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The importation of liquefied natural gas is one method of dealing with the United States' dwindling domestic supply of natural gas. The Government's uncertain approach toward liquefied natural gas imports has resulted in a time-consuming regulatory review process. Findings/Conclusions: Intensive examination of a proposal to import liquefied natural gas from Indonesia to California showed that delays stem from inadequacies in the national policy on imports; legislative requirements; lack of established criteria and guidance; and jurisdictional gaps, overlaps, and disputes between both Federal agencies and Federal and State authorities. Recommendations: The Secretary of Energy should, in cooperation with other Federal agencies, revise the policy statement for imported natural gas to define clearly goals and objectives for imported liquefied natural gas and establish criteria as to what constitutes excessive national dependency. In acting on this, the Secretary should analyze the various alternative energy sources or natural gas substitutes. If liquefied natural gas imports are determined necessary to supplement U.S. gas supplies, the Secretary should reevaluate the existing regulatory process for liquefied natural gas import proposals. The Secretaries of State and Energy should consider the pros and cons of a concerted effort by liquefied natural gas importing nations to effectively coordinate matters of mutual concern such as pricing by exporting countries. The Congress should require the Secretary of Energy to report within a given time period the role liquefied natural gas should play in satisfying U.S. energy needs. This should be supported by a systematic analysis of the

various alternative energy sources or natural gas substitutes. (Author/SC)

7005

BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Need To Improve Regulatory Review Process For Liquefied Natural Gas Imports

This report documents reasons for, and adverse impacts of, the lengthy regulatory review process involving liquefied natural gas import proposals.

GAO recommends that the Secretary of Energy analyze various alternative energy sources and natural gas substitutes. If it is determined that liquefied natural gas imports are necessary to supplement dwindling domestic gas supplies, the Secretary of Energy should streamline the existing regulatory review process.

ID-78-17

JULY 14, 1978

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-178205

To the President of the Senate and the
Speaker of the House of Representatives

Because of an impending natural gas shortfall, importing liquefied natural gas is a means to supplement projected declines in the U.S. gas supply by 1985. This report documents reasons for and adverse impacts of the lengthy regulatory review process involving liquefied natural gas import proposals.

Our review was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

Copies of this report are being sent to the Secretaries of State and Energy; Federal Energy Regulatory Commission, the Office of Pipeline and Producer Regulation; California Public Utilities Commission; and to the Director, Office of Management and Budget.

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

NEED TO IMPROVE REGULATORY REVIEW PROCESS FOR LIQUEFIED NATURAL GAS IMPORTS

D I G E S T

Largely because natural gas is less expensive, cleaner, and easier to handle than other fuel sources, its use has increased markedly. Steps must now be taken to cope with our Nation's dwindling domestic supply of natural gas. One way is to import liquefied natural gas.

However, the Government's uncertain approach toward liquefied natural gas imports has resulted in a time-consuming regulatory review process. Using a proposal to import liquefied natural gas from Indonesia to California as a case study, GAO found that delays stem from

--inadequacies in the national policy on imports;

--legislative requirements;

--lack of established criteria and guidance; and

--jurisdictional gaps, overlaps, and disputes between both Federal agencies and Federal and State authorities.

Liquefied natural gas import projects are costly and require long-term commitments. All parties involved with such projects must review carefully the economic and other implications associated with such a commitment.

This lengthy Federal review process has adversely affected both the United States and Indonesia--an important source of liquefied natural gas. The most important effect on the United States is a projected denial of gas to high priority customers. Delays result in increased project costs, increased Federal spending and obligations to support liquefied natural gas import projects, a loss

of U.S. exports in the form of equipment and materials to construct the production facilities in Indonesia, a negative impact on U.S. balance of payments, and uncertainties and problems for California.

For example: (See pp. 25 to 30.)

--Each year's delay is expected to increase the cost of gas delivered to the distribution point in California by approximately 8 percent for the first year of actual delivery and 5 percent when the project builds up to full capacity during the third year. Much of this increase is attributed to increased ship construction costs.

--Delays in processing the Pacific Indonesia applications have increased expected U.S. Export-Import Bank and Maritime Administration commitment as of late 1977 by approximately $366 million.

--Importing Indonesian liquefied natural gas rather than foreign oil would reduce annual U.S. dollar outflows for energy imports by about $200 million because more of the liquefied natural gas price would be spent on U.S. interests.

--Inadequacies in the Federal energy policy concerning liquefied natural gas imports and other alternative fuels adversely affect California's ability to plan for future energy demand.

The most obvious short-term effects in Indonesia include construction deferrals, cost overruns due to disruption of ongoing construction and inflation, and postponed revenues. Less obvious are the long-term implications on Indonesian economic planning, regional development, and strengthening economic ties with the United States. (See pp. 30 to 32.)

Foreign countries seem to be moving more quickly than the United States to import liquefied natural gas. GAO noted that in Japan, liquefied natural gas projects have government backing and coordination among the parties involved and are not subject to the range and depth of government review, as they are in the United States. (See ch. 4.)

The newly created Department of Energy and the Federal Interagency Liquefied Natural Gas Task Force have recently begun to clear up some of the processing problems of the import proposals. However, certain issues are not currently addressed, including (See p. 42.)

--which Federal agency should have overall responsibility for controversial liquefied natural gas issues, especially siting and safety or how jurisdictional problems can be resolved;

--the need to effectively implement a coordinated Federal-State effort for deciding on liquefied natural gas projects and the means to do it;

--the need to assign specific review responsibilities to those Federal agencies having a definite expertise in a particular area;

--the need for comprehensive guidelines for Federal agencies to effectively rule on a liquefied natural gas proposal in a timely manner; and

--the feasibility of offshore receiving terminals for liquefied natural gas as an alternative to onshore sites.

In addition, GAO could not identify any plans for a systematic analysis of the various alternative energy sources or natural gas substitutes to determine whether, and to what level, liquefied natural gas imports should satisfy U.S. energy needs. Avoidance of overdependence on import of liquefied natural gas is a factor to be considered in making such a determination.

Resolving the above issues would facilitate a more timely and effective review process for liquefied natural gas import projects and construction of associated import facilities. (See p. 43.)

RECOMMENDATIONS

GAO recently recommended that the Secretary of Energy, in cooperation with other Federal agencies, revise the policy statement for imported liquefied natural gas to define clearly goals and objectives for imported liquified natural gas and establish criteria as to what constitutes excessive national dependency. In acting on this the Secretary should analyze the various alternative energy sources or natural gas substitutes. If liquefied natural gas imports are determined necessary to supplement U.S. gas supplies, GAO recommends that the Secretary reevaluate the existing regulatory process for liquefied natural gas import proposals. (See p. 43.)

GAO further recommends that the Secretaries of State and Energy consider the pros and cons of a concerted effort by liquefied natural gas importing nations to effectively coordinate matters of mutual concern such as pricing by exporting countries. (See p. 44.)

The Department of State agreed with the report's principal observation that the regulatory review process has been too lengthy. The Department of Energy and the Federal Energy Regulatory Commission generally concurred with the thrust of GAO's recommendations but disagreed on specifics. Their comments are summarized on pages 44 to 46 and are incorporated as appendixes IV, V, and VI.

RECOMMENDATION TO THE CONGRESS

The Congress should:

--Require the Secretary of Energy to report within a given time period the role

liquefied natural gas should play in satisfying U.S. energy needs. This should be supported by a systematic analysis of the various alternative energy sources or natural gas substitutes.

Contents

ABBREVIATIONS

Btus	British thermal units
CPUC	California Public Utilities Commission
CRS	Congressional Research Service
ERA	Economic Regulatory Administration
ERC	Energy Resources Council
EXIM	U.S. Export-Import Bank
FERC	Federal Energy Regulatory Commission
FPC	Federal Power Commission
GAO	General Accounting Office
LNG	liquefied natural gas
MARAD	Maritime Administration
NEPA	National Environmental Policy Act
OCS	Outer Continental Shelf
OPSO	Office of Pipeline Safety Operations

CHAPTER 1

INTRODUCTION

The United States is experiencing a growing gas shortage--the demand exceeds the supply--and the increasing gap (called shortfall) has limited expansion of gas consumption in residential, commercial, and industrial sectors.

Largely because it is less expensive, cleaner, and easier to handle than other fuel sources, natural gas usage has increased markedly since 1950. The increased consumption, combined with dwindling domestic production since 1973, has created a shortfall, and curtailments have occurred every winter since 1970. The Federal Power Commission (FPC) projected curtailments of about 1.66 trillion cubic feet of gas in interstate markets for the 1977-78 winter season--about 18 percent of the forecasted requirements. This shortfall is equivalent in energy content to approximately 318 million barrels of crude oil.

Because this energy resource is vital to the U.S. economy, steps must now be taken to cope with the increasing shortage of natural gas. The shortfall could be lessened by reducing the demand for gas, increasing the available supply, or combining these two measures. One means of adding to our Nation's supplemental gas supplies by 1985, as well as reducing U.S. dependence on oil imports, is to import liquefied natural gas (LNG).

LNG is obtained through a process that compacts natural gas to 1/600th of its volume by cooling it to minus 259 degrees Fahrenheit. In this way it can be transported in specially constructed ships to a receiving facility in the United States where it can be regasified and then distributed in existing pipelines. Currently, less than one-tenth of 1 percent of the annual U.S. natural gas supply (about 20 trillion cubic feet) is imported LNG. However, LNG imports could provide up to 1.8 trillion cubic feet by 1985 if all current projects pending before the Department of Energy were approved.

In a recent report 1/ we noted that President Carter's National Energy Plan, issued in April 1977, was inadequate because it did not resolve uncertainties associated with

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1/"The New National Liquefied Natural Gas Import Policy Requires Further Improvements," EMD-78-19, Dec. 12, 1977.

imported LNG. For example, the plan provides no clear indication of what role imports are to play in meeting future gas needs. We recommended that the Secretary of Energy, in cooperation with other Federal agencies, revise the policy statement for imported LNG to

--define clearly goals and objectives for imported LNG;

--establish criteria on what constitutes national dependency for use in determining project acceptability;

--specify curtailments to be applied for low priority users of imported liquefied natural gas; and

--clarify or correct ambiguous, inaccurate, or potentially misleading statements.

The report also addressed problems in the regulatory review process for deciding on LNG import proposals. We recommended that the Secretary of Energy initiate a study of the process to identify actions that should or could be taken to expedite decisionmaking. The Federal Energy Administration responded to the draft report in September 1977 that it agreed with the recommendation and was reviewing the regulatory procedures to streamline the review process.

This report, by using one proposal for an LNG import scheme--the Pacific Indonesia application filed with the FPC in November 1973--will set forth detailed findings and recommend improvements in the regulatory process. We also developed information on other foreign countries' policies for LNG imports.

SCOPE OF REVIEW

We contacted American Embassy and host government officials, representatives of gas industries, and other LNG importers in the five foreign countries experienced in LNG imports--Japan, the United Kingdom, France, Italy, and Spain. In addition, we met with officials of the American Embassy and LNG producers in Indonesia. We also contacted representatives of several companies with pending proposals or recently approved LNG import projects, various California State and local authorities, a Federal Interagency

LNG Task Force, 1/ and the following U.S. departments and agencies:

Department of Energy (including the Economic Regulatory Administration and the Federal Energy Regulatory Commission)

Federal Power Commission

Maritime Administration

Department of State

Export-Import Bank

1/The task force is composed of representatives from the Departments of Energy, Transportation, Commerce, State, Defense, the Treasury, and the Council on Wage and Price Stability.

CHAPTER 2

TIME-CONSUMING REVIEW PROCEDURES AND JURISDICTIONAL PROBLEMS OF LNG IMPORTS

The Department of Energy has primary jurisdiction over LNG imports, including responsibility for ruling on applications to (1) import LNG, (2) construct terminal facilities to accept the imports, and (3) sell the imported LNG to American consumers. 1/ As of the end of January 1978, three LNG projects had been approved and five others were pending. (See app. I.) The review process for the three approved projects required 76 months, 2/ 54 months, 3/ and 43 months, respectively.

The Pacific Indonesia application was approved by the Economic Regulatory Administration (ERA) on December 30, 1977--more than 4 years after the initial application. However, the approval will cause additional hearings and further delays. The terminal site approved, located at Oxnard, California, is the only one on which sufficient evidence had been taken. After the hearing but before ERA's decision, the California legislature enacted a law with siting criteria which Oxnard could not satisfy. ERA stated it will cooperate with California to settle on a mutually acceptable site. Delays may also be faced because ERA's approval was conditioned upon revising the price escalation provision in the contract allowing for future price adjustments.

1/The Federal Power Commission was responsible for these functions before it was abolished on Oct. 1, 1977. These functions are now performed by the Department of Energy's Economic Regulatory Administration and the Federal Energy Regulatory Commission.

2/This proceeding initially took 19 months but was extended to 76 months due to an appeal of an FPC ruling on method of pricing the gas to customers. FPC eventually reversed its initial decision.

3/This was the first LNG import application submitted for approval. The application was submitted to FPC in Feb. 1970, and the first shipment arrived in 1971. FPC originally elected not to assume jurisdiction over intrastate facilities and did not impose conditions on these LNG imports because it was not "necessary or appropriate" for the public interest to do so. This case was subsequently reopened in May 1973, and finally approved in Nov. 1977. Shipments of LNG continued from 1971. The 54 months is calculated from May 1973 to Nov. 1977.

FPC was not prepared to process these early LNG import applications in a timely manner because the projects were new and the staff lacked expertise in reviewing the applications. Furthermore, an FPC official stated that LNG import policy proposals generally received low priority as an energy resource.

In addressing the Cryogenic Society of America, Inc., in May 1976, the FPC official responsible for processing LNG applications noted that 18 months would be an optimum processing time. The time frame assumes that (1) the applicant initially provides a completed application--this has rarely, if ever, been the case--and (2) the applicant responds promptly to requests for additional information and makes no significant changes to the project. The official stated that no formal time guidelines have been adopted by FPC or the Department of Energy for processing LNG import proposals. The Pacific Indonesia proposal is a good example of the difficulty in achieving the optimum processing time. The initial application in November 1973 to import LNG from Indonesia to a proposed LNG receiving facility in the "vicinity" of Oxnard, California, was considered incomplete, and little effort was made to process the initial application. Several amendments and related applications were subsequently filed and FPC finally considered the proposal complete on March 31, 1975. The optimum time schedule of 18 months is compared below with the actual processing time for the Pacific Indonesia application.

Phase	Suggested optimum time required for processing	Actual processing time required for Pacific Indonesia application	
		Initial application November 1973	Completed application March 1975
	(months)		
Staff review is completed by	0-3	21	5
Hearing begins	4	25	9
Draft environmental statement issues	6	30	14
Final environmental statement issues	10	37	21
Hearing concludes	12	39	23
Administrative law judge decision	15	44	28
Commission (Department of Energy) decision	18	49	33
Reconsideration (if requested)	20	-	-

FPC reacted to criticism of its lengthy review procedures by accelerating three recent applications to import LNG from Algeria. FPC's administrative law judges, who are responsible for deciding on the application before a final FPC decision is made, recommended conditional approval for all three proposals within 12 months from the application dates. However, the administrative law judges' decisions can be approved, disapproved, or modified. Final decisions by the Department of Energy on these proposals had not been made at the time of our review.

There has been some concern, however, that the accelerated processing of these applications has not allowed for enough time to adequately support the decisions. For example, the administrative law judge ruling on one of the applications qualified his decision by stating,

> " * * * This case represents the barest minimum showing that could possibly be made to justify certification under normal regulatory processes and it is by no means hyperbole to state that but for the overriding energy crisis and the Sonatrach (Algerian) position, there are enough questions still extant to suggest the need for further more leisurely evaluation of the applications * * * "

The following sections discuss the factors causing the time-consuming process of LNG import proposals and jurisdictional problems, ways to reduce processing time and resolve jurisdictional problems, and the Department of Energy's potential to process LNG import proposals faster.

FACTORS AFFECTING U.S. REGULATORY PROCESSING OF LNG IMPORT PROPOSALS

The extensive time frame for processing and approving LNG import proposals is a result of several factors, including:

- --Inadequacies in the national policy on the role of LNG imports.
- --Legislative requirements.
- --Lack of established criteria and guidance on relevant issues.
- --Jurisdictional gaps, overlaps, and disputes both between Federal agencies and Federal and State authorities.

Although we could not determine the impact of each factor influencing the processing of LNG import proposals, the result has been a time-consuming review process by the Federal Government for those projects approved to date, including the Pacific Indonesia proposal. The four factors are discussed below.

Inadequacies in the national policy

Changing executive policies concerning the level of future LNG imports have adversely affected timely decisions. This is especially significant because agreements usually provide for deliveries for at least 20 years, and the combined import level from pending and approved projects exceeds the levels established by past executive policies. The current policy is also inadequate because it does not alleviate uncertainties associated with imported LNG. Policy changes during recent years are identified below.

--In 1974, President Nixon proposed a goal of U.S. energy independence. Opinions varied considerably, however, regarding the meaning of energy independence. To some, it meant that the United States produces all of its energy domestically. To others, it meant that the United States imports energy products only to a point of "acceptable" political and economic vulnerability. In our opinion, this essentially prevented approval of LNG projects, and none were approved until after an independent council under President Ford recommended in August 1976 that the United States import LNG. The Federal Energy Regulatory Commission (FERC) staff contend that the FPC, as an independent regulatory agency, was not bound by the President's proposed goal.

--In February 1976, President Ford directed the Energy Resources Council (ERC) to establish procedures for reviewing LNG import proposals, balancing the need for supplies against the need to avoid excessive dependence, and encouraging new imports where appropriate. The President stated that by 1985 we should be able to import 1 trillion cubic feet of LNG to help meet our needs without becoming overly dependent upon foreign sources.

--In August 1976, the ERC recommended that LNG imports from a single country be limited to 0.8 to 1.0 trillion cubic feet a year for national security reasons and

that about 2 trillion cubic feet a year is an acceptable national level of import dependency, within specific country limits. The council noted that 0.4 trillion cubic feet in LNG import projects had been approved, and over 3 trillion cubic feet in additional projects were pending or in the planning state.

--In April 1977, President Carter stated in his National Energy Plan that the ERC guidelines were being replaced with a more flexible policy that sets no limit on LNG imports. Under the new policy, the Federal Government would review each application to import LNG in order to provide for its availability at a reasonable price without risking dependence on foreign supplies. The Plan noted that this new policy could add as much as 500 billion to 1 trillion cubic feet annually to U.S. gas supply through the 1980s without making an open-ended commitment for large volumes of imports. This increase refers to LNG supply that could be allowed above what was allowed under the Energy Resources Council policy. The LNG import policy presented by President Carter is discussed in a recent GAO report. 1/

A Federal interagency LNG task force was established in April 1977 to implement President Carter's National Energy Plan. The task force was expected to submit LNG import policy recommendations to the Secretary of Energy in early 1978. However, as late as December 1977, it was undecided if the task force would address the crucial issues of how much LNG should be imported and at what price.

Legislative requirements

The Natural Gas Act of 1938, as amended, gave FPC jurisdiction over the import and sales of LNG and the facilities used to process it. The Administrative Procedure Act and the National Environmental Policy Act of 1969 (NEPA) also prescribe statutory requirements affecting Federal processing of LNG import proposals.

The time-consuming process is caused partly by FPC's interpretation that the Natural Gas Act requires that hearings be held on all LNG import applications. General notices of

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1/"The New National Liquefied Natural Gas Import Policy Requires Further Improvements," EMD-78-19, Dec. 12, 1977.

the applications must therefore be published in the Federal Register to allow interested parties to file petitions for intervening in the proceedings. Persons with affected interests or those with rights or interests conferred by law may be admitted into all proceedings. States can become participants in all proceedings by filing notices of intervention. Hearings for the Pacific Indonesia proposal began on December 16, 1975, and continued intermittently for 38 days over a 14-month period until February 25, 1977.

The lengthy processing time is also caused by Natural Gas Act requirements that findings be supported by "substantial evidence"--defined by a judge as "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." Although we do not advacate that decisions be based upon insubstantial evidence, ways should be found to expedite the process without doing violence to this standard. The controversial issues involved in LNG import proposals, such as siting, safety, purchase cost, how the cost will be passed on to the public, and financial feasibility of the project, lead to a voluminous presentation of evidence and extensive cross-examination. For example, the transcript of hearings for the Pacific Indonesia proposal consists of 38 volumes totaling more than 4,500 pages. In addition, about 200 exhibits were received in evidence, some as long as several hundred pages.

The nature and extent of FPC's review is indicated by the numerous categories of evidence examined by the staff during consideration of an LNG application. These categories include information concerning:

--Reliability of service from the foreign supplier.

--Distributors' dependence on foreign LNG to meet requirements of residential and commercial markets.

--Environmental impact of proposed facilities.

--Proper method of LNG pricing.

--Shipping costs.

--Overall economic feasibility of the project.

--End use of the proposed LNG supply.

--Availability of alternative fuels for the markets to be served by the project.

--Engineering feasibility of the project.

--Overall project safety.

--Other issues deemed pertinent and appropriate.

We were unable to identify the total time required to review each individual category of evidence. FPC officials stated that this type of data is not maintained. Until the categories of evidence are completed, the Commission staff does not concentrate solely on any one category but rather intermittently reviews all the categories of evidence throughout the entire process.

FPC officials stated that the processing of LNG import proposals could have been facilitated if other Federal agencies with expertise were designated and accepted responsibility for specific categories identified above. This practice has been followed in some cases but not to the the extent possible.

FPC considers approval of any LNG import project to be a "major Federal action significantly affecting the quality of the human environment." This subjects the project to the NEPA requirement that a draft and final environmental impact statement be prepared by the responsible Federal agency and submitted to the Chairman of the Council on Environmental Quality and others for comment. No administrative action is to take place until 90 days after the draft statement is filed, and another 30 days must elapse after the final statement is filed before final action can be taken.

The final environmental impact statement for the construction and operation of an LNG import terminal at Oxnard, California--the site recommended by FPC staff and approved by ERA for the Pacific Indonesia project--was completed in December 1976--37 months after the initial application and 21 months after the date FPC considered the application to be complete. The FPC official responsible for preparing the statement attributed the cause of the lengthy study to the fact that (1) available FPC personnel were assigned to a higher priority project and (2) other issues concerning the project were still being resolved by a different office within FPC and therefore completion of the project was not urgent. Officials responsible for the "other issues," however, stated that priority was not given to the proposal because the environmental statement had not been completed.

A recently passed California law effective January 1, 1978, requires lead agencies to prepare environmental impact

reports and approve or disapprove development projects within 1 year from the date an application is received and accepted as complete. The law also requires each State agency, by June 30, 1978, to compile a list specifying in detail the information required from any applicant, including the criteria to be used for deciding the application's completeness. The agency must determine the application's completeness within 30 calendar days and notify the applicant of its decision in writing. If the application is considered incomplete, the State agency must provide guidance on what additional information is required. There is no similar requirement or procedure within the Federal Government.

FPC recently acted to expedite the environmental review process by establishing time schedules for completing three LNG applications. The schedules were met by hiring consultants rather than relying on FPC personnel. The environmental impact statements were all completed within 3 months. One of these proposals was for an expansion of an existing project. However, in proceedings where States or environmental groups have asserted an "environmental interest," shortened time schedules can be criticized by these interveners on the basis that the impact statements do not meet the requirements of the NEPA or that the time schedules prevent them from adequately preparing their own environmental impact statements.

The time presently required to prepare environmental impact statements could be reduced in some cases if Federal agencies processing LNG cases were allowed to accept statements prepared by State authorities after meaningful Federal review. Courts have split opinions on whether a Federal agency can delegate responsibility for preparing environmental impact statements. Since interpretation of NEPA has varied, it seems that the only way Federal agencies could with assurance adopt environmental impact reports prepared by State authorities for LNG projects would be for the Congress to amend NEPA. The Congress has provided legislation which allows for such State preparation on development projects supported by Federal grants, provided there is an independent review and approval of the report by the Federal agency.

Another alternative to facilitate the processing of environmental impact studies and to reduce associated costs would be through a joint Federal-State effort. Both FPC and the State of California independently prepared environmental impact statements for the LNG receiving terminal for the proposed site at Oxnard, California, at a cost of approximately $200,000 and $800,000, respectively. California officials stated that a joint effort could have reduced these costs significantly.

Sierra County, California, and the U.S. Forest Service recently agreed to prepare a joint environmental impact statement for a development project that does not include Federal grants. The purposes of the joint endeavor are to avoid duplication of effort, avoid excessive expenses, achieve efficiency in the governmental process, coordinate studies and public hearings, promote interchangeability of documents, and simplify the review process for all Federal, State, regional, and local agencies. A U.S. Forest Service official stated, however, that a jointly prepared Federal-State environmental impact statement may cause difficulties because of differing legal interpretations.

Lack of established criteria and guidance

The lack of established Federal criteria and guidance for proposals to import LNG and to construct receiving terminals has caused concern at the State and local levels and contributed to the time-consuming processing of LNG import proposals. California, for example, recently implemented a comprehensive review process for deciding on a proposal to import LNG and legislatively established siting criteria for this LNG receiving terminal. Examples of the lack of established Federal criteria and guidance are discussed below.

Siting criteria

The lack of Federal criteria for siting LNG receiving terminals has caused considerable concern by interested parties and delayed potential LNG imports to California under the proposed Pacific Indonesia project. For the single onshore LNG terminal proposed, the new California law prevents offloading, regasification, and LNG storage facilities in any location where population density is greater than an average of 10 persons per square mile for a distance of 1 mile outside the perimeter of the site or 60 persons per square mile for a distance of 4 miles. This eliminates the Oxnard, California, site from consideration as this LNG receiving terminal--even though this was the site reviewed over the past 2-1/2 years and recommended by FPC's staff. ERA approved the Oxnard terminal site on December 30, 1977, but said this was not necessarily the only acceptable location and that the Department of Energy would work with California to make the final site choice. Federal siting criteria based on population density similar to California's law would have prevented the extensive FPC review of the Oxnard site. Furthermore, such criteria would eliminate from consideration certain alternative sites which would have to be considered under current requirements.

In addition to California's concern with siting criteria, officials from four eastern States petitioned FPC in May 1976 to develop site selection and facility operation standards for LNG marine terminals. FPC did not take any final actions on the petition prior to the transfer of responsibility to Department of Energy as of October 1, 1977. As of the end of 1977, no position had been taken on the petition by the Department of Energy.

In February 1978 the House Subcommittee on Energy and Power, Committee on Interstate and Foreign Commerce, held hearings on a bill (H.R. 6844) to regulate the siting, design, construction, and operation of facilities to be used for the transportation, storage, and conversion of LNG. On February 21, 1978, we presented testimony dealing with safety considerations in the storage and transportation of liquefied energy gases, including LNG. In the testimony, we stated our tentative findings and conclusions as to deficiencies in the current practices, policies, and procedures applicable to LNG. We said that because LNG is so dangerous and its potential for damage is so great, serious consideration needs to be given to intensified safety measures and to whether new or expanded old storage facilities should be built in densely populated urban areas, and further, that transportation through such urban areas should be highly controlled.

On May 15, 1978, an act, entitled "Fuels Transportatior Safety Amendments Act of 1978" (H.R. 11622), was reported out of the House Committee on Interstate and Foreign Commerce. Title II of the bill would amend the Natural Gas Pipeline Safety Act of 1968 to provide standards with respect to the siting, construction, and operation of liquefied natural gas facilities. The responsibility for issuing and enforcing the standards would be vested in the Secretary of Transportation."

Pricing of LNG imports

The pricing of LNG imports is another time-consuming issue, attributed partly to the lack of established guidelines and criteria. For example, there are no guidelines for identifying acceptable price ranges for LNG imports. A joint Department of Energy/State action in December 1977 could be a move toward developing pricing guidelines for gas imports. The two agencies intervened in a proposal to import natural gas from Mexico and indicated that the United States would not approve imports if the border price was more than $2.16 per thousand cubic feet--the price at which gas under existing Canadian contracts is imported. At the time of our review the Mexican Government withdrew its offer in reaction to the U.S. Government intervention.

Calculating price increases over the contract life also causes difficulties. For example, the Pacific Indonesia agreement provided for price increases based upon an equal split between Indonesia crude oil prices and the prices listed in the "U.S. Wholesale Price Index for Fuels and Related Products and Power." In approving the project, ERA rejected this method for escalation because it could result in "unreasonable price increases." At the time of our review, Pacific Indonesia Company and Pertamina, the Indonesian state oil and gas enterprise, were negotiating for an alternate method of determining future price increases.

There are also no established guidelines on whether LNG should be incrementally priced or "rolled-in". 1/ The time-consuming nature of this issue is illustrated by an administrative law judge decision on another LNG project. The judge took 2-1/2 years before he recommended rolled-in pricing. Although recent FPC actions have tended to set a precedent for rolled-in pricing, the Department of Energy has not adopted a firm policy but recently indicated that it may lean toward incremental pricing.

Information required in applications

Because the guidelines on information required for deciding on import projects are inadequate, decisions on LNG proposals take a lot of time. The Natural Gas Act and Federal regulations contain some guidance, but do not adequately address LNG imports. The Natural Gas Act was enacted when the exporting and importing of natural gas was generally limited to land-based pipelines and before LNG imports. The provisions governing the importing and exporting of natural gas are brief. FPC officials responsible for reviewing LNG import applications stated that the present guidelines are sketchy and should be revised to identify the information FPC needs to rule on LNG applications.

Insufficient guidance has resulted in applicants repeatedly being asked for additional information. This is an extremely time-consuming and costly process. Examples of this confusion experienced for the Pacific Indonesia application are presented on the following page:

1/Customers pay the weighted average of all imported and domestically produced gas under a rolled-in pricing scheme. Incrementally priced gas means the customer pays the full cost of the imported gas.

--On March 5, 1974, FPC asked the applicant, whose initial application had been submitted on November 11, 1973, for information on its terminal facility, including the major components and fire control and docking facilities.

--On April 8, 1974, FPC requested that a technical conference be held because its review of existing files showed the information might be inadequate in certain essential aspects. On September 23, 1975, FPC held another technical conference to obtain more information and to substantiate the projected cost of service, costs incurred by subsidiaries, and information concerning the distributor's gas supply, requirements, and ability to deliver.

--On June 19, 1974, FPC identified 59 additional pieces of information needed to evaluate the environmental issues associated with the applications filed on November 30, 1973, and February 15, 1974. On August 11, 1975, FPC requested the applicant to respond to 117 environment-related questions in order to assist the staff in analyzing the application. Additional environmental information was requested by FPC on September 1, 1976.

--On January 5, 1976, FPC requested additional information pertinent to the shipping phase of the project.

--On July 29, 1976, FPC requested detailed pricing information related to the terminal, pipeline, and shipping phases of the project.

The delays resulting from the requests for additional information and other procedures for obtaining evidence are caused partly by FPC's "ex parte communication" rule. This prevents off-the-record discussions of pertinent issues between responsible FPC officials and other participants involved in pending proceedings. This rule also, however, inhibits close coordination in the decisionmaking process between FPC and State authorities. The rule was established to avoid prejudices, real or apparent, to the interests of the public and persons involved in the proceedings pending before the FPC. California officials believe such coordination would facilitate the review process and mimimize conflicts between Federal and State authorities. Perhaps some modifications could be made to the rule which would accomodate this concern without impairing the rule's central purpose.

The lack of guidance and concern on the part of the FPC to reduce confusion related to LNG applications is

indicated in its reply to an April 1977 request by California officials for guidance on information required concerning offshore siting of LNG terminals. The FPC reply stated:

> "Since no applicant has ever proposed an offshore LNG terminal and this concept is relatively recent, there are no specific FPC regulations on this subject. The best way to ascertain the material and analysis which the FPC would need and utilize in making any determination of an offshore siting application, is to review past environmental impact statements on LNG projects. Of course, an offshore terminal impact statement could be expected to more fully analyze aquatic impacts. For your convenience, I am enclosing a copy of the latest FPC LNG impact statement, which concerns Oxnard, California."

The FPC officials responsible for environmental issues stated the Natural Gas Act does not direct FPC to perform comprehensive studies to (1) determine the feasibility of offshore siting for LNG receiving terminals or (2) ascertain the material and analysis required by FPC to decide on an offshore siting application. Although NEPA does require that FPC evaluate alternative sites for LNG projects, the December 1976 final environmental impact study for the proposed Oxnard site discounted the possibility of an offshore facility as an alternative for the Pacific Indonesia project. This was because it would require at least a year before a decision on the feasibility of offshore facilities could be expected, and such a delay was unreasonable in view of the immediate need for the gas. California officials contend that interveners could initiate court action unless the Federal authorities give more objective consideration to offshore facilities as an alternative in deciding on LNG import projects.

FPC officials stated that a comprehensive review of the feasibility of offshore LNG receiving terminals could prove beneficial for deciding on LNG import proposals. The officials stated that such a review would have had to be done by other agencies and there has not been adequate coordination in the past between FPC and other agencies. The Department of Energy was performing a study at the time of our review to identify the issues that need to be considered in actually siting an offshore LNG facility. In essence this study raised issues not resolved them. FPC/FERC officials were unaware of the study.

The State of California has appropriated $1.2 million to study the potential for offshore LNG terminals at

specific California offshore sites. This study will go much further than one recently performed by a consulting firm which concluded that technology exists for such terminals and that the minimum expected time to put one in operation off the California coast would be 6-3/4 to 8 years. The four major steps in the current study include:

--Developing detailed information on types of LNG terminals.

--Analyzing offshore terminal sites.

--Independently analyzing and evaluating site-facility combinations.

--Analyzing the regulatory process for approvals of such combinations and estimation of the time required to put such combinations into operation.

Role and jurisdiction of other Federal and State authorities

Many Federal agencies other than FPC are involved in the regulation of LNG. A recent Congressional Research Service (CRS) report identified seven Federal agencies involved in the regulation of LNG receiving facilities and shipping operations. The report noted that two options available to reduce or eliminate interagency conflicts and jurisdictional problems are (1) mandated cooperative efforts between agencies and (2) legislation that would delegate or clarify responsibilities of the respective Federal agencies. CRS concluded that resolving jurisdictional problems before greatly increasing LNG imports appears beneficial.

Congressional attention has focused on jurisdictional gaps, overlaps, and disputes between these Federal agencies. For example, hearings were held in 1973 before the Special Subcommittee on Investigations of the House Commerce Committee to review Federal jurisdictional responsibilities regarding LNG storage facilities. The Subcommittee's report found that overlapping regulations of LNG storage safety had led to duplication of effort, fragmentation of responsibility, and inefficient administration. The jurisdictional conflicts within the Federal Government were further discussed in a March 1974 report by the House Special Subcommittee on Investigations of the Committee on Interstate and Foreign Commerce which stated:

"The Subcommittee therefore urges OPS [the Office of Pipeline Safety] and FPC as well as the USCG

[United States Coast Guard], to form a liaison committee to formulate an agreement to alleviate jurisdictional conflict over the full spectrum of LNG handling and storage matters, and submit a draft to this Subcommittee prior to its adoption."

"The resolution of this problem would be a major step toward centralized responsibility for safety, substantially simplified and more orderly Federal Power Commission certification procedures, and--in the long run--more effective regulatory administration."

A September 1977 report of the Office of Technology Assessment, "Transportation of Liquefied Natural Gas," stated that there are still no guidelines for dividing responsibility among FPC, the Department of Transportation's Office of Pipeline Safety Operations (OPSO), and the U.S. Coast Guard for promulgating regulations. The Coast Guard mostly reviews applications in its area of expertise, so the most serious present conflict is with OPSO over siting and safety issues, as noted in the report.

"1) To what extent can the FPC require higher standards than those contained in OPSO regulations?

The two agencies clashed directly on this point in the past. * * * This led to an effort between the two agencies to develop a memorandum of understanding delineating responsibilities; however, so far this effort has not been successful.

"2) Which agency--if either--shall establish siting criteria for the location of import terminals?

OPSO has proposed new safety standards for LNG terminals which bear heavily on the selection of specific areas. The effort has surfaced two problems:

a) There appears to be a statutory prohibition against OPSO standards prescribing the location of LNG facilities; and

b) The FPC has expressed concern that it has exclusive jurisdiction over

> site selection. The FPC has received a request by the attorneys general of several East Coast states to begin rulemaking on uniform siting criteria and has asked for comments on this request; however, the outcome of this issue is far from certain."

The report stated that, until these jurisdictional problems are resolved, it is difficult, if not impossible, to plan facilities which can be approved.

The jurisdictional problems and uncertainties at the Federal level are further complicated when considering the jurisdiction of State and local authorities. For example, all three levels of government have independently assumed some jurisdiction for the proposed siting of the Pacific Indonesia receiving terminal at Oxnard, California. The uncertainty was not resolved by the initial decision of FPC's administrative law judge in July 1977 recommending approval of the Oxnard site. The judge stated that authorities granted in his initial decision over any facility or operation of any part of any facility will not take effect until all necessary Federal, State, and local authorizations are secured.

A California law passed September 17, 1977, added to future uncertainties. The California law specifically addresses the importing of LNG from Alaska and Indonesia to California. A major finding stated in the law reads:

> "That, in order to expedite the siting, construction, and operation of such liquefied natural gas terminal so that serious shortages of natural gas do not occur, it is necessary to vest exclusively in one state agency the authority to issue a single permit authorizing the location, construction, and operation of such terminal, and to establish specific time limits for a decision on applications for such permit."

The law designates the California Public Utilities Commission (CPUC) as the single permitting agency and requires a decision by July 31, 1978, for construction

and operation of an LNG terminal to receive the imports from Alaska or Indonesia. The law further provides that the LNG storage and regasification facilities in California for these imports be onshore; the trestle and related facilities may be located either onshore or offshore, as necessary. The California Coastal Commission must rank and evaluate sites meeting the siting criteria and sub- t its recommendation to the CPUC by May 31, 1978.

CPUC officials stated that they are processing the Pacific Indonesia proposal as prescribed by the new California law and will make their decision based on information received during the processing of the application. The nature and extent of CPUC review duplicates the all-encompassing examination of the Pacific Indonesia application by the FPC staff. The law authorizes CPUC and the California Coastal Commission a total of nearly $1.7 million to carry out their respective responsibilities. These costs will eventually be repaid by the applicant and passed on to the California gas consumers.

Unlike the jurisdictional responsibility assumed by both Federal and State authorities for onshore siting of LNG receiving terminals in California, statutory authority for offshore siting is insufficient. This lack of jurisdiction could cause considerable delays for deciding on any future proposals for offshore siting.

Studies have shown that enough regulatory authority does not exist to enable granting all of the necessary approvals and permits for siting, construction, and operation of an offshore LNG receiving terminal for imports to California. The three principal reasons for this conclusion are as follows:

--No Federal legislation enables the granting of approvals for the siting and associated leasing for an LNG receiving terminal on the outer continental shelf (OCS).

--No Federal legislation enables the granting of a gas transmission pipeline right-of-way and lease across the OCS for transport of gas other than that produced locally from submerged lands in the vicinity of the pipeline.

--No State of California regulations have promulgated the standards for siting and licensing an LNG receiving terminal in State jurisdictional waters on the submerged tidelands.

A 1977 study identified that the need for Federal legislation to authorize siting of LNG receiving terminals on the OCS is similar to the need that existed for Federal authority to site petroleum-receiving terminals on the OCS. International treaties provide for rights of navigation, roadsteads, and other reasonable uses, but no provision is made specifically for any type of offshore terminals or receiving facilities.

To permit offshore crude oil terminals, the Deepwater Port Act of 1974 was enacted authorizing the construction and operation of oil terminals at sites on the OCS beyond the U.S. territorial seas. The report noted that after enactment of the Port Act, processing of the initial application for this type of terminal required more than 2 years.

CREATION OF THE DEPARTMENT OF ENERGY

The Department of Energy Organization Act combines, for the first time, the regulatory review and policymaking functions of a national energy program within one Federal organization. The Department of Energy is authorized not only to rule on LNG import applications but also to base these decisions on a national policy for LNG imports.

FERC, which assumes many of the functions formerly assigned to FPC, and ERA, which has been directed to decide on the Pacific Indonesia import application, are two new organizations within the Department of Energy. By Secretarial delegation under the Department of Energy Organization Act, ERA has the responsibility for ruling on natural gas applications under section 3 of the Natural Gas Act. FERC has certain statutory functions regarding terminal applications and sale of regasified LNG under section 4 through 7 of the Natural Gas Act. At the time of our review, precise procedural coordination of these responsibilities had not yet been decided. Representatives from ERA and FERC are now negotiating a memorandum of understanding which is expected to delineate these responsibilities.

The need for more timely review has been recognized by the recently appointed heads of FERC and ERA. In addressing the Interstate Natural Gas Association of America in Arizona, on October 18, 1977, the FERC Chairman said that to try to break the logjam of pending business and to streamline procedures he would:

--Appoint an executive director charged with setting up a case management system.

--Reform procedures to end "the legacy of doubt, disappointment and confusion" left by FPC, particularly to eliminate the long delays in settling cases.

--Reduce the lengthy procedure while still preserving "fairness and due process."

--Delegate rulemaking on less important actions to lower level staff so that FERC itself will be able to focus on major issues.

--Obtain additional staff to break the logjam of pending cases.

During a hearing on the Pacific Indonesia application, the ERA Administrator expressed his interest in achieving more timely processing of LNG proposals by stating that:

> " * * * we are now working under the rules and practices of the Federal Power Commission which we inherit * * * one of the questions that is open to the Department of Energy generally is whether there are improved procedures which we could use * * * [to improve] the procedures by which we handle [gas import] cases."

As noted on page [illegible] Federal interagency LNG task force to implement President [illegible] National Energy Plan is expected to submit LNG import policy recommendations to the Secretary of Energy by early 1978. The task force is expected to recommend economic and environmental criteria for use in the approval of specific LNG import proposals and address the problems of supplier availability, national dependency, pricing, consumer impacts, safety and siting questions, and contigency planning in the event of supply disruption.

Actions currently underway by ERA, FERC, and the Federal interagency LNG task force will help to clear up some of the present confusion associated with processing LNG import proposals. A national LNG policy seems to be taking shape and the regulatory framework for implementing that policy is being devised. However, there are certain important issues that are not being addressed by either the ERA-FERC memorandum of understanding or the task force. These issues include:

--Which Federal agency should have overall responsibility for controversial LNG issues, especially siting and safety, or how jurisdictional problems can be resolved.

--The need for and means to effectively implement a coordinated Federal-State effort for deciding on LNG import projects.

--The need for comprehensive guidelines which clearly identify the information needed by the Department of Energy to effectively rule on an LNG import proposal in a timely manner.

--The feasibility of offshore receiving terminals for LNG imports as an alternative to onshore sites.

In addition, we could not identify any plans for a systematic analysis of the various alternative energy sources or natural gas substitutes to determine whether, and to what extent, imported LNG should play a role in satisfying U.S. energy needs. Avoidance of overdependence on imports of liquefied natural gas is a factor to be considered in making such a determination.

CHAPTER 3

EFFECT OF DELAYS IN PROCESSING THE PROPOSAL TO IMPORT LNG FROM INDONESIA

Lengthy review procedures have adversely affected both U.S. and Indonesian interests. To determine what these effects were and their overall impact, we made a case study of the Pacific Indonesia proposal to import LNG from Indonesia to Calfiornia. The application was filed with the Federal Power Commission in November 1973 and was approved by the Economic Regulatory Administration on December 30, 1977. However, the approval was based on conditions that will result in additional hearings and further delays.

Pacific Indonesia proposes to import LNG from the Arun field in northwest Indonesia. An average of 550 million cubic feet daily would be shipped in 9 cryogenic tankers to a marine terminal--originally selected to be located near Oxnard, California--and eventually piped 12.2 miles to existing transmission facilities of Southern California Gas. The total investment cost of the project including the Oxnard site is estimated to exceed $2 billion which includes (in 1977 dollars):

	Cost (millions)
Facilities in Indonesia (note a)	$ 700
9 cryogenic tankers	1,200
Receiving terminal	200
Pipelines to existing transmission facilities	20
Total	$2,120

a/Includes costs for facilities specifically designated for Pacific Indonesia; does not include costs for production field, common facilities, and liquefaction plants designated for Japan. Japan has contracted for half of the Arun field production.

As noted on page 12, the California law eliminated Oxnard as a potential site for an LNG receiving terminal. An application was then filed for Point Conception, California,

as the site for the terminal. The applicant estimates that the investment cost of the project for Point Conception will be approximately $250 million more because of increased construction costs and the longer pipelines to existing transmission facilities.

EFFECT OF DELAYS ON THE UNITED STATES

The most important and obvious impact of delays to the United States is possible denial of gas to high priority customers. The CPUC has supported the Pacific Indonesia project as a viable new source of gas for California and urged project approval as quickly as possible. It agreed with the evidence provided by the Southern California Gas Company and Pacific Gas and Electric Company concerning the gas supply and demand forecasts for California in the next several years. It also agreed that the LNG was needed to service high priority customers in California. At the time of our review, California was reconfirming the gas supply and demand forecasts.

The delays also result in increased project costs, increased Federal spending and obligations in support of LNG import projects, loss of U.S. exports, a negative impact on U.S. balance of payments, and uncertainties and problems for California.

Increased project costs

Delays in starting a project increase its overall costs. The applicant's response to FPC interrogations in July 1976 stated that assuming a base LNG price of $1.25 per million British thermal units (Btus) and initial deliveries for the Pacific Indonesia project starting in September 1979, the cost of gas delivered to the distribution point in California was estimated to be $2.37 per million Btus in the first year of deliveries and $2.92 per million Btus when the project builds up to full capacity after 2 years. The applicant further stated that each year's delay was expected to increase the cost by 26 and 14 cents, respectively. A large part of this increase is attributed to increased ship construction costs--from $130 to $165 million over the 3-year period ending January 1978 for each of the six ships of about 125,000 cubic meters to be constructed for this project. It should be noted that the California consumers must ultimately pay for these increased costs.

The California consumers will also have to bear the costs expended for administrative matters and environmental impact studies for proposed sites eliminated from consideration

by the recent California law. This would include Oxnard and another proposed site at Los Angeles. These costs amounted to several million dollars and were caused partly by a lack of siting criteria for LNG receiving terminals.

Increased Federal spending and obligations in support of LNG import projects

The United States supports LNG projects through Export-Import (EXIM) Bank loans and Maritime Administration (MARAD) guarantees and subsidies. As of November 1977, these agencies had committed over $2 billion for LNG import projects.

The EXIM Bank has provided $527.9 million in LNG-related loans to promote American exports. Loans approved to date have been for LNG facilities in Algeria and Burma. The Bank approved a preliminary commitment in May 1973 of $388.5 million to Pertamina to provide financing for LNG facilities in Indonesia. This represented about 85 percent of the costs at the time for the LNG plant and ancillary facilities in that country. The commitment expired in December 1973 and the EXIM Bank refused to extend it pending the required FPC approval of the application.

MARAD provides financial guarantees and construction differential subsidies to encourage the construction of ships in the United States. As of November 1977, approximately $1.3 billion in financial guarantees and $228 million in differential subsidies had been committed for 16 LNG ships. MARAD officials also expect to provide an estimated $3.3 billion in financial guarantees and $1 billion in differential subsidies for LNG ships within the next 2 years, assuming Government approval is obtained for certain pending LNG projects. Based on a January 1978 approval, guarantees and subsidies for the Pacific Indonesia project are estimated at approximately $700 million and $120 million, respectively.

As of late 1977, delays in processing the Pacific Indonesia application have increased expected EXIM Bank and MARAD commitments by approximately $366 million. This includes an increase of about $190 million in EXIM Bank loans to achieve the same percentage of investment costs covered by the preliminary commitments. The full extent of support could not be identified because of an EXIM Bank policy not to consider applications for financing LNG projects until after companies have obtained the required approval of Federal regulatory agencies for importing LNG.

Although no firm commitments have been made for the LNG ships required for the Pacific Indonesia project, MARAD support will likely be provided for six ships. The estimated increase in MARAD support due to ship construction cost increases is shown below.

	Project approvals as of		
	March 1975	January 1978	July 1978
	millions		
Guarantee	$560.6	$711.1	$739.5
Subsidy	97.5	123.7	128.7

As shown above, anticipated increases in direct subsidies amount to $26.2 million, and are expected to increase another $5 million if the project approval is delayed until July 1978.

Loss of U.S. exports

Japanese firms have been the major source of equipment and material used for plant construction in Indonesia--estimated to be $132.4 million and representing 41 percent of the total cost at the time of our review. Partly because of its lead in technology and licensing, the United States exported about $98 million (31 percent of the total construction costs) in material and equipment. Pertamina officials told us, and it appears reasonable to assume, that U.S. exports would have been greater had EXIM Bank financing been available because of its requirement to procure U.S. material and services. Although Pertamina had adopted a "least cost, worldwide" procurement policy, they were encouraged, due to the substantial Japanese financing support, to purchase from Japanese sources.

Impact on U.S. balance of payments

The Pacific Indonesia LNG import project would have a much smaller adverse impact on U.S. balance of trade than would a comparable import of oil from the Middle East. An unaudited report by Southern California Gas Company in 1977 identified the relative potential impact on the U.S. balance of payments based on the costs of the Indonesian LNG project and the costs of imported Middle East crude oil. The report concluded that about $11 for each barrel of oil would flow out of the United States compared to only about $5 for an equivalent amount of energy in the

form of LNG from Indonesia. 1/ Using the above estimates, the potential LNG imports from Indonesia would reduce annual U.S. dollar outflows for energy imports by about $200 million.

Uncertainties and problems for California

The delays in processing LNG import proposals have caused uncertainties for the future of LNG imports to California. If imports are disallowed, State and local jurisdictions will need to obtain alternate forms of energy to overcome the expected shortage of natural gas. Petroleum products, coal, and nuclear power are the principal fuel options that could be substituted for natural gas. A report prepared for California's Energy Resources Conservation and Development Commission claims that each of the three optional fuels would be undesirable:

> "* * * increased use of petroleum products would further increase the dependence on oil imports, cause higher air pollution emission levels, and require greater development of the petroleum products distribution system in California. Increased use of coal, while utilizing an abundant, domestic energy resource, would also cause higher air pollution emission levels, possibly tax the rail transportation system, as well as introduce aesthetic problems in some communities. Increased nuclear power usage would require the resolution of important safety issues, and further, nuclear power would be a limited substitute for some gaseous fuel uses."

Southern California Gas Company has reported that the only real alternative to importing LNG is importing oil. The company states that this would greatly increase energy costs to the consumer and further aggravate the U.S. dependence on imported oil. The most efficient use of oil would be for direct burning in home appliances, but the necessary transportation and distribution system for oil would have to be conceived and established, because it does not now exist. Customers' oil storage tanks and oil burning appliances would also have to be installed at considerable

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1/The report originally used an outflow of $3. After discussions with Southern California Gas Company and FPC officials, it was agreed that about $5 would be a more realistic estimate.

expense and great inconvenience. Furthermore, the burning of fuel oil at numerous small domestic installations would also contribute to air pollution and adversely affect the region's current air quality problems.

Another alternative identified by the company is to burn the oil in electric generating plants to produce electricity for additional residential requirements. This is an energy inefficient alternative requiring about double the Btu volume compared with the direct consumer use of oil or gas. It would also be very expensive because twice the volume of Btus would need to be purchased, and more importantly, additional electric generating plants would have to be built, electric transmission and distribution facilities would have to be expanded, and electric appliances would have to be installed by consumers. To illustrate the magnitude of this alternative, the Los Angeles Department of Water and Power and the Southern California Edison Company together would need to build six new 1,000 megawatt generating plants by 1981 to provide enough electric energy just to replace this one LNG project. The source of some of the fuel for such expanded electric generating facilities would probably be oil from the Middle East. Thus, in terms of meeting energy requirements, the added volume of oil from the Middle East seems less desirable than an alternate fuel supply for Southern California in the form of Indonesian LNG.

CPUC officials stated that the inadequacies in the U.S. energy plan create uncertainties in planning to provide for its energy requirements. For example, the supply forecasts currently being developed by California agencies would be significantly affected by Federal actions, such as (1) providing large amounts of Federal assistance to help commercialize coal gasification 1/ or (2) concentrated efforts to obtain Mexican and Canadian gas supplies. The California officials recommended that the Federal Government develop a systematic economic analysis of the various alternative energy sources or natural gas substitutes to determine whether, and to what extent, imported LNG could satisfy U.S. energy needs.

1/Our recent report, "U.S. Coal Development--Promises, Uncertainties," EMD-78-43, Sept. 22, 1977, concluded that if gas from coal is to make a significant contribution to the Nation's gas supplies sometime before the year 2000, massive Federal subsidies may be required to overcome its economic disadvantage.

Department of Energy officials stated that they have not developed or adopted an economic analysis of the various alternative energy sources or natural gas substitutes. Numerous analyses have been reported but none are considered comprehensive enough for deciding on the role LNG should play in meeting U.S. energy needs.

EFFECT OF DELAYS ON INDONESIA

The most obvious short-term problems of project delays to Indonesia are construction deferrals, cost overruns caused by inflation and breaks in construction activity, financing difficulties, and postponed revenues. Less obvious are the long-term implications for national economic planning, regional development, expeditious exploitation of an important natural resource, and strengthening of economic ties with the United States.

Over the years, the United States has provided much military and foreign assistance to the Government of Indonesia. In the process, the United States has built up a reservoir of good will, and U.S. interest will be served by helping Indonesia develop. Both countries have built up important interdependencies. In return for exports of abundant natural resources and other important considerations, Indonesia has come to rely on imports of U.S. food, machinery, equipment, technology, and investment capital. In the petroleum sector alone, the 26 U.S. oil companies produce 85 percent of Indonesia's oil, and oil exports account for 60 percent of Indonesia's export earnings.

In recent years, Indonesia has experienced serious foreign exchange deficits. The LNG project would have helped to alleviate its debts and develop a sparsely populated area by inducing migration from the more densely populated areas of the country.

Construction costs

Although common facilities and the Japanese portion of the liquefaction facilities have been near schedule, construction of the additional facilities for U.S. deliveries has been held up, pending U.S. approval of the Pacific Indonesia project. At the time of our July 1977 visit, project officials hoped to receive approval by the final October 6, 1977, deadline, but realistically, did not think a final order could be issued before 1978.

The absence of an approved project has postponed construction of the liquefaction facilities in Indonesia.

Construction costs would have been approximately $200 million less than current estimates if the project had been approved in 1975, or within 18 months from the initial application date.

The cost increases based on approval dates are shown below:

Approval date	Worldwide purchase	USA market requirements (note a)
	(millions)	
March 1975	$452	$480
January 1977	570	600
January 1978	658	689

a/EXIM Bank financing would require purchases of goods and services from the United States which would normally be procured from other sources.

Pertamina estimated that the January 1978 costs include about $12 million directly attributed to a break in construction activity.

Financing agreements

The original plans for the project were predicated on the availability of Japanese and U.S. financing. The U.S. EXIM Bank in 1973 approved a $388 million loan contingent on FPC approval. The Japanese lenders were reluctant to advance funds toward the construction of the common facilities without a financial commitment from the United States. This became one of the major negotiating points between the Japanese and Indonesian parties. Negotiations continued, but the project was virtually halted due to a shortage of funds. Had financing been available for the portion of the common facilities to be allocated to U.S. sales, the severity of the funding shortage would have been avoided and the construction schedule would likely have not been disrupted. It is believed that approximately $20 million of a total $234 million cost overrun for the project to date is directly related to U.S. delays in approving the contract.

Japan is heavily committed to obtaining LNG from Indonesia. Loan commitments totaling over $1.4 billion for the Arun project and one other LNG complex in Indonesia were arranged primarily through the Japanese Indonesian Liquefied Natural Gas Company--a consortium representing five Japanese utility companies. Included in this total was a $327 million loan in 1976 for construction cost overruns in completing the two projects. In addition, $50 million was recently committed by the Bank of Tokyo and $180 million by the Government of Indonesia. Pertamina officials stated that EXIM Bank financing is essential before LNG can be made available to the United States.

Indonesia revenues

Successful and timely completion of the project is important to both Pertamina and Indonesia as evidenced by Pertamina's need for short-term revenue to meet debt obligations and Indonesia's need for foreign exchange to continue national and regional development. The LNG complex could help attract other investment in the Northern Sumatra area and create jobs and training opportunities for Indonesians.

Pertamina has projected net revenues of about $8.8 billion from LNG sales and $5 billion for condensate-related sales. Pacific Indonesia has estimated that Indonesia will receive over $280 million a year from LNG sales to the United States; this will probably increase due to the escalation clause in the agreement and the effects of inflation.

Although revenues will be received over a 20-year period regardless of the U.S. approval date, the plant was originally designed on a full production concept and delays will substantially affect the profits of the project for a number of years.

CHAPTER 4

IMPORTING COUNTRIES' POLICIES AND APPROACH TOWARD LNG IMPORTS

Japan, the United Kingdom, Spain, France, and Italy have established firm LNG import policies and have several projects in operation. Spain, France, Italy, and Japan have established clearly that LNG imports are important elements of their national energy plans. Largely due to what they consider overdependence on oil imports, they have decided to expand LNG imports, and decrease oil imports. Current and projected natural gas from LNG imports for the four countries are as follows:

	1975 billion cubic feet	Percent of energy consumption	1985-1990 billion cubic feet	Percent of energy consumption
France	126	2.1	313	3.8
Italy	136	3.4	366	5.6
Spain	32	2.0	308	4.9
Japan	238	1.8	2,072	7.7

The United Kingdom, unlike the other four countries, expects to be virtually self-sufficient in natural gas over the next decade due to its North Seas reserves.

Implementing LNG import projects is greatly facilitated when directed by a national policy. Once the decision is made that imports are in the national interest, implementation is left to the operating arms of the governments in the European countries and to private companies in Japan. The Japanese jurisdictional process is quite similar to that of the United States, involving several ministries, agencies, local government bodies, and special interest groups. Although specific dates were not available in all cases, information available shows that Japan has been able to obtain necessary approval toward project implementation within 1-1/2 to 2-1/2 years from the application date. LNG projects in Japan have government support and are effectively coordinated among the parties involved. Furthermore, LNG projects are not subject to the range and depth of government review in Japan as are LNG projects in the United States.

LNG AGREEMENTS

As of June 1977, the four European countries and Japan had made 13 LNG agreements totaling approximately 37 trillion cubic feet of gas. Information on the agreements is shown below.

Foreign LNG Import Projects

Importing country	Source	Commencement	Contract life (years)	Contract volume (billion cubic feet per year)
United Kingom	Algeria	1964	15	35
France	Algeria	1965	25	17
Spain	Libya	1971	15	39
Italy	Libya	1972	20	106
France	Algeria	1973	26	124
France	Algeria	1981	20	184
Spain	Algeria	1980	20	159
Italy	Algeria	1982	20	300
Japan	United States	1969	15	58
Japan	North Borneo	1973	20	270
Japan	Abu Dhabi	1977	20	164
Japan (note a)	Indonesia	1977	20	383

a/There are two contracts for Japanese imports of LNG from Indonesia.

GOVERNMENT MONOPOLIES FACILITATE DECISIONMAKING AND APPROVALS IN EUROPE

Government monopolies in the four European countries examined have the lead role in importing LNG. Their tasks are facilitated by close working relationships with the responsible ministries having approval authority for these projects and a clearly stated national policy for import proposals.

We could not adequately compare the processing time required by the United States to that of the European countries for LNG import applications. The officials contacted did not have information available at the time of our review to identify specific dates for the approved projects. Also, government monopolies in all four countries have the lead role in importing gas and, in at least one country, strong support by the central government essentially eliminated participation by local authorities. Notwithstanding the absence of directly comparable data and situations, we believe there are some useful lessons for consideration in formulating a U.S. LNG import approval process.

Descriptions of LNG policy and approval processes for the European countries are contained in appendix II.

JAPAN'S LNG POLICY

Japan's experience in approving LNG import proposals is of particular interest to the United States. As mentioned earlier, Japan uses a jurisdictional process quite similar to that of the United States. Japan's economy depends heavily on oil imports and, as a result, was severely affected by the 1973 oil crisis. Its energy policy now projects substantially increased use of nuclear power and imported LNG. Japan's primary objectives for increasing LNG imports are to reduce dependency on petroleum imports and reduce environmental pollution. Highlights of Japan's policies and approach toward LNG imports are as follows:

--Japan has completed construction of four LNG receiving terminals and had begun construction on two others at the time of our review. The approval process, which includes safety, environmental, and special interest concerns, is complex, but necessary approval toward project implementation has been obtained within 1-1/2 to 2-1/2 years from the application date. The relative timeliness is attributed to government support and good coordination among the authorities involved.

--No contingency planning in the event of supply disruptions has been developed because Japan expects LNG suppliers to honor negotiated agreements.

--The Japan Export-Import Bank policy emphasizes projects to secure required energy resources for Japan, including LNG supplies.

--A rolled-in pricing policy for all gas feedstocks has been developed.

--Japan has created incentives which encourage electric utilities to convert to gas usage.

--Japan has increased electric power companies' and gas utilities' dependence on LNG with a concomitant decrease in oil imports and environmental pollution.

--No evaluation by the government has been made concerning the reasonableness of contracted gas prices on the basis that these are commercial agreements and that Japan is dependent on foreign energy supplies.

--Government and industry officials consider LNG no more hazardous than other energy fuels, as long as prescribed standards are maintained.

The above points concerning Japan's policy and approach to LNG are further discussed in the remainder of this chapter and in appendix III. We do not suggest that elements of Japan's policy and approaches are automatically transferable to the United States.

FOREIGN VIEWS ON SECURITY OF LNG SUPPLIES

Japanese and European officials believe that the nature of LNG arrangements provides assurance that suppliers will meet the terms of their contracts. Only a limited number of countries have made the investments in LNG facilities and ships required to transport and regasify LNG. Therefore, LNG can be sold only to such countries. This limits the possibility for special purchases by buyers not covered by existing contract agreements.

This "closed loop" system, whereby producer and consumer countries are forced to trade with each other because they have so few options to trade with other countries, has been cited as a major factor in making gas supplies secure. One official of a private gas firm pointed out that the LNG importing countries are allies and that it would be unlikely for one country to accept gas intended for another friendly country.

We were told that importers encourage exporting countries to participate in financing LNG schemes, recognizing that a producer is not likely to risk either its substantial investment or its international business reputation by interrupting the gas supply. Nevertheless, European and Japanese officials told us that they wanted to keep from becoming too dependent on any one source of gas and were attempting to further diversify their supply sources.

Government officials in all four European countries consider Algerian gas corporation officials to be reliable business partners. French officials said that the Algerian supplier follows sound business practices and keeps its operations separate from government foreign policy. We were told that technical problems had caused some delays in deliveries from Algeria but that political differences have not resulted in any contract difficulties. United Kingdom officials stated that the Algerians did send a special LNG cargo or two to the United States when they were behind on their deliveries to the United Kingdom. This act alone did not violate the contract and was considered an isolated case.

Spanish and Italian officials related their problems in maintaining continuous LNG supplies from Libya after the 1969 Libyan revolution and the resulting change of government. The new government insisted that the price agreed to between the Libyan producer and the Italian importer had to be increased. A series of three embargoes, ending in early 1975, resulted in heavy price increases. The Libyan situation may not be relevant to the United States, because it is doubtful that Libya, whose gas reserves are low, will enter any new LNG schemes. The Libyan case, however, clearly demonstrates the kind of problem that can arise.

The general consensus among Japan Government officials and private interests is that a politically motivated curtailment by producing countries is less likely for LNG than for oil. Indonesia is considered an especially

secure source of LNG because (1) of its substantial requirements for the revenue from such exports and (2) Japan and the United States are considered the only likely export market for Indonesian LNG. Some general reasons noted why LNG supply is considered more secure than oil are as follows:

--The producing and receiving parties tend to develop close ties because of the huge amount of investment involved and the substantial time required to develop the project.

--Reserves are very abundant in a variety of non-Mid East countries.

--There is only a limited number of countries with capability to import LNG in the next few years.

--Long-term agreements guarantee the producer a fixed market at a reasonable price.

--Any curtailment would mean a loss or at least deferral of substantial revenue to the producing country.

We were told that Japan has not had any experience of its LNG suppliers curtailing exports. However, until May 1977, imports were received only from the United States and Brunei, which does not belong to the Organization of Petroleum Exporting Countries.

The Departments of Defense and State, and the ERC have all endorsed Indonesia as a secure source for LNG supplies. The ERC Task Force on LNG reported in August 1976 that definitive judgments on the security of LNG imports are particularly difficult. The ERC noted that it is virtually impossible to predict with any certainty the political situation in specific LNG-producing countries 10 years hence. Nevertheless, based on the best information available, Indonesia was considered to be a relatively secure source of LNG supplies. In our December 1977 report (see p. 1), we did state that as LNG imports increase, the United States increases its vulnerability to supply disruptions, for political or technical reasons, and price hikes. An extensive discussion of these factors appears on pages 10 through 14 of that report.

LNG PRICING

Pricing is the key ingredient in the development of LNG trade. There is no internationally accepted price for natural gas at the wellhead, but producers generally have linked it to alternative energy sources on a Btu basis. Representatives of producer countries emphasize that they will seek higher prices because gas is a clean, flexible fuel which can be readily developed to stave off the expected world oil supply crunch in the years ahead.

The United States reviews pricing as an important element of LNG import proposals. However, there is no policy guidance for making pricing decisions. Debate has centered around the use of rolled-in pricing versus incremental pricing. Although the most recent FPC decisions have accepted the principle of rolled-in pricing, the Department of Energy has not endorsed this pricing scheme as an established policy and has recently indicated a preference toward incremental pricing.

The regasified price of imported LNG from Indonesia approved by the ERA on December 30, 1977, would be $3.42 per million Btus. The wellhead price of domestic natural gas in interstate sales is now regulated at a maximum of $1.49 per million Btus (for gas produced from wells commenced on or after January 1, 1975) and at an average of about 70 cents per million Btus for all U.S.-produced interstate gas. The National Energy Plan proposes a top price of $1.75 per million Btus beginning in 1978. On a Btu equivalency basis, the average price of $13.48 per barrel of crude oil imported in 1976 equates to $2.32 per million Btus of gas. The $3.42 price is equivalent to an oil price of $19.84 per barrel.

Because the United States is potentially the largest importer of LNG, European officials expressed serious concern that large U.S. requirements could disrupt market pricing. They believe a U.S. practice of rolled-in pricing could further distort prices because U.S. importers would be able to cushion the higher LNG cost against the larger share of cheaper domestic natural gas. Furthermore, representatives of producing countries have conveyed their intentions of coordinating their efforts toward obtaining greater returns for this clean-burning fuel. Contrary to the efforts of the exporting countries, no coordinated effort to date has been taken by the United States with other importing countries toward more favorable pricing of LNG imports.

Since some experts are predicting a significant increase in LNG trade, it might be opportune to consider a meeting of current and potential importers to discuss pricing and other matters of mutual concern. Perhaps the International Energy Agency (IEA), comprised of 19 industrialized nations, would be the forum for pursuing some of the issues involved in LNG trade. Although the general approach to LNG pricing has been to tie it to the price of crude oil, the fact that LNG can be sold only to industrialized countries does give consumer nations some leverage to negotiate "reasonable" prices for LNG.

LNG prices seem exhorbitant in relation to the price of domestically produced gas. However, imported gas would be a relatively small percent of the total supply and the ultimate cost to the consumer could be cushioned if rolled-in pricing is approved by averaging in the cheaper and more plentiful domestic gas. Therefore, even though U.S. LNG importers would try to negotiate the best possible price for their customers, it could be more important from the gas company viewpoint to secure the gas rather than to lose the contract to a foreign competitor.

LNG SAFETY

There has only been one significant LNG incident in the European countries and Japan. In 1971, a phenomenon called "roll over" occurred in an Italian storage tank. Colder LNG being loaded into the top of the tank caused warmer LNG at the bottom to turn over in the tank and build up pressure. No damages or injuries resulted.

One of our future reports is expected to discuss Federal policy regarding transportation hazards, storage, liability, and legal problems of LNG, liquefied petroleum gas, and naphtha. Tentative conclusions and findings include several recommendations governing facilities.

CHAPTER 5

CONCLUSIONS, RECOMMENDATIONS, AGENCY COMMENTS, AND RECOMMENDATIONS TO THE CONGRESS

Because natural gas is vital to the U.S. economy, steps must now be taken to cope with the worsening shortage of natural gas. Importing LNG could add to our Nation's supplemental gas supplies by 1985, as well as reduce U.S. dependency on oil imports.

CONCLUSIONS

Unlike the U.S. Government, other foreign countries examined in our review seem to be moving more quickly to import LNG. We noted that LNG projects in Japan are supported by the government, coordinated among the parties involved, and are not subject to the range and depth of government review as in the United States.

The U.S. Government's uncertain approach toward LNG imports has resulted in a time-consuming review process. The Federal approval process has averaged approximately 58 months for the three projects approved as of November 1977, and the Department of Energy approval in December 1977 for the Pacific Indonesia project (after 49 months) set forth conditions that will cause additional hearings and still further delays.

This extensive U.S. time frame is caused by (1) inadequacies in the national policy on the role of LNG imports (2) legislative requirements, (3) lack of established criteria and guidance on relevant issues, and (4) jurisdictional gaps, overlaps, and disputes between both Federal agencies and Federal and State authorities. The result is a time-consuming process for deciding on LNG import projects approved to date. In addition, statutory authority covering offshore siting of terminal facilities is insufficient and this could cause considerable delays for deciding on any future proposals for offshore siting of LNG facilities.

In focusing on the adverse impact of lengthy regulatory processing of LNG import proposals, we did not attempt to evaluate whether, and to what extent, imported LNG should be used in satisfying U.S. energy needs. We concluded, however, that LNG can be an important source of much needed gas, that it is available, and the technology for transporting it to the United States has been demonstrated.

Ways to improve regulatory review process

If LNG imports are needed to supplement dwindling domestic gas supplies, the regulatory review process needs to be streamlined. Toward this end, we sought the views of the Department of Energy, State of California, and Pacific Indonesia Company officials. Their comments plus comments of other interested parties identified by an Office of Technology Assessment report 1/ issued in September 1977 are summarized below.

--Develop a definitive policy on the role of LNG in total U.S. energy requirements.

--Establish specific time guidelines for hearings and other phases of the review process.

--Establish clear jurisdictional lines among State and Federal agencies to minimize conflicts and permit cooperation in matters of mutual interest.

--Coordinate Federal and State efforts toward joint environmental statements and joint hearings on construction of LNG receiving terminals and related issues.

--Place more reliance on the expertise of other Federal agencies.

--Establish a clear policy on incremental and rolled-in pricing.

The newly created Department of Energy and Federal Interagency LNG Task Force have recently initiated actions to clear up some of the present problems associated with processing LNG import proposals. However, there are certain issues that are not currently being addressed, including:

--Which Federal agency should have overall responsibility for controversial LNG issues, especially siting and safety or how jurisdictional problems can be resolved.

1/OTA obtained the view from more than 100 persons from gas utilities and related industries and financial institutions, organized labor, State and local agencies, and public interest groups.

--The need for and means to effectively implement a coordinated Federal-State effort for deciding on LNG import projects.

--The need to assign specific review responsibilities to those Federal agencies having a definite expertise in a particular area.

--The need for comprehensive guidelines which clearly identify the information needed by designated Federal agencies to effectively rule on an LNG import proposal in a timely manner.

--The feasibility of offshore receiving terminals for LNG as an alternative to onshore sites.

In addition, we could not identify any plans for a systematic analysis of the various alternative energy sources or natural gas substitutes to determine whether and to what extent, imported LNG should be used to satisfy U.S. energy needs.

Successful resolution of the above issues would facilitate a more timely and effective review process for deciding on LNG import projects and construction of LNG import facilities.

RECOMMENDATIONS

In a recent report, we recommended that the Secretary of Energy, in cooperation with other Federal agencies, revise the policy statement for imported liquefied natural gas as necessary to define clearly goals and objectives for imported liquefied natural gas and establish criteria as to what constitutes excessive national dependency.

In acting on this recommendation, the Secretary of Energy should develop a systematic analysis of the various alternative energy sources or natural gas substitutes. If a determination is made that LNG imports are needed to supplement U.S. gas supplies, we recommend that the Secretary of Energy reevaluate the existing regulatory process for LNG import proposals and:

--Develop a timely procedural format for processing import proposals which allows for responsive processing.

--Identify and delegate responsibility for segments of the review to those agencies with the necessary expertise.

--Clearly delineate the role, and improve the coordination between those Federal agencies involved in LNG import projects.

--Effectively coordinate with State and local governments and devise an appropriate review approach including joint hearings, joint environmental impact studies, and division of responsibilities.

--Develop comprehensive guidelines which clearly identify the information needed to effectively rule on an LNG import proposal in a timely manner.

--Determine who should have final approval authority for controversial LNG issues, especially siting and safety or how jurisdictional problems can be resolved.

--Establish a clear policy on incremental and rolled-in pricing.

--Determine the feasibility of offshore siting for LNG facilities and required legislation to avoid unnecessary delays for any future projects.

--Propose legislative changes, if needed, to eliminate overlap, duplication, fragmentation of responsibility, and to generally streamline the review process.

--Ensure that future agreement with LNG producer countries are consistent with an established national LNG policy.

In view of the long-term commitments involved in LNG trade for both producer and consumer nations, we further recommend that the Secretaries of State and Energy consider the pros and cons of a concerted effort by LNG-consuming nations to effectively coordinate matters of mutual concern such as pricing by exporting countries.

AGENCY COMMENTS

This report was submitted to the Departments of State and Energy and to the California Public Utilities Commission for comment. We also informally discussed the draft report with officials of Pacific Indonesia Company and their comments have been considered.

Department of State

The Department of State agreed with our principal observation that the regulatory process has been too lengthy in the past. (See app. IV.) State said that the International Energy Agency is currently studying the role of natural gas, including liquefied natural gas, within member countries. State expected that this study will lead to discussions of possibilities for further cooperative efforts among LNG importing countries.

Department of Energy

The Federal Energy Regulatory Commission, an independent agency within the Department of Energy, which succeeded to certain of the Federal Power Commission's responsibilities, commented independently of the Department of Energy. (See app. V and app. VI) FERC stated that any criticism of FPC delay should be tempered by recognizing the inadequacies of the proposals filed by certain applicants and that the reference to an optimum review period must recognize this factor. We agree and believe this has been adequately discussed in the appropriate sections of the report. (See pp. 5, 6, 15, and 16.)

FERC agreed that certain measures should be taken to improve the regulatory process. Its response noted that the Economic Regulatory Administration, also within the Department of Energy, had not yet adopted regulations for LNG licensing procedures and believe that our report should aid in the adoption of regulations. The Department of Energy and FERC generally concurred with the thrust of our recommendations, but disagreed on specifics. Some of the areas of disagreement between the two and with our recommendations are summarized below:

--FERC believes that present procedures for processing LNG import proposals are necessary to properly evaluate the full impact of these projects, whereas the Department of Energy said it is presently working on procedural regulations which will reduce much of the processing time.

--FERC agreed that delegating responsibility to agencies with special expertise should be encouraged and expanded while the Department of Energy said that legislation would be required for authority to delegate such responsibilities.

--The Department of Energy and FERC agreed that cooperation and coordination with State and local governments are desired but FERC cautioned that provincial interests may conflict with overall national interests.

--Both agencies believed that interagency cooperation can in most instances resolve LNG conflicts regarding overlap, duplication, fragmentation of responsibility, and streamlining the review process without legislation. Therefore the Secretary of Energy should reevaluate existing procedures with a view to facilitating interagency cooperation and proposing legislation if found necessary.

--Regarding offshore siting of LNG facilities, FERC said this has been adequately covered while the Department of Energy said it is currently under study. Although the Department of Energy does not believe that legislation to provide for offshore siting of LNG facilities is necessary, FERC agreed with our recommendation that a study be made to determine the feasibility of legislation to avoid unnecessary delays for future projects.

Concerning our recommendation to the Congress that it require the Department of Energy to identify the role of LNG in U.S. energy requirements based on systematic analysis, the Department of Energy said that a separate report is not necessary. However, we believe such an assessment is basic to deciding the role of imported LNG in meeting future energy needs, and Congress should know the basis of such a determination.

As noted on page 21 of this report, ERA and FERC are currently negotiating a memorandum of understanding to delineate the responsibilities of each agency in regulating LNG imports. Clarification of the roles and responsibilities of each agency will facilitate processing LNG import proposals.

California Public Utilities Commission

The California Public Utilities Commission stated that the report is a good summary of the existing regulatory process for LNG projects. (See app. VII.) CPUC noted that many of the recommendations contained in the report have already been made by several other Federal agencies, such as the Office of Technology Assessment and the Congressional

Research Service. It further noted that despite the continuous recommendations by these agencies, neither the Congress nor the relevant Federal agencies have taken steps necessary to streamline the regulatory process and avoid unnecessary duplication of efforts with respect to the approval of pending LNG import applications. The CPUC is hopeful that this report will act as a catalyst for some constructive action.

RECOMMENDATION TO THE CONGRESS

We recommend that the Congress:

--Require the Secretary of Energy to report within a given time period the role LNG should play in satisfying U.S. energy needs. This should be supported by a systematic analysis of the various alternative energy sources or natural gas substitutes, recognizing the need to protect the United States from becoming overdependent on foreign supplies.

STATUS OF LONG-TERM IMPORT PROJECTS APPROVED BY DEPARTMENT OF ENERGY AND/OR FPC

OR PENDING AS OF JANUARY 1, 1978

Project title	Nation of origin	U.S. terminals	Scheduled delivery	Annual volume billion cubic feet	Date of initial application	Date of approval
Distrigas I	Algeria	Everitt, Mass. Staten Island, N.Y.	1971	a/(15)	February 1970	November 1977a/
Distrigas IV (Replaces existing contracts effective 1-1-78)	Algeria	Everitt, Mass.	1978	46 volume includes Distrigas I above)	February 1977	Decembe- 1977
El Paso I	Algeria	Cove Point, Md. Elba Island, Ga.	1978	365	September 1970	January 1977
Trunkline	Algeria	Lake Charles, La.	1980	153	November 1973	June 1977
Eascogas	Algeria	b/Staten Island, N.Y.	1980	238	August 1972	Pending
El Paso II	Algeria	Port O'Conner, Tex.	1980	365	March 1977	Pending
Tenneco	Algeria	New Brunswick, Canada (via pipeline to U.S.)	1985	416	December 1976	Pending
Pacific Lighting	Indonesia	Oxnard/Point Conception, Calif.	1981	197	November 1973	c/December 1977
Total				d/1,780		

a/The 15 Bcf for the Distrigas I project is included in the 46 Bcf approved for the Distrigas IV project.

b/Eascogas is restructuring project to import LNG into Staten Island, N.Y.

c/DOE approved Oxnard, California, for the receiving terminal which does not meet California siting criteria and also rejected the price escalation clause included in the agreement. These conditions will result in additional hearings and further delays in project implementation.

d/This was the first LNG import application submitted for approval. The application was submitted in February 1970 and the first shipment arrived in 1971. FPC originally elected not to assume jurisdiction over intrastate facilities and did not impose conditions on these LNG imports because it was not "necessary or appropriate" to the public interest to do so. The case was subsequently reopened and was finally approved in November 1977--93 months after the application was received.

APPENDIX I

APPENDIX II

LNG POLICY AND GOVERNMENT PROCESS IN FRANCE, ITALY, SPAIN, AND THE UNITED KINGDOM

France

Gaz de France, the French Government gas monopoly has exclusive authority to import and distribute gas in France and may enter into import negotiations without specific approval. French law requires that after an LNG contract is signed, it must be approved or disapproved within 2 months by the Ministry of Industry's Delegate General for Energy. The Delegate General consults with other interested agencies, such as the Ministry of Foreign Affairs and Ministry of Finance before he gives final approval. However, this approval appears to be only a formality, because Gaz de France works closely with the Delegate General, who is usually aware of the contents of an LNG contract before it is formally received.

Gaz de France initiates the selection of sites for LNG facilities subject to the approval of Government agencies responsible for industrial development, environmental protection, and maritime affairs. Industrial development played an important role in the selection of sites for LNG terminals. Environmental factors played only a limited role in these selections but could play a more important one in the future.

There are no nationwide government safety standards for LNG, but there are regional offices with safety responsibilities. LNG safety standards are greatly influenced by the United States and other organizations, such as the U.S. Coast Guard and the U.S. National Fire Protection Association (NFPA); Veritas, a French shipping classification society and the Intergovernmental Maritime Consultative Organization. France has never had a serious LNG accident.

The Ministry of Finance plays the lead role in pricing gas. The consumer pays the same price whether he receives domestic or imported gas. The French Government policy is ultimately to let the price of gas seek thermal parity (the identical pricing of fuels in Btu equivalents) with the prices of other fuels. The gas price is currently being held down as an anti-inflation measure.

Italy

The Ministry of Industry is responsible for energy planning in Italy and collects statistics relating to energy use. It also insures that energy regulations are followed.

The Ministry of State Holdings controls all Government corporations including the Ente Nazionale Indrocarburi (ENI) and its subsidiary, Societa Nazionale Autogenazione Metan (SNAM), which is responsible for gas importation and distribution in Italy. SNAM initiates gas import proposals and, together with ENI, presents these proposals to the Ministry of State Holdings for approval. If the Ministry of State Holdings accepts such a proposal, it is forwarded to the Inter-Ministerial Committee for Economic Planning, to which both the Ministry of State Holdings and the Ministry of Industry belong. Approval by this Committee means that a project may be undertaken. The officials contacted did not have information available at the time of our review to identify specific dates for the approved projects.

SNAM also takes the lead in siting LNG facilities but coordinates its efforts very closely with ENI. Any proposal that is forwarded for approval is a joint SNAM/ENI proposal. The ministry in charge of maritime and coastal affairs has been the primary agency for approving LNG facility siting. Once the Ministry receives a proposal, it takes the lead in forming a commission of interested parties, including other concerned ministries, which approves or disapproves the project. The Ministries of Finance and the Interior must also give their approvals.

Various provincial and local bodies must also agree to the sites for LNG plants and other industrial facilities. For example, port authorities license plants that operate within their port area. Regional cultural authorities insure that no national shrines are threatened.

Italy has a policy of building up its underdeveloped South. In addition, environmentalists and various lobby groups are playing an increasing role in siting matters in Italy, but their efforts are being directed more at nuclear power than at LNG. Environmentalists' objections had to be overcome to site one of the two LNG terminals in Italy. The opposed site was in a resort area and a wildlife preserve. One official commented that the local approval process is getting very complicated.

Italy has no law or code that relates specifically to LNG safety, but safety plays an important role in LNG sitings and operations. SNAM and other officials stay current on LNG research and safety advances by keeping abreast of NFPA, Coast Guard, American Petroleum Institute and other publications on the subject. Italy accepts the

Intergovernmental Maritime Consultative Organization code for LNG carriers and plans to meet the NFPA standards in building new facilities, such as the construction of concrete protectors around LNG storage tanks.

SNAM not only buys and distributes natural gas in Italy but is also involved in establishing the price to consumers. Italy's consumer gas prices, currently low compared to prices of competing fuels, are basically determined by negotiations between SNAM and representatives of the major gas consuming groups, such as industry and residential users. In principle, gas prices are not controlled by the Italian Government, but they are monitored by the Ministry of Industry and a price committee of the Government.

The Italian Government accepts the principle of thermal parity in fuel pricing (i.e., the government wants gas prices to eventually rise to the level of the prices of competing fuels). For example, industrial gas prices would be competitive with the prices of heavy oils used for industrial purposes. The object of this policy is to discourage nonpriority gas use, such as for home heating, and to encourage the use of gas for priority use, such as petrochemicals where gas' clean burning qualities are important.

In Italy we were told that the consumer price of gas has little relationship to the source of the gas. Because LNG imports are regasified and integrated into the Italian pipeline network, the source of the gas to a given customer is unknown. The price for gas to the Italian consumer is the same whether the gas is obtained through domestic sources, pipeline imports, or LNG imports.

Spain

Virtually all of the natural gas used in Spain--about 2 percent of the country's total energy consumption--is imported from Libya and Algeria as LNG. Government energy plans call for an increase in gas importation, but the plans are considered only targets, not mandates. Spain wants more gas in order to reduce its dependence on oil imports, which provide about 68 percent of the country's energy.

Since 1972, Spain's gas policy has been made and carried out by Empresa Nacional del Gas, S.A. (ENAGAS), Spain's monopoly for importing and distributing gas. ENAGAS is a subsidiary of Institute Nacional de Industria (INI), which is a virtually autonomous government holding company. Major INI decisions are subject to approval from the Ministry of

Industry, but the ministry's approval of LNG importation schemes and gas prices appears to be a formality.

The Ministry of Industry does take an active role in approving ENAGAS proposals for siting of LNG structures (i.e., receiving terminal, regasification plant, and storage tanks). The ministry is interested in placing industrial plants in Spain's underdeveloped areas. It also reviews construction designs and carries out post-construction inspections to insure that safety standards are met. The U.S. Coast Guard, NFPA, and other standards are used for new LNG projects. Environmental factors have played little role in siting.

Local jurisdictions must also approve siting proposals, but such approvals do not appear to have delayed the siting process to any great extent. We believe this can be attributed in part to the fact that ENAGAS is a government-owned company under what has been a relatively strong central government. In these circumstances, a local jurisdiction would not likely veto a project sponsored by the central government.

Gas in Spain is priced at about $2.25 per million Btus for industrial consumers and at about $4.90 per million Btus for residential consumers. Because virtually all of Spain's gas is imported, the averaging or "rolling in" of the LNG price with that of domestic gas is not a serious concern to the Spanish gas industry. ENAGAS is currently paying a "free on board" Algeria price of about $1.30 per million Btus for gas. This price is tied to an index of fuel oil prices in the European market. Transportation costs from Algeria to Spain are between 12 and 15 cents per million Btus .

United Kingdom

In the United Kingdom the British Gas Corporation, (BGC), the national gas utility, is charged with meeting the country's demands for gas. Importation of energy fuels, however, is subject to the approval of the Secretary of State for Energy.

BGC initiates the process for selecting sites for LNG facilities. Site selections are subject to the approval of the Department of the Environment which carries out regional planning and industrial development. Local authorities and interest groups are heavily involved in industrial siting decisions. The siting approval process can be very time-consuming but that problem does not relate only to LNG; the process is the same for all industrial development.

APPENDIX II

Obtaining official approval has usually been enough to proceed with LNG projects. In one case, however, even with official approval already obtained, BGC's selection of an LNG storage site in a Welsh coal mining area was thwarted by a coalition of environmentalists and people oriented toward coal mining. BGC finally capitulated and chose another site.

In its 13 years of experience with LNG, the United Kingdom has had no incidents resulting in injury, loss of life, or significant damage. The responsibility for LNG safety in the United Kingdom is split between several agencies. The Port of London Authority controls LNG ships entering the Thames River and moving upriver to the terminal at Canvey Island. The Port Authority's responsibilities end when the LNG is pumped into the receiving terminal. Safety of such LNG then becomes BGC's responsibility. The Safety and Health Executive regulates aspects of LNG related to employee safety and health. The Division of Industrial Safety of the Department of Trade and Industry oversees plant safety.

The British Government and the BGC strive to stay current on the safety aspects of LNG. They have accepted the Intergovernmental Maritime Consultative Organization code and the standards of various classification societies, such as Lloyds of London for constructing and operating bulk liquid gas carriers, as well as the NFPA's standards for on-land production, storage, and handling.

Consumer gas prices are subject to a general price code under the control of the Department of Prices and Consumer Protection. BGC's charter, however, requires the corporation to avoid losses; therefore, gas prices must be set accordingly. The Department of Energy can overrule pricing decisions by the Department of Prices and Consumer Protection.

Consumers are charged a price above the rolled-in cost of domestic gas and LNG imports. Presumably, since imported LNG represents only 1 percent of total gas supplies, LNG costs only slightly affect consumer prices.

THE ROLE OF LNG IN JAPAN'S ENERGY POLICY

Japan's heavy dependence on imported energy was glaringly exposed during the oil crisis in 1973. As a result, government and private interests reexamined the nation's energy outlook and developed a national energy policy aimed at reducing its overdependence on petroleum imports. The national energy policy approved in December 1975, reflected substantial future increases in the use of nuclear power and imported LNG.

The LNG consumption in 1973 of 2.4 million metric tons was projected to increase to 20.6 and 42 million metric tons for 1980 and 1985, respectively. Actual consumption in 1975 amounted to 5.06 million tons.

As a pollution-free source of energy, LNG fulfills environmental standards established by the central and local governments. In 1975, about two-thirds of the imported LNG was used by electric power companies and the remainder by gas utilities supplying the residential, commercial, and industrial sectors.

LNG represented about 25 percent of the feedstock used by the gas utilities in 1975 to service their customers. By 1985, the two largest gas utilities in Tokyo and Osaka, which accounted for 69 percent of gas sold in 1975, were expected to rely on LNG for more than half of their feedstock requirements. Similarly, the largest electric utility in Tokyo, which accounts for about one-third of national customers and sales, expected LNG to provide 40 percent of its 1985 electricity output, compared with 24 percent in 1977.

Approval process for LNG projects

Although specific dates were not available in all cases, information obtained shows that Japan has been able to implement LNG projects within 1-1/2 to 2-1/2 years from the application date. We noted that formal applications were generally preceded by informal correspondence and coordination among the various parties involved in the project.

The review process for siting LNG facilities in Japan is complex and requires approval from several Government of Japan (GOJ) ministries and agencies, local government authorities, and private interest groups. The primary GOJ ministries and agencies involved in the approval process are:

--The Ministry of International Trade and Industry (MITI) has overall approval authority for LNG projects.

--The Ministry of Transportation has responsibility for harbor safety standards and port operation procedures.

--The Environmental Protection Agency is responsible to assure that environmental laws and regulations concerning water and air pollution are met.

Once a company decides to build an LNG facility, it is required to prepare an environmental impact study. The study addresses issues on overall siting, construction of the facility, and safety of LNG carrier operations. The study is required to meet certain government standards and follow applicable guidelines and is coordinated with appropriate authorities responsible for siting approval.

The environmental study prepared by the company is the only one performed for a specific project. The report is reviewed by responsible GOJ and local government authorities. Although specific dates were not available to identify the time required to prepare the studies for current projects, a MITI official told us that it takes about a year from the time the decision is made to complete the environmental impact study.

Notwithstanding the complex procedures for site approval we were advised by GOJ officials and private company representatives that there were no major problems getting approval for the five terminals already approved. There were some water pollution problems related to the sixth project, but construction had already begun at the time of our review and the officials expected no delays in project implementation. Two reasons given for the lack of major problems in the approval process are (1) the GOJ has recognized and stressed the social need for LNG imports and (2) a large degree of coordination exists among the various authorities responsible for approval. The gas and electric company representatives told us it was difficult to predict if approval for future proposed sitings would be processed as timely as the first six facilities. Future problems may stem from a more active role of local governments and residential interests on environmental issues.

A MITI official told us that the GOJ has overall authority for approving or disapproving a proposed site for an LNG facility. But, in practice, there is preliminary

local government support for the proposed site prior to extensive evaluation of GOJ authorities.

GOJ involvement with cost of LNG prices to consumers

The GOJ does not evaluate the gas supply contract price when reviewing LNG import proposals. The price is decided entirely on a commercial basis between the supplier and importer. The GOJ relies on the importers to negotiate for the most favorable prices, considering expected prices for alternative sources.

The contracts for the LNG imports from Alaska and Brunei have been renegotiated upward from the original fixed price. The percentage of increase and amount are considered confidential and could not be identified. Gas utility and electric power companies believe that the Japanese importers have little leverage to resist pressures for price increases.

It was generally believed that the United States would have more leverage in negotiating with producers because the U.S. is less dependent than Japan on imports of energy resources--especially LNG. Individuals hesitated to discuss the possibility of importing countries forming a cartel to guard against any forced price increases by producers.

Pricing policy to consumers related to use of LNG as a feedstock

The MITI has responsibility for approving rates for gas and electricity to consumers--there is no local government responsibility or authority for rate approval. The approved rate for each company is based on combined cost of all feedstocks (rolled-in pricing), processing costs, overhead, and profit. Prior to any rate increase, MITI performs an audit of the company and reviews forecasts of procurement plans, investment plans, and operating cost.

The prices of the various feedstocks could not be identified because they were considered confidential. However, a town gas industry representative noted that locally purchased gas is probably the least costly, followed by LNG, and coal-based gas and petroleum-based gas costing the most to produce. In the future, the cost of LNG and petroleum-based gas should be about the same because LNG contracts will provide for escalation of prices similar to increases in petroleum prices. The rationale

for this escalation of LNG prices is accepted by GOJ officials and companies using LNG.

Safety issues for LNG and LNG facilities and shipments

The general consensus of GOJ officials and representatives of industries using LNG is that LNG is no more hazardous than other energy fuels, such as petroleum. LNG projects and operations are regulated by many safety standards. The Gas Safety Division of MITI and the Maritime Safety Agency of the Department of Transportation have primary responsibility for approving and supervising these safety elements. The general opinion is that adherence to the prescribed safety measures will provide adequate assurance for LNG safety.

No standards or requirements for the distance an LNG receiving facility or storage tank is required to be from a residential area have been established. The safety distance is considered on a case-by-case basis. We were advised that most facilities and storage tanks are located about one or two miles from what would be considered a residential area. No criteria as to what constitutes a "residential area" has been defined.

Forty-two LNG storage tanks were constructed as of March 1977--15 underground and 27 aboveground. Both types are considered safe and secure. The underground tanks have the advantage of (1) being less expensive because no dyks are required, (2) being psychologically more acceptable because they are less visible and (3) requiring less space. However, some locations are not suitable for underground construction because soil at the site is unsuitable. The safety issues on LNG storage tank construction in Japan are discussed in depth in a report we recently released for comments.

Japan has not had any LNG-related accidents resulting in injuries to people or loss of property. This experience includes several hundred shipments dating back to 1969. In 1976, about 200 shipments were received in Japan. The LNG is also carried by truck throughout Japan.

Government of Japan financing and incentives toward LNG projects

The Japanese Export-Import Bank is the primary GOJ vehicle used to assist in financing LNG projects in foreign countries. Approximately $200 million was lent for such

activities in Indonesia in 1975. The primary objective of these loans is to facilitate Japanese imports of required national resources--not necessarily to promote Japanese exports. We were advised by MITI officials and industry representatives that no other type of GOJ financing is available domestically or to foreign countries for LNG projects. However, substantial investment and financial assistance by private Japanese interests for LNG facilities in LNG-producing countries exist. For example, these interests have lent about $1.5 billion to construct two LNG facilities in Indonesia.

The GOJ does provide some incentives to electric power companies and gas utilities to import LNG by not imposing duties on such imports. We were advised that the reasons for this tax waiver are (1) to promote the import of this energy resource and reduce dependency on petroleum and (2) to contribute to GOJ's clean air program. The import duty on crude oil is equivalent to about 45 cents a barrel. This duty was increased in April 1977 from about 36 cents a barrel.

Another incentive for electric power companies and other industries to use natural gas is the GOJ Environmental Protection Agency's levy rate for emission of sulfur oxide. This rate was more than doubled for the metropolitan areas effective April 1, 1977. Since natural gas is a clean source of energy, emitting very little sulfur oxide, this levy is considered to some extent to promote the demand for natural gas and the related imports of LNG.

Contingency plan related to LNG imports

In the event suppliers curtail LNG exports GOJ has no contingency plan for LNG imports; nor does it have a requirement that the importers or users of this resource develop such a plan. Essentially, the Japanese rely on the suppliers to honor the agreement and not curtail deliveries of LNG to Japan. Also, Japan has alternative energy resources which could be used if LNG imports are curtailed.

APPENDIX IV

DEPARTMENT OF STATE

Washington, D.C. 20520

April 5, 1978

Mr. J. K. Fasick
Director
International Division
U.S. General Accounting Office
Washington, D. C.

Dear Mr. Fasick:

I am replying to your letter of March 1, 1978, which forwarded copies of the draft report: "Need to Improve Regulatory Review Process for Liquefied Natural Gas Imports."

The enclosed comments were prepared by the Assistant Secretary for Economic and Business Affairs.

We appreciate having had the opportunity to review and comment on the draft report. If I may be of further assistance, I trust you will let me know.

Sincerely,

Roger B. Feldman for DLW

Daniel L. Williamson, Jr.
Deputy Assistant Secretary
for Budget and Finance

Enclosure: As stated

GAO DRAFT REPORT: "NEED TO IMPROVE REGULATORY REVIEW PROCESS FOR LIQUEFIED NATURAL GAS IMPORTS"

The Department of State agrees with the principal observation of the proposed GAO report entitled "Need to Improve Regulatory Review Process for Liquefied Natural Gas Imports" that the regulatory process has been too lengthy in the past. The organization of the new Department of Energy was designed to streamline this regulatory process on the one hand while giving due consideration to the many complex issues that are involved in the importation of LNG on the other.

The report recommends that the International Energy Agency could be a forum for pursuing some of the issues involved in the LNG trade. The IEA is currently conducting a study of the role of natural gas, including liquefied natural gas, within IEA countries. This study will lead to discussion of further possibilities for cooperative efforts among LNG importing countries.

MAR 31 1978

Julius L. Katz
Assistant Secretary for Economic
and Business Affairs

APPENDIX V

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

March 27, 1978

Mr. Monte Canfield, Jr.
Director
Energy and Minerals Division
U. S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Canfield:

Please find attached the comments of the Federal Energy Regulatory Commission (Commission) staff on the draft GAO report entitled "Need to Improve Regulatory Review Process for Liquefied Natural Gas Imports." These comments have not been reviewed or approved by the Commission itself and, thus, should not be construed as representative of the views of the Commission.

Since the Federal Power Commission, which is discussed in the draft report, is the predecessor of this agency and since the Commission is an independent regulatory agency within the Department of Energy, we have chosen to respond directly to you on the report. We appreciate the opportunity to comment and trust that our comments will be useful in preparing the final report. If the staff can be of further assistance or if the suggested informal conference with your office is desirable, please advise.

Sincerely,

Barry L. Haase, Director
Office of Pipeline and
Producer Regulation

FERC STAFF COMMENTS ON GAO DRAFT REPORT "NEED TO IMPROVE REGULATORY REVIEW PROCESS FOR LIQUEFIED NATURAL GAS IMPORTS"

The central premise of the report is that the regulatory process should be overhauled or stream-lined to provide for expeditious and efficient licensing procedures since imported LNG can serve as an important supplement to U.S. energy supplies. This position is advanced with recognition of the need to carefully scrutinize the basic elements of LNG import proposals in light of the large capital investment, high annual costs, long term commitments and other significant actions required by such endeavors.

While we agree with the basic premise, any stream-lined review process on important issues must remain a comprehensive review process. Sufficient facts must be available, in sufficient detail, to reach meaningful conclusions on the advisability of entering into the long term financial and other commitments required by these projects. Indeed, the magnitude of the commitments demonstrates the need to fully incorporate comprehensive review requirements in any stream-lined licensing process. Recognizing these principles, we concur with the draft GAO report that certain measures should be taken to improve the regulatory process.

As the draft report correctly notes, the authority to regulate LNG imports has been transferred from the recently abolished Federal Power Commission (FPC) to the Economic Regulatory Administration (ERA). ERA has not as yet adopted regulations for the licensing procedures related to LNG imports. The report's review of FPC procedures should aid in the adoption of regulations.

FERC staff believe that any criticism of FPC delay should be tempered by recognizing the inadequacies in the proposals filed by certain applicants. For example, the applicant in the Pacific Indonesia case amended the proposal several times as to major project components such as shipping arrangements and terminal configuration and location. At the time of decision, the record did not contain accurate estimates of the operating costs and

APPENDIX V

capital investments for the time of initial deliveries, either for the marine operations or the onshore components. This type of information is essential if import decisions are to be based upon a weighing of national interests, not solely on the need of energy supplements. This problem, coupled with the fact that the FPC was considering the implications of importing LNG from a foreign country which had not previously been considered a source of LNG and other related novel aspects of the Pacific Indonesia proposal, resulted, to a large extent in the delay in processing that proposal.

Thus, the reference in the report to an optimum review period of 18 months must recognize these variables and the particular circumstances of each case. Optimum procedures require cooperation on the part of the applicant as well as the regulators. In a subsequent case wherein the licensing procedure was expedited, the Administrative Law Judge states "... the result here has been an almost unacceptable schedule resulting in a record barely complete as to its essential elements." 1/ The point this illustrates is that expedition in itself cannot be substituted for reasoned determination of the major issues that must be addressed in each individual LNG import proposal.

The report contains, on pages vii through ix, ten specific recommendations for re-evaluation of the existing regulatory process as follows:

(1) Develop a timely procedural format for processing import proposals which allows for responsive processing.

Comment: The existing procedural format was developed in light of the requirements of the Administrative Procedure Act and, in our opinion, is necessary to properly evaluate the full impact of these multibillion dollar projects on the national interest.

(2) Identify and delegate responsibility for segments of the review to those agencies with the necessary expertise.

Comment: This procedure has been followed by the FPC. Agencies such as the U.S. Coast Guard and Marad, have participated in such reviews. We agree that the practice should be encouraged and expanded.

1/ Decision; p. 6, Tenneco Atlantic Pipeline Company, et al., Docket Nos. CP77-100, et al.

(3) Clearly delineate the role and improve the coordination between those Federal agencies involved in LNG import proposals.

Comment: We concur but caution that certain agencies may be concerned with restrictive portions of the national interest and may not be capable of overall evaluation. In any event, ultimate authority to license should rest with one agency and should not be divided or dispersed.

(4) Effectively coordinate with state and local governments and devise an appropriate review approach including joint hearings, joint environmental impact studies and division of responsibilities.

Comment: Joint cooperation should continue to be encouraged; however, joint consideration seldom is appropriate due to provincial interests that conflict with overall national interests.

(5) Develop comprehensive guidelines which clearly identify the information needed to effectively rule on an LNG import proposal in a timely manner.

Comment: We concur and agree that improvement is needed.

(6) Determine who should have final approval authority for (a) controversial LNG issues especially, (b) siting and safety or (c) how jurisdictional problems can be resolved.

Comment: (a) Final approval authority for controversial LNG issues must rest in a single Federal authority or agency; (b) for siting and safety, consistency requires a common and universal Federal policy, with recognition of unique regional considerations, if appropriate, to provide for fair and equal treatment under the law; (c) jurisdictional problems should not exist under current law.

(7) Establish a clear policy on incremental and rolled-in pricing.

Comment: We concur but note that either method may be appropriate dependent upon end use market profiles.

(8) Propose legislative changes if needed to eliminate overlap, duplication, fragmentation of responsibility and to generally streamline the review process.

APPENDIX V

Comment: We know of no such conflicts in the LNG area that cannot be resolved by interagency cooperation and agreement. The Commission staff has worked with other agencies in this area in the past. As noted above, we believe a minimum number of agencies should have decision making authority over LNG projects.

(9) Insure that future agreements with LNG producer countries are consistent with an established national LNG policy.

Comment: We concur and not that such a policy currently is under formulation by DOE.

(10) Determine feasibility of (a) onshore siting for LNG facilities and (b) required legislation to avoid unnecessary delays for future projects.

Comment: (a) The state of feasibility for offshore facilities has been adequately addressed in current projects under consideration (b) we concur.

In addition, the report, on page ix, sets forth several congressional recommendations. FERC staff defers comment on the recommendations for a national energy policy to DOE, and on the suggested amendment of NEPA to CEQ or EPA as appropriate. As to legislation to provide for offshore siting of LNG facilities, we believe that this is duplicative of item (10) above.

FERC staff has found a number of discrepancies and apparent errors in the body of the report and would welcome the opportunity to cover these in an informal meeting with the GAO authors. (See GAO note.)

GAO note: FERC comments have been considered and changes made where appropriate.

APPENDIX VI

Department of Energy
Washington, D.C. 20545

APR

Mr. Monte Canfield, Jr., Director
Energy and Minerals Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Canfield:

We appreciate the opportunity to review and comment on the GAO draft report entitled "Need to Improve Regulatory Review Process for Liquefied Natural Gas Imports."

The report should cite that some of the recommendations have been undertaken by DOE or are under consideration by DOE and the Interagency Task Force on LNG Import Policy.

Comments pertaining to the recommendations are as follows:

GAO Recommendation

--developing a timely procedural format for processing import proposals which allows for responsive processing;

DOE Comment

We are presently working on procedural regulations which will substantially reduce processing time of the existing procedural format.

GAO Recommendation

--identifying and delegating responsibility for segments of the review to those agencies with the expertise such as Maritime Administration for LNG ship construction and costs;

DOE Comment

To effect this recommendation, changes in the DOE authority to delegate such responsibilities would be required. We cannot, under the DOE Act or the Natural Gas Act, delegate authority in an import proceeding. We expect to request the expert advice of these agencies, and have recently proposed amendments to the ex parte rules to allow us to do so. Furthermore, we think it is impractical to allow various bits and pieces of the import permit to be decided by several agencies. In our view such a process is more likely to cause delay than the present procedures.

GAO Recommendations

--clearly delineating the role, and improving the coordination between those Federal agencies involved in LNG import projects;

--developing comprehensive guidelines which clearly identify the information needed to effectively rule on an LNG import proposals in a timely manner;

DOE Comment

We agree with these recommendations and we are currently cooperating with other Federal agencies having an interest in the LNG imports program. We are developing guidelines needed to more effectively rule on proposals in a timely manner.

GAO Recommendations

--effectively coordinating with state and local governments and devising an appropriate review approach including joint hearings, joint environmental impact studies, and division of responsibilities;

--determining who should have final approval authority for controversial LNG issues, especially siting and safety or how jurisdictional problems can be resolved;

DOE Comments

Joint coordination and cooperation with state and local governments as well as with other Federal agencies is always a prime consideration. We will continue to encourage participation by other governmental bodies as long as a conflict of national interest does not exist.

Jurisdictional overlap between DOE, the states, and other Federal agencies may be a source of added delay and confusion. However, overlaps cannot always be resolved by agency action. There are jurisdictional overlaps between DOE and DOT for segments which cannot be eliminated because each agency is required by law to establish safety standards for LNG facilities. Neither agency, in our view, may delegate its authority to the other. However, it should be noted that the final approval authority for the entire project is the responsibility of DOE.

GAO Recommendation

--establishing a clear policy on incremental and rolled-in pricing;

DOE Comment

We agree with this recommendation and the Interagency Task Force has

extensively reviewed this issue. We hope to provide definitive guidance in the near future. Also, the Administration's National Energy Act proposes some form of incremental pricing of natural gas to the end user.

GAO Recommendation

--determine feasibility of offshore siting for LNG facilities; and required legislation to avoid unnecessary delays for any future projects;

DOE Comment

The DOE Region IX office is currently conducting a study on various aspects of the siting of LNG facilities offshore including technical advantages and problems, costs and legal elements associated with such facilities. Also, we agree that unnecessary delays for future projects should be avoided but we do not believe that legislative action is necessary.

GAO Recommendation

--proposing legislative changes if needed to eliminate overlap, duplication, fragmentation of responsibility, and to generally streamline the review process; and

DOE Comment

As previously stated, we encourage cooperation with other governmental bodies. Interagency cooperation can resolve LNG conflicts and we consider that it is not now clear that legislative action is necessary. Interagency cooperation in the past has resolved these jurisdictional overlaps.

GAO Recommendation

--ensuring that future agreements with LNG producer countries are consistent with an established national LNG policy;

DOE Comment

Formulation of policy guidelines has been undertaken by DOE.

GAO Recommendation

--deliberate the pros and cons for a concerted effort by LNG consuming nations to effectively coordinate efforts on matters of mutual concern such as pricing by exporting countries.

APPENDIX VI

DOE Comment

The recommendation for DOE and State to consider the coordination of gas import policy with other consumer countries needs to be explored further. DOE will pursue this recommendation through the International Energy Agency's Standing Group on Long Term Cooperation.

GAO suggests that the Congress:

--Require the Secretary of Energy to report within a given time period the role LNG should play in satisfying U.S. energy needs. This should be supported by a systematic analysis of the various alternative energy sources or natural gas substitutes.

--Develop and enact legislation to provide statutory authority for offshore siting of LNG facilities.

DOE Comments

The DOE is continually assessing the energy mixes in an attempt to determine and satisfy the U.S. energy needs. In this respect, the Congress is being provided periodic reports, as well as information upon request, on various forms of energy supplies and substitute sources. We do not believe that another separate report to Congress is necessary.

As mentioned in earlier comments, we do not believe this action to be necessary because of the work being performed by our own Region IX office.

Comments of the Federal Energy Regulatory Commission were furnished directly to your office.

Sincerely,

Fred L. Hiser, Director
Division of GAO Liaison

APPENDIX VII

ADDRESS ALL COMMUNICATIONS
TO THE COMMISSION
CALIFORNIA STATE BUILDING
SAN FRANCISCO, CALIFORNIA 94102
TELEPHONE: (415) 557-0558

Public Utilities Commission

STATE OF CALIFORNIA

FILE NO.

March 30, 1978

Mr. J. K. Fasick, Director
U.S. General Accounting Office
International Division
Washington, D.C. 20548

Dear Mr. Fasick:

Re: Draft of Proposed Report "Need to Improve Regulatory Review Process for Liquefied Natural Gas Imports"

By letter dated March 1, 1978, you requested written comments on the above-described proposed report. The report has been reviewed by the Commission's LNG Task Force.

Generally, the report is a good summary of the existing federal regulatory process for LNG projects. However, the report is unduly repetitive in certain areas, and many of the recommendations contained in the report have already been made by several other federal agencies, such as the Office of Technology Assessment, Congressional Research Service, and the General Accounting Office. Despite these continuous recommendations by these various federal agencies, neither Congress nor the relevant federal agencies have taken the steps necessary to streamline the regulatory process and avoid unnecessary duplication of efforts with respect to the approval of pending LNG import applications. Hopefully, this report will act as a catalyst for some constructive action.

Of particular interest in the proposed report was the discussion of regulatory procedures in other countries relating to the siting of LNG facilities and the pricing of LNG supplies.

I am also returning three (3) of the five (5) draft copies sent to me for review. Copy #1 specifies the errors found in the proposed report. Some additional comments are attached to this letter. The other two (2) copies of the report were sent to the California Energy Resources Conservation and Development Commission and the California Coastal Commission. These agencies will submit their own comments on the report.

APPENDIX VII

I am also enclosing copies of statements recently submitted to the Department of Energy and the U.S. House of Representatives Subcommittee on Energy and Power relating to LNG import policies.

I hope these comments and statements will be beneficial in the preparation of your final report.

Very truly yours,

Frederick E. John

FREDERICK E. JOHN, Director
Policy and Program Development

Enclosures

(46853)