains the Federal Register of Historic Places. The Advisory Council on Historic Preservation comments on Federal and federally assisted and licensed project having an effect on properties listed in the Federal Register, under the National Historic Preservation Act of 1966. The National Trust for Historic Preservation, while a private organization, was chartered by Congress and received Federal matching money to acquire and preserve buildings important to the nation's cultural, architectural, and historic heritage. Although there are many governmental programs to aid American Indians and Alaska natives in terms of health services, education, and financial support, largely through the Bureau of Indian Affairs (Interior Department) and the Department of Health, Education, and Welfare, there seems to be no public agency directly concerned with the preservation of both the spirit and form of native cultures. The closest approximation is the Interior Department's Indian Arts and Crafts Board, which is concerned with the development of native arts and crafts, not the preservation of whole cultures.

7-b. The National Park Service is concerned with the preservation of sites of unusual natural beauty or visual qualities. The national parks, seashores, lakeshores, etc. are the country's scenic reservations, as well as being areas for recreation and protection of the environment. The Forest Service administers wilderness and primitive areas.

Appendix A

The National Interest Guide

What is the National Interest?

THE NATIONAL INTEREST GUIDE

State management programs approved by the Office of Coastal Zone Management should fall within the bounds of the policy enumerated in Section 306(c)(8). In further development of what the national interest in the coastal zone may be or, more properly, in what manner it is manifested, several assumptions have been made as a result of this policy. One, the broad national policy to "preserve, protect, develop, and where possible to restore or enhance" coastal resources is accepted as valid. Two, it is the function of the Office of Coastal Zone Management to "encourage and assist" the states in the development of their management programs. Thus, the interest guide as developed in this paper is in the nature of assistance to the states in deciding when and to what extent the national interest is involved--guidelines, rather than a strict set of rules which have to be met. Third, it is assumed that decision-makers on the state(or regional) level will favor the interest of their constituents in their allocation of coastal resources, through either a lack of knowledge of the national concern with their program or a basic human tendency to be somewhat less than magnanimous in relinquishing control to the federal government of resources which they may consider as a base for future economic or aesthetic development of their local area.

NATIONAL INTEREST GUIDE

Introduction

The guide includes a series of national interest "tests," which have been developed to assist the states in determining when the national interest may be involved and establishing a set of guidelines for determining the degree of that involvement.

Every facility/activity will have a wide range of effects or impacts. These include direct and indirect, short and long-term effects on environment, economy and culture. Here the Office of Coastal Zone Management-sponsored work of Devanney and Lassiter (economic effects), Clark (environmental effects)[1] and others will be critical to the development of methodologies needed to enable a systematic evaluation of the state or national character of a facility/activity. Some of these effects will also be dealt with later in this section.

1. Determining the Presence of a National Interest in a Facility or Activity

   a. Does the facility/activity address any part of an identified nationwide problem? For example,

      1) Energy self-sufficiency
      2) Environmental protection
      3) Adequate recreational facilities
      4) Health and welfare
      5) Transportation
      6) National defense
      7) Preservation of historic, cultural, and aesthetic values.

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[1] Devanney, J.W., et al., Parable Beach: A Primer in Coastal Zone Economics. Report submitted to Office of Coastal Zone Management, Sept. 1974.

Clark, John. Coastal Ecosystems. Washington, D.C., 1974.

b. Physical, Chemical and Biological Considerations

Does the facility/activity have environmental effects that extend to or impact at a regional or national level?

Two types of effects are included here: direct (primary) and diffuse or indirect (secondary/tertiary) physical, chemical, and biological effects. "Effects" shall be construed to be those which change the resource base. This test is therefore weighted heavily towards considerations which are reasonably easy to quantify. An increase in the level of phosphates in a water body (primary effect) with attendant detrimental effects on marine life (secondary effect) would fall into this category.

c. Economic Considerations

The following interpretation of economics should not be confined strictly to the attachment of prices to goods in the coastal zone whose value is easy to assess which could lead to a cost/benefit analysis of fluctuations in net national or regional income caused by a proposed coastal activity. Rather, economics should be treated as the concept of achieving an efficient allocation of limited resources given certain societal objectives. (See User's Matrix: Economic Factors).

For purposes of determining the presence of a national interest, the following question may be asked: Will the

benefits and/or costs of any proposed activity within the coastal zone extend to the regional or national level? If so, there is evidence of a national interest in the activity.

d. Social Considerations

In the context of the national interest test, social considerations can be shown to be a logical extension of the economic framework. Here, an additional concept, that of social systems accounting is offered.[2] This concept serves to round out the more limited economic accounting system and bring it more in line with the understanding of economics as the concept of achieving an optimal allocation of limited resources given certain societal objectives. Briefly, the concept of "national economic accounting" has been extended and removed from the realm of strictly quantifiable indicators. This system of social indicators, some highly quantifiable and some not, better indicates the true state of a nation. These encompass not only economic aspects, but also include "political, social, cultural, and biophysical aspects." [3]

For the purposes of the national interest guide, then, the following question should be addressed:

> Do the political, social, and cultural effects of a proposed activity extend to the regional or national level?

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[2] Gross, Bertram M., Chapter 3, in Social Indicators, R. A. Bauer, (ed.), M.I.T. Press, Cambridge, Mass., 1966.

[3] Bauer, p. 154.

If so, evidence of "more than local interest" exists. It should be noted at this point that the first three sections of the national interest guide are quite similar in scope in that they are all heavily dependent upon a determination of the geographical extent of effects caused by the activity. Additionally, state or regional level cooperation would serve to diminish or eliminate federal concern.

e. The Funding Source, Proponent or Primary Agent for the Facility/Activity

Here, a spectrum of primary agents and their proposed facilities/activities could be considered. The primary agents are listed in descending order of probability that their proposed facility/activity is of regional or national interest.

Federal Congress (e.g., the Alaska Pipeline Project, including coastal facilities)

Federal Agency (e.g., The Shoreline Erosion Control Program of the Corps of Engineers)

Regional Interstate Institution (e.g., the facilities of the New York Port Authority)

State Legislature (e.g., enactments to provide for recreation and beach access)

State Agency (e.g., projects or licensing programs of state department of public works)

County or Municipal Government (e.g., public housing programs)

Public Authority (e.g., airport or power plant of specific public authorities)

Private Industrial or Commercial Interest (e.g., a marina, refinery)

Private Agricultural or Silvicultural Interest (e.g., cranberry farming, shellfishing, etc.)

Private Landowner or Lessee (e.g., home, docks, etc.)

Careful consideration reveals that federal agency projects or programs may, in most cases, not manifest interests beyond the state or local level. For example, a flood control project of the Corps of Engineers designed to protect sections of downtown Boston is not necessarily in the national interest, since the benefit may extend only to a discrete, local region: the national interest is really not in the specific project, but in having an agency like the Corps funded and competent to undertake such projects as they are required.

For projects proposed by more than one initiating agent or proponent, some method for determining the "lead agent" or prinicipal agent must be developed. Here, the recently revised impact assessment guidelines of the federal Council on Environmental Quality and subsequent experience may be of use, and should be evaluated. [See Preparation of Environmental Impact Statement, Council on Environmental Quality, Federal Register, V. 38, N. 147, pp. 20530-20562 1 August 1973)].

In some cases, the principal agent and primary source of funds will be the same orginization or party. However, it is anticipated that in numerous cases, different parties will be involved--e.g., for an airport extension project to be carried out by a public authority, the source of

funds may be the federal Department of Transportation under the congressionally-funded and designed program for airport development assistance (AADA Act).

In some cases, the source of authority is clear--e.g., the AEC as the provider of construction and operating permits for nuclear power plants. In other cases, there may be several sources of authority at different government levels. For example, a marina may require approval of the town zoning authority for a variance, a permit from the state department of public works, and a dredge permit from the Army Corps of Engineers. Such cases of diverse authorities, all legitimate, will cause the difficulties. A mechanism for coordinating these different levels of authority built into the state program would alleviate the risk of conflicts between these different levels of government.

f. National Ownership or Trusteeship Considerations

Section 304 (a) of the Coastal Zone Management Act reads as follows: "Excluded from the coastal zone are lands the use of which is by law subject solely to the discretion of or which is held in trust by the federal government." State management programs will probably not include these lands directly. However, a state program may have elements which will impact on federal lands in that state. For example, if a state's program allowed residential or private recreational development near a national park, it would probably increase visitor pres-

sure on the park. Such impacts on federally owned resources would constitute an indication of national interest.

g. National Security Considerations

National security provisions are mentioned in only two places within the Act. Specifically, these are Sections 307(c)(3) and 307(d) of the Act. The context of these sections provides that the Secretary of Commerce is charged with responsibility for ensuring that considerations for the national defense are not overlooked in the approval or disapproval of proposed activities within the coastal zone of the United States. However, national security considerations may be upheld by other provisions of the Act as well, despite no specific mention of the issue:

Section 304(a)	Exclusion of federally owned or entrusted lands from the coastal zone
Section 307(b)	Views of agencies principally affected by management plans shall be taken into account
Section 307(c)	(1) Authority of agencies to conduct or support activities
	(2) Authority of agencies to undertake development projects.

In this context, "agencies" might be read as "agencies concerned with national security." The extension to national security then becomes obvious. Additionally, federally owned or entrusted lands might very well be defense establishments. It is conceivable that a state's management

program may allow an activity/facility which, while consistent with its own interests, is detrimental to national defense interest. Such a case might be a state's advocacy of offshore petroleum drilling in an area critical to the Navy for maneuvers or other military exercises. Such an action would be inconsistent with the national interest. This does not imply, however, that the Secretary of Defense would have a veto power over a state's coastal zone program. This test would simply alert a state that a problem existed, which would then be handled through procedures set up by the state and by the federal Office of Coastal Zone Management to coordinate state and federal interests.

h. National Interest Adjudication

The Secretary of Commerce is specifically charged in the Coastal Zone Management Act with (1) deciding appeals from applicants for federal permits for coastal activities which have been refused by a state for not being in accord with a state program; and with (2) allowing federal agencies to approve, when necessary, projects inconsistent with a state's plan. Both of these actions should take place only if the activity or facility in question is consistent with the purposes of the Act or necessary for national security. Since the Secretary is so charged, it is in the national interest to have

1) A process for deciding the appeals at the secretarial level (for which the Department of Com-

merce will be responsible)

2) A well-thought-out process at the state level to allow the inclusion of spokesmen for the national interest in disputes over specific facilities or activities

i. Legal Considerations

A number of legal concepts and realities may also be of use in determining the character of the facility/activity. For example, the Constitution provides for federal authority over "interstate commerce," national defense, and international relations. Admittedly, concepts such as interstate commerce have been stretched through court decisions to include almost any activity that the federal government has chosen to regulate. Nevertheless, the constitutional basis for establishing national interests and authorities must be closely considered. An important question would therefore appear to be--is the facility/activity one which has been or is likely to be considered as affecting interstate commerce? The significance of the commerce clause is well-established--e.g., as the basis for present federal authority over most activities in navigable waters. Facilities and activities for the national defense or to implement international agreement would be of national interest, and it is difficult to imagine contrary cases.

Research into the utility of these and additional legal considerations should continue. For example, the federal

power "to tax and spend," also provided in the Constitution, underlies the massive federal procurement program, and leads to consideration of another possible criterion--whether or not a facility/activity has been designed to meet obligations under federal contract or grant for goods and services.

2. Guidelines for Determining the Degree of National Interest Involvement

   a. Identify what resources are necessary to complete the facility and what the net impacts of the completed project will be on national needs.

   b. Determine to what extent the resource commitments necessary to complete the facility and the net impacts of the facility will foreclose future options for alternative uses of the resources. Implicit here is an attempt to identify the irreversibility of the proposed activity. The extent of the impact at the national level, foreclosing national options, indicates the degree of national interest concern.

   c. Having identified necessary input and expected output, as well as potential options foreclosed, determine to what extent other national needs are compromised and to what extent the collective impacts lie at the national level. The extent to which a proposed activity would obstruct or in some way hinder the satisfaction of a national requirement gives some indication of the significance of the national interest involved.

   d. Determine at what level the most consequences or impacts of a project occur, whether local, regional or national.

The extent to which the greatest number of consequences accrue to the national level will indicate the significance of the national interest involved. If the greatest number of consequences occurs at the regional level, and cannot be settled by interstate or regional coordination and cooperation, then the national interest will be involved to the extent of the collectivity of regional impacts.

APPENDIX B

USER'S MATRIX

A user's matrix has been developed to assist in several operations described in the preceding text. The primary function of the matrix is to act as a refinement of Section 1 of the National Interest Guide. Once a potential impact on the nation interest has been identified by using the guidelines developed in this report, the decision-maker can assess more precisely the impact a particular facility/activity will have on the national interest by using the matrix to see the effect the project can have on a wide range of social and natural factors. The factors reflect the broad range of interests that the nation has in the coastal zone, though not all of the factors, obviously, will apply to every project. It should be stressed here that the matrix is not intended as the final word on variables involved in determining national interest in coastal facilities siting. The decision-maker should tailor the matrix to fit each situation, selecting relevant activities, characteristics and factors, adding some of his own design if necessary.

The information obtained from the matrix may also be used by the decision-maker to assist the implementation of Section 2 of the National Interest Guide. Here it will help identify the impacts of a completed project (2a) and assist in determining the effect of the project on national requirements (2c).

A third function of the matrix is to assist the decision-maker in determining impacts of proposed activities as part of the "adequate consideration process." The fourth and last function is to guide the Secretary of Commerce in deciding appeals of state siting decisions under Sections 307 (c)(3) and 307(d) of the Act. It will provide the Secretary with information on the impacts of a proposed facility in addition to that presented by the applicant, state, and federal agency involved in the appeal.

The matrix has several elements:

1. Categories of coastal activities, i.e., activities which can or do occur on the coastline. These categories cover a number of types of activities. Some examples are:

   a. offshore facilities
   b. resource extraction
   c. ecological preservation
   d. industry-transportation

   Each category has subheadings denoting activities which are subsumed under the general category. For instance, the specific entries under resource extraction are:

   a. commercial shrimp and finfishing
   b. commercial shellfishing
   c. onshore oil and gas wells
   d. onshore mining and quarrying
   e. sand, gravel, and shell mining
   f. seawater chemicals extraction
   g. desalinization

   (note: offshore oil and gas wells have been included in offshore facilities category)

2. Characteristics of coastal activities, i.e., an enumeration of specific projects, actions, or facilities resulting from a particular category of coastal activity. These actions impact on the factors of #3 below. Examples of these characteristics, again under resource extraction, include:

   a. stock introductions
   b. collection of species
   c. temporary housing
   d. processing plants
   e. towers and platforms
   f. excavation
   g. dredging
   h. wastewater
   i. seawater intakes
   j. pipeline
   k. submerged fencing
   l. evaporation beds
   m. slips and berths
   n. channels

o. breakwaters and jetties
p. fuel docks
q. docks and piers
r. boatyards
s. boats and barges

3. Societal factors - social, economic, natural resource, and constitutional-legal - which describe the national interests.

Two elements of the matrix are not explicated in the same detail as the above, because they depend entirely on the particular situation being analyzed. They are:

1. A description of the changes in the factors after impact by the coastal activity in questions (called "consequence conditions" in the matrix).
2. An assessment of the value of the coastal activity toward fulfilling the seven broad national objectives outlined in Section 1 of the National Interest Guide. These elements are discussed below.

The matrix, as evidenced from the example provided, involves performing several functions. The decison-maker should use it in three steps.

1. Select the facility/activity concerned from the categories of coastal activities (#1 on the matrix) and plot it against the characteristics given for that category (#2 on the matrix). This allows the specific characteristics of or actions resulting from an activity to be seen.

2. Plot the characteristics of the activity against the societal factors (#3) to determine the impact of the siting of the facility on the national interest. A check in the box indicates that an impact exists. This impact is then described in the "consequent conditions" section (#4 in the matrix). Not all factors will be impacted, of course, and of those that are, some will be more heavily impacted than others.

3. Determine the importance of each impact on the national interest by evaluating what effect the impacts will have on fulfilling or obstructing the

broad national requirements in Section 1 of the National Interest Guide; determine what environmental, social, or economic effect the siting of the facility can have at the regional or national level, as well as how heavily the federal presence is involved, also in accord with Section 1 of the Guide.

After completing these three steps, the decision-maker will be able to see how severely the national interest will be impacted by siting (or not siting) a facility on the coastline. Several sites may be run through the matrix to determine the national interest impact of alternative sites. The information obtained from the matrix, the decison-maker should also have some information for deciding the net impacts of approposed project on national needs, as required in Sections (2a) and (2c) of the National Interest Guide.

The following pages list in detail the categories and characteristics of coastal activities and the social factors used in the matrix.

1. Categories of Coastal Activities[1]

a. Recreation

Motorboating	Beachcomging-strolling
Boatfishing	Clamming-bait collecting
Waterskiing	Picknicking-cookouts
Sailing	Contemplation-observation
Surf fishing	Painting-photography
Pier fishing	Wildlife observation
Swimming	Hunting
Surfing	Horseback riding
Scuba-snorkling	Beach and dune driving
Wading	Shopping-boardwalking
Sunbathing	Ocean-view dining
Group beach games	Sightseeing pleasure driving
Camping	

[1]Source: Jens Sorensen, A Framework for Identification and Control of Resource Degradation and Conflict in the Multiple Use of the Coastal Zone. This was used as the basis for coastal activities categories, although we added to and changed some for our own purposes.

b. Industry-Transportation

Sewage treatment
Industrial operations
Power lants
Military facilities
Communications
Marine transport
Highway transport
Air transport
Rail transport
Navy and Coast Guard operations
Marine research

c. Residential-Commercial

Residential development
  Single-family dwellings
  High-rise or multiple dwellings
Commercial services
  Tourist-oriented services
  Small businesses
  Large chain businesses
  Shopping centers

d. Resource Extraction

Commercial shrimp and finfishing
Commercial shellfishing
On-shore oil and gas wells
On-shore mining and quarrying
Sand, gravel and shell mining
Seawater chemicals extraction
Desalinization

e. Offshore Facilities

Oil and gas wells
Atomic power plants
Mineral mining
Sand, gravel and shell mining
Seawater chemicals extraction

f. Ecological Preservation

Wildlife refuges
National parks
Wilderness areas
State parks
Natural areas

g. Historical, Cultural, and Aesthetic Value Preservation

Historic sites
Historic structures
Unspoiled areas of natural beauty
Unique areas of particular American cultures

2. Characteristics of Coastal Activities[2]

These are specific parts or actions of coastal activities that have potential impacts on the factors defining the national interest in the coastal zone, and therefore on that interest.

a. Recreation

Protection of species
Collection of species
Landscaping
Utilities
Sewage and trash disposal
Picnic facilities
Signs and billboards
Fences
Toilet facilities
Structures
Vehicle trails
Paths to shore
Vehicles
Launching ramps
Roads to shore
Turnouts and vista points
Roadways and parking areas
Channels
Breakwaters
Groins and beachworks
Bulkheads and seawalls
Navigation aids
Docks and piers
Fuel docks
Slips and berths
Boatyards
Boats

b. Industry-Transportation

Collection of species
Practice ranges
Defense operations
Power pylons and wires
Transmission towers and antennae
Utilities
Fences
Runways
Aircraft
Vehicles
Railroads
Roadways and parking areas
Building site cuts and fills
Roadbed cuts
Bridges
Roadbed fill and causeways
Water impoundments
Solid waste
Waste water and sewage
Nuclear reactions
Fossil fuel combustion
Bulk refining and processing
Tanks, elevators and warehouses
Structures
Bulk and fuel loading
Navigation aids
Slips and berths
Channels
Breakwater and jetties
Docks and piers
Shipyards
Nuclear ships
Conventional ships

[2]Source: This section is based in large part on work by Jens Sorenson in A Framework for Identification and Control of Resource Degradation and Conflict in the Multiple Use of the Coastal Zone.

c. Residential-Commercial

Septic tanks
Sewage systems
Solid waste
Groins and beachworks
Bulkheads and seawalls
Signs and billboards
Vehicles
Utilities
Fences
Structures
Roadways and parking areas
Landscaping
Vegetation clearing
Irrigation
Water impoundments
Groundwater withdrawal
Drainage improvements
Cuts and fills

d. Resource Extraction

Stock introductions
Collection of species
Temporary housing
Processing plants
Towers and platforms
Excavation
Dredging
Waste water
Seawater intakes
Pipelines
Submerged fencing
Evaporation beds
Slips and berths
Channels
Breakwaters and jetties
Fuel docks
Docks and piers
Boatyards
Boats and barges

e. Offshore Facilities

Petroleum and mineral prospecting
Drilling
Gangue dumping
Offshore beneficiation
Radioactive waste disposal
Release of radioactivity to water and air

f. Ecological Preservation

Restriction of commercial, residential, and industrial development
Recreational uses of land
National, state, and local government acquisition of land
Interpretive and other facilities for visitors

g. Historic, Cultural, and Aesthetic Value Preservation

Restriction of development
Preservation and restoration of structures
Preservation and restoration of land
Restrictive building codes
Interpretive, parking, and other facilities for visitors
National, state, and local government acquisition of land
Cosmetic procedures (e.g., burying cables) to preserve aesthetic values

stry-Transportation Activity

ic power plant - on-shore

Industry-Transportation

Characteristics

Practice ranges	Collection of species	Defense operations	Power pylons and wires	Transmission towers	Utilities	Forces	Runways	Aircraft	Vehicles	Roadways, parking areas	Site cuts, fills, dredging	Roadbed cuts	Bridges	Roadbed fill, causeways	Water impoundments	Solid waste	Waste water (heated)	Nuclear reactions/Reactors	Fossil fuel combustion	Bulk refining, processing	Tanks, elevators, hoppers	Bulk and fuel loading	Navigation aids	Sites and berths	Channels	Breakwaters, jetties	Docks and piers	Shipyards	Nuclear ships	Conventional ships	Seawater intakes	Radioactive emissions normal (low level)	accident (high level)	Saltwater cooling towers	Structures	Entire project	Construction phase	Operation phase
			✓	✓		✓				✓	✓	✓		✓	✓		✓	✓									✓				✓		✓	✓	✓	✓	✓	✓	✓

1. Societal Factors

4. Consequent Conditions

5. Effects on National Policies

A. Social																																						
Population																																						
Access to public facilities						✓																				✓									✓			
Opportunity for education and training																																						
Employment																																				✓	✓	
Public health and welfare																		✓														✓	✓					
Housing																																						
Leisure and recreation																																						
Food supply and distribution																	✓															✓	✓					
Transportation																																						
Communication																																						
B. Economic																																						
Subjective considerations																		✓																				
National objective																																						
Information available to society																																						
Causes of market breakdown																																						
Distribution of income																																						
Political considerations																																						
Regional income levels																																						
Differences in																																						
Cost of outputs to consumers																		✓																				
Private profits																																			✓			
Public profits																																			✓			
Take-home pay																																				✓	✓	
Respending																																						
Pecuniary considerations																																						
Wage and salary levels																																				✓	✓	
Transfer payments to government and private sector																																						
Interest rate																																						
Tax levels																																						
Commodity prices																		✓																				
Level of national defense spending																																						
C. Natural Resource																																						
Marine characteristics																																						
Water - physical and chemical properties											✓		✓	✓		✓										✓						✓	✓					
Biota											✓		✓	✓		✓															✓	✓	✓					
Crucial life support systems											✓		✓	✓		✓																✓	✓					
Carrying capacity											✓		✓	✓		✓																✓	✓	✓				
Recreational and aesthetic potential			✓	✓		✓				✓																								✓	✓			
Estuarine characteristics																																						
Water - physical and chemical properties											✓		✓	✓		✓										✓						✓	✓					
Biota											✓		✓	✓		✓														✓		✓	✓					
Crucial life support systems											✓		✓	✓		✓										✓						✓	✓	✓	✓			
Carrying capacity											✓		✓	✓		✓																✓	✓					
Recreational and aesthetic potential			✓	✓		✓				✓																								✓	✓			
Shoreland (upland) characteristics																																						
Watershed drainage												✓		✓																				✓				
Freshwater flow into coastal area												✓		✓																					✓			
Crucial life support system												✓		✓																					✓			
D. Legal-Constitutional																																						
Constitutional law																																						
Legislation																																						
Adminstrative regulation																																						
Common law																																						

	4. Consequent Conditions	5. Effects on National Policies
Access to public facilities	Block access to public shoreline; keep land from use for recreation facilities	3-
Employment	May increase employment, especially in construction phase	4+
Public health and welfare	Somatic and genetic damage to individuals from emissions; contribute to adequate energy supplies	4-;1+
Food supply and distribution	Pollution of mariculture waters, shellfish beds	4-
Cost of outputs to consumers	May lower cost of electricity, keep it from rising, or keep increase in price to a minimum	1+;4+
Private profits	Increase profits to investors in utility	4+
Public profits	Increase municipal tax revenues	4+
Take-home pay	May increase take-home pay, especially in construction phase	4+
Wage and salary levels	May increase slightly	4+
Commodity prices	May lower cost of electricity, keep it from rising, or keep increase in price to a minimum	1+;4+
Water - physical and chemical properties	Thermal and possibly radioactive pollution of surrounding waters; change in littoral drift increase turbidity	2-
Biota	Deleterious effects of pollution on marine species; loss of organisms in seawater intakes	2-;3-
Crucial life support systems	Deleterious effects due to pollution	2-
Carrying capacity	Reduce carrying capacity because of pollution	2-
Recreational and aesthetic potential	May damage scenic values on-shore	2-;3-
Water - physical and chemical properties	Thermal and radioactive pollution; change in littoral drift, increase turbidity	2-
Biota	Deleterious effects on estuarine species due to pollution; loss of organisms in seawater intakes	2-;3-
Crucial life support systems	Salt may damage shore vegetation; deleterious effects on breeding, feeding, migration	2-;3-
Carrying capacity	Reduce capacity of estuarine waters due to pollution	2-
Recreational and aesthetic potential	May damage scenic values on-shore	2-;3-
Watershed drainage	Salt may affect groundwater supplies	2-;4-
Freshwater flow into coastal area	Removing vegetation cover may affect channels for water flow, rate and amount of flow	2-

ffect on National Policies:

r (1, 2, etc.) indicates
rific national policy involved

(+) or minus (-) mark
cates positive or negative
cts on national policy

nal policies
nergy self-sufficiency
nvironmental protection
dequate recreational
facilities
ealth and welfare
transportation
ational defense
reservation of historic,
cultural, aesthetic values

CAPECOD -

INDUSTRY-TRANSPORTATION

1. Industry-Transportation Activity

2. Industry-Transportation Characteristics

Industry-Transportation Activity	Practice ranges	Collection of species	Defense operations	Power pylons and wires	Transmission towers	Utilities	Fences	Runways	Aircraft	Vehicles	Roadways, parking areas	Site cuts, fills, dredgin	Roadbed cuts	Bridges	Roadbed fill, causeways	Water impoundments	Solid waste	Waste water (heated)	Nuclear reactions/Others	Fossil fuel combustion	Bulk refining, processin	Tanks, elevators, houses	Bulk and fuel loading	Navigation aids	Ships and berths	Channels	Breakwaters, jetties	Docks and piers	Shipyards	Nuclear ships	Conventional ships	Sonics-ultrasonics	Radioactive emissions	normal (low level)	accident (high level)	Saltwater cooling towers	Structures	Entire project	Construction phase	Operation phase
Atomic power plant - on-shore				✓	✓		✓				✓	✓	✓		✓	✓		✓	✓								✓					✓		✓	✓	✓	✓	✓	✓	✓

3. Societal Factors / 4. Consequent Conditions / 5. Effects on National Policies

Societal Factors	Consequent Conditions	Effects on National Policies
A. Social		
Population		
Access to public facilities	Block access to public shoreline; keep land from use for recreation facilities	3-
Opportunity for education and training		
Employment	May increase employment, especially in construction phase	4+
Public health and welfare	Somatic and genetic damage to individuals from emissions; contribute to adequate energy supplies	4-;1+
Housing		
Leisure and recreation		
Food supply and distribution	Pollution of mariculture waters, shellfish beds	4-
Transportation		
Communication		
B. Economic		
Subjective considerations		
National objective	Contributes to energy self-sufficiency and to adequate energy supplies for U.S.	1+
Information available to society		
Causes of market breakdown		
Distribution of income		
Political considerations		
Regional income levels		
Differences in		
Cost of outputs to consumers	May lower cost of electricity, keep it from rising, or keep increase in price to a minimum	1+;4+
Private profits	Increase profits to investors in utility	4+
Public profits	Increase municipal tax revenues	4+
Take-home pay	May increase take-home pay, especially in construction phase	4+
Respending		
Pecuniary considerations		
Wage and salary levels	May increase slightly	4+
Transfer payments to government and private sector		
Interest rate		
Tax levels		
Commodity prices	May lower cost of electricity, keep it from rising, or keep increase in price to a minimum	1+;4+
Level of national defense spending		
C. Natural Resource		
Marine characteristics		
Water - physical and chemical properties	Thermal and possibly radioactive pollution of surrounding waters; change in littoral drift increase turbidity	2-
Biota	Deleterious effects of pollution on marine species; loss of organisms in seawater intakes	2-;3-
Crucial life support systems	Deleterious effects due to pollution	2-
Carrying capacity	Reduce carrying capacity because of pollution	2-
Recreational and aesthetic potential	May damage scenic values on-shore	2-;3-
Estuarine characteristics		
Water - physical and chemical properties	Thermal and radioactive pollution; change in littoral drift; increase turbidity	2-
Biota	Deleterious effects on estuarine species due to pollution; loss of organisms in seawater intakes	2-;3-
Crucial life support systems	Salt may damage shore vegetation; deleterious effects on breeding, feeding, migration	2-;3-
Carrying capacity	Reduce capacity of estuarine waters due to pollution	2-
Recreational and aesthetic potential	May damage scenic values on-shore	2-;3-
Shoreland (upland) characteristics		
Watershed drainage	Salt may affect groundwater supplies	2-;4-
Freshwater flow into coastal area	Removing vegetation cover may affect channels for water flow, rate and amount of flow	2-
Crucial life support system		
D. Legal-Constitutional		
Constitutional law		
Legislation		
Adminstrative regulation		
Common law		

Key for Effect on National Policies:

A. Number (1, 2, etc.) indicates specific national policy involved

B. Plus (+) or minus (-) mark indicates positive or negative effects on national policy

C. National policies
1. Energy self-sufficiency
2. Environmental protection
3. Adequate recreational facilities
4. Health and welfare
5. Transportation
6. National defense
7. Preservation of historic, cultural, aesthetic values

3. Societal Factors

a. Social Factors

An important part of the national interest in the coastal zone is represented by the health and social welfare of its people. These considerations are represented by the numerous social factors and their respective indicators. The impact on the national interest may be seen specifically by the way various coastal activities affect these factors.

Social factors have been assumed to be those "things" which represent the major aspects of our society, or those areas which comprise the basic human needs and wants, and reveal the general well-being of the entire population.

There are essentially two types of social factors, objective and subjective. An objective or external social factor is one which is amenable to direct measurement and can be employed to some extent as a decision-making tool. A social factor which cannot be quantified (i.e., have a dollar value assigned to it or have statistics gathered on it) is called subjective or internal. This type of factor includes such individualistic social aspects as happiness, desires, satisfactions, feelings, etc., and by present techniques cannot be quantified when decisions have to be made. Many planners, policy-makers, etc. recognize the importance of the subjective as well as the objective social factors; but since no method of quantification presently exists, their use as an effective decision-making tool is very limited. Only objective social factors and their indicators, therefore, are considered in the matrix.

It was stated earlier that the impact on the national interest may be seen specifically by the way coastal activities affect these factors. Actually the factors themselves are not directly affected by an activity. It is the indicators that are affected, which, in turn, have an effect upon the factors. A good example would be that of an industrial development which increases the extent of private ownership of the coastline (an indicator) which decreases public access to the shore (a factor).

Like a social factor, a social indicator does not possess a firm, concrete, widely accepted definition. Many sources, however, perceive social indicators to be

1) instruments for detecting changes in factors;
2) instruments for monitoring progress toward social goals;
3) measures of changes in factors - this view has been adopted here.

Item 3) demonstrates the quantifiable characteristics of the factors chosen.

The individual social factors and their indicators were selected based on the following criteria:

1) that each factor reflect a fundamental need or want
2) that each factor be quantifiable in some way
3) that the list be as comprehensive as possible
4) that the list not contain any redundancies.

No long lists of criteria were utilized in devising the indicators for each factor. All that was required was that each be a means of measuring the changes in its respective factor. The social factors and their indicators are outlined below.

Factor	Indicator
(1) Population	Density Geographical distribution Income levels Occupations Age
(2) Access to public facilities	Private ownership of land Proximity of public area to place of residence Natural preserves and wildlife refuges Pollution and waste disposal
(3) Opportunities for education and training	Availability of programs Quality of programs Cost of programs - financial restraint Income of consumers Racial and sexual barriers
(4) Employment	Unemployment rate Introduction of new business and industry Growth in population Racial and sexual barriers
(5) Public health and welfare	Health care facilities and delivery Environmental health Water pollution (drinking water, recreational uses, marine food sources) Air pollution Disease control Disaster warning Hurricanes, tsunamis, storms Air raids Flood warning and control
(6) Housing	Population pressure Interest rates Cost of construction Income levels
(7) Leisure and recreation	National parks, seashores, riverways, wildlife refuges, etc., providing recreational facilities
(8) Food supply and distribution	Onshore fishing facilities, distribution systems
(9) Transportation	Interstate highways Rail, air, and marine facilities

(10)	Communication	Warning systems Transportation systems

b. Economic Factors

Since economic considerations are involved in any assessment of national interest, three sets of economic factors have been included in the matrix. They are subjective economic factors, a regional income factor, and pecuniary factors.

Subjective economic considerations are those basic to a concept of economic efficiency and which do not readily admit of quantification in money terms. They are often overlooked in the concern for obtaining quantifiable measures of economic well-being, but they represent considerations which may be significantly affected by coastal activity siting. For that reason, they should be dealt with in any assessment of national interest.

A regional income factor is included to measure the change in regional income levels. This factor is termed "regional" for convenience. It can actually be used to measure changes in income in any area a decision-maker chooses to draw a boundary around, from a municipality to a nation. Since this study deals with the national interest, however, we are including this factor as a method of measuring changes in the income of an interstate region or of the nation.

The pecuniary factors were derived primarily from the system of economic accounts in use in the United States today. In the absence of regional income analyses, and where carefully used, these factors provide a guide to the magnitude

and geographic extent of the economic effects of a given development scheme. They do not, however, measure the economic merits of alternative coastal allocation schemes, as does regional income analysis.

This list of economic factors is not a final, unalterable set. Local decision-makers will have to select characteristics that fit their own areas. Use of the economic factors alone, moreover, will not provide an adequate assessment of the national interest. Economic considerations should only be used in conjunction with the other factor categories in the matrix.

1) Subjective economic considerations

These considerations, difficult to quantify in dollar terms, represent areas which may be significantly affected by coastal activity siting. They have direct, yet often subtle implications for resource allocation decisions, assuming one desires the allocations to be economically efficient and politically acceptable.

a) National objective

This is a reflection of the desires of the citizenry of the United States. What are these desires with regard to the coastal zone? Shall we devote the coastal zone to nuclear power plants, or offshore drilling rigs, or pleasure boating, or what? The choice of coastal activities is both a reflection of societal values and a formulator of

them. For example, a truly strong desire for the preservation of wetlands (not merely a professed one) could be expected to be reflected in any national objective with regard to the coastal zone, and thus have an effect on activities located there.

b) Information available to society

Going hand in hand with the development of societal objectives mentioned above is this highly important factor. Its inclusion stems directly from the consideration that perhaps society may not be able to make the right decision, due to bad information or lack of it, and thus adopts a faulty value system. The best way to avoid this problem is to provide proper information on the effects of allocation decisions. To the extent that lack of information affects consumption decisions or that experience from past allocative decisions affects those yet to be made, information availability is an economic consideration to be used in national interest assessment.

c) Market breakdown

Assuming that the private market is the allocative mechanism in use, the following become strong factors in determining the effectiveness of its operation and hence the allocation decision made.

(1) Spillover effects (externalities)

An externality or spillover is an effect of one person's consumption of a good on those not consuming that good. The classic example is water pollution.

An industry uses water in its manufacturing processes and returns it polluted to the river from which it came, resulting in a decrease in the recreational or drinking water potential of the river downstream. It should be asked what effect a coastal allocation decision will have in terms of spillover costs.

(2) Goods subject to decreasing costs

In pure competition, all goods will be sold precisely for what it costs to make them (marginal cost). If this marginal cost is less than the average cost of the goods, the producer loses money on each item sold and does not produce. Society, which may be willing to pay for these goods, is a loser. E.g., a lighthouse could not be a money-making proposition. Public action may be warranted here, so the effect on allocation decisions is obvious.

(3) Contracting costs

Ideally, decsions in the marketplace (to buy, to sell, to locate) are made at zero cost. In reality, it costs both in money and in social terms to make these decisions. This is a breakdown in the market, and it might affect the decision whether or not to locate an activity in a given coastal zone. An example of this is the expense involved in acquiring land for a national seashore, where many dollars and hours are spent to arrange the transfer of property from one owner to another.

(4) Collective goods

Public or collective goods are those from which everyone benefits, whether they wish to or not, which everyone owns in common, such as air and water, or the fish resources of the water column, and which cannot be priced. Lack of a price leads to the market's inability to handle the commodity, and to its overexploitation or misuse. The effect of an allocation decision may have serious effects on a public good or goods, and this factor should be carefully considered.

d) Distribution of income

In the context of coastal zone allocation decisions, there may be vast numbers of people who actually suffer from resource allocation to a given activity, while only a few gain. The losers have lost a measure of expression of their willingness to pay in the marketplace, and the winners have gained a considerable say. Allocation decisions in the market are less than a consensus, as monetary power shifts to a relatively few people whose values are probably different from those less wealthy. Shifts in the other direction can occur through various methods of income transfer with the opposite effect on allocative decisions.

A classic example of control of coastal allocation decisions by a relative few is Cape Cod in Massachusetts, where wealthy landowners control much of the coastline.

Few who have visited the area and had an opportunity to walk the beach will deny the high level of preservation in a relatively natural state. Compare this to municipal beaches in New Jersey where, at least indirectly, a large number of less wealthy individuals have expressed their desires for coastal recreation. Any resemblance to a natural shoreline is purely coincidental. Nonetheless, the decision has been made, and only serves to emphasize the fact that the nature of allocative decisions is heavily affected by those who make them. In the marketplace, this means those with money.

e) Political considerations

Most definitely these are a factor in affecting coastal allocation decisions. Not all decisions are made in the context of the marketplace, quite obviously, and a large number of non-economic factors enter into them. Public sentiment has long affected the actions of decision-makers. Indeed, strong public expression (other than monetary) of a national goal in the coastal zone would have farreaching effects on the allocation decisions made there. The Alaska Pipeline delay is an example. This is a two-way street, however. Well-organized and well-funded lobbies which represent something less than broad public opinion exist precisely to use this factor in affecting allocation decisions, both along the coast and elsewhere. The resulting allocations may have farreaching effects of

both a subjective and a pecuniary economic nature. Thus political considerations must be deemed a factor in resource allocation.

Not all of these subjective considerations will apply in like manner to every coastal siting decision or in every coastal region throughout the nation. The national objective in the coastal zone as seen by residents of Oregon certainly will differ from that in the view of New Jersey residents. The extent of environmental spillover effects from an oil production facility of the coast of Alaska will differ somewhat from that of a similar facility off the coast of New England. Again, the use of these considerations and those which follow will be up to the regional or local decision-maker who must decide which are essential to his national interest assessment. The list must be tailored to the region and the case under consideration.

A list of subjective economic considerations is presented in Table 1.

2) Regional income level considerations

The next economic factor is that of regional income analysis. (The reader will recall that "regional" is used for convenience, and that "region" as used here means an interstate region or the nation.) This factor consists of the net difference in real regional income occasioned by undertaking one coastal siting alternative as opposed to another, or as opposed to leaving the site in its present use. A

TABLE 1

SUBJECTIVE CONSIDERATIONS

a) National objective

b) Information available to society

c) Market breakdown

    (1) Spillover effects

    (2) Goods subject to decreasing costs

    (3) Contracting costs

    (4) Collective goods

d) Distribution of income

e) Political considerations

3) Pecuniary economic considerations

Pecuniary economic considerations are readily quantifiable and are drawn from the national income accounting system as represented in the monthly U.S. government publication Economic Indicators and related publications. These considerations present a number of factors, which, when properly used to avoid pitfalls such as double counting, provide a guide to the nature of the magnitude and geographic extent of economic effects expected from a development scheme. They do not, however, provide the uniquely defined set of numbers which regional income analysis produces to measure the relative merits of alternative development schemes.

For purposes of this analysis, three sectors of the economy are considered:

a) the personal or private sector

b) the governmental sector;

c) the industrial or business sector.

Much time and effort could be spent in measuring changes in the levels of everything from cigarettes sales taxes to the price of safety pins, and measuring the effect on them of a change in the makeup or level of coastal activities. This would be futile, however, The situation must be modeled in order that a reasonable approximation to real circumstances can be made using relatively few parameters. Choice of the parameters (factors) depends on their applicability to "greater than local" interests. The factors particularly applicable to these three sections have been jointly derived from both the 1967 Supplement

to Economic Indicators and the 1971 edition of State-Local Finances and Suggested Legislation. Table 2 indicates the pecuniary factors.

c. Natural Resource Factors

Since the coastal zone is heavily used now, with the promise of even greater use in the future, our impacts on the natural resources of this area must be considered carefully and modified, if the area is to remain useful and productive for man. For this reason, natural resource factors have been included in the matrix to allow an assessment of the environmental effect of specific coastal zone projects. The factors lean heavily on water quality, not only because it is the primary element which determines overall environmental quality in the coastal zone, but because the federal government has expressed a clean water policy for the country. The maintenance of water quality in general may therefore be construed as being in the national interest.

The factors also emphasize estuarine areas, because they are most vulnerable to man-caused stresses, and because their importance as breeding and nursery grounds for fish, traps for pollutants and sediments, etc., is now undisputed. They are such a prevalent feature of the coastal zone that their health must be considered in the national interest, as well as in the interests of the regions in which they are located.

The third important aspect of the factors is the areas

TABLE 2

PECUNIARY CONSIDERATIONS

a) Wage and salary levels

b) Transfer payments to government and private sectors

c) Interest rate (opportunity cost of capital)

d) Tax levels

- Property
- Personal income
- Corporate income

e) Commodity prices

- Durable goods
- Non-durable goods
- Housing

f) Level of national defense spending

designated as crucial life support systems or "vital areas."[4] These are areas that should be considered as nationally important and strictly protected, because of their unique life support capabilities which contribute in a major way to the health of the coastal zone.

In the section on shorelands or uplands, defined as those lands above the coastal floodplain which are not inundated by even the most severe storms, only the watershed characteristics have been dealt with. These charactertistics form the primary influence of the uplands on the coastal zone, by providing freshwater inflow. The uplands do have other effects on the coastal zone, however, and coastal decision-makers, depending on their geographic locale, may wish to emphasize this area more heavily than has been done here.

In using the matrix for a specific project in a specific locality, obviously those doing the analysis will have to select factors that are relevant to their situation; effects on coral reefs would have no significance in Massachusetts, for instance.

A complete list of the natural resource factors follows.

1) Marine characteristics
   a) Water - physical and chemical properties
      (1) Salinity
      (2) Depth
      (3) Turbidity
      (4) Circulation/currents

[4] John Clark, Coastal Ecosystems: Ecological Considerations for Management of the Coastal Zone (Washington, D.C., 1974), p. 59.

(5) Nutrients and trace elements
(6) Temperature
(7) Geologic basin characteristics
(8) Toxic substances and biocides
(9) Oxygen
(10) Pathogens
(11) Sediment

b) Biota
(1) Plants
(a) Phytoplankton
(b) Aquatic plants (rooted and floating)
(2) Animals
(a) Mammals
(b) Finfish
(c) Shellfish
(d) Worms and other invertebrates
(e) Birds
(f) Zooplankton and larvae

c) Crucial life support systems
(1) Coral beds
(2) Kelp beds
(3) Dunes and beachfronts
(4) Barrier islands
(5) Nursery areas
(6) Wintering areas
(7) Migratory pathways

d) Carrying capacity (total resource capability)

e) Recreational and aesthetic potential

2) Estuarine characteristics

a) Water - physical and chemical properties
(1) Salinity
(2) Temperature
(3) Circulation and associated geologic basin characteristics, including flushing rates
(4) Freshwater inflow

(5) Stratification
(6) Sediment
(7) Nutrients and trace elements
(8) Toxic substances and biocides
(9) Oxygen
(10) Pathogens
(11) Turbidity

b) Biota
(1) Animals
(a) Bacteria
(b) Larvae and zooplankton
(c) Finfish
(d) Shellfish
(e) Worms and other invertebrates
(f) Mammals
(g) Birds
(h) Reptiles
(i) Estuarine-dependent species
(2) Plants
(a) Phytoplankton
(b) Aquatic plants (rooted and floating)
(c) Productivity of plant communities

c) Crucial life support systems
(1) Mangrove communities
(2) Drainageways
(3) Coral reefs
(4) Shellfish beds
(5) Grass beds
(6) Wetlands
(7) Vegetated tidelands
(8) Tideflats
(9) Nursery areas
(10) Breeding areas
(11) Wintering areas
(12) Feeding areas

(13) Migratory pathways

d) Carrying capacity (total resource capacity)

e) Recreational and aesthetic potential

3) Shoreland (upland) characteristics - watershed drainage

a) Freshwater flow into coastal areas

(1) Rate

(2) Amount (volume)

(3) Dissolved substances

(a) Sediment

(b) Toxic substances and biocides

(c) Nutrients and trace elements

(d) Oxygen

(e) Pathogens

b) Crucial life support system - drainageways for water flow

(1) Channeled flow

(2) Surface flow

(3) Sheet flow

(4) Characteristics affecting flow

(a) Vegetation cover

(b) Excavation, surfacing, and other development activities

d. <u>Legal-Constitutional factors</u>

Since the full range of the legal hierarchy is involved in determining national involvement in the coastal zone, the legal-constitutional factors reflect this range. The types of law referred to here are

1) constitutional law
2) legislation
3) administrative regulation
4) common law

These categories will be involved in areas which apply to the coastal zone both specifically, as in admiralty law, wetlands

regulation, and navigable waterways, and generally, as in taxation, nuisance, equal protection, eminent domain, and health and welfare.

Often, where specific activities are concerned, understanding that different parts of an activity relate to different areas of the law and come under the jurisdiction of varying local, state, regional and federal agencies is difficult. The matrix will allow the coastal decision-maker at least to see the areas of federal law involved in a project. The decision-maker will also have some idea of the difficulty of changing any of the laws involved, or changing the interpretation of a law, should it be deemed necessary.

While the matrix does not point out specific agencies and levels of government involved, this should be an area for further study and analysis.

APPENDIX C

Case Study of "Adequate Consideration" of the National Interest in the Siting of a Facility

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4. Energy Policy Considerations

C. Defects in the Nuclear Power Plant Siting Process in Relation to the National Interest

1. Avoidance of Issues

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4. Concluding Remarks

I. NATIONAL INTEREST TEST AS APPLIED TO NUCLEAR POWER PLANT SITING

A. Introduction

In applying the national interest test to this case study, it is first useful to point out that there is a close relationship between the first two elements of the test; i.e., specific types of impacts (element no. 2) can be categorized according to their relationship to broader categories of problems of identifiable nationwide concern (element no. 1). Thus, for the purposes of this analysis, these two elements are distinguished only insofar as they represent different levels of aggregation.

With regard to the "federal presence" aspects of the test (element no. 3), it should be noted that such "presence" can take many forms. In some cases, affected national interests are firmly institutionalized in the form of agency departments, programs, and regulations; in other cases, the national interest may be as nebulous as a broad declaration of Congressional policy. Further, some national interests have yet to be articulated in any way but are the subject of developing concern and pending legislation. To the extent that national interests are institutionalized, the analysis will comprise a sort of "A-95 review" in reverse, and will include observation as to the nature of federal involvement (degree of conclusive say in decision, extent of shared jurisdiction, etc.). To the extent that national interests remain ill-defined, the

discussions are necessarily limited to issue identification and tentative evaluation.

B. Problem Areas of Nationwide Concern

Nuclear power plant siting in the coastal zone, whether onshore or offshore, is integrally related (to varying degrees) to four major problem areas that are clearly identifiable as matters of nationwide concern:

1) health and safety policy;

2) environmental policy (pollution control and resource management);

3) energy policy;

4) foreign affairs policy.

All of these cover a wide range of concern and impact to both the natural and the human environment. The impacts in each area can be classified as direct or indirect, tangible or intangible, long- or short-term, little- or well-understood, controversial or non-controversial. Impacts are associated with both the construction and operation stages of the siting process, as well as with activities that take place in conjunction with the existence of a nuclear facility (e.g., power transmission, fuel extraction and processing etc.). The general nature of many of these impacts are well-documented, and their relative significance depends heavily on the particular site in question. The purpose here is not to provide a comprehensive assessment of the potential effects of nuclear power plant siting, but to identify the full range of considerations within the four broad areas listed above that have national interest aspects.

1. Health and Safety Considerations

The health and safety aspects of nuclear power plant siting can be divided into three basic categories, all of which pertain to the risk of radioactive emission surrounding the use of fissionable nuclear fuel. These include the potential dangers associated with:

1) extraction and processing activities;
2) transportation of radioactive wastes;
3) on-site use for power generation;
4) ultimate long-term storage.

Emissions can be further classified as low-and high-level, corresponding to normal operation and accident situations. Radiation exposure can have both somatic (damage to an exposed individual) and genetic effects on human beings. Somatic effects known to result from high radiation doses that might occur in an emergency situation include: various types of cancer; cataracts; fetal abnormalities; and unspecific life-span shortening. The extent to which such affects can be extrapolated down to low-level, long-term situations is still a matter of controversy.

2. Environmental Considerations

The environmental impact of nuclear power plants can be divided into two basic categories of concern: 1) pollution control, and 2) land and water resources management. The former deals primarily with the use of air and water during the operations stage, while the latter involves the commitment of land and water resources during the construction stage.

Pollution Control

For a nuclear facility, the primary mode of pollution is associated with the discharge of large amounts of heat into a relatively small area of either the aquatic or atmospheric environment. Thermal pollution in estuarine areas can result in disruptive effects on the populations of important aquatic species with narrow thermal tolerance, especially where the species are living close to the upper or lower limit of this tolerance. Other potential effects to fish include interference with migration past the outflow, changes in the chemical signals used to find food, and changes in growth rate and spawning times. Other deleterious effects might arise from changes in the assimilative capacity of the waters for other polluting effluents.

With regard to atmospheric effects, cooling towers may produce fogging and icing, change air temperatures or rainfall patterns, or (in the case of salt water towers) spread salt around the plant area that may affect vegetation and fresh water supplies. Also, facilities such as auxiliary units for meeting peak demand or generators for supplying power during shutdowns should be considered as potential sources of air pollutant emissions at a nuclear reactor site.

A second pollution concern in the sense of ecological effects is radioactivity, which under normal operating conditions is released in very small quantities to both the atmospheric and aquatic environments. Radioactive isotypes are subject to concentration in the marine environment and

transfer through the food chain, making the possibility of a major release (as in the case of an emergency at an offshore facility) a potentially serious situation.

While the bulk of pollution problems associated with a nuclear power plant arise during the operational stage, there are some potential short-term impacts on the environment during the construction stage. These include the effects of runoff of leachable toxic material in spoil piles, ground water contamination and sanitary waste disposal.

The extent of pollution surrounding the operation of a nuclear facility depends both on the characteristics of the emission source (e.g., plant design, amount and type of effluent, etc.) and the receptor environment (e.g., dispersion climatology hydrodynamics, chemical and biological interactions, etc.).

Water Resources Management

In the case of water resources use, the construction of a nuclear facility may affect:

1) the dynamics of the water system itself;

2) the use of the water surface and non-living resources of the sub-surface;

3) the lifecycle of living marine resources dependent on the land-sea interface.

With regard to the dynamics of the watershed, consideration must be given to hydrogologic factors pertaining to:

1) water supply (surface and groundwater)

2) irrigation/drainage;

3) flood control;

4) forestry; and

5) erosion/sedimentation.

For example, utilization of ground water for nuclear power plants should not exceed the sustained yield of the ground water system or adversely effect higher priority uses. Further, reductions in quantity or quality of water may have significant impacts on downstream irrigated agricultural lands or livestock ranches. During the construction stage the dredging of intake channels or the deepening of supply channels, in combination with the erection of breakwater and other shoreline protection systems, can have large effects on the littoral drift of sediments required to stabilize shorelines.

With regard to the use of the water surface, (e.g., navigation and waterborne transportation) or the non-living resources of the seabed (e.g., extraction of oil, gas, minerals, sand and gravel) a nuclear facility may have an impact in purely locational terms, especially in the case of an offshore site which could be in the middle of a shipping lane or a prime mining area.

With regard to the use of the land-sea interface, a nuclear power plant could have significant impacts on fisheries and wildlife conservation, including effects on:

1) breeding and other natural habitats;

2) terrestrial vegetation and biologically productive intertidal areas which serve as important components of the integrated environmental setting;

3) species migration, both daily and seasonal;

4) rare or endangered species protection.

In the case of natural habitat areas, physical alterations might lead to inundation (e.g., for a cooling pond) of nesting, spawning or nursery areas. The dredging and filling of wetlands or salt marshes for construction can remove important sources of food for the marine biotic community. As to species migration, the siting of a power plant should allow for protection of zones of passage in rivers, tidal outlets, and estuaries. The location of a nuclear facility in a marshy area along a major migratory flyway could potentially hinder or displace populations (e.g., the Columbia River in Pacific Northwest), the timing of fish migrations becomes important in the timing of construction events, such as placement or removal of cofferdams which alter the turbidity of the stream. Such considerations should be given special attention in the case of rare or endangered species.

Land Resources Management

In the case of land resources, the potential impacts of a nuclear power plant fall into two general categories:

1) conflicts with existing land uses in the surrounding area;

2) lost opportunities for other valued coastal activities on or near the chosen site.

Regarding conflicts with existing land uses, the siting of a nuclear power plant must take into consideration the possibility of both physical and visual/cultural interaction with its surroundings. As to physical compatibility, site regions containing manufacturing plants with hazardous materials and products, chemical plants and storage facilities,

oil and gas pipelines, transportation routes (including airports), missile sites testing grounds, military bases and other federal lands all have the potential for adverse interaction with nuclear plant operations. A clear example of land-use incompatibility would be the planned construction of a high cooling tower in a landing approach zone for a nearby airport. As to aesthetic compatibility, power plants can often severly disrupt the visual/cultural integrity of coastal landscapes through the occupation of relatively large portions of both horizontal and vertical space. The same is true for transmission corridors which, if not properly screened, intrude upon the aesthetic qualities of the landscape.

With regard to the lost opportunity for alternative uses, a number of coastal and land-use planning concerns might be affected by the location of a nuclear power plant. These include the needs for:

1) enhancement of public access and recreation;

2) protection of scenic open spaces and unique natural resource areas;

3) preservation of important historical and archaeological sites;

4) protection of fossil, and rare rock areas;

5) provision of adequate sites for various industrial, commercial, marine research and education and other activities for which proximity to water is a necessary operational ingredient (e.g., ports, aquaculture, marinas, etc.)

In the case of natural resource areas, there are locations that might be suitable as a power plant site but which also have

unique or rare land forms, vegetation, watercourses, and/or wildlife which are deserving of preservation in a totally undisturbed state (e.g., Gay Head Cliffs on Martha's Vineyard).

Other Considerations

The environmental impacts of a nuclear power plant as discussed above pertain directly to the construction and operations of the facility itself. However, a power plant, as a key facility in the economic growth of any area, has an additional "multiplier" effect on the environment insofar as the availability of electric power influences the overall evolution of development in the region. In this sense it acts as a "complex source", much the same as a downtown sports stadium affects air pollution levels through the generation of traffic.

3. Energy Policy Considerations

The siting of a nuclear power plant affects energy policy in that it contributes to the larger electric power system that is needed to provide adequate supplies of reliable power at a reasonable cost. Here, important considerations include:

1) the need for additional capacity by a certain time;

2) the affect of the facility on system reliability, efficiency, and cost;

3) the appropriateness of the choice of fuel and technology.

As to the need for additional system capacity, the decision to build a nuclear power plant must be assessed within the context of the perceived requirements for social and economic development in the region as well as the possibilities of

energy conservation. As to system reliability and cost, important factors include construction lead time, pooling and transmission arragements, and physical characteristics of site (proximity to load centers, rail and highway access, etc.). As to the choice of fuel and technology, important considerations include long-term fuel supply, research and development priorities, etc.

4. Foreign Affairs Considerations

Though perhaps not as obvious as in the cases of health and safety, environment, and energy policy, the siting of a nuclear power plant may have significant effect on foreign affairs. These effects fall into two broad categories:

1) diplomatic relations and international agreements;

2) national security and well-being.

With regard to diplomatic relations, there are a number of ways in which a nuclear power plant site in the vicinity of an international border could have significant effects. For example, radioactive emissions or thermal effluents might cross the boundary and have an impact on the people and natural environment of the adjoining country. Or, the large cooling water requirements of the nuclear plant may have an adverse affect on joint surface water and ground water supplies. In some cases, proximity to the border may not be the prime determinant of any international effect. For example, a nuclear plant might in some way block the pathways of migratory waterfowl or otherwise severely restrict the long-distance movement of wildlife populations covered by international treaty obligations.

With regard to national security and well-being, there are three potential areas of relationship with the siting of a nuclear power plant. First, there is the concept of energy independence from the rest of the world, in which nuclear power is expected to play a significant role. Second, there is the issue of nuclear blackmail, felt to be an emerging reality with the current state of technological knowledge which points to the need to provide for the security of nuclear materials. Finally, there is the issue of military security, as some of the recent major power failures have created concern that power systems might be more vulnerable to attack then had previously been thought. This issue might take on special importance in the case of an offshore facility, which is perhaps more vulnerable than a landbased unit.

5. Concluding Remarks

While the above discussions are by no means exhaustive, they are reasonably comprehensive and would provide the initial basis for the construction of an impact matrix to show the complete range of nuclear power plant siting effects insofar as the national interest is concerned. For the purposes at hand, such a detailed presentation is not necessary, since we are primarily interested at this point in identifying the appropriate federal spokesman (if any) that might enter the decision process to be described in Part III. For this purpose, it is useful to summarize the categories of impacts described in the foregoing sections, and this is set forth in Table I. With this as a framework, we can now move on to identify the affected federal interest for each element.

TABLE 1

SUMMARY OF NUCLEAR POWER PLANT SITING IMPACTS
WITH NATIONAL INTEREST ASPECTS

I. HEALTH AND SAFETY CONSIDERATIONS

A. Extraction and processing of nuclear fuel

B. Transportation of radioactive material

C. Use of nuclear fuel for steam generation

D. Disposal of radioactive wastes

II. ENVIRONMENTAL CONSIDERATIONS

A. Pollution control

1) air pollution including effects on meteorological/ climatological characteristics of atmosphere

2) water pollution, including thermal effects on temperature sensitive aquatic species (excluding radioactivity)

3) radioactive effects on marine ecology

B. Water resources management

1) dynamics of hydrogeologic systems

(a) water supply (surface and ground water)
(b) irrigation/drainage
(c) flood control
(d) forestry
(e) erosion/sedimentation

2) water surface and seabed use

(a) navigation and waterborne transportation
(b) extractive uses

3) fisheries and wildlife conservation

(a) breeding and other natural habitats
(b) terrestrial vegetation and intertidal marsh
(c) species migration
(d) rare and endangered species

TABLE 1

(continued)

C. Land resources management

1) Conflicts with and lost opportunities for:

(a) public access and recreation
(b) unique natural resource areas
(c) open spaces and visual/cultural amenities
(d) historical and archaeological sites
(e) fossil, rare rock sites
(f) use for transportation, industry, commercial, research and education, military, etc.

D. Other considerations ("complex source" impacts)

III. Energy Policy Considerations

A. Need for additional capacity

B. System reliability, efficiency, and cost

C. Choice of fuel and technology

IV. Foreign Affairs Considerations

A. Diplomatic relations and international agreements

1) direct effects across boundaries

2) indirect effects on treaty obligations

B. National security and well-being

1) energy independence

2) nuclear blackmail

3) military security

C. Affected Federal Interests

This section describes the current federal role and programs relative to national interest aspects of a nuclear power plant in the coastal zone, as summarized in Table 1. The purpose will be to develop a reasonably comprehensive (though by no means exhaustive) picture of the federal presence in areas of concern that are potentially impacted by a nuclear facility siting process.

To meet the requirements of the national interest, the federal government has assumed varying degrees of responsibility in every area identified in Table 1. The nature of the federal role depends on the circumstances, and includes the following activities:

1) direct federal investment in construction, land, or operations;

2) program review and project regulation, evaluation, or licensing;

3) preparation of surveys and studies, including inventories, data collection, and research;

4) planning for public works projects;

5) technical advice and assistance to states through conferences and consultation, mutual assistance projects, and joint projects and studies;

6) financial assistance to state-federal cooperative programs;

7) grants and loans to state and local programs.

Categorization of these multitudinous federal activities cannot be clear-cut, as there is a continuous series of interlocking activities among agencies and concurrent jurisdiction with the States. Nevertheless, it is useful

to point out the degree of direct influence on or involvement in decision-making that federal activities have in relation to each area of concern. In some cases, the federal presence will have a direct and significant operational affect, while in others it may be limited to a purely advisory or coordinative role.

1. Health and Safety Considerations

The Atomic Energy Act of 1954, as amended, vests in the Atomic Energy Commission exclusive control over all civilian utilization of nuclear fission. As this applies to thermal power plants, the AEC must approve construction and design plans for the reactor and for all other parts of the plant and its operations which involve contact with radioactive matter. The AEC mandate is the protection of the public health and safety from radiologic hazards while promoting the peaceful use of nuclear energy, and this mandate is applied to all activities surrounding the extraction, processing, use, transportation, and disposal of nuclear fuels. The regulatory jurisdiction of the AEC over these matters is complete and pertains directly to the nuclear siting process, and will therefore be discussed more fully in Part II of this appendix.

2. Environmental Considerations

General

In the area of environmental policy, the activities of all federal agencies with regard to the siting of a nuclear power plant are shaped in large measure by the National Environmental Policy Act (NEPA), which will therefore be considered prior

to discussion of each category of impact under this heading.

NEPA comprises a declaration of national policy for the integration of environmental considerations into the future decision-making processes of all federal agencies. Section 102 of the Act requires federal agencies to prepare environmental impact statements for all "major actions" before they are undertaken, and to make such statements available to the public and government officials for review and comment. This assessment responsibility is broadly stated in the Act to include:

1) potential environmental impacts;
2) unavoidable adverse impacts;
3) irreversible adverse impacts;
4) short-term vs. long-term consideration;
5) alternatives to the proposed action.

These requirements are greatly elaborated on in guidelines established by the Council on Environmental Quality, which has the further responsiblity of reviewing impact statements. Although NEPA does not provide a veto power to any official even if the project assessed possesses real environmental hazards, the act does provide new information to the public by exposing the extent to which environmental effects are being considered by an agency. Glaring deficiencies in the statement scope and substantative content, or failure to meet procedural requirements, will often result in citizen group intervention in agency processes, political pressures, and litigation. Since a nuclear power plant siting decision

is clearly a major action of the AEC, NEPA plays a very large role in the siting process and will therefore be discussed more fully in Part II.

Pollution Control

In the area of pollution control, the Environmental Protection Agency brings under one roof almost all federal activities in controlling air and water pollution, drinking water quality, solid wastes, pesticides and toxic substances, and environmental radiation and noise. The importance of EPA as the dominant federal presence in pollution control is indicated in Table 2, which summarizes the various federal activities in the areas of concern delineated in relation to the siting of a nuclear power plant.

Water Resources Management

Federal involvement in the diverse aspects of water resources management is quite extensive, and appears in all forms. For example, the following agencies participate directly in the development of joint federal-state water and related land management plans: Soil Conservation Service (Agriculture); Army Corps of Engineers; National Oceanic and Atmospheric Administration (Commerce); Office of Planning and Urban Development (HUD); Bureau of Outdoor Recreation, Bureau of Mines, Bureau of Sport Fish and Wildlife, Geological Survey (Interior); Coast Guard (Transportation); Atomic Energy Commission, Environmental Protection Agency, Federal Power Commission, River Basins Commissions. Most of these agencies are associated with the Water Resources Council, established under the Water

TABLE 2

FEDERAL PRESENCE IN POLLUTION CONTROL

Area of Concern re. Nuclear Facility	Agency	Activities
Air Pollution	Environmental Protection Agency	-Sets primary and secondary national ambient air quality standards for six pollutants (non-thermal) -reviews and approves state implementation plans for attainment and maintenance of standards, including exercise of state authority to prohibit new construction -direct regulation of emissions from new stationary sources through setting of uniform national emissions standards
Meteorlogical/ Climatological Effects of Thermal Discharges	National Weather Service	-observes and reports weather; develops and publicizes forecasts -provides technical assistance and use of federal facilities to state and local agencies
Water Pollution (including thermal)	Environmental Protection Agency	-review and approval of state water quality standards under Water Quality Act of 1965 -establish guidelines for effluent limitations under Water Quality Amendments of 1972 -set standards for new industrial point sources

TABLE 2 (cont.)

FEDERAL PRESENCE IN POLLUTION CONTROL

Area of Concern re. Nuclear Facility	Agency	Activities
Water Pollution (including thermal) (continued)	Army Corps of Engineers	-determine best available control technology and require its installation -issue guidelines for state discharge permit programs; in case of discharge into ocean waters, must be consistent with criteria established under Marine Protection, Research and Sanctuaries Act of 1972 -approve granting of permit by Army Corps of Engineers for ocean dumping of dredging materials -issue permit for ocean dumping of all other materials, including construction debris -participate in and provide technical assistance to interstate compacts for river basin planning -establish criteria and issue permit for dredging and filling in navigable waters under Rivers and Harbors Act of 1899
Environmental Radiation	Environmental Protection Agency	-generally-defined standard setting authority, with enforcement through existing AEC licensing authority.

Resources Planning Act of 1965, a major statement of federal policy to encourage the conservation, development, and utilization of water and related land resources of the United States on a comprehensive and coordinated basis by all levels of government and private enterprise. The Council has the responsibility of maintaining a continuing study of the relation of regional or river basin plans and programs to the requirements of larger areas of the nation; and to appraise the adequacy of administrative and statutory means for coordination and implementation of related land resources policies of the several federal agencies.

The various activities of all federal agencies associated with water and related land resources management are far too numerous to enumerate in the body of this report. However, in Table 3 the activities of these agencies are summarized as they relate to the areas of concern for a nuclear power plant site. Tables 4 through 7 expand on selected elements of Table 3, and serve to illustrate the scope and extent of the federal presence in the water resources management field.

Land Resources Management

In the area of land resources management, the federal presence is generally less influential, and can be divided into two general classes:

1) comprehensive planning assistance; and

2) single-purpose acquisition, regulatory, and grant-in-aid programs.

TABLE 3

FEDERAL AGENCIES AND WATER RESOURCES MANAGEMENT

Department of Agriculture.....

	Agricultureal Research Services	Agric. Stabilization and Conservation Svc.	Farmers Home Admin.	Federal Extension Svc.	Forest Service	Soil Conservation Service
WATER SUPPLY			C			A B
FLOOD CONTROL			C		A B C	A B C
IRRIGATION, DRAINAGE, AND RELATED LAND MANAGE-MENT		C	C	B C	A B C	A B C
FORESTRY		C	C	B C	A B C	
NAVIGATION						
WATER-BORNE TRANSPORTA-TION						
MINING AND MINE WATER DISPOSAL						
FISH AND WILDLIFE CONSERVATION		C	C			A B C

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)

B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)

C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE 3 (cont.)
FEDERAL AGENCIES AND WATER RESOURCES MANAGEMENT

	Department of Commerce				Dept. of Defense
	Economic Development Administration	National Oceanic and Atmospheric Admin.	Office of Business Economics	Office of Regional Economic Development	Department of the Army Corps of Engineers
WATER SUPPLY	C				A B
FLOOD CONTROL	C				A B
IRRIGATION, DRAINAGE, AND RELATED LAND MANAGE-MENT					A B
FORESTRY					
NAVIGATION					A B
WATER-BORNE TRANSPORTA-TION	C				
MINING AND MINE WATER DISPOSAL		A B			
FISH AND WILDLIFE CONSERVATION		A B C			A B

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)

B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)

C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE 3 (cont.)
FEDERAL AGENCIES AND WATER RESOURCES MANAGEMENT

Department of the Interior.....

	Department of Housing and Urban Development	Bureau of Mines	Bureau of Sport Fisheries and Wildlife	Geological Survey	National Park Service
WATER SUPPLY	C				
FLOOD CONTROL					
IRRIGATION, DRAINAGE, AND RELATED LAND MANAGEMENT					A B
FORESTRY					
NAVIGATION					
WATER-BORNE TRANSPORTATION					
MINING AND MINE WATER DISPOSAL		A B C			
FISH AND WILDLIFE CONSERVATION			A B C		A B

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)

B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)

C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE 3 (cont.)
FEDERAL AGENCIES AND WATER RESOURCES MANAGEMENT

	Department of Transportation.....		Exec. Off. of the Pres. . . .	
	Coast Guard	Federal Highway Administration	Environmental Protection Agency	Council of Environmental Quality
WATER SUPPLY			A B C	
FLOOD CONTROL				
IRRIGATION, DRAINAGE, AND RELATED LAND MANAGEMENT		C		
FORESTRY				A
NAVIGATION	A B			
WATER-BORNE TRANSPORTATION	A B		A B	A
MINING AND MINE WATER DISPOSAL				
FISH AND WILDLIFE CONSERVATION			A B	A

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)

B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)

C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

TABLE 3 (cont.)
FEDERAL AGENCIES AND WATER RESOURCES MANAGEMENT

	Executive Office of the President		
	Office of Emergency Preparedness	Interstate Commerce Commission	Water Resources Council
WATER SUPPLY	A		A C
FLOOD CONTROL			A C
IRRIGATION, DRAINAGE, AND RELATED LAND MANAGEMENT	A		A C
FORESTRY			A C
NAVIGATION			A C
WATER-BORNE TRANSPORTATION		A	A C
MINING AND MINE WATER DISPOSAL			A C
FISH AND WILDLIFE CONSERVATION			A C

Key: A--direct role (research, planning, preparation, construction, operation, maintenance)

B--indirect role (advice and counseling in research, planning, engineering or technical fields, use of Federal facilities, etc.)

C--financial assistance (grants, loans, advances, underwriting of bond issues, etc.)

Source: NAR Regional Water Resources Study Coordinating Committee. "Legal and Institutional Environment," Appendix S, North Atlantic Regional Water Resources Study, May 1972.

TABLE 4

WATER SUPPLY

Farmers Home Administration	- technical assistance for rural water system designs
	- grants to rural towns for water supply system planning and construction
Soil Conservation Service	- technical assistance for water conservation and community water supply in rural areas
Economic Development Admin.	- financial assistance in economically disadvantaged areas
Army Corps of Engineers	- may recommend storage for water supply at multipurpose reservoir pursuant to Water Supply Act of 1958
HUD	- provides grants for construction of basic water facilities consistent with a program for a coordinated area wide water system, as part of comprehensive development of an area - HUD Act of 1965, 702 as amended.
	- other grants under Demonstration Cities and Metropolitan Dev. Act of 1966, New Communities Act of 1968, and Housing Admendments of 1955.
EPA	- responsibility for drinking water quality under Public Health Service Act of 1944, sets interstate quarantee regulations.
Office of Emergency Preparedness	- assure adequate safe water for human survival and essential services and industry during disasters and recovery periods
Water Resources Council	- assess adequacy of water supplies in each water resource region in U.S. and assess the national interest therein.

TABLE 6

NAVIGATION

Army Corps of Engineers	- builds operates, and maintains projects for navigation
	- protects navigable waters by establishing harbor lines, issuing regulations and permits for dredging and filling navigable waters and the building of artifical islands and structures on the continental shelf beyond harbor lines
	- provides technical assistance for navigation
Coast Guard	- maintains navigational aids on inland and coastal waters

WATERBORNE TRANSPORTATION

Economic Development Administration	- grants for port development projects in economically disadvantaged areas
Interstate Commerce Commission	- regulatory powers over transportation economics and service

TABLE 7

FISH AND WILDLIFE CONSERVATION

Soil Conservation Service	- carries out works of improvement and provides for multiple watershed uses including fish and wildlife development under Watershed Protection and Flood Prevention Act of 1954
	- technical assistance in planning, designing, and establishing watershed works of improvement
National Oceanic and Atmospheric Administration	- carries out research on commercially important species of marine life
	- conservation and development of anadromous fish under Anadromous Fish Act
	- grants to states for coastal zone management and purchase of estuarine sanctuaries
Army Corps of Engineers	- recommends inclusion of certain project modifications for fish and wildlife purposes under Fish and Wildlife Co-ordination Act of 1958
Federal Power Commission	- considers fish and wildlife in transmission line licensing
Bureau of Sport Fisheries and Wildlife	- production and distribution of hatchery fish
	- operates nationwide system of wildlife refuges
	- regulation of migratory bird hunting under Migratory Bird Treaty Act
	- financial assistance to states in fish and game management programs
	- assesses water use projects proposed by Federal or private agencies for impacts on fish and wildlife resources and recommends measures for their conservation and development (emphasis on estuary conservation)
	- provides information on status of rare or endangered species, whose taking or possession is prohibited under the Endangered Species Conservation Act of 1969

TABLE 7

(continued)

National Park Service	- promotes and regulates the use of national parks to conserve natural objects and wildlife therein
Environmental Protection Agency	- establishment of marine sanctuaries to preserve parts of the ocean for conservation
	- wetlands conservation policy in granting of funds for wastewater treatment facilities

In the comprehensive planning area, the principal program is the HUD "701" program, so called because its authority is contained in Section 701 of the Housing Act of 1954, as amended (P.L. 83-560, 68 Stat. 590, 640; 40 U.S.C. 461). The aid is in the form of project grants for the preparation of development plans, policies, and strategies; programming of capital investments, government services, and implementation measures; and coordinating related plans and activities of other levels of government. Eligible subjects for such planning include land development patterns, physical facility needs, and the development and protection of natural resources.

With regard to the federal presence in the more specific areas of concern surrounding the siting of a nuclear power plant, Table 8 summarizes a number of agency programs and activities in relation to land management in coastal areas. Once again, the listing is by no means exhaustive but serves to indicate the vast array of federal programs and interests in coastal land use.

Other considerations

The final area of concern regarding environmental aspects of the siting of a nuclear power plant pertains to its possible role as a "complex source", i.e., a key facility whose existence has a "multiplier effect" on the level of development in a region and hence on the potential for environmental degradation. The only legal framework within which this issue might fall is the regulations promulgated by the EPA regarding state implementation plans to meet national air

TABLE 8

FEDERAL LAND MANAGEMENT ACTIVITIES

AREA OF CONCERN	AGENCY	ACTIVITY
Recreation	Army Corps of Engineers	- Recommends outdoor recreation as proper purpose of federal water resource projects pursuant to Federal Water Project Recreation Act of 1965
	Bureau of Outdoor Recreation	- provides financial assistance for acquisition and development of public outdoor recreation resources under Land and Water Conservation Fund Act of 1965
		- financial and technical assistance for preparation of statewide comprehensive outdoor recreation plans
		- prepares national outdoor recreation plan
	National Oceanic and Atmospheric Administration	- responsibility for protection and enhancement of marine sport fishing
	Bureau of Sport Fisheries and Wildlife	- administers national system of wildlife refuges, 82 of which are coastal
	National Park Service	- Administers 20 marine parks dedicated primarily to water-oriented recreation
	Federal Power Commission	- consider recreation in transmission line licensing
Unique Natural Resource Areas	Bureau of Land Management; Forest Service; Bureau of Sport Fisheries and Wildlife; Bureau of Reclamation; Army Corps of Eng. National Park Service; Bureau of Ourdoor Recreation; Geological Survey;	- all have developed comprehensive regulations, policies, and guidelines to protect natural resource areas whose unique character would be expected to change drastically or to which irreparable harm would be done if certain facilities were to be located in or immediately adjacent to them.

TABLE 8
(continued)

AREA OF CONCERN	AGENCY	ACTIVITY
Open Spaces and Visual/Cultural Amenities	Bureau of Ourdoor Recreation	- provides grants for open space recreational resource acquisition
	National Park Service	- administers marine parks dedicated to preservation of scenery and cultural attributes of resources
	HUD	- grants for open space acquisition programs
	Federal Power Commission	- considers aesthetics in transission line licensing
Historical/ Archaeological Sites	National Park Service	- maintains National Register of Historic and Archaeological places under National Historic Preservation Act.
		- manages numerous historic sites, many in coastal locations
Fossil and Rare Rock Deposits	National Park Service	- establishment of fossil bed preserves
Transportation/ Industrial/ Commercial/Other Uses (examples)	Federal Aviation Administration	- requires protection of aircraft from towers and smokestacks especially in airport approach zones
	Federal Highway Administration	- planning and implementation of national interestate highway system
	Office of Saline Water	- provides grants to operate state water resource institutions
	Department of Defense	- operates military bases, testing grounds, missile sites, etc.

quality standards. Here, controls are extended to those facilities, labeled "complex sources", which contribute indirectly to air pollution by generating large amounts of motor vehicle traffic emitting pollutants. The status of these regulations are presently unclear, making the extention of their underlying rationale to the more general case of nuclear power plant siting tentative at best.

3. Energy Policy Considerations

In the case of energy policy, the scope of federal involvement becomes much more narrow, being limited to the activities of the Atomic Energy Commission, the Federal Power Commission, and the Federal Energy Office. Of these, the Atomic Energy Commission plays the most significant role in nuclear power plant construction and operation, with the jurisdiction of the FPC being limited to the transmission and sale at wholesale of electric energy in interstate commerce and public utilities engaged therein. The establishment of the Federal Energy Office is the first attempt at setting up an institutional mechanism for the coordination of national energy policy, including the role of conservation and the search for alternative technologies.

4. Foreign Affairs Considerations

With respect to foreign affairs considerations, the federal presence comprises the Departments of State and Defense and the Environmental Protection Agency. The Department of State is responsible for overseeing the activities of the federal government insofar as treaties, conventions, and other inter-

national obligations are concerned, (e.g., migrating birds and Great Lakes pollution agreements with Canada). The Department of Defense has jurisdiction over national security matters, and the Provost Marshal General of the Army conducts an annual survey of several hundred facilities in the United States which supply electric energy to important defense production areas. Finally, the Environmental Protection Agency has the authority to abate air and water pollution which originates in the United States and affects a foreign country. As to energy independence, the Federal Energy Office is charged with coordinating the national effort toward self-sufficiency, and this includes fostering the AEC's research and development of nuclear technology and encouraging the timely siting of nuclear facilities.

D. Concluding Remarks

If nothing else, the foregoing discussion serves to point out the complexity of the national interest in areas that could potentially be impacted by the siting of a nuclear power plant in the coastal zone. In some cases, the national interest takes the form of a controlling influence on decisions, while in others it is buried in a broad policy of financial assistance to states and local governments for comprehensive planning. What remains to be seen at this point is how these various expressions of the national interest gain entry to the nuclear power plant siting process. This is the topic for investigation in Part II.

II. THE NATIONAL INTEREST AND THE CONSTRUCTION-REALIZATION PROCESS FOR A NUCLEAR POWER PLANT

A. Overview of the Process

The process by which a nuclear power plant is located and approved for operation is a complicated one, due to both the intricate technological characteristics of the facilities themselves and the degree of governmental regulation to which the process is subjected. The generalized siting process can best be understood as a series of four relatively distinct (though in many ways interrelated) stages, as follows:

1) Stage One - Determination of Need for Additional Capacity and Choice of Fuel (Nuclear, Fossil, etc.)

2) Stage Two - Site Selection and Evaluation

3) Stage Three - Pre-construction Approval of Site and Plant Design

4) Stage Four - Construction and Operation.

In terms of governmental involvement, the process is divided into two sections. During the first two stages, there is almost no formal governmental intervention, as the actual selection of sites based on a perceived need for additional capacity and a particular mix of generation type is left solely to industry. The site selection and evaluation stage (Stage 2) can be further divided into the following phases:

1) Phase One - determination of candidate areas

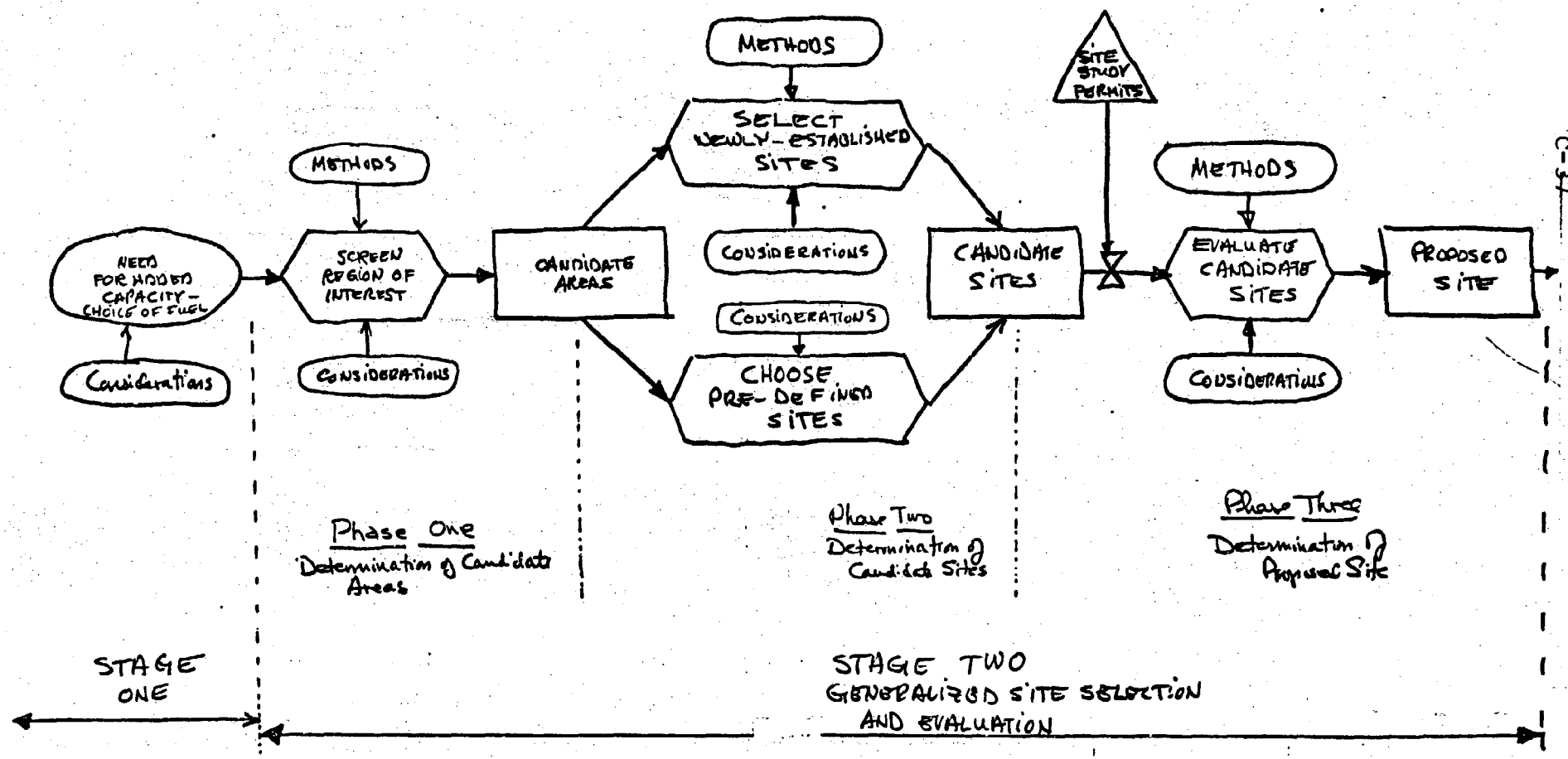
2) Phase Two - determination of candidate sites

3) Phase Three - determination of proposed sites.

These phases are shown schematically in Figure 1, and represent a logical progression of steps generally followed by a

Figure One

The "Private" Part of the Siting Process



utility in going from a broadly defined region of interest to a very specifically defined proposed site. The phases are characterized both by differences in the geographic area involved and the type and depth of analysis applied. In phase one, attention is usually directed toward fairly large geographic areas, whereas in phases two and three, the concern centers on specific sites. Similarly, the level of detail and depth of analysis usually increases in going from phases one through three. Within phase two, there is an essential difference in the type of analysis required for predefined sites--as opposed to newly-established sites--since these have already been identified as being reasonably suitable. Once candidate sites are determined, it is often the case that certain permits are required to conduct on-site measurements or special studies. In Massachusetts, for example, these might include: 1) approval from the Mass. Department of Public Works to place oceanographic instrumentation cable; 2) approval from the federal Army Corps of Engineers to place oceanographic equipment in navigable waters; and 3) approval from the Mass. Water Resources Commission to conduct marine hydrology studies.

At each step of the site selection and evaluation stage, a great many factors must be taken into account, covering the full spectrum of safety, engineering, cost, environmental, and political considerations. Many of these considerations are dealt with in anticipation of the criteria for approval of construction and operation that are applied by government agencies in stages three through four.

Formal government input takes place during the latter two stages of the overall process, and consists mainly of approval, approval with conditions, or disapproval of the industry-selected site. In short, the public role is essentially negative in that the public interest is incorporated into the siting process through the setting of performance standards, rather than through direct government involvement in consideration of alternative locations. Since these latter two stages--especially stage three--are central to the incorporation of the public interest--including national interests--into the overall process, it is useful to look into each in more detail.

1. Stage Three - Preconstruction Approval of Site and Plant Design

A schematic diagram of stage three is shown in Figure 2. This stage can be divided into two phases:

1) Phase One - general site location permits

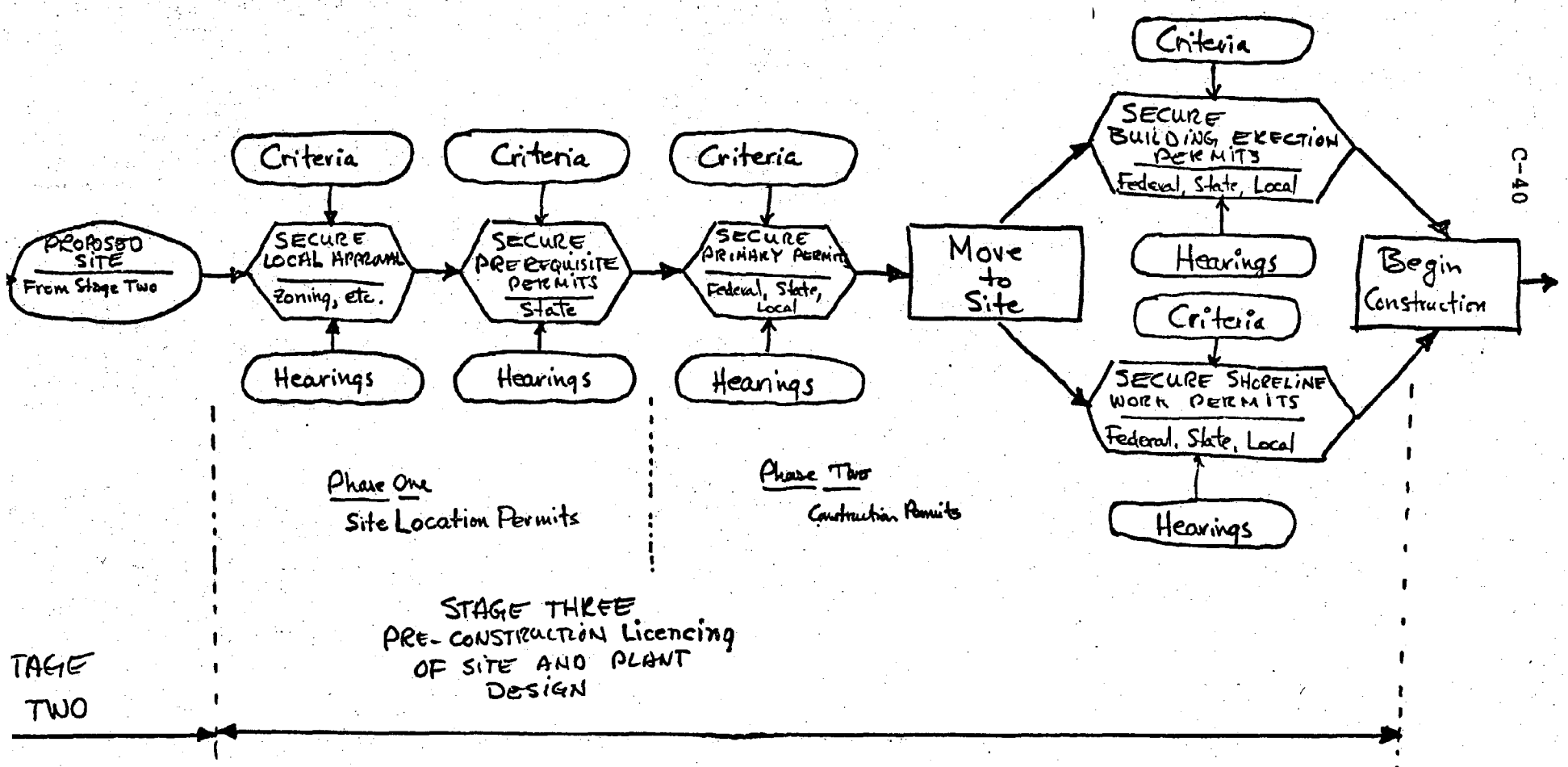
2) Phase Two - construction permits

During each of these phases the utility must show to the satisfaction of various government regulatory agencies that the proposed facility site and design meet the relevant approval criteria.

In phase one, the first step is usually to secure an exemption (if needed) from local zoning ordinances. In most states, this is done more as a courtesy to the town than anything else, because the state department of public utilities is usually authorized, under petition, to exempt from municipal zoning requirements the land and structures of a public utility if it determines after a public hearing that the site is reason-

FIGURE TWO

The "Public" Part of the Siting Process



ably necessary for the public convenience or welfare. This is generally referred to as a certificate of public convenience and necessity. In Massachusetts, utilities frequently ignore local procedures and go directly to the DPU for a zoning exemption (this happened 30 times in fiscal year 1970-1971). Once the question of zoning is resolved, the utility must then secure any state level permits that are prerequisite to applying for other permits. In Massachusetts, for example, the Division of Water Pollution Control of the Department of Natural Resources has a substantial influence on the process at this point, because federal law requires that, prior to the issuance of any federal permit, the state must issue a water quality certificate that gives reasonable assurance that the siting activity will be conducted in a manner which will not violate applicable water quality standards. Also, exemption from land use regulations at the state level (i.e., wetlands protection statutes) may be required at this point.

Having secured the necessary permits relative to the general site location, the utility then enters phase two, where it must obtain a substantial number of permits from local, state, and federal authorities relative to the actual construction of the facility. This is the most complicated phase of the pre-construction licensing stage, and must therefore, be reviewed in some detail.

Local

Aside from zoning and after direct land use controls dis-

cussed above, the only means at the disposal of cities and towns for affecting the siting process are building and health codes and ordinances relating to transmission lines and structures. A typical example might be the town of Plymouth, Massachusetts, site of the Pilgrim nuclear station, which requires permits for:

1 - connection to town water supply

2 - materials handling

3 - fuel oil storage

4 - working beyond normal hours

5 - construction of sewage disposal works

6 - plumbing and electrical work

In general, such ordinances are not reviewable at the state level, although in the case of transmission lines, local building codes may not apply or must a least be approved by some form of public utilities commission. In some cases, however, local governments may deny utilities the right to cross public ways or other municipally-owned land. In Massachusetts, for example, the Department of Public Utilities does <u>not</u> have power to override the local disapproval of an electric transmission line unless two municipalities bordering the one in question have approved the line or unless a majority of the municipalities through which it will run have approved it. In the case of public parks, the power of Massachusetts towns to refuse rights of way is absolute.

Beyond the circumstances described above, the local input to the siting decision is limited to participation in state and federal procedures. In Massachusetts, for example,

municipalities participate somewhat in the implementation of the state's wetlands protection laws in that notice of projects must be sent to the town and local hearings and recommendations are authorized. In the case of nuclear power plant construction, the local conservation commission receives an intent to dredge for intake structures. With regard to federal procedures, municipalities are given a substantial voice in federal agency implementation of the National Environmental Policy Act. To the extent that federal permits are required for the construction of generating and transmission facilities, municipal agencies are usually involved or can be influential in the review process.

State

At the state level, there are usually a number of agencies and their subdivisions which exercise a wide spectrum of controls over the siting of electric power plants and the routing of transmission lines. These agencies fall into three general categories:

1) Public Utilities Commission, which generally issue certificates of public necessity and convenience, approve financing arrangements, and oversee local land planning and transmission line regulations;

2) Natural Resource Agencies, which generally issue permits for activities affecting land, air, and water resource systems;

3) Health, Safety, and other Public Interest Agencies, which generally issue permits for activities that might pose dangers to assorted areas of concern for the general welfare.

In all, more than 40 states require some sort of authorization for new power plants. In Virginia, for example, there are ten state boards and commissions which are involved in the siting

process. In Massachusetts, the array of permits necessary to proceed with the construction of a nuclear facility would look something like this:

1) Department of Public Utilities permits:

   (a) variance to noise regulations
   (b) approval of station operating procedure
   (c) certificate of public necessity and convenience (including override of certain local zoning ordinances and regulations)
   (d) authorization of construction and use of transmission facilties

2) Department of Public Health permits:

   (a) connection of city water and plant system
   (b) solid waste disposal
   (c) construction of sewage disposal works
   (d) construction of sanitary facilities (water supply, plumbing, drains)
   (e) air pollution control
   (f) discharge to watercourses

3) Department of Natural Resources permits:

   (a) water quality certificate
   (b) review of compliance with wetlands and ocean sanctuary acts
   (c) discharge of hazardous wastes

4) Department of Public Safety permits:

   (a) use of explosives
   (b) fuel oil storage
   (c) hydrogen and propane storage
   (d) boilers

5) Department of Public Works permits:

   (a) construction of intake and discharge structures
   (b) tree trimming
   (c) permission for access road
   (d) placement of oceanographic instruments
   (e) transmission line crossings

6) Department of Labor and Industries permits:

   (a) radioactive sources storage
   (b) review of buildings which may pose aviation hazards

7) Weather Amendment Board

(a) certificate of authority to modify weather.

Faced with such a collage of multi-ministerial procedures, some states have passed legislation which provides for coordinated review of bulk power supply facilities by all state agencies having permit-granting responsibility. Such legislation provides for coordinated state planning and site review procedures of major energy facilities through a state site evaluation committee, which eliminates the need for separate review of environmental and other reports or separate hearings by the various state permit-granting agencies.

In the majority of states, no site review coordination has yet been established and the applicant utility must deal separately with each permit-granting agency. Generally, one agency will take the lead and hold public hearings. In the case of nuclear facilities, this state procedure normally occurs after initial federal Atomic Energy Commission approval has been obtained, and this leads now to a discussion of the federal role in nuclear power plant siting.

Federal

Direct federal participation in the process of licensing a nuclear power plant is limited to five agencies--the Atomic Energy Commission, the Army Corps of Engineers, the Environmental Protection Agency, the Coast Guard, and the Federal Aviation Administration. All these agencies, however, operate within the framework of the National Environmental Policy Act (NEPA), as well as within other statutory contexts which

require coordination with other federal agencies. A great many federal spokesmen, therefore, have indirect access to the licensing process, as will become evident in subsequent sections where the regulatory criteria of the primary participation agencies will be discussed in more detail.

1) Army Corps of Engineers

The authority of the Corps of Engineers stems from the Rivers and Harbors Act of 1899 and has grown over the years as new statutes and decisions have been superimposed on the old. Essentially, no structure may be erected in navigable waters without the Corps' approval, including permission to:

1) install temporary and permanent structures that may be a hazard to navigation;
2) dredge and fill for installation of water intake/discharge and barge facilities
3) transport and dispose of dredge materials in the ocean;
4) construct across navigable waters;
5) take soil samples and core borings below mean high water.

2) U.S. Coast Guard and Federal Aviation Administration

Prior to construction of a nuclear facility on navigable waters, permission from the Coast Guard must be sought for (1) navigational interference in connection with water intake/discharge facilities; (2) any vessel to carry explosives for construction or site investigatory work. With regard to the Federal Aviation Administration, permission must be obtained relative to 1) the lighting of structures that may be hazardous to air navigation; 2) the lighting of meteorological towers; 3) the construction of natural draft cooling

towers; and 4) the construction of transmission lines as they affect air navigation.

3) Environmental Protection Agency

Of major importance to utilities are air and water pollution standards, which are still promulgated and administered chiefly at the state level but are subject to increasing supervision by the Environmental Protection Agency. Under the Clean Air Act of 1970, the EPA administrator must fix national air quality standards, and states must produce for federal approval implementation plans adequate to achieve these standards. Further, EPA has direct responsibility for promulgating and enforcing uniform national standards for new stationary sources, including power plants. These standards have not yet been set for nuclear facilities.

Under the Federal Water Pollution Control Act Amendments of 1972, the EPA is empowered to fix performance standards for new pollution sources, which incorporates information regarding best practicable and available technology for abatement. The EPA may also review and override state water quality standards and enforcement, and is authorized to establish a permit program to enforce standards set in accordance with the statute. Under this law, the EPA has set up a permit program relative to the discharge of liquid wastes, including thermal effluents. In the case of thermal discharges, the requirement for use of best practicable and available control technologies (cooling towers, in the case of a nuclear plant) may be waived if the discharger can prove that the protection and propagation of fish, shellfish,

and wildlife can be satisfactorily achieved by alternative means.

Aside from a liquid waste discharge permit, the only other EPA permit relative to nuclear power plant siting is in relation to ocean disposal of all classes of materials (e.g., construction debris) other than dredging materials. Other than this, EPA's role is an indirect one, limited to review for compliance with EPA criteria of other federal agency permit-granting activities. This will be dealt with in a subsequent section.

4) Atomic Energy Commission

Under the Atomic Energy Act of 1954, the Atomic Energy Commission regulates the safety of nuclear activities, including power plants. The AEC is authorized to license nuclear power plants under a two-stage process: first, it grants a construction permit, and then an operating license. In the construction permit process the AEC regulatory staff and the Commission's Advisory Committee on Reactor Safeguards evaluate the application. These preliminary reviews are followed by a mandatory public hearing before an Atomic Safety and Licensing Board. Interested parties including state and local governments may intervene, but a hearing is required whether or not there is opposition.

Prior to NEPA, the AEC limited its scope of review in licensing nuclear power plants to radiological effects. Following the enactment of NEPA, the AEC promulgated regulations requiring applicants to submit environmental reports and took

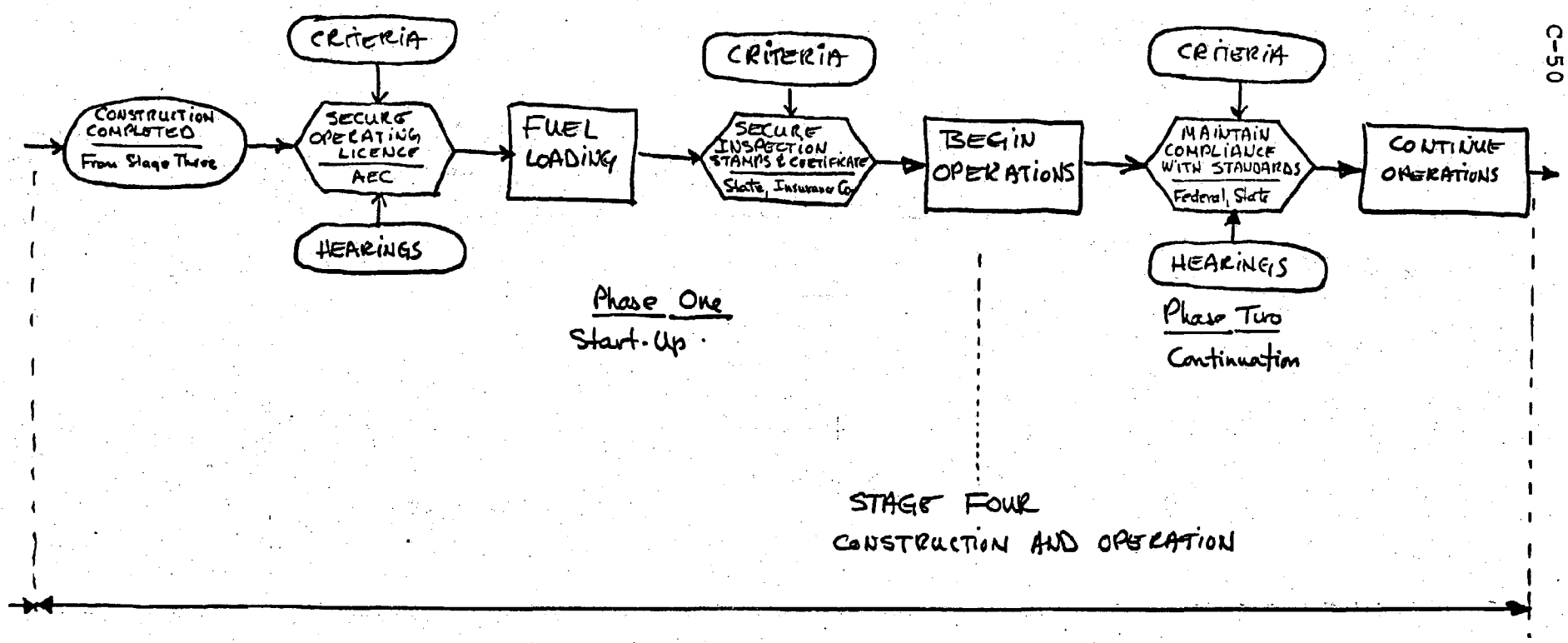
on the burden of preparing detailed environmental impact statements as the "lead" federal agency involved in nuclear power plant siting approval. These regulations provided that certification of a project by an appropriate governmental agency would be "dispositive" of any environmental questions considered in that certification. In the well-known decision by the District of Columbia Court of Appeals in Calvert Cliffs Coordinating Committee v. AEC, these regulations were invalidated and the AEC was required to independently evaluate and balance thermal and other environmental effects, notwithstanding certification by other federal or state agencies that a proposed plant satisfies their criteria. Thus compliance with the requirements of other agencies with environmental responsibilities is now a necessary, but not sufficient, condition for the granting of an AEC permit or license. NEPA, Calvert Cliffs, and the latest AEC regulations have thus placed the Commission in a positon to review all factors (including land-use) on both sides of the energy-environment conflict in determining whether nuclear power plants should be licensed. This will be an important fact to consider when we discuss the points of entry of national interests in the power plant siting process.

2. Stage Four - Construction and Operation

Figure Three is a schematic diagram of stage four of the nuclear power plant siting process. When construction of a plant is nearly complete, there are a relatively small number of permits that must be secured prior to the beginning of

FIGURE THREE

Construction. Realization



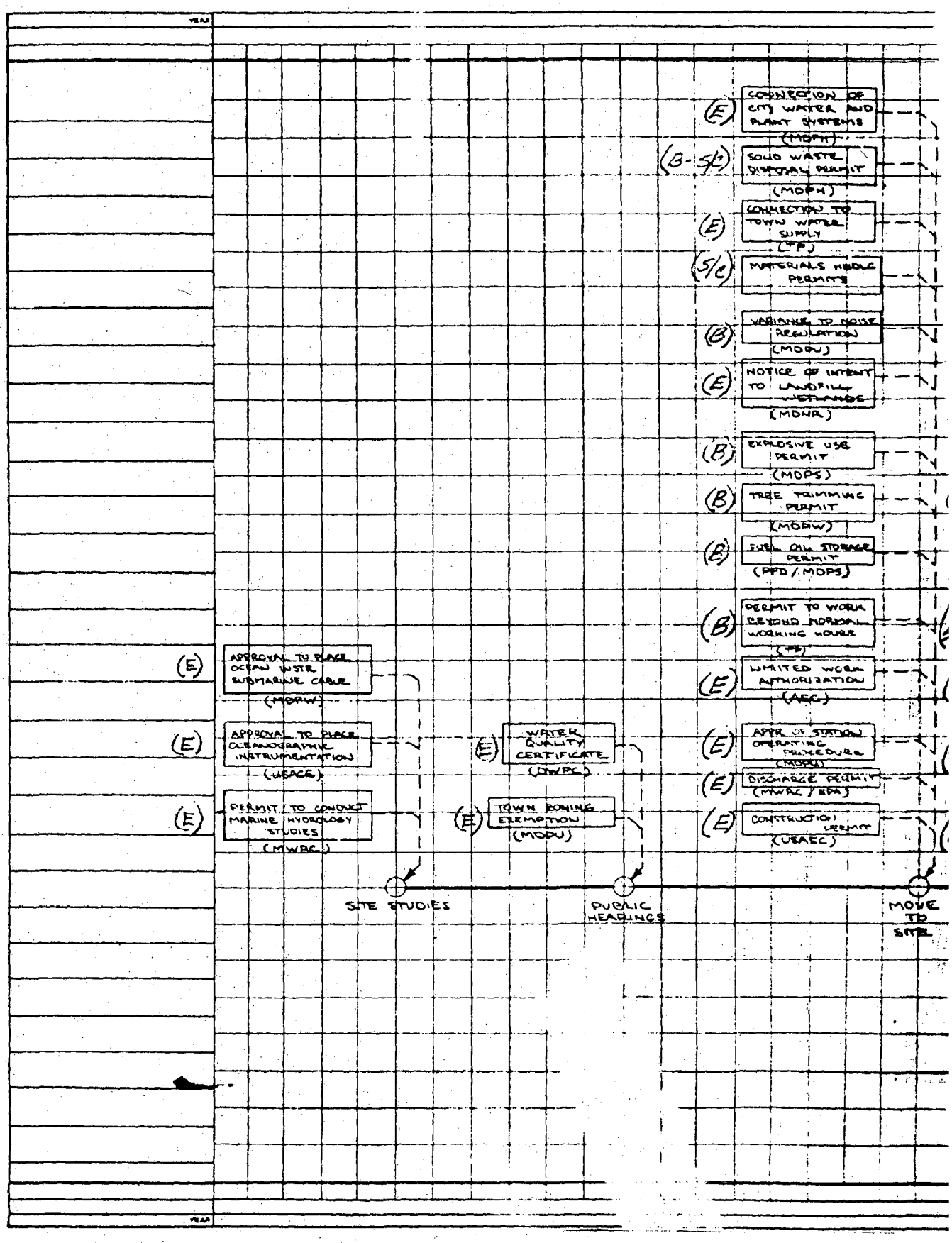
operation. At the state level, for example, boilers are usually inspected for compliance with air pollution control design requirements, and a certificate of meeting water quality standards must be obtained. At the federal level, the most important permit at this stage is the AEC operating license, which has a review process similar to that for the construction permit, except that a hearing is not mandatory. Other federal permits required prior to operation include AEC licenses for handling of source and by-product materials and storage of special nuclear material; and Coast Guard permission for navigational interference with the operation of intake discharge ports.

Once the start-up phase is completed, a certain degree of agency involvement remains in the form of monitoring of plant operations for compliance with relevant state and federal standards. Under certain circumstances, operations can be halted and hearings begun if operational difficulties arise.

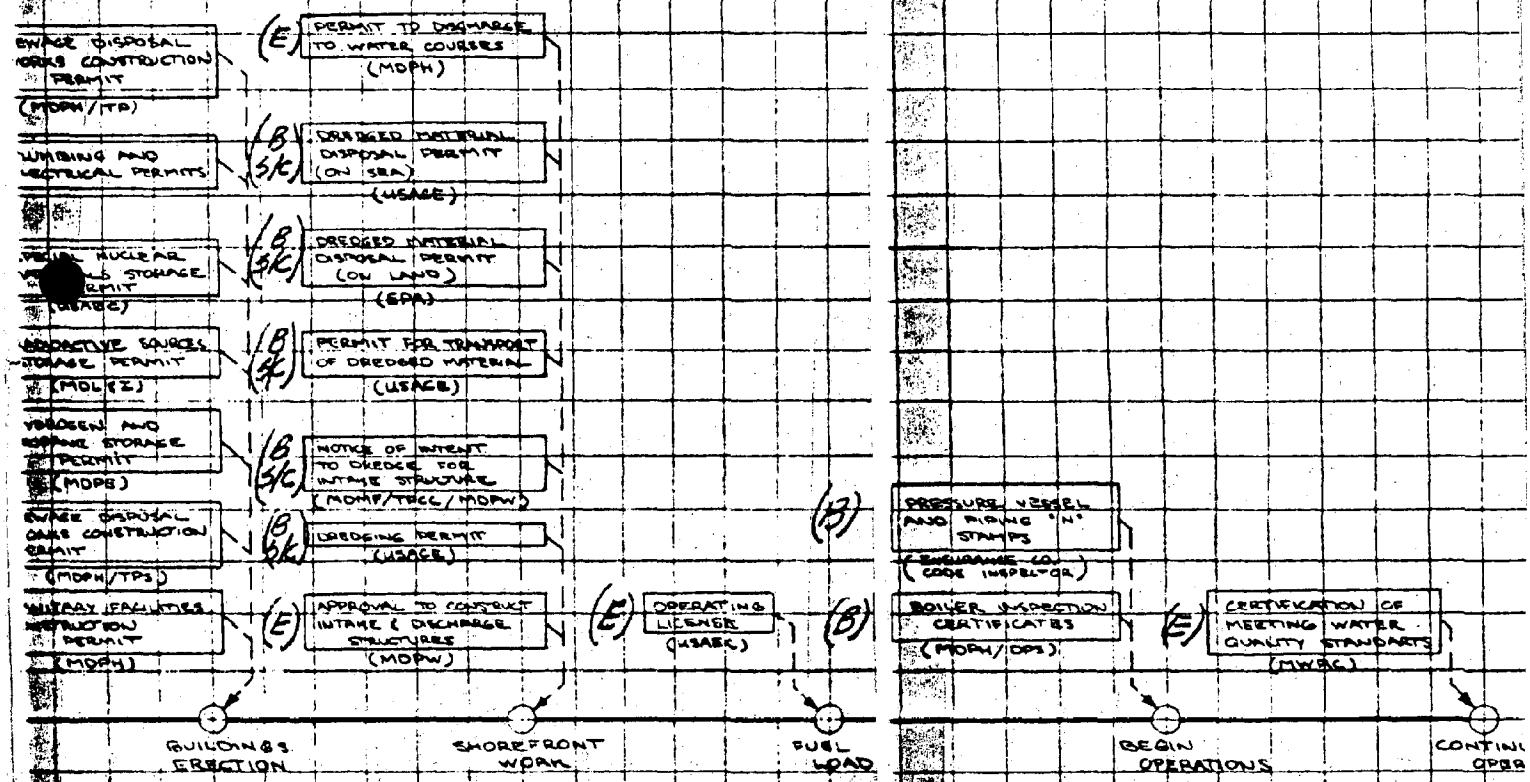
3. Concluding Remarks

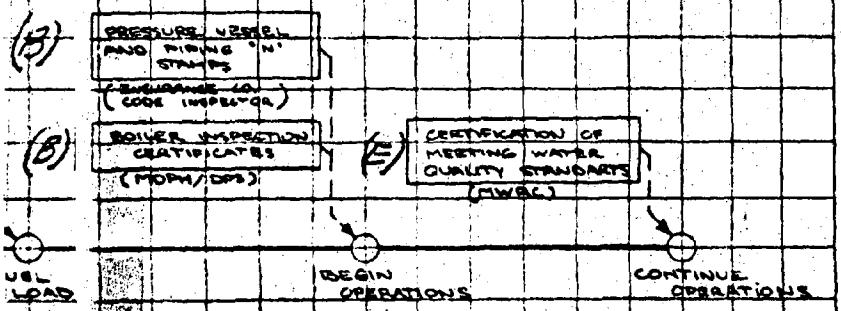
The above discussions, though presenting only an overview, indicate clearly the complexity of the nuclear power plant siting process. The number of permits that must be obtained is staggering, as indicated in Figure 4 which is a generalized licensing flow chart prepared for a Massachusetts utility company. Even so, this represents only the first level of aggregation. For each permit, there is a procedural infrastructure that varies greatly in complexity from one agency to another. Further, the infrastructures of many permit processes are closely intermingled, as illustrated by the PERT diagram

Figure Four Sample Nuclear Plant Liscensing Flow Chart



Source: Private communication with Boston Edison Co., Boston, Mass.


SEWAGE DISPOSAL WORKS CONSTRUCTION PERMIT (MDPH/TP)
(E) PERMIT TO DISCHARGE TO WATER COURSES (MDPH)
PLUMBING AND ELECTRICAL PERMITS
(B S/C) DREDGED MATERIAL DISPOSAL PERMIT (ON SEA) (USACE)
NUCLEAR WASTE STORAGE PERMIT (USACE)
(B S/C) DREDGED MATERIAL DISPOSAL PERMIT (ON LAND) (EPA)
RADIOACTIVE SOURCES STORAGE PERMIT (MDL(Z))
(B S/C) PERMIT FOR TRANSPORT OF DREDGED MATERIAL (USACE)
HYDROGEN AND OXYGEN STORAGE PERMIT (MDPS)
(B S/C) NOTICE OF INTENT TO DREDGE FOR INTAKE STRUCTURE (MDMP/TECC/MDPW)
SEWAGE DISPOSAL WORKS CONSTRUCTION PERMIT (MDPH/TPS)
(B S/C) DREDGING PERMIT (USACE)
MILITARY FACILITIES CONSTRUCTION PERMIT (MDPH)
(E) APPROVAL TO CONSTRUCT INTAKE & DISCHARGE STRUCTURES (MDPW)
(E) OPERATING LICENSE (USAEC)
(B) PRESSURE VESSEL AND PIPING "N" STAMPS (INSURANCE CO. CODE INSPECTOR)
(B) BOILER INSPECTION CERTIFICATES (MDPH/DPS)
(E) CERTIFICATION OF MEETING WATER QUALITY STANDARDS (MWRC)
BUILDINGS ERECTION
SHOREFRONT WORK
FUEL LOAD
BEGIN OPERATIONS
CONTINUE OPERATIONS



AGENCY ABBREVIATION KEY

EPA - ENVIRONMENTAL PROTECTION AGENCY

MDNR - MASS. DEPT. OF NATURAL RESOURCES

MDPH - MASS. DEPT. OF PUBLIC HEALTH

MDPS - MASS. DEPT. OF PUBLIC SAFETY

MDPW - MASS. DEPT. OF PUBLIC WORKS

MDLI - MASS. DEPT. OF LABOR & INDUSTRIES

MWRC - MASS. WATER RESOURCES COMMISSION

TP - TOWN OF PLYMOUTH

TPFD - TOWN OF PLYMOUTH FIRE DEPT.

USACE - U.S. ARMY CORPS OF ENGINEERS

USAEC - U.S. ATOMIC ENERGY COMMISSION

TPCC - TOWN OF PLYMOUTH CONSERVATION COMMISSION

MDPU - MASS. DEPT. OF PUBLIC UTILITIES

MDMF - MASS. DEPT. OF FISHERIES

RESPONSIBILITY

E - EDISON
B - BECHTEL
B-
S/C - BECHTEL - SUB-CONTRACT

LICENSING FLOW CHART

BECHTEL	JOB NO.	DWG. NO.	REV.	UPDATE
	8791	B-2	1	

1 YEAR STANDARD SCHEDULE

shown in Figure 5. While this diagram refers to an oil refinery and not a nuclear power plant, many of the permit requirements are identical (e.g., impact statement, dredge & fill, waste-water discharge, etc.).

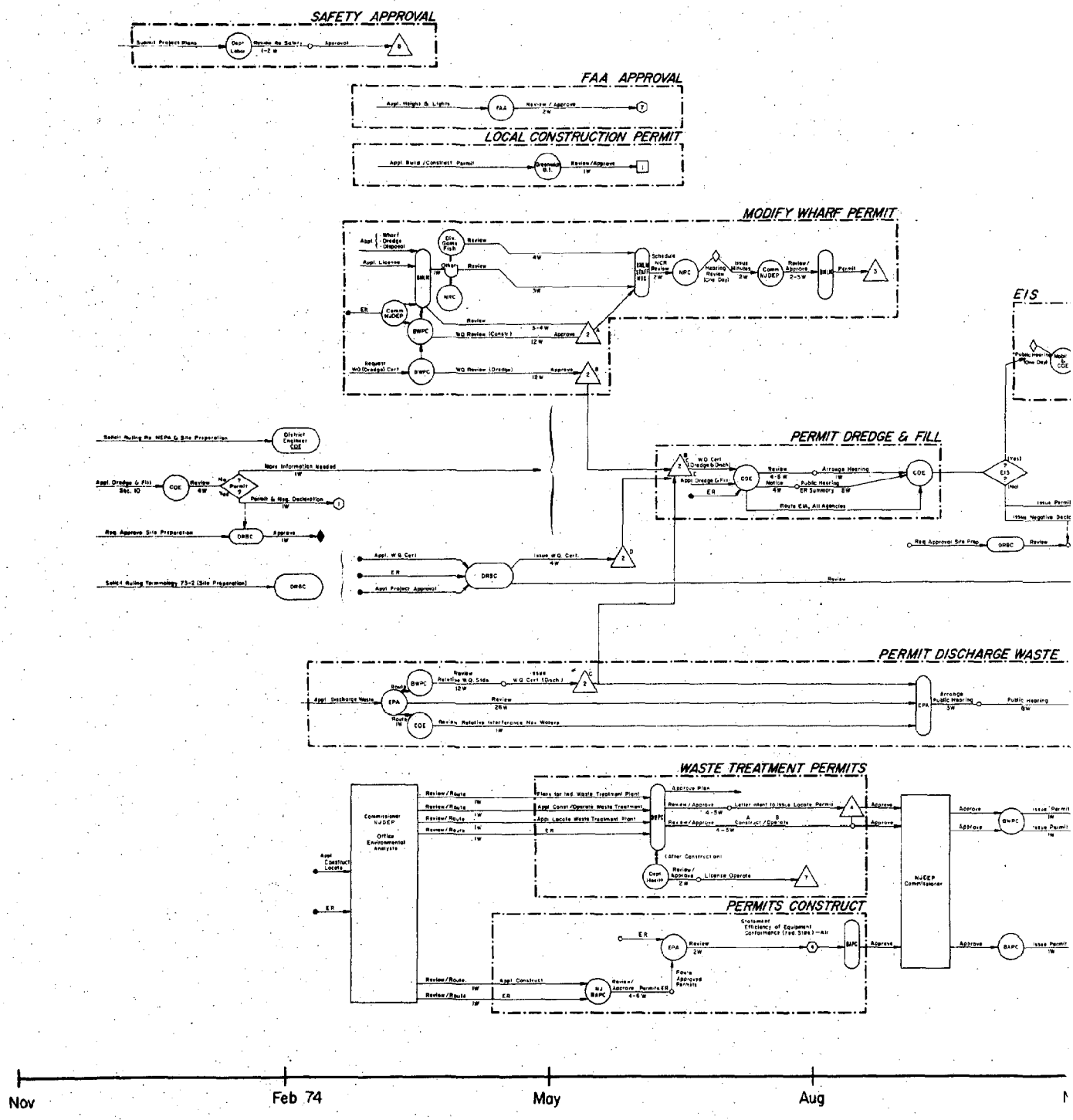
At this point, it is appropriate to look more closely at the siting process in terms of the extent to which national interest considerations are incorporated into it, both procedurally and substantively. As to procedure, we will be interested in the means by which agencies without direct access to the process can nevertheless influence it. As to substantive aspects, we will be interested in how the agencies and their criteria are translated into considerations at the site selection and evaluation stage. Once this is completed, we will then be in a position to comment on and assess the adequacy of the extent to which national interests have access to the overall siting process.

B. National Interest Incorporated into the Nuclear Siting Process

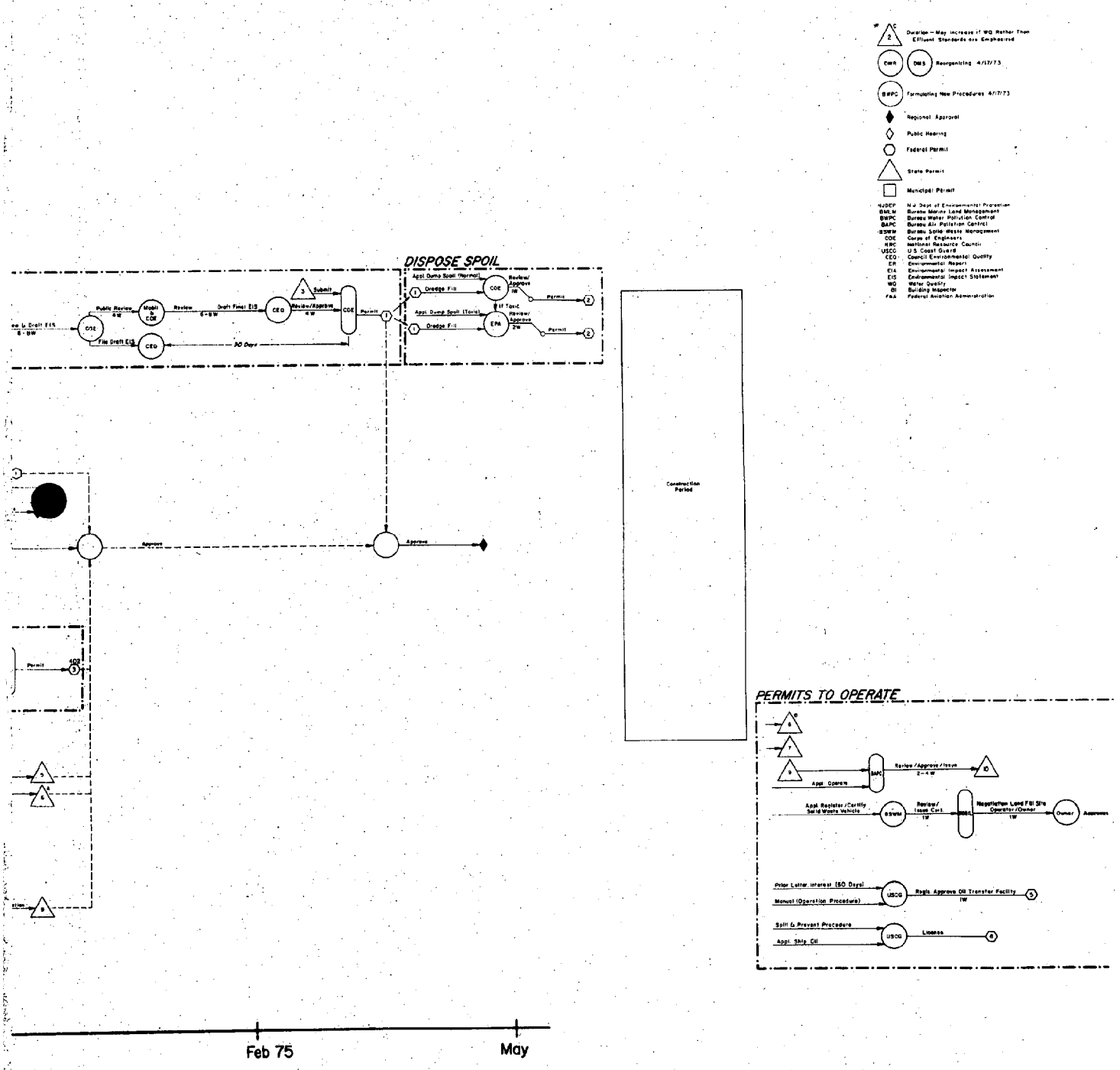
1. Health and Safety Considerations

The national interest in protecting the public health and safety from the potential hazards of exposure to radioactivity is completely integrated into the nuclear power plant siting process, both procedurally and substantively. In the procedural sense, the AEC has direct licensing authority with respect to health and safety considerations. Substantively, the AEC has adopted criteria for evaluating the acceptability of proposed reactor sites, and these are contained in the regulations comprising Part 100 (Reactor Site Criteria) of Title 10 of the

Figure Five Sample Oil Refinery Permit Schedule



Source: Private communication with Environmental Research and Technology, Inc., Lexington, Mass.



Duration — May Increase if WQ Rather Than Effluent Standards are Emphasized

DWR DMS Reorganizing 4/17/73

BWPC Formulating New Procedures 4/17/73

Regional Approval

Public Hearing

Federal Permit

State Permit

Municipal Permit

NJDEP New Dept of Environmental Protection
BMLM Bureau Marine Land Management
BWPC Bureau Water Pollution Control
BAPC Bureau Air Pollution Control
BSWM Bureau Solid Waste Management
COE Corps of Engineers
NRC National Resource Council
USCG U.S. Coast Guard
CEQ Council Environmental Quality
ER Environmental Report
EIA Environmental Impact Assessment
EIS Environmental Impact Statement
WQ Water Quality
BI Building Inspector
FAA Federal Aviation Administration

Code of Federal Regulations. Factors considered by the Commission in judging the safety of proposed sites for nuclear reactors include dimensions and characteristics of the site under the operator's control; population density in the area surrounding the proposed site, and the uses which are made of this area such as industrial, agricultural, or residential; and the seismology, meteorology, geology, and hydrology of the area. Other factors considered are the characteristics of the proposed reactor, including the maximum power level, and the particular safety features to be engineered into the plant either to prevent accidents or to limit their consequences; and the extent to which the design of the reactor incorporates unique or unusual features that may have a significant bearing on the probability of consequences of an accident. A similar regulatory approach is taken with regard to transportation, processing, storage, and ultimate disposal of radioactive materials.

2. Environmental Considerations

With regard to national interests in the area of environmental concern, there are extensive procedural specifications for both direct and indirect involvement in the nuclear power plant siting process. In the case of pollution control, the federal involvement is in the form of EPA liquid waste discharge permits, air emission standards for new stationary sources, and ocean dumping permits, and in other ways as well. For example:

(1) EPA is mandated to review and comment publicly on the environmental impact of the regulations of agencies and departments. This would include the environmental regulations adopted by the AEC and the Corps in connection with their evaluation of permit applications regarding nuclear power plants.

(2) Under the Marine Protection, Research and Sanctuaries Act of 1972, the granting of permits by the Corps for ocean dumping of dredging materials is subject to approval by EPA for compliance with guidelines relative to the selection of disposal sites and other criteria relative to the effects of dumping itself. The Administrator can prohibit or restrict the use of any defined area as a disposal site whenever he determines that the discharge of such materials will, for example, have an unacceptable adverse impact on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas. The Administrator is also required to consult with other federal officials with respect to the ocean dumping program, giving a number of other agencies with related programs indirect access to this particular aspect of nuclear power plant siting.

National interests in the pollution control area are further incorporated into the nuclear power plant siting process by <u>state</u> agencies acting pursuant to mandates set up by federal law. For example, state air pollution implementation plans are subject to approval by EPA for compliance with standards, giving EPA another indirect influence on the nuclear siting process. Further still, the Federal Water Pollution Control Act requires any applicant for a federal license or permit for conducting any activity that may result in a discharge into navigable waters to obtain a certification from the state that the discharge will comply with the applicable effluent limitation (set by EPA) and water quality standards (approved by EPA). Thus, on both procedural (EPA participation in process) and substantive (EPA criteria and standards) grounds, the national

interest in pollution control has ready access to the nuclear power plant siting process.

With regard to national interests in the land and water resources management sector of environmental considerations, there are three major statutory enactments that guarantee at least procedural incorporation of federal perspectives into the nuclear siting process. These are:

(1) The Fish and Wildlife Coordination Act

(2) The National Historic Preservation Act

(3) The National Environmental Policy Act

The Fish and Wildlife Coordination Act is applicable to most, if not all, nuclear power generating facilities. Whenever any body of water is impounded, diverted, or modified for any purpose (e.g., a cooling pond) under a federal license or permit, the licensing agency must consult with the Fish and Wildlife Service of the Department of the Interior, as well as the National Marine Fisheries Service in the Department of Commerce. Reports received from these agencies must be integrated into any report, such as an environmental impact statement under NEPA, prepared by the licensing agency, and the plan for the proposed project must include those wildlife conservation measures that the <u>licensing</u> agency (not the Fish and Wildlife Service) finds necessary to obtain maximum overall project benefits. In the case of nuclear power plants, reports to the AEC normally include recommendations for monitoring radioactivity and for appropriate safeguards for protecting fish and wildlife from thermal effects and from

being drawn through the plant's cooling system.

The National Historic Preservation Act of 1966 requires that the licensing by a federal department or independent agency of any undertaking must "take into account" the effect of the proposals on any district, site, building or object listed in the National Register of Historic Places. The Advisory Council on Historic Preservation must be given a reasonable opportunity by the licensing agency to comment on the project, but the weight given the comments of the Council is apparently within the discretion of the licensing agency.

The statutes just now discussed were pre-NEPA attempts to incorporate certain environmental considerations into relevant federal agency decision processes, and the influence of these enactments has been buttressed by the passage of NEPA. The National Environmental Policy Act requires that prior to the issuance of a construction permit for a nuclear power plant, the AEC must assess the potential environmental effects of the facility in order to ensure compliance with national environmental goals. In the procedural sense, NEPA is by far the most significant point of access for national interest considerations with respect to environmental aspects of nuclear siting. The law specifically requires that "prior to making any detailed statement, the responsible Federal official (AEC in this case) shall consult with and obtain the comments of any federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved." Since the concept of environmental impact is broadly defined,

this in effect requires that any federal agency that has any connection to land and water resources planning or management in relation to the environment be given an opportunity to participate in the permit evaluation process. The scope of this interagency coordination provision in NEPA is illustrated by the impact statement guidelines prepared by the Council on Environmental Quality, which lists as an appendix the federal and federal-state agencies the CEQ considers relevent (see Table 9).

With regard to the incorporation of substantive environmental aspects into the nuclear power plant siting process, CEQ has promulgated guidelines concerning the content of impact statements to be prepared by the lead federal agency for a given project. Among the factors to be considered are the potential effect of the action on such aspects of the environment as those listed in Appendix II of the guidelines, as shown in Table 9. As far as a nuclear power plant is concerned, these include all of the aspects delineated in Table 1 of this report. In the wake of the Calvert Cliffs decision, the AEC's interpretation of its responsibilities under NEPA is that it must first secure compliance with other federal agency standards, but must also do an independent evaluation of all the substantive environmental aspects surrounding the project. In the substantive sense, then, the AEC has the full weight of the burden of adequate consideration of national environmental interests squarely on its shoulders.

One substantive consideration which has been articulated

APPENDIX II—AREAS OF ENVIRONMENTAL IMPACT AND FEDERAL AGENCIES AND FEDERAL STATE AGENCIES [1] WITH JURISDICTION BY LAW OR SPECIAL EXPERTISE TO COMMENT THEREON [2]

AIR

Air Quality

Department of Agriculture—
Forest Service (effects on vegetation)
Atomic Energy Commission (radioactive substances)
Department of Health, Education, and Welfare
Environmental Protection Agency
Department of the Interior—
Bureau of Mines (fossil and gaseous fuel combustion)
Bureau of Sport Fisheries and Wildlife (effect on wildlife)
Bureau of Outdoor Recreation (effects on recreation)
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
National Aeronautics and Space Administration (remote sensing, aircraft emissions)
Department of Transportation—
Assistant Secretary for Systems Development and Technology (auto emissions)
Coast Guard (vessel emissions)
Federal Aviation Administration (aircraft emissions)

Weather Modification

Department of Agriculture—
Forest Service
Department of Commerce—
National Oceanic and Atmospheric Administration
Department of Defense—
Department of the Air Force
Department of the Interior
Bureau of Reclamation

WATER RESOURCES COUNCIL

WATER

Water Quality

Department of Agriculture—
Soil Conservation Service
Forest Service
Atomic Energy Commission (radioactive substances)
Department of the Interior—
Bureau of Reclamation
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
Bureau of Sports Fisheries and Wildlife
Bureau of Outdoor Recreation
Geological Survey
Office of Saline Water
Environmental Protection Agency
Department of Health, Education, and Welfare
Department of Defense—
Army Corps of Engineers
Department of the Navy (ship pollution control)
National Aeronautics and Space Administration (remote sensing)
Department of Transportation—
Coast Guard (oil spills, ship sanitation)
Department of Commerce—
National Oceanic and Atmospheric Administration
Water Resources Council
River Basin Commissions (as geographically appropriate)

Marine Pollution, Commercial Fishery Conservation, and Shellfish Sanitation

Department of Commerce—
National Oceanic and Atmospheric Administration
Department of Defense—
Army Corps of Engineers
Office of the Oceanographer of the Navy
Department of Health, Education, and Welfare
Department of the Interior—
Bureau of Sport Fisheries and Wildlife
Bureau of Outdoor Recreation
Bureau of Land Management (outer continental shelf)
Geological Survey (outer continental shelf)
Department of Transportation—
Coast Guard
Environmental Protection Agency
National Aeronautics and Space Administration (remote sensing)
Water Resources Council
River Basin Commissions (as geographically appropriate)

Waterway Regulation and Stream Modification

Department of Agriculture—
Soil Conservation Service
Department of Defense—
Army Corps of Engineers
Department of the Interior—
Bureau of Reclamation
Bureau of Sport Fisheries and Wildlife
Bureau of Outdoor Recreation
Geological Survey
Department of Transportation—
Coast Guard
Environmental Protection Agency
National Aeronautics and Space Administration (remote sensing)
Water Resources Council
River Basin Commissions (as geographically appropriate)

FISH AND WILDLIFE

Department of Agriculture—
Forest Service
Soil Conservation Service
Department of Commerce—
National Oceanic and Atmospheric Administration (marine species)
Department of the Interior—
Bureau of Sport Fisheries and Wildlife
Bureau of Land Management
Bureau of Outdoor Recreation
Environmental Protection Agency

SOLID WASTE

Atomic Energy Commission (radioactive waste)
Department of Defense—
Army Corps of Engineers
Department of Health, Education, and Welfare
Department of the Interior—
Bureau of Mines (mineral waste, mine acid waste, municipal solid waste, recycling)
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
Geological Survey (geologic and hydrologic effects)
Office of Saline Water (demineralization)
Department of Transportation—
Coast Guard (ship sanitation)
Environmental Protection Agency
River Basin Commissions (as geographically appropriate)
Water Resources Council

NOISE

Department of Commerce—
National Bureau of Standards
Department of Health, Education, and Welfare
Department of Housing and Urban Development (land use and building materials aspects)
Department of Labor—
Occupational Safety and Health Administration
Department of Transportation—
Assistant Secretary for Systems Development and Technology
Federal Aviation Administration, Office of Noise Abatement
Environmental Protection Agency
National Aeronautics and Space Administration

RADIATION

Atomic Energy Commission
Department of Commerce—
National Bureau of Standards
Department of Health, Education, and Welfare
Department of the Interior—
Bureau of Mines (uranium mines)
Mining Enforcement and Safety Administration (uranium mines)
Environmental Protection Agency

HAZARDOUS SUBSTANCES

Toxic Materials

Atomic Energy Commission (radioactive substances)
Department of Agriculture—
Agricultural Research Service
Consumer and Marketing Service
Department of Commerce—
National Oceanic and Atmospheric Administration
Department of Defense
Department of Health, Education, and Welfare
Environmental Protection Agency

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[1] River Basin Commissions (Delaware, Great Lakes, Missouri, New England, Ohio, Pacific Northwest, Souris-Red-Rainy, Susquehanna, Upper Mississippi) and similar Federal-State agencies should be consulted on actions affecting the environment of their specific geographic jurisdictions.

[2] In all cases where a proposed action will have significant international environmental effects, the Department of State should be consulted, and should be sent a copy of any draft and final impact statement which covers such action.

Food Additives and Contamination of Foodstuffs

Department of Agriculture—
Consumer and Marketing Service (meat and poultry products)
Department of Health, Education, and Welfare
Environmental Protection Agency

Pesticides

Department of Agriculture—
Agricultural Research Service (biological controls, food and fiber production)
Consumer and Marketing Service
Forest Service
Department of Commerce—
National Oceanic and Atmospheric Administration
Department of Health, Education, and Welfare
Department of the Interior—
Bureau of Sport Fisheries and Wildlife (fish and wildlife effects)
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
Bureau of Reclamation (irrigated lands)
Environmental Protection Agency

Transportation and Handling of Hazardous Materials

Atomic Energy Commission (radioactive substances)
Department of Commerce—
Maritime Administration
National Oceanic and Atmospheric Administration (effects on marine life and the coastal zone)
Department of Defense—
Armed Services Explosive Safety Board
Army Corps of Engineers (navigable waterways)
Department of Transportation—
Federal Highway Administration, Bureau of Motor Carrier Safety
Coast Guard
Federal Railroad Administration
Federal Aviation Administration
Assistant Secretary for Systems Development and Technology
Office of Hazardous Materials
Office of Pipeline Safety
Environmental Protection Agency

ENERGY SUPPLY AND NATURAL RESOURCES DEVELOPMENT

Electric Energy Development, Generation, and Transmission, and Use

Atomic Energy Commission (nuclear)
Department of Agriculture—
Rural Electrification Administration (rural areas)
Department of Defense—
Army Corps of Engineers (hydro)
Department of Health, Education, and Welfare (radiation effects)
Department of Housing and Urban Development (urban areas)
Department of the Interior—
Bureau of Indian Affairs (Indian lands)
Bureau of Land Management (public lands)
Bureau of Reclamation
Power Marketing Administrations
Geological Survey
Bureau of Sport Fisheries and Wildlife
Bureau of Outdoor Recreation
National Park Service
Environmental Protection Agency
Federal Power Commission (hydro, transmission, and supply)
River Basin Commissions (as geographically appropriate)
Tennessee Valley Authority
Water Resources Council

Petroleum Development, Extraction, Refining, Transport, and Use

Department of the Interior—
Office of Oil and Gas
Bureau of Mines
Geological Survey
Bureau of Land Management (public lands and outer continental shelf)
Bureau of Indian Affairs (Indian lands)
Bureau of Sport Fisheries and Wildlife (effects on fish and wildlife)
Bureau of Outdoor Recreation
National Park Service
Department of Transportation (Transport and Pipeline Safety)
Environmental Protection Agency
Interstate Commerce Commission

Natural Gas Development, Production, Transmission, and Use

Department of Housing and Urban Development (urban areas)
Department of the Interior—
Office of Oil and Gas
Geological Survey
Bureau of Mines
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
Bureau of Sport Fisheries and Wildlife
Bureau of Outdoor Recreation
National Park Service
Department of Transportation (transport and safety)
Environmental Protection Agency
Federal Power Commission (production, transmission, and supply)
Interstate Commerce Commission

Coal and Minerals Development, Mining, Conversion, Processing, Transport, and Use

Appalachian Regional Commission
Department of Agriculture—
Forest Service
Department of Commerce
Department of the Interior—
Office of Coal Research
Mining Enforcement and Safety Administration
Bureau of Mines
Geological Survey
Bureau of Indian Affairs (Indian lands)
Bureau of Land Management (public lands)
Bureau of Sport Fisheries and Wildlife
Bureau of Outdoor Recreation
National Park Service
Department of Labor—
Occupational Safety and Health Administration
Department of Transportation
Environmental Protection Agency
Interstate Commerce Commission
Tennessee Valley Authority

Renewable Resource Development, Production, Management, Harvest, Transport, and Use

Department of Agriculture—
Forest Service
Soil Conservation Service
Department of Commerce
Department of Housing and Urban Development (building materials)
Department of the Interior—
Geological Survey
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
Bureau of Sport Fisheries and Wildlife
Bureau of Outdoor Recreation
National Park Service
Department of Transportation
Environmental Protection Agency
Interstate Commerce Commission (freight rates)

Energy and Natural Resources Conservation

Department of Agriculture—
Forest Service
Soil Conservation Service
Department of Commerce—
National Bureau of Standards (energy efficiency)
Department of Housing and Urban Development—
Federal Housing Administration (housing standards)
Department of the Interior—
Office of Energy Conservation
Bureau of Mines
Bureau of Reclamation
Geological Survey
Power Marketing Administration
Department of Transportation
Environmental Protection Agency
Federal Power Commission
General Services Administration (design and operation of buildings)
Tennessee Valley Authority

LAND USE AND MANAGEMENT

Land Use Changes, Planning and Regulation of Land Development

Department of Agriculture—
Forest Service (forest lands)
Agricultural Research Service (agricultural lands)
Department of Housing and Urban Development
Department of the Interior—
Office of Land Use and Water Planning
Bureau of Land Management (public la
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
Bureau of Sport Fisheries and Wildlife (wildlife refuges)
Bureau of Outdoor Recreation (recreation lands)
National Park Service (NPS units)
Department of Transportation
Environmental Protection Agency (pollution effects)
National Aeronautics and Space Administration (remote sensing)
River Basins Commissions (as geographically appropriate).

Public Land Management

Department of Agriculture—
Forest Service (forests)
Department of Defense
Department of the Interior—
Bureau of Land Management
Bureau of Indian Affairs (Indian lands)
Bureau of Sport Fisheries and Wildlife (wildlife refuges)
Bureau of Outdoor Recreation (recreation lands)
National Park Service (NPS units)
Federal Power Commission (project lands)
General Services Administration
National Aeronautics and Space Administration (remote sensing)
Tennessee Valley Authority (project lands)

PROTECTION OF ENVIRONMENTALLY CRITICAL AREAS—FLOODPLAINS, WETLANDS, BEACHES AND DUNES, UNSTABLE SOILS, STEEP SLOPES, AQUIFER RECHARGE AREAS, ETC.

Department of Agriculture—
Agricultural Stabilization and Conservation Service
Soil Conservation Service
Forest Service
Department of Commerce—
National Oceanic and Atmospheric Administration (coastal areas)
Department of Defense—
Army Corps of Engineers
Department of Housing and Urban Development (urban and floodplain areas)

Department of the Interior—
Office of Land Use and Water Planning
Bureau of Outdoor Recreation
Bureau of Reclamation
Bureau of Sport Fisheries and Wildlife
Bureau of Land Management
Geological Survey
Environmental Protection Agency (pollution effects)
National Aeronautics and Space Administration (remote sensing)
River Basins Commissions (as geographically appropriate)
Water Resources Council

LAND USE IN COASTAL AREAS

Department of Agriculture—
Forest Service
Soil Conservation Service (soil stability, hydrology)
Department of Commerce—
National Oceanic and Atmospheric Administration (impact on marine life and coastal zone management)
Department of Defense—
Army Corps of Engineers (beaches, dredge and fill permits, Refuse Act permits)
Department of Housing and Urban Development (urban areas)
Department of the Interior—
Office of Land Use and Water Planning
Bureau of Sport Fisheries and Wildlife
National Park Service
Geological Survey
Bureau of Outdoor Recreation
Bureau of Land Management (public lands)
Department of Transportation—
Coast Guard (bridges, navigation)
Environmental Protection Agency (pollution effects)
National Aeronautics and Space Administration (remote sensing)

REDEVELOPMENT AND CONSTRUCTION IN BUILT-UP AREAS

Department of Commerce—
Economic Development Administration (designated areas)
Department of Housing and Urban Development
Department of the Interior—
Office of Land Use and Water Planning
Department of Transportation
Environmental Protection Agency
General Services Administration
Office of Economic Opportunity

DENSITY AND CONGESTION MITIGATION

Department of Health, Education, and Welfare
Department of Housing and Urban Development
Department of the Interior—
Office of Land Use and Water Planning
Bureau of Outdoor Recreation
Department of Transportation
Environmental Protection Agency

NEIGHBORHOOD CHARACTER AND CONTINUITY

Department of Health, Education, and Welfare
Department of Housing and Urban Development
National Endowment for the Arts
Office of Economic Opportunity

IMPACTS ON LOW-INCOME POPULATIONS

Department of Commerce—
Economic Development Administration (designated areas)
Department of Health, Education, and Welfare
Department of Housing and Urban Development
Office of Economic Opportunity

HISTORIC, ARCHITECTURAL, AND ARCHEOLOGICAL PRESERVATION

Advisory Council on Historic Preservation
Department of Housing and Urban Development
Department of the Interior—
National Park Service
Bureau of Land Management (public lands)
Bureau of Indian Affairs (Indian lands)
General Services Administration
National Endowment for the Arts

SOIL AND PLANT CONSERVATION AND HYDROLOGY

Department of Agriculture—
Soil Conservation Service
Agricultural Service
Forest Service
Department of Commerce—
National Oceanic and Atmospheric Administration
Department of Defense—
Army Corps of Engineers (dredging, aquatic plants)
Department of Health, Education, and Welfare
Department of the Interior—
Bureau of Land Management
Bureau of Sport Fisheries and Wildlife
Geological Survey
Bureau of Reclamation
Environmental Protection Agency
National Aeronautics and Space Administration (remote sensing)
River Basin Commissions (as geographically appropriate)
Water Resources Council

OUTDOOR RECREATION

Department of Agriculture—
Forest Service
Soil Conservation Service
Department of Defense—
Army Corps of Engineers
Department of Housing and Urban Development (urban areas)
Department of the Interior—
Bureau of Land Management
National Park Service
Bureau of Outdoor Recreation
Bureau of Sport Fisheries and Wildlife
Bureau of Indian Affairs
Environmental Protection Agency
National Aeronautics and Space Administration (remote sensing)
River Basin Commissions (as geographically appropriate)
Water Resources Council

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at the national level but which is conspicuously absent from the nuclear power plant siting process is the consideration of alternative sites. While NEPA requires that alternatives to proposed actions be incorporated into the agencies' decision-making processes, in practice the very structure of the siting process tends to avoid this issue. Since the actual choice of site is left completely to the utility, regulatory agencies wind up carefully scrutinizing proposed sites but have a limited ability to ensure consideration of alternative sites. Since the product of a nuclear power plant is impossible to store, and delay or modification of construction will often threaten ability to meet demand, there is great pressure placed on agencies which all but rule out suggestions as to major re-evaluation of the choice of site. Therefore, the task of balancing the environmental and economic pros and cons of various sites falls by default to the utilities themselves, subject of course to the broad guidelines promulgated by the reviewing agency.

3. Foreign Affairs Considerations

With regard to the potential impact of nuclear power plant siting on foreign affairs considerations, there are a number of "points of entry" to the nuclear siting process, most of them indirect. With respect to pollution that crosses international boundaries, the EPA has authority for abatement and can influence the process directly through its permit programs. For those environmental impacts which affect treaty obligations, the federal agencies that have programs pursuant to such

obligations have access through the NEPA impact statement procedures. With regard to military security, we have seen that the Provost Marshall General of the Army reviews facility sites on an annual basis and makes recommendations concerning military security measures and arrangements. With respect to the national security aspects of plutonium diversion, the AEC has direct statutory authority to require utilities to invoke stringent security measures.

4. Energy Policy Considerations

In the area of energy policy, national interests at this point are not well-defined, and this uncertainty is reflected in the almost total absence of any energy policy considerations in the nuclear power plant siting process. The very important issue of how much electricity society should use, for example, is now resolved without conscious balancing of competing economic, environmental, and social considerations. The only federal agency with a relationship to this area of concern is the AEC, and its mandate is directed toward only one aspect of the overall energy policy situation - promotion of nuclear energy. In terms of mandate, the FPC would come closer to a more balanced approach, since a basic purpose of the FPC is to assure "an abundant supply of electric energy throughout the United States with the greatest possible economy and with regard to the proper utilization and conservation of natural resources." But to achieve this broad purpose, the FPC is empowered only to divide the nation into regional districts

for voluntary interconnection and coordination of electric facilities. Until recently, the FPC accepted this role and denied responsibility for considering power conservation or for gathering the information necessary to make a conscious decision about shaping future demand. Even if the FPC were to take such responsibilities, they could only be discharged in connection with the licensing of hydro-electric plants, since FPC has no regulatory involvement with the nuclear power plant siting process.

Aside from the issue of energy demand and conservation, another issue of considerable national importance is that of how to produce electricity, becuase each mode of generation has different environmental consequences and even different international consequences (Project Independence, for example). At present, the choice of production mode is left to the individual utility, or there is no governmental intervention in Stage One of the overall siting process, and the licensing stages fail to provide any effective review of the utilities' choice.

C. Defects in the Nuclear Power Plant Siting Process in Relation to the National Interest

The foregoing discussions seem to indicate that there are points of entry for most national interest considerations (exclusive of energy policy factors) in the overall nuclear power plant siting process. It must be pointed out, however, that this holds true only insofar as national interests come in relatively discrete units or categories with attendant

federal bureaucracies to represent them. However, when the national interest is perceived in a broader sense--i.e., as in calling for an orderly and balanced consideration of energy policies and siting alternatives on a regional basis from the point of view of multiple objectives--it becomes a clear that the nuclear power plant siting process is sorely deficient. The clearest summary of the failures of the siting process in this regard has been extensively documented by the Bar Association of the City of New York in a major report entitled Electricity and the Environment: The Reform of Legal Institutions. This and other scholarly observations over recent years have led to an emerging concensus that the overall structure of the siting process, as described herein, militates against a broad-based, balanced approach to this crucial aspect of energy policy. The current administrative system is structurally indisposed towards analysis of the overall interaction of technical, economic, environmental, and social variables. It is appropriate at this point to review the major criticisms which have been directed at the process and which are of nationwide concern.

1. Avoidance of Issues

The first criticism of the siting process is that it evades some very important issues, which are therefore left to be determined not by conscious choice, but as the random by-product of many private and public forces pursuing their disparate missions. These issues include control of demand, choice of power type, direction of research and development, site selection

and evaluation, and coordination of interdependent policy areas.

Perhaps the most important issue that the existing siting process has failed to deal with is the issue of energy demand. Consideration of new plants has been based on forecasts of power needs, with no thought to the question of how much power use should grow, and whether some kind of control of demand might be necessary. In addition to ducking the question of norms and limits for electricity use, power policy has generally encouraged growth by permitting pricing that encourages large power users. What is needed is a structure that is able to pull in broad and long-run social, economic, and environmental perspectives, to consider the consequences of growth and resource depletion, and to initiate federal determination of a real electricity demand policy. Instead, we have a structure that tends to focus on the narrower, technical grounds for siting, and is too fragmented to be conducive to discussion of the broad questions of electricity consumption.

Next, the current administrative structure of siting prevents the consideration of alternative types of power production at a given site, because the administrative structure is fragmented by power type: nuclear power is handled by AEC, hydroelectric by FPC; and neither agency has the authority to license any but its own type of power generation. In the case of fossil stations, the Army Corps of Engineers is the lead federal agency, but has only limited jurisdiction. Thus, the utility decides what mode it wants to use to generate power, and then approaches

the agency in charge of that mode. The utility makes its choice on the basis of internal consideration of relevant factors, which may not reflect the total social costs and benefits of using that particular mode at that particular site. But the existing administrative format provides no opportunity for reviewing the utility's choice of mode, as each licensing agency minds only its own jurisdiction.

The current administrative format also evades the issue of proper directions for research and development in the area of power generation and siting, by fragmenting the consideration of R&D needs and the allocation of R&D funds. Different agencies handle different facets of energy research. No overall assessment of directions and priorities for research is performed, so the research is channeled according to fairly subjective criteria, mostly wherever pressure from the utilities and the entrenched licensing agencies directs. (Currently, the emphasis is on nuclear R&D). Naturally, the directions that are most advantageous for industry are not necessarily the directions that would be most advantageous to society. Social interest <u>might</u> be better served by research into new technologies (MHD, geothermal) or demand control techniques, which could be very disruptive and threatening to industry interests.

Another issue avoided by the siting system is the question of regional allocation of plant sites. The utility wants to locate its plant in its service area. Although the regulatory agencies do assess the proposed site carefully, they never

consider the possibility that the best site might be one not in the utility's service area. This is part of the larger question of site selection and evaluation of alternative sites, which ideally should comprise objective appraisal of environmental and community values as well as technical and economic objectives of the utility. But since the utility is not accountable to any constituency in connection with the former values, it is by no means assured that the private decision-making process will adequately weigh public interests. In the case of environmental values, the proponents of NEPA had hoped that the writing and circulation of environmental impact statements would eliminate the tunnel vision of many federal agencies which influence private decisions; but the superimposition of NEPA on a closed and biased administrative structure does not seem sufficient to transform the output into broad-based, balanced policy, especially because NEPA does not to any great extent, provide for review of the decison processes of either agency or utility in substantive matters.

Finally, the siting process avoids the issue of coordination of policy in environment, energy and land use, once again because the fragmented energy jurisdiction makes such coordination difficult and unlikely. Agencies with narrowly-defined jurisdictions and mandates just aren't suited to an overall coordinating and balancing function, nor do the separate agencies have the authority to implement any broader, more coordinated policies.

2. The Private Making of Public Decisions

The second large area of criticism of existing siting procedure is that they permit public decisions to be made in private, without explicitly considering and balancing the views of those other than the utility and the regulatory agency. Industry-agency councils play a large role in determining regulatory policy and demand growth projections, yet few "outsiders" have access to these important policy-making bodies. In this way, public, environmentalist, and consumer points of view are excluded from a significant, even though de facto, policy-making process.

Similarly, with relation to approval of specific site proposals, most of the real deciding is done in ongoing, informal industry-agency negotiations, which usually precede formal application by the utility. Once again, other viewpoints are excluded from this dickering process. By the time the utility makes formal application, it is pretty confident that the agency is satisfied with the site and plant proposal. Thus the hearing, which is the only opportunity for public input, is often something of a hollow ritual. The utility and the agency are already a united front; to show how united, there is no case of the AEC denying a permit after the hearing stage was reached, only two cases of FPC denial of permit for environmental reasons, and no case of Army Corps refusing a permit for a fossil plant. Thus, by excluding non-agency perspectives from the pre-application bargaining process, the administrative structure effectively denies public input on a decision that really is of public concern.

This might not be so disturbing if we were assured that the regulatory agencies were good negotiators who represented public and environmental concerns effectively. But in fact, the agency structure predisposes the agencies to be poor bargainers because they are charged with two contradictory tasks: promotion AND regulation. Thus, the agency tends to ignore the non-development alternative, which is not surprising when an agency must act as the judge of applications it helped to develop, and when the subject at hand is the trading off of huge amounts of money against tiny probabilities of disaster or scientific uncertainty as to effects. Finally, the agency suffers from insufficient staff to cope with a broad range of considerations, and it is undoubtedly subject to intense pressure from the utilities, to which it is innately sympathetic.

The general tendency to shut out the public and the broader environmental perspectives is compounded by the general lack of disclosure, information flow, and open discussion. The public is not kept informed of what goes on in the industry-agency councils. Certain reports and studies are very hard for any outsider to get. (Apparently, some of the hardest studies to get were those that concluded that environmental concern was NOT a significant cause of siting delay. Also hidden from the public were studies on the topic of plutonium theft and nuclear blackmail.) In some measure, this reticence is probably a product of the fact that information dissemination can be the last straw for a strained bureaucracy. But more

important, industry and the agencies do not seem to look on the public as a relevant party to the siting decision, and do want to minimize intervention and delay. Therefore, they minimize discussion and information availability. Their role in discouraging discussion is further compounded by the fact that the agency itself does not recognize many important issues, and issues which the agency never articulates to itself are obviously not articulated to the public either.

In addition to the exclusion of the public from the important bargaining stage, and minimization of the information outflow, the administrative process is characterized by further obstacles to public participation. Hearing notice is often made as unobstrusive as possible. The time schedule of hearings is usually such that the public groups have little time to organize, investigate, and get funds between notice and hearing. The public has a few months' notice, while the industry has had years, and can pass its cost on to the consumers. Also, the public is at a major disadvantage because it often lacks access to the kind of money needed to participate in hearings (which really require counsel and expert witnesses), and it lacks access to expertise, which is concentrated in the very industry and government groups being challenged.

3. Siting Delays

A third siting process defect (often raised by industry) is the tremendous potential for delay. The case is made by industry, the agencies, and many other concerned observers

that unless we rapidly add some new generating plants, there will be widespread power shortages. Projections show that 150 new sites are "needed" for the decade 1970-1980, and 150 more for the decade 1980-1990, plus three million additional acres for transmission lines. These figures are based on projections of needed generating capacity; in 1970, we had 340 million kilowatts of capacity in all power modes; for 1980, we are to need 665 million kilowatts, and for 1990, 1,260 million kilowatts. (This, of course, assumes continuation of present trends in electricity use). As of 1970, power reserves to meet peak demand were in many areas shrinking to below the 15-20% reserve recommended by the FPC. Under these circumstances, we must either limit consumption or increase generating capacity. Since the former is a proposal no one likes to deal with, the latter becomes a mandate. To fill that mandate of increasing generating capacity, the siting process must be streamlined. Although some cases of delay are due to the preparation of environmental impact statements and to environmental litigation on procedural questions under NEPA, more often the delay is the natural corollary of the fragmented administrative structure, which requires the utility to seek federal, state and local permits, with opportunity for delay and litigation at every level.

4. Concluding Remarks

The above observations portray an administrative structure fragmented vertically into separate federal, state and local reviews; fragmented horizontally into separate consideration

of each power mode and each category of environmental impact; and fragmented temporally into industry-agency consideration of relevant factors and eleventh-hour incorporation of all other perspectives. This fragmentation constitutes a structural bias that is the proximate causal factor in the avoidance of many important issues, the existence of delay, and the general tendency to look at energy questions in terms of narrow, single-purpose criteria rather than in terms of broad balancing of long-term and short-term economic, environmental and social needs and values. As far as the national interest is concerned then, the underlying structure of the power plant siting process is clearly an important challenge to be addressed as states continue to develop programs in the interrelated areas of coastal zone and land use management and energy policy.

APPENDIX D

Coastal Zone Management Act of 1972

Public Law 92-583
92nd Congress, S. 3507
October 27, 1972

An Act

86 STAT. 1280

To establish a national policy and develop a national program for the management, beneficial use, protection, and development of the land and water resources of the Nation's coastal zones, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act entitled "An Act to provide for a comprehensive, long-range, and coordinated national program in marine science, to establish a National Council on Marine Resources and Engineering Development, and a Commission on Marine Science, Engineering and Resources, and for other purposes", approved June 17, 1966 (80 Stat. 203), as amended (33 U.S.C. 1101-1124), is further amended by adding at the end thereof the following new title:

Marine Resources and Engineering Development Act of 1966, amendment.

80 Stat. 998; 84 Stat. 865.

TITLE III—MANAGEMENT OF THE COASTAL ZONE

SHORT TITLE

SEC. 301. This title may be cited as the "Coastal Zone Management Act of 1972".

CONGRESSIONAL FINDINGS

SEC. 302. The Congress finds that—

(a) There is a national interest in the effective management, beneficial use, protection, and development of the coastal zone;

(b) The coastal zone is rich in a variety of natural, commercial, recreational, industrial, and esthetic resources of immediate and potential value to the present and future well-being of the Nation;

(c) The increasing and competing demands upon the lands and waters of our coastal zone occasioned by population growth and economic development, including 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, have resulted in the loss of living marine resources, wildlife, nutrient-rich areas, permanent and adverse changes to ecological systems, decreasing open space for public use, and shoreline erosion;

(d) The coastal zone, and the fish, shellfish, other living marine resources, and wildlife therein, are ecologically fragile and consequently extremely vulnerable to destruction by man's alterations;

(e) Important ecological, cultural, historic, and esthetic values in the coastal zone which are essential to the well-being of all citizens are being irretrievably damaged or lost;

(f) Special natural and scenic characteristics are being damaged by ill-planned development that threatens these values;

(g) In light of competing demands and the urgent need to protect and to give high priority to natural systems in the coastal zone, present state and local institutional arrangements for planning and regulating land and water uses in such areas are inadequate; and

(h) The key to more effective protection and use of the land and water resources of the coastal zone is to encourage the states to exercise their full authority over the lands and waters in the coastal zone by assisting the states, in cooperation with Federal and local governments and other vitally affected interests, in developing land and water use programs for the coastal zone, including unified policies, criteria, standards, methods, and processes for dealing with land and water use decisions of more than local significance.

DECLARATION OF POLICY

SEC. 303. The Congress finds and declares that it is the national policy (a) to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations, (b) to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone giving full consideration to ecological, cultural, historic, and esthetic values as well as to needs for economic development, (c) 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, and (d) to encourage the participation of the public, of Federal, state, and local governments and of regional agencies in the development of coastal zone management programs. With respect to implementation of such managament programs, it is the national policy to encourage cooperation among the various state and regional agencies including establishment of interstate and regional agreements, cooperative procedures, and joint action particularly regarding environmental problems.

DEFINITIONS

SEC. 304. For the purposes of this title—

(a) "Coastal zone" means the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal states, and includes transitional and intertidal areas, salt marshes, wetlands, and beaches. The zone extends, in Great Lakes waters, to the international boundary between the United States and Canada and, in other areas, seaward to the outer limit of the United States territorial sea. The zone extends inland from the shorelines only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters. Excluded from the coastal zone are lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers or agents.

(b) "Coastal waters" means (1) in the Great Lakes area, the waters within the territorial jurisdiction of the United States consisting of the Great Lakes, their connecting waters, harbors, roadsteads, and estuary-type areas such as bays, shallows, and marshes and (2) in other areas, those waters, adjacent to the shorelines, which contain a measurable quantity or percentage of sea water, including, but not limited to, sounds, bays, lagoons, bayous, ponds, and estuaries.

(c) "Coastal state" means a state of the United States in, or bordering on, the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes. For the purposes of this title, the term also includes Puerto Rico, the Virgin Islands, Guam, and American Samoa.

(d) "Estuary" means that part of a river or stream or other body of water having unimpaired connection with the open sea, where the sea water is measurably diluted with fresh water derived from land drainage. The term includes estuary-type areas of the Great Lakes.

(e) "Estuarine sanctuary" means a research area which may include any part or all of an estuary, adjoining transitional areas, and adjacent uplands, constituting to the extent feasible a natural unit, set

aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area.

(f) "Secretary" means the Secretary of Commerce.

(g) "Management program" includes, but is not limited to, a comprehensive statement in words, maps, illustrations, or other media of communication, prepared and adopted by the state in accordance with the provisions of this title, setting forth objectives, policies, and standards to guide public and private uses of lands and waters in the coastal zone.

(h) "Water use" means activities which are conducted in or on the water; but does not mean or include the establishment of any water quality standard or criteria or the regulation of the discharge or runoff of water pollutants except the standards, criteria, or regulations which are incorporated in any program as required by the provisions of section 307(f).

(i) "Land use" means activities which are conducted in or on the shorelands within the coastal zone, subject to the requirements outlined in section 307(g).

MANAGEMENT PROGRAM DEVELOPMENT GRANTS

SEC. 305. (a) The Secretary is authorized to make annual grants to any coastal state for the purpose of assisting in the development of a management program for the land and water resources of its coastal zone.

(b) Such management program shall include:

(1) an identification of the boundaries of the coastal zone subject to the management program;

(2) a definition of what shall constitute permissible land and water uses within the coastal zone 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 and water uses referred to in paragraph (2) of this subsection, including a listing of relevant constitutional provisions, legislative enactments, regulations, and judicial decisions;

(5) broad guidelines on priority of uses in particular areas, including specifically those uses of lowest priority;

(6) a description of the organizational structure proposed to implement the management program, including the responsibilities and interrelationships of local, areawide, state, regional, and interstate agencies in the management process.

(c) The grants shall not exceed 66⅔ per centum of the costs of the program in any one year and no state shall be eligible to receive more than three annual grants pursuant to this section. Federal funds received from other sources shall not be used to match such grants. In order to qualify for grants under this section, the state must reasonably demonstrate to the satisfaction of the Secretary that such grants will be used to develop a management program consistent with the requirements set forth in section 306 of this title. After making the initial grant to a coastal state, no subsequent grant shall be made under this section unless the Secretary finds that the state is satisfactorily developing such management program. Limitation.

(d) Upon completion of the development of the state's management program, the state shall submit such program to the Secretary for

review and approval pursuant to the provisions of section 306 of this title, or such other action as he deems necessary. On final approval of such program by the Secretary, the state's eligibility for further grants under this section shall terminate, and the state shall be eligible for grants under section 306 of this title.

Grants, allocation.

(e) Grants under this section shall be allocated to the states based on rules and regulations promulgated by the Secretary: *Provided, however*, That no management program development grant under this section shall be made in excess of 10 per centum nor less than 1 per centum of the total amount appropriated to carry out the purposes of this section.

(f) Grants or portions thereof not obligated by a state during the fiscal year for which they were first authorized to be obligated by the state, or during the fiscal year immediately following, shall revert to the Secretary, and shall be added by him to the funds available for grants under this section.

(g) With the approval of the Secretary, the state may allocate to a local government, to an areawide agency designated under section 204 of the Demonstration Cities and Metropolitan Development Act of 1966, to a regional agency, or to an interstate agency, a portion of the grant under this section, for the purpose of carrying out the provisions of this section.

80 Stat. 1262; 82 Stat. 208. 42 USC 3334.

Expiration date.

(h) The authority to make grants under this section shall expire on June 30, 1977.

ADMINISTRATIVE GRANTS

Limitation.

SEC. 306. (a) The Secretary is authorized to make annual grants to any coastal state for not more than 66⅔ per centum of the costs of administering the state's management program, if he approves such program in accordance with subsection (c) hereof. Federal funds received from other sources shall not be used to pay the state's share of costs.

Allocation.

(b) Such grants shall be allocated to the states with approved programs based on rules and regulations promulgated by the Secretary which shall take into account the extent and nature of the shoreline and area covered by the plan, population of the area, and other relevant factors: *Provided, however*, That no annual administrative grant under this section shall be made in excess of 10 per centum nor less than 1 per centum of the total amount appropriated to carry out the purposes of this section.

Program requirements.

(c) Prior to granting approval of a management program submitted by a coastal state, the Secretary shall find that:

(1) The state has developed and adopted a management program for its coastal zone in accordance with rules and regulations promulgated by the Secretary, after notice, and with the opportunity of full participation by relevant Federal agencies, state agencies, local governments, regional organizations, port authorities, and other interested parties, public and private, which is adequate to carry out the purposes of this title and is consistent with the policy declared in section 303 of this title.

(2) The state has:

(A) 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 to the Secretary, which plans have been developed by a local government, an areawide agency designated pursuant to regulations established under section 204 of the Demonstration

Cities and Metropolitan Development Act of 1966, a regional agency, or an interstate agency; and

80 Stat. 1262; 82 Stat. 208. 42 USC 3334.

(B) established an effective mechanism for continuing consultation and coordination between the management agency designated pursuant to paragraph (5) of this subsection and with local governments, interstate agencies, regional agencies, and areawide agencies within the coastal zone to assure the full participation of such local governments and agencies in carrying out the purposes of this title.

(3) The state has held public hearings in the development of the management program.

(4) The management program and any changes thereto have been reviewed and approved by the Governor.

(5) The Governor of the state has designated a single agency to receive and administer the grants for implementing the management program required under paragraph (1) of this subsection.

(6) The state is organized to implement the management program required under paragraph (1) of this subsection.

(7) The state has the authorities necessary to implement the program, including the authority required under subsection (d) of this section.

(8) The management program provides for adequate consideration of the national interest involved in the siting of facilities necessary to meet requirements which are other than local in nature.

(9) The management program makes provision for procedures whereby specific areas may be designated for the purpose of preserving or restoring them for their conservation, recreational, ecological, or esthetic values.

(d) Prior to granting approval of the management program, the Secretary shall find that the state, acting through its chosen agency or agencies, including local governments, areawide agencies designated under section 204 of the Demonstration Cities and Metropolitan Development Act of 1966, regional agencies, or interstate agencies, has authority for the management of the coastal zone in accordance with the management program. Such authority shall include power—

(1) to administer land and water use regulations, control development in order to ensure compliance with the management program, and to resolve conflicts among competing uses; and

(2) to acquire fee simple and less than fee simple interests in lands, waters, and other property through condemnation or other means when necessary to achieve conformance with the management program.

(e) Prior to granting approval, the Secretary shall also find that the program provides:

(1) for any one or a combination of the following general techniques for control of land and water uses within the coastal zone;

(A) State establishment of criteria and standards for local implementation, subject to administrative review and enforcement of compliance;

(B) Direct state land and water use planning and regulation; or

(C) State administrative review for consistency with the management program of all development plans, projects, or land and water use regulations, including exceptions and variances thereto, proposed by any state or local authority or private developer, with power to approve or disapprove after public notice and an opportunity for hearings.

(2) for 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 regional benefit.

(f) With the approval of the Secretary, a state may allocate to a local government, an areawide agency designated under section 204 of the Demonstration Cities and Metropolitan Development Act of 1966, a regional agency, or an interstate agency, a portion of the grant under this section for the purpose of carrying out the provisions of this section: *Provided*, That such allocation shall not relieve the state of the responsibility for ensuring that any funds so allocated are applied in furtherance of such state's approved management program.

80 Stat. 1262; 82 Stat. 208. 42 USC 3334.

Program modification.

(g) The state shall be authorized to amend the management program. The modification shall be in accordance with the procedures required under subsection (c) of this section. Any amendment or modification of the program must be approved by the Secretary before additional administrative grants are made to the state under the program as amended.

Segmental development.

(h) At the discretion of the state and with the approval of the Secretary, a management program may be developed and adopted in segments so that immediate attention may be devoted to those areas within the coastal zone which most urgently need management programs: *Provided*, That the state adequately provides for the ultimate coordination of the various segments of the management program into a single unified program and that the unified program will be completed as soon as is reasonably practicable.

INTERAGENCY COORDINATION AND COOPERATION

SEC. 307. (a) In carrying out his functions and responsibilities under this title, the Secretary shall consult with, cooperate with, and, to the maximum extent practicable, coordinate his activities with other interested Federal agencies.

(b) The Secretary shall not approve the management program submitted by a state pursuant to section 306 unless the views of Federal agencies principally affected by such program have been adequately considered. In case of serious disagreement between any Federal agency and the state in the development of the program the Secretary, in cooperation with the Executive Office of the President, shall seek to mediate the differences.

(c)(1) Each Federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with approved state management programs.

(2) Any Federal agency which shall undertake any development project in the coastal zone of a state shall insure that the project is, to the maximum extent practicable, consistent with approved state management programs.

Certification.

(3) 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. Notification.

(d) State and local governments submitting applications for Federal assistance under other Federal programs affecting the coastal zone shall indicate the views of the appropriate state or local agency as to the relationship of such activities to the approved management program for the coastal zone. Such applications shall be submitted and coordinated in accordance with the provisions of title IV of the Intergovernmental Coordination Act of 1968 (82 Stat. 1098). Federal agencies shall not approve proposed projects that are inconsistent with a coastal state's management program, except upon a finding by the Secretary that such project is consistent with the purposes of this title or necessary in the interest of national security. 42 USC 4231.

(e) Nothing in this title shall be construed—

(1) to diminish either Federal or state jurisdiction, responsibility, or rights in the field of planning, development, or control of water resources, submerged lands, or navigable waters; nor to displace, supersede, limit, or modify any interstate compact or the jurisdiction or responsibility of any legally established joint or common agency of two or more states or of two or more states and the Federal Government; nor to limit the authority of Congress to authorize and fund projects;

(2) as superseding, modifying, or repealing existing laws applicable to the various Federal agencies; nor to affect the jurisdiction, powers, or prerogatives of the International Joint Commission, United States and Canada, the Permanent Engineering Board, and the United States operating entity or entities established pursuant to the Columbia River Basin Treaty, signed at Washington, January 17, 1961, or the International Boundary and Water Commission, United States and Mexico.

(f) Notwithstanding any other provision 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. Ante, p. 816. 81 Stat. 485; 84 Stat. 1676. 42 USC 1857 note.

(g) When any state's coastal zone management program, submitted for approval or proposed for modification pursuant to section 306 of this title, includes requirements as to shorelands which also would be subject to any Federally supported national land use program which may be hereafter enacted, the Secretary, prior to approving such pro-

gram, shall obtain the concurrence of the Secretary of the Interior, or such other Federal official as may be designated to administer the national land use program, with respect to that portion of the coastal zone management program affecting such inland areas.

PUBLIC HEARINGS

SEC. 308. All public hearings required under this title must be announced at least thirty days prior to the hearing date. At the time of the announcement, all agency materials pertinent to the hearings, including documents, studies, and other data, must be made available to the public for review and study. As similar materials are subsequently developed, they shall be made available to the public as they become available to the agency.

REVIEW OF PERFORMANCE

SEC. 309. (a) The Secretary shall conduct a continuing review of the management programs of the coastal states and of the performance of each state.

Financial assistance, termination.

(b) The Secretary shall have the authority to terminate any financial assistance extended under section 306 and to withdraw any unexpended portion of such assistance if (1) he determines that the state is failing to adhere to and is not justified in deviating from the program approved by the Secretary; and (2) the state has been given notice of the proposed termination and withdrawal and given an opportunity to present evidence of adherence or justification for altering its program.

RECORDS

SEC. 310. (a) Each recipient of a grant under this title shall keep such records as the Secretary shall prescribe, including records which fully disclose the amount and disposition of the funds received under the grant, the total cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

Audit.

(b) The Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access for the purpose of audit and examination to any books, documents, papers, and records of the recipient of the grant that are pertinent to the determination that funds granted are used in accordance with this title.

ADVISORY COMMITTEE

Coastal Zone Management Advisory Committee, establishment; membership.

SEC. 311. (a) The Secretary is authorized and directed to establish a Coastal Zone Management Advisory Committee to advise, consult with, and make recommendations to the Secretary on matters of policy concerning the coastal zone. Such committee shall be composed of not more than fifteen persons designated by the Secretary and shall perform such functions and operate in such a manner as the Secretary may direct. The Secretary shall insure that the committee membership as a group possesses a broad range of experience and knowledge relating to problems involving management, use, conservation, protection, and development of coastal zone resources.

Compensation, travel expenses.

(b) Members of the committee who are not regular full-time employees of the United States, while serving on the business of the committee, including traveltime, may receive compensation at rates not exceeding $100 per diem; and while so serving away from their

homes or regular places of business may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by section 5703 of title 5, United States Code, for individuals in the Government service employed intermittently. 80 Stat. 499; 83 Stat. 190.

ESTUARINE SANCTUARIES

SEC. 312. The Secretary, in accordance with rules and regulations promulgated by him, is authorized to make available to a coastal state grants of up to 50 per centum of the costs of acquisition, development, and operation of estuarine sanctuaries for the purpose of creating natural field laboratories to gather data and make studies of the natural and human processes occurring within the estuaries of the coastal zone. The Federal share of the cost for each such sanctuary shall not exceed $2,000,000. No Federal funds received pursuant to section 305 or section 306 shall be used for the purpose of this section. Grants. Federal share.

ANNUAL REPORT

SEC. 313. (a) The Secretary shall prepare and submit to the President for transmittal to the Congress not later than November 1 of each year a report on the administration of this title for the preceding fiscal year. The report shall include but not be restricted to (1) an identification of the state programs approved pursuant to this title during the preceding Federal fiscal year and a description of those programs; (2) a listing of the states participating in the provisions of this title and a description of the status of each state's programs and its accomplishments during the preceding Federal fiscal year; (3) an itemization of the allocation of funds to the various coastal states and a breakdown of the major projects and areas on which these funds were expended; (4) an identification of any state programs which have been reviewed and disapproved or with respect to which grants have been terminated under this title, and a statement of the reasons for such action; (5) a listing of all activities and projects which, pursuant to the provisions of subsection (c) or subsection (d) of section 307, are not consistent with an applicable approved state management program; (6) a summary of the regulations issued by the Secretary or in effect during the preceding Federal fiscal year; (7) a summary of a coordinated national strategy and program for the Nation's coastal zone including identification and discussion of Federal, regional, state, and local responsibilities and functions therein; (8) a summary of outstanding problems arising in the administration of this title in order of priority; and (9) such other information as may be appropriate.

(b) The report required by subsection (a) shall contain such recommendations for additional legislation as the Secretary deems necessary to achieve the objectives of this title and enhance its effective operation.

RULES AND REGULATIONS

SEC. 314. The Secretary shall develop and promulgate, pursuant to section 553 of title 5, United States Code, after notice and opportunity for full participation by relevant Federal agencies, state agencies, local governments, regional organizations, port authorities, and other interested parties, both public and private, such rules and regulations as may be necessary to carry out the provisions of this title. 80 Stat. 383.

AUTHORIZATION OF APPROPRIATIONS

SEC. 315. (a) There are authorized to be appropriated—

(1) the sum of $9,000,000 for the fiscal year ending June 30, 1973, and for each of the fiscal years 1974 through 1977 for grants under section 305, to remain available until expended;

(2) such sums, not to exceed $30,000,000, for the fiscal year ending June 30, 1974, and for each of the fiscal years 1975 through 1977, as may be necessary, for grants under section 306 to remain available until expended; and

(3) such sums, not to exceed $6,000,000 for the fiscal year ending June 30, 1974, as may be necessary, for grants under section 312, to remain available until expended.

(b) There are also authorized to be appropriated such sums, not to exceed $3,000,000, for fiscal year 1973 and for each of the four succeeding fiscal years, as may be necessary for administrative expenses incident to the administration of this title.

Approved October 27, 1972.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 92-1049 accompanying H.R. 14146 (Comm. on Merchant Marine and Fisheries) and No. 92-1544 (Comm. of Conference).

SENATE REPORT No. 92-753 (Comm. on Commerce).

CONGRESSIONAL RECORD, Vol. 118 (1972):

Apr. 25, considered and passed Senate.

Aug. 2, considered and passed House, amended, in lieu of H.R. 14146.

Oct. 12, House and Senate agreed to conference report.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 8, No. 44:

Oct. 28, Presidential statement.

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1. Industry-Transportation Activity

Atomic power plant - on-shore				✓	✓		✓				✓	✓	✓		✓	✓		✓	✓							

✓					✓		✓	✓	✓	✓	✓	✓	✓			

2. Industry-Transportation

Characteristics

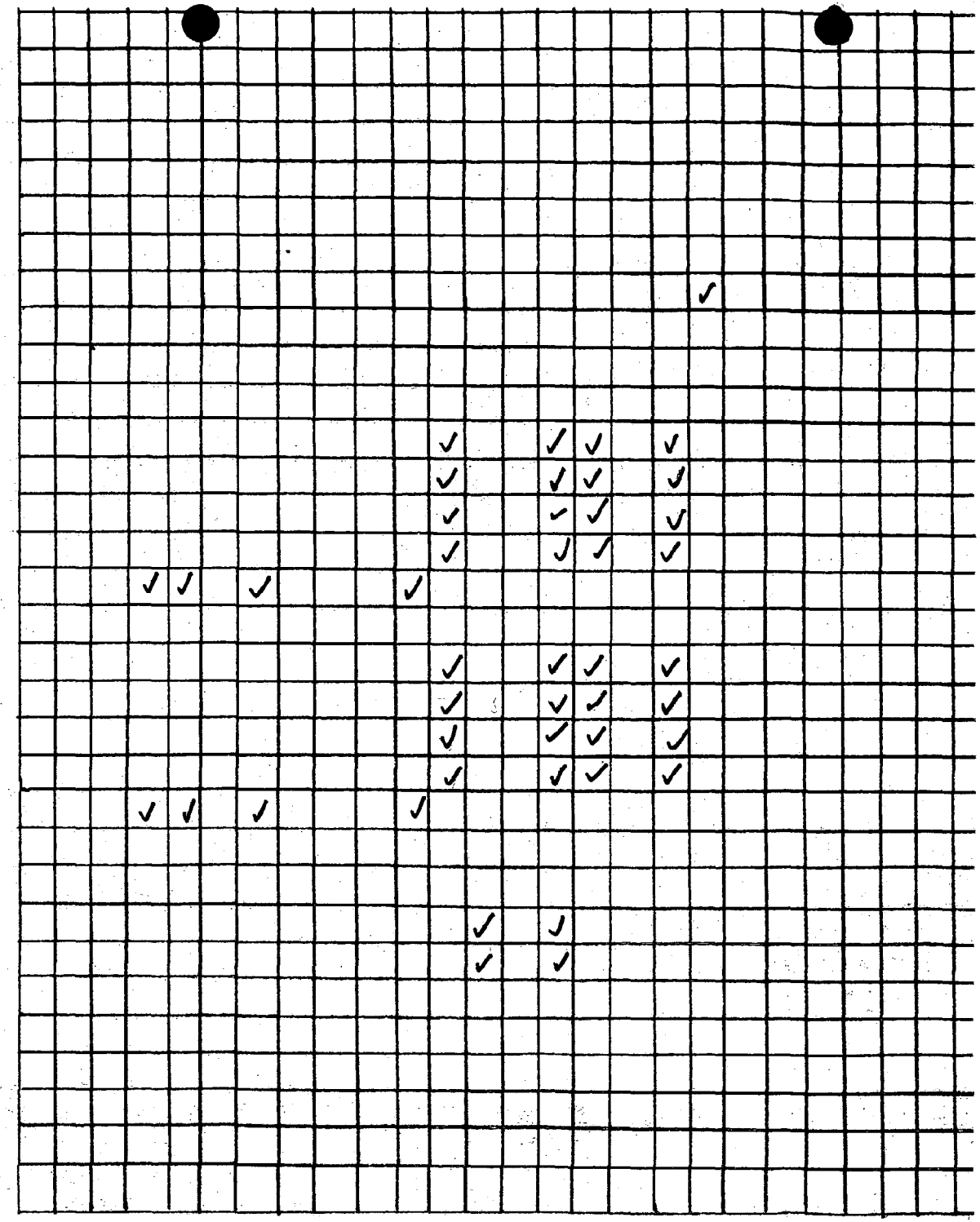
																							Practice ranges
																							Collection of species
																							Defense operations
																							Power pylons and wires
																							Transmission towers
																							Utilities
																							Fences
																							Runways
																							Aircraft
																							Vehicles
																							Roadways, parking areas
																							Site cuts, fills, dredging
																							Roadbed cuts
																							Bridges
																							Roadbed fill, causeways
																							Water impoundments
																							Solid waste
																							Waste water (heated)
																							Nuclear reactions/elec. generat.
																							Fossil fuel combustion
																							Bulk refining, processing
																							Tanks, elevators, ware-houses
																							Bulk and fuel loading
																							Navigation aids
																							Slips and berths
																							Channels

Key for Effect on National Policies:

A. Number (1, 2, etc.) indicates specific national policy involved

B. Plus (+) or minus (-) mark indicates positive or negative effects on national policy

C. National policies
1. Energy self-sufficiency
2. Environmental protection
3. Adequate recreational facilities
4. Health and welfare
5. Transportation
6. National defense
7. Preservation of historic, cultural, aesthetic values



Breakwaters, jetties	Docks and piers	Shipyards	Nuclear ships	Conventional ships	Seawater intakes	Radioactive emissions	normal (low level)	accident (high level)	Saltwater cooling towers	Structures	Entire project	Construction phase	Operation phase				3. Societal Factors
																	A. Social
																	Population
✓										✓							Access to public facilities
																	Opportunity for education and training
												✓	✓				Employment
							✓	✓									Public health and welfare
																	Housing
																	Leisure and recreation
							✓	✓									Food supply and distribution
																	Transportation
																	Communication
																	B. Economic
																	Subjective considerations
																	National objective
																	Information available to society
																	Causes of market breakdown
																	Distribution of income
																	Political considerations
																	Regional income levels
																	Differences in
																	Cost of outputs to consumers
											✓						Private profits
											✓						Public profits
												✓	✓				Take-home pay

4. Consequent Conditions	5. Effects on National Policies
Block access to public shoreline; keep land from use for recreation facilities	3-
May increase employment, especially in construction phase	4+
Somatic and genetic damage to individuals from emissions; contribute to adequate energy supplies	4-;1+
Pollution of mariculture waters, shellfish beds	4-
Contributes to energy self-sufficiency and to adequate energy supplies for U.S.	1+
May lower cost of electricity, keep it from rising, or keep increase in price to a minimum	1+;4+
Increase profits to investors in utility	4+
Increase municipal tax revenues	4+
May increase take-home pay, especially in construction phase	4+

																Respending
																Pecuniary considerations
											✓	✓				Wage and salary levels
																Transfer payments to government and private sector
																Interest rate
																Tax levels
																Commodity prices
																Level of national defense spending
																C. Natural Resource
																Marine characteristics
✓						✓	✓									Water - physical and chemical properties
				✓		✓	✓									Biota
						✓	✓									Crucial life support systems
						✓	✓	✓								Carrying capacity
								✓	✓							Recreational and aesthetic potential
																Estuarine characteristics
✓						✓	✓									Water - physical and chemical properties
				✓		✓	✓									Biota
✓						✓	✓	✓	✓							Crucial life support systems
						✓	✓									Carrying capacity
								✓	✓							Recreational and aesthetic potential
																Shoreland (upland) characteristics
								✓								Watershed drainage
									✓							Freshwater flow into coastal area
									✓							Crucial life support system
																D. Legal-Constitutional
																Constitutional law
																Legislation
																Adminstrative regulation
																Common law

May increase slightly	4+
May lower cost of electricity, keep it from rising, or keep increase in price to a minimum	1+;4+
Thermal and possibly radioactive pollution of surrounding waters; change in littoral drift; increase turbidity	2-
Deleterious effects of pollution on marine species; loss of organisms in seawater intakes	2-;3-
Deleterious effects due to pollution	2-
Reduce carrying capacity because of pollution	2-
May damage scenic values on-shore	2-;3-
Thermal and radioactive pollution; change in littoral drift; increase turbidity	2-
Deleterious effects on estuarine species due to pollution; loss of organisms in seawater intakes	2-;3-
Salt may damage shore vegetation; deleterious effects on breeding, feeding, migration	2-;3-
Reduce capacity of estuarine waters due to pollution	2-
May damage scenic values on-shore	2-;3-
Salt may affect groundwater supplies	2-;4-
Removing vegetation cover may affect channels for water flow, rate and amount of flow	2-