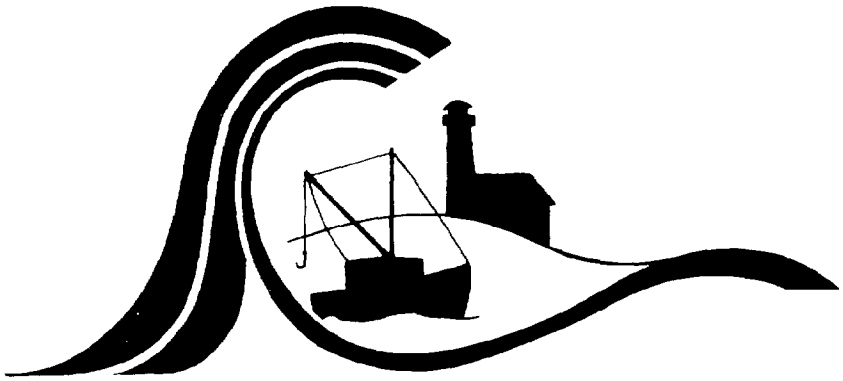


Development of the Coast:
Facing the Tough Issues.

A COASTAL STATES ORGANIZATION sponsored Conference in cooperation with the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management

FINAL PROCEEDINGS

Mills House Hotel
Charleston, South Carolina
September 27–28, 1979

Coastal States Organization

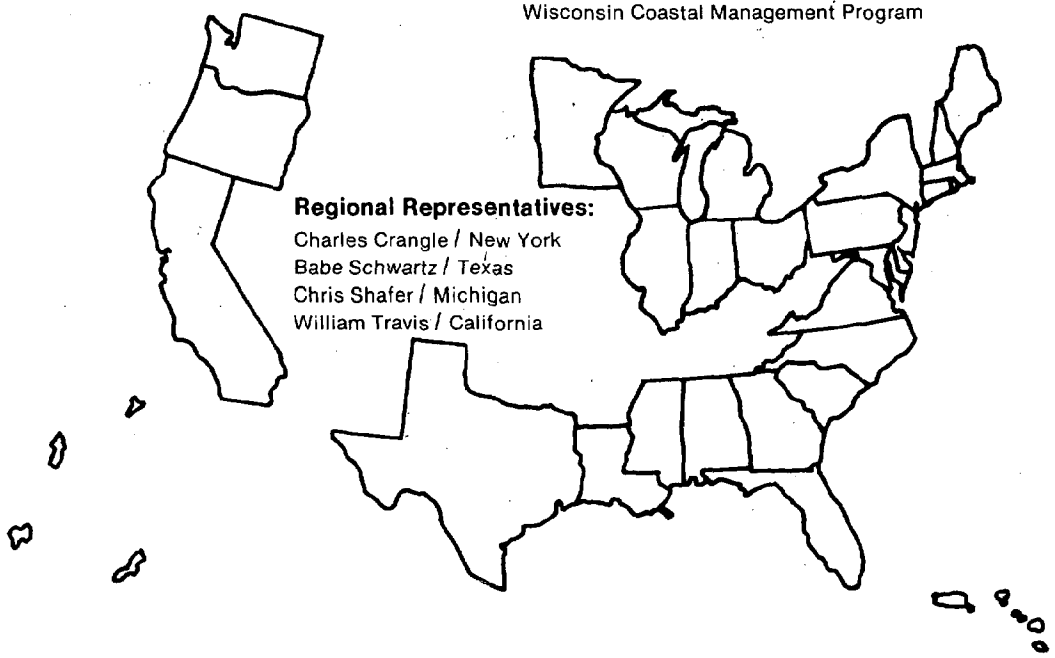
An alliance of the Coastal States, Commonwealths, and Territories providing an effective voice in the formulation, development, and implementation of national marine and coastal resource programs and policies.

Coastal States Organization
Executive Committee

Chairman
William J. Hargis, Jr.
Director, Virginia Institute of Marine Science
Gloucester Point, Virginia 23062
(804) 642—2111

Vice-Chairman
James F. Ross
Oregon Department of
Conservation & Development

Secretary / Treasurer
Allen H. Miller
Wisconsin Coastal Management Program



Regional Representatives:
Charles Crangle / New York
Babe Schwartz / Texas
Chris Shafer / Michigan
William Travis / California

FOREWARD

This National Coastal Zone Management Conference marks a milestone in the history of the program.

It was six years ago in this very location that the first awards were made to those states that entered into the Federal-State partnership of coastal zone management.

Phase I of the legislation, the planning phase authority expires this year thus signalling to all coastal states that the preparation period is over and the implementation work is at hand.

Almost two-thirds of the states have approved coastal management programs with another six states expected to be approved in 1980.

It is appropriate at this time that we as a group turn to the hard issues of developing our coasts while preserving their resources. It is in the best interest of good government to gather together with key Federal, State and local legislators and official leaders in the Executive Branch, industry, the environmental community, public interest groups and concerned public citizens to debate the future of our coasts, and our management programs as we enter the decade of the 80's.

As Chairman of the Coastal States Organization, an alliance of the coastal states designed to provide a voice in the formulation, development and implementation of national, marine and coastal resource programs, I wish to commend the participants of this conference and thank them for their contributions.

Dr. William J. Hargis, Jr.
Chairman, CSO

TABLE OF CONTENTS

	Page
Conference Program	1
Remarks of The Honorable Fritz Hollings United States Senate	6
Remarks of The Honorable Ted Stevens United States Senate	12
Remarks of Administrator Jimenez Federal Insurance Administration	15
Remarks of W. Samuel Tucker, Jr. Florida Power & Light Company	19
Detail Fact Sheet for Electric Energy Facilities Siting	23
Remarks of Administrator Bardin Economic Regulatory Administration	31
Remarks of David Davis Massachusetts Port Authority	35
Conference Attendance List	40

Note:

Submission of written text was optional, thus only a portion of the speeches presented at the conference is contained herein.

Thursday, September 27, 1979

Mills House Hotel — Signers Ballroom

9:00 am ● CONFERENCE OPENING

Presiding:
Dr. William J. Hargis, Jr.
Chairman, Coastal States Organization
Director, Virginia Institute of Marine Science, Gloucester Point, Virginia

WELCOME TO CHARLESTON
The Honorable Joseph P. Riley, Jr.
Mayor

WELCOME TO SOUTH CAROLINA
The Honorable James M. Waddell, Jr.
State Senate, South Carolina
Chairman, South Carolina Coastal Council

INTRODUCTION OF OPENING SPEAKER
Robert W. Knecht
Assistant Administrator for Coastal Zone Management, National Oceanic and Atmospheric Administration, Department of Commerce

10:00 ● OPENING ADDRESS

The Honorable Edwin W. Edwards
Governor, Louisiana

10:30 ● COFFEE BREAK

11:00 ● COASTAL STORMS AND DEVELOPMENT

Gloria M. Jimenez
Administrator, Federal Insurance Administration

Neil L. Frank
Director, National Hurricane Center
National Oceanic and Atmospheric Administration, Miami, Florida

Noon ● **LUNCHEON IN HIBERNIAN HALL**

Speaker:

Gus Speth

Chairman, President's Council on Environmental Quality, Washington, D.C.

Mills House Hotel

2:00 ● **PORTS**

David W. Davis

Executive Director, Massachusetts Port Authority, Boston, Massachusetts

Brig. General Norman G. Delbridge

Division of Engineers
U.S. Army Engineers
Division of the South Pacific

3:00 ● **COFFEE BREAK**

3:30 ● **ENERGY FACILITY SITING IN THE COASTAL ZONE**

David J. Bardin

Administrator, Economic Regulatory Administration, Department of Energy

Bob Armstrong

Commissioner, General Land Office
State of Texas

6:00 ● **RECEPTION IN HIBERNIAN HALL**

7:00 ● **BANQUET IN HIBERNIAN HALL**

Presiding:

The Honorable James M. Waddell, Jr.

Speaker:

The Honorable Ted Stevens

United States Senate, Alaska

Friday, September 28, 1979

9:00 am—Noon CONCURRENT SESSIONS

COASTAL STORMS AND DEVELOPMENT

Moderator: *The Honorable Babe Schwartz*
State Senate, Texas
Chairman, Texas Coastal and Marine Council

Panelists: *Charles E. Fraser*
President
Sea Pines Plantation Company
Hilton Head Island, South Carolina

John R. Sheaffer
President, Sheaffer & Roland, Inc.
Environmental Planning & Engineering
Chicago, Illinois

David Kinsey
Acting Director, Division of Coastal Resources
Department of Environmental Protection
Trenton, New Jersey

Reporter: *John Armstrong*
Director, Coastal Zone Laboratory
University of Michigan, Ann Arbor, Michigan

PORTS

Moderator: *Armour S. Armstrong*
Director, Port Development, Maritime Administration, Department of Commerce

Panelists: *J. Ronald Brinson*
Executive Vice President, American Association of Port Authorities, Washington, D.C.

Rear Admiral Roy F. Hoffman (Retired)
Municipal Port Director
Milwaukee, Wisconsin

Mike Wilmar
Executive Director, Bay Conservation and Development Commission, San Francisco, California

Reporter: *William K. Fehring,*
Director, Environmental Affairs
Tampa Port Authority

ENERGY FACILITY SITING

Moderator: *William Nothdurft*
Special Assistant to the Director, Bureau of Land Management, Department of Interior

Panelists: *W. Sam Tucker, Jr.*
Manager, Environmental Affairs
Florida Power & Light Company

Don E. Glass
Senior Staff Engineer
Shell Oil Company
Houston, Texas

Joseph E. Bodovitz
Executive Director
Public Utilities Commission
State of California

Reporter: *Malcolm Baldwin*
Staff Member, President's Council on Environmental Quality, Washington, D.C.

Friday, September 28 (Continued)

● **LUNCHEON IN HIBERNIAN HALL**
Presiding:
Dr. William J. Hargis, Jr.
Speaker:
Captain Jacques Cousteau

Mills House Hotel — Signers Ballroom

2:00 ● **PLENARY SESSION—REPORTS & DISCUSSION OF CONCURRENT MORNING SESSIONS**

Moderator:
Robert W. Knecht

Reporters:
John Armstrong
William Fehring
Malcolm Baldwin

3:15 ● **COFFEE BREAK**

3:30 ● **CLOSING ADDRESS IN HIBERNIAN HALL**

Presiding:
Richard A. Frank
Administrator, National Oceanic and Atmospheric Administration, Department of Commerce

Speaker:
The Honorable Ernest F. Hollings
United States Senate, South Carolina

REMARKS OF SENATOR FRITZ HOLLINGS
VICE-CHAIRMAN, NATIONAL OCEAN POLICY BOARD
BEFORE THE
COASTAL STATES ORGANIZATON
CHARLESTON, SOUTH CAROLINA
SEPTEMBER 28, 1979

Almost 6 years ago, I stood in this place at the first coastal zone management conference held here. And I remember what we had then.

We were witnessing the end of a long and bitter struggle to pass the legislation. That was a time when New Jersey couldn't get enough industry; Florida couldn't get enough tourism, motels and hotels. And the Federal government couldn't build enough highways to move everybody into the area. Gasoline was cheap and plentiful. So were shrimp. If the beaches were crowded and the smokestacks were smoking, there was money in everyone's pocket, and life was one big Disney World. Planning, in most cases, consisted of little more than local zoning.

That's where we were when we finally passed the legislation. Then we had to turn around and literally wrench the funding out of the Nixon Administration. Ehrlichman, the Land-use Lawyer, wanted massive, national land-use planning. So he denied funds to the program for over a year after the President signed the law. Instead, he funded a land-use program in the Department of Interior, when the legislation for it hadn't even passed the Congress. As you know, it never did. We got the funding in spite of Ehrlichman.

Then we gathered here, and gave out the first planning grants to the states. There were three awarded that night -- Fred Dent presented them. And Rhode Island, Maine, and Oregon received them.

All three of those states have approved programs today, along with 16 other states and territories, including South Carolina. Tomorrow, in fact, South Carolina officially joins the roll, with Secretary Kreps making the presentation.

In the 5 and 1/2 years between the two Charleston Conferences, 68% of the nation's shoreline has come under coastal zone management. Over this period of time, we have paid 69 million dollars for that 68%. Cheap at the price. No other similar Federal program has accomplished so much with so little.

There are only two other Federal planning programs we can fairly compare with. And I think the figures will astonish you. One is the Clean Water Act 208 planning program. It's been operating for 6 years, just like coastal zone management has. By the end of this fiscal year, 369 million dollars will have been spent, with very little to show for it. The HUD 701 program is another case in-point. This has been functioning since 1954 -- that's 25 years. If the current appropriations conference report for the next fiscal year is approved, one billion dollars will have been appropriated for that program, with a spotty record that does not compare to the success that coastal zone management has had.

We were right seven years ago when we passed the law. Fundamentally,

it was the right approach. Not massive, national, land-use planning like Nixon and Ehrlichman wanted; but a focused, coastal program that would yield a balancing process between preservation, restoration, protection, and development.

We took a big risk: we did something new. We changed the Federal-state relationship. Instead of shoving Federal commands down the throats of the states, we offered generalized guidelines, assistance, and a chance to shape a state-by-state, individualized program.

State and local governments could take hold of their own development destinies on the Coast -- even to making Uncle Sam toe the line. It has been an unusual Federal-state relationship. It's taken time, patience, and in some cases, experimentation, to see it through. Since we were standing some time-worn Federal principles on their heads, it took a little longer than we originally anticipated.

But the challenge I spoke of here in 1974, having overcome all the other obstacles, was to find a union of minds, talents, and creativity to move this program along. And this challenge has been met. Most of you in this room this afternoon, have been a part of it.

All 35 states and territories have received planning grants. And now, most of them are either in the program -- we have 19 today -- or will be coming in next year. When it's complete, we will probably have 27 states and territories, covering almost 90% of our national coastline. This includes the Great Lakes, our magnificent freshwater, inland sea. The two major Great Lakes states are already in the program, Michigan and Wisconsin; and Ohio and Illinois are coming along.

I've watched Bob Knecht from the beginning. He became hardnosed along the way, and would throw a state out, from time to time, if it didn't come up to standards. He has done an outstanding job with the legislation. I had the honor of nominating Bob for the Rockefeller Public Service Award for natural resources, earlier this year. He deserves to receive it. He is one of few people I know, who can tackle so difficult a task as this, turn it into a success, and make it all look easy.

We have met the challenge. Authorization for the planning grant money runs out on Sunday. We had a hearing on it, but did not recommend reauthorization on the advice of all the witnesses -- the Administration, public interest groups, and the states themselves. It is not necessary to extend the grants any further, we were told, the groundwork has been laid. This is a real, tangible milestone.

We are moving into a new phase in the life of this legislation. It is one of reaffirmation, but is it also one of resolution.

The authorization hearings for section 306 -- the funds that enable state programs to be carried out -- must be held before May 15th next year. In conjunction with this, we will hold hearings to evaluate the performance of the law, and clear up some areas where Congress may have been too ambiguous.

One area we will look at is simplifying the permit process. I have

hoped from the start that we could achieve a kind of "One-Stop Shopping" for permits. Instead of running around like a scalded dog between agencies, talking with 14 separate people, turning in 37 different pieces of paper, and meeting 12 separate deadlines, we need to combine these efforts. And we have made some progress on a large part of this.

The whole issue breaks down to three basic ingredients -- policy, process and predictability. You take a large dose of the proper policy -- and this we have in the Federal Consistency provision. You add to it a simplified process -- and we are achieving this in most states now. You sprinkle liberally with predictability -- we reach that by setting strict decision deadlines, analyzing potential industrial sites in our inventories, identifying "Areas of Particular Concern", and the like. It all yields what I call "One-Stop Shopping."

Some of these ingredients are solidly established; others we need to work on. For example, we are making remarkable progress in combining and straightening out the different permit processes themselves.

Coastal Zone Management has stimulated joint permit and public hearing procedures in 12 states; 5 others are proposing to do the same. I have to commend the Corps of Engineers for their cooperation and leadership in this area especially. Eight states have consolidated their state permits; 4 others are following suit. Five states have set up clearinghouses, or computer tracking systems. Now an individual can know where his permit application is at any time, and whether there are any problems. This is reducing the time it used to take to find out whether a permit would be issued or denied.

I can see the difference here in South Carolina. Just since the passage of our coastal managment legislation, the Coastal Council has resolved over 30 permits that were pending as the law was passed. Some had been around for almost 7 years. We also have a General Permit for a pier or dock. This has cut out a lot of red tape for which fishermen, small businesses, and private citizens had to hire lawyers to unscramble in the old days.

It will probably continue to be different in each state, just as each state's coastal program reflects its own problems, experience, and perspective. But there is definite progress here. We are cutting down the cost to state and Federal governments in the long run. We are cutting down the cost to the citizen. Development goes ahead where it should be; and our fragile areas, where the shrimp and fish spawn, are getting better protection.

Now the process is in pretty good shape, but the policy ingredient looks like it needs some work. All the Federal agencies who give permits, licenses, and grants in the coastal zone, should be coordinated with Coastal Zone Management. This is what the Federal Consistency provision is supposed to do. The Federal government, itself, is supposed to toe the line, and be consistent with an approved coastal state program. Because the language of the law is somewhat ambiguous, and the legislative history is unclear, we need to address Federal Consistency and strengthen it.

We also will look at some other terms in the law that affect both policy and predictability -- for example, "National Interest," "Uses of

Regional Benefit," and "Areas of Particular Concern." With a minimum of change, the Congress can describe in more detail what was intended. Clearer guidance is needed for the Coastal Zone office in setting out regulations and for the states in implementing their programs. We need to review all the elements of the balancing process in the act and check it for fine tuning.

If this seems a cautious approach, it is. I don't believe we want Uncle Sam to turn into Big Brother. We have a unique, Federal-state balance. And the difference between Uncle Sam and Big Brother, is the difference between asking states to consider certain points of national interest in their decision-making, and coming right out and telling them to put that energy facility right over there. The Congress did not intend to put the Federal government into the business of making local zoning decisions. We want to keep the new balance we've established in the law, and make it work properly.

There are other areas we will take up in the hearings. One is how to deal with coastal hazards that are injurious to life and property. Hurricane David came through Charleston less than a month ago. By the time David got to us, he was pretty weak. We only had 60 to 70 mile-an-hour winds to contend with. South of here a few miles is Folly Beach, long a high-impact erosion area. Homes fell into the sea off their foundations. The erosion created by the massive power of the waves and winds, have left the future of more property there in doubt. Given another good gale like David, there will be more property destroyed or with extensive damage. In economic terms, that weakened hurricane caused over a 1 million dollars loss just in Charleston County alone. Up the coast at Myrtle Beach, the loss is already over 6 million dollars. And these are not the final figures.

Wind and water damage. Subsidence and saltwater intrusion. Erosion. All coastal hazards. Over one-quarter of the entire coastline of this country is eroding away, much of it at alarming rates. Erosion is a natural phenomenon; it's been with us since water first touched land. This is one of the greatest problems in coastal development and restoration, and we still haven't straightened out our policies for dealing with it.

In the original legislation, we wrote about mitigating loss of life and property. We emphasized it again in the 1976 amendments when we talked about erosion. We need to examine the treatment of coastal hazards in the law, and see if we cannot do the job better than before.

Last month, President Carter told us, in his Second Environmental message, that he is interested in tackling some of these same problems, and word is that the Congress should receive an Administration amendment package sometime in October.

Normally, as we all know, the federal government studies everything to death before it gets around to a genuine effort at problem-solving. But the study the President proposes is in the right direction. NOAA is leading the effort, and other federal agencies are cooperating, to take a good, hard look at the things we have been talking about today:

-- Consistency and coordination on federal permits;
-- conflicts in policies;
-- contributing factors to wasteful, uneconomic, and environmentally unsound development;

-- and the effect on critical recreational, erosion-prone, or hazardous areas.

I support this study; I believe NOAA is the right agency to lead it; I think the right questions are being asked; and we are going to look at the results very closely with an eye toward policy and action.

The President's Environmental Message also declared 1980 "The Year of the Coast." We all welcome that. But in a way, I regret that the summons came just in the Environmental Message. It should also be part of an Economic Message, a Development Message, and an Employment Message. For in truth, all of this is involved, all of it is a part of the coast. And balancing the factors is what coastal zone management is all about. Absent that kind of context, we will never have a comprehensive, problem-solving national policy. Last May I joined a large number of colleagues in a letter to the President asking him to declare the 1980's "The Decade of Ocean Resource Use and Management." We have never finished the job in ocean policy begun by Julius Stratton a decade ago. Instead we have been tackling it piecemeal. Now it is time to finish the job.

Let's finish what we began in 1970 with the National Oceanic and Atmospheric Agency. I still remember well the sense of victory we had in persuading President Nixon to include in his reorganization plan even a part of what we wanted for a lead, civilian ocean and atmospheric agency. But we knew then that we were taking a first, not a final, step. Building on that, we must now clearly set out NOAA's authority through organic legislation. A reorganization plan just pulls different pieces together. It can never lay out the overall policy under which an agency should operate. Lack of a clear mandate inevitably leads to squabbling for turf. It's bigger than football, and it's the basic bureaucratic sport, and NOAA has not been exempt from this built-in pushing and pulling. It serves no one. It advances no public or national interest. It doesn't contribute to solving any of our national problems -- the energy crisis, the balance of payments deficit, what have you. What it <u>does</u> is waste tax dollars, encourage regulatory overkill, and stoke the fires of inflation. I believe that passing organic legislation will put the lid on most of these squabbles and help us get on with our business.

<u>BUSINESS WEEK</u>, in its Fiftieth Anniversary issue this month, had a long series of articles on the next fifty years of American business. Ocean resources figured prominently in their discussion. But we are never going to get out into the oceans and accomplish our potential at our present level of disarray and disorganization. The Department of Interior and Commerce are still fighting over which one will get deep seabed mining responsibility. EPA wants to believe it is the lead pollution researcher in the oceans. The National Park Service is expanding its boundaries into the oceans and doing ocean resources research. Even the Congress gets into the action. When the shooting wars are not erupting in the agencies downtown, they are breaking out on Capitol Hill between the various committees who are, or want to be, involved.

We are never going to be able to truly manage the oceans and its vast resources -- the fish, the minerals, the oil and gas, the solar-based ocean renewable energy resources -- without a structure that cuts out all

this turf squabbling once and for all.

For over six years now, I have been looking at different kinds of agencies here in town and comparing the jobs they do. I have been studying reorganization, because it is always the first thing brought up, and have found no satisfactory solution there. Back in 1976, I introduced a bill to create a Department of Environment and Oceans. We had some good debate, we learned a few things, but still it did not pass. Then we went along for awhile with Memoranda of Understanding between the agencies, disputes mediated and settled by the Office of Management and Budget when all else failed. Along the way came proposals for a Department of Natural Resources. This was a bad idea years ago when it was first proposed, and it remains a bad idea today. There is nothing to gain and much to lose, by taking the ocean and atmosphere focus we have and consigning it into the maws of a huge, land-based department which is itself an anomaly of conflicting policies, and hoping for the best. Hope is all we would have had, because this was also proposed as a reorganization plan -- no policy, no legislation, no direction. And keep in mind, this was not for a mid-sized agency like NOAA, but for a department based on Interior and building out from there.

Thank goodness for those here in this audience and for others like Jacques Cousteau, who appreciated the problems and pointed out the deficiencies. Captain Cousteau has led the way internationally for years now. And he's a hard man to keep pace with. This past spring, he came out with a series of Ocean Policy Papers that we ought all be familiar with -- because he knows what the United States should be doing. In his writings and in his talks, there are ideas we should implement -- on coastal zone management, ocean engineering, marine education, ocean energy and others.

Captain Cousteau talks about the duplication, the fuzzy authority, and the need for new organization in ocean policy. I propose to take these insights and translate them into needed legislation providing some focus and direction. By the first of the year, when we enter this new Decade of Ocean Use and Management, I intend to introduce a bill calling for creation of a new entity. It will provide policy language, and give a framework which will allow us to send the turf-squabbling bureaucrats back to Monday Night Football to vent their frustrations. I don't expect instant passage of my bill, nor do I even expect to have all the answers when I introduce it. But we cannot dilly any longer, and my goal is to get us moving down the right road for a change.

Nearly six years ago now, you and I were present at the creation of coastal zone management. You picked up the challenge, made your commitment to coastal zone management, and you made it work. You have accomplished a great deal. The basic law works. We can see concrete achievements. Now the need is to look farther down the road. To the next decade and beyond. You are the group to set the tone and direction. The critical problems of deepwater ports, energy facility siting, off-shore drilling, population growth, fishing problems, and the overriding national need to protect our coastal and marine environment will respond to a group ready to lead. In this room are the minds and the talent to get the job done. You've led the way before. Let's do it again.

REMARKS OF SENATOR TED STEVENS
BEFORE THE
COASTAL STATES ORGANIZATION
CHARLESTON, SOUTH CAROLINA
SEPTEMBER 27, 1979

I'm pleased to be back in Charleston to visit with members of this Conference again. I am particularly pleased to be here at the invitation of Senator Fritz Hollings. We've fought many battles together and I think we'd all agree that our victories in such areas as the 200 mile limit and Coastal Zone Management may prove to be among our greatest contributions to the future of this Nation.

You, I know, are most interested in Coastal Zone Management. Passed by Congress in 1972, this Act provides you with a critical mechanism to plan, conserve, and protect our sensitive coastal areas.

As with all new legislation, its success depends on the manner in which it is implemented. It must relate directly to the purpose of the law.

The Coastal Zone Management Act is intended to enable National planning decisions in development of environmentally sensitive areas. Its purpose is to manage growth -- not prohibit development. While conservation is a primary consideration, it would be a perversion of the bill's intent to use it for preservation of the status quo; to obstruct development; to deny necessary growth.

We must utilize our coastal zones just as we must protect their unique ecology. Both can be accomplished under this law.

As the co-author of the National Environmental Policy Act of 1969, I am acutely aware of abuses and distortions of its intent. NEPA, like the Coastal Zone Managment Act, was designed to encourage and, in fact, enforce environmental planning in all major federal projects.

It was not intended to obstruct development. But some Courts allowed the use of NEPA to delay or deny critical public works projects. As a result, dams, highways, bridges, important to local, regional, even the national economy have not been built or their construction costs have been needlessly -- sometimes prohibitively-increased due to delay during a period of massive inflation. Our goal was productive, constructive development consistent with technology to protect the environment.

We have never been a fearful people. We are enterprising and inventive. We should not be inhibited by those who react emotionally rather than act rationally. The Coastal Zone Management Act provides us an opportunity to do just that. Through its framework we can safely plan and provide for development within the limits of modern technology.

There may be areas within any coastal zone that merit absolute protection due to their unique contribution to the natural or human environment. Wildlife and waterfowl refuges, wetlands and marshes, recreation areas which are irreplaceable may not be compatible with other uses. But, most of designated coastal zone areas can be judiciously developed. Conservation

in many areas will require intervention to prevent erosion. Development in other areas is integral to the regional economy or national security. In many cases and many places, growth is not only desirable but also totally feasible with proper planning.

Tonight, I'd like to suggest to you that managment forms pioneered by the Fisheries Conservation and Management Act of 1976, which established the 200 Mile Limit, may have merit in Coastal Zone Management ... specifically the Regional Commission Concept. Your initial reaction may be negative for it is a new form of government combining state and federal regulatory powers. In the past, states have been highly competitive and federal authorities often regarded as prime protagonists by states.

Yet regional commissions have been able to overcome historic animosities and supplant unproductive rivalry with constructive cooperation. Working together, comprehensive programs were developed which have paid off with maximum protection and record harvests. Valuable fish populations are recovering with amazing speed toward our ultimate goal of optimum sustained yield.

The key to the use of Regional Commissions in Coastal Planning is that each Regional Commission be committed to the Regional concept and be confident that it can fulfill the precise purpose and mandate of the Coastal Zone Management Act. That is to manage the lands within these zones to their highest and best use ... all forms of use. This includes conservation, recreation, fishing, and economic development in the local, state, regional and national interest.

The Regional Commission does not imply domination of states but encourages the cooperation and coordination necessary to respond to new challenges. For example, if off-shore drilling in the Baltimore Canyon or Georgia Banks produces major discoveries, we must have some additional pipeline, storage, and possible refinery facilities on the East Coast. These can best be planned, sited, and managed on a Regional basis. States still retain their primacy. The Secretary of Commerce would still be required to approve Regional proposals. But working together, in an atmosphere of mutual respect, the Regional Commissions should maintain the comprehensive conservation regime critical to preserving each state's wetlands and shellfish industries.

The Regional Concept applies to many other areas of the country as well. Pollution doesn't respect state boundaries any more than a noble experiment like alewife in the Great Lakes or natural disasters like hurricanes moving up the East Coast. To me, the Regional approach is a logical progression in Coastal Zone Management.

We still have time and you now have the precedent of successful Regional Commission Management within the 200 Mile Limit Zone.

We are also working through Congress ... initially the Commerce Committee and now in House-Senate Conference Committee ... through the support of far-sighted Senators like Fritz Hollings .. legislation to make LNG Tankers and facilities as safe as possible. When this legislation is finally completed LNG facilities will be safely located in the Coastal

Zone. This will result in a tremendous economic boom for South Carolina whose General Dynamics plant is a major producer of LNG tanker cryogenic vessels.

Many of us have fought the President's reorganization proposal which would transfer the National Ocean and Atmospheric Agency (NOAA) from the Department of Commerce to a new Department of Natural Resources. To quote my esteemed colleague, Senator Hollings, the proposed reorganization:

> "Moves boxes around, based on one of the most spurious fallacies found in the field of public administration -- combining functions and programs merely because they fall into the same loose category. Based on this kind of thinking carried to its logical extreme, we would just have a Department of Planet Earth. The acronym for this entity would be DOPE."

You have your work cut out for you. Coastal Zone Managment involves pioneering a whole new field of planning. I hope you will consider the option of expanding to a Regional Management model. In any event, if you adhere to the original intent of the law and operate in a spirit of mutual cooperation and trust, our Nation will be better off ecologically and economically.

Confidence is the key. Don't allow the law to be misused or abused. Past animosities must not preclude future opportunities. Doubt should not cloud the decision making process.

Federal law provides the mandate and mechanism to manage each coastal zone. You have the planning capability to make rational decisions and our Nation has the technology for orderly, ecologically sound use of the coastal zone. It is within your power to achieve economic growth and environmental conservation consistent with the goals and aspirations of your states and regions. Used wisely, Coast Zone Management, vigorously pursued, now means that future generations will be able to say, this was a program properly conceived, courageously implemented, whose vision brought our nation economic progress, enhanced our standard of living and preserved our valued ecology and cherished lifestyle.

REMARKS BY GLORIA M. JIMENEZ
ADMINISTRATOR, FEDERAL INSURANCE ADMINISTRATION
ON
COASTAL STORMS AND DEVELOPMENT

I would like to thank the Coastal States Organization for extending this invitation to speak on "Coastal Storms and Development". It is a particularly apt time to address this issue. Hurricane Frederic recently caused massive damage in the Mobile area. Few lives were lost due to the residents' willingness to evaculate, probably because most residents remembered Hurricane Camille. We must remember that Hurricane Frederic was an average sized hurricane. If a great hurricane hits a recently developed area, where the residents are unfamiliar with hurricanes and unwise development has occurred, the devastation and loss of life will be overwhelming.

In the last two decades, the growth rate for coastal areas has been four (4) times greater than the national rate. Much of this recent development is unprotected from flooding. More than eighty (80) percent of the people on the coast have never experienced a significant hurricane -- a chilling echo of the Galveston hurricane at the turn of the century where people made it a point to travel to the shoreline to watch the gigantic waves. That hurricane killed 6,000 people. The great 1928 Florida hurricane killed almost 2,000 people. Many have been comforted by the relatively mild hurricane activity in the past 25 years. This underestimation of the hazard has frequently resulted in open resistance to environmental concerns and flood plain management regulations designed to reduce the hazard to new coastal structures. As a result, there is a potential for an enormous catastrophe.

However, many people are beginning to speak out in opposition to coastal development trends. These concerned citizens have been warning of the dangers inherent in massive coastal development. Many articles and several books have appeared on this subject. This new impetus has led to the declaration of 1980 as "The Year of the Coast". I believe that these continual reminders of the hazard helped to achieve the massive evacuations prior to Hurricanes David and Frederic. Hopefully, the Year of the Coast will enable the Nation to turn the tide on unwise coastal development.

Recent development has often not only disregarded the hazard but has increased the hazard. Man's alteration of the coastal environment has increased erosion and destroyed natural flood barriers, such as mangrove stands and sand dunes. Clearly, there is a relationship between environmental protection and hazard mitigation.

The Federal government has played a major role in encouraging the rapid development of the coast. The funding of water lines, highways and bridges in these fragile areas has made development inevitable. Many claim that the National Flood Insurance Program has also encouraged coastal development -- by offering flood insurance and allowing development throughout the coastal area. The possibility that the Program has encouraged coastal development is a grave concern of mine.

As you know, the National Flood Insurance Program is founded on a principle of compromise. Existing structures are eligible for subsidized flood insurance provided the community adopts an ordinance to protect new construction in flood plains. Once the Program has provided flood elevations to the community, they must require protection to that elevation and new structures are only eligible for actuarial, "true risk" flood insurance. The Program is tough enough to cause many coastal communities to fight the imposition of official flood elevations tooth and nail. However, one must ask, it it tough enough?

Unfortunatley, it has taken longer than expected to provide flood elevations to all coastal communities, and meanwhile unwise development continues. Until official flood elevations are provided, new construction is subsidized and protection from flooding is often minimal. However, we now have the major coastal communities enforcing flood elevations, with new construction covered only by unsubsidized flood insurance. New structures in violation of the elevation requirement will be assigned very high flood insurance premiums. Due to our progress in mapping the major coastal development areas, subsidizing minimally protected new construction will no longer be widespread.

Other problems remain. Our Program has been a major stimulus for applying methodologies used in determining flood elevations. Partially as a result of our stimulus, experts have informed us that new methodologies indicate our flood elevations are not true 100-year flood elevations, since they do not consider the wave height factor. We are now having the new methodology refined and are conducting a cost benefit analysis of adding the wave heights to our flood elevations. This work should be completed by December. We must then make a decision on how to address wave heights. Do we revise the official flood maps -- a multi-year, tremendously expensive project? In some cases the elevations required would be half again as high. Elevations of 20 feet border on the absurd. Wouldn't it be preferable to simply declare it a no build area? Or do we try to factor wave heights into the premium rates, thereby encouraging a voluntary additional protection level? The decision will have repercussions for all affected interest groups. The political impact on the program will be severe.

Aside from the proper protection level, the Program's coastal flood plain management standards are being reviewed. The Program's allowance of solid breakaway walls below flood elevation has made local enforcement efforts difficult. Many people have turned the lower areas into finished rooms after the building is approved. I plan to issue a proposed rule in the near future to only allow open areas or latticework walls below flood elevation in Velocity Zones. This change would facilitate local efforts to enforce the Program's elevation requirement.

Many people favor more drastic restrictions. For example, it has been proposed that the Program regulations be changed to prohibit development in Velocity Zones. I have decided against this course, due to the constitutional "taking" issue and my desire not to be so restrictive that communities drop out of the Program and avoid any regulation. The 1977 amendment of our statute weakened the effect of sanctions applying to

mapped, nonparticipating communities.

We are currently assessing the possibility of requiring more restrictive regulations on barrier islands. Our decision will be guided by the Department of Interior's recommendations for all Federal agencies. My initial feeling is that a velocity zone on the mainland should have the same risk as a velocity zone on a barrier island. If the risk is different, then we do need a different zone designation on barrier islands with more restrictive flood plain management requirements. So far, we do not have adequate data to support differential treatment. Many people point to the erosion hazard on barrier islands, but the erosion methodology for barrier islands is not yet refined enough to resist attack. Also, Congress only gave the Program jurisdiction over unanticipated erosion. Most coastal erosion is anticipated.

We currently do require protection of the most fragile coastal resources -- sand dunes and mangrove stands. These Program requirements should halt the widespread destruction of these natural flood barriers.

I have recently reoriented the Program to emphasize technical assistance to communities. We wish to help the most flood prone communities investigate every possible way to keep people out of the flood plain, and to relocate flood prone individuals wherever possible. In this conjunction, I have determined that where community ordinances prohibit rebuilding severely flood damaged structures, the flood insurance policy can cover a "constructive total loss". This means that the claims payment can exceed the actual flood damage in consideration of the true total loss. It is my hope that this interpretation will encourage communities to exceed the minimum Program regulations, thereby facilitating eventual clearance of extremely hazardous areas. We will also use the constructive total loss approach on repeatedly damaged structures if the insured is willing to donate the land to government for open space purposes.

The most important aspect of this Program reorientation will be the focusing of our limited staff and resources on assisting communities with the most severe flood hazards and the most intense development pressure. Action by these communities to exceed the minimum Program requirements will be the most effective way to decrease national flood losses. In addition, hazard mitigation considerations must be incorporated into state or local plans. Decisions made on infra-structure make the later resistance to development in these areas futile.

The creation of the Federal Emergency Management Agency (FEMA) by the President on April 1st has focused the Federal hazard mitigation effort in one agency for the first time. Director John Macy has stressed the high priority within FEMA of flood hazard mitigation. We are working closely with the Office of Coastal Zone Management to coordinate our mutual hazard mitigation responsibilities. The Coastal Zone Management Act requires that flood hazards be addressed in each state plan. Executive Order 11988 states the hazard avoidance and mitigation requirements for a planning implementation program such as CZM.

Adequate compliance with Executive Order 11988 is a subject on which we are working with CZM. In order to comply with the order, it is hoped that CZM will encourage specific flood plain management standards within state coastal plans, including:

1) Identification of the flood hazard and impacts on the flood plain,

2) Avoidance of the flood plain or negative impacts on the flood plain wherever practicable,

3) Appropriate impact mitigation for any development affecting the flood plain,

4) Public Notice throughout the above process.

We realize that the Office of Coastal Zone Management must balance many objectives within the coastal zone. However, we are seeking a greater awareness of hazard mitigation in both the Federal and State CZM offices. I am pleased with the hazard mitigation in CZM funding. Nature always asserts its priority in choosing the most appropriate coastal uses. CZM plans can help to guide development away from the most hazardous areas, thereby reducing the scope of future disasters. We must integrate the NFIP with Coastal Zone Management. We have been successful in doing just that in North Carolina.

It is apparent that the National Flood Insurance Program is facing an interesting year. It is appropriate that "The Year of the Coast" will be a controversial year for the National Flood Insurance Program. The desires of many competing interests will have to be considered. I am hopeful that the long term result will be a strengthening of the National Flood Insurance Program with beneficial effects on the coast.

REMARKS BY W. SAMUEL TUCKER, JR.
FLORIDA POWER AND LIGHT COMPANY
ON
ENERGY FACILITY SITING IN THE COASTAL ZONE

I don't know about you, but it's hard for me to believe that in just a few months that long decade of the 1970's will be behind us and we'll all be entering the brave new world of the 1980's. It seems like only yesterday we were in the midst of the turbulent Viet Nam war years of the '60's and passing through the mid-'70's national agony of Watergate. Every decade seems to have its own dominant, characteristic themes, and who knows exactly what issues we'll have encountered looking back ten years from now, in 1989.

Yes, the world is certainly a different place today than it was when the Coastal Zone Management Act was passed back at the beginning of the 1970's. President Carter has proclaimed 1980 as the "Year of the Coast," highlighting the importance of the nation's coast as we enter the new decade. What will be the major issues surrounding management of the coastal zone in the 1980's? It's impossible to know all the future, but if the past provides any indication at all, one issue leaps immediately to mind: energy.

There's no doubt on my part that the national focus on energy which began in earnest with the first oil embargo will continue and substantially increase in the coming decade. It is significant that the OCZM budget for 1980 - the Year of the Coast - includes just as much money for coastal energy impact grants as for program implementation grants.

There is also no doubt in my mind that developement of important energy facilities in the coastal zone must receive greater positive emphasis in the years ahead if we are to win the "moral equivalent of war." It seems to me that every time Congress tries taking a step to strengthen the ability of the nation to get critical energy facilities constructed in the coastal zone or elsewhere, what comes out - even if it sounds good - ultimately gets buried in an avalanche of general environmental interests and studies about where such facilities should not be sited. As a country, we simply must get behind carefully located, rationally designed, and vital energy facilities with the same enthusiasm we embrace the concept of protecting environmental amenities. Not all proposals are necessarily good, but they're certainly not all bad either. We all have a stake in saying yes to beneficial energy projects -- not just electric utilities, not just oil companies, not just The Department of Energy.

One important related comment which needs to be mentioned in this regard is that finding feasible coastal sites is becoming increasingly difficult. There is no such thing as a perfect site anymore, if indeed there ever was. If we continue to shoot down projects one by one, waiting for a coastal energy facility which will be totally free from any environmntal impacts or pollution risks, nothing is ever going to get constructed. I recall seeing a TV report on the national evening news

about a refinery proposed at a port on the east coast - I forget the exact location - where a number of similar energy facilities already existed. Though it seemed an appropriate site to me, the project was opposed by environmentalists because of concern over additional impacts in an area quote: "already stressed." Yet, if the project had been proposed for an undeveloped area, the same people would probably be concerned about destruction of a quote: "pristine environment."

I know that my own company spends a lot of time and money, sometimes over a million dollars, identifying a favorable site for a new energy facility - in this case a power plant or transmission line. We balance a lot of factors into the decision, including a list which we've developed of some 27 different environmental criteria. Coastal sites offer some important environmental and energy, as well as economic benefits, and where we can identify a good site on the coast, we feel a proper managment program should help us in taking advantage of that situation: help to ensure predictability with regard to our use of that site, not institute another obstacle in an already impossible licensing maze.

Let me tell you why the coast is so important to electric utilities, especially considering the energy situation which will continue to face us in the coming years.

First of all, a modern power plant uses a tremendous amount of water for cooling: hundreds of thousands of gallons a minute. Not all of this water is consumed, of course. In fact, only a small percentage (perhaps one to three percent) is lost through forced evaporation. But over time, we're still talking about a substantial amount, and in a region where fresh water supplies are limited or highly seasonal, as they are in Florida, fresh water consumption can become a very significant environmental constraint, and competition for fresh water resources a difficult political issue. Power generating facilities are, as you can see, extremely water dependent. Fortunately enough, however, it doesn't matter whether that water is fresh or saline. From a resource standpoint, a once through ocean-to-ocean cooling system makes all the sense in the world. Clark and Brownell, for example, in their treatise Electric Power Plants in the Coastal Zone conclude that open seacoasts offer better possibilities for environmentally acceptable power plants sites along much of the U. S. coastline.

Using deep water discharges and devices like multi-port diffusers, a facility at a coastal site can also do without off-stream recirculating cooling systems such as cooling towers without creating undue environmental impacts. Off-stream systems are almost always required for new plants in fresh water environments because stream flows are generally insufficient to handle plant thermal discharges. It is important to note here that recirculating systems themselves use a substantial amount of energy. To operate the mechanical draft cooling towers we have at one of our smaller power plants on fresh water requires energy which could otherwise support over 400 homes. When combined with the energy costs of air pollution control equipment, I might add, these penalties can reach ten percent of total plant

output. Anyway, the point is that properly designed coastal sites can protect the environment and save money and energy at the same time.

Let's look at the future from another angle. Without burdening you with a lot of statistics, all the population projections say there's going to be many more people living in the coastal zone by the end of the next decade. Not only will this increase be in terms of total numbers, there will also be an increase in percentage versus inland areas. Even taking the most optimistic conservation assumptions into account, supplying these people with electrical energy will require new facilities. It's a fact of life that the farther away from these coastal population centers a power plant is located, the more miles of transmission lines will be required. Transmission lines have their own associated environmental impacts; and, I could think of situations where an extensive transmission network required by a remote site might affect coastal land resources to an even greater extent than a plant located directly in the coastal zone. Of equal consequence, there is an unavoidable loss of power related to distance. One of our typical high-voltage transmission lines, for example, will experience line losses of two to eight percent for every hundred miles of line. This translates into thousands of kilowatts. Here again, the costal zone is important for location of new power generating facilities for both environmental and energy reasons.

Much of the emerging national energy policy is directed toward a greater reliance on coal, our nation's largest energy resource. This reliance is reflected in legislation encouraging use of coal as a fuel in the production of electricity. While there is a lot of coal, it's not always in the right places. States like Florida, far from the coal field, are faced with a great challenge in finding ways of transporting enormous volumes of coal long distances. Our studies have shown that coastal sites offer substantial opportunities in this regard. Systems are safe and the economics are very attractive. And, barging coal to a coastal power plant can be a very energy efficient mode of transportation.

I hope that you are beginning to get a feel for the kind of factors that we in the ulitity business think about when we consider the coastal zone. Coastal zone management is not an intellectual exercise for us. It's very real. For the reasons I have briefly outlined and others, electric utilities now have around 500 hundred power plant sites in the coastal zone and about 50 more projected. Further national programs which could affect this coastal dependency lie on the energy horizon as well.

In his energy address last July, President Carter announced the goal of 50 percent reduction in the use of oil for electric power generation by 1990. One alternative for achieving this goal for Florida Power & Light Company could be the construction of from five to eight additional new coal-fired generating units to displace existing oil units. Due to limited space and other constraints, new sites would be required for any such facilities. And where would these sites be located? I couldn't begin to tell you right now. I can say that eight of our twelve existing power plants are located on the coast, and we must

continue to have the flexibility of considering the coastal zone as a siting alternative.

I'm sure that other energy-related industries could give you ample reasons why development of energy facilities in the coastal zone is important from their perspective. I think one basic conclusion is this. As we stand on the threshold of a new decade beginnning with a designated "Year of the Coast," we need to be constantly reevaluating the role that coastal zone management is playing in helping our country deal with important planning issues - not the least of which is energy facility development. We need coastal zone management programs which promote a positive, straightforward, and uncomplicated energy facility planning process. Do we have them? We need coastal zone management programs which can ensure that the national interest in energy facilities is recognized and specifically accounted for, especially on tough decisions regarding highly controversial projects. (You know, it's hard to fight a war when every state is counting on the other 49 to provide all the troops.) Do we have these kinds of programs? We need coastal zone management programs which establish mechanisms so that facilities of regional benefit like power plants aren't arbitrarily smothered by local regulations. Do we have them?

Frankly, I don't know. The jury's still out. We've been doing all we can to provide clear input of our thinking into development of the program guidelines. Some of our suggestions have been accepted; some haven't. A lot now rests with the response of individual states. I think careful program monitoring is going to be an absolute necessity in this regard.

The future remains as much of an enigma to the power company as anybody else. But one thing is certain. From the earliest settlements to the present, our nation's coastline has been a focal point for commerce and economic development, an area where population has been concentrated, and an area where energy facilities have been located. How well our country has fared in the energy crisis by the end of the 1980's will depend to a large extent on how well we have provided for the wise development of the nation's coast for key energy facilities.

DETAILED FACT SHEET
FOR
ELECTRIC ENERGY FACILITY SITING
IN THE COASTAL ZONE

I. The National Interest in Electric Energy Facilities
A. Adequacy and Reliability of Electric Energy Supply
B. National Energy and Economic Objectives
II. Siting of Electric Facilities in the Coastal Zone

Of Counsel:

J. Roy Spradley, Jr.
Rose, Schmidt, Dixon, Hasley,
Whyte & Hardesty
818 Connecticut Ave., N. W.
Washington, D.C. 20006
(202) 296-5950

I. THE NATIONAL INTEREST IN ELECTRIC ENERGY FACILITIES

The Coastal Zone Management Act (CZMA or Act) requires states to consider both national and regional aspects of electric energy facilities. Section 306 (c) (8) requires that states provide

> adequate consideration of the national interest involved in planning for and in siting of . . . energy facilities . . . necessary to meet requirements other than local in nature.

And, in section 306 (e) (2) requires that states assure

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

The legislative history 1/ of the CZMA is unequivocal that this the national interest "consideration" required by section 306 (c) (8) is intended for "power plants" and "the specific national interest in the generation and distribution of electric energy." Legislative History at 321-322. Electric energy facilities are also, by their very nature, uses of regional benefit. The national interest in and regional benefit of electric utilities can be divided into two aspects: 1) adequate supply, and; 2) national energy and economic objectives.

A. Adequacy and Reliability of Electric Energy Supply

It is the electric utility's mandate to supply adequate, reliable, and economic electrical energy. Most electric utilities are required by state statute to maintain such, for example, in the State of Florida, Florida Statute 366.03 provides in part,

> Each public utility shall furnish to each person applying therefor reasonably, sufficient, adequate, and efficient service upon terms as required by the commission, provided, no public utility shall be required to furnish electricity or gas for resale (emphasis supplied).

It is estimated that by the year 2000 as much as 80 percent of the nation's population may be living within 50 miles of the coast. Legislative History at 194. It is the coastal electric utilities' mandate to provide an adequate and reliable supply to these consumers. One need only look at the devastating economic and social impact of the New York City blackouts to appreciate the national, regional, and local interests involved.

1. National and Regional Electric Reliability Organizations

For purposes of maintaing adequacy and reliability of supply, electric utilities in the contiguous United States are divided into nine regional reliability councils which comprise the national Electric Reliability Council (NERC). Figure No. 1. In addition to reliability councils, various power pools and electric power coordinating groups interconnect electric utility companies. Through these operating groups, power pools, and reliability councils, utilities plan for and interconnect generation and transmission facilities exchange power purchases based on the most efficient and economic generation and dispatch available share reserve requirements, and coordinate maintenance and unit outages to maximize efficiency and reliability of service.

The "adequacy" of electric energy supply is defined as generating capability sufficient to meet the aggregate peak loads (MW) and energy requirements (MWh) of all customers at all times. Figure No. 2. Because of scheduled and forced outages on generation, transmission, and distribution facilities, a reserve must be maintained to prevent total load from exceeding available capacity. The percentage of reserve varies among systems frequently being in the 20 to 30 percent range. 2/

The "reliability" of an electric generation system is measured by whether it will function as designed when needed. Generally, this is expressed in terms of how often and how long the total load exceeds the

available capability of an electric generation system. Most electric systems operate on a design loss of load probability of one day in ten years for planning generation requirements. Thus, reliability is measured in one sense, as the system's ability to meet demand within design voltage limits during outages of some generating units and transmission facilities. A second aspect of reliability is the system's ability to withstand a sudden outage without causing additional loss of facilities - the cascading effects that may lead to widespread blackouts, such as those in New York City.

Adequacy and reliability are, therefore, simply a cost/benefit evaluation of the cost of service versus the cost of interruption. Figure No. 3. The higher the reserve margin, the higher the cost of service and the lower the probability of a loss of load interruption: the lower the reserve, the lower the cost of service and the higher probability of load interruption.

2. Adequate and Reliable Electric Energy Supply

The year 2000 will place significant demands on our nation and the electric utility industry in order to maintain adequate, reliable, economic service.

a. Total Energy Demand

The continued effects of inflation, skyrocketing oil prices, and conservation have caused a slowdown in the growth of energy use. According to the Electric Power Research Institute (EPRI), total energy growth has fallen well below the historic 3.3 percent rate, but remains slightly higher than the 2 percent target of the federal energy program.[3/] By the year 2000, EPRI estimates total energy demand at 130 quadrillion (10^{15}) BTU and electricity at 5 trillion (10^{12}) kWH. Figure No. 4. (In 1977, EPRI estimated these demands at 150 quadrillion BTU and 7 trillion kWH.[4/]) By 2000, EPRI forecasts coal to increase threefold, supplying 35 percent of domestic energy and nuclear power, despite a 35 percent drop from the 1977 forecast, to increase fivefold over the 1978 level. Hydro, solar, and geothermal energy sources are forecast to provide roughly 8 percent of supply; these sources are expected to remain relatively small until 2030 when they are anticipated to grow to roughly 25 percent of supply. Substantially dependent on imports, petroleum consumption is expected to rise twofold by 2000. Natural gas consumption is forecast to increase less than either coal or oil; by the year 2030, it is expected to provide only 3 percent of our energy supply.

b. Electric Energy Demands

i. Generation Facilities

According to the Department of Energy, there are some 500 existing and 50 projected electric generating facilities in coastal areas of the 30 coastal states.[5/] Together, these facilities represent approximately 27 percent of national generation capability.

Demand for electricity will, according to EPRI, continue to rise faster than total energy. Electricity's share of total energy by the end of the century is now seen at 35 to 40 percent - a substantial drop from the 47 percent forecast by EPRI in 1977.

EPRI forecasts a 2.5-fold increase in electric energy supply by 2000. Using average industry load factor and reserve capacity data, this 3×10^{12} kWH increase in supply can be estimated to require some 500,000 megawatts of new electric generation capacity. (the 1977 forecast translated into some 800,000 MW's.) This additional electric energy will be produced principally by coal and nuclear energy. Figure No. 5. According to the Edison Electric Institute (EEI), as of April 1, 1978, additional capacity of nearly 260,000 megawatts were already scheduled for installation by 1990.[6/]

The EEI projects the following shifts in use of raw energy for production of electric energy (Figure No. 6):

	1978	1987
	(Percent)	
Nuclear	13.1	27.3
Oil	16.9	13.0
Gas	11.2	3.4
Coal	48.0	49.3
Hydro	10.4	6.6

ii. Transmission Facilities

At present, there are roughly 121,000 miles of bulk high voltage transmission lines in existing networks.[7/] Reliability on these systems can be defined as "the ability to withstand severe emergency conditions without uncontrolled cascading tripouts of system components, which, in turn, would lead to widespread power outages or blackouts."

The existing networks have resulted in a high level

of reliability, economics of scale, reduction in generation requirements through sharing of capacity, and assistance during shortages and emergencies. The most recent example of the operation of the reliability network is its response during the 111-day coal strike, winter 1977-78. Figure No. 7. In response to serious emergencies, 15 billion kWH of electricity were transmitted to affected areas of the Midwest from as far away as New England, Florida, Oklahoma, and the Dakotas, as well as Canada.

Over the next ten years, utilities are planning to add 40,000 miles of lines to the bulk transmission networks. The recent interruptions in New York, Miami, Jacksonville, San Antonio, and San Diego support the need for the additions to preserve the integrity and reliability of the overall system.

B. National Energy and Economic Objectives

1. Foreign Oil Dependency

Clearly, as a national objective, we have the reduction of reliance on foreign oil sources and resultant economic influences. It is clear that the electric utility industry is responding to provisions in the National Energy Plan [8/] and Power Plant and Industrial Fuel Use Act [9/] which call for conventional coal and nuclear-fueled steam facilities to provide required electric energy over the near term. When viewed in terms of equivalent fuel requirements in oil which would be necessary for electric generation of the coal and nuclear-fueled capacity, some 5,000 million barrels per year by 1987, the national interest in utilizing these facilities to their fullest to avoid further increase in foreign oil imports is abundantly clear. Figure No. 8.

As part of his July 15, 1979, Energy Message, President Carter indicated his intention to request Congress to require utilities to cut current consumption of oil by 50 percent by 1990. [10/] Compliance with this national objective can be estimated to require replacement of approximately 30,000 megawatts of existing oil-fired facilities with coal units.

As one remedy to the circumstnces, the conversion and replacement of existing oil-fueled facilities to coal is planned. Under the Power Plant Industrial Fuel Act and its precursors, the Department of Energy has the authority to require new fossil-fueled facilities to be constructed with coal burning capability and to prohibit consumption of oil in new and existing facilities. [11/] Nationally, there are some 93 facilities (203 units) representing 31,600 megawatts of existing facilities which have been identified as potential candidates for conversion; roughly 44 facilities (104 units) representing 19,000 megawatts are in coastal counties

of the 30 coastal states.[12]

For electric utilities such as Florida Power & Light Company, without coal burning capability, replacement of facilities is the only means of compliance with this objective. In FP&L's case, compliance with this national objective would require replacement of five to eight generating units.

II. SITING OF ELECTRIC ENERGY FACILITIES IN THE COASTAL ZONE

In amending the Act of 1976, Congress recognized that siting of certain energy facilities in the coastal zone would be necessary and established a requirement that states provide

> a planning process for energy facilities likely to be located in or which may significantly affect, the coastal zone, including, but not limited to, a process for anticipating and managing the impacts from such facilities. Section 305 (b) (8).

While Congress did not intend an inflexibile zoning map[13] or that siting of energy facilities be accelerated in coastal areas,[14] it did intend a process of siting necessary facilities in the coastal zone. This conclusion is required by the legislative history of the Act which describes the energy facilities planning process as

> [O]ne which would require each coastal state to develop a comprehensive process dealing with both the planning and the impacts of the siting of energy facilities. Because of the unique nature of the coastal zone, it is anticipated that a substantial portion of the new energy facilities the nation needs may be located in coastal areas.
>
> * * *
>
> State coastal zone programs should, therefore, specifically address how major energy facilities are to be located in the coastal zone if such siting be necessary. Second, the program shall include methods of handling the anticipated impacts of facilities. The Committee in no way wishes to accelerate the location of energy facilities in the coast; on the contrary, it feels a disproportionate share are there now. For those facilities which necessarily will be in the coast, however, a specific planning process for siting such facilities and dealing with their socio-economic and environmental impacts is desired. Legislative History at 900, 931 (emphasis added).

The criteria used by electric utilities in siting energy facilities involve a wide array of considerations. Figure No. 9. While each is important and is weighed and balanced in the selection of a site, certain involve essential technological requirements. Three of the most critical of these demonstrate the importance of the coastal zone to the electric utility industry.

The most important criteria in siting a power plant is the availability of an adequate supply of cooling water. [Capability of Cooling

System Development]. A steam electric turbine-generator cannot be sited without an adequate and reliable supply of cooling water regardless of the outcome of an evaluation of the other criteria. This is a principal reason why electric generating facilities in coastal states have historically been located on the coast. Modern power plants use on the order of 400,000 gallons of water a minute per generating unit (800 megawatts) for cooling, evaporating a certain percentage of that water into the atmosphere. As an alternative to coastal siting and use of brackish or saltwater, inland freshwater sites are welcome, but the implications can be staggering. Assume, arguendo, that a decision were made to relocate the 50 currently projected coastal facilities to inland sites, where they would be cooled by freshwater. The annual freshwater loss through evaporative cooling for these units would be sufficient to supply the water needs of around 3 million people. Of course, this is an order of magnitude figure; however, in states like Texas, California, and Florida, freshwater supplies a serious issue. The volumes of water required for cooling and hazards of saltwater intrusion also limit the practicality of supplying saltwater to an inland site through a pipe, aqueduct, or other conveyance. Economics also discourage such siting. For example, it can be estimated that the cost of moving these volumes of water is about $10 million per mile per unit (800 megawatts), without consideration of possible environmental impacts.

A second fundamental consideration in power plant siting relates to providing the electricity where it is needed. [Proximity to Load Center]. It makes good environmental and economic sense to serve people located on the coast from coastal power plants, where possible. Transmission lines do have economic and environmental impacts. Moreover, power losses occur in the transmission of electricity over distances requiring larger power plants to provide the same amount of electrical energy to a coastal area when an inland site is used in lieu of a coastal site. For example, for each 100 miles of a typical 230 kv transmission line, the load loss is 4 to 7 percent. Thus, a facility located 100 miles away from its load center must be 20 megawatts larger just to make up for the energy loss in transmission. This energy loss in turn results in greater land use, greater need for fuel, and additional environmental degradation, discharges to the water, air, and land as well as designation of a land use corridor for transmission facilities.

A third central criteria relates to fuel transportation consideration. [Accessability]. While sheer volume of fuel is not as critical a concern with a nuclear power plant, moving a large amount of coal necessary for a coal plant can be a mjor consideration. Water transportation is a dependable and economical method of supplying the necessary fuel. The inland location of a facility may require the extension and expansion of fuel transportation systems.

A fourth criteria, especially critical for nuclear power plants, concerns geological considerations. [Suitability of Soil Foundation Conditions]. We all understand, I believe, the importance in not locating a nuclear power plant on an unstable site.

As is apparent, there are other factors which can lead to a decision to site a power plant on the coast. They include non-degradation air

restrictions on inland areas, increased land requirements if a cooling water reservoir would have to be provided at an inland site, and so forth.

******

FOOTNOTES

1/ Senate Committee on Commerce 94th Cong. 2d. Sess., Legislative History of the Coastal Zone Management Act of 1972, As Amended in 1974 and 1976 with a Section-by Section Index 211, 322-24, 643 (Comm. Print 1976) [herein "Legislative History"].

2/ Electric Power Research Institute, Costs and Benefits of Over/Under Capacity in Electric Power System Planning EPRI EA-927 (October 1978); EPRI Journal, Vol. 3, No. 10, 6-13 (December 1978).

3/ Electric Power Research Institute, EPRI Journal, VOl. 4, No. 4, 6-12 (May 1979).

4/ Electric Power Research Institute, Demand 77 EPRI EA-621-SR (March 1978).

5/ U.S. Department of Energy, Inventory of Power Plants in the United States (1979).

6/ Electric Power Survey Committee, Edison Electric Institute, 1978 Annual Electric Power Survey (April 1978).

7/ National Electric Reliability Council, 8th Annual Review of Overall Reliability and Adequacy of the North American Bulk Power Systems, 13-15 (August 2, 1978).

8/ U.S. Department of Energy, National Energy Plan II, 8 (1979).

9/ 42 U.S.C. `6211 et seq (supp 1978)

10/ 125 Cong. Rec. S. 11414-15 (daily ed. August 2, 1979). A more detailed version of the President's National Coastal Protection Proposals may be found in the Office of the White House Press Secretary, the President's Second Message on the Environment: Detailed Fact Sheet for New Initiatives

11/ Power Plant and Industrial Fuel Use Act, 42 U.S.C.A. `8312 (Supp 1978)

12/ Letter from Carl E. Bragge, President, National Coal Association, to Honorable Stuart Eizenstat, Assistant to the President (August 11, 1979).

13/ American Petroleum Institute v. Knecht, 456 F. Supp 889 at 919 (C.D. Ca. 1978).

14/ Legislative History at 931.

REMARKS BY DAVID J. BARDIN
ADMINISTRATOR, ECONOMIC REGULATORY ADMINISTRATION

In one view, society pits one adversary interest against another, as decision-makers trade off one social objective against another. Yet our civilization rests on the premise that we seek common ends -- albeit by diverse means. Let us not confuse means with ends. Energy programs and facilities are a means -- a vital means -- to help realize social ends. Urgent as they are and should be on today's agenda, urgent as they ought to remain for years to come, energy policies and their implementation are not ends in themselves.

The basic ends of our society concern human dignity and human freedom, husbanding God's bounty and using it wisely.

Where does coastal zone managment fit in? To some, managing the coastal zone may become a fetish, a golden calf. Certainly, coastal zone management has been a motherhood issue: As Tom McCall puts it, coastal zone management is so popular a cause that you could pass a coastal zone managment bill in Nebraska.

Some are tempted to look upon protection of fragile coastal resources as ends in themselves. Others become enthralled by the processes of balanced coastal management. Surely the process is no end in itself. But neither, in my view is the protection, in the sense of excluding man and his works from nature. Rather our society strives for multi-purpose use of resources in harmony with God's creation.

The coastal zone manager does well to distinguish sharply the true ends of society from the means with which his decisions deals. That distinction helps us resist the knee-jerk argument and to give appropriate weight to current needs and future needs, to perpetual and ephemeral resources, to the local, the national and the global interests. In short, much in the coastal zone manager's tool box teaches him to classify and compartmentalize. But the bedrock strength of coastal zone management lies in the opportunity to integrate policy goals as well as professional disciplines. A focus on the true ends of our civilization will strongly buttress the multi-purpose integrative approach.

Thus consider the supposed conflict between preserving perpetual (renewable) resources and exploiting ephemeral resources. Take the question of oil and gas leasing in the case of Georges Bank. The Department of the Interior (DOI) and the National Oceanic and Atmospheric Administration (NOAA) reached an agreement which deleted certain tracts from the proposed lease sale in order to protect coral, lobster and fish populations and allowed the sale to proceed for other tracts; DOI has also established strong preventive and mitigating measures. A recent editorial described the DOI-NOAA agreement as embodying a simple choice between the fleeting advantages of a little oil production and the risk of destruction to a perpetual fishery resource. Such a black-or-white calculus leaves out too many nuances. What is the risk? The fishery resource renews itself and, therefore, seems "perpetual" on the scale of human history. But is there any risk of the extinction of the fish? Is there even a risk that the Georges Bank as a spawning ground might be destroyed forever? The editorial really focused on a different risk. Namely, of a substantial--even severe--but temporary impairment in the quantity of ocean protein that many may derive from the Georges Bank. Experience of the American oil industry in the Gulf of Mexico

suggests that an extensive program of exploration, development and production might be carried on over many years without adverse impacts on fisheries. Even the trauma of the PEMEX exploratory well blowout should not prompt knee-jerk reactions. Foolish as it was for some to pooh-pooh the threat to the beaches, we should not extrapolate into a risk of a fisheries catastrophe. On the other hand, we should fully appreciate the relatively greater sensitivity and commerical importance of both sea bottom and the water column in an area such as Georges Bank.

Understandably, no fisherman need be enthusiastic about taking any risk of any impairment over any period, but reasoned decisionmakers should accept some risks. We should certainly not turn tail and flee from an ephemeral risk to a perpetual resource. Moreover, what is the gain? If exploration finds oil or natural gas, we may have quantities of fuel to supplement our resources, to reduce our drain upon oil supplies from other parts of the globe, to fuel our fishing fleets and heat the homes on shore. If the Georges Bank proves productive at all, we may find only natural gas and risk no oil spills. But if there is a bounty of oil to be found and developed, there is a value to try to do so, even though the amounts cannot fully solve America's energy or petroleum needs. We should look at each increment of production or conservation cumulatively--not exclusively.

There is no single source of energy supply, no conservation panacea, no magic answer which will alone solve the energy problem. The environmental movement focused attention on the cumulative potential for environmental insult and destruction. Similarly, decisionmakers should recognize the cumulative potential for benefits of each added energy supply to any society--and particularly to the vast and complex economy of our country.

The same principles apply to reasoned decisions for siting energy facilities onshore. Just as offshore oil exploration and development requires its marine platforms, and, if successful, pipelines to shore, so too oil ports, propane and liquified natural gas terminals, coal ports and power plants seek coastal access. The energy facilities that need coastal access may well compete with other forms of intensive development. Do they also compete with the biological productivity of the tidal zones or other fragile areas? Do energy facilities impinge on open space or other aesthetic values? In my judgment rational decision making can generally sort out the demands for coastal access in most of the country; we still have a goodly coastal resource which can provide biological productivity for the tidal and marine environments, access for transportation and energy needs, and access for national defense, as well as some nearby residential and agricultural opportunities. True, more and more crowding intensify the competition for coastal access, as it intensifies land use struggles generally. Walter Gellhorn has observed that earlier in the century the public law of land use in our country consisted exclusively (or nearly so) of cases fixing the value of land upon public condemnation. In contrast the British cases have for decades concerned whether a publicly built or encouraged project should be allowed to proceed. Today, of course, we have caught up with the mother country in questioning the necessity for project after project.

In sorting out projects we should certainly set priorities in relation to the necessity for coastal access. Thus, a marina or an energy port must be located at the water's edge if it is to function at all. Residential

development, however, may be restrained back from the coast line, the dune line or the coastal cliff line for reasons of resource preservation, recreational access to the shore, safety, aesthetic preference, or priority for competing uses. The energy facilities involve an intensive development of a portion of the shoreline and yet the dedication of a portion of the coast to that purpose may be meshed with the preservation of open space in the surrounding area and, in many cases, with preserved or enhanced public access to the land-sea interface itself. Thus, a wise coastal policy might well combine the coastal siting of nuclear power plants with few residences and light recreational use in the surrounding area and with public access to the beach between the fence and the ocean.

Once reasonable restraints have been placed on residential development of dunes, beaches, coastal cliffs or wetlands, the true priority projects which remain would not impact so heavily on the basic resources as to preclude accomodation somewhere in the coastal zone. The process of coastal management would then optimize multiple uses, preserve the true sanctuary values and mitigate adverse impacts.

Sadly, there continue to be heard absolutist voices that object to any development and any impingement on coastal resources. Such objectors are generally not effective substantively because they fail to quantify or weigh one impact against another. Thus decision makers ultimately become inured to and brush aside a repeated objection that a form of development may reduce or even will reduce biotic habitat when the objector never distinguished between trivial reductions of little cumulative impact and vast reductions of distinct importance to the resource. In the long run, such objectors would do well to overcome the uncertainties of their discipline, and at least rank if not quantify the environmental impacts at risk.

Even though intelligent and rational coastal zone management would ultimately find a place for needed energy facilities, two problems stand between the possible and the actual. On the one hand project sponsors and coastal managers have, time and again, failed to canvas reasonable alternatives so as to sort out the options and work out a reasonable, multi-purpose use of coastal zone resource. On the other hand, objectors raising even flimsy grounds and procrastinating decision makers have managed to delay any decision at all in all too many cases. The planning process under the Coastal Zone Management Act, as well as the analytic process under the National Environmental Policy Act hopefully are addressing the former problem. The Carter Administration's proposed Energy Mobilization Board, now pending before the Congress, will address the latter.

More and more laws impose permit reviews on new energy facilities. The physical scarcity of sites only partially explain this legislative fecundity. A better explanation in many cases, I think, lies in the environmental legislator's reluctance to deal with established enterprises, as contrasted with the political attraction of regulating future projects--as it were, the unvested interests. Needless to say, that natural legislative preference has significant anti-competitive consequences for those who would initiate new economic activities or, even, for those who would expand existing activities in competition with other firms. Hopefully, decisionmakers who administer these laws find some occasion to care about the harm they

may be doing to that other society-approved means, the objective of a competitive economy. Be that as it may, we have seen a proliferation of permitting requirements at the federal, state and local levels.

We have also seen a tendency to compartmentalize decision-making with different agencies focusing on narrow isolated aspects of the public interest. In other instances, we have seen several jurisdictional levels of regulation--federal, state, regional or local--dealing with seemingly identical components yet each trying to out-perform the other, in some cases, or to duck behind the decision of the other. In these cases, we have seen delays either because an agency pauses to dream up new preventive and mitigating measures to outdo its rivals or, as bad, delays as Alphonse ducks and darts behind Gaston.

My state experience, in New Jersey, with a super-agency in charge of most of the environmental permitting programs, leads me to value the centralization of ultimate responsibility as an administrative tool to assure that a decision will actually be made. Yet no society will entrust to a super-agency all of the state, Federal and the local decisions.

Similarly, the successful New Jersey lead in coordinated permitting by the Corps of Engineers and our Division of Marine Services working in parallel, has realized the opportunities for intelligent management to cut through red tape, at least in the normal case. That technique, however, will not assure timely decision for a highly controversial energy facility project.

Accordingly, President Carter has proposed creation of an Energy Mobilization Board which can establish binding, coordinated deadlines for the various stages of Federal, state and local permitting of vital energy facilities, including those in the coastal zone. The legislation would not override the governing substantive standards of the various coastal, environmental, land use, and safety laws. After all, energy facilities are merely means and not ends in themselves. But the proposed law would make it the responsibility of a specialized energy mobilization board to identify the facilities which deserve a fast-track of decisionmaking and to set the dealines after consulation with state government and the interests involved. In case of failure to meet the deadlines, the board could take over the decisionmaking, still governed by the substantive standards in question. Moveover, the bill would consolidate and expedite judicial review.

We do not propose to force appproval of each such product. But, we do propose to force a timely "yea" or "nay." Having worked with analogous requirements for timely decision on non-energy development projects in New Jersey, I suspect that enactment of such legislation may actually lead to a modest increase in the "nays." Nonetheless, by cutting down on delay and uncertainty, the legislation will make more capital and ingenuity available to help meet vital energy needs of our economy.

From the standpoint of intelligent coastal zone management, and the planning processes which it has set in motion, the energy mobilization bill offers an exciting challenge and an opportunity for better decisionmaking which I hope you will embrace.

Procrastination and delay frustrate the very process of management by which society marshals the means to achieve basic ends. Delaying in itself is no virtue, deciding is no vice. As they say: "Marriage has its pains, but celibacy has no pleasures." Similarly, deadlines pinch, but what's the fun of putting it off?

REMARKS BY DAVID DAVIS
MASSACHUSETTS PORT AUTHORITY

Ladies and gentlemen, it's a pleasure to be here with you today in Charleston. I'm delighted to have been asked by the Coastal States Organization to participate in this conference. For those of you who are not familiar with the Massachusetts Port Authority - the Agency which I head - perhaps a few words of introduction are in order.

In addition to operating Logan International Airport, Hanscom Civil Airfield, and The Tobin Bridge, Massport is responsible for running a number of facilities within the Port of Boston. Included among these are the Moran Container Terminal, which was opened in 1971. Moran handles in the neighborhood of 55,000 containers per year on approximately 22 acres of ground. Our facility at Castle Island occupies about 100 acres and is used for break bulk cargoes, lumber and automobiles. It also contains a 13-acre container facility that handles an additional 14,000 containers each year. Massport also owns The Boston Fish Pier which was built in 1913. The pier provides fresh fish unloading and processing facilities for the Port of Boston. Incidentally, we just began a major renovation project at the Fish Pier with the help of grant money from the EDA. In addition, we own and maintain a number of other piers within Boston Harbor as well as some parcels of land adjacent to our port properties.

As you can see from this thumbnail sketch of our operations, we at Massport are involved in a number of water related industries. Even our airport is located in Boston Harbor on approximately 2,400 acres of land, the great majority of which were created by land fill projects over the past 40 years. And so the Coastal Zone Management Act of 1972 and our Massachusetts CZM program potentially impact upon just about all of our facilities.

The question I've been asked to comment on today is: What Has Coastal Zone Management Come To Mean To The Port Industry After Seven Years? In answer to that, I'd like to discuss some of the general issues that concern the industry as a whole and relate to you some of the experiences that Massport has had with CZM.

Before getting into the specifics, however, I believe that there is a basic premise from which we must begin. Simply stated - you can't please all the people, all the time. There exist a number of divergent groups concerned with the future of the coastal zone. There are those whose principal interest is the development and expansion of mechanized facilities to handle the throughput of goods. And there are those whose chief concern is the preservation of a natural and untouched coastal environment. Other interests fall somewhere in between these two poles -- reflecting a wide array of options, all of which, from some perspective, constitute desirable and responsible use of the coastal area.

While CZM was conceived to provide the means for these divergent groups to plan and work together, I believe that we must accept that many of these basic differences are not going to be fully reconciled by any process.

In waterfront development, the traditional approach for years has been for the agencies and individuals who are having an impact on the

environment and those who see themselves as its protectors to act and react in an ad hoc unstructured way that often causes more confusion and delay than anything else.

CZM was set up seven years ago to lend some order to this process of interaction by providing a focal point for public and private input and by instituting a long-range planning process that brought the conflicts and the interests out in the open long before a crisis is at hand.

Because the conflicts, as I mentioned, between various waterfront interests run so deep, it is not surprising that CZM has met with mixed receptions and with only qualified success. CZM was asked to be a traffic cop at a very busy intersection which had never been subject to control or discipline before. It's not surprising that the undisciplined drivers in the intersection are all leaning on their horns.

Wassily Leontief, who won a Nobel Prize for inventing the input-output model, told The International Association of Ports and Harbors last June that waterbound general cargo in and out of North America between 1970 and the year 2000 would more than triple. No doubt some ports will get a lion's share of this increase, and others will stagnate at their present levels. This is probably as it should be; since some are better suited to expansion than others. But if all ports take the position that the other guy will absorb the increase in cargo handling facilities, North America simply won't handle that cargo, and the economic consequences for the continent will be nothing short of disastrous.

It is equally true that wholesale capacity development at any place on the continent that a highway runs to the sea in a race to capture cargo which could quite easily flow through existing facilities or future facilities that are part of a well-ordered plan could irreparably harm what is still an enormous national treasure: our coastline.

Let me briefly describe Massport's interaction with CZM in Massachusetts and then relay a few general industry concerns from colleagues elsewhere in the country.

Our experience with CZM at Massport has been very good. This is attributable to several causes. First, the process of establishing priorities and developing a coastal plan for Massachusetts was an exceptionally orderly and well-run process. The staff were first-rate, and really managed to lay the groundwork, solicit the interaction, and develop proposals, which even after a thorough public airing were able to obtain a fairly high degree of consensus in the affected communities. Second, the job may have been somewhat easier in Massachusetts than elsewhere because there is in Massachusetts a pretty widely held desire to preserve our historical heritage and our attraction to tourists, vacationers, and to the fishing industry. The constituencies in Massachusetts for such large-scale projects as oil refineries and nuclear power plants are comparatively small.

One might ask how a seaport operator could come out of such an environment feeling good about the CZM process. Since, after all, a seaport is a pretty large and intensive industrial type development.

The answer is that we have confined our ambitions to the portions of the coastline that have historically been used for cargo handling or for naval purposes. The adjacent uses in most cases are industrial, and the adjacent waters, by and large, are fairly uninteresting from a biological point of view, since they are deep water channels in a fairly busy harbor.

Our seaport development really has two parts. The first, intensification of use of our existing facilities by modernizing them and increasing their efficiency doesn't really involve the kind of change of use which triggers active involvement of CZM or traditional environmental agencies. Our only major new port development which could be viewed as controversial is a 37 and 1/2 acre fill project which we will be undertaking in the upcoming five years at a site which used to be a naval shipyard. In this case, however, because of the nature of the adjacent uses, the site has been designated in the Massachusetts CZM plan as appropriate for port development. So in a sense, the CZM people are quite happy to see the development go forward, because it represents an opportunity for them to endorse an appropriate industrial use and establish their credentials as impartial arbitors of coastal development.

I suspect that if the Massachusetts Port Authority developed a keen ambition to turn 150 acres of natural marshland several miles outside the city into a containerport and pursued that ambition that I would have a very different tale to tell.

In my view, those kinds of ambitions should only be harbored by port authorities when there's so much marshland around that 150 acres wouldn't even be missed. I think that in most parts of the nation we've gotten beyond that stage. I am prepared to say, though I might incur the wrath of some of the shipping interests in my home state, that it is probably not appropriate even for a port authority to devote its single-minded attention to the expansion of its facility without regard for the larger questions of how the land it has its eye on might otherwise be used.

In fact, I think that the notions embodied in the CZM program of careful, fully developed and public planning for the allocation of uses according to the natural and locational advantages of particular parts of the coastline is an extremely important development in national policy and one whose positive effects will be appreciated more by our grandchildren than by ourselves.

I should hasten to say that although I have carefully tried to avoid becoming an outcast among my peers, I am certainly by no means typical. In fact, it strikes me as just a wee bit amusing that I was invited to this conference as a representative of the port industry. I think it's only fair that I report to you just a bit of what I know to be the very serious and deeply felt concerns among my colleagues about CZM. I have picked up four main concerns: Let me deal with them separately.

The first one I would call CZM's perception of its role. It is difficult for any agency that is set up to approve or expedite or encourage certain activities but to act as a control or limiting influence on other activities to figure out whether it is an expeditor or an enforcer. We have certainly seen this with the Atomic Energy Commission to such a marked degree that Congress felt obliged to intervene. To a lesser extent,

many federal so-called regulatory agencies have to divide their energies between promoting and controlling. It always produces an identity crisis, and the CZM area is no exception. On the one hand, CZM is supposed to protect large areas of coastlines from developments that are perceived by its criteria to be inappropriate or harmful, and on the other hand it has a mandate to foster and encourage and expedite developments which are consistent with its criteria. I think it's just plain hard for any agency to be enthusiastic and impatient on one day and conservative and cautious on the next; even though the merits of the projects may differ, tempermentally it's difficult to achieve. The ports that are engaged in projects that are not inconsistent with the coastal plan are disappointed to see local CZM authorities passively accepting the project when they could be actively promoting it. Though I suspect this view may be a bit colored by a port's own desire to see its own project as being somewhat more thoroughly consistent than the reviewing authorities may have found it, I suspect that in many cases this is a legitimate lament.

The second problem is one as old as government itself. When a new agency is created, and no old agencies are eliminated outright, simply transferring lead responsibility or coordinating responsibility to the new agency by no means causes the older traditional and entrenched agencies to shrivel up and expire. What follows in the CZM case and in countless others in the annals of government history is that a lively and colorful turf battle ensues in which the existing agencies cling to their prerogatives, and the new agency attempts to exercise leadership in a field of players all of whom are more experienced than the newcomer. The result is that different agencies construe the various statutes and regulations broadly in favor of their own power and cling to their independent review responsibilities that preexisted CZM. Although I have not directly experienced this in Boston in our seaport development, I've seen it often enough in other contexts to say that my colleagues are probably not far from the mark. My own personal view is that CZM's problems in this regard are not of their own making, since they inherit only as much strength as they are explicitly given. I think that this issue of the turf battles that occur between CZM and the more traditional reviewing authorities is part of the larger problem that the federal government primarily (and local governments to a lesser extent) are subject. Legislatures seem to take particular delight in creating an executive branch full of little independent pockets which represent rather narrow constituent interests and have rather narrow mandates to protect certain public, and not so public, interests. They then put them all under the same chief executive and imply that they're all supposed to be part of that chief executive's consistent policy structure. The results are sometimes comical and sometimes tragic, but always very confusing. I don't think one can blame CZM for what is really a problem that is endemic to modern governments, at least in its American manifestations.

The third area of port criticism of the CZM process is almost a play on words. There doesn't seem to be much consistency in the determinations of consistency. That is to say that the proponent of a major development project might well find that he encounters, in the course of his efforts to get approval, widely differing interpretations of what is or isn't consistent with the preexisiting CZM plan or with the historical or adjacent uses on and around the project site. The

federal guidelines sometimes seem to lose something in the translation to the state level or at least in the application to a particular project from the perspective of many of my colleagues. And furthermore, a finding of consistency by CZM by no means precludes another state or federal agency under the guise of their own independent authority for making a finding which in the final analysis simply boils down to a judgement that CZM was wrong and that the use is not consistent with what is or should have been the overall coastal plan. This one's hard for me to evaluate, of course, because I haven't been close enough to any of the projects in other jurisdictions to perform an independent judgement.

Finally comes the issue of mitigation. To put it bluntly, some of my colleagues feel that in some instances rather exorbinant schemes for mitigation of environmental harm have been put foreward as a rather thinly veiled disguise for costing the project out of the realm of feasibility and protecting the site from any development. It's much easier to say yes, but ..., then it is to say simply no, and some participants in the review of coastal projects have taken this easy way out.

Seaports are probably the one piece of infrastructure in modern society which has the most difficult time paying for itself by direct charges. Although maritime facilities have enormous impact on the economy, they are so competitive with each other, mostly because of this impact, that they never seem to manage to be able to pay for themselves. Doubling or tripling the cost of a project by including exotic mitigating measures puts the project quite often beyond the range of feasibility. It would be a more honest and forthright approach to simply oppose the project at an earlier stage.

I think, happily, that even many of my colleagues would admit, given the developments of the late 1960's and 70's, that without CZM things could have been even worse. Much of their frustration, I suspect, is due to what they perceive to be a public disenchantment with rapid and ambitious development which would have expressed itself, perhaps, in more chaotic and irrational ways had CZM not been developed.

As I said at the outset, no one promised that CZM would provide solutions to deep, almost philosophical differences which divide segments of our society with respect to how certain finite resources such as coastline should be allocated among competing and incompatible uses. And CZM has not delivered that. But it has provided us with a forum and a thorough and ingenious process for thrashing out these issues ahead of time; before enormous amounts of money and emotional energy are invested by proponents or opponents of particular solutions for particular sites.

Finally, I'd like to say, as CZM matures, that we all need to work to achieve a fair and reasonable balance of interests to establish better avenues of communication between the various groups who are concerned about coastal development. If the idea of cooperative planning for prudent management of our coastal resources is the aim of CZM, and we want to make that aim work, we've got to stop dealing with other guys as the enemy though we don't have to agree with him -- there are going to be many instances when we're going to have to accommodate his viewpoint, and expect him in other instances to accommodate our's. Although the seacoast is a finite resource, there is still the opportunity to make rational and efficient choices about which pieces to preserve and which pieces to develop and to form the coalitions of different interests necessary to log roll a coherent program to fruition.

DEVELOPMENT OF THE COAST: FACING THE TOUGH ISSUSES
Attendance List

Mr. William Ahern
California Coastal Commission
631 Howard Street, 4th Floor
San Francisco, CA 94105

Ms. Judith Anderegg
Office of Coastal Management
Pouch AP
Juneau, AK 99811

Mr. James E. Anderson
Jersey Central Power & Light
Madison Avenue
Morristown, NJ 07960

Mr. Armour S. Armstrong
Director, Port Development
Maritime Administration
Department of Commerce, Room 4888
Washington, D.C. 20230

Mr. Bob Armstrong
Commissioner, General Land Office
835 Stephen F. Austin Building
1700 North Congress Avenue
Austin, TX 78701

Mr. John Armstrong
Director, Coastal Zone Laboratory
2480 Gale Road
Ann Arbor, MI 48105

Mr. Malcolm Baldwin
Staff Member, President's Council on
Environemntal Quality
722 Jackson Place, NW
Washington, DC 20006

Commander Matt Barbour, USCG
7th Coast Guard District
1018 Federal Bldg.
51 S.W. 1st Ave.
Miami, FL 33130

Mr. David J. Bardin
Administrator, Economic Regulatory
Administration, DOE
2000 M Street, NW, Rm. 6001
Washington, DC 20461

Mr. Richard J. Barnett
Bureau of Land Managament
New York OCS Office
26 Federal Plaza, Suite 32-120
New York, NY 10007

Mr. Jet Battley
NOAA/NOS
6001 Executive Blvd.
Rockville, MD 20852

Mr. Wayne Beam
South Carolina Coastal Council
1116 Bankers Trust Tower
Columbia, SC 29201

Mr. Stanford R. Beebe
Marine Resource Program Director
Coastal Plains Regional Commission
215 E. Bay Street
Charleston, SC 29401

Ms. Ann H. Berger-Blumdom
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. Samuel A. Bleicher
National Oceanic and Atmospheric Adm.
2001 Wisconsin Ave., NW, Room 326
Washington, DC 20235

Mr. Joseph E. Bodovitz
Executive Director
California Public Utilities Commission
350 McCalister Street
State Building, Civic Center
San Francisco, CA 94104

Ms. Patricia Bowie
South Carolina Coastal Council
168 Queen Street
Charleston, SC 29401

Mr. William Brah
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. Earl Bradley
Department of Natural Resources
Tidewater Administration
Tawes State Office Bldg.
Annapolis, MD 21401

Mr. Charles H.S. Bridges, III
Seabrook Island Company
P. O. Box 32099
Charleston, SC 29407

Mr. Darwyn Briggs
U.S. Dept. of Agriculture
Room 412-A Adm. Bldg.
14th and Independence Ave., NW
Washington, DC 20250

Mr. J. Ron Brinson
Executive Vice President, American
Association of Port Authorities
1612 K Street, NW
Washington, DC 20006

Col. William W. Brown
US Army Corps of Engineers
P.O. Box 919
Charleston, SC 29402

Ms. Mary Lowndes Bryan
Natural Resources Defense Council
P.O. Box 58
Columbia, SC 29205

Mr. Roger L. Buck
Governor's Energy Office
80 Dean Street
Providence, RI 02903

Mr. Victor Burrell
South Carolina Marine Resources
Research Institute
Charleston, SC 29412

Ms. Nancy Bush
Special Assist. to the Director of PA
Dept. of Commerce
NOAA, Rm. 5217
Washington, DC 20230

Mr. Keith J. Buttleman
Council on the Environment
903 Ninth Street Office Building
Richmond, VA 23219

Mr. William Campbell
1823 Heyward Street
Columbia, SC 29205

Ms. Martha Canan
NAUTILUS PRESS, INC.
1056 National Press Building
Washington, DC 20045

Mr. Christopher Capotis
Planning Director, Erie County
Metro Planning Commission
Erie County Courthouse
Erie, PA 16501

Ms. Sara Carroll
Office of Environmental Affairs
100 Cambridge Street
Boston, MA 02202

Ms. Donna R. Christie
Woods Hole Oceanographic Institution
Marine Policy
Woods Hole, MA 02543

Ms. Virginia Chaffee
Pennzoil Company
Pennzoil Place
700 Milam Street
Houston, TX 77001

Ms. Delores Clark
NOAA/OCZM
3300 Whitehaven St., NW, Page Bldg. #1
Washington, DC 20235

Mr. Phillip A. Clark
American Petroleum Instiute
2101 L Street, NW
Washington, DC 20037

Mr. James Collins
NOAA
6001 Executive Blvd.
Rockville, MD 20852

Mr. Steven L. Colman
New England Basins Commission
53 State Street
Boston, MA 02109

Ms. Cathy Cousins
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20235

Captain Jacques Cousteau
Cousteau Society
777 Third Avenue
New York, NY 10017

Mr. Frank S. Craig, III
CSO. Representative
1320 Stephens Ave.
Baton Rouge, LA 70808

Ms. Lena Crawley
Davidson College
1109 Satilla Blvd.
Waycross, GA 31501

Ms. Rosita Cruz
Guam Coastal Management Program
P.O.Box 2950
Agana, Guam 96910

Mr. David W. Davis
Executive Director, Massachusetts
Port Authority
99 High Street
Boston, MA 02110

Mr. Richard F. Decker
NY Dept. of State
Div. of Planning & Federal Programs
162 Washington Avenue
Albany, NY 12231

Brig. General Norman G. Delbridge
Division Engineer
US Army Engineers Division, South Pacific
630 Sansome Street, Room 1216
San Francisco, CA 94111

Mr. Ray Dudark
CZM Planners
100 Demere Oaks Circle
St. Simons Island, GA 31522

Mr. Stanley Eames
NOAA, Office of Public Affairs
6001 Executive Blvd.
Rockville, MD 20852

Ms. Phoebe Eliopoulos
ENVIRONMENT REPORTER
1231 25th Street, NW
Washington, DC 20037

Mr. William K. Fehring
Director, Environmental Affairs
Tampa Port Authority
P.O. Box 2192
Tampa, FL. 33601

Mr. Michael L. Fisher
California Coastal Commission
631 Howard Street, 4th Floor
San Francisco, CA 94105

Ms. Kathy Fitzpatrick
Oregon Coastal Zone Management
Association, Inc.
P.O. Box 1033
Newport, OR 97365

Mr. Neil L. Frank
Director, National Hurricane Center
Cable Tower One
1320 S. Dixie Highway
Coral Gables, FL 33146

Mr. Richard A. Frank
Administrator, National Oceanic
& Atmospheric Administration
Department of Commerce, Rm. 5808
Washington, DC 20230

Mr. Charles E. Fraser
President, Sea Pines Plantation Co.
Hilton Head, SC 29928

Mr. James Frederick
US Geological Survey
750 National Center
Reston, VA 22092

Mr. Kurt Fredriksson
State of Alaska
Office of Coastal Management
Pouch AP
Juneau, AK 99811

Mr. Don E. Glass
Senior Staff Engineer
Shell Oil Company
P.O. Box 4320
Houston, TX 77210

Mr. Brian Gorman
NOAA/OCZM
3300 Whitehaven Street, NW
Washington, DC 20235

Ms. Karen E. Gottovi
North Carolina Coastal Resources
Advisory Commission
Route 3, Box 3441F
Wilmington, NC 28403

Mr. Donald T. Graham
Assistant Commissioner for
Natural Resources
NJ Dept. of Environmental Protection
P.O. Box 1390
Trenton, NJ 08625

Mr. Richard R. Greenfield
Office of Coastal Zone Management
2001 Wisconsin Ave., NW, Room 323
Washington, DC 20007

Ms. Doris Grimm
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. Robert C. Hansen
NY Dept. of State
Coastal Managment Program
162 Washington Avenue
Albany, NY 12231

Dr. William J. Hargis, Jr.
Chairman, Coastal States Organization
Director, Virginia Institute of Marine
Science
Gloucester Point, VA 23062

Commander James Haas, USCG
5th Coast Guard District
431 Crawford Street
Portsmouth, VA 23705

Ms. Frances Stuart Hester
P.O. Box 533
Mt. Pleasants, SC 29464

Mr. Michael Hightower
General Land Office
1705 Guadalupe St.
Austin, TX 78701

Rear Admiral Roy F. Hoffman
Municipal Port Director
Board of Harbor Commissioners
500 North Harbor Drive
Milwaukee, WI 53202

The Honorable Ernest F. Hollings
United States Senate
Washington, DC 20510

Mr. Jack Holt
DOI - BLM
New Orleans OCS Office
500 Camp Street
New Orleans, LA 70130

Mr. Kent H. Hughes
National Oceanographic Data
Page Bldg. 1, Room 428
Washington, DC 20235

Mr. Roger Humphrey
1602 Country Club Dr.
Charleston, SC 29412

Mr. R.E. Hunt
Texaco Inc.
P.O. Box 52332
Houston, TX 77052

Mr. J.R. Jackson, Jr.
Exxon Company, USA
P.O. Box 2180
Houston, TX 77001

Ms. Rose Jacobius
NAUTILUS PRESS, INC.
1056 National Press Bldg.
Washington, DC 20045

Ms. Gloria M. Jimenez
Administrator, Federal
Insurance Administration
Department of Housing and Urban Dev.
Washington, DC 20410

Mr. Duane Kanuha
Department of Planning &
Economic Development
P.O. Box 2359
Honolulu, HI. 96804

Dr. Richard J. Keating
Director, NOAA Congressional Affairs
Department of Commerce
14th & Constitution Ave., Room 5225
Washington, DC 20230

Mr. David Kinsey
Acting Director, Division of
Coastal Resources
Dept. of Environmental Protection
P.O. Box 1889
Trenton, NJ 08625

Dr. Thomas R. Kitsos
U.S. House of Representatives
1334 Longworth HOB
Washington, DC 20515

Mr. Robert W. Knecht
Assistant Administrator for
Coastal Zone Management, NOAA
2001 Wisconsin Ave., NW
Washington, DC 20235

Senator Andy Knox
Delaware State Senate
107 Quintynnes Drive
Wilmington, DE 19807

Mr. David C. Kyler
Brunswick Glyun Co.
Joint Planning Commission
P.O. Box 1495
Brunswick, GA 31520

Ms. Linda Larson
CZM Legal Council
2001 Wisconsin Ave., NW
Washington, DC 20235

Mr. E.A. Laurent
Div. of Research & Statistical Services
1028 Sumter Street
Columbia, SC 29201

Mr. Douglass Lea
DOC/NOAA, Office of Policy & Planning
14th & Constitution Ave., NW
Washington, DC 20230

Mr. Donald Lindley
Associate Editor
DAYTONA BEACH NEWS-JOURNAL
P.O. Box 431
Daytona Beach, FL 32069

Mr. Joel Lindsey
Coastal Management Section
LA. Dept. of Transportation & Dev.
P.O. Box 44245, Capital Station
Baton Rouge, LA 70804

Mr. Richard A. Lyons
US Coast Guard Hqs. (G-WS/TP11)
2100 2nd Street, SW
Washington, DC 20590

Ms. Sheri Maier
Senate Committee on Commerce, Science
& Transportation
126 RSOB
Washington, DC 20510

Mr. Curt Marshall
House Oceanography Subcommittee
Room 3580, House Annex #2
Washington, DC 20515

Dr. James S. Mattson
NACOA
3300 Whitehaven Street, NW
Washington, DC 20235

Mr. William Matuszeski
Office of Coastal Zone Management
NOAA/DOC
Page Building 1
3300 Whitehaven Street, NW
Washington, DC 20235

Mr. Peter McAvoy
Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20235

Mr. Stephen A. McMillan
CZM Advisory Committee
2001 Wisconsin Ave., NW
Washington, DC 20235

Mr. Bruce E. McPherson
Ohio CZM Program Administator
Bldg. E, Fountain Square
Columbus, OH 43224

Ms. Gail R. McTeer
SC Coastal Council
P.O. Box 1026
Beaufort, SC 29901

Professor H.R. Merrens
Department of Geography
York University
4700 Keele Street
Downsview
Ontario, Canada

T. W. Messervy, MD
1200 S. Main Street
Summerville, SC 29483

Mr. Allen H. Miller
Secretary-Treasurer, CSO
Coastal Management Program
Room B 130
1 West Wilson Street
Madison, WI 53702

Mr. William C. Milhouser
CZM Gulf Region
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. Dallas Miner
Office of Coastal Zone Management
NOAA/DOC
Page Building 1
3300 Whitehaven Street, NW
Washington, DC 20235

Mr. Jerry Mitchell
Bureau of Marine Resources
Department of Wildlife Conservation
P.O. Drawer 959
Long Beach, MS 39560

Mr. Robert Moore
Kiawah Island Company
Kiawah Island Resort
P.O. Box 12910
Charleston, SC 29412

Ms. Eileen Mulaney
Pacific Region
Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. James F. Murley
OCZM/NOAA, Congressional Affairs
3300 Whitehaven St., NW
Washington, SC 20235

Mr. Thomas Nash
US Fish & Wildlife Service
Department of Interior
Washington, DC 20240

Mr. Hans Neuhauser
Georgia Conservancy
4405 Paulsen Street
Savannah, GA 31405

Mr. William Nothdurft
Special Assistant to the Director
Bureau of Land Management, DOI
Washington, DC 20240

Mr. David A. Nystrom
OCS Information Program
US Geological Survey
750 National Center
Reston, VA 22092

Captain Neil F. O'Connor, USN
NOAA, Office of Naval Deputy
Page 1 Bldg., Room 200
3300 Whitehaven Street, NW
Washington, DC 20235

Mr. Richard O'Connor
North Atlantic Region
Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. John O'Donnell
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Ms. Lynn Peace
Davidson College
1109 Satilla Blvd.
Waycross, GA 31501

Mr. John Phillips
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. Jeffrey R. Pike
House Oceanography Subcommittee
Room 3577, House Annex #2
Washington, DC 20515

Mr. John Pleasants
Assistant Director, Virginia
Institute of Marine Science
Gloucester Point, VA 23062

Mr. Richard Poirier
Department of Planning &
Economic Development
P.O. Box 2359
Honolulu, HI 96804

Ms. Karen Popek
Georgia Department of Natural Resources
1200 Glynn Ave.
Brunswick, GA 31520

Mr. Thomas D. Potter
NOAA, Environmental Data & Information
Service
3300 Whitehaven Street
Washington, DC 20235

Mr. Michael Rawson
The Conservation Foundation
1717 Massachusetts Ave., NW
Suite 300
Washington, DC 20036

Mr. Cyrus Rhode
1101 Hickory Drive
Long Beach, MS 39560

The Honorable Joseph P. Riley, Jr.
Mayor, City of Charleston
P.O. Box 652
Charleston, SC 29401

Ms. Margaret Schneider
The Conservation Foundation
1717 Massachusetts Ave., NW
Washington, DC 20036

Ms. Betty Scott
Clean Water Association of Coastal NC, Inc.
P.O. Box 1015
Wilmington, NC 28402

The Honorable Babe Schwartz
State Senate, Texas
P.O. Box 12068
Austin, TX 78711

Ms. Sallie J. Scott
Box 384
Sullivans Isalnd, SC 29482

Mr. Chris Shafer
Michigan Coastal Mgt. Program
Stevens T. Mason Building
Lansing, MI 48909

Mr. Michael Shapiro
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. Dinesh Sharma
Barrier Islands Coalition
2750 Rhode Island Ave.
Ft. Myers, FL 33901

Mr. James A. Sharp
National Realty Committee
2033 M Street, NW
Washington, DC 20036

Ms. Eileen Shea
NOAA/DOC
Office of Congressional Affairs
Main Commerce Building, Room 5225
Washington, DC 20230

Mr. John R. Sheaffer
President, Sheaffer & Roland, Inc.
130 North Franklin Street
Chicago, IL 60606

Mr. Thomas W. Shick
University of Wisconsin
455 North Park St.
Madison, WI 53706

Dr. Carl Shuster, Jr.
Federal Energy Regulatory Commission
Acting Director, Division of Energy
Technology and Environment
Washington, DC 20426

Col. Beverly C. Snow, Jr.
Executive Director, Coastal Plains
Marine Center
1518 Harbor Drive
Wilmington, NC 28401

Ms. Patricia Snow
Georgia Dept. of Natural Resources
1200 Glynn Ave.
Brunswick, GA 31520

Ms. Carol Sondheimer
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Mr. Gus Speth
Chairman, President's Council on
Environmental Quality
722 Jackson Place, NW
Washington, DC 20006

Mr. J. Roy Spradley, Jr.
Rose, Schmidt, Dixon, Hasley,
Whyte & Hardesty
818 Connecticut Ave., NW
Suite 300
Washington, DC 20006

Mr. Stephen J. Spurgeon
Southern California Gas Company
810 South Flower Street
Los Angeles, CA 90017

The Honorable Ted Stevens
United States Senate
Washington, DC 20510

Mr. Kenneth D. Stewart
NC Coastal Management Program
P.O. Box 27687
Raleigh, NC 27611

Ms. Sharron Stewart
Texas Deepwater Port Authority
NACOA
102 Carnation Street
Lake Jackson, TX 77566

Ms. Deb Stirling
Senate Committee on Commerce, Science
and Transportation
126 RSOB
Washington, DC 20510

Ms. Rosella Sussman
Office of Coastal Zone Management
3300 Whitehaven Street, NW
Washington, DC 20235

Mr. James Tabor
Department of Environmental Resources
Third and Reily Streets
P.O. Box 1467
Harrisburg, PA 17120

Mr. Richard S. Thorsell
Edison Electric Institute
1111 19th Street, NW
Washington, DC 20036

Mr. John Paul Tolson
Office of Coastal Zone Management
2001 Wisconsin Ave., NW
Washington, DC 20007

Dr. Bruce Trickey
Coastal Area Board
P.O. Box 755
Daphne, AL 36526

Mr. W. Sam Tucker, Jr.
Manager, Environmental Affairs
Florida Power & Light Company
P.O. Box 529100
Miami, Fl 33152

Ms. Nancy R. Tuor
Oregon Department of Land
Conservation & Development
1175 Court Street, NE
Salem, OR 97310

John A. Vance, Esquire
Pacific Gas & Electric Company
1050 17th Street, NW
Washington, DC 20036

The Honorable James M. Waddell, Jr.
State Senate, South Carolina
P.O. Box 1026
Beaufort, SC 29902

Mr. Carl Walsh
South Carolina Coastal Council
110 Bonnoitt Street
Moncks Corner, SC 29461

Mr. McIver Watson
Coastal Plains Regional Commission
215 E. Bay Street
Charleston, SC 29401

Robin T. Waxman
National Marine Fisheries Service
3300 Whitehaven Street, NW
Washington, DC 20235

Mr. Michael Wilmar
Executive Director, Bay Conservation
& Development Commission
30 Van Ness Ave., Room 2011
San Francisco, CA 94102

Mr. Duane E. Wegner
Department of Ecology/Office of
Land Programs/Shorelands Division
St. Martin's College, Mail Stop PV-11
Olympia, WA 98504

Mr. Robert J. Weiss
Department of Community Affairs
Division of Local Resources
Room 530, Carlton Bldg.
Tallahasse, FL 32301

Mr. David Worley
Florida Office of Coastal Mgmt.
2600 Blair Stone Road
Tallahassee, FL 32301

Mr. Avery Youn
Department of Planning &
Economic Development
P.O. Box 2359
Honolulu, HI 96720

Ms. Diane C. Hunt
Dept. of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32301

Mr. James L. Quinn
Florida Office of Coastal Mgmt.
2600 Blair Stone Road
Tallahassee, FL 32301