

# BURLINGTON COUNTY OUTER CONTINENTAL SHELF AND ENERGY FACILITY PLANNING PROGRAM FINAL REPORT

Prepared by:

The Conservation and Environmental Studies Center, Inc. and The Burlington County Planning Board Staff for The Burlington County Board of Chosen Freeholders and The Burlington County Planning Board

January, 1978

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This report is submitted to the Burlington County Board of Chosen Freeholders, the Burlington County Planning Board, Burlington County Municipal Officials, and citizens as a year end report prepared under terms of contract to the New Jersey Department of Environmental Protection, Office of Coastal Zone Management, with financial assistance under the provisions of Section 305 of P.L. 92-583, Coastal Zone Management Act of 1972.

The study team and its advisors have made every effort to apprise all interested municipal representatives, environmental groups and members of the general public, of the progress of this report.

With the submission of this report however, the Burlington County study team does not consider the book "closed". Commentary from public officials and others interested in potential impacts of energy facilities is earnestly solicited.

Comments should be received at the Burlington County Planning Board, 49 Rancocas Road, Mount Holly, N.J. 08060, by March 31, 1978. At this time an addendum will be prepared and filed with the Burlington County report at the Planning Board Office and at the New Jersey Department of Environmental Protection, Office of Coastal Zone Management, Trenton, N.J.

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### CHAPTER I

### ABSTRACT

The Burlington County team studying the onshore impacts of exploration for oil and gas on the outer continental shelf essayed five tasks - 1. literature study, 2. inventory of present county energy facilities, 3, analysis of inventory, production and siting potential and needs, 4. coordination and information exchange with the State, other counties, Burlington County municipalities and the general public and, 5. Recommendations concerning energy facility siting.

Burlington County's objectives were to encourage and obtain beneficial energy facilities with assured environmental safeguards. All of the county area was considered environmentally sensitive, but great priority was set on ensuring the environmental protection of the Pinelands, wetlands and agricultural areas.

Present probability does not indicate heavy onshore impact for the County from oil-gas exploration and energy facility siting. A pipeline right-of-way along major highways seems most probable with the placement of a heliport, gas scrubber or major refinery as remote possibilities. Potential exists for siting various support facilities along the Delaware River.

The need for continued assistance and information to municipalities to prepare enabling or exclusionary ordinances and to understand the major issues of energy supply and conservation is strongly indicated.

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### CHAPTER II

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# SUMMARY OF FINDINGS AND RECOMMENDATIONS ON THE ENERGY FACILITY SITING ELEMENT OF THE STUDY

# 2.1 Findings Summarized

The Burlington County Outer Continental Shelf study team has projected the following onshore impacts for the county from the exploration and possible location of petroleum off the New Jersey coast. See Map I. In order of decreasing probability, these events are:

- A pipeline corridor landfall in Ocean or Atlantic County. See Chapter
  VI, section 6.4 and 6.5.\*
- b. A new pipeline-corridor by the Garden State Parkway moving: 1.) southward toward the Atlantic City Expressway or 2.) moving northward toward the northern refineries in Middlesex County or 3.) moving both north and south along the Garden State Parkway.
- c. The location of a gas scrubber in close proximity to the Garden State Parkway near the landfall.
- d. The location of one or more heliports in the vicinity of Atlantic City or Robert Miller Airpark in Ocean County, with the remote possibility of a location on the lands of the Viking Yacht Company in Bass River Township.
- \* Discussion of this projection and those immediately following is found in Chapter VI, section 6.4 and 6.5. See also Table III, Chapter VII.

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e. The extremely remote possibility of the construction of a new refinery at a suitable location in northwestern Burlington County with railroad and New Jersey Turnpike Connections.

These findings are based on the following information sources.

- a. Onshore Impacts of Outer Continental Shelf Oil and Gas Development ASPO Training Project Mid Atlantic I and II.
- Pipeline Projections from the Lease Sale 40 Area to the Camden-Philadelphia Area by the Shell Oil Corporation.
- c. Exploratory drilling intentions filed by the Continental Oil Company.
- d. The proposed designation of the Pine Barrens of Burlington County as an exclusionary area for oil/gas pipelines by OCZM in its latest draft of the <u>Coastal Management Strategy for New Jersey</u>.
- e. All advice and projections from oil companies state that no new refineries will be needed in Burlington County or the entire Camden/Philadelphia petrochemical complex. The possibility is suggested to accomodate additional needs presently unforeseen.

# 2.2 Recommendations

- a. Adoption by DEP/OCZM, with federal concurrence, of the pipeline exclusionary area in the Burlington County Pine Barrens is recommended.
- b. The implementation of all pipeline policies enumerated in Chapter VIII including the use of the Garden State Parkway and the Atlantic City Expressway as described in Chapter VI.

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- c. Special precautions should be taken for any pipeline which might cross the Mullica River estuary as described in Chapter VI.
- d. The use of demonstrated "best available technology" in the refining of any petroleum materials in gas scrubbers and other refineries as well as the "best available technology" to control any gaseous or aqueous pollutants produced as emissions from such facilities.

# CHAPTER III OBJECTIVES OF THE STUDY AND METHODOLOGY

# 3.1 Objectives

The clear aim of this study is to initiate development of planning to prepare for the eventuality that significant crude oil and natural gas reserves are located on the outer continental shelf of the Atlantic Ocean.

Planning for the above eventuality and assessing the total environmental impact of OCS/oil explorations includes biogeophysical facts, human social factors, environmental protection, optimum land use, and hopefully the improvement of the quality of life.

During the fall of 1976, the Office of Coastal Zone Management (OCZM) of the New Jersey Department of Environmental Protection prepared a list of tasks deemed necessary to render an adequate report and recommendations for planning relative to energy search and development on the outer continental shelf of the Atlantic Ocean. Implementation of the two - pronged objectives of planning and assessment was facilitated by the specific tasks designated by OCZM.

The Conservation and Environmental Studies Center has accomplished these tasks under contract to the Burlington County Board of Chosen Freeholders and with the advice and assistance of the Burlington County Planning Board staff.

Mr. Bernard Cedar, Director and Mr. John Ettinghouse of the Burlington County Planning Board have given valuable liaison and direction to the project.

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During all phases of task execution, the entire project has been overseen by the Burlington County Regional Environmental Advisory, Committee (REAC) and a Steering Committee established by REAC. Also to help meet the particular needs of Burlington County, attendance has been regular and complete at all intercounty/OCZM meetings; an Information Bulletin has been published and sent to all municipalities and public officials in Burlington County.

### Objectives Summarized

- To provide counties with the opportunity to analyze the capability of local government to cope with problems and respond to the opportunities of potential energy facility development on the Outer Continental Shelf.
- 2. To identify geographic areas which might or might not be suitable for specific energy facilities from the local government perspective. To rank facilities in terms of feasibility and compatibility with existing land uses.
- 3. To establish, or recommend a process to establish and facilitate interaction with respect to OCS and energy facility siting within the context of New Jersey's coastal zone management program and the ongoing CAFRA permit program. To recommend alternative strategies, opportunities and constraints, to the state on energy facility siting.
- 4. To specify the extent to which energy facility siting will accomodate state and national interests.

#### 3.2 Planning Method

# Task No. 1 Review Literature:

Literature sources include the petroleum industry, Burlington County

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Planning Board, municipal records and files, Burlington County Office of Economic Development records and files as well as documents and information supplied by OCZM, other county study teams, American Right-of-Way Association, Railroad Companies, Public Utilities and other miscellaneous sources.

A bibliographic annotation is included as a separate appendix in this report. It is also important for a reader to be aware that new literature of importance to this study is constantly emerging from many and varied sources.

### Task No. 2 Inventory:

This task is viewed as the process by which the professional planning staff identifies acceptable facilities according to the limitations and specific requirements and impacts of the facility and then determines the relative suitability of such facilities and sites. A broad inventory of Burlington County is included in Chapter V of this report. The task, when complete, will identify environmentally sensitive land and rights-of-way, as well as areas potentially compatible and suitable as energy facility sites, not only in the Coastal Zone, but also in the irreplaceable Pinelands and all other areas in Burlington County.

The inventory process consists of two phases.

- a. Identification and Location
- b. On-site inspection

# Task No. 3 Analysis

Analysis of all data, literature, maps, graphs, charts and on-site inspections is the central indispensable task of this report. All recommendations

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given in this report are derived from the analysis of the above types of information.

All analysis was made using the following procedures:

- Extensive detailed reading and annotations by the staff member most familiar and proficient with the type of materials and/or data to be analyzed.
- Secondary consideration of all materials by Dr. Vivian, Director of the study team.
- All materials and pertinent information was further discussed in staff meetings.
- When information and/or data were inconclusive, extra staff consultation was sought from a consultant of known capability.
- 5. Industrial consultation was sought when technical or logistical information was required.
- 6. All recommendations were rendered in draft form and presented to the Steering Committee, REAC, other counties, OCZM, and during workshops with industrial representatives in Burlington County.
- 7. A final draft was prepared incorporating suggestions, data and information which were yielded by step number five.

## Task No. 4 Coordination

The task of coordination is exceedingly significant for Burlington County for these reasons. First, because of its small area near the Atlantic Coast, it is very important to take into account the plans of other counties, especially with respect to Ocean, Atlantic and Camden County. Second, the very strong "home rule" tradition in Burlington County makes dissemination and consensus a task of extreme importance because of the great diversity of community types in Burlington County. Third, the entire state plan should be unified by strong coordination with each county plan.

The following sub-tasks were executed to facilitate the task of coordination.

- Attendance and participation was regular and frequent at meetings, conventions and seminars, and liaison was maintained with environmental groups, county and state agencies, other counties, all Burlington County municipal and county officials, service organizations and industrial representatives.
- Five regional municipal slide/lecture presentations were presented to accomodate all municipalities. See municipality map number II.
- 3. An information bulletin was published and mailed to more than 250 individuals, both in the county and at other locations. This mailing served to keep key individuals appraised of the progress of the project and to solicit individual and group interaction.
- 4. The regional municipal slide/lecture presentation was supplemented by several innovations. Written information was provided to each participant, including, but not limited to:
  - Names and address of all steering committee members, OCZM, REAC and project staff personnel.
  - b. Names and addresses of all Burlington County Right-of-way Committee members.
  - c. A table depicting Burlington County Municipalities and the



presence or absence of ordinances relating to OCS facilities. (Table IV, Chapter VII).

- d. The dates of important meetings related to OCS oil exploration and the location of these meetings.
- e. Evaluation forms for return to CESC staff. Evaluation was for the presentation but also was aimed at provision of a forum whereby an individual's ideas and concerns might be implemented in the final recommendations.

### Task No. 5 Recommendations:

There is no question that this task is the heart of the project report. The recommendations were evolved by the other four tasks. This task then is the publication phase.

As chapters were rendered in draft form, the chapter would be presented to the Steering Committee and REAC, as well as other individuals with whom liaison was maintained. Each person rendered his own critique, modification was made or rejected, and a final draft prepared. The final draft was then printed when all chapters were completed. The recommendations are clearly stated in Chapters Six through Eleven of this report.

# CHAPTER IV ASSUMPTIONS OF OCS COUNTY STUDY 4.1\_Historical Sketch

In accordance with the national policy to accelerate the development of energy resources, the federal Office of Coastal Zone Management within the National Oceanic and Atmospheric Administration in the Department of Commerce made available in 1976, additional monies for states to plan for the development of Outer Continental Shelf oil and gas. New Jersey, located adjacent to the Baltimore Canyon, a potential oil and gas reservoir, applied for \$337,000 for these planning funds, of which it allocated \$180,000 to the twelve counties believed most likely to be affected by Outer Continental Shelf development. See cover.

The exploration of the Outer Continental Shelf (OCS) for energy represents a novel form of industrial enterprise for New Jersey and other mid-Atlantic states which will involve them, the oil and gas industry, federal and local governments and the private sector in a new set of relationships.

The Bureau of Land Management which has supervision over public lands and resources conducted Lease Sale #40 in August 1976. A second sale, No. 49 is scheduled to take place in 1978. Lease sale No. 40 is estimated to contain between 0.4 to 1.46 billion barrels of oil and from 2.6 to 9.4 trillion cubic feet of gas respectively. Recovery of this oil and gas could take between 20 to 25 years.

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Until exploration of the leased tracts actually takes place, no one will know for sure whether federal government and industry estimates of oil and gas are correct. Exploration for oil and gas off New Jersey's shore, in the not too distant future, therefore, appears to be a distinct possibility. New Jersey's response to this federal program was enunciated by the Governor in testimony before the Department of the Interior in 1976; the New Jersey position is to support such activity as long as it be done in an environmentally sound manner. The state applied for the federal planning monies to insure that OCS related activity be conducted in an orderly manner and that facilities be sited in the most compatible locations with respect to existing land uses.

Inasmuch as OCS activities may impact the coast, the New Jersey Office of Coastal Zone Management invited the counties bordering on New York-New Jersey harbor, the Atlantic Ocean and the Delaware River to participate in a study to evaluate the possible impacts of OCS activity on their counties. Twelve counties accepted the offer and received \$15,000 to carry it out.

The purpose of the study was to provide counties with an opportunity to evaluate land uses as they might or might not be suitable for OCS and other energy facilities, to aid the state in developing guidelines for the management of OCS activities and to aid the state in developing the energy element as mandated by the Coastal Area Facility Review Act (CAFRA) N.J. P.L. 1973, Chapter 185, and the amended Federal Coastal Zone Management Act of 1972 (P.L. 92-583) Map number III, indicates New Jersey's CAFRA area and the larger coastal zone proposed for inclusion under CAFRA jurisdiction, as indicated by interpreting the federal coastal zone law.



Map III

# 4.2 Product Assumptions

- The final product will consist of 12 individual county reports specifying areas which might or might not be suitable for OCS and other energy related facilities and the basis for these statements.
- The study assumed that some form of OCS activity such as exploration and/or development would take place within the next few years.
- 3. The counties would shape the state's basic scope of work to their individual specifications based on their geographic location, economy and lifestyles. That is, if one county chose to focus in depth on one aspect of energy facility siting such as LNG or pipelines for example, it was free to do so. However, each county was to include in its report:
  - An inventory of existing facilities, land and water uses and coastal resources, including zoning.
  - Analysis of these facilities as they might affect future development.
  - Report of how it had coordinated with local and state government in coming to conclusions, detailing constraints and opportunities.
  - Recommendations to the state with respect to the ranking of facilities, specification of alternatives, political constraints, recommendations and improved state-local coordination.
- 4. The study was designed to be carried out by one person working full-time for a period of one year. In addition, the state recognized that each county would be approaching OCS and energy facility siting from a different level of concern and expertise.

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5. The study assumed some coordination and interaction among participating counties.

### 4.3 Informational Assumptions and Premises

The magnitude of the impact that may be realized by Burlington County in general and/or specific municipalities or regions in particular, depends on many factors, including the size, location and other characteristics of the resources being explored in the leasing area. The subject is not only broad, complex and highly technical, but also rather speculative because of existing uncertainties.

Vagaries such as those above do little to build local perceptions of OCS oil and gas development as a safe and same entity. What is meeded are general assumptions that apply to the situation on a mational level, and state and local levels in particular, that serve as a foundation for later decision-making.

This text has, therefore, been prepared with the following assumptions and premises in mind:

- The United States Department of the Interior has leased for oil and gas exploration, 876,750 acres of the area known as the Baltimore Canyon Trough off of the coast of New Jersey.
- 2. Exactly how much oil and gas is present on the Outer Continental Shelf under study, and thus the resulting impacts, cannot be determined until discoveries are actually made. However, the U.S. Department of Interior estimates that 0.4 to 1.4 billion barrels of oil and 2.6 to 9.4 trillion cubic feet of natural gas are present.
- 3. The amount of oil that is actually discovered will be instrumental in terms of the decision as to the method (ships or pipelines) of

transporting the crude product from the discovery site to process and distribution sites.

- 4. In the event of an oil strike and the subsequent location of support facilities in Burlington County, changes in environment, socioeconomics and lifestyles are likely to occur in Burlington County.
- 5. The greatest onshore and nearshore environmental impact will result from site alteration rather than from spills.
- A complex array of offshore and onshore features will determine the number of the siting of onshore facilities that are directly related to OCS oil and gas development.
- 7. The greatest amount of offshore activity, and thus the greatest potential for onshore impacts, is during the development phase.
- 8. Industries involved in servicing and supporting offshore development tend to be clustered in developed harbors near strike sites.
- 9. The location of large scale facilities, such as fabricating yards and refineries, will not necessarily be in close proximity to specific lease areas.
- 10. Impacts of OCS development are likely to be more intense in rural areas than in urban or suburban areas.
- 11. The period of greatest demand for public services, and therefore the period of greatest fiscal impact, will be during the development phase.
- 12. Management and regulation of development onshore is at best, limited, and is in a process of evolution.

# 4.4 Specific Local Conditions Assumed to Influence OCS Energy Facility Siting

1. Local attitudes, regulations and ordinances will influence choices of

sites by industry.

- The composition of the labor force and level of unemployment will influence the ratio of local imported workers.
- <u>Adopted</u> land management regulations will guide industry in location decisions.
- 4. Local and state tax policies can effect industry siting decisions.
- 5. Certain federal or state environmental laws and programs may significantly influence site feasibility.
- Physical features, architectural demands of specific facilities, are very influential in site selection.
- 7. Established refineries in the urbanized New Jersey/Delaware/Pennsylvania region could be the destination of all oil recovered from the Baltimore Canyon.

# 4.5 Working Guidelines for the Study

These guidelines are based on priorities established by the Steering Committee of the Burlington County Outer Continental Shelf Study Team.

# General Priorities for Burlington County

Burlington County views the exploration of the Outer Continental Shelf for the presence of crude oil or natural gas in developable quantities as both an opportunity and a challenge.

Such exploration is viewed as an opportunity to provide:

- natural gas in greater abundance for industries and residents of the county.
- b. increased employment potential for Burlington County residents.

c. increased industrial development within the County as a result of potentially increased energy supplies.

The potential of offshore oil and gas sources provides a challenge to maintain environmental quality despite potential ocean spills, air polluting refineries or potential aquifer polluting pipelines.

In short, Burlington County's priorities include improved energy supply, improved employment and improved or undeteriorated environmental quality.

### Desirability Analysis of Energy Development/Transportation Facilities

Burlington County has no ocean front area, but it would not welcome extensive oil spills accompanying any offshore oil or gas drilling.

# What the Steering Committee Favors

- On-shore staging facilities only in areas of low environmental sensitivity.
- New county-based industry in desirable industrial zones as a result of increased energy supplies.
- Increased employment as a result of new energy development of energy-dependent industry.
- Preservation of aesthetic amenities by providing adequate visual shielding and camouflage of natural gas staging areas, pumping facilities or storage tanks.
- 5. Adequate technological safeguards for environment in marine and terrestrial environments.
- Pipelines on higher ground and with adequate environmental safeguards from main breaks with demonstrated efficacy.
- 7. Placement of living facilities for engineers and workers in areas

already developed for residential purposes.

- 8. Maintaining densities in the southern pinelands-wetlands portion of the county at levels best suited for this generally sensitive environment.
- 9. Limiting the development of residential areas in the southern portion of the county to areas already established as population centers.
- 10. The purchase of lands in the southern portion of the county already recommended for acquisition by a number of agencies.

### What the Steering Committee Would Oppose

- Energy producing activities which would deplete the quality of the unpolluted waters of the Wading-Mullica River watersheds or Great Bay.
- 2. Any energy producing or related activities which would reduce the oyster or other shellfish beds of Great Bay, presumably the cleanest estuary in the state of New Jersey.
- 3. Any significant reduction or deterioration of the Great Bay-Mullica estuary wetlands.
- 4. Location of nuclear electrical generating stations on the Great Bay.
- 5. Locating electrical generating stations in the Pinelands.

#### CHAPTER V

# Existing County Resources

### 5.1 General Resource Characteristics

The purpose of this chapter is to inventory selected features of the physical and cultural aspects of Burlington County. The following topics are broadly treated in the text of this chapter and then more specifically considered on the maps and charts which accompany the text:

- A. Environmentally sensitive areas (see Chapter VIII)
- B. Existing transportation (see Chapter VIII)
- C. Existing energy facilities, pipelines and electric transmission lines
- D. Delaware River Waterfront facilities

Burlington County, New Jersey, is bounded on the northwest by the Delaware River and on the east by Great Bay and estuary. It has an area of approximately 524,160 acres, or 819 square miles. The Delaware River in Burlington County is navigable for ocean-going vessels with a draft up to 40 feet. It is also tidal as far north as Trenton with many fresh water marshes. There are also coastal salt marshes and large tidal flats at the southeastern tip of the county. (See map numbers VII and VIII, Chapter VIII).

Most of the county population is located in an area 10 to 15 miles wide that runs parallel to the river. The majority of the business and industry of the county is also located in this area. Historical documents reveal that western Burlington County has always been a major traffic artery along the east coast of the United States. This feature is as true today as it has always been due to the fact that U.S. Route 130, the New Jersey Turnpike, and Interstate Highway 295 form a broad transportation corridor running northeast-southwest in the west of the county. Fort Dix and McGuire Air Force Base are also located in part in Burlington County. See map number IX, Chapter VIII.

The October 1971 Soil Survey of Burlington County indicates that the county is about 54% forest, 30% farmlands, 12% developed community lands, and 4% federally owned lands. Most of the productive farmland is in the western one-third of the county. East of this is the natural treasure of the Pinelands where state-owned forests and parks make up 20% of the central and southern forested areas in the county.

The part of the county containing the predominantly pine forest is often referred to as the New Coastal Plain. This section is popularly known as the Pine Barrens or Pinelands, while the ecologically unique Pygmy Forests or dwarfed tree areas located within the Pine Barrens are called the "Plains".

There are also many irreplaceable historical treasures in Burlington County. Buildings and structures that date from more than 100 years prior to the Revolutionary War are certainly areas warranting special protection.

Correctly speaking, the entire 819 square miles of Burlington County may be considered environmentally sensitive; some areas are less sensitive than others. The use of any areas should be in the direction of improving the natural flow of energy, and for management to optimize their present natural status. Concerted efforts in maintaining the current status of open space areas such as the irreplaceable Pine Barrens, the Wading River-Mullica River Watershed and the Great Bay, should be priority management items.

In the western third of the county, pressure from all kinds of land use will

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continue. Particular concern must be taken in providing a delicate balance among recreational, residential, agricultural, industrial and other land uses. Among the areas especially suited for open space activities are Hawk Island in Delanco, Rancocas State Park in Westampton and other areas with access to watercourses such as the Pennsauken, Pompeston, Assiscunk, Crafts, Blacks and Crosswicks Creeks.

# 5.2 Energy Facilities

In Burlington County, there are many existing energy facilities. There is the Burlington Generating Station of Public Service Electric and Gas (PSE & G) to which many switching stations, substations and transmission lines are connected. This facility also has an auxiliary generating capability in the form of jet engines which can be placed on line in the event of a high demand. PSE & G also maintains a Liquified Natural Gas Facility just to the west of the above described plant.

There are also numerous rights-of-ways in multiple use. The Interstate Pipeline Corporation maintains a tank farm storage facility in Burlington Township near the New Jersey Turnpike. Colonial Pipeline Company operates a similar facility in Mount Laurel Township. Transcontinental Pipeline Corporation, along with Interstate and PSE & G utilize many public rights-of-way such as the Turnpike and Route I-295 in western Burlington County (See map numbers IV and VI). Burlington County is not laced with heavily used railroad rights-of-way. Many formerly heavily used railroad beds have now been relegated to a light use status. (See map number IX, Chapter 8).

The county also has many Delaware River waterfront facilities which are depicted in map number V.

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Map IV



# CHAPTER VI SUITABLE COASTAL ENERGY FACILITY SITES AND AREAS IN BURLINGTON COUNTY

# 6.1 Methods for Suitability Determination

The requirements for each type of energy facility were summarized by a table indicating resource demands and environmental impacts for each energy facility under consideration for Burlington County. A partial copy of this table containing the six facilities considered as being most likely for possible location in the county was included in the "Burlington County Popular Reader for Offshore Oil Drilling" (see appendix) and distributed at all regional public meetings and to concerned public officials in each municipality. Information for the table was collected from the literature and from information meetings conducted by OCZM with representatives of the petroleum industry, the American Petroleum Institute, the New Jersey Petroleum Institute and the New England River Basin Commission.

The broad requirements of each facility were compared to environmental and existing land use factors as well as community interest or receptivity. These analyses and conclusions are embodied in an additional table indicating areas and communities where the location of any facility was environmentally and developmentally possible. To this table a column was added listing communities known to be receptive to the location of that facility within their boundaries.

Obtaining a clear indication of a community's general receptivity or hostility toward a given energy facility was not a task which could be completed with great certainty. Despite the four sectional meetings and the wide dissemination of the "Burlington County Popular Reader for Offshore Oil Drilling",

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many communities in Burlington County did not seem sufficiently motivated to take a strong position. Burlington County is not viewed as being strongly impacted by the imminent oil exploration on the Outer Continental Shelf.

To insure that the county population is more completely aware of the need to prepare for potential new energy facility siting, impact must be a prime focus for county OCS activities during 1978. A telephone opinion poll produced only ten usable responses among the forty communities. A questionnaire was promptly dispatched. The results of this questionnaire will be filed as addenda to this report or in the 1978 report.

# 6.2

The following two tables provide much significant information for community decision-making concerning the location of any such facility within that community.

In this chapter, only the facilities deemed possible in Burlington County are included. Other facilities not possible are characterized in Chapter VII. Thus a permanent service base with its high dock space requirement on an all weather harbor is not deemed possible in Bass River on the coast, while the Delaware River sites in Burlington County have been considered too remote from the Atlantic Ocean.

### 6.3

See Table I and Table II on the pages following.

table 1

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# SOME ENVIRONMENTAL IMPACTS AND RESOURCE DEMANDS OF OIL AND ENERGY TRANSMISSION FACILITIES POSSIBLE OR LIKELY

IN BURLINGTON COUNTY

Facility Type	Area Required	Visual	Noise	Odor Air	Water Supply Requirement	Wastewater Potential Contaminants	Groundwater Contamination Potential	Highway Requirements	Fire/Other Hazards	Energy Demands	Tax Ratable	Labor	Capital Investment	Solid Waste	Limiting Factors
Permanent Service Base	25 - 50 Acres	Tall Cranes To 150'	85 db 24 hrs/day	Hydro- carbons	8.2 Mil Gals per rig/year	Hydrocarbons heavy metals	Small	Increase in County	Yes	20,000 to 54,000 bbls year	11	60/rig 80% Local	\$1-3 million	6 tons/day	200' Wharf/rig 15-20' Water Depth
Heliport	5 - 10 Acres		30 db to 120 db at site			Some lead from fuels					11				
Refinery	1000 - 1500 Acres	Towers to 100' Tall	90 db to 100 db 24 hrs/day	Particulates nitrates - nitrites, sulfur diox- ide, sulfites carbon mono- xide	4-10 Mil Gals per day	-	Considerable Draw Down	Possible Increase in County	Yes	1.45 mil kwh/day 19,800 bbls/dy	11		\$700 million to \$1 billion	Concrete/metal other debris	All reports indicate that no new refineries will be required, there is suf- ficient capacity in the Camden-Phila. area by de- creasing the amount of imported crude oil
Gas Scrubber	50 - 75 Acres	Towers to 80' Tall	80 db to 100 db 24 hrs/day	Sulfides oxide of sulfur and nitrogen, hydrocarbons	200,000 gals/day	Sulfuric Acid Chromium Zinc, Phos- phates, Sulfite	Great Draw Down		Yes	5.4 mil kwh/month 360 ft <sup>3</sup> / month	11	500 Const 55 for operation	\$85 million	Sludge, scale oil absorbents	Must be within 10 miles of landfall if Nat. Gas is found
Pipelines and Làndfall	See Comment		90 db to 140 db	Minimal	Minimal	Minimal	No		Yes		"	15 - 20	\$700,000 to \$2 mil/mile	Minimal	50 to 100' R/W,(40 acres for pump station, 60 acres for terminal if required) at landfall
Partial Processing Facilities	15 Acres							L	L	· ·		150 Constr. jobs, 10 jobs during operation	\$13 million		Partial processing of the well stream can either be performed offshore or onshore with the long distance from the well to the shore, it is more likely at least some partial processing will occur offshore. When processing occurs onshore, the siting decision will be in- fluenced by the loca- tion of the nineline
			24												landfall.

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### TABLE II

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Designation of Communities in Burlington County Where Oil-Gas Transmission Facilities Siting is Favorably or Unfavorably Viewed

Facility	Environmental Limitations or Special Requirements	Municipalities Where Siting is Possible	Population Favorable to Siting	Population Unfavorable to Siting
Heliport	Must be near sea coast and close to service bases	Bass River Twp., Washington Twp.	One industrial firm interested in leasing some of its land area	Bass River Twp., Washington Twp.
Refinery	Large land area, Large water supply, Railway and High- way access, Air Pollution Control Needed	Burlington Twp., Delanco Twp.	Not determined to date	Cinnaminson and Bordentown Twp.'s have exclusionary ordinances
Pipelines	Lowest water table possible, existing rights-of-way e.g. highway, railway	Bass River (Garden State Parkway) Wrights- town, Pemberton Twp., Eastampton, Mount Holly, Hainesport, Mt. Laurel	Wrightstown-all have a railway but no major highway except Mt. Laurel	Not determined to date
Gas Scrubber	None likely in Burlington County if the exclusionary area of the Pine Barrens for pipelines is implemented and upheld			Bass River Twp., Washington Twp.


Map VI

# 6.4 Rationale

#### Pipelines

The Pine Barrens section of Burlington County has been designated as a pipeline exclusionary area in <u>Coastal Management Strategy For the Coast</u> - New Jersey Department of Environmental Protection, Office of Coastal Zone Management. This means that a pipeline landfall in Ocean County or Bass River Township in Burlington County would be diverted southward along the Garden State Parkway to the Atlantic City Expressway to reach the Camden-Philadelphia refining area.

A less likely possibility could be a pipeline landfall in Monmouth County moving southwestward toward Camden-Philadelphia via County Road 537 and possibly using the Conrail right-of-way through Wrightstown, Pemberton, Eastampton, Mount Holly, Hainesport and Mount Laurel. See Map VI on the page following.

# Gas Scrubbers

Because of the high acidity of unrefined natural gas, costly stainless steel pipelines are required until scrubbing (washing out the acid) can be accomplished. For this reason, gas scrubbers are desired as close to a pipeline landfall as possible. With the pipeline routes limited as described above, the only community in which a gas scrubbing facility might be sought in Burlington County is Bass River Township. Although an area is available near the wetlands at the Viking Yacht Company, it is likely that the ground water and surface water polluting potential of a gas scrubber would arouse vigorous opposition in Bass River Township. The environmental sensitivity of the area with its high water table and the possibility of pollution in the Great Bay provides a serious environmental deterrent to such a facility placement.

Constituents of water wastes from gas refining plants are expected to

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include dissolved solids, phenols, hydrocarbons and sulfur compounds. Groundwater recharge areas and stream floodplains are particularly susceptible to washwater effluents from such gas refineries. (Woodward - Clyde, pg. 137, see Bibliography in the Appendix).

### 0il Refineries

Several communities having rail and highway facilities profess not to have available space for a refinery. These communities include Willingboro, Palmyra, Beverly and Fieldsboro. This leaves only Burlington and Delanco Townships as possibilities for refinery location.

# Marine Terminals and Staging Areas

Because of its long distance up the Delaware River from the ocean, the Delaware River waterfront of Burlington County does not seem favorably situated to have the petroleum industry interested in placing their facilities in this location.

## 6.5 Probable Adverse Effects and Beneficial Impacts

Heliport - By itself the heliport promises a minimum of adverse effects, chiefly from some low decibel noise near the facility. The presence of the heliport, however, would indicate that the other installations which it existed to serve would be located in close proximity. These are installations such as a marine terminal or a permanent service base. These facilities have been perceived as unlikely in Burlington because of the great -distance of Bass River Township from the ocean via the relatively shallow Great Bay and Brigantine Inlet. Other facilities in Burlington County potentially available as heliports are Burlington County Airpark and the Flying "W" Airfield. See Map IX.

Beneficial effects from the heliport would certainly include increased tax

ratables for a period of three to thirty years, and employment of local construction contractors and personnel. A few maintenance personnel from local sources could also be employed.

# Refinery

The adverse impacts of this type of installation have been previously identified in the foregoing section. Presumably there is sufficient existing refinery capacity in the Delaware Valley area to suggest that no new refineries will need to be constructed.

In the event that a new refinery were built in the vicinity of railroads and the New Jersey Turnpike in western Burlington County, it should be possible to insist on the newest technology to provide more adequate environmental safeguards from both air and water pollution.

## Gas Scrubber

If a pipeline corridor is established in Burlington County, it will probably be along the Garden State Parkway. The only community through which the Garden State Parkway passes is Bass River Township. However, two factors make this possibility rather remote: 1.) The high water table subject to pollution from the acid waste water effluent constitutes a very strong negative factor in the placement of such a facility in Bass River Township. The citizens of the township would probably be overwhelmingly opposed to this kind of installation. (See Table I on the preceding pages for description of such an installation), 2.) The pipeline landfall will most likely be located at some distance north or south of Bass River Township.

Unquestionably, the gas scrubber would bring additional ratables and some modest new employment (up to 10 local persons from the area's original population)

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to any area where it is located.

#### Pipelines

Pipeline rights-of-way only pose a significant adverse impact in the event of a spill from a joint leak. The probability of any leak may be sharply reduced by the frequent or complete use of x-rays of joint welds. Where a pipeline traverses public land, the cost of such x-rays might be obtained from a trade-off of x-rays on welds for decreased lease fees.

On private land, the lease or purchase fee would constitute a positive fiscal gain for the owner.

The proposed exclusion of pipelines from much of the Pine Barrens of New Jersey has made the protection of this most sensitive area much more feasible. In the previous section a route using a county highway and a railroad right-of-way has been described. Other than the risk of a spill and its threat to the water table locally, a pipeline located on this route should have little adverse effect.

If a pipeline were routed along the Garden State Parkway southward toward the Atlantic City Expressway, then special precautions would need to be taken when crossing the two mile wide estuary of the Mullica River at Great Bay. Here x-rays of all welds should be mandatory before a wetlands permit is issued. See map VI in this chapter.

Lowering the level of the pipeline to a hard sand base in this estuary to provide for maximum support would create the need for a pumping station at this location.

#### CHAPTER VII

## Non-suitable Coastal Energy Facility Sites and Areas

# 7.1 Tabulation of Non-suitable Energy Facilities

Bass River Township is the only Burlington County community located near the coast on the Great Bay estuary of the Mullica River. All of the facilities listed in Table III below require access to the ocean with large dock areas and pierside depths up to 35 or 40 feet. Such facilities do not exist in the Bass River Township portion of Great Bay, therefore, their siting has been eliminated from possible location in this area.

Riverside facilities on the Delaware in western Burlington County have similarly been eliminated because of the great distance from the Atlantic Ocean and the availability of more developed facilities in Camden County downstream.

# 7.2 Tabulation of Exclusionary Energy Facility Ordinances

Table IV shown below indicates the findings of a study of all exclusionary ordinances now in existence in the communities of Burlington County. The study was made by examining the zoning ordinances submitted by each community in Burlington County to the Planning Board office. All zoning ordinances were read and catalogued for zoning exclusion relative to any energy facility.

# TABLE III

# SOME RESOURCE AND DEVELOPMENT DEMANDS OF OIL AND OTHER ENERGY TRANSMISSION FACILITIES NOT LIKELY TO BE LOCATED IN BURLINGTON COUNTY

FACILITY	LAND	WATER FRONT	LABOR	CAPITAL INVESTMENT	LIMITING FACTORS
Service Base Temporary	5-10 acres on all weather harbor	200 ft. of wharf 15 to 20 ft. water depth	45 jobs/rig	\$150,000 to \$200,000	Burlington County does not have 200 ft. docks and 20 ft. channels along the seacoast
Service Base Permanent	50-75 acres on all weather harbor	400 ft. wharf 15 to 20 ft. water depth	50-60 jobs/ platform during drilling	\$1 million to \$2 million	Burlington County does not have 400 ft. docks and 15-20 ft. channels along the coast
Repair and Maintenance Yards	200-1000 acres on navigable water- ways	15-30 ft. depth at pier	250-550 workers/ steel platform	\$30-\$60 million start up capi- tal	Burlington County does not have dock space nor 15-30 ft. depth at any piers on the seacoast
Concrete Platform Fabrication Yards	Mim. 50 acres per platform	35-50 ft. depth at pier	350-450 average	\$30-\$60 million start up capi- tal	Although Burlington County does not have dock space nor 35-50 ft. depth at pier on the seacoast, these facilities could be provided on Delaware River sites
Steel Platform Installation Services Bases	5 acres waterfront land plus a helipad	15-20 ft. depth at pier 400 ft. wharf space/4 platforms installed	approx. 100 workers in- stallation spread	\$1 million to \$2 million	Burlington County has the required dock space on the Delaware River, but not on the seacoast
Pipeline Installation Services Bases	approx. 5 acres plus helipad	200 ft. wharf spread,15-20 ft. water depth,wide enough to ma- neuver 5 barges	approx. 25 onshore jobs	\$150,000 to \$200,000	Road, rail, sea and airways must be available. If installation is over 150 miles from drill site, heliports would probably replace crew boats. Burlington County does not have any site available on the coast

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# TABLE III - con't

# SOME RESOURCE AND DEVELOPMENT DEMANDS OF OIL AND OTHER ENERGY TRANSMISSION FACILITIES NOT LIKELY TO BE LOCATED IN BURLINGTON COUNTY

FACILITY	LAND	WATER FRONT	LABOR	CAPITAL INVESTMENT	L IMITING FACTORS
Pipe Coating Yards Permanent	100-150 acres on water front	750 ft. of wharf and 20-30 ft. depth at pier	100-200 work- ers during season (Mar. to Sept.)	\$8 to \$10 million	A site near the pipe laying service base is desired, Burlington County does not have the wharf space nor the water depth 20-30 ft. to accomodate this facility on the seacoast. A portable facility may be possible, "Railbed Operation" usually servicing a pipeline limited (to 20-50 miles), Baltimore Canyon average 85 miles off- shore. This facility might be accomodated on the Delaware River.
Marine Terminals	approx. 30 ft. waterfront acres	50-60 ft. shel- tered water at mid depth pier	560 workers	approx. \$50 million	Burlington County does not have a sheltered harbor to take 40,000 D.W.T. tankers with 80-180 ft. length on the coast.
Steel Platform Fabrication Yards	200-1000 acres on navigable waterway	15-30 ft. depth at pier	250-550 workers	\$30 million to \$60 million	Steel platforms and rigs are available in southern fabrication yards; so that, rigs can be towed up from the south. Burlington County does not have a large waterfront area with 15-30 ft. depth at the pier on the coast.

# TABLE IV BURLINGTON COUNTY MUNICIPAL ZOWING EXCLUSIONARY ORDINANCES

"X" indicates mentioned in ordinance

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MUNICIPALITY	HIGH VOL 550 K.V.	T.TRANS. 765 K.V.	OIL REFINERY	OIL,GAS FLAMM TANK I OIL	S, OTH. ABLE FARMS GAS	OTHER	STORAGE VOLUME LIMIT	GAS REFINERY SCRUBBER	OIL PIPE- LINE	GAS PIPE- LINE	NUCLEAR PLANT	NOISE	AIR TRANS- PORT
Bass River Twp.	X	X		X	x	Art 9- 4						X	
Beverly City			X	<u>x</u>	X	Art 2- 206		X				X	
Bordentown Twp.			X	18-12.3 (a)(4)		Sec.9-160	20,000 cn.ft. 20,000 gal.					X	
Bordentown City													
Burlington City				X	X		<u>x</u>						
Burlington Twp.				X		19:7-1 (11)	19:7-1 (11)					Χ	
Chesterfield Twp.													
<u>Cinnaminson Twp.</u>			x	X	<u>x</u>	Art XII		X			X	X	x
Delanco Twp.						No coverage							
Delran Twp.												X	
Eastampton Twp.													
Edgewater Park Twp.						16:7-1 (11)						X	
Evesham Twp.												X	
Fieldsboro Twp.													
Florence Twp.			x	x	x		Max. 10,000 cu.ft.					X	
llainesport Twp.			X									X	

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MINITCIPALITY	HIGH VOL 550 K.V.	F. TRANS. 765 K.V.	OIL REFINERY	OIL,G/ FLAM TANK OIL	AS,OTH. MABLE FARMS GAS	OTHER	STORAGE VOLUME LIMIT	GAS REFINERY SCRUBBER	DIL PIPE- _INE	GAS PIPE- LINE	NUCLEAR PLANT	NOISE	AIR TRANS. PORT
Lumberton Twp.													<u>x</u>
Mansfield Twp.			X		Max. 20,000 cu.ft.		Max. 10,000 gal.						
Maple Shade Twp.			X	X	x		-					x	
Medford Twp.			X	X	X	Sec. 78-22							
Medford Lakes Borough					<u> </u>	Art.X						X	
Moorestown Twp.						Sec. 2:17-5 (pre. stats.)					X	x	
Mount Holly Twp.													
Mount Laurel Twp.			X	Max. 20,000 cu.ft.	10,000 ya1s	Art. VIII Sec. 800						X	X
New Hanover Twp.			X			Sec. 7	Max. 20,000 cu.ft.						
North Hanover Twp.			X	Max. 20,000 cu.ft.	10,000 gals.	Sec. VII						x	
Palmyra Borough			X	X	x	94:12	Max. 10,000 cu.ft.						
Pemberton Borough			x	X	X	Art.VI	Max. 550 gals.	X				X	

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# BURLINGTON COUNTY MUNICIPAL ZONING EXCLUSIONARY ORDINANCES-con't

	HIGH VOLT.TRANS.	OIL	OIL,GAS FLAMM/ TANK I	S,OTH. ABLE FARMS	OTHER	STORAGE VOLUME	GAS REFINERY	OIL PIPE-	GAS PIPE-	NUCLEAR	NOISE	AIR TRANS-
MUNICIPALIT	550 K.V. 705 K.V.	KEPINERI		-1-GAS			SURINBBER	LINL	LINL	<u> TLANI</u>	MOIJL	
Pemberton Twp.		X	X	X	Sec.411							
Riverside Twp.					Sec. 21:1-14	Max 10,000 cu.ft.						
Riverton Borough		X	X	X	Art.X						<u>x</u>	
Shamong Twp.		X			Art.IX							
Southampton Twp.		<u>x</u>			807-1		X					
Springfield Twp.					Art.X-A							
Tabernacle Twp.					Nothing							
Washington Twp.					Nothing							
Westampton Twp.		X			Art.VII	Max. 40,000 cu.ft.	X				x	
Willingboro Twp.					20-6-9						X	
Woodland Twp.	· · · · · · · · · · · · · · · · · · ·				Sec.1105							
Wrightstown Twp.											х	

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## BURLINGTON COUNTY MUNICIPAL ZONING EXCLUSIONARY ORDINANCES-con't

#### CHAPTER VIII

# POLICIES AND REGULATIONS INFLUENCING ON-SHORE ENERGY STORAGE, LOCATION OR TRANSMISSION

This chapter is to identify policies and regulations already in existence, those already proposed and awaiting approval, and those which this study indicates are necessary or desirable.

# 8.1 Policies Already Adopted

 New Jersey's Position Concerning Oil/Gas Exploration on the Outer Continental Shelf.

The State of New Jersey supports the now-imminent exploration of the outer that it be be done in an environmentally sound manner. New Jersey insists that its beaches and tourist industry must be safeguarded. Existing petroleum drilling technology, if applied to this end, can provide those safeguards. These foregoing statements are the sense of New Jersey Governor Brendan Byrne's testimony before the United States Department of the Interior's hearing on the then-proposed Mid-Atlantic oil and gas lease sale, on January 27, 1976.

# 2. New Jersey's (0il) Spill Law

On January 6, 1977, Governor Brendan Byrne signed Assembly Bill #1903 into law. Known as the "Spill Compensation and Control Act", this law prohibits the willful discharge of petroleum and other hazardous materials and provides for clean-up and removal of any such accidential discharge. The "Act" establishes a Spill Compensation Fund and provides for the raising of revenues to implement the payment of claims. Such legislation signifies the intent of the State of New Jersey to protect its coastal zone's tourist economy and its environment. Unfortunately, the legislation does not specify clearly how individual property owners could be compensated for various losses directly or indirectly attributed to oil spills.

#### 8.2 Policies Awaiting Adoption or Approval

1. Federal Oil Spill Indemnity Legislation

The 95th Congress has legislation pending in H.R. #6803 now reported out of committee. The proposed act would "provide a comprehensive system of liability and compensation for oil spill damage and removal costs". Recent information reveals that this legislation will not be acted upon in the 95th Congress. In its present form, the proposed oil spill provisions are not as comprehensive as New Jersey's existing law.

# 2. State Policies Proposed for the Coastal Area (CAFRA)

The Office of Coastal Zone Management of the New Jersey Department of Environmental Protection has produced several definitive policies which would apply to the regulation of onshore installations related to energy refining, transmission or storage. These policies are enumerated in <u>Coastal Management</u> <u>Strategy for New Jersey: CAFRA Area</u>, a second draft published in September, 1977. See Map III, Page 14.

The "Strategy", if adopted, proposes to utilize a series of definitive "use" policies dealing not only with energy installations, but any proposed new land use, and synthesize these with a shorter series of location policies relating to the degree of land use development as a basis for decision-making in the coastal zone under the jurisdiction mandated by the Coastal Area Facilities Review Act (CAFRA).

The general siting policy in <u>Coastal Management Strategy</u> page 26, stipulates the joint review by the New Jersey Department of Environmental Protection and the New Jersey Department of Energy required for all energy facilities in the coastal zone.

The second policy restates the New Jersey position enunciated by Governor Bryne and described above.

Policies dealing with specific energy facilities include those for the following:

- onshore support bases
- offshore platform construction yards
- pipelines and associated facilities
- oil refineries and petrochemical facilities
- crude oil storage
- tanker terminals
- deepwater ports
- base load electric generating stations
- liquified natural gas (LNG)
- solar and wind powered generating plants

Of particular significance for Burlington County is the policy relating to pipelines. The policy statement seeks to limit the total number of pipeline corridors and proposes that established rights-of-way such as the Atlantic City Expressway be used. This is consonant with energy siting policies developed by the Burlington County Outer Continental Shelf study team and described further in this chapter. The CAFRA pipeline policy enunciated in the <u>Coastal Management Strategy</u>, if adopted, also proposes to prohibit the crossing of a 760 square mile area encompassing some of the watersheds of the Mullica, Wading, and Toms River as well as parts of the Cedar Creek and Rancocas Creek watersheds. The area proposed for pipeline exclusion is the same as that identified by the Department of Environmetnal Protection as a proposed "Critical Pine Barrens Area" for sewerage regulation and for which non-degradation water quality standards have been proposed and may soon be implemented. See map numbers VII and VIII on the pages following.

If this policy is adopted, then the crossing of Burlington County by pipelines through the center of the Pine Barrens, from the coast to the Camden-Philadelphia petrochemical refining complex, would be virtually eliminated.

Similarly, following the policy would most likely eliminate the placement of the kind of preliminary gas refining plant known as a "gas scrubber" in Burlington County. Such a policy if adopted and implemented would, in the opinion of the Burlington County OCS study team, safeguard the Pine Barrens from ground water pollution from pipeline oil spills.

3. Policy Resolution By the Burlington County Board of Chosen Freeholders The Freeholder Board has had a draft resolution presented to it which proposes a policy concerning oil and gas exploration on the outer continental shelf and the potential transmission of energy or energy materials in Burlington County. It is anticipated that a policy resolution will be considered after the Board studies this first year report.

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Map VIII

## 8.3 Policies Recommended for Adoption By This Study

1. Local Level Policies

The New Jersey "Home Rule Tradition" is strong in Burlington County. In order to make "Home Rule" a reality with respect to facilities related to the transmission, storage or production of energy or energy materials, each of Burlington County's forty (40) municipalities should enunciate its policies for all such facilities. The policies should then be implemented by the enactment of enabling and/or prohibitory ordinances stated in clear and consise language. The review of municipal master plans and zoning ordinances is also indicated as essential to implement energy related policies. These ideas were conveyed to all of Burlington County's municipalities by means of four regional meetings and by the wide distribution of an informational packet called the "Burlington County Popular Reader for Offshore Oil Drilling".

2. Proposed Energy Facility Siting Policies for Burlington County

The policies recommended in this chapter were developed with two objectives as essential guiding principles.

- a. The quality of life in Burlington County must be maintained or improved.
- b. Policies adopted by Burlington County should allow for or provide for sites adequate for the various energy production or delivery tasks identified.
- A Use/Location Recommendations

I. Prohibitory Policies

a. <u>No oil refineries shall be built or erected in Burlington County</u> unless the following site requirements are met:

- the landscape should be buffered so that appearance of the facility is harmonious as considered from the surrounding areas.
- 2. NOISE AND VIBRATION: The level of noise at the property boundaries shall not exceed the ambient limits prior to development. No increased vibration shall be perceptible at the property boundary except where sensitive instruments are employed.

ODOR: No odors of any kind shall emanate from the installation.

AIR POLLUTION: There shall be no visible emission of smoke. Facilities must comply with federal and/or state standards and applicable local ordinances.

VISIBILITY: The installation shall be compatible with the potential surroundings by use of any or all of the following measures where applicable;

a. Buffer strips

- b. Depressions, natural or artificial
- c. Screen planting and landscaping continually maintained, existing or not

d. Camouflage and/or blending colors

LIGHTING: All lights shall be shielded so as not to shine on adjacent properties. Visible gas flares will not be permitted.

TRAFFIC: The traffic restrictions of all state, county and local regulations shall prevail.

GRADING: Grading shall preserve the natural contour of the land. Berms with adequate landscape planting shall be used.

FLOOD AND EROSION CONTROL: If controls are required by the appropriate soil conservation district to prevent erosion and flood damage, such measures shall be carried out as specified; the said district shall have the authority to insure that the specified control measures are accomplished.

LAND AND WATER POLLUTION: There will be no discharge of effluent which will contaminate land or water. The facility must comply with federal and state regulations.

PUBLIC SAFETY: The safety of people and adjacent properties must be assured by complying with applicable federal and/or state laws.

LAND USE: Each application shall be subject to the provisions of the applicable state laws and local zoning ordinances.

1. Local municipalities through the planning and zoning process, with the assistance of the County Planning Board, should provide the primary framework within which potential adverse affects of any onshore facilities can be prevented or ameliorated.

2. The municipal planning boards of Burlington County are strongly urged to take immediate steps to plan for potential onshore development including the regulating and restricting of certain activities, procedures and facilities.

3. The "Best Available Technology" test should be applied to the equipment and procedures used.

This policy is proposed even though the expectations expressed by the representatives of Exxon, Shell, Mobil and Ashland Oil Companies indicate that present refinery capacity in the Middle Atlantic States is more than adequate for any production of oil or gas on the eastern Outer Continental Shelf or the Atlantic Ocean.

# No nuclear generating plants shall be erected in the Pine Barrens of Burlington County.

The need for vast quantities of cooling water for nuclear generating stations in the Pine Barrens could most likely be supplied only from wells drilled in the Cohansey or Kirkwood aquifers. The anticipated drawdown could unfavorably affect the water table and consequently the vegetation, wild-life, agriculture and recreation as well as producing the danger of salt intrusion in these irreplaceable aquifers in the area. The resultant waste waters from nuclear electric power generation, chiefly from cooling processes, would provide an unfavorable increase in the ambient temperature of any stream of the Mullica River drainage system and possibly the ambient temperature of the Great Bay. To avoid these consequences, such waste waters might need to be piped several miles into the Atlantic Ocean. The anticipated environmental effects seem likely to produce such detrimental environmental conditions in the Pine Barrens that nuclear or fossil fuel energy production would be precluded.

# c. <u>No 765 kv electrical transmission lines shall be erected and</u> strung in Burlington County.

There seems to be documented evidence of unhealthful radiation effects of

such high voltage transmission.\* Power lines of conventional voltage should be sufficient for county, state and network needs. It is preferable and desirable that buried cable be used for new transmission lines.

II. Limited or Restricted Facilities Policies

a. Heliports

Heliports developed near the seacoast should be placed or screened in such a manner that the visual amenities at the water's edge are preserved, and are in accord with state regulations.

Although heliports are presently essential for development and maintenance of drilling platforms and associated installations, such heliports may be located close to the water's edge without being in a position to dominate a recreationally or aesthetically valuable landscape.

b. Oil and Gas Pipelines

1. Existing Compatible Land Use

The foremost criterion is locating land formerly used or still being used as a right-of-way for transportation or energy transmission. See map number IX on the page following. See also Map VI in Chapter VI.

Highways and railroads are often built on a minimum gradient, raised above all wetland levels, and with bridges over major water courses.

\* Most recent source: CBS News, 60 Minutes, Vol. X, Number 4, Sunday, October 2, 1977.



Map IX

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Multiple use of rights-of-way would reduce the high ratio of land already set aside or developed for transportation purposes.

A mimimum of new environmental degradation would result from use of such rights-of-way.

In order of preference, the following rights-of-way are designated.

A. Super Highways

Super highways have the widest rights-of-way and, presumably, the maximum available space for energy transmission lines.

Super highways have the most favorable gradients in that they are the most recently constructed of all highways and built to stringent standards to maximize speed, energy efficiency, and safety.

# B. Existing Rights-of-Way

The land use is identical, and the safeguarding of the integrity of a pipeline from the dangers of earth moving equipment or other disturbance hazards would be held to a minimum.

## C. Railroads

Railroad rights-of-way tend to be of much lesser width than present super highways or oil/gas pipeline rights-of-way, even though they are built with low gradients and are raised above wetland depressions. Notable exceptions may be found where multiple track rights-of-way have been reduced to a single set of rails. Single lane beds in active use may not be suitable. If documentary evidence is found to demonstrate that railroad traffic vibrations would damage oil pipeline welds, then the use of railroad rights-of-way would be discouraged.

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## D. Roadways

These lowest priority communication lanes at least have cleared areas and would presumably utilize less land than in breaking new ground for a pipeline. Hazards from rupture by earth moving equipment would be maximized by some construction but minimized by existing stability.

# 2. New Land Use

When new land must be used for pipeline rights-of-way siting, the following criteria must be applied.

1. Soil Factors:

A. Water Table Minima

The minimum water table encountered in the annual fluctuation should be six feet or more.

This depth should guard against joint leakage or other kinds of rupture directly into the water table.

B. Soil Porosity:

The highly porous soils of the Pine Barrens such as the Lakewood and the Woodmansie soils series must be avoided.

Less porous soils should retain oil leaks more readily in view of their higher clay content.

2. Wetlands:

# A. Cedar Wetlands

Cedar wetlands should be avoided or only crossed at right angles to the stream bed.

Cedar wetlands are the only areas of the Pine Barrens in which enough food is present to allow for the over-wintering of deer. The opening of a short swath of cedar forest in the upper reaches of a stream course bordered by cedar wetlands will not produce non-recoverable environmental damage, but will, in many cases, provide improved and increased habitats for rare pineland species. Normal cedar regrowth should occur.

B. Flood Plains or Flood Plain Wetlands

Such lands should be avoided or crossed at minimum widths at right angles to the stream bed.

The corporations installing any pipelines in the county should demonstrate satisfactorily that the best available technology is being utilized.

# III. Public Safety and National Security

The installation of all pipelines should be carried out with maximum safeguards for public safety but also in cooperation with any plan for national security. This policy may be of particular significance when a proposed concentration of energy producing facilities is too great for adequate defense.

IV. Design Recommendations

a. No industrial installation of any kind shall be erected or developed which will adversely affect the quality of the waters of the Great Bay, a water body whose principal sources of water are from the Mullica River ecosystem and other streams located in Burlington County.

The Great Bay contains water of the highest quality among the estuaries of New Jersey. The harvesting of fish and shellfish from these waters will be adversely affected by pollutants from many industries as well as any large new

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residential concentrations. This policy would tend to prohibit such installations as temporary or permanent service bases, repair and maintenance yards, marine terminals and steel and concrete platform fabrication yards in that area.

b. No visible flares for burning excess gas shall be permitted in Burlington County's coastal zone. Any ocean based stack for burning excess gas shall not be a significant feature on the visible seascape as viewed from the water's edge.

V. Priority Recommendations

a. Oil Spill Clean Up

The coastal counties of New Jersey should recommend additional oil spill protection legislation at the state level and press for legislation at the federal level which will:

- 1. require prompt repair of leaks or damaged equipment producing spills.
- provide for damage compensation not only to states, communities or government agencies, but also to individual or corporate property owners.
- 3. hold oil companies fiscally responsible for spill damage compensation if such damages exceed the funds collected by the indemnification funding provided in the existing law.

The existing "Spill Law" of New Jersey should be modified to include all of the concerns listed above.

None of these provisions is viewed as punitive or limiting for oil producing corporations inasmuch as all such costs are eventually passed to the consumer. On the other hand without complete safeguards, government agencies have been

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generally powerless or ineffective in providing adequate damage compensation in emergencies.

b. Removal of obsolete or non-producing equipment or installations.

State and federal regulations must be further developed to require the owner oil companies to remove unsightly or hazardous equipment or installations for oil production onshore and offshore when use is completed.

The responsibility for equipment or installation removal should not fall upon the community or other property owners.

- c. An impact check list should be provided for each municipality considering the siting of any energy facility. The check list should include the following factors; (a) environmental (b) economic development (c) demographic (d) social (e) infrastructure requirements. Ref: Mid-Atlantic I: Onshore Impacts Of Outer Continental Shelf Oil and Gas Development, section - III).
- d. All locations or facilities must comply with federal, state, county, and/or local health, safety, traffic, and zoning ordinances.
- e. All locations must comply with existing federal, state, and local rules and regulation with respect to air, water, noise and land use.

## CHAPTER IX

## The County Role in Coastal Energy Facility Siting

9.1 County/State Relationships

Both the county and the state require assistance from each other in dealing with energy facilities in particular and other items of mutual concern in general.

9.11 Specifically the County needs State assistance:

- a. To implement sound county policies and valid county objectives through the states licensing and regulatory powers.
- b. To provide or share technical scientific information or pertinent statistics not available to, or collected by the county.
- c. To serve as an agency to guide energy related industry which could prosper and also serve the needs and objectives of the county.
- d. To deal with counties, without bias, on the needs and desires of its constituent population.
- e. To encourage state agencies to deal with counties on an objective basis without bias. This relationship must be perceived as more of a reality before more extensive regional planning or coordination can be accomplished.
- f. To control the harmful effects of local self-interest, state agencies

must be able to deal with regional and environmental planning issues without prejudice. More trust needs to be established between local officials and their county agencies, between local officials and their state agencies, and between county officials and their state agencies.

g. To show and delegate responsibility insofar as the public interest in the county is served adequately.

9.12 Conversely, state agencies need county assistance to:

- a. serve as the state's surrogate with local officials and the public, in regional planning, decision-making, and implementing regulations.
- b. serve as a liaison between the state and state agencies on the one hand, and local agencies and the public on the other hand, with respect to:
  - providing information about county, state and national energy problems.
  - interpreting state regulatory policies and bases for decision-making.

c. provide necessary county or local data to appropriate state agencies.

d. assist in making state agency and county agency policies consistent.

9.2 County-County Relationships

The counties can have beneficial interrelations by:

- a. exchanging information and energy policies.
- developing regional cooperation in the transmission or storage of energy or energy materials.

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c. serving to catalyze regional planning interests.

# 9.3 County-Municipal Relationships

The county can serve its constituent municipalities by:

- a. providing technical information relating to energy.
- assisting municipalities to prepare for onshore impact of energy transmission, production, or storage by providing:
  - information for decision-making by responsible officials in agencies
  - 2. educational programs for the general public
  - 3. provide legal and technical assistance in producing enabling or exclusionary ordinances for various energy facilities.
  - 4. a sounding board by which the feelings of local officials may be transmitted to state agencies.

Municipalities can assist the county by:

- a. helping to make its citizens aware of county objectives
- b. developing cooperative inter-municipality programs
- c. reviewing and upgrading local development and land use procedures to incorporate recent knowledges and techniques in a land use plan which reflects both regional and local needs.
- d. providing site-specific data to aid in developing a comprehensive regional plan.

# 9.4 County-Public Relations

Counties can serve the general public by conducting educational programs to

inform citizens about:

- a. regional energy problems
- b. means of energy conservation
- c. by serving as a conduit to provide information about federal, state and regional objectives and needs
- d. and by serving as an agency to transmit public reactions to federal, state and county goals and regulations.

The county can also serve the general public by inducing new environmentally beneficial energy facilities to locate in the county and to strive to improve any adverse environmental impact of any existing energy facility.

#### CHAPTER X

County View of State and National Interests in Coastal Energy Facility Siting

Burlington County has demonstrated its perception of state and national interest by supporting the environmentally hazardous exploration for oil and gas on the outer continental shelf. See Chapter 4.

In New Jersey, there is unquestionably the greatest concentration of petroleum refining with respect to the entire east coast. It seems to be in the national interest to have industry achieve the maximum production of oil/gas on the outer continental shelf. This greater production with its inherent environmental risks may not benefit the state or the county with respect to energy allocation and distribution.

The interest of the state in general and Burlington County in particular would be better served if some quid-pro-quo were established for any increased concentrations of energy transmission, production or storage facilities to be placed in New Jersey. Natural gas shortages and unequal gasoline and fuel oil allocations of past years demonstrate the essential significance and ultimate fairness of this suggestion. It seems clearly in the interest of the state that its citizens receive assurance of a greater energy allocation as a prerequisite for establishing a greater concentration of petrochemical industry in New Jersey.

The environmental protection of New Jersey's water's edge ultimately transcends any short term gains or energy-shortage respites which would occur from the establishment of petrochemical production facilities on the coast. The

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attraction of the ocean beaches with their concomitant shoreline amenities and the long term value of the tourist industry will long outlast the thirty year life span of successful oil/gas production on the outer continental shelf.

New Jersey's quid-pro-quo in serving the national "energy interest" should be an environmentally protected coast and an equitable energy allocation for its citizens. That is, if New Jersey is to accomodate more energy facilities, it should be assured of a reasonable supply of the energy it transports so that it does not suffer shortfalls arising from inequitable distribution.

# CHAPTER XI

# County View of State and Federal Assistance In Coastal Energy Facility Siting

# 11.1 County View of Federal Assistance

Burlington County views the possibility of federal assistance as potentially beneficial. It is certain that no municipality would wish to have federal pressure in siting an energy facility within its borders if that community were opposed to such an installation.

On the other hand, the help of federal agencies such as the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the Bureau of Land Management, and the Federal Department of Energy, would be essential to insure that the installation of a refinery would have the best available technology and that all effluents would satisfy air and water quality standards.

Inasmuch as a pipeline corridor landfall in southern New Jersey is a strong probability, the Department of Interior might well insure adequate environmental controls by siting that landfall on federal lands. This would insure a minimum of danger to and disruption of settled or built-up areas and provide an optimum of controls for the passage and burial of the pipeline through the estuarine wetlands. This would allow wildlife biologists to design and nurture the recovery of the land surface along the pipeline right-of-way.

The County is also appreciative of the role played by the National Oceanic and Atmospheric Administration in administering funds provided by the Federal Coastal Zone Law to be used by the State of New Jersey in developing its program of coastal planning and controls.

# 11.2 County View of State Assistance

Burlington County views the role of the State as most significant in the siting of energy facilities.

The items described above relating to federal assistance in siting would apply similarly to State assistance. The placement of pipeline landfalls on federal or state lands should insure a minimum of environmental damage and a maximum of natural systems recovery following installation.

Burlington County wishes to commend the role of the Office of Coastal Zone Management of the Department of Environmental Protection in administering the funds provided through NOAA for coastal zone planning and management. In particular, OCZM is to be commended for:

- Organizing a helpful and informative series of meetings and programs for the several counties in the conduct of their Outer Continental Shelf study grants.
- 2. Their efforts to obtain input and critique from the counties and the general public for the Coastal Management Strategies
- Demonstrating that input and feedback from the counties has been utilized.
- 4. Burlington County has been pleased to serve as a medium and catalyst for gathering the opinions of municipal officials and the general public concerning oil/gas exploration and facility siting, and further, transmitting those opinions to OCZM.
Burlington County is most hopeful that the possibility of an increased role for decision-making by the county in the coastal zone will become a reality.

#### APPENDIX A

#### ANNOTATED BIBLIOGRAPHY

Alaska Consultants. <u>Marine Service Bases for Offshore Oil Development</u> Juneau, Alaska: State of Alaska-Division of Community Planning, 1976.

A summary of the phases of oil operations including a detailed description of the service base concept and service locations.

Barwis, John H. <u>Annotated Bibliography on the Geologic, and Engineering Aspects</u> of Tidal Inlets. Washington, D.C.: U.S. Government Printing Office, 1976.

This is the most complete available bibliography of its kind.

BDM Corporation. <u>Final Report: A Study of New Use Demands on the Coastal Zone</u> and Offshore Areas of New Jersey and Delaware. Vienna, Virginia: BDM Corporation, 1975.

This volume is an excellent data base for planning: One of the few in which an actual projection is made for Burlington County.

BDM Corporation. <u>State Legal and Administrative/Regulatory Aspects of Offshore</u> Development. Vienna, Virginia: BDM Corporation, 1975.

A good initial reference for a study of permit regulations and legal requirements.

California Coastal Zone Conservation Commissions: <u>California Coastal Plan</u>. Sacramento, California: California Coastal Zone Commissions, Documents and Publications Branch, 1975.

A useful comparison reference, some of the planning suggestions are unique and of great interests.

Cecil, J.L. and D. Morell. <u>New Jersey Natural Gas Shortage</u>: <u>A Policy Analysis</u> Upton, New York, 11973: Brookhaven National Laboratory 1976.

The story of the gas shortage is well described and documented. The recommendations for moderating the shortage are relatively familiar to the more informed reader.

Clark, John. <u>The Sanibel Report</u>. Washington, D.C.: The Conservation Foundation, 1976. This case study report about a 12 mile barrier beach island on the west Florida coast is the most comprehensive ecological study of a barrier beach yet published. The environmental factors are used as the basis for developing a plan for future growth. It should be most useful in master planning for barrier beach islands.

Ichthyological Associates. <u>Ecological Considerations for Ocean Sites off New</u> Jersey for Proposed Nuclear Generating Stations. 301 Forest Drive, Ithaca, New York, 08201: Ichthyological Associates, 1972. This work is in three volumes and forms part of an environmental impact statement for the Public Service Electric and Gas Company. These volumes form a most definitive description of the organisms and the natural systems in which they are found on the New Jersey Coast. A must for studying the ecology of the littoral area of New Jersey.

Ichthyological Associates. <u>Ecological Studies in the Bays and other Waterways</u> near Little Egg Inlet and in the Ocean in the Vicinity of the Proposed Site for the Atlantic Generating Station, New Jersey. 301 Forest Drive, Ithaca, New York, 08201: Ichthyological Associates, 1975.

An excellent and detailed natural resource inventory of the land and coastal shelf area to four miles offshore. A most helpful work for anyone interested in the ecology of the Southern New Jersey Coast in six volumes.

Kildow, J., J.H. Hollman, et. al. <u>A Report on the National Interest in the</u> <u>Coastal Zone</u>. Cambridge, Massachusetts: Massachusetts Institute of Technology, 1974.

This work is most useful in interpreting some of the objectives and policies of the Coastal Zone Management Act of 1972. Most useful sections are the National Interest Guide and the Users Matrix.

Meier, P.M. and D. Morell. <u>Issues in Clustered Nuclear Siting</u>. Springfield, Virginia: National Technical Information Service, 1976.

This work has some useful environmental data for the Pinelands. The proposal for clustered nuclear siting seems incomprehensible in view of the fragility of the Pinelands water table.

Middle Atlantic Governor's Resources Council. <u>Identification and Analysis of</u> <u>Mid-Atlantic Onshore OCS Impacts</u>. Cambridge, Massachusettes: Research Planning Associates, Inc., 1976.

A summary of six inventories for studies conducted about energy resource exploration in the outer Continental Shelf of the Atlantic Ocean in the Mid-Atlantic States is presented in this volume. The study is somewhat difficult to read because its style includes initial alphabet jargon and nauseum. It is useful in comparing the studies included, especially in comparing the methodologies by which each study was conducted.

New England River Basins Commission. <u>Onshore Facilities Related to Offshore Oil</u> and Gas Development: Fact Book. Boston, Massachusetts: (NERBC-RALI), 1977.

This is one of the indispensable references for planning studies related to the title. The resource demands and environmental impacts of various energy facilities are best described here.

New England River Basins Commission. <u>Onshore Facilities Related to Offshore</u> <u>Oil and Gas Development, Technical Update 16.</u> Boston, Massachusettes: (NERBC-RALI), 1977.

Written in the problem question and solution style characteristic of the

earlier NERBC-RALI Reports, these two chapters are most useful in two general tasks; a. developing schedules for various oil exploration and production and b. estimating various (but not all) types and numbers of onshore facilities. The kinds of facilities most interesting to Burlington County were not included or completed.

Port Authority of New York and New Jersey. <u>Support Bases for Offshore Drilling</u>, <u>The Port of New York Potential</u>. New York, New York: Port Authority of New York and New Jersey, 1977.

This study contains brief discussions of the offshore drilling process, the needs of support bases and their economic impacts. The remainder discusses details of eight possible locations for support bases in the Port of New York Authority's District. The bibliography is useful.

Resources and Land Investigation, United States Department of Interior and U.S. Environmental Protection Agency. <u>Onshore Impacts of Outer Continental Shelf</u> <u>Oil and Gas Development</u>. Chicago, Illinois: American Society of Planning Officials, 1977.

This work is a sourcebook in two volumes entitled Mid-Atlantic I and II. These two books are the most definitive single source to assist with the county task of locating potential onshore facility sites following needs assessment. The breaker page tabs at the edge of the pages are most helpful.

Woodward-Clyde Associates. Mid-Atlantic Regional Study, An Assessment of the Onshore Effects of Offshore Oiland Gas Development., 1975.

This 429 page study is well written and easily comprehensible. The environmental descriptions of the two study areas - 1, part of Southern New Jersey and 2. the Norfolk, Virginia area are exhaustive and helpful. The book's most unique contribution is to contribute a means for estimating local environmental impact. Most unique sections are: Computer drawn maps showing land use and potential land use during various stages of oil/gas development. A most valuable aid for Southern New Jersey in particular. It does not aid too much in planning for local facility siting. The bibliography is superb.

United States Congress, Office of Technology Assessment. <u>Coastal Effect of</u> Offshore Energy System. Washington, D.C.: U.S. Government Printing Office, 1976.

This 288 page study is an easily readable reference which is a useful primer of oil/gas exploration on the Outer Continental Shelf, a study of proposed deep water ports and of offshore floating nuclear power plants. Of special value in this volume are:

- 1. Numerous helpful maps.
- 2. Well prepared tables to summarize and clarify information.
- 3. Excellent summaries of each section.
- 4. Interesting if unavoidably dated presentation of the issues and public opinion in each issue.
- 5. Excellent format.

United States Department of the Interior. <u>Draft Environmental Statement OCS</u> Sale #42, Volume 1-4. Washington, D.C.: U.S. Government Printing Office, 1977.

A useful supplement to the Final EIS for Lease Sale 42.

United States Department of the Interior. <u>Final Environmental Statement, OCS</u> <u>Sale #40, Volume 1-4</u>. Washington, D.C.: U.S. Government Printing Office, 1976.

This volume contains comprehensive treatment of the ecological and natural systems of the Outer Continental Shelf as well as in the coastal zone on land.

#### APPENDIX B

Log of Activities of the Burlington County Study Team of Oil/Gas Exploration on the Outer Continental Shelf and its Prospective Onshore Impact

The study team was composed of members of the Burlington County Planning Board staff and members of the staff of the Conservation and Environmental Studies Center, Inc., of Browns Mills. CESC, Inc. was under contract to the Board of Chosen Freeholders and the Burlington County Planning Board. The study team was composed of the following persons:

> Conservation and Environmental Studies Center, Inc.

## Burlington County Planning Board

Bernard Cedar, Director John Ettinghouse, Senior Planning Aide Marshall Chaney, Principal

Planning Draftsman

V. Eugene Vivian, Director EmeritusWilliam D. Michalsky, DirectorF. William Van Ness, Industrial Consultant

The monthly reports submitted by the study team to the Board of Chosen Freeholders, the Burlington County Planning Board, the Regional Environmental Advisory Committee and its special Steering Committee for the Study Team, to the Office of Coastal Zone Management of the New Jersey Department of Environmental Protection and members of other county study teams participating in this study are here reproduced to form the log of study team activities.

## Subregional Outer Continental Sheif and Energy Facility Planning Program County of Burlington

First Report - February 10, 1977

Submitted to:

Mr. David N. Kinsey, Chief Office of Coastal Zone Management Division of Marine Services Department of Environmental Protection P.O. Box 1889 Trenton, N.J. 08625

by:

The Conservation and Environmental Studies Canter, Inc. Box 7595 RD 7 Browns Mills, N.J. 08015 as agents for THE BURLINGTON COUNTY PLANNING BOARD and BOARD OF CHOSEN FREEHOLDERS of -Burlington County, N.J. 49 Rancocas Road Mt. Holly, N.J. 08060

#### Subregional Outer Continental Shelf and Energy Facility Planning Program County of Burlington

#### FIRST REPORT

#### Priorities for Burlington County

Burlington County views the exploration of the Outer Continental Shelf for the presence of crude oil or natural gas in developable quantities as both an opportunity and a challenge.

Such exploration is viewed as an opportunity to provide:

- a. natural gas in greater abundance for industries\_and residents of the county
- b. increased employment potential for Burlington County residents
- c. increased industrial development within the County as a result of potentially increased energy supplies

The potential of offshore oil and gas sources provides a challenge to locate and process materials which have a considerable potential to impoverish environmental quality through ocean spills, air polluting refineries or aquifer polluting pipelines.

In short, Burlington County's priorities include improved energy supply, improved employment and improved or undeteriorated environmental quality.

## Desirability Analysis of Energy Development / Transportation Facilities

Burlington County has no ocean front area but it would not welcome extensive oil spills accompanying any offshore oil or gas drilling.

### What the County Favors

- 1. On-shore staging facilities only in areas of low environmental sensitivity
- 2. New county-based industry in desirable industrial zones as a result of increased energy supplies
- 3. Increased employment as a result of new energy development or energydependent industry
- 4. Preservation of aesthetic amenities by providing adequate visual shielding and camouflage of natural gas staging areas, pumping facilities or storage tanks
- 5. Adequate technological safeguards for environment in marine and terrestrial environments
- 6. Transmission lines on higher ground and with adequate environmental safeguards from main breaks with demonstrated efficacy
- 7. Placement of living facilities for round the clock engineers and workers in areas already developed for residential purposes
- 8. Maintaining the low population density in the southern Pinelands Wetlands portion of the county which seems best suited for this generally sensitive environment.
- 9. Limiting the development of residential areas in the southern portion of the county to areas already established as light population centers.
- 10. The purchase of lands in the southern portion of the county already recommended for acquisition by a number of agencies

#### What County Would Oppose

- 1. Energy producing activities which would deplete the unpolluted waters of the Wading Mullica River watersheds or Great Bay
- 2. Any energy producing or related activities to reduce the oyster or other shellfish beds of Great Bay, presumably the cleanest estuary in the State of New Jersey
- 3. Any significant reduction of deterioration of the Great Bay Mullica estuary wetlands
- 4. Location of nuclear electrical generating stations on the Great Bay inasmuch as the Atlantic Generating Station is situated in close proximity
- 5. Locating electrical generating stations in the Pinelands without the development of new technology and environmental safeguards.

#### Proposed Modifications in the Scope of Work

No deletions or additions to the proposed scope are recommended for Burlington County. Reapportioning of the percentages of time allocated for each task is proposed; - Literature Review and initial coordination/dissemination 10%, Inventory 20%, Analysis 30%, Coordination 30% and Recommendations 10%.

#### Progress Report

The staff of the contracting agency has been involved with the following tasks:

- 1. Literature Review, Survey and Collection
- 2. Dissemination of Program purposes to municipalities, industry, conservation groups and the general public
- 3. Pre-project visit to Trinidad's offshore oil producing areas at private expense. Some problems encountered were:
  - a. ocean oil spills oily beaches
  - b. employment of "imported" workers
  - c. inadequate preservation of visible shoreline amenities uncamouflaged staging areas
  - d. new temporary "dependent" housing communities for special technical employees
  - e. unexpected local unemployment relative to land based oil developing/processing activities
  - f. inadequate electric power generation
- 4. The complete OCZM statement of alternate strategies has not been received to date and therefore no review or action has been taken.

#### THE BOARD OF CHOSEN FREEHOLDERS BURLINGTON COUNTY, N.J. 49 Rancocas Road Mount Holly, N.J. 609 – 267 - 3300

Subregional Outer Continental Shelf and Energy Facility Planning Program

Second Report - March 10, 1977

Work on the following tasks has been completed:

- 1. Organization and first meeting of OCS steering committee composed of Members of the Burlington County Regional Environmental Advisory Committee.
- 2. Collection and cataloguing of all literature pertinent to the OCS and energy facility planning project.
- 3. Meeting for exploration and identification of avilable facilities for energy storage, stafing or processing on the Delaware River with Burlington County Office of Economic Development.
- 4. Attended reven organizational or informational meetings related to the project.

Work on the following is in progress:

- 1. Review and annotation for all pertinent literature.
- 2. Exploration of siting potentials in the Great Bay and Pinelands.
- Development of commentary on "Atternatives for the Coast" by Burlington County REAC Committee.

bv:

V. Eugene Vivian OCS – Burlington County The Conservation and Environmental Studies Center, Inc. Box 7596 RD 7 Browns Mills, N.J. 08015 609 – 893 - 9151

Burlington County Planning Board Liaison John Ettinghouse

#### BOARD OF CHOSEN FREEHOLDERS

OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY 08060

OFFICE OF BUSE MOTON COUNTY PLANNING BOARD Teleshone 267-3300 Area Code 609 Ekr. 261-262



Subregional Outer Continental Shelf and Energy Facility Planning Program

Third Report - April 1, 1977

Work on the following tasks was completed:

1. Review of <u>Alternatives for the Coast</u> by the OCS staff, the OCS Steering Committee and the Regional Environmental Advisory Committee for Burlington County copy attached.

2. Communication underway with all municipalities to provide initial information and set up discussion and information exchange meetings. Copy attached.

3. Met with one bayside industry which has a site possibly feasible for onshore pumping stations or preliminary scrubbing of natural gas. The firm, Viking Yacht Company, is located on U.S. Highway 9, New Gretna, New Jersey - 609-296-2044.

Maps to be prepared for the Burlington County OCS study.

- a. optimum pipeline routes
- b. optimum electrical transmission routes
- c. zones of high environmental sensitivity
  - by: V. Eugene Vivian OCS Burlington County The Conservation and Environmental Studies Center, Inc. Box 7596 RD 7 Browns Mills, N.J. 08015 609-893-9151

Burlington County Planning Board Liaison John Ettinghouse BOARD OF CHOSEN FREEHOLDERS OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY

May 1, 1977

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Telephone 267-3300 Area Code 509 Ext. 261-262

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SUBREGIONAL OUTER CONTINENTAL SHELF AND ENERGY FACILITY PLANNING PROGRAM

FOURTH REPORT - MAY 5, 1977

#### A. Work on the following tasks was initiated:

- 1. Development of criteria for identifying environmentally sensitive sites with respect to energy transmission or production facilities.
- Continued preliminary contact with a bayside industry, Viking Yacht Company, was delegated to the Burlington County Economic Development Council.
- 3. Data gathering for mapping zones of high environmental sensitivity, and optimum pipeline routes.

#### B. The following items were accomplished:

- Preparation of commentary on Partial First Draft Coastal Management Strategy was made for consideration by Burlington County's OCS Steering Committee to insure a broad base for reaction and critique.
- 2. Submitted written comments on:
  - a. Division of Fish, Game and Shellfisheries memo containing comments on Ocean Resources: Mineral, and pertinent pipeline information.
  - b. Outlines for final reports
  - c. Goodman pipeline study scope of services
  - d. Permits for OCS activities

#### 3. Attended:

- a. April 14, 1977 Oil Company meeting/workshop at OCZM
- b. March 20, 1977 DVRPC sponsored bus tour of the Pine Barrens. Topics emphasized included:

Pigmy Forests

Pine-Oak Forests

Cranberry Bogs

Maple, Gum, Magnolia Swamp Forest

Peat Bog

Medford Lakes Development

c. March 29, 1977 - Rutgers University conference "Revitalizing New Jersey in a Time of New Federal Initiatives", which included the topic "Coastal Zone Management in New Jersey". Speakers on this topic were Professor Richard K. Brail, Carl Hintz, Executive Committee, N.J. A.I.P., Darryl Caputo, N.J. Conservation Foundation, David Atkin, American Littoral Society, and J. Kenneth Mitchell, Dept. of Environmental Resources, Cook College.

> Dr. V. Eugene Vivian Conservation and Environmental Studies Center

John Ettinghouse Burlington County Planning Board Staff

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#### BOARD OF CHOSEN FREEHOLDERS OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY 08060

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Teleshone 267-3300 Area Cade 639 Ext. 261-252

Sub-Regional Outer Continental Shelf and Energy Facility Planning Program

Fifth Report - June 5, 1977

A. The following meetings were held:

1. <u>May 11, 1977</u>: A Burlington County OCS Steering Committee meeting was held for the purpose of revising comments on the OCZM "Partial First Draft Coastal Management Strategy".

2. <u>May 19, 1977</u>: Conducted an inter-county meeting with Atlantic, Camden, Gloucester, and Ocean Counties (further explanation under "Special Tasks" section).

B. Attended:

- 1. May 5, 1977: Monthly meeting
- 2. May 13, 1977: Meeting with Shell Oil Company at OCZM

3. <u>May 23, 24 and 25</u>: ASPO Workshop: "Onshore Impacts of Outer Continental Shelf Oil and Gas Development" attended by Mr. Bernard Cedar, Planning Director, Burlington County Planning Board

C. Special Tasks:

1. The May 19th inter-county meeting (mentioned above) was held at the Conservation and Environmental Studies Center, Whitesbog, Burlington County.

This meeting was held to give the counties of Burlington, Camden, Atlantic, Ocean and Gloucester an opportunity to exchange information about pipelines, pipeline siting criteria, and potential pipeline corridors.

The Burlington constituent consisted of V. Eugene Vivian and William Van Ness, both of CESC, John Ettinghouse of the Planning Board staff and William Monroe of the Burlington County Department of Economic Development. It was determined that these counties would eventually submit to OCZM, maps of unofficial potential pipeline corridors based on each county's knowledge of possible environmental impacts in its own unique area.

The five counties mentioned, further suggest that these potential corridors be studied intensively by those performing the pipeline study for OCZM.

The counties were concerned that New Jersey take appropriate steps to insure that it would receive a supply of any gas which is piped ashore in New Jersey.

2. Wrote draft "Environmental Sensitivity Criteria For Pipeline Siting".

3. Supplied blueline prints of New Jersey map to Atlantic, Camden, Gloucester and Ocean Counties' OCS participants, for the purpose of mapping potential pipeline corridors.

4. Staff of CESC searched ordinances of all forty of Burlington County's municipalities for regulations relevant to energy facility siting, pipelines, electrical transmission and various other OCS activities.

#### Contacted:

Contact was made with the following individuals and organizations/industries for the purpose of soliciting relevant information:

Mr. R. L. Coleman Transcontinental Gas Pipeline Company P.O. Box 251 Linden, New Jersey 07036

Mr. M. Bruck, Project Engineer Sohio Pipeline Company P. O. Box 8 Woodbury Heights, New Jersey 08097

Mr. Laurence Huff Assistant Vice President - Real Estate Consolidated Railway Corporation Room 1444 6 Penn Center Plaza Philadelphia, Pennsylvania 19104

Mr. Ernest Saldutti Colonial Oil Pipeline Company P. O. Box 225 Haddonfield, New Jersey 08033

Mr. Van Towle Real Estate Supervisor New Jersey Bell Telephone Company 1040 Broad Street Newark, New Jersey

> Dr. V. Eugene Vivian Conservation and Environmental Studies Center John Ettinghouse Burlington County Planning Board Staff

#### BOARD OF CHOSEN FREEHOLDERS

OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY 03060

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Telephone 257-3300 Area Code 509 Ekt. 251-252

> Sub-Regional Outer Continental Shelf and Energy Facility Planning Program

> > Sixth Report - July 18, 1977

A. The OCS study team's accomplishments were described at the following meetings:

- 1. July 13, 1977: A Burlington County OCS Steering Committee meeting was held for the purpose of revising and commenting on the;
  - a. Draft copy of a Final Report Outline
  - b. Draft copy of a Resolution to the Burlington County Board of Chosen Freeholders, dealing with County policy position
  - c. Draft copy of a slide show lecture for presentation to Burlington County officials and the public on August 8, 1977 and September 15, 1977.
  - d. Draft copy of Chapter II "Objectives of the Study and Methodology".
  - e. Draft copy of Chapter VII "Recommended Energy Facility Siting Policies".
- July 19, 1977: A Burlington County Regional Environmental Advisory Committee meeting was held to update and inform all REAC members of the progress and status of the project. REAC unanimously endorsed all of the above drafts.

#### B. Attended:

- 1. June 13, 1977 NOI workshop at OCZM
- June 23, 1977 Monthly meeting at Whitesbog, hosted by the Conservation and Environmental Studies Center and Burlington County Planning Board (further explained in Special Task Section).
- 3. July 1, 1977 Slide lecture at Wetlands Institute.
- 4. July 9, 1977 Slide/Lecture Wetlands Institute.
- 5. June 14, 1977 Slide/Lecture presentation to local service group about project, by staff.

C. Special Tasks:

- 1. Prepared drafts of Chapter II and Chapter VII of the final report.
- July 15, 1977 Conducted on-site inspection of numerous rights-of-way.

- 3. Staff visitation to OCZM, Trenton to obtain reproduction of slides for inclusion in slide/lecture under OCZM Task 5 Coordination.
- 4. The June 23, 1977 OCZM/County Monthly Meeting took place at the offices of CESC, Inc.
- 5. A delegation from the Board of Chosen Freeholders and the County Economic Development Committee visited the Viking Yacht Company's facilities to explore its potential as a facility supporting OCS energy development.
- In addition, the following topics were considered:
  - a. Rights-of-Way Mr. Van Towle
  - b. Regional OCS Public Mtg. Mr. Charles Romick
  - c. BLM Pipeline Corridor Study Ms. Helga Busemann
  - d. Lessons From the North Sea Ms. Helga Busemann
  - e. Coastal Environmental Impact Fund Ms. Andrea Topper

#### D. Contacted:

Communications were established with the following individuals and organizations/industries for the purpose of soliciting relevant information.

- Mr. John Dillon Public Service Electric & Gas Company
- Mr. Joseph Nardone Engineering Department Burlington County Roads Mt. Holly, N. J.
- Oliver Papps National Petroleum Council Trenton, N. J.
- C. J. Lakey Mobil Oil New York, N. Y.

JE/jp

## BOARD OF CHOSEN FREEHOLDERS

OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY 08060

,

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Telephone 257-3300 Area Code 539 Ext. 251-262

## Mid Contract Report July 11, 1977

The following tasks were accomplished:

OCZM Task Number One: Literature Search

- A. All literature reviewed by one or more members of Burlington County team.
- B. Annotated bibliography for final report initiated.

OCZM Task Number Two: Inventory

A. Identification and location phase - completed

- 1. Rights of Way
  - a. oil pipelines, b. railroads, c. electrical transmission lines, d. telephone coaxial cables, e. highways
  - 2. Energy Plant Facilities
    - a. Public Service Gas and Electric Plant
    - b. Colonial Tank Farm
    - c. Liquified Natural Gas Plant
    - d. Jersey Central Power and Light
- B. On-Site Inspection
- 1. All of the above.
- C. Analysis
  - 1. All of the above initiated and in progress.
- D. General County Inventory
  - 1. Initiated and in progress.

OCZM Task Number Three: Analysis

- A. Established data bank of useful literature.
- B. Scenario development for the following have been initiated:
  - 1. potential pipeline rights-of-way established where pipelines merely cross some portion of the county.
  - 2. where pipeline landfall is located within the county.
  - 3. where additional support facilities near the water's edge are located in the county.
  - 4. potential use of riparian areas for support or transmission facilities in Burlington County.

- C. Development of policies for siting energy facilities
  - Preparation and endorsement of a Board of Chosen Freeholders Resolution concerning energy development and siting in Burlington County.
- D. Energy Facility Siting Impact Analysis
  - 1. Initiated and in progress

a. agriculture, b. environmentally sensitive lands,c. employment, d. housing, e. transportation, f. investment funding sources.

OCZM Task Four: Coordination

- A. Developed Information Bulletin for public agency members, environmental groups and general public.
- B. Developed format for public information meetings to include
  - Short film, customized Burlington County slide presentation, Information Packet to contain: Table of Municipal Ordinances, (status of occurence by municipality), names ofcontact persons - REAC meeting dates, an Information Booklet entitled "Burlington County Popular Reader for Offshore Oil Drilling".
  - 2. Field Days during which various sites will be visited by the citizenry of the county under OCS team leadership.

OCZM Task Number Five: Recommendations and Final Report.

- A. Recommendations
  - 1. Energy facility siting policies drafted for REAC.
  - 2. Final Report
    - a. Final outline drafted and approved
    - b. Chapter II and VII drafted

#### Burlington County Sub - Regional Outer Continental Shelf and Energy Facility Planning Program

#### 7th Report

Essentially the work period covered within this monthly report involved two major segments of the OCS project contract requirements:

- <sup>1</sup> Much time was spent in preparing for the OCS and Energy Facility Planning Program public meetings, as required in the OCZM scope of services. Work involved production of the following:
  - A) "Burlington County Popular Reader for Offshore Oil Drilling," which gives pertinent background information of the oil technology, definitions of terms, background on lease sales, etc.
  - B) "Pertinent Information Handout" which contains the names and addresses of municipal, county and state OCS participants and officials.
  - C) A three page evaluation sheet for people attending meetings to rate and make comments on its content.
  - D) Chart showing the existence of municipal ordinances related to OCS development and its potential onshore impacts. A chart was provided to emphasize possible absence of or gap in these particular ordinances, and to encourage municipalities to correct these possible deficiencies.
  - E) Work in preparation for the public meetings also entailed the production of a slide show and accompanying script. The slide show contains slides photographed by the OCS study team along with several obtained from the N.J. OCZM library, N.J. Petroleum Institute, PSEG and Mobil Oli Corporation. A movie produced by the BLM to show protection measures maintained by the U.S. Geological Survey and the lack of knowledge by the general public was also shown.
  - F) Work for the public meetings also involved the mass mailing of invitations, including press releases. Since Burlington County has a relatively large number of municipalities (40), the public meetings will be held four times, each in separate regions of the county (see attached schedule) The first meeting occured on August 8, 1977 in Chatsworth. The next meeting will be September 15, 1977 in Bordentown. Invitations for the second meeting are presently being released.
  - II Work has been progressing on the drafts of all chapters projected for the final report. Draft copies are due by September 9, 1977.

#### 111 Attendance

Thursday, August 18, 1977 OCS Steering Committee meeting, Critique of two draft chapters for final report was the major agenda item.

## BOARD OF CHOSEN FREEHOLDERS OF THE COUNTY OF BURUNGTON MOUNT HOLLY, NEW JERSEY 08060

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Telephone 257-3300 Area Code 509 Ext. 251-262

#### BURLINGTON COUNTY OUTER CONTINENTAL SHELF AND ENERGY FACILITY PLANNING PROGRAM

#### 8th MONTHLY REPORT

I. The County OCS study team is continuing its program of public meetings to explain the intent of the study and its current findings, and to solicit municipal input.

The second municipal meeting took place on September 15, 1977 at the Bordentown Regional High School, Bordentown Township. This particular meeting was designed to cover the northern municipalities of the county. Further meetings will take place on October 12th and October 20th.

Burlington County also participated in the September 29th Regional OCS meeting in Gloucester County. The following agenda was followed:

- 1.) Introduction: Gloucester County Freeholder Director Donald Wagner. 2.) Film.
- 3.) Frank Easile: Bureau of Land Management, New York Outer Continental Shelf Office.
- 4.) David Kinsey: Chief, N.J. Department of Environmental Protection, Office of Coastal Zone Management.
- 5.) County presentations:
  - A. Gloucester refineries, support bases, etc.
  - B. Burlington pipelines, proposed county pipeline siting criteria.
  - C. Camden pipelines, Camden waterfront.
  - D. Salem pipelines, pipe coating, service bases.
  - E. Cumberland repair and maintenance yards, oyster industry.
- 6.) Question and Answer Period.
- II. Work is continuing on draft chapters for the final report of the study.
- III. Attended the September 21, 1977 OCZM/John Hopkins University Power Plant Norkshop.

#### BOARD OF CHOSEN FREEHOLDERS OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY 08060

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Teleshane 267-3300 Area Cade 609 Ext. 261-262

November 1, 1977

Outer Continental Shelf and Energy Facility Planning

9th Monthly Report

- I. Two more OCS public meetings were held in the month of October to cover the central and western municipalities of the county.
- II. Developing comments and suggestions to scope of work for next year's "State-Local Coastal Coordination Project".
- III. Received and began reviewing <u>Coastal Management Strategy for New</u> Jersey.
- IV. Gave OCS progress report and showed film "Offshore/Onshore" to Burlington County Regional Environmental Advisory Committee on October 18, 1977.
- V. Attended showing of three OCS related films on October 21, 1977, by invitation of New Jersey Office of Coastal Zone Management.
- VI. Made presentation of current findings of OCS study before Burlington County Economic Development Committee on November 2, 1977.
- VII. Work continues on draft chapters and maps for draft final OCS report.

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## BOARD OF CHOSEN FREEHOLDERS OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY 08060

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#### BURLINGTON COUNTY OUTER CONTINENTAL SHELF AND ENERGY FACILITY PLANNING PROJECT

#### 10th Monthly Report

- I. The major tasks performed during this report period involved completion of draft chapters for the final OCS report. This included the construction of maps and charts that will be included in the report. These draft chapters were submitted to OCZM.
- II. Submitted to OCZM, the Burlington County OCS study team's initial comments on the Coastal Management Strategy for New Jersey.
- III. Submitted to OCZM Burlington County's proposed work program for next year's potential State-County Coastal Coordination Project.
- IV. Meetings held and attended:
  - A. November 7, 1977 OCS monthly meeting in Toms River was attended.
  - B. November 14, 1977 Burlington County OCS Steering Committee was held for the purpose of soliciting Steering Committee input to the <u>Coastal Management Strategy</u> and Burlington County's proposed work program for the State-County Coastal Coordination Project.
  - C. November 15, 1977 Burlington County Regional Environmental Advisory Committee (REAC) meeting - At this meeting the OCS study team presented initial comments on the <u>Coastal Management Strategy</u> to the committee, as well as the proposed work program for next year.

Both the OCS Steering Committee and REAC unanimously approved the proposed work program and further suggested that it be sent to the Freeholders for their review.

Suggestions and changes made by both committees on the study team's initial comments to the <u>Strategy</u> are expressed as addenda to the initial November 3rd commentary (both distributed to DEP/OCZM).

D. November 30, 1977 - OCS Steering Committee meeting. For purpose of review, comment and modification of draft chapters to final report (changes to be incorporated into final submission).

- E. December 6, 1977 Steering Committee meeting. For purpose of finalizing Steering Committee comments and modifications to draft chapters of final report.
- V. Attached is a copy of the transcript to a recent CBS News "60 Minutes" segment entitled "High Tension". It deals with 765 kilovolt power lines.

#### BOARD OF CHOSEN FREEHOLDERS

OF THE COUNTY OF BURLINGTON MOUNT HOLLY, NEW JERSEY 08060

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Teleshone 267-3300 Ares Code 609 Ext. 251-262

January 11, 1978

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Outer Continental Shelf , and Energy Facility Planning Program

## 11th Monthly Report

## Accomplishments:

- 1.) Received comments on draft OCS final report from DEP/OCZM and the Burlington County Regional Environmental Advisory Committee.
- 2.) Final revisions to final OCS report were incorporated into the text for preparation of final printing.
- 3.) Submitted to DEP/OCZM, addenda to OCS study team's initial comments on the Coastal Management Strategy for New Jersey.

### Meetings:

- 1.) December 7, 1977: OCS monthly meeting.
- 2.) December 20, 1977, Washington, D. C. : Meeting with the National Oceanic and Atmospheric Administration and several N.J. coastal counties, DEP/OCZM, and several Congressional Aides. Meeting held for the purpose of working out funding problems for the continuation of the county programs.
- 3.) December 20, 1977 (evening): Burlington County Regional Environmental Advisory Committee: Final revisions and suggestions to the OCS draft final report were solicited for incorporation into the printed final.

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#### APPENDIX C

# Communication with Burlington County Communities and the General Public

## Public Meetings

Four public meetings were conducted within the county at locations convenient to each community. The schedule on the following page represents the meeting dates brought to the attention of mayors, municipal clerks, planning board members, chairmen and secretaries, Zoning Board members, chairmen and secretaries and members of Environmental Commissions as well as officers of known environmental groups, and others. Telephone calls were made to representatives of many communities to assure their attendance. At the meetings discussion, films and slides described methods of offshore oil drilling, onshore impacts and specific possibilities for Burlington County. Each community was urged to prepare for oil development by updating its enabling and prohibitory ordinances for all kinds of energy facilities.

Members of the study team also participated in a regional public meeting for members of the public in Burlington, Camden, Gloucester, Salem and Cumberland Counties. The meeting was held at Gloucester County College on September 29, 1977.

## BOARD OF CHOSEN FREEHOLDERS

OF THE COUNTY OF BURLINGTON MOUNT HOLLY NEW JERSEY 03060

OFFICE OF BURLINGTON COUNTY PLANNING BOARD Telephone 267-2000 Area Code 609 Ext. 261-262

BURLINGTON COUNTY OCS PUBLIC MEETING DATES AND COVERAGE

#### Southern Burlington County:

Monday, August 8, 1977 - Chatsworth School, Woodland Township

- 1.) Bass River
- 2.) Shamong
- 3.) Tabernacle
- 4.) Washington
- 5.) Woodland

Northern Burlington County:

## Thursday, September 15, 1977 -Bordentown Regional High School

- 1.) Bordentown City
- 2.) Bordentown Township
- 3.) Chesterfield
- 4.) Fieldsboro
- 5.) Florence
- 6.) Mansfield
- 7.) New Hanover
- 8.) North Hanover
- 9.) Springfield
- 10.) Wrightstown

Central Burlington County:

#### Wednesday, October 12, 1977, Freeholders' Board Room

- 1.) Eastampton
- 2.) Evesham
- 3.) Hainesport
- 4.) Lumberton
- 5.) Maple Shade
- 6.) Medford Lakes
- 7.) Medford Township
- 8.) Moorestown
- 9.) Mt. Holly
- 10.) Mount Laurel
- 11.) Pemberton Borough
- 12.) Pemberton Township
- 13.) Southampton
- 14.) Westampton

Western Burlington County:

## Thursday, October 20, 1977, Delran Municipal Building

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- 1.) Beverly City
- Burlington City
  Burlington Township
- 4.) Cinnaminson
- 5.) Delanco
- 6.) Delran
- 7.) Edgewater Park8.) Palmyra
- 9.) Riverside
- 10.) Riverton
- 11.) Willingboro

## The Information Bulletin

The Information Bulletin was initiated to provide specific updates on the conduct of the study. It was mailed to the same recipients as for all public meeting notices. The first bulletin is included in this appendix.



## BURLINGTON COUNTY OUTER CONTINENTAL SHELF AND ENERGY FACILITY PLANNING PROGRAM

#### WHAT ABOUT OFFSHORE OIL DRILLING?

Twelve New Jersey counties, including Burlington, are working on a federal-state sponsored study to assess the push for new energy sources in New Jersey's coastal lands.

The Burlington County Study will be primarily focused on:

Oil/gas search drilling on the outer continental shelf.

Plans for siting electrical power plants in open areas of the county.

WHAT COULD HAPPEN?

If oil is located off the coast, it seems likely at this stage of our knowledge that:

Burlington County might be requested for one or more pipeline rights-of-way. A natural gas pumping station of five to thirty acres may be requested from one to ten miles inland.

\_\_\_\_\_A five acre pumping station area for each oil pipe line may be needed.

\_\_\_\_No new tank forms will be needed anywhere in the county.

No new refineries will be needed anywhere in the county.

With respect to new electrical energy supplies, it is possible that

new power lines may traverse the

county, including the Pine Barrens the federal suggestion for an electrical energy production park will be assessed

#### WHO'S DOING THIS STUDY?

The Conservation and Environmental Studies Center, Inc., in conjunction with the Burlington County Planning Board 'is preparing this study at the request of the Board of Chosen Freeholders.

#### Contact Persons Are

Dr. V. Eugene Vivian, Director Conservation & Environmental Studies Center, Inc. Box 7596, R.D. 7 Browns Mills, N.J. C8015 609-893-9151

John Ettinghouse Burlington County Planning Board 49 Rancocas Road Mt. Holly, NJ 08060 609-257-3300 ext. 261

Progress reports are prepared each month and discussed prior to release with a Steering Committee comcosed of members of Burlington County's Regional Environmental Advisory Committee (REAC), an advisory body appointed by the Board of Chosen Freeholders. The County's Board of Economic Development renders assistance and has been kept informed.

#### WHAT'S BEEN DONE SO FAR?

The consultant has been reviewing the

literature and making initial contacts with various segments of the energy industry, and with co-workers in other counties and in the office of Coastal Zone Management of the N.J. Department of Environmental Protection.

For its first report, the Steering Committee took the following position:

#### Priorities for Burlington County

Burlington County views the exploration of the Outer Continental Shelf for the presence of crude oil or natural gas in developable quantities as both an opportunity and a challenge.

Such exploration is viewed as an opportunity to provide:

a. natural gas in greater abundance for industries and residents of the county.

b. increased employment potential for Burlington County residents

c. increased industrial development within the County as a result of potentially increased energy supplies

The potential of offshore oil and gas sources provides a challenge to maintain environmental quality despite potential ocean spills, air polluting refineries or aquifer polluting pipelines.

In short, Burlington County's priorities include improved energy supply, improved employment and improved or undeteriorated environmental quality.

\_Desirability Analysis of Energy Development/ Transportation\_Facilities

Burlington County has no ocean front area, but it would not welcome extensive oil spills accompanying any offshore oil or gas drilling.

What the Steering Committee Favors

 On-shore staging facilities only in areas of low environmental sensitivity.
 New county-based industry in desirable industrial zones as a result of increased energy supplies.

3. Increased employment as a result of new energy development of energy-dependent industry.

4. Preservation of aesthetic

amenities by providing adequate visual shielding and camouflage of natural gas staging areas, pumping facilities or storage tanks.

tanks. 5. Adequate technological safeguards for environment in marine and terrestrial environments.

5. Pipelines on higher ground and with adequate environmental safe-guards from main breaks with demonstrated efficacy.

7. Placement of living facilities for engineers and workers in areas already developed for residential purposes.

3. Maintaining densities in the southern Pinelands-Wetlands sortion of the county at levels best suited for this generally sensitive environment.

9. Limiting the development of residential areas in the southern portion of the county to areas already established as population centers. 10. The purchase of lands in the

10. The purchase of lands in the southern portion of the county already recommended for acquisition by a number of agencies.

#### WHAT THE STEERING COMMITTEE MOULD OPPOSE

1. Energy producing activities which would deplete the quality of the unpolluted waters of the Wading-Mullica River watersheds or Great Bay.

2. Any energy producing or related activities which would reduce the oyster or other shellfish beds of Great Bay, presumably the cleanest estuary in the state of New Jersey.

3. Any significant reduction or deterioration of the Great Bay-Mullica estuary wetlands.

4. Location of nuclear elactrical generating stations on the Great Bay inasmuch as the procosed off-shore Atlantic Generating Station is situated in close proximity.

5. Locating electrical generating stations in the Pinelands.

#### WHAT ABOUT THE MUNICIPAL VIEW POINT

The Board of Chosen Freeholders has directed that the final report be representative of the views of the entire county. Meetings with several municipalities at a time will be set up, starting in June. We hope that these meetings will serve to communicate the intent of the study and provide a plan where we can receive the concerns of municipal

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officials and local citizens.	We will ma	ke	National	Oceanic	and	Atmospheric
every attempt to schedule these	meetings	32	Administrat	ion granted	to the	New Jersey
locations and times that w	ould be	as	Department	of Envi	ronmental	Protection,
convenient as possible to you.			Office of	Coastal Z	one Mana	agement, and
			contracted	by the Stat	a to Burl	ington County

This study is being undertaken with for planning studies for Duter Continental funds from the U.S. Department of Commerce, Shelf and Energy Facility siting.

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## The Burlington County Popular Reader for Offshore Oil Drilling

A vast amount of information new to most of the public is needed to consider offshore drilling for oil/gas and its onshore impacts. Rumors and misinformation often accompany discussion about offshore oil/gas drilling. For this reason, the "Reader" was developed for distribution at public meetings and for community representatives. It is reproduced here. Burlington County Popular Reader for Offshore Oil Drilling

#### The Lease Sale No. 40 Log

## Baltimore Canyon

Location

Parallel to New Jersey Coast for about 200 miles from near Cape Charles Virginia to south of Long Island.

Size

Maximum width - 50 miles length - 200 miles

Water Depths 130 - 610 feet

Distance from New Jersey 47 - 92 miles offshore

Number of Tracts - 154 tracts

Time of Sale - August 17, 1976

Number Tracts Offered - 154 tracts, each 3 - miles square, totalling 876,750 acres

Recoverable Oil - (Estimate by U.S. Dept. Interior) - 0.4 to 1.4 billion barrels of oil

Recoverable Gas - (Estimate by U.S. Dept. Interior) - 2.6 to 9.4 trillion cu. ft. of natural gas

Daily Production - 90,000 to 320,000 barrels of oil, .85 billion to 3.0 billion cu. ft. of gas for about 10 years after initial production has begun

Estimated Worth of Gas and Oil - \$31 billion

Potential - Atlantic OCS offers only potential for discovery of oil and gas until exploratory drilling has been completed. There is no way of actually confirming the existence of any resources.

Total Bids - Petroleum companies bid over \$3.5 billion for 101 of the 154 tracts nominated for the sale.

Royalty Fee - A percentage of the gross value of all hydrocarbons discovered must be paid to the federal government as a royalty fee, 16 2/3% for all tracts except high royalty tracts - for high royalty tracts, the fee is 331/3%.

High Royalty Tract - "High royalty tracts" in the opinion of the Department of Interior, have a higher potential yield of hydrocarbons than do other tracts.

Successful Bidder - Most successful bidder in Lease Sale No. 40 was Exxon Corporation which submitted bids totalling \$729.9 million on 69 of the 101 tracts.

- 1 -

#### The Basic Drilling Process and Schedule Estimates

Basic Phases - Drilling proceeds in three basic phases

1. exploration

2. development

3. production

Basic Components of Drilling - 1. Platforms

2. Rigs

#### 3. Wells

Rig - A rig is the equipment and machinery used for drilling the well.

Well - The well is the shaft or deep vertical hole drilled into the earth.

Platforms - Rigs are located on platforms, which are the offshore structures used to support physically all the equipment, personnel and material engaged in drilling activities.

Jacket - The main supporting structure of the platform is the jacket.

- Description of an Oil or Natural Gas Well An oil or natural gas well is essentially a steel, encased pipeline which serves as a conduit from the underground source of fluid fossil fuel to the surface. The well is drilled by using a series of bits that cut a hole into the soil and rock strata. At a relatively shallow, predetermined depth, the bit and drilling tools are withdrawn and a tubular casing, the outer pipe of the well, is lowered into the hole and cemented into place. The casing protects against possible pollution by underground water, prevents the well from collapsing, and supports the well - control equipment. The drilling process is extended with increasingly smaller diameter casing strings placed inside the earlier ones (creating a telescope effect) until the desired depth is reached, which is usually in excess of 10,000 feet.
- Drilling Mud A specially prepared slurry, known as "drilling mud," is forced through the drill stem (the hollow stem that turns the drilling bit) into the well between the drill stem and the hole created by the bit. The mud controls pressures within the well, lubricates and cools the bit, seals the strata until the casing is in place, supports the sides of the well hole, and carries rock chips cut by the bit up to the surface.
- Blowout Preventor A special system of valves, called a "blowout preventor" is attached to the top of the well during drilling. The preventor remains in place throughout the entire operation to provide a means of cutting off well flow in the event of an emergency.
- Schedule of Drilling 1. The most active exploration drilling in lease sale no. 40 will probably take place within five years of the resumptional exploratory drilling. Most exploration drilling should be completed within 5 to 10 years of the starting date.

2. Development drilling, conducted from fixed platforms, could begin within 3 years of the commencement of exploratory drilling, and continue for 10 - 15 years.

3. Production drilling was expected to commence in the lease sale no. 40 area in 1981, with most platforms producing by 1990.

Pipeline - Based upon resource potential estimates, it had been determined that the most economically feasible and environmentally desirable method of transporting oil extracted from the offshore wells would be via pipeline (as opposed to barges or tankers) Small gathering lines would connect production from individual platforms to larger diameter pipelines which would carry oil and gas to shore in pipeline corridors.

Well Life - It is estimated that the wells will have a life up to 25 years.

Landfall - A shore line location where the underground pipelines start their route across the land, chiefly northward or westward to the refineries.
#### The Drilling Story - From Exploration to Production

Table 1 Range of Drilling Demands for Lease Sale No. 40\*

Number of Wells - Exploration 60 - 240

Number of Platforms (maximum drilling at one time)

Exploration 5 - 20

Development 5 - 20

Total Miles of Offshore Pipeline 100 - 450

Number of Onshore Supply Bases 1 - 4

\*Based on U.S.G.S. estimates - Source - Final Environmental Statement: Lease Sale No. 40, U.S. Department of Interior, May 25, 1976

Exploration Drilling - The exploration phase of OCS development consists of locating oil and natural gas reserves. There are two stages in this phase, one before and one after the lease sale.

<u>Prior to the Lease Sale</u> - geophysical exploration is undertaken. This activity normally employs seismic surveying, where shock waves are set off near the water surface and sensitive recording devices towed behind vessels are used to determind the density of sediments lying beneath the ocean bottom. The results of the surveys are interpreted to predict where oil and gas deposits are likely to be found.

In addition to geophysical exploration, some geological investigations also take place before the sale. For example, <u>COST</u> (Continental Offshore Stratigraphic Test) <u>drilling was conducted</u> <u>during the first four months of 1976 at a site located approximately 75 miles east of Atlantic</u> <u>Gity, New Jersey</u>. There, a well was bored to a depth of 16,000 feet by a mobile drilling rig for the purpose of obtaining stratigraphic information in the Baltimore Canyon trough area.

<u>After the Lease Sale</u> - more intense exploration drilling commences. Seismic and geological surveys only imply the oil and gas are present in sediments beneath the Continental Shelf. Exploration wells must be drilled to verify the presence of natural gas or oil in amounts commercially feasible for extraction.

The major shore side requirements during exploration drilling are for supply bases where support material(i.e. drilling equipment, pipe, chemicals, diesel fuel, water, provisions, etc.) can be stored and assembled for transshipment to the mobile drilling unit. Transportation to drilling units is provided by work or supply boats (length up to 200 - 250 feet), crew boats (length up to 85 - 110 feet), and helicopters.

At least one helicopter is utilized per rig to transport personnel and small units of equipment to and from the rigs. A rig complement ranges usually from 35 to 70 men.

# Development Drilling

The confirmation of the existence of commercially desirable quantities of oil and/or natural gas beneath the OCS ends the exploration and initiates <u>the development drilling</u> <u>phase</u>. This stage consists of the development of production strategies, permanent platform construction and erection offshore, pipeline construction, and wells for production purposes.

A basic difference between exploration and development drilling is that the latter is conducted from fixed platforms secured to the ocean bottom.

Platforms used in the mid-Atlantic area will most likely be constructed from structural steel, and be attached to the ocean floor by pilings. Development wells are drilled directionally from the platform and extend at angles into all portions of the ocean bottom formation, allowing maximum penetration of wells into the oil and gas reservoir. The maximum angle of such a deviated well is reportedly about 80 degrees from the vertical. With this method, as many as 35 development wells can be drilled from one platform thus reducing the number of platforms required. Up to five years or more may be required to complete activities necessary between the start of exploration drilling and the final development of commercial production.

Another aspect of the development phase is that of platform fabrication. The steel jacket fixed platform is contemplated for development in the mid-Atlantic area. The steel jacket is a tower with a truss frame work of tubular members. This tower supports one or more decks bearing drilling and production equipment, a heliport, crew quarters, and storage areas.

#### Production Drilling

Once development drilling is completed, production casing is placed in the well and cemented into place. The casing is perforated with shaped explosive charges to establish a path for oil and gas to flow from the reservoir into the well bore. A string of narrower pipe called tubing, is then run inside the casing to serve as a conduit allowing petroleum or gas to rise to the surface. At the surface, flow is controlled by a set of well head valves called a "Christmas Tree" placed on top of the tubing. After all wells are drilled, the development drilling rig is disassembled, and production equipment is installed on the platform. This equipment is designed to separate oil, natural gas, and condensate, and to remove natural contaminants. When the field is depleted, the wells are plugged, the platform removed, and the area is allowed to revert to its original condition.

The production phase consists of the operation and maintenance of all of the facilities necessary to extract, partially process, and transport the oil and/or gas discovered.

## Pipelines

When oil or natural gas is produced in sufficient quantities from undersea wells, a pipeline is generally used for transportion to onshore facilities for processing, or for transshipment to refineries. One or two 36" major underwater pipelines will probably connect offshore oil and gas platforms in the mid-Atlantic to onshore facilities. An alternative method of transportation is via tanker or barge, but this method is usually employed only in the case of small fields located far from shore. High production rates and large fields make the use of pipelines more attractive.

## Pipe Coating

Before laying, each section of pipe is first coated with materials, such as epoxy or mastic to prevent corrosion, and then covered with a layer of dense concrete to add enough weight to allow it to sink. Thus, coating is an integral portion of pipeline construction. This task is accomplished on shore at a pipe - coating yard. Large diameter pipe (i.e. greater than a 12" diameter) is welded together from short 30 to 40 - foot sections, carried to the site on a barge, sunk, and then held under its own weight on the sea floor. In water depths less than 200 feet, the pipeline is also buried. Pipeline construction also includes the laying of gathering pipelines between platforms, and the shore. Conceivably, as much as 570 miles of offshore pipeline may have to be built simply to support production resulting from lease sale no. 40.

# Sources <u>Factbook - Onshore Facilities Related to Offshore Oil and Gas Development, NERBC.</u> August 1976

Support bases for offshore drilling. The Port of New York Potential - May 1977

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H H H H H U. . Henry W. Metzger-F Harold L. Colburn S. Catherine Costa Michael Conda . Robert C. Shinn nj, 11 Tovea. 'n. (D + ; 0

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# THE BUPL INGTON COUNTY DIVENIATIO BOARD

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# MEMBERSHIP

Robert A. Pa 217 West Sec A-4 Moorestown, . Parki Second 2.4 0.0 ٠ H ທ ÷ 0805 (D • (Ť -1 Nial 2. Gardner, 143 Warren Street Edgewater Park, N

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Stephen V. Speedwell Chatsworth 5 2 10 ٢, ٠ Η 1-1 Ö ÷έ  $\widetilde{\omega}$ 610 164 Medi ert J. 1 South 1 ford, N Meyer, A. Laxesid: N.J. 080

Bernard Cedar, Director Burl. Co. Planning Boar 49 Rancocad Road Mt. Holly, N.J. 03060

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James Quinn,Coun Burl. Co. Engine Maple Avenue Mt. Holly, N.J. ,County ngineer 08 05 n n Dun Dun ő n 1-1001 1001

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# THE REGIONAL ENVIRONMENTAL ADVISORY COMMITTEE OF BURLINGTON COUNTY (REAC)

Meets Third Tuesday of Each Month - 3:00 P.M. Freeholders Conference Room County Office Building Rancocas Road Mount Holly, New Jersey

Carl Taraschi	Stephen V. Lee, III	Barbara Seeley
90 Twin Hill Drive	Speedwell	Tom Brown Road
Willingboro, N.J. 98046	Chatsworth, N.J. 08019	Moorestown, N.J. 03057
James May 308 Morgan Avenue Palmyra, N.J. 03065	' Elizabeth Anderson 74 Lenape Trail Medford Lakes, N.J. 03055	Robert D. Eck 233 Eastbourne Terrace Moorestown, N.J. 03057
Ruth Allen	Eugene Englebrecht	Dr. Irwin Vas, Vice-Chr.
Woodside Lane	200 High Street	6 Prince Street
Cinnaminson, N.J. 03077	Mt. Holly, N.J. 08060	Bordentown, N.J. 08505
F. Gary Patterson,Chr.	William Haines	Esther Yanai
Rt.No.2,Box 2356-A	Chatsworth	302 Kenwood Drive
Browns Mills, N.J. 08015	New Jersey 08019	Moorestown, N.J. 08057
Free. Henry W. Metzger 49 Rancocas Rd., Mt. Holly, N.J. 08060	Free. Marold L. Colburn,Jr. 49 Rancocas Rd., Mt. Holly, N.J. 03060	Charles Schiers,Sec. Burl. Co. Health Dept. Woodlane Road Mt. Holly, N.J. 03060
Bernard Cedar, Director	Fred Mahn	Craig Imber
Burl. Co. Planning Board	Soil Conservation Service	Mosquito Commission
49 Rancocas Road	Cramer Bldg., Rte. 33	Eayrestown Road
Mt. Holly, N.J. 03060	Mt. Holly, N.J. 03060	Mt. Holly, N.J. 08060
Raymond Samuelis	James Quinn,County Engineer	Robert Simkins,Tech.Staff
Extension Service	Burl.Co. Engineer's Dept.	Burl. Co. Health Dept.
High Street	Maple Avenue	Woodlane Road
Mt. Holly, N.J. 08060	Mt. Holly, N.J. 08060	Mt. Holly, N.J. 08060
	John Ettinghouse,Tech.Staff; Burl. Co. Planning Board 49 Rancocas Road Mt. Holly, N.J. 08060	

- 3 -

### REAC/STEERING COMMITTEE FOR THE OUTER CONTINENTAL SHELF/BURLINGTON COUNTY IMPACT STUDY

Meets At The Direction Of The Chairperson Burlington County Health Center Woodlane Road Westampton, New Jersey

#### Steering Committee For OCS

Mr. Charles Schiers, Chairperson Mr. John Ettinghouse - Liaison for Mrs. Ruth Allen Planning Board Mr. Gary Patterson Mr. Michael Wardell - Health Dept.Liaison Mr. Stephen V. Lee, III Mr. William Monroe - Economic Development Dr. Harold L. Colburn, Free. Dr. V. Eugene Vivian - CESC Mr. Bernard Cedar, Director, \*Mr. Joseph Forgach Planning Board \*Mr. Albert B. Seither \*Recent appointments

\*\*\*\*

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF COASTAL ZONE MANAGEMENT LABOR AND INDUSTRY BUILDING JOHN FITCH PLAZA - P.O. BOX 1889, Trenton, N.J. 08625

Mr. David Kinsey - Chief Ms. Helga Buseman - Staff Ms. Andrea Topper - Staff Mr. John Weingart - Staff

> Twelve New Jersey Counties Participating In OCS/Impact Studies and Contact Persons

John Gideonse Director Atlantic Co. Div. of Planning 730 Guarantee Trust Building Atlantic City, N.J. 08401 (509) 348-6400 Russell Dorm, Administrator Hudson County Planning Board County Administration Building 595 Newark Avenue Jersey City, N.J. 07206 (201) 792-3737

OCS: Eugene Ely

OCS: (not designated)

- 9 -

Cedar, Bernard, Director Burl. Co. Planning Board 49 Rancocas Road Mount Holly, N.J. 00860 (609) 267-3300, Ext. 261 OCS: V.Eugene Vivian The Conservation and Environmental Studies Center, Inc., Box 7597, R.D. No.7 Browns Mills, N.J.08015 18 Court Street Bd. Staff

Batory, Ms. Joan, Director Camden County Environmental Agey. Ocean County Planning Board 2276 North 43rd. Street Pennsauken, N.J. 08110 (609) 757-8979 OCS: Jerry Lennon

Jarmer, Elwood, Director Cape May County Plng. Board County Court House Cape May Court House, N.J.08210 Salem, N.J. 08079 (609) 465-7111 OCS: R. Carl Rubalcava

Holland, John, Director Cumberland County Plng. Board 800 East Commerce Street Bridgeton, N.J. 08302 (609) 451-8000OCS: Judy Scott

Scolpino, Robert V., Director Gloucester County Plng. Board County Administration Building North Delsea Drive Clayton, N.J. 08310 (609) 881-1200 OCS: Charles Romick

Powell, Douglas Director Middlesex Co. Planning Board County Administration Building John F. Kennedy Square New Brunswick, N.J. ' 08901 (201) 246-6062 OCS: Jim Fong

Halsey, Robert D., Director Monmouth County Planning Board Freehold, N.J. 07728 John Ettinghouse, Plng. (201) 431-7000, Ext. 220-OCS: Jack Rosenberg

> Director - Undetermined Court House Square 119 Hooper Avenue Toms River, N.J. 08753 (201) 244-2121 OCS: Undetermined

Ambler, Chet, Director Salem County Planning Board 94 Market Street (609) 935-4477 OCS: Christopher Warren

Linden, Alfred H., Director Union County Planning Board County Court House Elizabeth, N.J. 07207 (201) 486-3800 OCS: Barbara Bockert

AMERICAN RIGHT OF WAY ASSOCIATION STATE OFFICIALS

Mr. Robert Knudsen, Secretary 526 St. Mark Avenue

Mr. Van Towle New Jersey Bell Telephone Company Westfield, New Jersey 07090 540 Broad Street, Room 1300 Newark, New Jersey 07101

# BURLINGTON COUNTY REPRESENTATIVES

Mr. William Stoop Burlington County Plng. Board Mapel Avenue Mt. Holly, New Jersey 08060 Mr. John Eckman Burlington County Engineering Dept. Maple Avenue Mt. Holly, New Jersey 08060

Mr. Kenneth Street Burlington County Road Dept. Maple Avenue Mt. Holly, New Jersey 08060

#### EVALUATION

Date

I am aware of currently existing energy facilities in Burlington County.
 Yes \_\_\_\_\_\_Yo.

Comment:

2. I have become more familiar with the terminology and jargon utilized by public and private agencies during oil exploration, development and production. Yes \_\_\_\_\_No.
Comment:

3. I am more familiar with some of the self-limiting needs of some energy facilities, e.g. deepwater dockage, gas scrubbing plants, heliports, refineries, tank farms, housing, jobs and other considerations.
Yes. \_\_\_\_\_\_No.

Comment:

4. I am more familiar with some of the steps taken by state, county and municipal agencies to safeguard the environment and existing social and economic bases of Burlington County. Yes \_\_\_\_\_No. Comment:

5. I feel that this meeting has provided me with useful data and information as well as appropriate channels to express my concerns and suggestions regarding oil exploration on the outer continental shelf. Yes No.

Comment:

- 12 -

Page 2, Evaluation:

6. Additional Comment:

Please add my name to the mailing list so that I may be kept abreast of the progress of the project.

Name	2:	 • · ·	
Address:		 a da anticipation de la companya de	 an an a
Zip	Code:		

# EVALUATION

- 1. Who should have the ultimate say in decisions such as the siting of controversial facilities?
  - 4. The individual community being affected.
  - b. The individual community with limited input from the state, county, and/or region
  - c. Complete state-federal-regional override of local decisions
- 2. Do you think that this meeting reflected a bias toward industry, environment, cooperative planning?
  - a. Industry
  - b. Environment
  - c. Planning
- 3. Do you think that this meeting will help you as an individual and a community member to improve the quality of life?
  - a. individual
  - b. citizen in a community
  - c. both
- 4. Do you plan to tell others about this meeting?
  - a. yes
  - b. no
  - c. That they should be involved
  - d. That they should research their ordinances.
- 5. What do you believe?
  - a. That environments (natural) must be preserved at the cost of the quality of life.
  - b. That jobs and economic health is more important than natural environments.
  - c. That economic health, the high quality of life and preservation of environments should be given equal status and are interacting features.

Facility type	Aren Regutred	Visual	Notse	Odor Air	Water Supply Requirement	Wastewater Potential Contaminanta	Groundwster Contemination Potential	Highway Requirements	Ffre/Other Hazarda	Energy Desands	Tax Ratable	Labor	Capital Investment	Solid Weste	Councert
Temporary Service Base	5 - 15 Астев		85 db 24 hee/day	Nydro- Carbona	5.2 Hil Galm per rig/year	Hydrocarbons heavy metals	San11	Possible Increase in County	Yes	26,000 bbls year	Times Capital Inv.	45/118 152 Local	\$150,000 co \$250,000	6 tona/day	200' Wherf/itg 15-20' Water Depth
Permanent Service Base	25 - 50 Acrea	Tall Cranea To 150'	85 dh 24 hr6/day	Hydro- carbona	8.2 Hil Golu per rig/year	Bydrocarbous heavy metals	Suci [ ]	Increase In County	Yes	20,000 to 54,000 bbla year		60/rig 802 1.00al	\$1-3 miliion	6 tons/day	200' Wharf/rig 15:20' Water Depth
Hel tport	5 - 10 Acces		30 db 10 120 db at site			Some lead from fuelm									
Reitnery	1000 1500 Acres	Tovera to 1004 Tall	90 db to 100 dh 24 hra/day	Particulates nitrates uitrites, sulfui diox- ide, sulfites carbon mono- xide	4-10 Hil Gals Per day		Considerable Draw Down	Pousible Increase in County	Үен	1.45 m11 kuti/day 19,800 tola/dy			\$700 million to 41 billion	Concrete/metal other debils	
Cas Scrubber	50 - 75 Астем	Tovers to 80° Tall	80 db to 100 do 24 hra/day	Sulfides oxide of sulfur and nitrogen, hydrocarbons	200,000 gula/day	Sulfuric Acid Chroaina Zinc, Phos- phates, Sulfite	Great Draw Down		Yea	S.4 mil kwb/month 360 ft <sup>3</sup> / month		500 Const 55 for operation	\$85 mtildon	Sludge, arale oil abnorbents	Muar be within 30 miles of landfall if Nat. Gas is found
Pipelineu and Landfall	See Connent		90 db ro 140 db	Hinimal	Hfistnes)	Hintmal	No		Ý¢s			15 - 20	\$760,000 to \$2 m11/m11e	Hán tua L	50 to 100° R/W,(40 actes for pump station, 60 acres tor terminal 1f required) at landiali

SOME ENVIRONMENTAL IMPACTS AND RESOURCE DEMANDS OF OIL AND ENERGY TRANSMISSION FACILITIES

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SOURCE: ONSUBRE IMPACTS OF OUTER CONTINUENTAL SHELF OIL AND CAS DEVELOPMENT AN ASPU TRAINING PROJECT - HID ATLANTIC 1 i.

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Municipality	High Volt. Trans.	Oil	011, Gas, C	Mh. Flammal	, 1	Storage	Gas	O,I	Gas	Nuclear		Air
• /	550 K.V. 765 K.V.	Refinery	Tank	Farms		Volume	Refinery	Pipeline	Pipeline	Plant	Noise	Transport
		/	DIL	Gas	Other	Limit	Scrubber	· · · · · · · · · · · · · · · · · · ·				
Bass River Township City of Beverly Bordentown Township Bordentown City		X	× × 18-12.3(4)(4)		Art 9-78 4 Art 2 Rads See 4-160	10,000 Cu. H. 20,000 Gul.	×				× × ×	
Burlington City Burlington Township Chesterfield Township			× ×	×	19:7-1(11)	19: 1-1 (11)					x	
Cinnaminson Township		X	×	×	Art.XIT		X	,		×	X	×
Delance Township Delran Township Eastampton Township				,	No coverage.						×	
Edie water Park Twp. Eresham Twp.					16:7-1(11)						X X	
Fieldsbord Township Florence Township Haines part Township		××	×	×	-	Max, 000 cuft.					× ×	
Maple Shade Township Medford Township		××	× ×	××	Jei: 18-22						×	×
Lumber fon Township Manstield Tup. Med Ford Lakes Borugh Moorestown Tup.		×		MU SACONT	Art.X (Heuv Sec. 2:17-5	Max. 10, 103 gal. I Talent.) Pre. Stats)		•		×	××	
MF. Hally Twp MF. Lawrel Towash, p New Hanover Twp North, Hanover Twp		×××	Mar. 20,000 citt. Mar. 20,000 citt.	10,000 gal. 10,000 gal.	Art. 1 Sec. Sect. 7 Sec VII (Inc	an Max 20,000 cult. tent)		: : :			×	. <b>X</b>
Palmyra Boronyn Pemberton Burongh Pemberton Tup		XXX	×××	X	94:12 Art. VI Sec. 411	Milt. 10,000 euft Max.s50 gal.	×	• • •			X	
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Willing bore Tup Taber nucle Tup Washington Tup					20-6.9(I. Nothing Nothing Ber 1105	Anitent					~	
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# Burlington County Municipal Zoning Exclusionary Ordinances

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