Volume I

P U B L I C H E A R I N G

before

SENATE COMMITTEE ON ENERGY, AGRICULTURE AND ENVIRONMENT

on

SENATE BILLS 689 AND 200
(Oil Ports)

Held:
February 25, 1974
Assembly Chamber
State House
Trenton, New Jersey

MEMBERS OF COMMITTEE PRESENT:

Senator Joseph L. McGahn (Chairman)
Senator Thomas G. Dunn
Senator Bernard J. Dwyer

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I N D E X

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SENATOR JOSEPH L. MC GAHN (Chairman): Good morning, ladies and gentlemen. I am Senator McGahn, Chairman of the Energy, Agriculture and Environment Committee. To my right is Senator Dwyer and to my left is Senator Dunn.

We are gathered to hold public hearings on Bill S 200 and conversely, at the same time, on Senate Bill 689. S 200, which is Senator Dodd's bill, would provide for the construction and operation of a single oil transfer facility in waters off the New Jersey shore by a public corporation created by this act. The act limits the type of facility which may be constructed and operated by the corporation. It provides for the preparation of an environmental impact statement and grants the Governor a veto over any decision of the corporation to construct or operate an oil transfer facility.

This Committee is soliciting testimony from industrial, environmental, civic and governmental groups to determine the impact of the construction of a deep water petroleum port on the energy crisis, on the environment, and on the on-shore development of land.

We are certainly desirous of getting all the testimony we can so we can make a determination as to the suitability of referring this bill out of committee.

Conversely, Senate Bill 689, sponsored by Senator Buehler, is a bill to ban the construction of a deep water port. We are interested in the views of people on both these bills.

If any individuals have a prepared statement, we would prefer that you give that to Mr. Mattek, our Legislative Aide and Research Assistant, who will supply it to us. We would ask you to limit your remarks to the statement that you make. If, perchance, there has been a similar statement made by an individual preceding you, we would ask that you do not reiterate that, but you deal with those points that you consider pertinent because we do intend to hold more than

responsibility in the event of a mishap; protection of New Jersey's vital tourist industry; the economic factor which is an ancillary benefit to a State-owned and operated facility. These areas and others must be thoughtfully discussed and answers given to any questions which may arise.

Only after this exhaustive exploration and discussion can we be convinced that those who oppose and those who propose do so from a position of knowledge, that those who make public pronouncements do so from a position of education,understanding and not superficial misconception, that those who vote on the fate of S-200 truly vote the will of the citizens of the State of New Jersey.

These hearings will probably last quite a while, yet, if we restrict ourselves to the merits of the bill and dedicate this time to the deduction of clear and intelligible facts, then this will truly have been time well spent. Thank you very much.

SENATOR MC GAHN: Do any members have any questions to ask? (No response.)

Thank you very much.

The next gentleman to testify will be Mr. Joseph T. Barber, Acting Commissioner of the Department of Environmental Protection.

J O S E P H T. B A R B E R: Mr. Chairman and members of the Committee, I appreciate the opportunity to testify today on Senate Bill 200, "The Oil Transfer Facility Corporation Act".

In the midst of what some call an energy crisis, we can expect many pieces of legislation designed to alleviate the effects of the fuel shortages which are now evident. Some of this legislation will, like S-200, attempt to solve the energy problem by providing more fuel. Some will attempt to curb society's apparently insatiable demand for energy, and some will seek to provide new sources of power for the

future. Such legislation should be examined for side effects, or secondary effects, which would arise from its implementation, and also examined to see if the legislation forms a consistent part of an over-all energy policy for the State and the nation.

My testimony today will be devoted solely to assessing the environmental impact which would result from enacting the proposed legislation, S-200, and to establishing the environmental considerations which should be included in a comprehensive energy policy.

I will leave it to the wisdom of this committee, equipped with the testimony heard from others, to weigh these environmental considerations and strike the proper balance.

Before proceeding to the detailed comments, one piece of philosophy is required. There are those who see economics and the environment as conflicting, and those who regard energy and the environment as opposing forces. Nothing could be further from the truth. Many of our environmental problems are economic problems; a polluter creates costs which are borne by someone else. Energy and environment are very closely related; in fact, kilowatt hours are to ecology what dollars are to economics: a basic unit of measurement in the science. The society which uses energy most efficiently will likely be environmentally sound.

Deepwater Ports: Background

New Jersey is the most densely populated State in the nation. It is located between two giant urban complexes, yet 60% of our land area remains open. The northern part of New Jersey is intensively developed and supports the densest concentration of oil and chemical industries in the country. The southern part

of the State remains rural, and where not devoted to agricultural uses, supports a large and growing tourist economy.

We have recognized that in New Jersey, as elsewhere across the nation, land use is the single most important factor in determining the quality of the environment. Land use shapes a state's future and its destiny.

As you may be aware, New Jersey has in the past rejected as unacceptable the current Army Corps of Engineers' proposals to build deepwater ports off New Jersey. Our objections to the proposed port facilities not only concern their primary environmental impact, but also more importantly, are based on the secondary and tertiary impacts of the proposed facilities on land use and the environment.

The Corps of Engineers issued on 8 January 1973, a "Summary of Environmental Considerations" of the proposed port facilities. The document is quite frank. Among the impacts on land use and the environment it identifies are:

Presently recreation-oriented counties such as Cumberland and Cape May would be transformed to a densely developed area such as the areas to the north;

Thirty miles of development would be required for on-shore facilities to support a deepwater port. This development would occupy the entire bayfront shoreline of Cumberland County.

The magnitude of the water needs by the industries required by the deepwater port -- to say nothing of the population and other water uses -- would pose a severe problem for the region as a whole and New Jersey in particular.

Air quality in the region would be degraded below its present high standard, because of hydrocarbon and sulfur compound emissions from support facilities. The industrial complex supporting the facility would produce sewage with a biological oxygen demand equal to the untreated liquid wastes of a city of 250,000 population, even if those industries used the best available water treatment technology.

With information such as this, it is understandable that the State has taken its firm position in opposition to deepwater ports. But there are additional reasons, as well.

Although the Army Engineers' report does not mention them there are other impacts. The development of such a facility and its on-shore industrial support would be totally incompatible with the present uses of the area for agriculture and recreation. These industrial facilities would therefore not only result in severe adverse environmental impact, but would also lead to economic and social dislocations in the area affected.

These kinds of impacts were to be expected, and the Corps is to be complimented for making them explicit. A previous study performed for the Corps by the Arthur D. Little Company (Foreign Deep Water Port Developments - A Selective Overview of Economics, Engineering and Environmental Factors, IWR Report 71-11) found that:

> While all nations are keenly aware of the direct savings, in transport costs (to be obtained through the construction of a deepwater port), these are by no means the only or even the controlling reasons for building deepwater

ports. Regional development through the growth of coastal industrial complexes has been a major element in the decisions.

The Arthur D. Little report also found that, whether intentional or not, heavy industry that relies on imported raw materials tends to spring up around deep water ports that offer ready access to markets. The authors of the report reveal that a general maxim of port officials in both Rotterdam and Antwerp is, "In developing a port you always need twice the land you originally planned". The report also ominously notes that "In Rotterdam, congestion and a failing environment will slow the phenomenal growth of the past 20 years".

The primary rationale cited for the construction of a deepwater port is the need to import vast amounts of foreign fuels to solve our energy crisis. It is my view that one of the chief causes of the energy crisis is that demand for energy has been artificially inflated by pricing energy at less than its total cost. A recent report by the Office of Emergency Preparedness, entitled "The Potential for Energy Conservation", shows some of the ways to curb energy demand, and begin to cure the cause of the energy crisis. Energy has been subsidized by such measures as the oil-depletion allowance, the construction of barge canals, the Price-Anderson Act, all of which make the price so low that there is little incentive to conserve energy. The construction of such a port could - depending on the technique used - represent yet another government subsidy. The extension of another subsidy would only go to ameliorate the symptoms of the energy crisis without curing its causes. It would also in-

crease profits of the energy companies, with these increased profits gained at the expense of the environment, and at the long-term expense of consumers. The Little report recognizes this effect, as well. It reports that:

> The huge expenditure involved in developing ports for handling superships has given rise to second thoughts, and foreign governments are becoming increasingly aware that, while cheaper bulk materials transportation benefits the nation's economy in the long run, it also primarily benefits the oil refining and ore processing companies.

We do not have to travel far to observe the results of importing large quantities of oil into a region -- New Jersey contains less than two per cent of the land area of all the east coast states, but is host to 33 per cent of that region's oil refining capacity. Logan Township in Gloucester County is the center of a circle with a 25-mile radius, including parts of Pennsylvania and Delaware, in which 60 per cent of the east coast refinery capacity is located. A visit to the Marcus Hook area or to the Perth Amboy-Woodbridge area will indicate what an additional 30 square miles of New Jersey will probably look like if a deepwater port is built.

We should also consider what the effects of a deepwater port will be in combination with oil production on the outer continental shelf, a possibility which may be close to becoming reality. As indicated in a study done for the Council on Environmental Quality entitled "Study on OCS Drilling", to produce 1.58 million barrels a day would require the construction of seven

huge refineries in the now pastoral agricultural and recreation-oriented counties of Cape May and Cumberland. In addition to the refineries, the two counties could also be expected to hold eight huge petro-chemical facilities.

These facilities would more than double the demand for water during the next 11 years. There is already a concern over the local area's ability to meet current water needs. The school-age population would more than double by 1985, requiring the construction of 16 new high schools in 11 years. The undeveloped land in the region is not well suited for industry, but the industrial complexes associated with oil refining would require 130,000 acres, or one-third of the undeveloped land in the two counties.

This kind of impact surpasses mere consideration of environmental codes and standards. With massive changes of this kind in store for the State, the decision as to whether or not to permit a deepwater port really depends on what kind of place we want New Jersey to be. Should we continue to provide attractive recreation and open space in South Jersey -- or should we transform it to a totally industrialized area? Should New Jersey be the refining center for the east coast? Should New Jersey have a conglomeration of economic, social and environmental opportunities? Or should we continue our pattern of endless paving?

Application of environmental standards can answer some of these questions, but not all of them. That is one of the reasons that the Council on the Future was formed recently by Executive Order of the Governor. Its task is to recommend broad policies

for dealing with the future in such a way that New Jersey becomes in fact the kind of State we want -- rather than the kind of State we inherit by default.

The Bill before you would not prevent a massive increase in refining and petro-chemical production as outlined in the Corps report and the Arthur D. Little study. It would spur construction of such facilities, together with their attendant side-effects previously mentioned. Section 3e limits the land area for support facilities to 480 acres, or three-quarters of a square mile; it prohibits new refinery location only within that area, not in the rest of the State. In Section 6d, no agency is given the power to review and approve or disapprove the environmental impact statement which the section requires the corporation to prepare. Finally, Section 26 requires the corporation to consult with DEP, but does not make it explicitly subject to all of DEP's statutes, rules, and regulations, including the Coastal Area Facilities Review Act and the Wetlands Act.

The Department especially views with the greatest concern Section 7t of the Bill (p. 10, lines 81-87). This section would allow the corporation to determine the location of the transfer facility without reference to any land use plans, whether State, county, or local. The Coastal Area Facility Review Act requires the preparation of a land use plan for the coast, based on environmental, economic, and social consideration. The most severe adverse impacts of a transfer facility would be the land use impacts of secondary development. Therefore, the facility

should certainly not be exempt from such land use regulations as the Flood Plains Act, the Wetlands Act, or the Coastal Act. If such a facility is built, only the strict application of these statutes can ameliorate its adverse effects.

In my judgment, this Bill represents a sincere attempt to balance environmental and energy demands while constructing a superport. However, a threat to the environment still exists. Also, a special threat is posed to the multi-billion dollar resort industry, which is by far New Jersey's greatest asset. The Bill also contains certain technical inadequacies, which at the very least should be addressed. Beyond that it is a very serious question as to whether or not crowded little New Jersey should make a deliberate decision to spur on new, massive, major industrial facilities. We should realize that there are "pluses" and "minuses" in any decision. Our real concern should be for the NET impact on society. We should decide consciously how we want our children and their children and all of our successors to judge the results of the decision we are about to make.

Thank you very much.

SENATOR MC GAHN: Mr. Barber, thank you very much.

I have a few questions. Is it your contention that existing land use acts now in existence would be pre-empted by this bill?

MR. BARBER: That is my understanding.

SENATOR MC GAHN: That is my understanding also.

Is it your understanding also as far as the Coastal Facility Review Act is concerned that while it says that the Department shall within 2 years make a survey of existing coastal facilities and then come up with a land-use plan by the third year, which would be voted upon by the Legislature, at the moment this really does not constitute a land-use plan?

MR. BARBER: It doesn't.

SENATOR MC GAHN: It is a regulatory thing; it is not mandatory. It does not prohibit that type of operation.

MR. BARBER: No, it does not prohibit. But we would like the opportunity to have it come to us to make a decision as to whether or not it should locate there.

SENATOR MC GAHN: Fine. Thank you. I see in your statement, you say, "Should New Jersey be the refining center for the east coast?" Are you implying at the moment that it is not the refining center for the mid-Atlantic east coast area?

MR. BARBER: I am not saying that. But it is not the center totally. Certainly in New Jersey there is a great deal of refining, but it is not the total center of the refining industry.

SENATOR MC GAHN: Well, the New Jersey, New York and Delaware Bay area actually constitutes the majority.

MR. BARBER: That's right.

SENATOR MC GAHN: Very frankly, other than Norfolk and Maine, which is very small, basically it is here.

In Jersey in this area, there are some 14,600 jobs directly related to this industry, with a total payroll of about $130 million. In addition, the ancillary facilities account for about 64,000 jobs, with a payroll of about $650 million per year.

Are you also implying that from an economic standpoint, the State of New Jersey can phase out some of the existing facilities that now are in existence?

MR. BARBER: No. As I said in the opening part of

my statement, I would not comment on the other factors involved; I would only comment on the environmental impact. I think I would leave to others the economic impact of such a deep water port.

SENATOR MC GAHN: As to the bill, basically you mention - and I agree with you - that before any oil transfer facility is undertaken, they should consult with the Department. Would you agree that that term should be "approved" by the Department rather than consulting with?

MR. BARBER: I think both are true. They should consult with and it should be approved by the Department of Environmental Protection.

SENATOR MC GAHN: I think it is fair to possibly also say that, as far as you are concerned, you make the proposition that if this were to be considered, it should be considered in addition to a concrete land-use plan that would actually prohibit in the area mentioned here the on-shore development that might simply result from this.

MR. BARBER: Well, I am not saying it should be totally prohibited. But I would think that if the plan is submitted, it is possible that there could be a compromise solution as to what should go in what area. For us to totally say "no" to such a proposition, perhaps is not the answer as well because somewhere along the line we have to consider the economic impact, and the economic impact is going to have some effect on where it is located and how many people are employed in the area. But at the same time, while I am saying that, we must also consider the impact on the resort industry which could occur if there was an accidental discharge somewhere along the line.

SENATOR MC GAHN: I agree with you there. I think, however, while it isn't specifically stated as such, that we must also consider the impact upon the counties bordering the Delaware. Certainly, I think, as we know, from an

environmental standpoint, the present system of lightering, the present system of oil distribution, in the Delaware Bay is anything but the greatest. In the newspapers in the last few days, we have read about a 285,000 oil spill in the Delaware. Within the past eight weeks, there has been a 600,000-gallon rupture of a tank. There has been another situation in which 38,000 gallons of oil spilled; another one, about 80,000. So we are really talking in the Delaware over the last eight weeks of over a million gallons of oil that are polluting the waters of the Delaware.

If, perchance, an oil transport system could cut down on this loss, would this then be feasible without any existing on-shore tank farms or on-shore facilities in Cape May County or wherever?

MR. BARBER: First of all, I don't disagree with doing anything that is going to cut down the problems that we have had the past few weeks. You may note in the latter part of my statement, I said there are "pluses" and "minuses." If there is a control of the on-shore facilities, I think the problem is lessened a great deal as far as the environmental impact is concerned. But unless there is some control in that area, we find that there is a problem.

SENATOR MC GAHN: Commissioner, one final question: If, perchance, there was included in the bill an assurance that certainly as far as the areas of the State that are covered by the Coastal Facility Review Act are concerned, such areas were very definitely precluded from this and that this would simply then be an oil distribution center to the existing tank farms and refineries that are now in existence, would your position possibly be altered to any degree?

MR. BARBER: Certainly. Of course.

SENATOR MC GAHN: Thank you.

We will hear next from Senator Jack Fay.

J O H N J. F A Y, J R.: Senators, the report that I am going to refer to and quote from at times is a report I asked for last year as an Assemblyman when this subject came before the Assembly. The people that I contacted besides groups and individuals in Middlesex County, especially in my Assembly district, were the Middlesex County Planning Board and their professional staff and the Middlesex County Board of Freeholders.

This report that I am going to read from is dated January 24, 1973, and I am sure that someone from the Board of Freeholders of Middlesex County, and particularly Douglas Powell, will report at one of the coming public hearings. The major conclusions of this report - and it happens to be mine, as one who represents the people who happen to live in the most highly-polluted area in the State, if not the eastern seaboard - are that this bill, without land use, this bill without some form of control, would cause an ecological disaster beyond anyone's wildest imagination.

I refer the people of the State and this Committee to the public health reports that have been done already in Woodbridge and in Perth Amboy, particularly the reports of Dr. Italla, the head of the Woodbridge Board of Health. I refer you to the hundreds of recurring air pollution faults from the Central Jersey Air Pollution Agency.

The facts have changed so drastically in just the last few months with relation to the energy crisis that we could very easily panic and so something unwise, such as authorizing this oil port. In that connection, I would like to refer to the report given to the Corps of Engineers at Middletown last year and also to some of their own words, some of the conclusions, and I am quoting: "Even with the location of the port in Delaware Bay, at least 8,350 additional acres of new crude oil storage, refinery and related petrochemical development will result by the year 2000 in the Middlesex-Monmouth County area if a deep water port is developed."

If we just stop there and say that the refineries can up their capacity and this new oil port will cut down on some of the problems of the tankers coming into the Kill Van Kull and into the Raritan, the fact of the matter is that this is going to put an overwhelming burden on Middlesex County. We don't have the roads. We don't have the water. We don't have the housing and we don't have the personnel for existing public services, given the present institutional arrangements found in this region.

What I am afraid is that Middlesex County is going to become the sacrificial lamb if the argument for Monmouth and Ocean Counties is accepted, that we are not going to play Russian roulette with the Jersey shore and with the tourist industry. What we would have then is the expansion of the petrochemical and oil industries in what is left - and, believe me, there is not much left - of the Middlesex County area that we are talking about.

Another conclusion in the report, and again I am quoting, is that Middlesex County will run out of land in this very short 20-year period. But at the same time, there is a very real danger, a very real probability, not a possibility, that it would run out of water and probably out of breathable air.

Most certainly the burden, the moral burden, and the major responsibility rest upon the Federal government, but the government that is directly responsible, the government that will make this decision, is going to be the State government of New Jersey.

I, for one, insist before this bill goes very much further in committee that there has to be - there absolutely has to be - some type of land-use study. An environmental impact study, to me, is too often just a cliche. Too often, it is done superficially. If we are going to do an ecological impact study of the oil port and just do it on the waters, it is hardly enough. The major burden and the major problems

are going to come when that oil starts hitting the land, the odds being it is going to hit Middlesex County, and it would be a death blow.

If this bill went dashing through both Houses under the panic and under what I am afraid is blackmail by some, for the advantage of a few, it would have to come to a screeching halt.

I don't know if the Environmental Protection people are capable of coming up with this kind of report in a few short months. When the last resignation was in the papers the other day, it was announced that they don't have the money and they don't have the staff just to deal with the water problem alone.

So I think the new Commissioner, whoever it is going to be, and Commissioner Hoffman should have no higher priority, should have no greater responsibility, than sitting down tomorrow and starting to work on every problem that has been pointed out. This is not melodrama. These figures are not exaggerated. They have been carefully calculated. They are detailed facts presented by professionals in the field of public health and in the field of ecology who certainly cannot be marked down as ecology nuts or marked down as anti-industry.

This is the report that I am submitting to your Committee and hoping that Mr. Powell, at your next meeting, can go into more specifics and more details on the points I have brought to you. Thank you.

SENATOR MC GAHN: Thank you very much, Senator. I think I can reassure you on one thing and that is simply that this is not going to be rushed through committee. We are not simply going to be blackmailed into coming out with any basic report. Very frankly, I do not think that we, nor do I think, by the same token, that the Department of Environmental Protection at this particular point in time, have the facilities to come up with a feasibility study.

We are not going on a collision course with the Energy Crisis Commission that has already been established. Incidentally, one of the mandates in that particular bill was that they do come up with siting, as far as the facilities are concerned, and various other things. I think in a sense this would fall within their purview.

From a very pragmatic standpoint, I would like to ask you one question, or possibly two. Do you honestly feel, local zoning being as it is, that you can depend upon local zoning?

SENATOR FAY: No, I don't.

SENATOR MC GAHN: By the same token, do you think the municipalities in this State are ready to have the State pre-empt their powers of zoning through State land use?

SENATOR FAY: To me, whether the local communities like it or not, the problem of pollution, it almost goes without saying, should not be left to a local community. I can see Woodbridge being very arrogant and very selfish and destroying Edison on one side of them and Rahway on the other, picking up all of the industries that pollute the air and the waters of surrounding towns.

Governor Cahill had a proposal for a State Development Plan. I don't know what Governor Byrne's thoughts on this are. But I am convinced that you have to have this kind of regional planning where we are talking about major ecological problems. No, I don't think the local community can or should handle it.

SENATOR DWYER: Senator, I will see to it that Woodbridge does not destroy Edison.

SENATOR MC GAHN: Thank you very much, Senator.

Unfortunately, because of the weather, we are having cancellations of individuals that were supposed to be here.

Mr. MacDonald, Planning Manager, Exxon Company, U.S.A.

A. W. S I T A R S K I: Senator, McGahn, I would like to thank the Committee for inviting us to this hearing. For the record, I am Al Sitarski of EXXON Company. Speaking for the company this morning will be Mr. Bob MacDonald, Manager of Planning of our Headquarters Supply Department. Also with us here to respond to any questions, if necessary, is Mr. John Mascenik, an Associate Engineer with ESSO Research and Engineering Company.

With that, I would like to turn this over to Mr. Bob MacDonald.

R O B E R T M a c D O N A L D: Thank you.

I appreciate this opportunity to discuss this morning why EXXON Company believes that a deepwater petroleum unloading terminal in the New Jersey area is needed and is in the best interest of the public and industry. My remarks today necessarily represent the views of a single company, EXXON. Likewise, I plan to talk about the needs and concept for a terminal, rather than any kind of completely developed proposal. I know of no satisfactory proposal at the present time and I think that is the reason these hearings are being held.

EXXON has been actively supporting deepwater terminals for the United States since the late 1960's because we believe that very large crude carriers, or VLCC's, as you have heard them called, in combination with deepwater crude unloading terminals provide the most environmentally sound and lowest cost system for handling the large volumes of imported crude which has been required, is required now and will be required in the future, we believe, to meet U.S. demand. I call your attention to the tables and charts in the handout that you have to illustrate our reasons for this conclusion. We will just work our way through the handout very briefly. There are a number of tables there, but I think we can go over them very rapidly.

The discussion today will cover the five topics

listed on page 1 of the handout.

First, I will review the national petroleum supply-demand balance, with particular emphasis on the East Coast. Then I will discuss the substantial environmental and economic advantages offered by modern big ship and deep-water terminal technology. We will then look specifically at design and operational aspects of Single Point Mooring (SPM) systems which form the basis for Gulf Coast deepwater terminal designs and should be equally appropriate for an East Coast terminal. I will then offer our views on potential sites for an East Coast terminal and legislative actions we believe are required at the Federal and State levels to enable construction of an East Coast terminal in the best interest of the Nation, State of New Jersey, and the industry.

Turning to supply-demand, a substantial gap exists between petroleum demand and domestic supplies in the United States. This has been illustrated very dramatically recently. During the early 1970's, foreign oil imported to the United States has grown at an unprecedented rate in order to fill this gap. In 1970, domestic production supplied 77 percent of U.S. petroleum needs, while imports supplied only 23 percent. However, during 1973 the declining domestic production and increasing demand caused imports to grow to 35 percent of U.S. petroleum supply. Prior to the Middle East embargo, several independent studies projected continued growth of foreign imports to over 10 million barrels a day by 1980.

Turning to the East Coast situation specifically, the East Coast has 1.6 million barrels a day of refining capacity and has a demand for petroleum products of some 6.8 million barrels per day, or a ratio of about 4 to 1 in demand on refining capacity.

Even the State of New Jersey with its large petroleum refineries does not have refining capacity equal to its demand for petroleum. Now some products are imported, some

are exported from the State, so there is not a complete balance on each product. But it is still not completely self-sufficient in refining capacity.

Chart 2, if you will turn to it, shows the sources of crude oil supplies to East Coast refineries from 1970 through the first 10 months of 1973. That is prior to the embargo. Here on the table at the top you see a dotted line across which shows refinery runs on the East Coast of the U.S. Historically, much of the crude came from domestic supplies, which is shown in the bottom sector on each of the bar graphs, principally by tanker from the Gulf Coast. However, the Gulf Coast has changed from a crude surplus situation to a crude deficit situation and the availability of domestic crude to East Coast refineries has been reduced dramatically. As late as 1970, about 55 percent of East Coast refinery runs were domestic crudes. During early 1973, domestic supply dropped to 15 percent of East Coast refinery runs while long haul Eastern Hemisphere sources increased to 60 percent of runs. If foreign oil is available, this trend will continue.

There are obvious questions concerning the need to import long-haul crude which is the justification for construction of an East Coast deepwater terminal. These are: the national goal of energy self-sufficiency; the prospects for development of additional U.S. crude supplies, particularly on the East Coast offshore; and, the availability of petroleum from the Eastern Hemisphere. I would like to touch very briefly on these considerations because they are very important.

President Nixon has established a goal of national energy self-sufficiency by 1980, Project Independence. We fully support this objective. However, total self-sufficiency will be difficult to achieve by the early 1980's because of the long lead times required to develop the vast energy resources which this nation possesses. In the

State of Louisiana, for example, the offshore area is the most prolific area for oil-finding and oil-producing that, I believe, we have ever encountered. They have just recently come into production at over a million barrels a day in the last two or three years. But the first Federal lease sale was made in 1954. Now that is a tremendous lead time before production really becomes appreciable. We will have the same sort of lead-time difficulties for offshore East Coast.

We are optimistic that in the long term the East Coast will develop additional crude-producing capability after exploratory rights are granted, which they have not so far; in the meantime existing reserves will continue to be depleted and demand will continue to increase. Thus, even with significant new discoveries, we believe the East Coast will continue to require imported oil for many years.

These foreign imports will continue to be predominately from the Eastern Hemisphere. The Arab embargo, which resulted from the Israeli-Arab conflict in October, is currently limiting the amount of foreign oil available to the United States. When the embargo is lifted, it can be expected that imports will increase again though and continue. When adequate crude is available to the United States refineries, the East Coast will once again necessarily revert to the situation shown on the graph there, which is dependence on foreign supplies. We believe that long-haul crude imports to the East Coast will be sufficient in quantity and duration to justify the construction of a deepwater terminal.

If you will turn to Chart 3 - and, by the way, the numbers are in the lower righthand corner - let's look at the impact of very large crude carriers on long-haul shipping requirements. I believe it is shown pretty dramatically here. The 500 thousand dead weight ton class of VLCC currently under construction will carry 3.6 million

barrels of cargo or over 15 times the cargo capacity of a 30 thousand ton vessel which carries only 220 thousand barrels. It is, therefore, apparent that significantly fewer ships of the VLCC size are required to transport crude imports than would be required today with the smaller vessels. For example, the current 1.3 million barrel a day capacity of the New Jersey-Philadelphia area refining could be supplied by waterborne imports in six 30 thousand ton ships per day. Now that is six per day. In contrast, only one 500 thousand ton VLCC arrival every 3 days would be required to supply the same volume. Comparing an average-size VLCC of 250 thousand tons with the commonly-utilized 50 thousand ton vessel, 3 fewer ship calls per day would result, which is a reduction of 80 percent.

Now here is the key to reducing oil losses through the reduction of ship traffic. The ship traffic, as you know, is the problem we have had lately with the incident occuring in the New York Harbor and the most recent incident down in the Delaware River.

Unfortunately, the U.S. does not have existing ports capable of handling modern large crude carriers. The largest vessels commonly used for delivering crude to the East Coast ports can carry only 75 thousand tons, but very few of our existing ports can handle even these tankers. In order to accommodate deep draft VLCC's, deepwater crude unloading terminals are needed. The Federal Council on Environmental Quality has concluded that utilization of very large crude carriers in combination with deepwater terminals would reduce spills by a factor of 10 compared to current operations.

Although the reduction in the number of ship calls and transfer operations made possible by the large vessels is a significant factor in providing improved safety, analysis of the data we have suggests that other factors also favor the large ships. The large ships show significantly lower spill records per unit of capacity on the ocean than small vessels. Their record per unit of capacity per port call

is even better. Thus, even when we account for the fact that small vessels tend to make more port calls than large, long-haul ships, the bigger ships perform better. The newness of the larger ships is probably a major factor in the improved performance.

Very large crude carriers and deepwater terminals also offer substantial economic advantages over the smaller vessels. I have deliberately put this second. It is shown on Chart No. 4. I believe it is second in our order of preference. The main reason for the large crude carriers is environmental; the secondary reason is economics.

This shows on Chart 4 that a 250 thousand ton ship can carry crude for about 45 percent of the cost per barrel of a 30 thousand ton ship. Similarly, the relative cost of a 500 thousand ton ship is only 38 percent of the cost of the smaller ship. Typical long-haul costs from the Persian Gulf or Africa to the East Coast can therefore be reduced greatly by using the VLCC's rather than smaller vessels for the entire voyage. However, these widely quoted "savings" for the entire voyage are misleading when applied to U.S. deepwater terminals because alternatives already exist which permit realization of most of the VLCC economic savings without deepwater terminals in the U.S.

Now on Chart No. 5 we show a map which shows relatively here the long distance from the Persian Gulf where the crude source is to the East Coast where the demand is. The voyage is around a 24,000-mile trip around the southern tip of Africa. For this voyage, the savings of a VLCC direct to the U.S. versus the small ship direct to the U.S. is very substantial. However, even without U.S. deepwater terminals, VLCC's can be used for most of the voyage by transshipping through existing deepwater terminals in the Caribbean or Canada as shown on this map. The VLCC's are unloaded at the transshipping terminal and the crude loaded onto smaller vessels which can then enter U.S. ports. Transshipping significantly reduces the economic incentive

for U.S. deepwater terminals. For example, U.S. Treasury Department studies indicate that an offshore New Jersey terminal would offer savings of about 3 to 11 cents a barrel compared to transshipping. Most of the oil companies that I am aware of are transshipping today with long-haul crude. They were before the embargo; they will be again when the embargo is lifted.

In short, U.S. deepwater terminals will not result in the financizl "bonanza" envisioned by many because existing transshipment terminals capture most of the savings provided by the large vessels. However, we believe the potential environmental and economic advantages of deepwater terminals outweigh the associated investment risk and that an East Coast deepwater terminal should be constructed as soon as practical.

Having drawn that conclusion, let's look at Chart 6 and see how we would do it if we can go ahead with such a terminal. This lists the important criteria.

First is proximity to refining centers. Since the cost per barrel declines as throughput increases, economies of scale favor building large terminals to serve more than one refinery.

Second is adequate water depth for VLCC's expected to call. As we saw earlier, the 500 thousand ton class of tanker may draw 95 feet when fully loaded. Use of the largest tankers reduces long-haul costs.

Favorable weather and sea conditions are needed to prevent excessive unloading facility downtime.

The fourth item is environmental impact. Consideration must be given to the potential positive and negative impact the facility could have on the near shore ecological system. This includes such factors as dredging, effect of potential spills and changing ship traffic levels and patterns.

Chart 7 gets more specific, but gets to the whole U.S. problem. It identifies the major refining centers in

the United States. The Gulf Coast has the largest concentration of refining capacity with 3.3 million barrels a day in Texas and 1.4 million barrels a day in Louisiana. In addition, a large portion of the Midwest capacity of 2.2 million barrels a day shown here connects from the Gulf Coast by pipeline. New Jersey area refineries had a January 1973 capacity of 1.3 million barrels a day, while California refineries had a capacity of 1.8.

While production from Alaska should soon alleviate the West Coast need for foreign oil, the other refining centers should experience increasing demand for imports as time goes on. Therefore, we see a need for at least three deep-water terminals - two along the Gulf Coast to serve the Texas, Louisiana and Midwest refineries, plus at least one along the East Coast to serve existing refineries in New Jersey, Delaware, and Pennsylvania.

Of the three areas identified as currently needing deepwater terminals, substantial progress has been made only on the Gulf Coast.

In Texas, the SEADOCK project is moving forward. SEADOCK is a corporation made up of 13 petroleum-oriented companies, including Exxon. Much of the design has been completed and a terminal site has been selected in 110 feet of water in the open Gulf 30 miles offshore Freeport, Texas. To date, SEADOCK has expended some 2.6 million dollars on feasibility, environmental, and preliminary design studies. The project is planning for an ultimate capacity in excess of 3 million barrels a day and an estimated cost of $400 million, excluding the pipeline system to the refineries.

In Louisiana, the LOOP project is also moving forward. LOOP is a corporation made up of 16-member companies, also including Exxon. LOOP has selected a site 22 miles offshore in the open Gulf in 110 feet of water, 70 miles south of New Orleans. The ultimate cost and capacity of the LOOP project will be quite similar to SEADOCK. Both Gulf Coast

projects could be operational by 1977.

There are three major types of terminals which could be built off the East Coast: (1) an artificial island with fixed berths similar to conventional piers and a tank farm. These facilities are normally prohibitively expensive, require massive dredging, and must be placed in protected waters. (2) A sea island or fixed pier offshore with the storage facilities located onshore. This type of terminal is normally either protected by a breakwater or located in a naturally sheltered location. (3) A single point mooring (SPM) or monobuoy cluster and this is shown on Chart 8, if you will turn to that. This is a schematic obviously. The tanker is moored to a monobuoy far offshore which actually is invisible from shore in almost every case, with connecting pipelines to a pumping platform and onshore storage facilities. SPM's are capable of operating in considerably rougher seas than other terminals and can, therefore, be located much further offshore and in relatively unprotected areas. Over 100 of these installations are in use around the world. Two types are used. These are shown on Charts 9 and 10, if you will turn to them. On Chart 9 is a catenary anchor leg mooring. On Chart 10 is a single anchor leg mooring. Our little handout leaves a lot to be desired, being in black and white. I think we have one which we would like to offer the Committee which may be desirable for your use in further consideration of this, which does give a much better representation of what a tanker moored offshore does look like at one of these single point moorings. It is a very simple installation, much like a bobber with the ship downwind from it and free to circle around it as the wind changes. Both LOOP and SEADOCK plan to utilize SPM's at their terminals and the Corps of Engineers proposed an SPM 13 miles offshore New Jersey as the best alternative for an East Coast terminal.

We would be glad to go into details of technology in the use of an SPM with any of you at your leisure.

If you don't want to do it today, we would be glad to come back. John Mascenik happens to be very expert in both the design and the utilization of these systems and we will be at your disposal to whatever amount you want.

If you will turn to Chart 11 now, this summarizes some of the considerations pertinent to an offshore New Jersey deepwater terminal location.

Natural water depth of over 100 feet which is adequate to handle the largest VLCC's is found within a reasonable distance, approximately 13 miles, from shore. This means that no dredging would be required.

Based on a literature search, it appears to us that weather conditions in the Atlantic offshore Long Branch are comparable to the Gulf of Mexico and that resulting weather outages should be within acceptable limits. True, you have a different weather pattern with the months of the year. You have slightly more fog and low visibility days on the East Coast, but you still should have at least an 85 percent factor of being able to unload the day that you come in. Long Island provides some shelter here from the northern winds and waves and the persistent fog is relatively infrequent that far offshore.

Visual impact from an offshore facility would be minimal. A VLCC moored 13 miles off Long Branch would not be visible from shore. The pipelines would be buried and lost in the sand. The onshore tank farm can be located inland some distance from the coastline, hidden by surroundings for minimum visual impact. Buried pipelines have an excellent safety record and provide the ideal transportation system between SPM's and the onshore storage terminal.

With the SPM facility, tankers stay far offshore. This results in several environmental advantages. By virtue of the remote offshore location, ecologically sensitive bays and estuaries will not be harmed by the possibility of minor accidental spills. This is particularly important

because at the present time, these types of spill do occur in existing harbors. Also, by allowing the ships to maneuver in the open sea, rather than in narrow channels, harbors and bays, we feel the possibilities of any accidents will be tremendously reduced.

Chart 12, if you will turn to it, illustrates that point. It shows historical data which were gathered by the Coast Guard on collisions and groundings and dramatically demonstrates that most oil spill accidents occur where harbor congestion is great and where ship maneuverability is restricted by narrow, winding channels. Such accidents are quite rare on the open sea, as you can see. Exposure to this type of accident will certainly be reduced if the large crude carrier delivers its crude to an offshore deepwater terminal which would utilize the latest traffic control and communications technology.

At least one terminal is needed now to serve existing East Coast refineries, even if no new refinery or expansions are ever built. Chart 13 shows the refining industry in New Jersey, location and capacity of existing refineries. In January 1973, the New York Harbor area refineries had a capacity of 405 thousand barrels a day and the Philadelphia area refineries had a capacity of 914 thousand barrels a day. Total area capacity was about 1.3 million barrels a day. As you know, additional capacity additions have been announced in this area. A terminal to serve these refineries needs to be built alongside the New Jersey or Delaware Coastline.

As you know, a Delaware Bay site has been pursued for many years by an industry group, Delaware Bay Transportation Company, of which Exxon is a member. This site has been prohibited by Delaware's Coastal Zoning Act of 1971; however, legislative proposals are currently under consideration in Delaware which might permit construction in the Bay. Other proposals are being considered to serve new refining capacity which has been proposed for Massachusetts (that is

MASSPORT), off the Carolinas (that is the Coastal Plains Regional Commission), in Maine and in New Hampshire.

We believe that an offshore Long Branch SPM terminal deserves some serious consideration. Chart 14, if you will turn to that, shows a possible system for the Long Branch site. The SPM facility would be located some 13 miles offshore in water approximately 110 feet deep, but still protected to a degree by the shoreline angles you can see out of New York Harbor. Underwater buried pipelines would transport the oil to storage tanks onshore. Buried pipelines onshore would distribute the oil to those refineries desiring to participate. It is important to reemphasize that a deepwater terminal is needed to supply crude to existing refineries and might well be justified to serve only a portion of the existing refineries in the area.

Chart 15 points out that we are aware that the potential impact of a deepwater terminal on regional development is one of the major concerns of the citizens of New Jersey.

There is an economic incentive to expand East Coast refining capacity and that has been talked about at some length this morning here. However, this incentive derives from the demand on the East Coast and the fact that present refining capacity is less than a fourth of the East Coast demand for oil. It does not derive from the fact that people want to build the refining capacity where you have a deepwater terminal necessarily, although this would be a fine place. We believe the incentive will exist both with and without a deepwater terminal.

Expansion of East Coast refining capacity in a controlled fashion would provide jobs and add a significant tax base. However, the location of both new refineries and expansions should be controlled through State land use planning. We do not believe prohibition of a deepwater crude terminal is either an effective or an intelligent way to control industrial land usage.

As shown on Chart 16, a deepwater crude unloading terminal will result in a number of economic benefits to the people of New Jersey. Lower crude oil transportation costs versus the transshipping alternative should result in a modes reduction in the cost of energy. The State would receive significant property, income, and franchise tax revenues if industry owned the terminal facility and the associated pipelines. The project would contribute to increased employment, certainly during the construction phase. Finally, the terminal would enhance the opportunity to attract new industry growth to whatever degree desired by the State of New Jersey.

Turning to the legislation question, many proposed terminals are beyond the limits of recognized state jurisdiction. For this reason, Federal legislation, asserting jurisdiction over the seabed of the outer continental shelf is required for offshore terminal projects to proceed. Several bills have been introduced in the Houses of Congress in Washington for this purpose. They generally make the necessary jurisdictional claim, designate a lead agency for granting the necessary permits, set up a regulating mechanism, and insure state involvement in the permitting process. We believe such Federal legislation will be enacted soon and although the final form is uncertain, the State will definitely have a strong voice in the permitting process.

Several states are also considering various forms of legislation in regard to deepwater terminals. We are encouraged that New Jersey is moving forward in this sensitive, but critically important area, and we concur with many provisions of the bill suggested, S-200.

1. That need does exist for an East Coast deepwater terminal.

2. That a deepwater terminal would be an environmental improvement for New Jersey over the present situation.

3. The most economically sound and efficient transportation system for long haul crude imports is shipment in VLCC's direct to U.S. deepwater terminals.

However, there are some provisions of Senate Bill 200 which we believe could prove counterproductive. First, state financing and ownership as implied, but not necessarily required, in S 200 may be undesirable and unnecessary:

1. State ownership is not required to protect the environment. Federal legislation will provide for extensive regulation of offshore facilities while the state will regulate operations within its boundaries. Federal legislation will allow the state a strong voice in the siting, design and operation of the facility. The state can control coastal development through progressive land use legislation. With such controls and industry's proven technical and operational expertise, we are convinced that the private sector could provide more effective, efficient environmental control when properly regulated.

2. Problems associated with state financing could result in significant delays and could conceivable scuttle the project. The burden of economic risk as typified by the recent embargo would be better borne by the petroleum industry than by the state. A state subsidy for the deepwater terminal is neither needed or appropriate.

3. Special tariffs imposed to generate profits for the state could eliminate or raise uncertainty about the rather small potential savings projected for a deepwater terminal compared to the transshipping alternatives.

4. Private industry has demonstrated a willingness to invest in deepwater terminals in the U.S. Gulf Coast. We believe industry should be encouraged to do so in New Jersey.

Second, Senate Bill 200 suggests that the terminal operator should assume unlimited liability for pollution damage. We urge you to avoid unlimited liability provisions which are essentially impossible to insure against.

I want to emphasize that oil companies already assume substantial financial liability for pollution cleanup as shown on Chart 17. Two voluntary agreements ensure coverage of oil pollution losses resulting from tanker operations. The first agreement is known as TOVALOP (Tankers Owners Voluntary Agreement concerning Liability for Oil Pollution). This agreement covers most tankers serving the United States; under it, clean up costs are insured based on $100 per gross ton registered up to $10 million and up to $15 million for third party legal liability. Backing up this agreement is another agreement known as CRISTAL (Contract Regarding an Interim Supplement to Tanker Liability for oil pollution). Under CRISTAL, participating oil companies have provided additional coverage up to $30 million total for the correction of oil pollution. A key factor of these agreements is that control and cleanup action is started immediately, before responsibility for the accident is assigned.

For U.S. waters, the Water Quality Improvement Act of 1970 legally assigns liability of $100 per gross registered ton up to a maximum of fourteen million dollars to the owner or operator of vessels, and up to eight million dollars for pollution from terminals. Clearly, my company and others, as tanker and cargo owners and potential participants in deepwater terminals, have a vital economic interest in reducing the potential for pollution.

To summarize, we feel that New Jersey could encourage construction of a deepwater terminal by providing legislation which will create the proper business environment to allow deepwater terminal construction while leaving open options for private ownership and financing, and by encouraging formation of an industry group to conduct feasibility studies, preliminary design, and environmental analysis.

If you have any questions, I would be glad to try and answer them.

(Charts referred to by Mr. MacDonald can be found beginning on page 48 A.)

SENATOR MC GAHN: Sir, what do you anticipate the expanded needs for refining capacity in this area by 1985 to be?

MR. MAC DONALD: That is a very difficult question to answer really. As I have said, the demand right now for petroleum products on the East Coast is something in the order of four times the refining capacity. This demand is being satisfied at present by the refineries that you have plus refineries in the Caribbean which are providing imports, particularly heavy fuel oil, and Gulf Coast refineries which are shipping product into this area.

I think that this system works fairly well. But I would suggest that the East Coast should become somewhat less dependent on other areas than the ratio of one-fourth of their own refining capacity. I would think any change should be gradual. It is difficult to say, but I believe that at least some new refineries are needed. The last new refinery in New Jersey, I believe, was the Hess Refinery built about 15 years ago. With the tremendous demand for petroleum products, I would think maybe we have even a little overkill today in reducing the ability of companies to come in and build new refineries.

SENATOR MC GAHN: Basically the point of my question is the fact that it has been estimated, I believe, that in 1985 we will have to import about 16 million barrels of oil per year. The Mid-Atlantic refineries utilize approximately one-third of that. Is that correct? Right now we are importing 3 million; Mid-Atlantic is using 1.3, crude.

MR. MAC DONALD: I think the real question comes down to not what you need because refineries can be built in other locations and I think there is no way that you would want to build all the refineries to meet East Coast demand on the East Coast. There is no way we would want to do that.

SENATOR MC GAHN: Can the refinery capacity be expanded at the present locations?

MR. MAC DONALD: As nearly as I am able to tell - and I, of course can only speak for my own company and from what I have read in the papers and trade journals about other people - but I believe some substantial expansion could occur at existing locations. For my own rough purposes, I would guess that most refineries could expand over, say 1971 capacity by about a factor of 2.

SENATOR MC GAHN: Under our existing pipeline system coming from the Gulf Coast, which is the Colonial Pipeline, this is not transshipping crude, is that correct?

MR. MAC DONALD: Well, the Colonial Pipeline only moves products.

SENATOR MC GAHN: Is there any anticipation of expanding this to ship crude?

MR. MAC DONALD: Well, our company is not an owner or a participant in Colonial and, as a matter of fact, it only ships very occasionally in it at the present time. So I really don't know their plans. I have heard of no plans of anybody to move crude to the East Coast by way of a pipeline.

SENATOR MC GAHN: Capline does move crude though.

MR. MAC DONALD: -- to the Midwest.

SENATOR MC GAHN: Despite the fact that I agree with you that the large crude carriers reduce the amount of spill by a factor of 10, by the same token a 312,000 dead-weight-ton carrier, if an accident or a fire should occur, would actually pollute the area with some 2,250,000 barrels of oil, I believe. And the statement was made by an individual from the Army Corps of Engineers that this would, therefore, pollute the beaches for 200 miles to a depth of 2 inches.

MR. MAC DONALD: Well, I believe that really the risk area was spoken to best probably by the studies made by the Council on Environmental Quality that I quoted earlier. And, by the way, I will provide you with some copies of the

rough text I was working from so you can see the references, etc., if you need to look up any of them. But I really think the question on large ships is that they are modern ships. They are kept in the best of trim. They are substantially superior to the average fleet that is available today for shipping crude into the United States.

There has recently been a program or a set of standards adopted by an international agency, IMCO, which is related to the UN, which will limit the size of tanks on these ships, so that if you had an accidental breakage of some ship, you would have a relatively small oil spill. They are limiting the size of individual tanks to the same size you have in existing ships. So in theory you wouldn't have any larger spill occurring from an accident than you would today. The difference would be, you are much less likely to have an accident as far offshore as we are and, if you had the accident that far offshore with that small an amount of oil, you do have a chance for the oil to weather and to not be harmful to either vegetation or to animals by the time it reaches the shore.

SENATOR MC GAHN: Obviously, of course, you favor private ownership of deepwater ports. The Texas Offshore Terminal Commission has voted in favor of public ownership, not private, and this, of course, will be left up to the Texas Legislature. However, in view of the energy crisis and what has appeared in the newspapers, very honestly, I think that there is some credibility as far as the oil companies are concerned, in getting both downstream and upstream as far as operations are concerned. The question has been raised, despite the fact that it has been resolved as far as onshore pipelines are concerned, whether this would in fact constitute an anti-trust type of action, and in this instance, it might be basically a valid thing.

As you well know, there is also - probably it will get noplace at all - in Congress a proposal spearheaded by

Les Aspen attempting to diversify the oil companies, certainly in a horizontal manner from the refining, production, manufacturing and marketing. What guarantee would the consumer have that the reduced cost of transporting gasoline would be reflected back in a reduced cost of the gas that he is getting out of the pump?

MR. MAC DONALD: Well, I believe you can look really to two areas. First, let's speak to the anti-trust question because this is a valid area. This is an area which over many years now, the pipe line companies, many of which had joint ownership, have been subject to and have been subject to a tremendous amount of open scrutiny. The Justice Department has looked about as hard as they can. The FTC has looked as hard as they can. And in the recent hearings in the U.S. Senate before, I believe, the Commerce Committee, the Justice Department testified that they have not been able to uncover any evidence or develop any kind of a case where there was a problem with anti-trust.

That is not because there might not be an opportunity; it is because the type of conduct that must be carried out in these joint ventures is open to public scrutiny and is handled very carefully.

I believe that that kind of a record probably is the best thing I can say in standing behind the anti-trust question. It is much like carrying on a business in a fish bowl, in all honesty.

On the other side of it, you say, what guarantee can you have of efficiency, and you have a two-step process. First of all, we have envisioned all offshore terminals would be regulated by the ICC. I think the jurisdiction needs to be extended to them as a part of the Federal legislation. But this kind of jurisdiction is quite possible. We have presumed all would be common carriers, so that they would be open to all comers, not just the owners; that the rate structure would be established under the consent decree

to require a 7 percent return on valuation as the pipelines have; and that, therefore, the rates would be fair, but would include a charge for risk on these kinds of terminals, providing an average return on investment. There has been quite a bit of work done in the Federal scene in looking at the return on pipeline investments and this appears to be set at a reasonable rate today. There may be more legislation on the question of pipeline investment and return in the future though. I think it is properly a Federal area.

Then you count on the fact that there are several companies that will have the advantage of a deepwater terminal and, under the American competitive system, pass on the profits. Over the past few years, I think there certainly has been a lot of information put out - recently there have been several articles in the papers - that indicates what kinds of returns the oil companies are getting. The amazing thing about the returns to the oil companies is how much of an increase it took this last year to get to where the oil companies now are making the same return as normal U.S. manufacturing does. For years they were below the average of U.S. manufacturing. They had around 12 percent; the oil companies were making 9 to 10 percent return on shareholders' equity. This last year they have come back to where they were slightly above it. I don't think we can expect that in a competitive environment to hold for very long.

SENATOR MC GAHN: As you have mentioned, you do not favor, of course, the State licensing these facilities nor charging fee, toll or whatever the rate for transmission of oil through the pipelines?

MR. MAC DONALD: I am not unequivocally opposed to those sorts of things as a list. I think the State should have a very strong voice in what is done in the State. I wouldn't have anything to do with a deepwater terminal

which was in conflict with the desires of the State. I wouldn't even want to ship through one nor own one. It would be too difficult to operate. The State can shut you off other ways. It has got to be something the State does want and is willing to put up with. So the vetoing really is a moot point in my opinion.

SENATOR MC GAHN: I am happy to hear you say you favor the veto rather than simply consultation as President Nixon does.

There must be a rather strong land-use plan associated with this because this is the only way the State, very frankly, can control onshore development.

MR. MAC DONALD: I think the veto can be structured in such a way that it becomes quite a political football in the state. I think it should be structured in some way so that it is not and the state has a good valid voice on it rather than just a question of whoever vetoes it may or may not become elected next time. I think you have to be careful to keep political pressures away from the veto. So I don't unequivocally agree with the veto either. I think some mechanism for the state to really have its complete say, though, is absolutely necessary.

SENATOR MC GAHN: We are talking about something that is politically motivated and politically implemented throughout. Very frankly, the oil companies have exerted an extreme amount of pressure and, of course, I think the environmentalists are simply attempting to resist it.

Be that is it may, thank you very much.

Senator Dunn?

SENATOR DUNN: I have one question, which is not very germane to the subject matter. I am taking it for granted that these VLCC's today are built in Japan?

MR. MAC DONALD: I think there has been a split in the past. A high percentage of them so far has been built in Japan. There are a number of shipyards, I believe, under

construction around the world to build the VLCC's, including some in the United States. I believe there will be some substantial number built in the United States, probably up to the capacity of the U.S. shipyards, under the subsidy program.

SENATOR DUNN: That is my concern. It would seem to me from a public relations standpoint - and your company and other refineries are in the need of a little better PR, I think -- it seems to me that the shipyards of the United States could stand a shot in the arm too and perhaps if a few of these ships could be built in the United States ---

MR. MAC DONALD: My company has been negotiating with two shipyards and with the Commerce Department in Washington to set up potential necessary subsidies and contracts to go ahead and build some of them in the United States.

SENATOR MC GAHN: Senator, maybe I could answer that. Yes, there are ships being built in the United States today. The most recent is the Brooklyn, which was a container-carrier. At the moment there are 50 tankers between 225 thousand and 425 thousand dead-weight tons that permits have been applied for. Subsidy programs are set up by the Federal government which will simply take and subsidize the ship to the extent of the difference in cost between what it would cost to be built in a foreign shipyard and what it would cost presently here. Seatrain is building three other ships. Seatrain built the Brooklyn of 225 thousand dead-weight tons. Bethlehem Steel is building three 265 thousand dead-weight ton vessels for MFC Boston Tankers, with 43 percent subsidies, at about 30.1 million dollars each. Bethlehem has also contracted to build two 265 thousand dead-weight ton ships for Gulf Oil Corporation, with 41 percent subsidies, amounting to 33.3 million dollars each. So ships are being built in the United States under the subsidy program.

SENATOR DUNN: The subsidy being paid for by the

taxpayers, of course.

SENATOR MC GAHN: Correct.

SENATOR DUNN: It seems to me the refineries should consider picking up the entire tab for ships built in the United States. That is only an editorial opinion.

SENATOR MC GAHN: Thank you very much. I think unfortunately this is going to be decided in Washington, not in Trenton. Thank you very much.

We will now hear Ms. Mary Larson if she is present. (Not present.)

Mr. Paul Sanson? (Not present.)

Mrs. Graves, representing the Sierra Club.

D I A N E G R A V E S: Good morning. I am Diane Graves. I am Conservation Chairman for the New Jersey Chapter of the Sierra Club.

We wish to correct statements being circulated that the Sierra Club supports or is happy with S-200. We are not happy with S-200 and we do not support it. We will present our views in detail next week.

SENATOR DUNN: Do you mind if I ask who said that you were in favor of it?

MRS. GRAVES: I have had several calls from reporters saying that they had heard this from various sources which were third or fourth hand, as far as I am concerned, so I won't say. But we are concerned about this and we want to put the record straight now.

SENATOR DUNN: Thank you.

SENATOR MC GAHN: All right. Thank you.

Mr. Illario from SEED.

R O B E R T I L L A R I O: Good morning, gentlemen. My name is Robert Illario. I am a resident of Edison, New Jersey, and I speak today as President of SEED-- the Society for Economic and Environmental Development. SEED is an organization composed of industrial, business and labor members, covering a wide range of interests from the

State Chamber of Commerce to the State AFL/CIO. Sitting on my right is Lewis R. Applegate, the representative from the State Chamber of Commerce. Those represented by our members include tens of thousands of working people and several hundred business and industrial firms.

We are pleased to see this year's Legislature show a willingness to consider an offshore oil terminal, as evidenced by today's hearing. We believe that turning our back on such a terminal would be like expecting the airlines to carry more passengers, then denying them an airport at which they could land those passengers -- or forcing them to let off passengers only one-by-one using parachutes.

This analogy seems ludicrous. But, how ludicrous is it? Not to permit large tankers to offload their cargoes in the safest way possible, as envisioned by S-200, but forcing their cargoes to be lightered to smaller and older ships, with greater certainty of oil spills, is in our view equally foolish. Yet unlike other nations that is exactly what we have been doing.

Of course, between this year and last year, we have seen major changes. There has been a dramatic change in our legislative makeup. We have also seen sobering evidence of New Jersey's and the nations's dependence upon an adequate petroleum supply.

The shortages we now experience affect all segments of our Society.. They are having a great effect on our daily lives. In simple terms, we are hurting. And unless Government and industry both show foresight in their actions, working where possible together, the pain could continue for years. We must be willing to take the steps that could be temporarily unpopular with some people, but which the facts show clearly are needed.

We can argue about why today's shortages are happening -- about who or what is responsible for them. But we cannot argue with the fact that petroleum

is necessary to our way of life. It does much more than heat our homes and power our vehicles, both of which are important in themselves. It also is a needed ingredient for products so widely different as medicines, plastics, polyester clothing and thousands of other snythetics. Without it to power our factories, our unemployment rolls will continue to soar.

Neither can we argue with the fact that for many years into the future the majority of petroleum supplied to the East Coast will have to be imported on tankers. As S-200 points out, the U.S. already imports about 30 per cent of its supply. All indications are that the national figure will nearly double by the 1980's. But even more significant for New Jersey is the fact that consumption figures for this section of the country are much higher than the national average. Figures for Petroleum Administration District I -- of which New Jersey is a part -- show that the East Coast is using some 70 per cent of all residual oil and around half of all distillate oil used in the country. By far the majority of this oil -- more than 90 per cent in the case of residual oil -- has had to be imported.

More and more of today's oil cargoes are being carried in larger ships, commonly called Very Large Crude Carriers or Supertankers. As evidence of this, I call to your attention a statistic published last spring by the U.S. Naval Institute. This reports that at the beginning of 1972 there were 233 VLCC's of more than 175,000 tons already in service. There were 342 more on the order books, some of more than 500,000 tons. Clearly, it is no longer correct to say that the day of the supertanker <u>is</u> coming; in fact, it already <u>has</u> come.

Alarmingly, there is existing no U.S. port with water deep enough or pier long enough capable of handling these ships!

Another enlightening statistic, from the Maritime Administration, is that crude oil imports expected to be needed in the U.S. by 1985 would require

2600 tankers of the average size arriving today. This would mean about 345 ship arrivals in U.S. ports daily. To carry the same amount with VLCC's would require only nine arrivals a day -- or about 336 fewer.

I think no statistics are needed to reach the obvious, common-sense conclusion that the fewer the number of arrivals, the fewer the number of ships, the fewer the number of accidents.

The Council for Environmental Quality (CEQ), using analysis methods of the U.S. Coast Guard, predicts the amount of oil spills will be dramatically less (90 to 95%) from 250,000 ton supertankers using offshore terminals and pipelines than from tankers averaging 50,000 tons serving conventional ports.

An SBM -- or Single Buoy Mooring -- terminal system, which seems to be the most favored, economical and quickest to construct, would appear to offer many advantages. According to maritime experts, it provides maximum flexibility, is exceptionally seaworthy and reduces fire, pollution and collision hazards. There are said to be more than 100 SBM terminals worldwide already in service and operating safely and satisfactorily.

But it is not our purpose today to comment on technical aspects that will require careful study by scientists, engineers and others, which can be accomplished under the corporation and agencies authorized by S-200.

We simply urge that the study and action begin promptly. The time for parochialism and political delay is long past. The lines at our hiring halls and unemployment offices, not to mention our gasoline stations, warn us that further delay is a luxury which New Jersey cannot continue.

We do not suggest that construction of an offshore terminal can bring a faster end to our energy shortage. We do suggest, however, that if we don't plan and build a modern facility to which the oil we need can be brought in the future the problems we face today can be repeated and worsened tomorrow, at greater risk to our economy and environment.

An overriding question is who should construct and operate such a terminal -- the state or private industry. We believe that both operation and construction should be left to the private sector, with the state limiting its role to leasing and proper regulation. Private industry by itself should be responsible for funding this project, and is better prepared to operate it. Attempts at state operation would require a needlessly large bureaucracy and could lead inevitably to increased costs.

As to specific sections of S-200, we would question under Section 9 a, (Pg. 11) the limiting of "storage, holding or distribution facilities" to an arbitrary three-fourths of a mile. While it could reasonably be forecast that the size of such a site could be smaller, it could also be slightly larger, at this point I doubt we can say. Since there are enough other provisions in the Act to permit state control of the site area, it would be better to omit this provision, or to allow for greater flexibility.

We also question the provision under Section 6 b, (Pg. 5) which would require that three of the corporation's five members must be residents of a specific geographical area -- in this case the designated Shore Zone. As a matter of principle, we feel that a proposal of this significance, affecting the state as a whole, requires the best talent New Jersey has available, regardless of geographical residence. A case could be made, in fact, that those with the greatest stake are the citizens of the large population centers, where dependence and need perhaps are the greatest.

In conclusion, we note that the same committees of the two houses hearing this bill will also consider bills -- similar to those of last year -- which would have directly the opposite effect of S-200 and would put an outright ban on offshore terminals. These, in our opinion, are based on emotion rather than facts. We urge that you give these proposals the fast rejection they deserve.

S-200, in contrast, shows a positive approach that is urgently needed. For that reason - even though further study may bring out faults the committee can correct - we strongly urge favorable action on S-200.

Mr. Chairman, off the top of my head, may I say a word? You know, it seems in the State of New Jersey, especially in Middlesex County - which I know you are well aware of - and Monmouth County, everybody is worrying about expanding refineries and such, and maybe they have a good point but the fact remains that the refineries are there now; they are not going to be put there tomorrow. The fact remains that we have this oil coming in now.

I noted the Chairman asked a question of Exxon, with reference to these big supertankers, "if they had a collision, how many gallons would spill?" Maybe five million - I don't know what the figures are. But the fact remains now, the supertankers are in the same place they are going to be in two or three years from now if we build this deepwater port. The only difference between now and three years from now will be that now we have 30 small ships around them which have more of a tendency of getting into accidents. It seems logical to me that we would want to put a place up where this ship, alone, could come, with no little ships running around. If we are going to let the Raritan Bay become the Delaware Bay, we are very shortsighted in this matter.

I know the people in Monmouth and Middlesex Counties are concerned. It seems to me if you go up the Garden State Parkway between 6:00 and 8:00 in the morning, you are going to see a heck of a traffic jam there - Route 9 and 18. Now in the middle of December and January and February, those are not people who are going down to the shore to go swimming. If they are, they are going in the wrong direction. Those are people who live in Monmouth County, coming to work up in Middlesex. Probably one of the reasons industry has settled in Middlesex is because of the supply of oil and by-products. The shore, this year,

is probably going to hurt. They tell me that the resort areas in the southern part of the country are hurting some 30% because of fuel. I'm sure this deepwater oil port isn't going to make fuel any cheaper, but it will be a safer way to get it here.

I know that we have some very capable legislators in our area. One thought in my mind is simply this: I believe that the Environmental Protection Agency should get a look at this to make sure that it is right for the people. The only difference is, if they are going to look at it, let them look at it, study it, and come up with a determination within 60 or 90 days, not 30 months because if we wait 30 months for them, it will never be built.

Thank you, gentlemen, I appreciate your attention.

SENATOR MC GAHN: Thank you very much. I think you know we cannot come up with a determination within 60 to 90 days because we are dependent on federal legislation. What we are attempting to do is, in this particular bill, get a head start, as did Louisiana and Texas. Certainly if federal legislation is enacted, this can and possibly, in most instances, will preempt basically what we would come up with as a state.

Thank you very much, Mr. Illario.

We will hear from Mr. Abrahams and then we will break for recess.

Mr. Sheldon Abrahams, Middletown Township Environmental Committee. Is Mr. Abrahams present?

S H E L D O N A B R A H A M S: Mr. Chairman, I am pleased to have the opportunity to enter testimony on behalf of Middletown Township, whose borders include the major portion of the Raritan Bay and off whose shores the ocean facility is planned.

I want to enter the following items for your consideration. I am not going to read them all because I am sure your staff is going to go over them. I just want to list them. I have here a copy of testimony of the

Middletown Environmental Commission as given at the Corps of Engineers' hearings, December 21, 1972 and January 16, 1973. I also have a copy of Resolution number 73221, dated August 20, 1973 wherein the township of Middletown supports the Monmouth County Planning Board position in opposition to the construction of the deepwater oil port in Monmouth County.

I also have a copy here of a letter which I am submitting from the Middletown Environmental Commission to Senators Case and Williams and Congressman Howard concerning the areas of oil port opposition and the areas of extreme gasoline shortages. There is a correlation and we have questions about it.

I have here excerpts from the report to the Senate by the Ad Hoc Committee on Energy and Environment, dated April 5, 1973 and, in addition, excerpts from the dissenting report to the Ad Hoc Committee by Senator Dodd, dated the same date.

I am enclosing, also, a copy of a letter, dated February 7, 1974, from Herbert Bradshore, Acting Administrator of the Township of Middletown, to Mr. Joseph Hoffman, Commissioner of Labor and Industry, concerning the Corps of Engineers oilport plans. Attached is Mr. Hoffman's letter to the same.

The comments I want to make separately are vis-a-vis the bill itself. The development of a super agency that negates, in fact, the Environmental Protection Act, bypasses the Major Coastal Areas Review Act and the Wetlands Act - I question the wisdom of this when we have spent as much time as we have in developing these acts and then wish to wipe them out without serious consideration.

S-200 violates local home rule, a concept that has always been vociferously defended in our state. I question whether we want to just wipe that out. The spill liability, as noted in the act itself, is not absolute; it is a presumption of liability and there is no provision in there

for spills which are the result of non-negligence or non-defective operation of the tankers.

The payments, in lieu of taxes to local townships, in fact, remain a static dollar payment, based upon the value of the land when acquired. Now we all know that our taxes go up as our houses increase in value. There is no provision for that kind of increase in the land that is going to be taken over for the facilities, whether it be the pipeline or the tank farm.

Senator Buehler, in his bill, which calls for a ban on deepwater oil port construction, I believe, has taken into consideration the question of whether a growth of the 600 million dollar - or whatever figure it is - oil industry and related industry value versus a 5 billion dollar resort and shore area value in our state--

One more comment concerning the Ad Hoc Committee's report. I don't know if you have copies; I will submit this later. In the Ad Hoc Committee report, it states that oil spill from a supertanker might conceivably cause irreparable harm to the fragile ecology of land/water interface along New Jersey's coastline. Such an event might prove disasterous to the breeding and feeding grounds of marine life as well as to the State's tourist and recreational industry. Are we prepared to sacrifice all of this in the name of mother oil? Is it necessary to take this kind of step? Are there alternatives?

The Committee that prepared the Ad Hoc Report questions whether the present warnings of the energy crisis are that valid or, perhaps, there is some question about them, inasmuch as only 25% of the production in Linden serves New Jersey's needs; the balance is shipped to New York, Pennsylvania and other northern states.

One of the big questions that the Committee raises is the provision for the supertanker, or the SBM, being in open water, which would be unique as far as unloading or

offloading the VLCC's is concerned. There is no harbor of refuge for these tankers.

Now, Senator, you are aware of what's happened to the Atlantic City Pier several times. There is no assurance that it won't happen again if there is a tanker out there offloading.

In the dissent, Senator Dodd states the safety record of these bouys is also notable. The port at Milford Haven, England has a proven record of an oil loss of less than four hundredths of one percent. Translated into the gallons lost in a supertanker - and this is not a disaster, this is just normal slop - comes out to eleven thousand, four hundred gallons a year, dumped into the shore waters. In addition the Corps of Engineers - I saw you reading the report before - estimates that throughout the life of this facility they anticipate one major loss which amounts to nine million gallons. They estimate, per year, one heavy loss of one hundred and fifty thousand gallons.

Senator Dunn, you raised the question before of American built ships. In Senator Dodd's report he states that, "I have determined that the larger vessels are carefully compartmentalized and engineered." Compartmentalized construction of tankers, I think, is unique to American built ships. Double bottoms are our restriction. Foreign tankers are not built to those specifications and over 80% of the large carriers today are not American built.

Senator, thank you very much.

SENATOR MC GAHN: Thank you, also, sir.

May I address myself to your last remark? That is, simply, at the present time there are no VLCC's that are capable of simply going into any American port. Double bottom ships are simply an extra safety factor in case of grounding. American ships, as you know, have been built with a less draft - sort of a wider, should I say, width - and this is a little peculiar. I don't know, basically, what the answer to that is.

I would like to address myself only to one other thing. I think I asked this question of Senator Fay because this is something that has disturbed me for a long time; that is, New Jersey has been operating under the myth of home rule, or the tradition, should I say, of home rule and I, again, will address myself to you: Do you think your own municipality can be trusted to take into question zoning and, under excellent circumstances, to simply say "no" to a facility existing that wants to expand.

MR. ABRAHAMS: I agree with what Senator Fay said before here, he stated that certain broad types of control might better be handled by a larger body, specifically the State. I question whether or not the State should have the right to tell a local town that it can or cannot have a refinery; that it can or cannot control what may happen to its local beaches.

Now, admittedly, there is a problem - local control versus State - and I, living in a local area, wish to have some control over what happens to where I live. But, since some of these problems transcend local borders, then perhaps there is an area for superimposition of a State control. I don't know the answer. I would not like to give up my control over what happens to where I live.

SENATOR MC GAHN: Thank you.

SENATOR DUNN: May I just make a comment. I think just about every Mayor and every member of a governing body is in favor of home rule but while the good Senator here corrected the word "myth" home rule has been a myth in our State because the State mandates, dictates to municipalities in hundreds of categories and I don't see any change in store for municipalities. We are creatures of the State. The State Legislature does have the legal authority to come into a municipality and, virtually, dictate and mandate policy, as they have been doing in hundreds of categories, including and especially, in the field of education, for example.

MR. ABRAHAMS: Yes, sir, but that is when the Legislature does it. S-200 does it by fiat.

SENATOR MC GAHN: Sir, I think we are aware of some of the deficiencies in S-200 that you addressed yourself to and, very frankly, we appreciate your bringing these up but I think we of the Committee are aware of these also.

MR. ABRAHAMS: Thank you, very much.

SENATOR MC GAHN: If it is agreeable, we will adjourn for lunch and reconvene at 2:00.

(lunch recess)

(Afternoon Session)

SENATOR McGAHN: Ladies and Gentlemen, welcome to the afternoon session of the Senate Committee on Energy, Agriculture and Environment. The hearing we are holding is on S-200, which is the Oil Offshore Facility Act and at the same time we are including testimony on S-689, which is a bill that would ban the deep water ports.

I am Senator Joseph McGahn. To my right - or your left - is Senator Dwyer and to my left and your right is Senator Thomas Dunn.

Without further ado I will call the first witness this afternoon to testify and that is Senator Buehler. Senator Buehler, please?

S E N A T O R H E R B E R T J. B U E H L E R: Thank you distinguished Senators. As you know, I represent Monmouth and Ocean Counties, which geographically runs from Monmouth Beach and Long Branch along the New Jersey coast, across the Manasquan River into Point Pleasant Beach and Borough. In the new redistricting this 10th District is commonly referred to as the Coastal District.

At the very outset it must be recognized that we cannot allow our decision-making process to become undermined by the false hope that a deep water port facility off the coast of New Jersey will provide a cure-all for the present energy situation. Nor can we assume that the development of such a facility is necessary for the future well-being of the State in general. We must realize that the implementation of an oil import facility will not bring one additional barrel of crude oil into this country and will not put one additional gallon of gasoline into the fuel tanks of our automobiles. It is merely an alternate method of bringing crude oil into our refineries for processing.

In light of the federal government's stated intent to establish energy self-sufficiency as rapidly as possible, and given the fact that all authoritative sources indicate that the demand for crude products will peak by the turn of

the century as alternate energy sources are developed, the need for any such port facility to handle imported crude becomes highly doubtful.

It is imperative that we weigh carefully any short-term benefits which may be derived from such a facility not only against the immediate ecological impact damage which could result, but also against the overall impact of projected land use which could drastically alter the entire character of vast areas of our State.

Senator Dodd's bill would prohibit the development of any refinery or petro-chemical plant within a self-defined shore zone, including the counties of Middlesex, Monmouth, Ocean, Atlantic, Cape May, Cumberland and Camden. However, this prohibition would apply only to the Oil Transfer Facility Corporation created by the act and to any private facility operator with whom the corporation entered into a lease agreement. Private industry, unconnected in any way with the corportion, would be free to develop such industry anywhere in the State and as worldwide experience indicates, the tendency to so develop areas in close proximity to an offshore port system is so great as to be considered a near certainty.

I am now quoting from the report of Arthur D. Little, Inc., "Potential Onshore Effects of Deepwater Oil Terminal-Related Development - Report to the Council on Environmental Quality, 1973, Vol. 1, Pg. 56", and the quote is as follows: "Depending on their location, deep water terminals are a powerful regional decongestion or agglomeration tool." In New Jersey, the industrial character of sections of the State would absolutely have the effect of agglomeration. The political and financial pressure inherent within the oil industry would allow such private interests to develop such refining and petro-chemical complexes within the State and as stated by Chairman John Bosterud of the President's Council on Environmental Quality, "if left to its traditional citing mechanisms, industry will locate crude oil storage and new refineries close to the point where pipelines from offshore ports reach land." The total

impact of such development, which would tend towards continuing self-enlargement, could be disasterous.

Putting aside the obvious ecological considerations relating to oil spills, consider the fact that accompanying an offshore port and related refining and petro-chemical developments, would be a demand for water to operate those facilities which, according to the Army Corps of Engineers, and I am quoting, "will approach one billion gallons per day by the year 2000. If all of this water were obtained from wells, the estimated ground water reserves of the New Jersey Coastal Plain area would be overdrawn." Quoting again from the Corps of Engineers, Philadelphia, January 8, 1973, pg. 20, I for one, find the concept of having to import water for the people of New Jersey to be unconscionable and repulsive. In addition to the water demand, if the North Atlantic were to supply all of its petroleum products for the year 2000, refineries, petro-chemical plants and storage facilities would require ten times the present acreage; biological oxygen demand, a measure of water pollution, would quadruple and be equal to the raw sewage of more than 250,000 people even with secondary treatment; there will be four times as many pounds of air pollutants discharged into the atmosphere daily; and while direct employment will rise considerably, the per capita income for the people of the State of New Jersey will rise only 1% above normal growth levels. It should really be unnecessary to expound upon the magnitude of the development of social services including housing, schools, sewage service, and all other factors which would be required to support the development of approximately 100 square miles of new housing which would be needed for the industry employees in an area which only a few years before would have been almost totally undeveloped if those employees were to live in reasonable proximity to their jobs.

As we wade through the mountains of sometimes conflicting statistical data and impact projections, it becomes

increasingly clear that the concerns over any offshore port facility involves far-reaching and complex issues which simply cannot be properly dealt with within the confines of a single presentation. We must therefore now turn our attention directly to the provisions of Senate bill 200.

It should be noted from the start that with regard to many of the major concerns involved, S-200 is seriously deficient. For example, as to ecological protection the bill glaringly omits any requirement that the Oil Transfer Facility Corporation obtain any type of approval or permit from the Department of Environmental Protection or from any other agency for construction over which the corporation has complete control. The only requirement is that before the corporation may develop, construct, or operate any part of the oil transfer facility, it must prepare a statement setting forth the environmental impact and unavoidable adverse effects, as well as resource commitments and alternatives to the planned action. The only problem is that after conferring with the appropriate governmental agencies in the preparation of the statement as required by the bill, the corporation need do nothing further. There is nothing to require the corporation to file its statement with any office except that of the Governor. The corporation develops its plan, draws its statement, and is from that point totally free to effectuate its blueprint regardless of the conclusions drawn by its own study. This high degree of autonomy is pervasive throughout the entire bill and leaves no room for influence by the people through their duly elected representatives in the Legislature. The only check on the entire system as outlined by the bill is a veto power placed in the hands of the Governor.

The bill makes an attempt towards the tempering of ecological-impact based objections, which attempts, I submit, are either impossible to effectuate or are woefully inadequate. Section 9, subsection (c) contains the provision that the oil transfer facility shall not become a reality until such time as the corporation adopts provisions for the prevention, control,

and containment of any oil spill from the facility and for the prevention of any facility related air and water pollution and land damage. Not only is there a lack of adequate knowledge for the design of a spill-proof system, techniques for handling major spills, ecosystem impact, and physical geographic impact - again, I am quoting from the Corps of Engineers, pg. 7 - but in fact, all available data indicates that water and air pollution would increase dramatically upon the further development of the petroleum and petro-chemical industries. Subsection (d) purports to have the corporation or its lesee held liable for damages to property caused by spillage, but proves to be inadequate in at least two essential areas. First, any damages caused by "accident" would not be recoverable as against the corporation unless such accident was the result of improper transfer facility construction or improper handling of crude or petroleum products. Simply stated, negligence is specifically excluded as giving rise to a cause of action for recovery against the corporation. Secondly, the bill does not assure indemnification of municipalities or individuals for resort related income losses which would almost certainly result from any sizable spill. It must be kept in mind that an oil spill of any real magnitude could place extremely heavy financial burdens on affected shore areas relying strongly upon our important resort industry. I would point out, gentlemen, that the State of New Jersey is still the number one tourism state - I'm sorry, New Jersey receives $2.3 billion in revenue from the shore resort tourist trade, making tourism the number one business in the State of New Jersey. This risk alone should be sufficient to give rise to serious question regarding the development of any such oil port facility off our coast.

Further broad powers would be granted to the corporation under the provisions of the bill in the area of aquisition of lands through eminent domain, a power which has been noted by its abuses over the years. The power would be applicable

to all land, meadowlands, highways, public lands, reservations and riparian rights held by the State or any municipality as well as to any private property. Once such properties were acquired the corporation would be free to develop it in any way it saw fit within the generous guidelines set down by the bill and without being subject to any zoning or other regulatory code from which the corporation would be specifically exempt.

The Senate Ad Hoc Committee on Energy and the Environment, in its April 5, 1973 report to the Senate, made several observations with regard to offshore ports. While not addressing itself directly to the issue, the Committee questioned "whether this nation must necessarily quadruple its importation of oil by 1985, and hence whether a deepwater port must actually be constructed" - page 23 of your report. In view of the recent strong alteration of national policy in this regard this question assumes even greater importance. The report cautioned the Senate against evaluating the desirability of an oil port solely on the basis of the energy crisis, stating that the presence of a deep water facility is not necessarily vital to the continuation of an available energy supply for New Jersey. As an example, the report cited the fact that only 25% of the production of Exxon's Linden refinery is utilized in New Jersey with the remainder going to the other northeastern states. The Committee rejected the proposition of state-by-state self sufficiency, but went on to state: "This is not to say that New Jersey must necessarily accept the port and thereby accept as its destiny the role of refinery for the northeast." Quoting again, the Committee.."found many unsettling aspects of the port proposal which would dictate a cautious approach."

The Committee expressed specific concern over hazardous operating conditions for supertankers in the North Atlantic if an offshore port were to be developed, and over extensive dredging and close-to-shore oil spills, should a bay area port be utilized. Also considered was the fear that

one massive spill from a supertanker might result in far greater damage than that from present handling systems.

Further consideration was given to onshore impact, industrialization, pollution, congestion, and loss of recreational opportunities. The Committee went on to state that "it firmly believes that New Jersey can prosper without replicating the conditions that exist in the present petroleum refining areas of the State" and that "the costs of this type of development far exceed the benefits."

In summary, the Committee suggested the undertaking of a long-range study and made two specific recommendations as conditions for any port development: (1) Establishment for authority for containment and clean-up of any oil spill and a mechanism for imposing fines and assessing and collecting damages for any economic or ecological loss attributed to any spill. S-200 fails to meet this criteria as discussed previously, and seeks to substitute a half measure. (2) Legislation allowing "stringent regulation by the Department of Environmental Protection of the planning, site selection, construction, and operation of any facilities to be used in the transportation, storage, refining or processing of any petroleum products, with particular regard to the protection of the coastal areas of the State. Instead, S-200 would grant all of these potential controls to the very agency which would control or operate the port and would, in fact, require not one iota of affirmative action by the D.E.P. or any other such agency. In effect, the passage of S-200 would serve to ignore every caveat presented by the Senate Committee as well as every other authoritative source.

It must be noted at this point that of the four members of that Committee, only one failed to concur with the findings. Senator Dodd found it necessary to submit to the Senate a dissenting statement containing his exceptions to the conclusions of the Committee. Only one of them needs to be dealt with at this time. Senator Dodd contended at that

time that "it is a non-sequitur to say that merely because a deep-water mooring buoy will be built, additional refining capacity will be sought. If necessary, we could further control that possibility by mandating that any mooring buoy built shall be built only for present refining capacity need" - page 26 of the Senate report. I reiterate that every authoritative source indicates that additional refining facilities would indeed follow the construction of a port, and I find it unfortunate that there is no such restrictive mandate within Senate bill 200.

What then can we expect for the future of the State of New Jersey should the expected refining and petro-chemical industry growth follow an offshore port into our State? The Army Corps of Engineers paints a clear but bleak picture: ". . .northern New Jersey is already highly industrialized. If a port were located there, one can assume that industrialization would intensify and development of new refinery capacity would move toward southern New Jersey and toward the Philadelphia area. In the Delaware Bay scenario, one sees new industrial development first taking place in the currently agricultural, rural and recreational areas of southern New Jersey, and moving to the Philadelphia area and toward northern New Jersey. In any case, and particularly by the year 2000, there would be considerable overlap between northern and southern New Jersey; one would expect the entire mid-Atlantic region to become heavily influenced by refinery, petro-chemical and associated industrial development. Direct land use in the mid-Atlantic for crude oil storage, refinery, and related petro-chemical activities without restrictions on land-use is estimated to amount to 23,000 acres by the year 2000. . . with a total estimated land purchase of 70 square miles" - pages 18 and 19 of the Senate report. "In addition, the northern and central portions of the mid-Atlantic region would become significantly more crowded. By the year 2000, Middlesex County will have approached the character, if not the population density, of

heavily industrialized Union County, New Jersey, and the Cumberland/Cape May area will have taken on the character of industrialized Middlesex County today."

The final analysis,then, is this: the financial considerations have become inconsequential for the real price is far too high to pay. Thank you, gentlemen.

SENATOR McGAHN: Thank you very much, Senator.

May I make a correction in your statement? That is, the number one business in the State of New Jersey - the number one industry - is the petrochemical industry; some $4.1 billion. Tourism ranks second.

SENATOR BUEHLER: I'll check that out.

SENATOR McGAHN: You may check it. The figures may be a little off but the number one and two industries are not.

In testimony this morning we were made aware of, basically, some of the inequities that may be present in this bill, particularly insofar as basic land use is concerned. I do not read in the bill, however, as you do, that the prohibited areas - which are refineries or anything that is basically producing - could be preempted by oil companies who would build next to the tank farms. The bill itself provides, if you will, that a receiving terminal onshore for tank farms, etc., would be three-quarters of a square mile, excluding the right-of-way as far a pipelines are concerned. I assume, then, that you feel there is not a sufficient amount of teeth in local zoning and the Coastal Facility Review Act to simply be able to challenge this type of onshore development, is that correct?

SENATOR BUEHLER: Senator, I would say that is one of my concerns with the bill. I believe that the teeth are missing in terms of the question of land use - certainly zoning - and also the threat, I believe, could possibly amount to endangering the concept of home rule in New Jersey. I believe home rule in New Jersey is possibly the strongest of any state in the nation. I think that is a consideration. I don't pretend to sit here and think that the three-quarter mile limit would be the ultimate effect on the location of a storage

facility in Monmouth or other counties. I believe we would be misleading the people of New Jersey if we thought that would be the extent of the development of that facility in the years to come.

SENATOR McGAHN: I think we can put to rest this morning, once and for all, home rule in Jersey, which is basically a myth and a tradition and not actually a fact. Certainly, as you know, zoning in New Jersey is a local prerogative. I assume, then, that you really have no confidence in your municipal government to be able to withstand the pressures for development in keeping within their zoning ordinance?

SENATOR BUEHLER: I have great confidnece in local government. We are all aware of the fact that the case before the Supreme Court of New Jersey, which was recently remanded by the Chief Justice back to the Superior Court for a 90-day study, is a clear case in point; that we are vitally concerned that one of the most urgent issues in New Jersey is the question of zoning and land use. I would say that local municipalities must work in concert with the County Planning Boards and certainly it is about time that the State of New Jersey and the Legislature became involved in the serious problem as relates to zoning and planning.

SENATOR McGAHN: I agree with you. You would then be in favor of the State simply preempting local zoning and mandating land use on a statewide basis?

SENATOR BUEHLER: No, I didn't say that. I wouldn't go so far as to move in the direction of the Massachusetts Legislature, which, of course, has enacted that type of hard legislation. I would simply say that it is time that there be a line of communication, an open line of communication, between Trenton and our 600 plus municipalities as it relates to zoning and land use and I contend that the three-quarter mile limit in this bill is not a long-range projection of what would come after we see the facilities in operation. I am looking beyond the year 1985.

SENATOR McGAHN: Is it your contention, then, beyond the year 1985, that New Jersey will not require any crude oil for the industry in Jersey insofar as petrochemical feed stock is concerned?

SENATOR BUEHLER: I don't think the purpose of this hearing is to explore what areas there are for self-sufficiency. I would only indicate that the federal government has stated that we are going to go for self-sufficiency in energy and that would require, I think, a whole separate set of hearings as to nuclear energy. The fact is, the House of Representatives, in their recent subcommittee hearings on energy, reported that we may have to open lines again which would give us enough coal reserves for the next 1500 years-- Senator, I think I could go on at great length and explore all the other areas of energy other than crude oil.

SENATOR McGAHN: I agree with you. I think the self-sufficiency program of President Nixon projects that we increase nuclear power as well as offshore drilling. We will not get into this.

I would like to ask one question, however. Assuming that - and I think that with any offport facility there must be a rather strong land use plan to control development onshore -- Assuming that you could be assured of this so that there would be no onshore development along the coastal area,that is not already present, would your attitude toward an offshore terminal receiving facility change?

SENATOR BUEHLER: I think the purpose of these hearings is for all of us to be open-minded and I would refer the Committee to my statement, that a spill the magnitude of a supertanker which measures almost the size of the Empire State Building, according to the Army Corps of Engineers, cannot be controlled. I would ask this Committee to be reasonable and also consider my alternative, that if we didn't have that supertanker off the coast of Monmouth County we wouldn't face the eminent danger of destroying what, I said, is a $2.3 billion annual summer trade.

SENATOR McGAHN: Assuming the supertankers are, again, basically a rather new innovation and the fact that there are some 350 operational today, do you have any idea of the history of the spills of the magnitude of which you are speaking?

SENATOR BUEHLER: I can only refer to the experts and the Army Corps of Engineers' comment, that I refer to in my document, which indicates that there is no device that has been developed by the Army Corps of Engineers, or anyone else, to control a spill the magnitude of a supertanker.

SENATOR McGAHN: That's correct. They can't even control one of 285 thousand gallons in the Delaware.

SENATOR BUEHLER: I know that - touche.

SENATOR DUNN: It would be safe to assume that you are against S-200 then, right?

SENATOR BUEHLER: Senator Dunn, I confirm that.

SENATOR DUNN: How would you feel if this monobuoy was built off the shore of Elizabeth, New Jersey?

SENATOR BUEHLER: I have many friends in Elizabeth. A Mayor, who is a very close colleague of mine, I am sure, would not want to see it off the coast of Elizabeth, if that be the case, Senator.

SENATOR DUNN: I just wanted to impress you with the fact that we have a coast.

SENATOR BUEHLER: I know.

SENATOR DUNN: It's called the Port Authority.

SENATOR McGAHN: Thank you very much, Senator.

SENATOR BUEHLER: Thank you.

SENATOR McGAHN: Mr. David Chetteck? Is Mr. Chetteck present?

(not present)

Mr. James Kelly?

(not present)

Mr. Sidney Brody of the Intercontinental Pipeline Company?

I would like to request if the gentlemen happen to have a prepared copy of their remarks, will you please submit them to the Committee in advance of testifying? Thank you.

S I D N E Y L. B R O D Y: First of all I would like to say that I appreciate this opportunity to be here to address the Committee and present my remarks in connection with S - 200.

My name is Sidney L. Brody. I am Vice-President of Intercontinental Pipeline Company, Inc., referred to as (IPCO). In my everyday walk of life I am also a substantial tax-paying resident of Cumberland County and Cape May County; and a developer and retailer, and served four years as the Immediate Past Chairman of the Cumberland County Economic Development Commission; with grass roots in South Jersey; and have been responsible for much of the Cumberland County Area development in the past fifteen years in the County; and presently planning a major Beach development known as Diamond Beach in Cape May County area of Lower Township, adjacent to the World famous Wildwood; and recognize the needs of Cumberland and Cape May Counties and the Nation.

I am here to present and establish my views and projections concerning the need of an offshore Deepwater Terminal in the Atlantic Ocean off Cape May, New Jersey; and what it will mean to our local area, State and National economies and future.

Preface to Remarks and Statement - First let me preface my remarks and statement with some resume background, that must be recognized as part of the problems we are facing in this dilemma of so-called energy crisis and/or shortage.

The human race, being what it is world-over when faced with a dilemma or crisis goes through three stages:

Stage I - Complete dismay and disbelief.

Stage II - Who can we name as a scapegoat and blame our problem on?

Stage III - Finally sit down, put our heads together, and solve the problem crisis.

It's my opinion we are still at this juncture of time orbiting around Stage I--complete dismay and disbelief. Much of this has been caused by the sensationalism of the news

headlines, by the news media without analyzing fully the cause and affects and adding fuel and fury to an already confused public, as do we have a fuel shortage or do we have an energy crisis.

Do we have an energy crisis? -

a. The answer is a very definite yes, worldwide.
b. Do we have a crude shortage, of crude product to manufacture petroleum products; the answer is no.

What is the crisis? - The true crisis is integrated in a few simple facts, which everyone including the public, legislators, environmentalists have pooh-poohed, for many years despite industry warnings and testimony from experts in the field of petroleum or related fields of utility energy and private concerned citizens, who analyzed and recognized the problems.

a. We have not built a complete new refinery in the United States in the past seventeen (17) years.
b. We have not added sufficient new tank storage for adequate crude or refined reserves to keep pace with our normal use and growth patterns.
c. In short we have now outgrown the reserve tolerances of our refineries and tank storage capacities, built many years ago, and at that time faced with the national growth rate of between 5-6% annully in seventeen (17) years have exceeded the capacities built in for the original design.
d. The oil industry was right when they did their original engineering designs, and forecast properly, but when it came time 6-7 years ago, to embark on new facilities to meet the growth demand then legislation- well-meaning environmentalists, blocked these energy projects at every turn, thus using up precious time, which we are now faced with today.

In other words, their chickens have come home to roost.

e. The oil or energy percentage use, as we have developed it to fit our economy and creative comforts in the United States, is approximated as follows:

1.	Utility Industry	24%
2.	Industry	22%
3.	Home	12%
4.	Automobile	42%
	Total	100%

f. The real crisis to our county and the individual, at this point in time is the cost of the crude or refined product, which has placed a financial burden on one and all. Thus, I maintain the real crisis is economics, due to the imbalance of energy raw products, wherein we set Oil and Natural Gas up, as our major source of energy supply, literally abandoning our use of Coal, rejecting our Technology, and stifling nuclear energy programs, and at the same time making this country vunerable to global economic blackmail by the countries from whom we depended upon for supply. This, Ladies and Gentlemen, is our true crisis, which could bring us to our knees, in our economy that was birthed by energy and wheels, and cause us to become economically bankrupt, if we are tardy in implementing immediate solutions.

g. We hear and read a lot about what the Arabs and the other OPEC- countries and yes our own United States companies, who are part of the Seven-Sisters of Aramco- have done to us, in prices increases, causing oil to rise, a short time ago- from $3.50 a barrel to the present OPEC world price of approximately $10.40 a barrel. Little has been said or reported that even here on our own Continent, our good neighbor, Canada, has raised their price to the United States to $10.40

per barrel and in the words of Mitchell Sharp Secretary of State for External Affairs of the Canadian Government, quote, "If the United States firms aren't prepared to play under the new Canadian rules there will be plenty of Japanese or European firms who will". This I believe sums up our position in this global blackmail we are vunerable, unless we do something about it.

h. We must also remember we the United States, exposed the World to energy and its benefits, and taught the World the better life as a result of energy; thus creating more world-wide demands and our present crisis shortage.

Solutions to the Problems - I believe we must take the following Ten (10) Point Priority Program immediately in a contiguous effort to keep our economic and industrial ship afloat.

1. Self-imposed and restriction of the general public.
2. Immediate 100% conversion of all of our Utility plants to Coal burning on a national basis.
3. Legislation guaranteeing the Coal Industry adequate life to return their capital investment, that will be needed.
4. Expedite our utility nuclear generator station programs.
5. Allow higher Sulphur fuel to be consumed, while in this crisis period.
6. Allow exploration and drilling of off-shore Oil and Gas fields.
7. Expedite our use of Science and Technology to create synthetic fuel.
8. Pass necessary legislation for a deep water terminal to help reduce cost of Oil shipments by approximately two-thirds (2/3), by use of super-tankers.
9. Cut the red-tape for oil companies for tank storage and pipeline companies to proceed with their immediate plans to do the necessary planning and engineering to get their

necessary jobs done, on our domestic shores. At the present time over fifty-two (52) permits, licenses and hearings are required to license a Nuclear power plant, and just as many are required for any project of the Oil Industry.

10. Create a continuing Office of Energy of Cabinet rank, both nationally and State to administer our energy resources, programs and continued growth.

Much of the above of the Ten (10) Steps I have outlined is being implemented at this time, but we must have legislators of the caliber of Senator Frank Dodd, with the intestinal fortitude to sponsor legislation that may not be popular at the moment, but necessary to continue our way of life in the United States which we have all become accustomed to; and he has looked down that long road, and has realized that he, Frank Dodd, as a legislator must now count the future of our world, instead of votes and ballots.

Deepwater Terminal by Intercontinental Pipeline Co. -

1. Intercontinental Pipeline has filed with the U.S. Army Corps of Engineers, State and Federal agencies as of 12 December 1972, a proposal requesting permits to enable us to construct, install and operate a deep-water port facility for the mooring and unloading of supertankers. We believe that the installation can be accomplished with minimal immediate environmental impact and that any immediate impact can be corrected upon completion of the project. The overall impact of the project will be to reduce the risk of oil spillages and consequential environmental damage.

This deep-water port is to be installed in the Atlantic Ocean approximately 36 miles southeast of Cape May, out of the sight line of the shore. It will include submarine pipelines under the ocean floor and in beds of the Delaware Bay, connecting the offshore mooring

system to onshore terminal facilities at a 200 acre site in the Town of Greenwich, Cumberland County, New Jersey. We believe that our proposal, which is being designed by Hudson Engineers, Inc., professional engineers and consultants of Philadelphia, considers and appropriately addresses the national emergency crisis, presently developing in our country and the economic and, most importantly, environmental problems of the nation and of New Jersey and Delaware.

2. IPCO hopes to complete the project within a year of the commencement of actual construction. It is estimated that in the first year of operation, the pipeline will have throughput of in excess of 300 million barrels of oil.

3. A deep-water port facility, such as the one proposed by Intercontinental is badly needed. As the Corps of Engineers pointed out in its report of November 29, 1972, energy, and particularly petroleum, requirements of the United States are increasing at a high rate at the same time that a decline in domestic exploration and production is being projected for the not too distant future.

4. Petroleum will be the major, and is probably the most desirable source of energy for the United States for some years to come. Imports of petroleum have been increasing and will continue to increase. Imports will come primarily from the Middle East and North Africa and will be carried on the new supertankers at much less expensive transport costs than are required by the smaller tankers which are now in general use. As the size of the tankers has increased, from the standard pre-1960, 16,600 ton tanker, to the modern supertanker of 200-300,000 tons, to the 540,000 ton tankers presently being constructed, so has their draft. The 540,000 ton supertanker will require 93.5 feet of water, more than three times the draft of the 16,600 ton tanker.

At the present time, there is no United States Harbor with either the facilities or the natural depth to handle the very large crude carriers that have been constructed and used since the early 1960's. Moreover, it is not feasible to consider dredging present harbors to the necessary depth, because of the almost prohibitive cost and the enormous adverse environmental consequences.

5. At the present time oil is imported into our harbors in a great number of smaller tankers, or in supertankers which anchor outside of our harbors and then are off loaded, at great risk of spillage and collision in a fleet of smaller lighters. As the Corps of Engineers points out in its report dated November 29, 1972, unless some sort of deep-water port facility is developed, the problems of the present system may become insurmountable:

> "Beyond the increased harbor congestion every vessel to vessel transfer carries with it the danger of a spill. Our projected North Atlantic imports for 1980 are 2,000,000 barrels per day. This would require a fleet of 637-40,000 ton vessels but only 98-250,000 ton ships, lessening (by a simple decrease in numbers) the chance of collision, and consequently, of accompanying oil spills." Page 2, Fact Sheet, Corps of Engineers.

6. There are good reasons for installing a deep-water port facility in the area proposed by Intercontinental. First of all, there must be a deep-water facility servicing the North Atlantic states, since this area is a major user of petroleum and contains a number of refineries. Secondly, the present method of importing petroleum into this area is inadequate, and rapidly becoming obsolete and, even more importantly, dangerous from an environmental point of view.

7. The Corps of Engineers, after studying the feasibility

of a deep-water facility at various places on the Atlantic Coast, determined that the two locations with the greatest economic and environmental feasibility appear to be either off Long Branch in Northern New Jersey or off Cape May-Cape Henlopen area.

8. We believe that of these two locations, the best place for such a deep-water port is off Cape Henlopen, primarily because this location is not in the congested maritime traffic present in Northern New Jersey while still being accessible to a number of refineries. However, if it is ultimately determined that an installation off Northern New Jersey is more economically and environmentally feasible, we are able and prepared to install our deep-water port system there.

As I mentioned before, Intercontinental's proposal involves a single buoy mooring system, located in international waters, approximately 36 miles southeast of Cape May, New Jersey, with submarine pipelines connecting the mooring system to Bay Side, New Jersey, where terminal facilities, including a tank farm, will be located.

Mooring System -

1. The proposed single buoy mooring system, or SBM is a complete self-contained, offshore terminal facility including two floating buoy terminals, floating and under-buoy submersible hoses, terminal moorings and submarine pipelines.

2. The SBM will be designed to accommodate the largest tankers afloat or under construction and will weather the most severe environmental conditions ever recorded or predicted for the specific site. The SBM's are large circular all-steel units of welded construction approximately 45 feet in diameter. They will be securely anchored to the seabed by means of six or more mooring chains. Tankers moor directly to the SBM and while so secured can discharge petroleum while maintaining

the alignment of least resistance to wind, current and waves. The moored tanker normally remains head to wind and sea and rides in the most comfortable position. Vessels may approach the SBM from any direction and moor in minimal time without the aid of tugs. In the center of each SBM there is a product distribution unit or swivel which permits the continuous passage of one or more grades of cargo while the moored tanker rotates around the terminal. Flexible floating hoses connect the tanker's cargo manifold with the SBM. Separate hoses connect the underside of the SBM to the submarine pipeline on the seabed.

3. This flexibility, together with the welded steel structure of the SBM enables the terminal to be used in rough weather and decreases substantially the risk of oil spillage. Moreover, any spillage which might occur would be 36 miles out at sea, rather than right offshore as in the case with the present method of lightering. This greater distance would enable the operator to clean up any spillage, which would be minimal, long before it approached the shore. Reducing the number of ships in the harbor area also reduces the chance of collision and groundings and resulting oil spillage.

The Pipeline -

1. The submarine pipelines will run under the ocean floor and the bed of the Bay for approximately 70 miles from the mooring facility to the tank farm at Bayside. Our engineers have already investigated and charted a course for them which will skirt existing oyster grounds and will not come closer to Cape May than 2-1/2 miles. The pipelines are not expected to cross navigable channels in the river and bay area and in the event of a new channel or other navigational project, Intercontinental Pipeline has agreed to appropriately modify the pipelines.

2. The pipelines will be of welded steel and will be buried under the ocean floor or river bed with a minimum of four feet of cover. The dredging and backfilling of the pipeline trench will be performed in compliance with the strictest environmental protection considerations. In this connection I also want to emphasize that the submerged pipelines will have automatic shut-off valves which will simultaneously shut down the pumps in the event of trouble. We have reviewed a substantial number of reports on oil spillage in connection with pipelines, including the Corps of Engineers report, and in all cases the experience with pipelines in this regard has been exceptionally good.
3. Substantial experience supports the Corps of Engineer's conclusion in its November 29 report, prepared in connection with this hearing that,

> "Whichever type of (deep-water port) facility is chosen, the oil will have to be moved ashore, and the most efficient and environmentally sound way to move the oil is by pipeline."

The Tank Farm -

1. The tank farm will be constructed at Bay Side in Cumberland County. The 200 acre site has already been selected and is locally zoned for industrial purposes. Recently, both the Greenwich Township Committee and the Planning Commission of the Township of Greenwich approved in principle Intercontinental Pipeline's proposal, subject, of course, to Intercontinental obtaining the appropriate permits from the Federal and State Governments.
2. The oil will leave the tank farm by pipeline, over the railroad right-of-way, to refineries in the Philadelphia and New York area. We have already approached the rail-

roads on this, and they have indicated interest in the proposal.

Federal, State or Local Requirements - Intercontinental Pipeline will comply fully with all environmental requirements imposed by Federal, State or Local government. Without such compliance we know we will not be permitted to proceed. We are now in the process of completing a definitive environmental impact study which we will file for public review with the Corps of Engineers and which we think will show that our proposal will not have an adverse effect on the environment of this area. This should be completed within the next months. We have already filed, however, a preliminary statement with the Corps of Engineers. Let me just say here, that based on a number of reports, chances of oil spillage are much less with a deep-water port and submerged pipeline, than with any other alternative, including the present system used in the Delaware Bay area.

Resume of IPCO - Proposed Deepwater Terminal - In conclusion, of proposed Deepwater Terminal, I would like to submit the Intercontinental Pipeline's proposal should be accepted because:

A. It alleviates and avoids environmental hazards and problems which now exist and will increase in the area in the near future, and it creates no ecology problems.

B. It will create tax revenues and job opportunities in Southern New Jersey while at the same time, bypassing Cape May so completely as to avoid any aesthetic or environmental problems in that area.

C. It will insure the availability in Southern New Jersey of inexpensive fuel for use by local residents and industry as well as tourists who want to visit this area, and

D. It will be a major help to the United States and the Atlantic Coast in relieving the growing energy crisis.

My next points I will read very slowly. I think that the Committee and those present should digest this because it is economics.

Potential Revenue to the State of New Jersey - The possibility of potential profit income to the State of New Jersey is astronomical. I project an income of approximately $830,375,000.00 of income, induced by a through-put charge of one-half cent per gallon on the pipe-line use up the Delaware River Coast line, to the refineries or tank storage farms. This figure is arrived at in the following manner - by multiplying the factor of 650 million gallons a day by .005, it gives you a pipeline charge of $3,250,000.00 per day, multiplied by 365 days, you get $1,186,250,000.00 per year, of which 70% consumption of the Delaware Valley would amount to $830,375,000.00 per annum; and double this amount to $1,660,750,000.00 for the year 1985. To state it simply, we are talking about an awful lot of money.

I suggest and propose that this income be controlled, managed, and used by the State of New Jersey; and the income used for ecology, education, and lowering of real estate taxes. Less than 5% of the through-put charge would be paid for by New Jersey residents, as the finished product would be approximately 95% sold outside the State of New Jersey, and even more satisfying, would not cause oil price increase to the consumers because of the offset savings of transportation costs. This figure does not take into consideration a through-put charge for Liquid Natural Gas, which also would mean income, or a port charge for docking and unloading of ships, which could pay as high as $200,000,000.00 annually, as documented by the World Trade Division of the Delaware Port Authority - or the tax rateables of over one billion dollars to the County of Cape May, where the home port could be

Prior Delivered Testimony relevant to the Energy Crisis and the Proposed Deepwater Terminal - The following quotes are excerpts from prior testimony and remarks made years ago,

by myself and General F.J. Clarks, Chief of Engineers, U.S. Army, which are so timely in today's crisis.

1. On Tuesday, 7th of February 1972, I appeared before Delaware River and Bay Marine Council, at a Public Hearing held at Bridgeton, New Jersey, as Chairman of the Cumberland County Economic Development Commission, to give testimony on pending legislation being established that will protect our natural resources; set up a Criteria Ecological, and Pollution standards that will help preserve mankind, and deep water port facilities development that our natural resources will lend themselves to.

Natural Resources of Cumberland County - The Commission points out that the most important natural resources the County of Cumberland is blessed with, are:

a. Thousands of undeveloped acres.

b. A long shoreline contiguous to the Shipping Channel of Delaware River and Delaware Bay.

c. Bordered by the Counties of Salem and Cape May, enjoying the same natural resources of a natural phenomenon.

d. Being geographically strategic, wherein within a 300 mile radius of Ameri-Port, Philadelphia, approximately 60% of the nation's population lives; or within a 100 mile radius, 30%. This is a most fantastic fact, and must be considered in all aspects of planning.

e. Naturally sheltered deep-water facilities.

Geographic Area Impact - Due to our geographic position, the area must not only, when it considers legislation, consider the immediate area, the State of New Jersey, but the National and International ramifications of improper planning and legislation that could adversely affect much more than the preservation of our natural land areas. In other words, our area today is the keystone to the Nation's economic future, as well as ecological future; and even further, with proper development, we can help control our Inter-

national Balance of Trades, and payments. Sound far fetched? No, when one stops to study and understand the forces that control our economic being, then one understands that this area must be vital in the distribution of product and energy to this concentrated dense mass of population, which we must now assume a responsibility for.

Pertinent Facts - Let's examine some of the pertinent facts as they exist:

a. As I have already pointed out, approximately 60% of the United States population resides in a 300 mile radius of this area.

b. Approximately 70% of all the oil consumed in the United States is consumed in this area.

c. Oil is energy; and is the energy that our economic life, industrial life, and ecological life depends on today, and represents approximately 85% of our energy force in our present state of civilization, providing:

1. Energy for our travel
2. Industrial Plants
3. Utility plants
4. Homes, heating, air conditioning
5. Etc.

A staggering effect on our economy and health if we did not have the availability of this product to create energy.

d. Approximately 45% of our nation's crude oil is imported today, to help preserve our own natural resources for generations to come; and it is estimated that by 1985, 85% will be imported.

e. Oil resources are being depleted at a conservative rate of four times faster than nature can create this energy product, which took millions of years, and will continue to increase depletion due to increased population and demands.

f. It may be 50 to 100 years before science can find and solve a compatible energy source to replace oil, and keep our ecological balance of nature.

g. At this writing, it is no secret that our supplies of Natural Gas are seriously curtailed, and many local gas companies are not taking on any new customers. It is so serious a threat that last week the Public Utility Commission ordered a cease and desist order in Pennsylvania on new customer accounts, in order to conserve gas supplies for this winter's fuel energy supply. In face of these energy shortages, El Paso Natural Gas, one of the Nation's largest producers and suppliers of Natural Gas, has entered into trade agreements with Algiers for the import of Liquified Natural Gas, brought into our Eastern Seaboard in tankers, for distribution; and are in the process of building a $50,000,000.00 (fifty million) dollar depot on the Delaware River, to facilitate the handling and distribution of this energy-providing Legislation does not prevent such construction and add hardships to users of Natural Gas. El Paso presently has three large tankers under construction in France, and six more will be contracted for in the United States, providing adequate Port facilities are available.

Alternates and Dangers of Losing Deep Water Port, and Industrial Development - If we do not provide today for the development of a Deep Water Port Facility, and Industrial Development, which is our inherited obligation by virtue of geographics and natural phenomenon, we will find ourselves and our future generations regretting the actions, or legislation that could conceivably close off opportunity and expose our area, State, and Nation to some of the following danger potentials:

a. The danger of Deep Draft Vessels being litered sea, without proper or controlled methods that could create product spills that would endanger our shores, ecology, recreational, and economic base.

b. The ominous possibility of a foreign power building a deep-water terminal offshore in international waters,

in line with Delaware Bay; and control our shipping; and adversely affect our cost of product.

c. The continuing danger to our ecology programs being exposed to an offshore terminal in International waters, where our ecology laws would have no jurisdiction.

d. A possibility of a shift in our present existing dense industrial complex to areas closer to a deep water port facility, that will become even more increasingly important in the cost of finished goods. (At present, several deep-water port facilities are being constructed in Canada, where product will be received and trans-shipped to the United States at additional costs, that every individual must bear, directly or indirectly.)

Benefits From Deep Water Port Facility - Industrial Development - The area, State, and Nation will benefit tremendously from planned and controlled Port and Industrial Development, in many of the following ways:

a. Controlling of Pollution, and Ecology in the Port and Industrial complexes.

b. Increased tax rateables, due to development.

c. Tax duty income on product being handled by the Port Facilities, passing through pipelines, or cargo trucks, to final destination, and use within the 300 mile megalopolis mentioned in prior paragraphs, and causing no servicing or governmental overhead for area communities.

d. Increased jobs - conservatively 50,000 new jobs would be added within five to ten years - with high income levels that also would alleviate area unemployment and welfare, and bring a better way of life, and a fuller way of life to the area residents.

e. Aid the United States in our national trade balance; and decreases balance of payments deficits by controlling our imports through United States controlled port facilities.

f. Enhance our National Defense System through a developed Port and Transportation system.

g. Energize our United States ship building industry, transportation systems of rail and truck, and back up industries, banking, housing, recreation, etc.

g. Increased Hotel and Motel Industry, and Recreational, would be felt; for a Deep Water Port Facility - properly planned, with esthetic and cosmetic planning and architecture, would become a true area tourist attraction that could rival "Disney Land".

Compatibility of Deep-Water Port Facility and Industrial Development -

a. With the present and every day advancement of science and technology, there is no doubt that a Deep Water Port Facility and Industry can live together for the betterment of mankind, both from an economy and ecological goal.

b. I would like to point out that the Country of Holland has reclaimed over 500,000 acres of sea-land; and has a density of population of over 13,000,000 (thirteen million) people who are not adversely affected by ecological problems, or pollution, because they have conquered these problems with their science and technology.

While on the subject of Holland, I would like to point out that they realize deep water ports are a necessity and reality, have recently finished a port facility that cost $275,000,000.00 to accommodate the new deep draft boats, and maintain their balance of economy.

c. There should be no doubt that Industry and a Deep Water Port Facility would police the criteria standards better than is being done at the present time, or could hope to be done in the future, without the tax aid such development would produce.

Deep Draft Boats and Port Facilities - Deep draft boats are a reality and many are already under construction, with drafts from 60 to 90 feet, in the Super-Oil Tankers, and will result in tremendous savings as indicated below:

a. Oil freight from the Persian Gulf in a regular tanker, presently costing $18.00 per long ton, and will enjoy a reduction to $5.70 per long ton, or a savings of approximately 70%, or $12.50 per ton savings.

b. Foreign Powers realizing the demand for deep draft boats, are starting and completing deep port facilities to hold their balance of Trade, all eventually affecting our area megalopolis economy.

On the same day and time, Tuesday the 7 February 1972, as I was giving the above Testimony the following remarks were being made, and I quote the remarks by Lieutenant General F.J. Clarks, Chief of Engineers, United States Army, Water Resources Congress, St. Louis, Missouri, 7 February 1972, from a speech which he made before the Water Resource Congress concerning the future of energy industrial development, and deep water port, and which is so timely and contiguous to the problem at hand, I offer and inject his remarks in my testimony: "The Nation must make up its mind in the very near future as to how much electric power it is going to have in the years to come, so that we can plan and provide the water availabilities that will be needed to produce and use that power. What we provide for now is what we and our children are going to have in the next decade or two. If we're going to cut back our use of electric power in order to have better swimming and fishing, let's make the decision with our eyes open and with full realization of the consequences. Let's not just block one power project after another on the ground that we're protecting water resources, and then, when the lights go out and the heat goes off and the breadlines form, claim that the devil made me do it".

On Monday the 18th December 1972, I made the following remarks at a Public Hearing held by the United States Army Corps of Engineers at Lower Cape May Regional High School, on the "Proposed Deepwater Port Facilities".

Meaning to Our Economy - Just what does the above facts mean to our present everyday economy - both on a local level and national level?

1. On a local level, we must be prepared to recognize that our motel and tourist economy can hit a severe slump, due to the following reasons:
2. Possible gasoline rationing - will cause restriction in travel.
3. Possible energy rationing to individuals, motels and businesses.
4. Cost of gasoline rising to $1.00 per gallon, or more.
5. Increased cost of energy for heating and cooling necessary.
6. Forcing shut-down of certain types of industries dependent on high energy sources. This has already happened along our Gulf Coast.
7. Resultant effect on economy by job layoffs.
8. On our national scene, we had a 6.9 billion trade surplus in 1970; and now have an estimated 7 billion trade deficit for 1972; and a projected trade deficit of 20 billion by 1985, because of our energy import needs which we must compete with in Europe and Japan.
9. Every penny we are forced to pay more, for our energy needs, means we must add it on to our finished goods - for both domestic and foreign trade - and make ourselves even more non-competitive than we are presently.

I am not here as a preacher, or prophet of doom, but merely to try and acquaint you with the facts, and make you aware that we all must share a responsibility.

10. On Monday 15 January 1973, I made the following remarks again, before the United States Army Corps of Engineers at a Public Hearing held at Erma, New Jersey, on the same subject:

Fuel Costs to the General Consumer - It was recently reported that fuel costs will soar in the next two to three years, if not sooner.

1. It is projected that the cost of producing crude oil at the well head will rise 125%, and natural gas at the well head, 250%. Something for all of us to look forward to.
2. I, for one, do not wish to pay $1.00 or a $1.20 per gallon for my gasoline - or double my fuel bills for my home heating by oil, gas, or electricity.
3. I do not want to face a future of gas rationing, or fuel rationing, which would prove detrimental to our economy, wherein our tourist economy must decline.
4. I do not want to face a future of restricted building, development, or progress, because of insufficient energy.

I do not mention the prior above dated and filed Testimony or remarks to prove a point, that myself or General Clarks, or others like us in the minority, can sit back and say "I told you so", but make mention of it, so that we can enunciate our projections, and the projections of other energy experts, that 100% of our projections remarks, and statistics have come to pass, and the time has now arrived for no more rhetoric on the subject, but for one and all, public-legislators, environmentalists, to address ourselves to decisive action and heed the warnings we gave starting back in 1969, and at the Public Hearings finally held in 1972-73, and with nothing concrete established to date.

Oil Spills - In the past month we have experienced substantial oil spills in the Delaware River, spills that would have not been, if a Deepwater Terminal was operating offshore. In the words of a U.S. Coast Guard Officer familiar with our lightering operations off the Delaware Bay, with regards to inevitable oil spills, said back 1972, "It's no longer if it's going to happen, but when it's going to happen", and further states that a controlled port unloading situation has to be safer and better than a non-controlled port situation for all concerned.

Deepwater Site by U.S. Corps of Army Engineers - The established report of the U.S. Army Corps of Engineers, under date of 8 January 1973, and as a result of the Public Hearings held, listed three (3) sites. Site No. 2 (Monobouy 25 miles offshore), which is the site proposed by IPCO is listed as having no disadvantages.

(See page 65A.)

Senate Bill No. 200 - Oil Transfer Facility Corporation Act - While it is encouraging to, at long last, see an appropriate bill submitted for the much needed Deepwater Terminal, I for one can see no reason why this should be done as a State Corporation or Authority.

Private industry and private enterprise are capable of doing the job, at costs that would be well under State Authority budgets for the same. Private industry has the expertise to do the job if legislation can be provided for them to accomplish this mission. They also, have the necessary investment capital, and the State would not have to risk or pledge the State's credit, moral or otherwise.

In addition to the above statements, areas where shore facilities would be, would be deprived of real-estate rateables, and the State would be deprived of both corporate taxes as well as the Federal Government.

We must also recognize that this proposed oil transfer facility is not just for the residents of New Jersey or its water bordering state neighbors, but will directly and indirectly serve the Nation, and someone living in Kansas, has just as much right to the waters we would use, as a result of a vested interest, and we could not deprive them of a potential share of revenue funds, to be enjoyed by the sovereign State of New Jersey, exclusively through a State Authority, whereas, as a public company, they would benefit through Federal taxation.

I firmly believe that said facility should be controlled through a State and Federal Office of Energy, as I made mention of the Ten (10) Points and steps I outlined in my opening remarks.

General Commentary - When one reads todays papers and hears of all the oil or gasoline that's available through brokers, this is so, but let's remember, it's for a price.

1. One must be acquainted with the industry to know, first, there is approximately 42 gallons of oil to a barrel depending on its viscosity, and approximately 7 barrels constitutes a DWT (Dead weight ton).
2. The oil was selling a short time ago on the OPEC market at $3.50 a barrel or approximately 8.5 cents per gallon, today at OPEC pricing, which may vary from day to day, oil is $10.40 per barrel or approximately 25 cents per gallon exclusive of shipping - transferring cracking - distribution - storage - or station profit.
3. Recently in Iran, our major oil companies were paying as high as $17.00 per barrel or approximately 40 1/2 cents per gallon, again exclusive of other necessary costs I mentioned.
4. We, IPCO, were also offered just three weeks ago fifteen million barrels of Light Arabian oil, at a premium price of approximately $2.00 per barrel over the OPEC price of $9.50, to be delivered over a minimum three (3) year period, which could be accelerated, if required. Same was subject to U.S. existing embargo, by the OPEC countries, but which could be traded for refined product, with European refineries; however, the resultant cost, would make the retail price for the finished product in the neighborhood of 80 cents per gallon, in boat load lots.
5. The questions is, when we finally need oil or gasoline just what are we willing to pay for this precious commodity, when our auto or home heating burner chokes empty?

There will be more and more of these middlemen offers as time goes by, and most of it will be for refined product, produced by offshore and European refineries, who have access to crude supply, and no price ceiling. Our own domestic refineries cannot use more crude at this point in time, for in most in-

stances are working at top production capacities.

6. As a passing comment, Iran has announced that they, "The Land of Oil," are planning Nuclear Power Stations for their own domestic utility energy.

7. I feel that attention should be addressed to our domestic problems, where legislation has forced our oil industry to flee our domestic shores, due to damaging legislation and continued roadblocks, preventing the refining industry to keep pace with its growth demand. For example, you will find Phillips Petroleum and Commonwealth Oil with new refineries in Puerto Rico, Hess Oil and Chemical in the Virgin Islands, British Petroleum (BP) and its associated partners, building a giant new refinery in the Bahamas at Freeport, along with a deep-draft terminal and tank storage. (Right in the heart of tourist industry.)

What does this mean to our domestic economy, with regards to oil and gasoline? It simply means that we have forced added costs, of double handling on our per gallon price, and have caused the loss of hundreds of millions, yes, even eventual billions of real-estate tax rateables, corporate taxes, and thousands upon thousands of U.S. jobs. Many environmentalists and their sympathetic legislators will say these losses are the insurance premium we must pay for clean air and no oil industry development. Let's ask ourselves, and be honest, is this anyway to become domestically self-sufficient, and ward off this global blackmail we are exposed to; of course, it isn't.

8. Our utility oil reserves on the east coast just a few short weeks ago, sunk to an all-time low of seven (7) days. That meant that if one boat-load destined for our East Coast utility companies, was lost or late, or diverted, we in certain areas would have been exposed to brown-outs or, worse, black-outs; many of our nation's utilities are spot buying this precious product on the open markets of Belgium, Italy, Russia, anyplace at all that their purchasing agents can get promise of the product, and at the same time meet EPA standards.

This is because our oil industry just cannot keep up

with the demand because of refining and tank-storage incapacity. A little of this has been alleviated by the utility companies going on dual-conversion of coal or oil , but coal is a problem, because of the type of coal presently being mined and available to them, does not provide the same BTU's as an equivalent unit of oil, thus causing more costs to the utility and eventually to you and me, Mr. & Mrs. Consumer. Just more imbalance of our energy crisis.

9. I think we should also know the refined gasoline today sells for .13 cents a gallon in Saudi-Arabia, while they pile up monetary reserves estimated to reach 285 billion dollars by 1985, and cause a possible depression in our United States or world-wide, if we do not become self-sustaining from every aspect.

Conclusion - I wish to thank you for your kind attention of my lenghty narrative to all of the various points and statistics I have elaborated on; I know that too many of you here, my testimony may be redundant, but I sincerely hope that it is heeded, and that our politicians, and environmentalists, do not leave these hearings, with their old worn phases and cliches of, "I believe in U.S. Science and Technology, and they will solve our energy problem". I also believe our technology and ingenuity will, but that may be 5-10-15-25 years away, and our problem is today and it won't go away, unless we take positive action NOW.

I stand ready to answer any questions the committee or legislators wish to direct to me. Thank you.

SENATOR McGAHN: Thank you very much, Mr. Brody, for your very informative paper. I think, certainly, it should open our eyes somewhat. It has opened mine on one point. On page 11 - Potential Revenue to the State of New Jersey - I'm a little confused. My mathematics is at fault. When you make the statement, by multiplying the factors 650 million gallons a day by .005 it gives you a pipeline charge of $3,250,000.00

per day.

MR. BRODY: Right.

SENATOR McGAHN: My arithmetic here, gets into difficulty. How do we get 650 million gallons of through-put per day when, generally, the public capacity of the average tanker is 100,000 gallons per hour - possibly 125,000, but for the sake of argument I'll say 100,000 gallons - this means that going at a rate of 24 hours a day you might come up with 2,400,000 gallons; therefore, this would mean that there would be basically, three supertankers that would have to come in to pump that through?

MR. BRODY: Yes.

SENATOR McGAHN: My question is where does it go? There are no sufficient tanks or tank farms in the State of New Jersey to accommodate this. If I'm not mistaken, very frankly, every 80,000 barrels of oil through-put requires one acre. Where do we get the land to take care of 650 million gallons of oil a day, and where do we get the refining capacity to do this?

MR. BRODY: Let me answer a little bit of that.

Number one, we proposed a single buoy out there to begin with. I believe you will find in my testimony that we anticipate 300 million gallons with our through-put the first year. Those single point mooring buoys could be increased in circle radius - get 3 or 4 or 5 or half a dozen out - depending on what we need. Now, the point you bring up, Senator, in regards to tank storage capacity -- I also point this out, that we have incapacity of this tank storage. This is something that you would have to conquer as time went on. By the same token, a lot of this would flow back to Pennsylvania from our refineries through the existing pipelines either Colonial or Big-Inch, whatever may be there now.

The other thing is, as we know, we haven't built any new refineries although several of the major refineries are

now in the process of expanding their per barrel a day capacities. I think, and in our discussions with the Corps of Engineers and upon assistance of General Groves at the time we made application, he insisted that part of our Engineering be considered to be 2-48 inch pipelines to come ashore. One for crude product and one for refine product. There is no doubt in my mind that we are going to be importing as much refined product in the future as we are crude product. Now, if this is the premium that we want and are paying, I guess we are going to have to do it. I think we are going to have to do it anyway, because the OPEC countries, today, are looking both for a profit upstream and downstream. They are already laying plans for the refining of product over there and shipping to us the refined product, not just the crude. So maybe this will answer some of your questions, Senator.

SENATOR McGAHN: Well, the logistics of it, of course, get me a little confused. Is it true that, generally speaking, as far as tank farms are concerned, there should be, as far as total through-put was concerned, a lead time of, let's say, ten to twelve days where that oil is going to be stored in a tank farm before it is refined. Now, the point I'm getting at here - by the same report of the Army Corps Engineers - they have calculated that for every 80,000 barrels of through-put it would require one acre. I'm wondering where we are going to get 650 million gallons, the acreage for this, plus holding that for anywhere from ten to thirteen days. This is basically my point. We are talking about tank farms that are incompassing the entire State of New Jersey?

MR. BRODY: The logistics on that would probably have to be worked out with Engineering. I don't think we will ever find a complete answer to it. I think you're going to find some of it will probably have to flow back immediately towards the Pennsylvania shores where existing refineries are today. We probably have to even expand what refineries we have to take

that if we re going to continue the growth that we've had or the demand that we put on oil for our economy. These are some of the problems that your bill will have to answer.

SENATOR McGAHN: On page 17 and I m not basically challenging your figures but I am simply calling your attention to them because they conflict with the figures I have. Where you state the freight from the Persian Gulf in a regular tanker - presently costing $18.00 per long ton - to the best of my information, I have $9.50 per long ton and using LVCC s this would be approximately $5.25 depending upon the dead-weight tonnage. Therefore we come up with a cost savings of let s say, anywhere from $2.92 to $3.48. Rather than --

MR BRODY: $12.50? I can correct that for you. If you note that is testimony I gave back in 1972. There has been a variance on the dead-weight coming from the Persian Gulf today. All I do is make mention of these -- they were the figures back in 1972 71-72.

SENATOR McGAHN: All right. Finally may I simply say this. Do I understand that you assume with your plan for a deep-water facility 35 miles off of Cape May --

MR BRODY: Right.

SENATOR McGAHN: -- with a dual pipeline 48 inch one for crude one for refined product coming in that there would then be from Bay Side going along the existing railroad right of way to Linden, there be crude and refined products going there as well as to the Philadelphia area.

Now my question is this - would this then preclude the necessity of any type of increased facilities serving the New York-New Jersey refinery area? Could this take care of what we have been calculating is going to be necessary to come in the New York-New Jersey Port area to take care of the refineries up in North Jersey?

MR BRODY: Yes we feel that. Our Engineers feel that. I have a map with me prepared by our Engineers that will show the right-of-ways both to Woodbury and to Sewaren

if you would like that as part of the testimony.

SENATOR McGAHN: One final question. I assume that the pipeline would be strictly within the territorial waters of New Jersey --

MR. BRODY: Very definitely.

SENATOR McGAHN: This would not have anything to do with Delaware, so we would not bcome involved in a bi-state hassle as to --

MR. BRODY: Yes, even the riperian rights of Bay Side are already owned by the company. Associated Land Company owns those rights. We wouldn't have to divert the income or share it with the State of Delaware in my opinion.

SENATOR McGAHN: We've been talking about home rule today. We've been talking about local prerogatives as far as local zoning is concerned. Am I to understand from your testimony that the town of Greenwich, or the township of Greenwich, would permit you to have a tankline there? Is it Greenwich --

MR. BRODY: Greenwich. We have presently, not a permit, but a resolution from their planning board sanctioning that, subject to all of the necessary permits. Of course, this could be rescinded if someone had a change of heart. The planning board could change it. However, they have those 45 hundred acres available there where the riperian rights are situated. It's all the type of industrial ground that would lend itself to this project. And we won't have to be faced with petro-chemical industries and so forth. Incidentally, it's adjacent - in line with - the proposed Shell Refinery which has been trying to get off the ground for five or six years and which we sorely need today but is still not off the ground.

SENATOR DWYER: Just one question. You're Vice- President of Intercontinental Pipeline Company, Inc.?

MR. BRODY: Yes.

SENATOR DWYER: Is that a trans-continental pipeline?

MR BRODY: That is a newly formed pipeline company just for this specific project.

SENATOR DWYER. I see. In other words you have no operating facility at the present time?

MR BRODY: Absolutely no.

SENATOR DWYER. Thank you.

MR BRODY: However it is made up of those who have the expertise and own pipelines throughout the country.

SENATOR DUNN: Mr. Brody I ever had the privilege of meeting you before but obviously you are an expert in this field and I have a couple of questions that perhaps you can enlighten me on for my own personal concerns. On page 11 -- I m sorry page 21 you make reference to a fact that just three weeks ago 15 million barrels of light Arabian oil were offered to you at a certain price. Does that bear out what Senators Dodd and Zane have been trying to prove that there is a plentiful supply of both the crude product as well as some refined products available providing we re willing to pay the price for it?

MR BRODY: Absolutely.

SENATOR DUNN. So you would agree with them --

MR BRODY I would agree. However bear in mind that this offer that we had was from Europe - 15 million barrels of light Arabian. There is much more to it Senator and I think that this is not the place to bring it up but there is much more to it in real depth as to what this problem truly is.

SENATOR DUNN: Well you are an expert and the point that I m trying to find an answer to; in your expert opinion is there sufficient crude and refined product available if we re willing to pay the price for it?

MR BRODY: Yes.

SENATOR DUNN: Okay. Another question. You make reference a couple of times here to blackmail against us being invoked by certain countries. Aren't we aiding and abetting it by providing them with the sophisticated equip-

ment to drill for the oil such as drills themselves and the bits and all the other sophisticated parts that are manufactured in this country?

MR. BRODY: I have to agree with you, we are. But by the same token, they've got the gun to our head. If we don't give them that, we're not even going to get the oil, and we're not self-sufficient today. It's going to get awfully cold in your house or mine if we don't have it.

SENATOR DUNN: So, this blackmail couldn't work both ways then. We couldn't hold back on providing them with this sophisticated equipment?

MR. BRODY: No. If we stop that, they'll stop giving oil to us. Right now they don't need us, we need them until we can prove our self-sufficiency.

SENATOR DUNN: All right. On page 16, Mr. Brody, you make reference to, a very casual reference, to enhance our national defense system through a developed port and transportation system. Now, while this is the first session of these Public Hearings to be held on this very important subject, do you know whether or not anyone from our national defense system, other than the Army Corps of Engineers, has made a study as to the value or -- which plan offers the greater defense to our national defense, the offshore facility that we are talking about in S-200 or the system that we now engage in by bringing the smaller ships into port?

MR. BRODY: I had quite a bit of discussion with General Groves who is in charge of the Northeast Region Corps of Engineers. They would prefer that this deep-water port be inside the cove or boot of Cape May. They can dredge there without breaking the aquifer systems and have it self-sustaining upon our shores. There is a definite amount of vulnerability in the United States by placing this offshore 35 or 36 miles out of the sight line. We are definitely vulnerable, but on the other hand, what are we, more vulnerable for, defense or cold homes or a bankrupt economy? Our problem is today not tomorrow.

SENATOR DUNN: Well I couldn't agree with you more. I might say this Mr. Brody that this is one of the most comprehensive statements so far presented to this Committee that I know of it covers many points of interest and concern to me. It is no secret that I have gone on record as concurring with the report submitted by Senator Frank Dodd however I have much to learn about the total subject and while your report might be construed as being lengthy it is very comprehensive and it has been of immeasurable help to me as one member of the Committee.

MR BRODY. Thank you Senator.

SENATOR McGAHN: I'd like to ask you one question and make one remark. I think that in reference to Major Groves statement concerning from the standpoint of security purposes preference for a sheltered port rather than 35 miles out -- I would assume also therfore using the same analogy that could also refer to offshore drilling as well which would be much more vulnerable from a security standpoint. This is not the purpose of our hearing but I make that particular statement for the record. I d like to ask you finally Mr. Brody a question which you can decline to answer; very frankly it has nothing to do with this as such. I think it would be helpful if you would attempt to break down for us if you can basically dollars and centswise where every bit of the money that we pay for OPEC oil goes? You had mentioned here that it takes approximately 12 cents as far as actually the product itself is concerned.

MR BRODY: I could do that.

SENATOR McGAHN: We discussed foreign tax credits the royalties to King Faisal and others. I think it would be extremely helpful.

MR BRODY: Let s take the present OPEC price - and I think I know what you re getting at Senator - of $10.40 a barrel. The first thing that comes off of that is $1.20 to the Royal family of Saudi-Arabia . The next thing that

comes off is 10 cents for a lifting cost from the well to the barrel. We now have $1.30. The tax on that is approximately $4.00. So now we have $5.30. Subtract that from $10.40 and you have $5.10 of profit which is then split between the Arabian government and the Seven Sisters of Aramco. The $5.30 is totally taken off of the tax as tax credits of the Seven Sisters of Aramco. So they earn $5.30 against earned income right off the top and are still able to split half - 50% - of $5.10.

SENATOR McGAHN: Thank you.

Do we have any additional people that wish to testify this afternoon.

Mr. Hughes? Mr. Hughes is from the New Jersey Truckers' Association.

N O R M A N H U G H E S: Good afternoon, Senators. Because our industry is suffering so severely from the shortage of fuel, we feel impelled to speak out on this subject even though it affects us only at the second or third level.

I am Norman Hughes, legislative representative of the New Jersey Motor Truck Association, a non-profit, trade organization, founded in 1914, which represents more than 1,000 member companies including for-hire carriers, contract carriers, private carriers, and allied industries.

With one of the largest memberships of any state trucking association in the nation, N.J.M.T.A., as the sole local organization of its kind, enjoys the distinction of being the authoritative voice of the trucking industry in New Jersey. It is also the official state affiliate of the American Trucking Associations, Inc. of Washington, D.C., the national federation of the trucking industry.

I appear at this hearing in support of S-200 in the belief that while the establishment of a New Jersey Oil Transfer Facility Corporation, empowered to create and operate an oil transfer facility off the coast of New Jersey, will not of itself produce oil, it will make much more efficient and less expensive the receiving of whatever oil is available.

Speaking for the industry which I represent, at this stage of the fuel shortage, in spite of a parade of Federal allocation regulations and State emergency procedures which have at various times promised first 100% of 1972 usage, then 110% of 1972 usage, and currently 100% of current needs, no such amounts have yet been obtainable. Obviously, because, for true or false reasons, no such quantities are available. Why this is so can now be explained by everybody from the President of the United States, the Federal Energy Office, the heads of the big oil companies, all the way down to the gas station attendant. How so many are so knowledgeable now, when

so few were, back when meaningful corrective measures could have been taken, deserves careful attention.

For instance: While it is widely conceded that the current method of importing crude oil into this country is so cumbersome, so expensive, so inefficient and so far behind the rest of the world, here we are six months after the concept of S-200 was first proposed by Senator Dodd, consuming untold man-hours, wrangling whether New Jersey should get on with what obviously would be a better system. And, may I suggest, if we don't get on with it the day will come when, again, the self-styled experts will be explaining why New Jersey and the United States are unable to import at least their share of available crude oil.

Many representatives of legitimate business have, for years, through proper channels, such as this, sought reasonable consideration from law-making bodies, frequently, more often than not, to no avail. Suddenly, however - certainly in our industry - those very same considerations are being accorded, not because of documented logic and reason but because of disruptive violence - strikes, blockades, shut-downs, and now kidnappings. If legitimate business, which is the supporting base of everything in America, is ever forced to embrace such tactics in order to obtain necessary results, America is in big trouble. Thank you.

SENATOR McGAHN: Thank you very much, Mr. Hughes.

We will now recess until next Monday morning at 10:00, the same time, in the same place.

I think we have established a sufficient base of factual information where we can go forward and there will be another hearing held, as I said, in these Chambers next Monday at 10:00. Additional hearings have been scheduled for Saturday, March 30th at 10:00 A.M. in Elizabeth City Hall, Elizabeth, New Jersey; Wednesday, April 10th at 7:30 P.M., Monmouth College, Monmouth County and sometime

during the week of April 1st at Ocean City Music Pier in Cape May, the time and the date will be released by Senator James Cafiero.

We have also confirmed the fact that we will hold a hearing in Ocean County at the request of Senator John Russo. The time and place will be released next Monday.

Thank you very much for your attention and we certainly hope that we do not see the same people here next Monday as we did today. It is not that we don't want to see you but we don't want you to testify again. Thank you very much.

(hearing concluded)

DEEPWATER TERMINALS

TO HANDLE

EAST COAST CRUDE IMPORTS

Prepared For the

Committee on Energy, Agriculture, and the Environment

Senate

State of New Jersey

R. W. MacDonald
Exxon Company, U.S.A.

February 25, 1974

EAST COAST DEEPWATER TERMINAL NEEDS HIGHLIGHTS

- Supply/demand outlook
- Advantages of VLCC'S and deepwater terminals
- The single point mooring concept
- Siting an East Coast terminal
- Enabling legislation

CHART #1

SOURCES OF CRUDE OIL
EAST COAST REFINERY RUNS

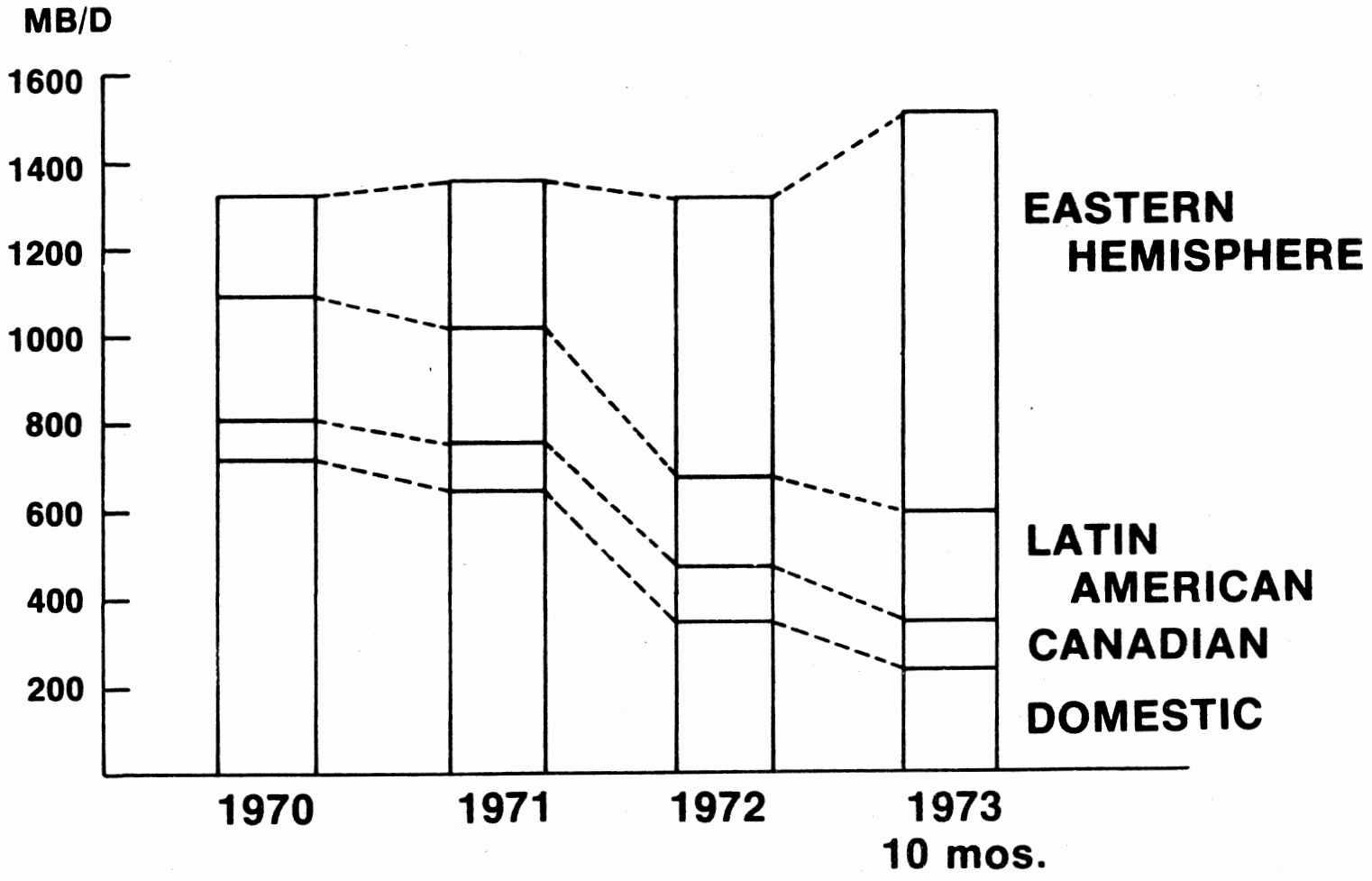


CHART #2

TRENDS IN TANKER SIZE

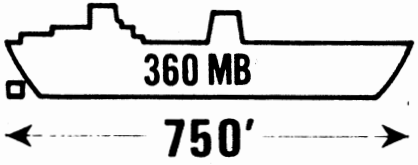
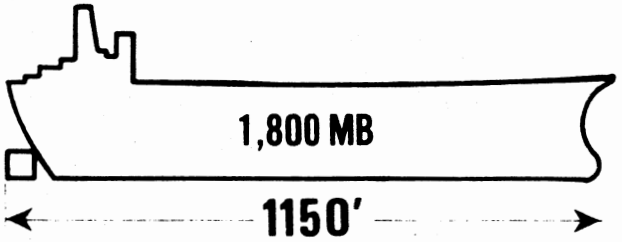
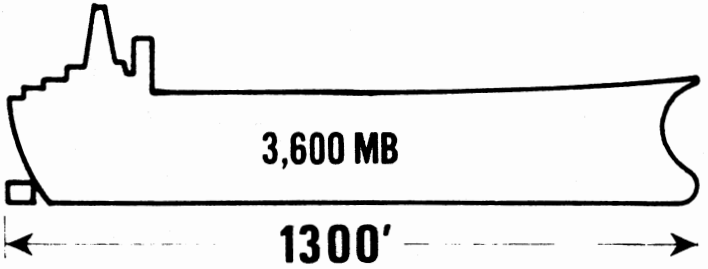
	SHIP	CARGO	FOR 1,300,000 BARRELS/DAY
1950		30,000 DWT	6 EACH DAY
1960		50,000 DWT	3½ EACH DAY
1970		250,000 DWT	1 EACH 1 TO 2 DAYS
1975		500,000 DWT	1 EVERY 3 DAYS

CHART #3

TRANSPORTATION COST – 1980
PERSIAN GULF TO U.S. EAST COAST

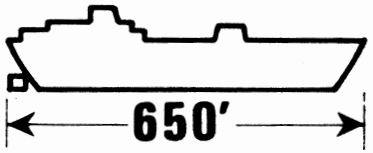
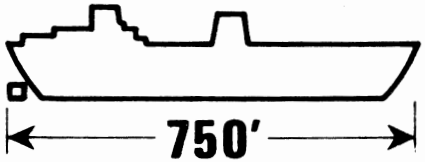
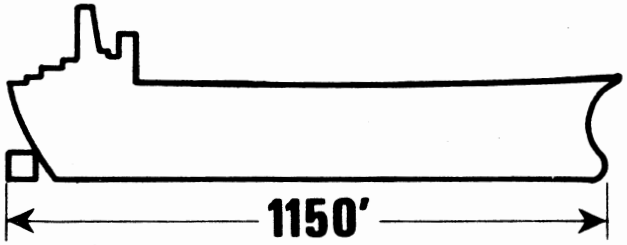
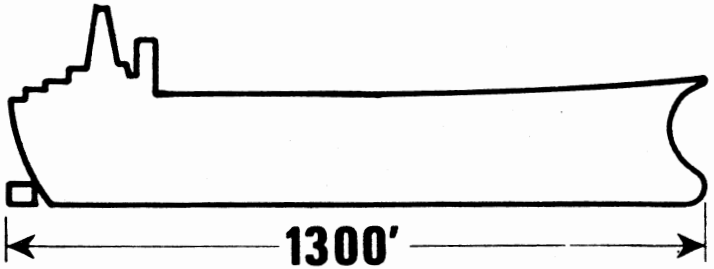
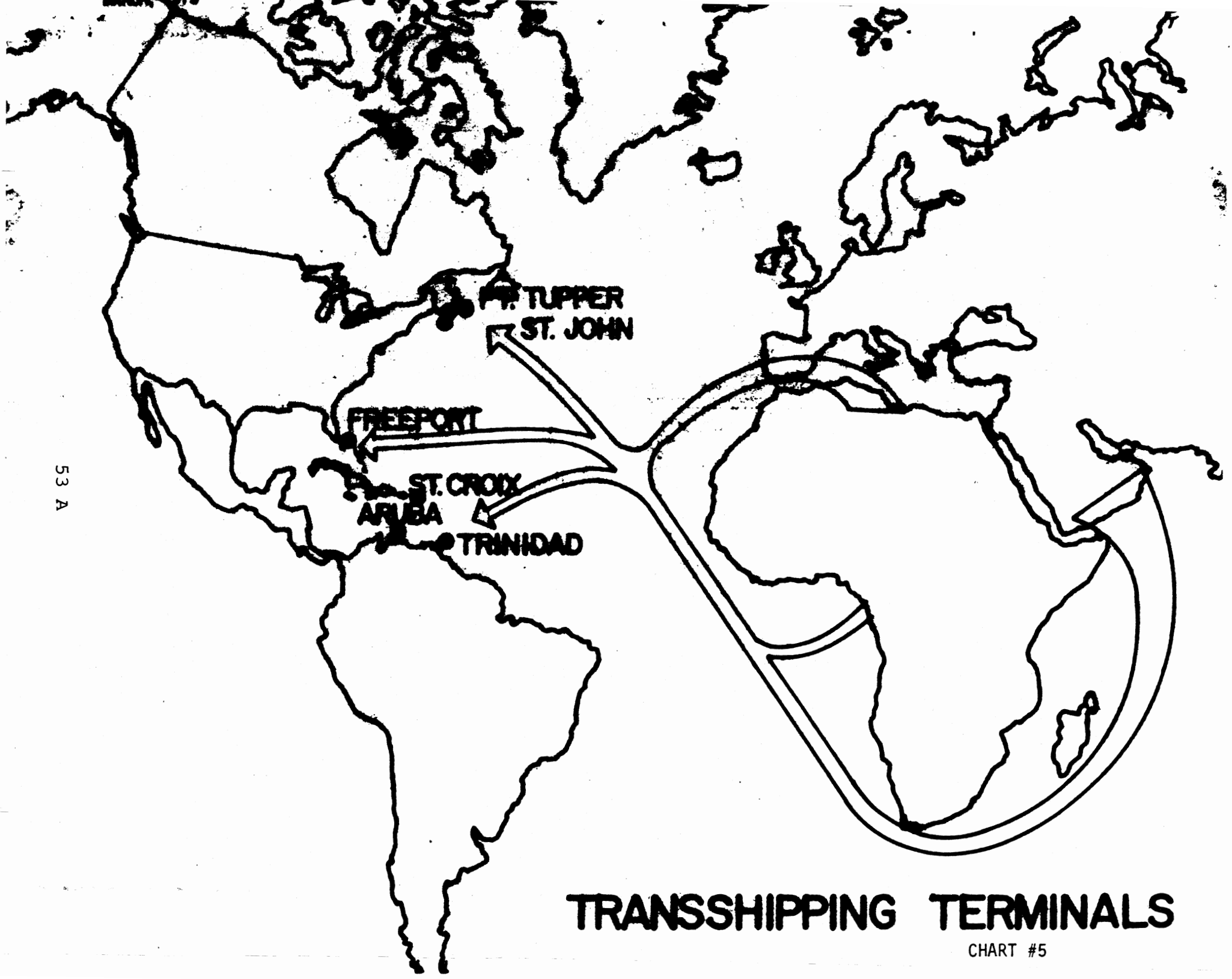
	SHIP	CARGO	RELATIVE COST/BBL.
1950		30,000 DWT	100 %
1960		50,000 DWT	88 %
1970		250,000 DWT	45 %
1975		500,000 DWT	38 %

CHART #4



TRANSSHIPPING TERMINALS

CHART #5

CRITERIA FOR SITING A DEEPWATER TERMINAL

- Proximity to refining centers
- Adequate water depth for VLCC's
- Favorable weather/sea conditions
- Environmental impact

CHART #6

MAJOR U.S. REFINING CENTERS

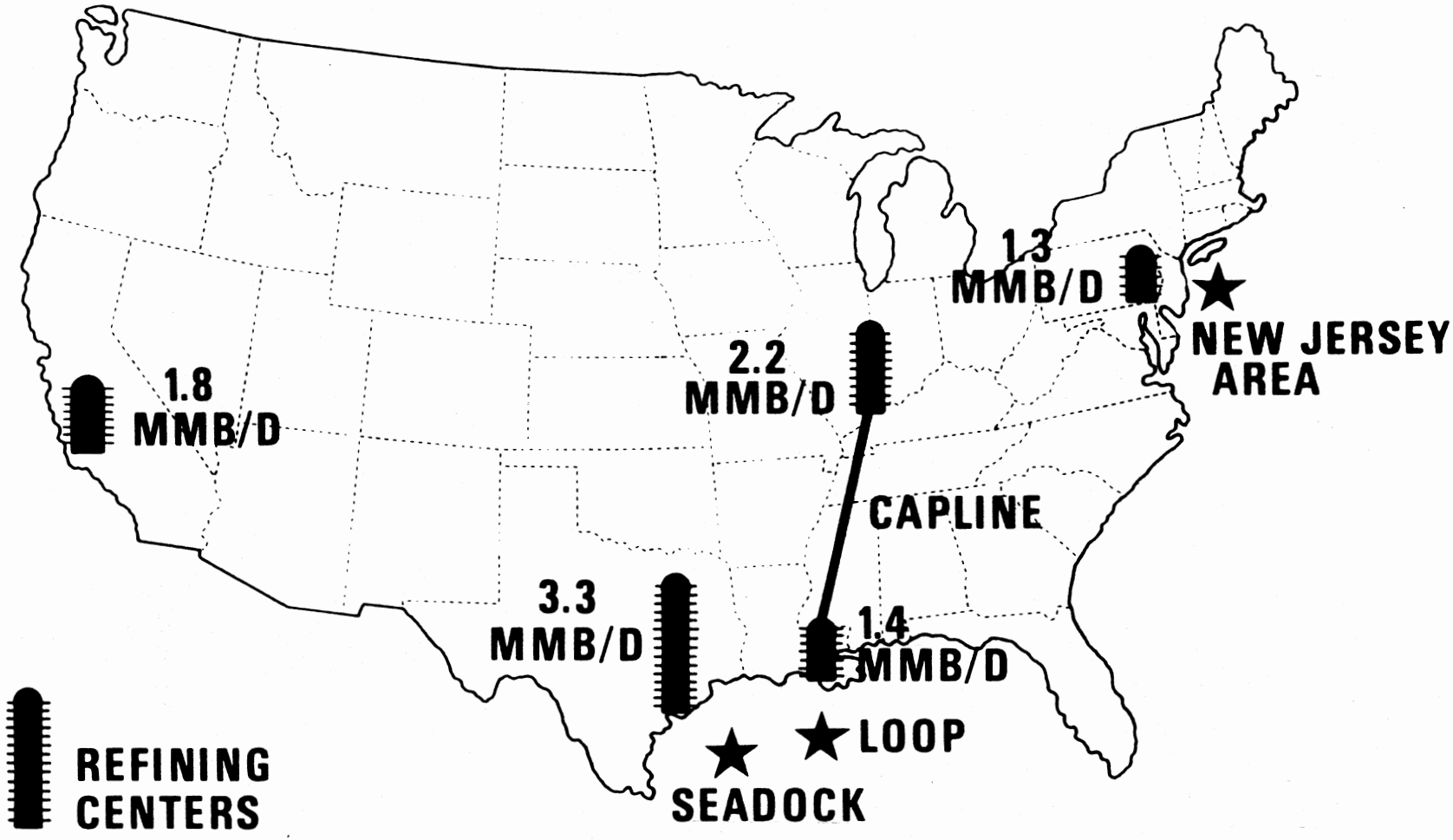


CHART #7

SPM OFFSHORE TERMINAL

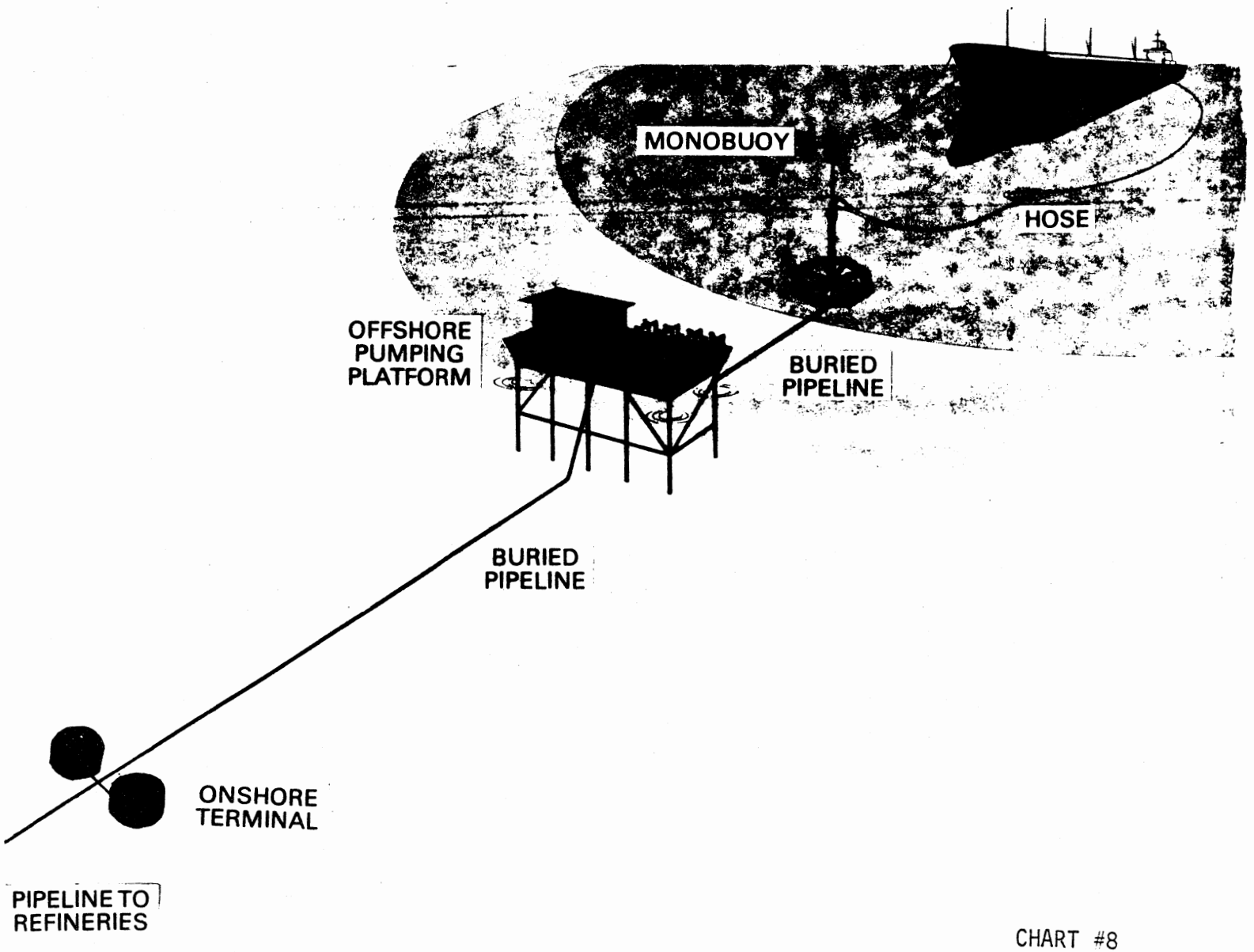


CHART #8

CATENARY ANCHOR LEG MOORING (CALM)

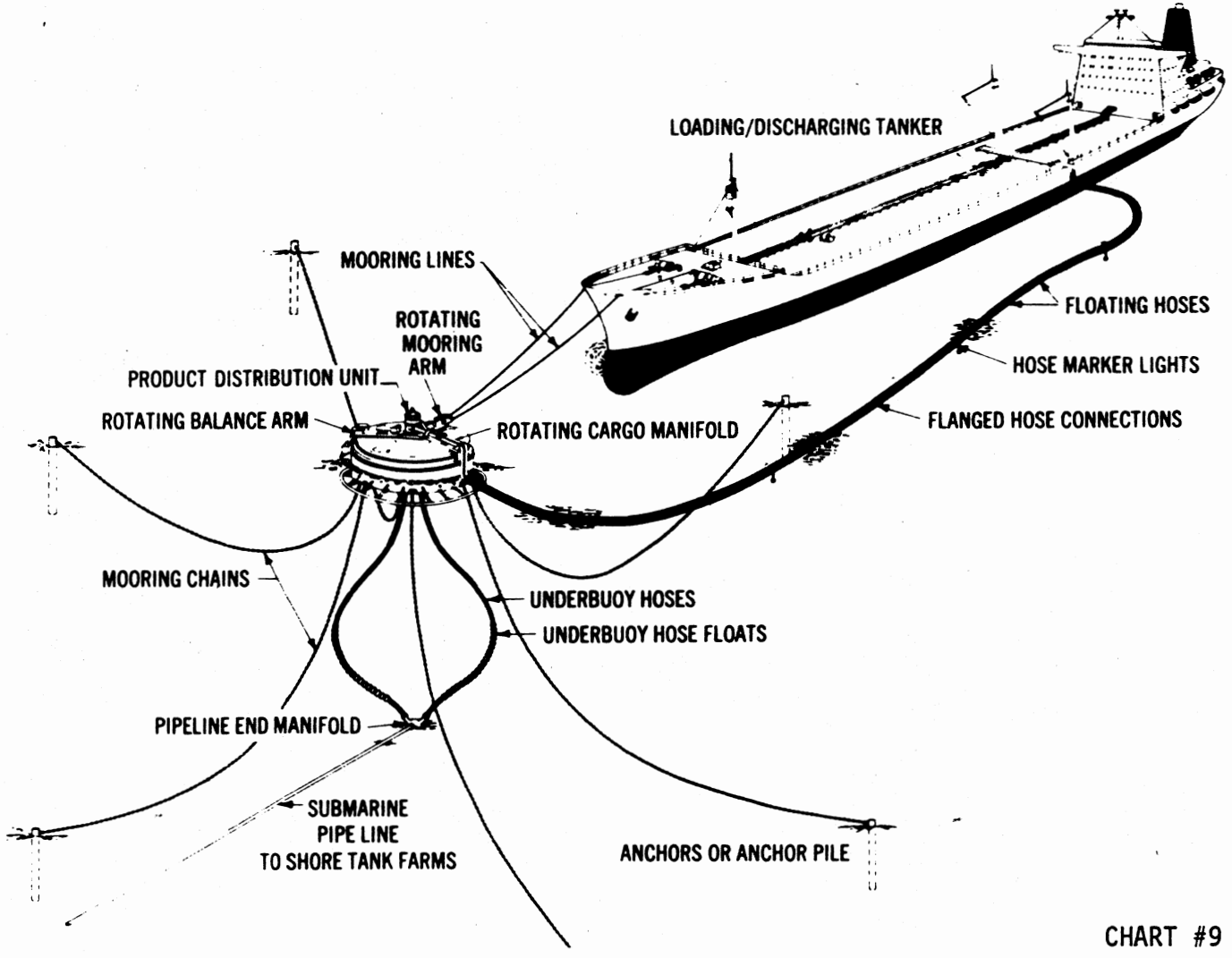
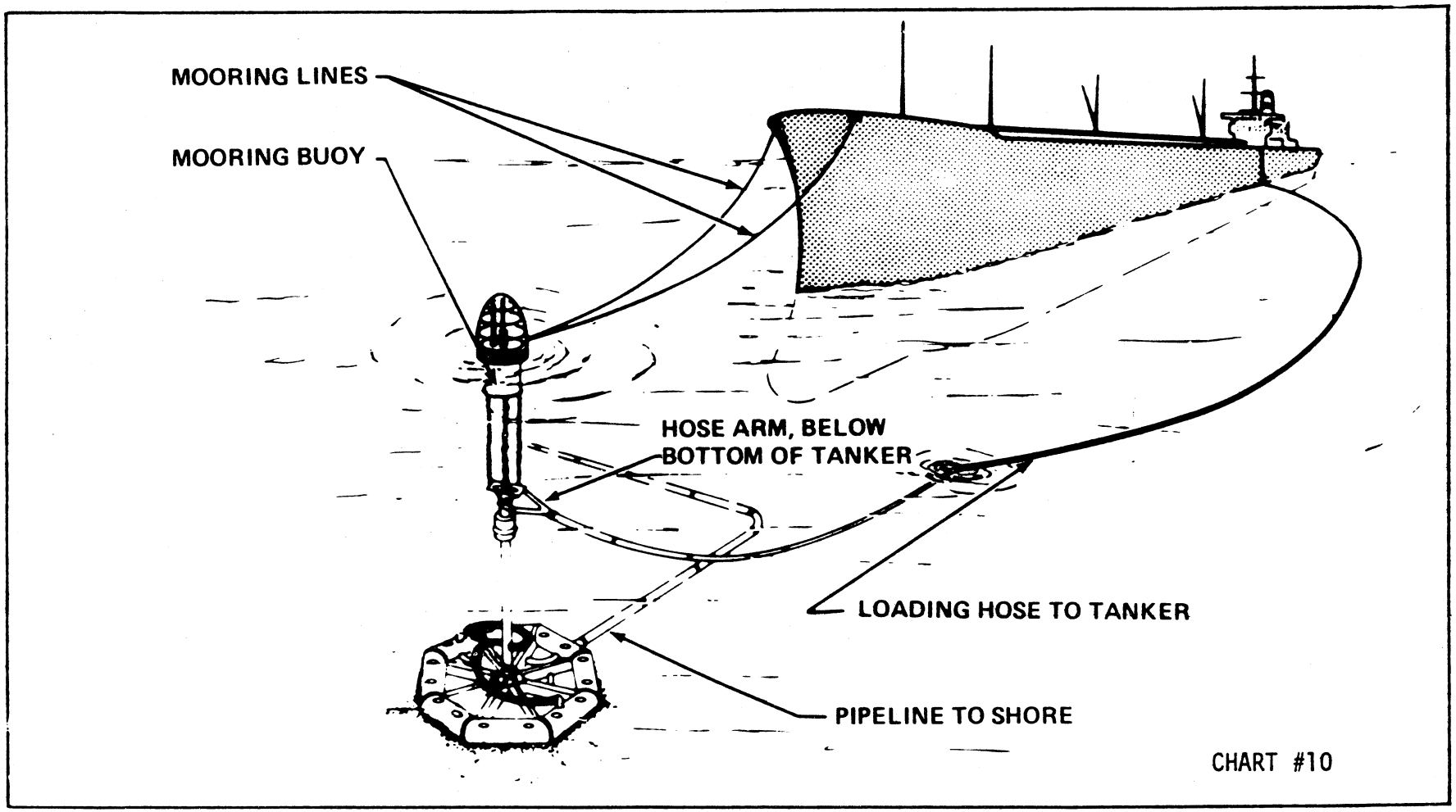


CHART #9

SINGLE ANCHOR LEG MOORING (SALM)



AN OFFSHORE NEW JERSEY DEEPWATER TERMINAL

- Water depth adequate to handle largest VLCC'S
  - Reasonable distance from shore
  - Dredging not required
- Weather conditions comparable to Gulf of Mexico
  - Downtime for weather within acceptable limits
- Minimum visual impact
- Buried pipelines have excellent safety record
- Tankers stay far offshore
  - Substantial distance from bays and estuaries
  - Reduced probability of tanker accidents

CHART #11

REFINERY CAPACITY AS OF 1-1-73

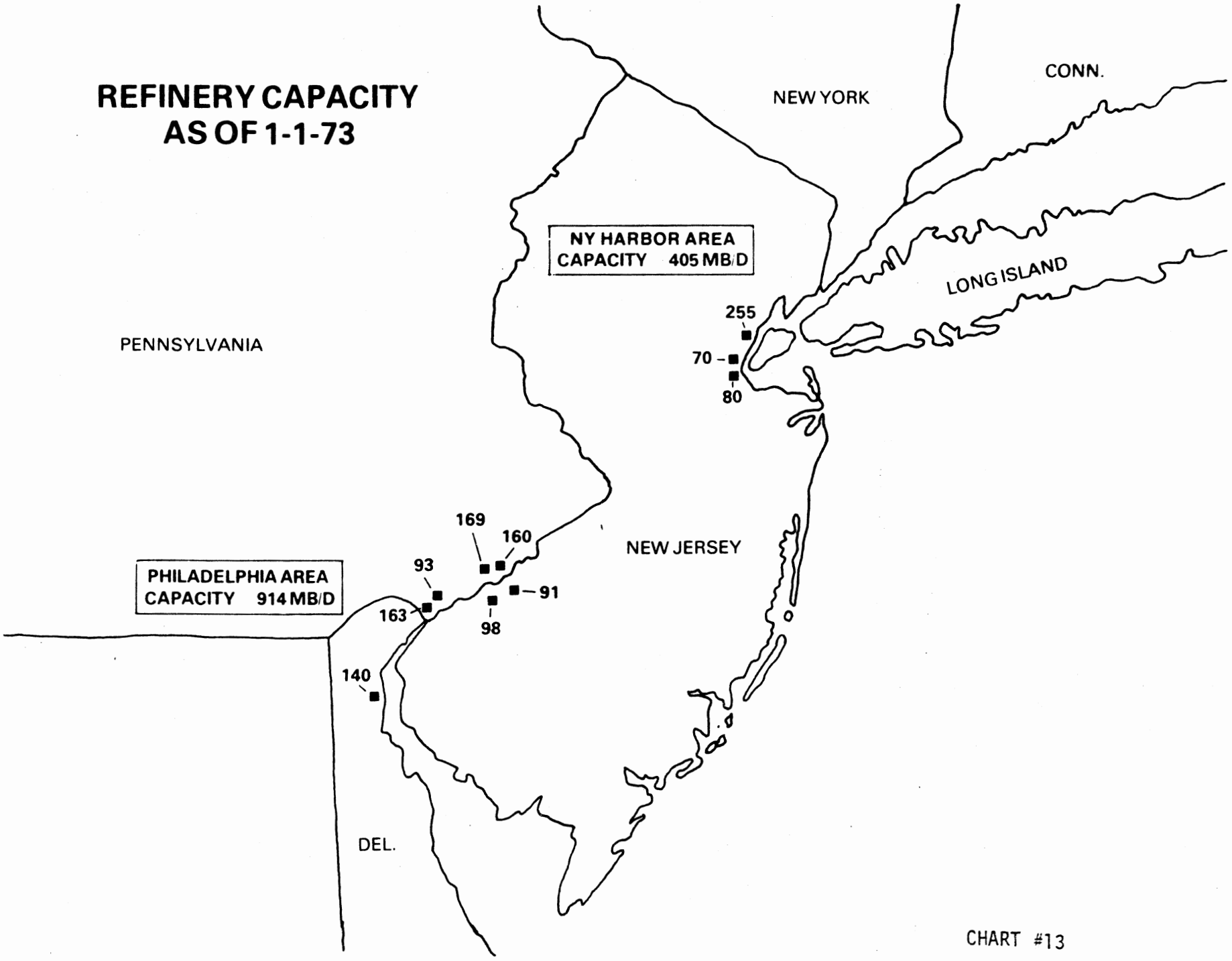


CHART #13

OFFSHORE NEW JERSEY DEEPWATER TERMINAL

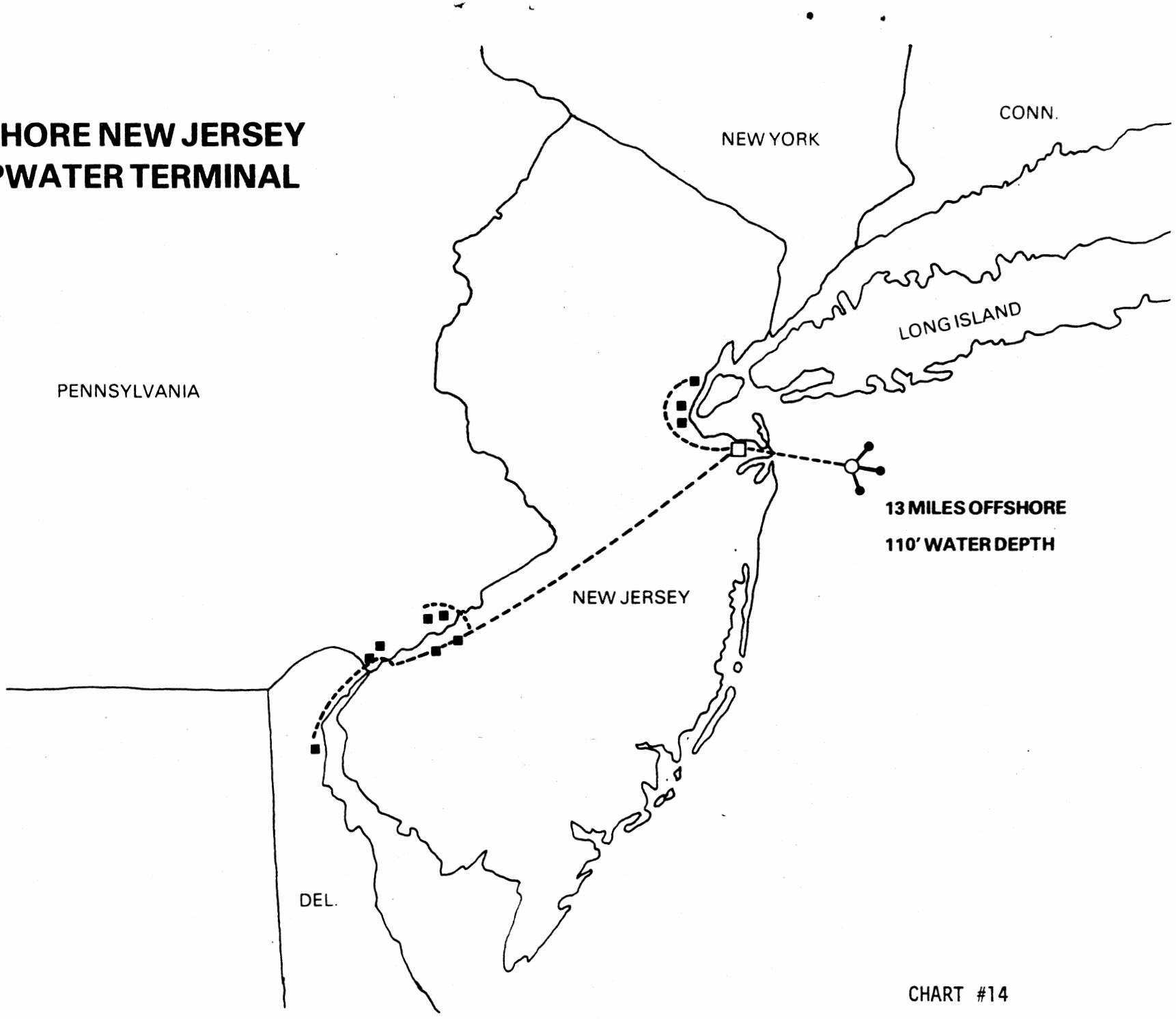


CHART #14

IMPACT OF EAST COAST DEEPWATER TERMINAL ON REGIONAL DEVELOPMENT

- Terminal is needed to serve existing refineries
- Incentives exist to expand East Coast refining capacity with or without a deepwater terminal
- "Secondary development" can be controlled by state

CHART #15

NEW JERSEY DEEPWATER TERMINAL
ECONOMIC BENEFITS

- Reduced energy costs
- Tax revenues
- Increased employment
- Opportunity for economic growth as desired by state

INDUSTRY'S LIABILITY FOR OIL POLLUTION

TOVALOP
- TANKER OWNERS VOLUNTARY
- UP TO 10 M$
- IMMEDIATE ACTION

CRISTAL
- MAJOR OIL COMPANIES VOLUNTARY
- SECONDARY LIABILITY UP TO 30 M$ TOTAL
- IMMEDIATE ACTION

WAQUA
- WATER QUALITY IMPROVEMENT ACT OF 1970
- TANKERS TO 14 M$
- TERMINALS TO 8 M$

CHART #17

SUBMITTED BY SIDNEY L. BRODY

ENVIRONMENTAL SUMMARY: ADVANTAGES AND DISADVANTAGES OF ALTERNATIVE SITES

SITE	ADVANTAGES	DISADVANTAGES
CAPE HENLOPEN, DELAWARE		
1. (OFF SHORE ISLAND)	1. Relatively low potential for ecological damage. 2. Close to final destination of oil. 3. Minimal dredging required.	1. Site exposed to severe wave action increasing possibility of an oil spill. 2. Wind driven currents could possibly cause some ecological damage to Delaware coast in the event of an oil spill.
2. MONOBUOY (25 mi. offshore)	1. Ease to control spill (reaction time) 2. High seas little effect 3. No dredging required 4. Low potential for ecological damage 5. Low effect of tidal currents	
LONG BRANCH, NEW JERSEY		
1. MONOBUOY	1. Relatively low potential for ecological damage. 2. Relatively low effect of tidal currents. 3. No dredging required. 4. Ease to control spill. (reaction time) 5. High seas little effect	1. Remote from final destination of oil if tug/barge system is used. 2. Site exposed to extreme wave action increasing possibility of occurrence of an oil spill. 3. Wind driven currents could cause ecological damage to Long Island or New Jersey coast in the event of a spill.