Cited as "1 ERA Para. 70,101"

Pac Indonesia LNG Company and Western LNG Terminal Associates (ERA Docket No. 77-001-LNG), December 30, 1977.

Importation of Liquefied Natural Gas from Indonesia.

[Opinion and Order]

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BARDIN, Administrator:

I. Introduction

A. Background

Two gas distribution utilities in California have organized a project to import natural gas, in liquefied form, from the island of Sumatra, the Republic of Indonesia. The gas utilities have established the two applicant corporations: Pacific Indonesia LNG Company (Pac Indonesia), which asks for authority to import the gas and to resell it for consumption throughout California; and Western LNG Terminal Associates (Terminal Associates), which asks for authority to build, own and operate certain facilities, including the proposed terminal on the California coast. Under the Natural Gas Act and the Department of Energy Organization Act, the Department of Energy (DOE) must approve or disapprove the applications.

The project proposes annual imports of more than 200 trillion Btu's (more than one-fifth Quad*) for 20 years, beginning early in the 1980's. That would approach one-third of one percent of current, nationwide energy consumption (74 Quads in 1976), about one percent of current nationwide gas consumption and over ten percent of current California gas consumption.

The project involves large investments and high operating costs. The estimated capital investments would approximate $2 billion:

Some $700 million for gas wells, pipelines and liquefaction terminal facilities in Sumatra;

Some $1,000 million for nine LNG tankers, six to be built in United States shipyards and three being completed abroad; and

Some $244 million for the receiving terminal and pipelines in California, and perhaps more depending upon the location.

The foregoing capital costs will ultimately be borne by gas consumers, and do not take into account the taxpayer costs of any subsidies such as U.S. Maritime Administration grants to help pay for the construction of the six U.S. flag vessels to transport the LNG.

Estimates of Pac Indonesia's full cost of service (including operating expenses as well as depreciation and return on investment) reveal that roughly 40 percent represents costs of ocean shipping; another 40 percent represents payments to the producer for producing the gas, pipelining it to the coast, liquefying it and loading the liquid on the tankers in Sumatra; and the remaining 20 percent represents costs to unload the liquid in California, hold it as a cold liquid in tanks and regasify it. The producer's initial realization at the wellhead would be a fraction of the highest domestic prices most recently allowed by the Federal Power Commission. But the proposed compensation for liquefaction and ocean transport would raise the initial cost of the regasified fuel (in current 1977 dollars) well above the current prices of imported liquid fuels or of domestic natural gas. Moreover, the escalator clauses in the current contract could substantially raise the initial LNG price over time.

The Japanese and North American markets offer natural outlets for volumes of natural gas on the scale of the estimated recoverable reserves discovered in Sumatra. The local Indonesian market does not hold out the potential to absorb gas in the volumes now available in the Arun Field. Indonesia currently sells LNG from this region of Sumatra to Japan and may well expand its sales to that market.

California's gas-dependent infrastructure includes nearly six million households which use natural gas for space heating (or more than one-sixth of the total of 35 million gas-heated households nationwide). As California's demands for energy continue to increase, and present natural gas supplies dwindle, California's principal energy alternatives are new sources of natural gas (mostly imported), synthetic natural gas made out of imported petroleum (naphtha), electricity, solar energy, gasified coal, geothermal, and

the more exotic sources. California's energy future will likely see a combination of several of these sources.

The Public Utilities Commission of California (CPUC) has intervened in this proceeding on behalf of the People and the State of California. The CPUC supports the proposed import as one of the means to satisfy that state's future energy needs, provided certain conditions, discussed infra are imposed.

This is the first gas import case to be decided since activation of the DOE. In the past, the Federal Power Commission (FPC), from which the DOE obtained jurisdiction over imports of natural gas, has approved imports of North American gas by pipeline and of offshore LNG by tankers. As a result, this country imported a net of about one Quad of pipeline gas last year. The U.S. also imported one-hundredth of a Quad, in the form of LNG, from Algeria to Everett, Massachusetts, and exported five one-hundredths of a Quad, in the form of LNG, from Kenai, Alaska, to Japan. Moreover, two additional Algerian gas projects approved by the FPC but not yet in operation will together deliver well over half a Quad annually. (El Paso I, with terminals at Cove Point, Maryland, and Savannah, Georgia, and Trunkline, with a terminal to be built at Lake Charles, Louisiana.) Four additional LNG import projects are now pending DOE decision:

Application	Source of Gas	Approx. Annual Proposed Import
Pac Indonesia	Indonesia	0.2 Quad
Distrigas	Algeria	0.04 Quad
El Paso II	Algeria	0.4 Quad
Tenneco TAPCO	Algeria	0.4 Quad

Each of these applications was originally filed with the FPC and heard before Administrative Law Judges of that agency, prior to activation of the DOE. Other LNG projects still in formative, preapplication stages may involve gas produced in Australia, Chile, Nigeria, Trinidad, and other countries.

B. General Considerations

Section 3 of the Natural Gas Act governs this case. It provides that no person shall import natural gas into the United States from a foreign country without first having secured an order from the Department of Energy authorizing it to do so. Section 3 directs the DOE to:

> issue such order upon application, unless, after opportunity for hearing, it finds that the proposed . . . importation will not be consistent with the public interest.

The DOE may by its order grant such application in whole or in part,

with such modification and upon such terms and conditions as it may find necessary or appropriate. Moreover, the DOE may make supplemental orders from time to time; it may thereby assure that an approved project continues to operate consistent with national energy policy.

The Congress vested the Federal government's responsibility to approve gas imports in the Secretary of Energy.

Congress provided for Secretarial control over gas import regulation, including any ancillary function under provisions of the Natural Gas Act other than Section 3. (See Sections 301 and 402 of the Department of Energy Organization Act, which likewise apply to gas exports and to foreign commerce in electricity.) Congress has also vested in the Secretary the responsibility to determine natural gas curtailment priorities. The Secretary has delegated those responsibilities to the Administrator of the Economic Regulatory Administration (ERA).

Gas import applications raise issues of global and local significance. There are issues of international trade and balance of payments, national security and economy, efficient allocation of resources and subsidized imports, gas utility responsibility and Federal-State relations, consumer protection and environment, public safety and land use.

At the outset, the DOE must carefully weigh implications for national security and the overall domestic energy economy. It must consider such questions as: Is the source of supply physically and internationally secure? How vulnerable are the physical arrangements to interruption by accident or by design, in peace or in war? Are the proposed long-term prices and financial terms in line with the equivalent energy costs of alternative supplies to our economy? Do the proposed pricing arrangements allow responsible scrutiny and choice by state governments and local distribution companies? Is the proposed escalation clause, if any, objective in its reflection of potential increases in the cost of energy? Are the proposed site and facilities such that they minimize the potential safety and environmental risks?

Development of new gaseous fuel supplies offers great benefits. Gas is the cleanest-burning fossil fuel. The country has a ready-made infrastructure for delivering gaseous fuel to the consumer. But there are substantial costs involved if we are to add to our rapidly dwindling gas supplies. As conventional, low-cost natural gas resources dwindle, we need a number of unconventional, even exotic, substitutes to replace the conventional. Gasification can turn our abundant domestic coal supply into a clean-burning fuel, but the process is costly. Natural gas from the north slope of Alaska can be transported to the lower 48 states, but the transportation system to deliver it will be the most costly privately-financed construction project in history. In time, we may be able to exploit the large quantities of the

methane gas locked within difficult-to-penetrate rocks or underground waters, but at significant costs.

When an import case involves secure supplies offered at costs below or equivalent to other new energy supplies, with each state-regulated gas distribution utility afforded the right to determine for itself whether its service area requires the volumes offered at their true cost, the DOE may decide the case in light of conventional factors, including markets, allocations, facilities, siting and environ mental quality. On the other hand, in a case involving insecure sources or prices that exceed the cost of equivalent energy supplies, the DOE may give more careful scrutiny to whether the project is in effect being inappropriately subsidized by being rolled in with low cost domestic gas, at the expense of future domestic gaseous fuel projects.

The DOE has not yet developed general criteria which it will apply to individual applications to import LNG. The DOE is exploring these issues through a generic policy formulation process in which the public has been invited to participate (see 42 F.R. 62419, December 12, 1977). Pending the more generalized policy formulations, the DOE will resolve each individual application on its merits, case by case. Relevant factors may include the effects interruptions would have on particular regions of the country, considering cumulative impacts of all projects of at least equal vulnerability; foreign exchange consequences for our balance of payments; non-availability of any other more secure or cheaper sources of supply, including secure supplies of synthetic fuels; unique environmental constraints; local utility responsibility and incremental pricing; and the incremental and cumulative quantities at issue.

C. Summary of Findings and Conclusions

The DOE has reviewed the record and the Initial Decision prepared in this case by Administrative Law Judge Gordon of the Federal Power Commission, and reached its detailed opinion (Part II, below). In summary, the DOE finds and concludes:

1. This case involves a reliable and relatively secure source of gas supply. The proposed import would be the first from Indonesia, and would help diversify our resources of LNG.

2. The project will be the first LNG approval for the distinct California market and does not represent excessive dependence by that market on LNG, so long as Applicants develop an interruption contingency plan.

3. The proposed price of the regasified LNG delivered to Pac Indonesia's customers is the equivalent of petroleum fuel if priced at about $20 per

barrel. (The proposed base price of LNG at the dock in Sumatra approximates the energy equivalent of $7 per barrel, but the high costs of ocean transport and terminalling bring the delivered cost well above the equivalent prices of liquid fuels. To the extent that American-built vessels actually provide two-thirds of the ocean transportation, the direct balance of payments impact may prove less harmful than the import of oil.) However, due to limited flexibility in the California market to switch to other energy types because of its unique air quality problems, the delivered price of Indonesian LNG may be roughly equivalent to or even lower than the incremental cost of true alternate sources for residential space heating purposes, such as synthetic natural gas (SNG) from imported naphtha or, perhaps, electricity, available within the time-frame associated with this project.

4. Based upon projected future curtailments of existing and potential gas supplies for California, Applicants have demonstrated the need for this Indonesian supply.

5. The proposal would price LNG incrementally at the wholesale level, with no rolling in of lower-priced domestic pipeline gas and, therefore, no subsidy for the imported fuel at that level. The choice to buy the import rests with the individual gas distribution utilities, which have the duty to know and meet the needs of their local service area. Each of these gas utilities is fully subject to State scrutiny and control through the CPUC.

6. Under principles implemented by the California PUC, retail prices of gas consumed in California are designed to encourage conservation of scarce resources, which accomplishes a principal goal of incremental pricing. In California, each class of customers pays a virtually uniform price on a "flat" rate (i.e., without discounts for larger use). These flat rates cover new supply costs to date. The pates avoid excessive revenues by providing an "inverted" residential rate schedule which includes a rate for the first small quantities of inelastic use at prices below the average cost of existing supply.

7. An all-events, cost-of-service tariff as requested by Applicants is not in the public interest. The Administrative Law Judge established a volumetric fixed tariff, for sale of this gas, subject to change only as a result of increases in the price of the Indonesian gas due to an escalator clause and a currency adjustment clause contained in the purchase contract, or as a result of a minimum bill provision. The DOE accepts and adopts the Judge's conclusions regarding the volumetric fixed tariff and minimum `ill. However, the DOE finds that the flow-through of costs associated with the escalator clause proposed by the Applicants could result in unreasonable price increases, inasmuch as it is tied in part to OPEC cartel prices and in part upon a domestic index on which the very increases in the price of gas for this project would have a spiralling influence and which would also be

affected by domestic energy taxes that are designed to prevent subsidization of foreign energy prices but would have the opposite effect here. For these reasons, we find the escalation clause is not in the public interest. In addition, we find that the currency adjustment clause contained in Applicant's contract with the Indonesian production company does not equitably distribute the risks of currency fluctuation between buyer and seller. The DOE would consider approving flow-through of costs associated with an escalator which is not linked to fuels indexes, and a currency adjustment clause which provides for downward adjustments in price below the base price should the value of the dollar increase relative to the agreed upon currency index.

8. We recognize that the rejection of automatic and unsupervised flow-through of costs and risks to the consumer may jeopardize such an LNG project, but our paramount obligation, as pointed out by the State Public Utilities Commission, and the Staff of the Federal Power Commission, is to protect American consumers from unwarranted costs and risks. Failure of the project because of these conditions, if that occurs, would suggest that the project inherently lacks the appropriate economic benefits relative to consumer costs. In this regard, Applicants and intervening American shippers have strenuously argued that the Law Judge's decision not to allow flow-through of shipping cost increases may result in a denial by the United States Maritime Administration of the construction differential subsidies and finance guarantees upon which the parties relied in consummating shipping arrangements. We are not persuaded that such denials will occur. DOE cannot find the proposed flow-through of burden to consumers to be in the public interest.

9. Based upon the record in this proceeding, the Oxnard terminal site proposed by the Applicants is an acceptable site, provided Applicants meet safety and environmental requirements, and is therefore conditionally approved. If Oxnard is in fact the site at which the terminal is eventually built, on-site changes proposed by the municipal government, including underground installation of the LNG tanks, will be required unless Applicants specifically justify their rejection. The Oxnard site is the only site demonstrated by the record in this case to be acceptable; we do not, however, conclude that it is necessarily the only acceptable site.

Since the record was made in this proceeding, a number of events have occurred which would make it inappropriate for the DOE to approve Oxnard to the exclusion of any alternate site, at this time. First, the President's National Energy Plan was published, which, among other things, calls for siting of new LNG facilities away from densely populated areas. The Department's LNG policy formulation process referred to above was initiated, in part, to establish siting criteria which will include more specific population density standards. Second, the State of California has itself

enacted legislation which incorporates specific population density criteria for the selection of sites for LNG receiving facilities and establishes a consolidated site selection procedure. Third, the Applicants in this proceeding have submitted an amendment to their application to request approval of a site at Point Conception that they believe will be acceptable under the new California law.

The California site screening process now underway may, by July 31, 1978, the deadline fixed by California law, produce a site that is also acceptable, or even preferable to Oxnard. The DOE will cooperate with the State to settle on a mutually acceptable site by that date. Unless that effort fails, the DOE finds no cause to exercise its authority under Section 3 of the Natural Gas Act in disregard of the legitimate interests of the State of California to participate in the site selection process. Further, DOE proceedings would be necessary to evaluate Applicants' Point Conception proposal or any other alternate site.

10. DOE reserves the right to issue supplemental orders, pursuant to the Natural Gas Act, including orders prescribing curtailment priorities for the imported gas and orders defining procedures for reallocation of such gas in cases of emergency.

Subject to the conditions imposed in the Order below, DOE determines that importation of gas as proposed in this case is consistent with the public interest. The Order is subject to applications for rehearing filed within 30 days hereof pursuant to Section 19 of the Natural Gas Act.

II. Opinion

A. Description of Proceedings

On November 30, 1973, Pacific Indonesia LNG Company (Pac Indonesia) filed an application (Docket No. CP74-160) pursuant to Section 3 of the Natural Gas Act for authority to import liquefied natural gas (LNG) into the United States from the Republic of Indonesia. The LNG is to be purchased from Perusahaan Pertambangan Minyak Dan Gas Bumi Negara (Pertamina), the state-owned oil and gas agency of the Republic of Indonesia, pursuant to the "Contract for the Sale and Purchase of Liquefied Natural Gas" (Pertamina Contract) dated September 6, 1973, as amended on January 9 and October 28, 1975.1/

On February 15, 1974, Pac Indonesia filed an application (Docket No. CP74-207), pursuant to Section 7 of the Natural Gas Act, to construct, own and operate facilities for the receipt, storage and regasification of the LNG. Pac Indonesia also requested authorization to sell the LNG to its customer

and affiliate, Southern California Gas Company (SoCal).

Subsequent to the above-described filings, several events occurred which led to amendments to the foregoing applications and the filing of new or supplemental applications with the Federal Power Commission (FPC). The Indonesian government would not approve the Pertamina Contract because it believed that the contract pricing formula which contained a fixed escalator2/ did not reflect world energy prices. Thereafter, Pertamina and Pac Indonesia's predecessor (Pacific Lighting International) agreed upon a base price of $1.25 per MMBtu with escalation linked to a combination of increases in the price of Indonesian crude oil and the Wholesale Price Index for Fuels and Related Products, and Power, as compiled by the U.S. Department of Labor, Bureau of Labor Statistics (BLS index). (Exhibit No. 3, Amendment of January 9, 1975).

On September 17, 1975, Western LNG Terminal Company (Western Terminal) filed an application (Docket No. CP75-83) pursuant to Section 7 of the Natural Gas Act to construct, own and operate facilities at Los Angeles Harbor, Oxnard, and Point Conception, California, to receive, store and regasify LNG and deliver the resulting volumes to appropriate customers. Western Terminal filed a supplemental application on March 31, 1975 (Docket No 75-83-3), to construct, own and operate the necessary facilities at Oxnard, California, to provide the terminal service to Pac Indonesia. On March 31, 1975, Pac Indonesia filed an amendment (Docket No. CP-74-207) to delete its proposal to construct the LNG terminal facilities.

On October 28, 1975, a second amendment to the Pertamina Contract was executed (Exhibit No. 79), whereby a minimum pricing provision was included in the contract. The purpose of this provision is to insure recovery by Pertamina of sufficient revenues to cover amortization of the debt which would be incurred to finance the facilities in Indonesia, plus interest, and payment of projected costs of operation and maintenance of facilities during the debt amortization period.

On January 27, 1976, a Memorandum of Understanding (Exhibit No. 123) was executed between Pacific Lighting Corporation (PLC) and Pacific Gas and Electric Company (PG&E) under which the management and operations of Pac Indonesia and Terminal Associates3/ will be shared by PLC and PG&E and the sales volumes of Pac Indonesia will be divided equally between SoCal and PG&E. These revisions were filed as amendments to the applications filed on May 17, 1976, and December 17, 1976. Under the partnership agreement (Exhibit No. 172) the terminal facilities will be owned and operated by Terminal Associates, rather than by Western Terminal.

A number of other amendments have been filed to reflect the arrangements under which a total of nine LNG ships will be provided by five

shipping companies. This is a departure from the original applications wherein it was contemplated that Pacific Lighting Marine Company, a PLC subsidiary, would provide ten ships to transport the LNG.

Finally, on November 11, 1977, Western Terminal LNG Associates filed an amendment to its application proposing an LNG site at Point Conception, on the coast of California, west of Santa Barbara.

The Applicants, when referred to herein, are Pac Indonesia and Terminal Associates. In their initial brief (p. 6), they have summarized the pending applications as follows:

> "1. Docket No. CP74-160, filed under Section 3 of the Natural Gas Act, in which Pac Indonesia requests authority to import natural gas from the Republic of Indonesia.
>
> "2. Docket No. CP74-207, filed under Section 7(c) of the Natural Gas Act, in which Pac Indonesia requests authority to make sales of natural gas to PG&E and SoCal.
>
> "3. Docket No. CP75-833, in which Terminal Associates seeks authority pursuant to Section 7(c) of the Natural Gas Act, to construct, own and operate facilities at Oxnard, California which are necessary to receive, store, and regasify the volumes of LNG to be imported by Pac Indonesia; and to deliver the resultant sales volumes, for Pac Indonesia's account, to SoCal and PG&E."

On December 3, 1975, the FPC issued an order setting the proceeding in these consolidated dockets for hearing and stated that the relevant issues include

> "reliability of service of the foreign supply, the dependence of the distributor on foreign LNG to meet residential and commercial markets, environmental impact of any proposed facilities, the proper method of pricing LNG supply, shipping costs, overall economic feasibility of the project, end-use allocation 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. . ."

In its April 2, 1976, order, the FPC set forth guidelines for evaluating shipping costs and arrangements in this proceeding. On May 16, 1976, the FPC granted its Staff's motion for a joint hearing on the siting and economic and safety factors involved in three separate unconsolidated proceedings pertaining to West Coast regasification terminals at Point Conception (El Paso Alaska, et al., CP75-96, et al.); Los Angeles Harbor (Pacific Alaska LNG

Company, et al., CP75-140, et al.); and Oxnard (Pac Indonesia, et al., CP74-160, et al.) Pursuant to this order, a joint hearing was held before Judge Litt and that record is a part of the record in the instant consolidated proceeding. The FPC denied motions by the California Public Utilities Commission (PUC) and the County of Santa Barbara for local hearings in California on siting, environmental, safety and economic issues in the three above-mentioned LNG proceedings. On April 1 and June 17, 1977, the FPC denied Applicants' motions for omission of the initial decision.

Hearings began on December 16, 1975, and were concluded on February 25, 1977. Judge Samuel A. Gordon issued an Initial Decision on July 22, 1977, in which, subject to conditions, he approved the applications, as amended, of Pac Indonesia and Terminal Associates for: (a) an order under Section 3 of the Natural Gas Act authorizing importation into the United States by Pac Indonesia of liquefied natural gas from Indonesia over a 20-year period; (b) an order authorizing Terminal Associates to construct, own and operate a marine terminal and regasification facilities at Oxnard, California, to receive, store, and regasify the volumes of LNG to be imported by Pac Indonesia, and to construct, own and operate a 42-inch pipeline from the Oxnard facility to the pressure limiting station of SoCal at La Vista, California; and (c) an order authorizing Pac Indonesia to sell the gas to SoCal and PG&E, at La Vista, pursuant to Section 3 of the Natural Gas Act. (I.D. at 142). All briefs on exceptions and opposing exceptions were filed with the Federal Power Commission by September 16, 1977.

On October 1, 1977, the Department of Energy (DOE) was activated pursuant to Executive Order No. 12009, September 13, 1977 (42 F.R. 46267) and the function to approve natural gas importation under Section 3 of the Natural Gas Act was automatically transferred and vested in the Secretary of Energy pursuant to Sections 301 and 402(f) of the Department of Energy Organization Act (Pub L. 95-91) (the Act). The Secretary immediately delegated to the Federal Energy Regulatory Commission (FERC, or the Commission) the authority to carry out this function with respect to pending cases assigned to the FERC by rule (DOE Delegation Order No. 0204-1, paragraph 11, October 1, 1977). By a DOE Final Rule issued October 1, 1977, entitled "Transfer of Proceedings to the Secretary of Energy and the Federal Energy Regulatory Commission," this proceeding continued under FERC jurisdiction until the forwarding of the record to the Secretary. On October 5, 1977, the record was forwarded in compliance with the Final Rule. Pursuant to paragraph 6 of DOE Delegation Order No. 0204-4, issued October 1, 1977, the Secretary has delegated the authority to issue a final order in this proceeding to the Administrator of the Economic Regulatory Administration (ERA).

On October 6, 1977, the Acting Administrator issued a notice of "Oral Argument and an Intent to Act on Proposal to Import Liquefied Natural Gas into the United States from Indonesia." Oral argument was held on October 20, 1977,

in Los Angeles, California.5/

B. Description of Project

The project will originate in north Sumatra, Indonesia, from the Arun gas field. The gas will be then transported to liquefaction facilities on the coast. Mobil Oil Indonesia, Inc. (Mobil) will develop and produce the gas field under a production sharing agreement with Pertamina. Although the liquefaction facilities will be owned by Pertamina, they will be operated by a partnership of Mobil and Pertamina--P.T. Arrun. Approximately $700 million of capital costs are attributed to the facilities necessary to fulfill the contract with Pac Indonesia. This figure is dependent upon construction timing and excludes the costs of capital invested prior to plant operation.

The sale and purchase under the Pertamina Contract does not become effective until approved by appropriate governmental agencies and authorities in both the United States and Indonesia (Exhibit No. 3, Article 19).

The base price for the LNG is $1.25 MMBtu. One-half of this price is proposed to be modified on the basis of changes in the Indonesia crude oil price from a base price of $11.00; the other half is escalated on the basis of changes in the BLS Index from a base of 230.0. Although Indonesian authorities approved the Pertamina Contract with this formula on March 18, 1975, the contract was again amended on October 28, 1975, to include a minimum pricing provision. This provision establishes a minimum bill designed to cover: (1) Pertamina's costs of amortizing the debt, plus interest thereon, which have been incurred to finance the facilities which Pertamina must build under the contract, and (2) the projected costs of operation and maintenance of such facilities during the debt amortization period; therefore, the sales price during the amortization period will be the higher of the minimum bill or the formula price.

If Pertamina cannot deliver the full contract quantities and this failure to deliver is not excused, the price at which those quantities will be "made up" is the price in effect at the time they should have been delivered less a 10 percent penalty. If Pac Indonesia fails to take at least 95 percent of the contract amount for any quarter of a year and this failure is not excused, Pertamina has the right to receive payments for those amounts not taken.

The Pertamina Contract also contains a currency revaluation factor under which the sales price is adjusted as the value of the U.S. dollar changes in relation to eleven other countries. However, these currency changes will never reduce the original price nor will they increase the price more than 25 percent above the applicable price in any given year.

After liquefaction, the LNG will be loaded aboard ships for transport to the United States. Under the Pertamina Contract, Pac Indonesia is responsible for the LNG ships. Currently, Pac Indonesia has contracted for three vessels from France and six from the United States. The ships will meet all United States Coast Guard and International Maritime Consultative Organization rules and regulations. Each of the ships will hold the equivalent of approximately 2.8 Bcf of natural gas and will be fitted with either five or six cargo tanks contained within a double hull structure. The proposed operating schedule is 345 days per year, with the remaining 20 days for dry docking and repairs.

The main feature of the time charters and transportation agreements for all nine ships is the provision which absolves Pac Indonesia from payment during any period when the ship is prevented from operating through no fault of Pac Indonesia; that is, risks such as collision, fire, and stranding are all borne by the shipowners rather than Pac Indonesia. The time charters also include currency adjustment provisions and escalator provisions for ship operation and maintenance expenses.

Facilities for the receipt, storage, regasification, and delivery of the LNG which are proposed (in Terminal Associates' initial application) to be constructed at Oxnard, California, are to be owned and operated by Western LNG Terminal Associates. This plant will be a base load plant with an average daily vaporization rate of 550 MMcf and an additional peaking capability of 450 MMcf per day. There will be five main parts to the system: the ship berthing facility, the unloading system, the LNG transfer system, the storage tanks, and the vaporization facility. The terminal will be located approximately 2 miles southeast of the Port Hueneme Harbor entrance adjacent to Ormond Beach in Oxnard. The LNG transfer system which will carry the LNG from the ships to the storage tanks will consist of a 42-inch diameter insulated cryogenic line and an 18-inch vapor return line. There will be two tanks, each with a capacity of 550,000 barrels. Each tank will be surrounded by a concrete dike approximately 260 feet in diameter and 81 feet high and will be designed to withstand instantaneous wind gusts of up to 104 m.p.h. anticipated for a 100 year recurrence interval level, and earthquakes of 7.5 on the Richter scale with horizontal acceleration of 0.32 gravity (g) and vertical acceleration of 0.219 g. The amortized cost of the terminal is an estimated 27 cents per MMBtu during the first full year of service (58.6 million dollars annually) (Exhibit No. 44 at 3).

From the receiving terminal, the gas will be moved to the distribution terminal through a 42-inch diameter, 12.2 mile pipeline ending at the La Vista pressure limiting station of SoCal. Then, the gas will be sold to SoCal and PG&E in equal quantities. The estimated cost of gas delivered at La Vista is $3.27 per MMBtu during the first year of service. This cost is expected to decline to $2.92 per MMBtu after the project has reached full volumes. This lower price is contingent upon an LNG price of $1.25 per MMBtu and a cost of

$155 million for each of the U.S. ships. Applicants estimate that a one-year delay in the start-up date beyond September 1979 will increase Pac Indonesia's cost of service, per MMBtu, by 26 cents, 17 cents and 14 cents in the first, second, and third years, respectively (Exhibit No. 165).

C. Initial Decision

The Applicants applied for import authorization under Section 3 and certificates of public convenience and necessity under Section 7 of the Natural Gas Act. The Law Judge concluded that the Commission clearly had jurisdiction under Section 3 regarding the importation of the LNG; however, he also concluded that

> "since Applicants will not be transporting the subject gas in interstate commerce or selling the gas in interstate commerce for resale, . . . neither Applicant will be a `natural-gas company' as that term is defined in Section 2(6) of the Act. And contrary to Pac Indonesia's application in Docket No. CP74-207 and Terminal Associates' application in Docket No. CP75-83-3, the Commission lacks jurisdiction under Section 7 of the Act . . ." (I.D. at 27).

However, Judge Gordon went on to state that the lack of jurisdiction under Section 7 of the Act did not prohibit the Commission from exercising "Section 7 type" jurisdiction in this proceeding. Citing from Distrigas Corporation v. Federal Power Commission, 495 F.2d 1057 (D.C. Cir. 1975), the Law Judge concluded that under Section 3 the Commission may impose Section 7 type requirements when "it affirmatively finds that applying such requirements to imports is `necessary or appropriate' to the public interest." (Distrigas Corporation, supra, at p. 1066). Based on these conclusions, the Law Judge placed certain conditions on the Section 3 import applications which are discussed, infra.

Next, the Law Judge found that the record demonstrated that Indonesia has ample gas reserves to meet its twenty-year contractual commitments to Pac Indonesia. Furthermore, Judge Gordon concluded that apart from Indonesia's "good political and economic relationships with the United States, Indonesia's own self interests indicated that it is a reliable and dependable source for LNG to be sold to Pac Indonesia under the Pertamina contract" (I.D. at 35). The Law Judge also noted that the Department of State, Department of Defense and U.S. Maritime Administration have no objection to the import application.

Regarding the engineering, technical and management dependability, the Law Judge found that Pertamina will be able to meet all of the requirements necessary to satisfy its contractual obligations. As to reliability of the shipping, the initial decision concluded that the transportation of LNG to the United States as projected in the shipping program was reliable.

Based on evidence presented by SoCal, PG&E and CPUC, the Law Judge concluded that there is a need for this gas. He stated that "the degree of projected curtailment in future years on a system-wide basis for each of these companies leaves little doubt that there is a need for substantial additional supplies of gas in the California market which the Pac Indonesia project could mitigate." (I.D. at 52).

With regard to the final pricing of the LNG, the Law Judge included an extensive and thorough discussion of the Pertamina contract as it pertains to the sales price and minimum bill; the shipping charges; and the costs of the stateside terminal, the La Vista pipeline, and various miscellaneous costs. Based upon this discussion, he concluded that the estimated cost of delivery of $3.59 per MMBtu "is within the zone of reasonableness, is consistent with the public interest, and is in the public convenience and necessity, such that the requirements of Section 3 of the Natural Gas Act are satisfied." The specific conditions which Judge Gordon attached to any rate increases are discussed more fully infra.

Next, Judge Gordon discussed in detail the financing of the project. The estimated total capital cost of the LNG project is approximately $2 billion (about $700 million for the Indonesian-based facilities; $1 billion for the nine LNG vessels; and $244 million for the stateside facilities). Applicants are responsible for obtaining financing for the stateside facilities; Pertamina for the Indonesian-based facilities; and the shipowners for the LNG vessels. The financing arrangements are set out clearly and concisely in the Initial Decision (I.D. at 98-103). The Law Judge required all parties to submit detailed arrangements for each aspect of the above-described financing.

The final part of the Initial Decision involves siting, safety and environmental issues for the stateside facilities. Applicants proposed Oxnard, California, as the site of the marine terminal and regasification facilities. The Law Judge approved the Oxnard site subject to the following condition:

> "The authorization granted herein shall not take effect as to any facility, or operation of any part of any facility, until all necessary federal, state and local authorizations as to that part of the facility, or operation thereof, have been secured. A copy of each such authorization for each facility, or part thereof, shall be submitted to the Commission prior to commencement of service of such facility or part thereof. Such authorizations shall include, but are not limited to, building permits, Coast Guard clearances of vessels and harbor operations, and statements of compliance with applicable industry codes or regulatory codes governing the design, construction and operation of facilities in a safe manner." (I.D., Ordering Paragraph P, at 151-152).

The Law Judge concluded that the proposed stateside LNG facilities are

designed to maximize the safety of the project and minimize the adverse environmental impacts of the project. (I.D. at 108-130). Based upon the safety standards proposed for the LNG project, the risks associated with the design, construction, and operation of the Oxnard facility, are, in Judge Gordon's words, "sufficiently low that they do not render the instant project inconsistent with the public interest or contrary to the public convenience and necessity." (I.D. at 119). As to the environmental consequences of the project, the Presiding Judge concluded that although there will be some adverse environmental effects, "many of these will be temporary" and "will be of a relatively minor nature. In any event, the detrimental effects will be clearly outweighed in the public interest by the numerous public benefits which will be conferred by this project . , ." (I.D. at 130).

D. Discussion

This is the first LNG import case pursuant to Section 3 of the Natural Gas Act to be decided by the Department of Energy (DOE). It is a transitional case since DOE has inherited the record from the Federal Power Commission (FPC). While the FPA's record is quite extensive and deals thoroughly with many of the complicated issues involved in the import proceeding, it does not address other issues of national energy policy which DOE believes it should consider when deciding to approve or disapprove the importation of LNG. Moreover, the record contains no substantial evidence with respect to the Point Conception site proposed in Terminal Associates' amended application.

On December 12, 1977, the DOE published a Notice of Inquiry concerning the various issues of national energy policy which are involved in the importation of LNG and which were addressed in the National Energy Plan, published by the Executive Office of the President on April 29, 1977. The Department, together with the several agencies which have regulatory authority over LNG facilities, intends to establish guidelines which will form the basis for specific regulations or standards that DOE will subsequently apply in ruling on future applications for LNG imports.

Notwithstanding the ongoing development of broad LNG policy, it is appropriate that DOE's decision be issued expeditiously in this proceeding. Although some of the issues which will be addressed in the Department's hearings on LNG policy have not been fully examined in the record before us, the evidence in this proceeding is sufficient to reach a decision consistent with the general policies outlined in the President's National Energy Plan.

Doe has therefore decided to approve this application, subject to certain conditions which will be discussed infra.

1. Jurisdiction

As noted above, the Administrative Law Judge found that the Commission had jurisdiction to approve the application for authority to import under Section 3 of the Natural Gas Act, and that while the Commission lacked Section 7 jurisdiction, it was not precluded from including "Section 7 type" requirements as conditions to its approval under Section 3. Inasmuch as the Commission's Section 3 authority in this proceeding has been transferred to ERA, pursuant to the DOE Act and the delegations of authority described supra, any authority to exercise Section 7 type authority with respect to this proceeding has also been transferred to ERA.

We concur in all respects in the Law Judge's conclusions with respect to jurisdiction. Accordingly, all authorizations contained herein shall be issued pursuant to DOE's authority under Section 3 of the Natural Gas Act, and shall be subject to such terms and conditions as we find to be in the public interest.

2. Reliability of the Foreign Country

The Law Judge concluded that Indonesia was a reliable country from which to import natural gas. He based this conclusion on the fact that Indonesia's political and economic relations with the United States were good. In addition, Indonesia has sufficient gas reserves to meet the requirements of the twenty-year contact. The record in this proceeding contains substantial and uncontroverted evidence supporting these conclusions. Therefore, the findings of the Law Judge in this respect will be affirmed and adopted.

3. Need for the Imported LNG

Based upon the record in this proceeding, it is clear that there is a need for additional sources of supply for California markets. Projected curtailments for SoCal and PG&E in future years support this conclusion. The Law Judge concluded that it would be "over optimistic" to assume that all of the various other projects (Pac Alaska, Wesco, Prudhoe Bay and Pacific Interstate) which are being planned to provide gas for California's future requirements will come on line as scheduled, or that they will be sufficient to meet requirements. The DOE concurs in this finding, and concludes, for the reasons set forth fully in the Initial Decision, that there is a need for the imported LNG.

4. Rate Issues

a. Indonesian Production Phase (Base Price, Indonesian Oil Index and BLS Index Rate Escalation Provisions)

The Law Judge found that the base price of $1.25 MMBtu contained in the Pertamina contract is a just and reasonable price. However, the base price is

only one element of the total contract package; in our view, a more relevant consideration is whether the total landed and regasified cost of this gas is reasonable compared to the delivered cost of other substitute fuels.

It is clear that the initial landed and regasified cost approved by the Law Judge ($3.59/MMBtu) would be in excess of current prices for equivalent volumes of middle distillates sold in California.6/ However, it is not clear that such a comparison would be a valid one. Given California's persistent air quality problems, clean-burning methane gas has a unique commodity value in California that is not reflected in strict comparisons of Btu equivalency. In part because of these air quality problems, the residential, rural and commercial sectors of the California economy are heavily reliant upon natural gas, and the infrastructure presently exists to deliver it to many California homes and business establishments. Thus, a more valid comparison would be between the delivered cost of Indonesian LNG and other large incremental supplies of natural gas, such as synthetic natural gas (SNG) produced from naphtha imports. In this connection we note that the price of SNG produced in new plants for which DOE has approved feed stock allocations ranges from $4.50-$5.50/MMBtu. On this basis, a landed and regasified price of $3.59/MMBtu would not appear to be excessive.

The $3.59 rate approved in the Initial Decision, however includes an element which is based upon the contract price escalation provisions, which raise a separate question. The Presiding Judge approved the provision in the contract that permits Pac Indonesia to flow through escalations in the base contract price of the LNG due to changes in the current market price of Indonesian crude oil (50 percent of any increase in the base price) and changes in the BLS index (the other 50 percent). The Judge also permitted Pac Indonesia to flow through changes pursuant to the contract currency adjustment provisions. However, Pac Indonesia was required to file notice of such rate changes with the Commission 30 days prior to the proposed effective date, along with calculations showing that the changes are contractually justified and properly calculated. The Judge cited Trunkline LNG, Opinion No. 796-A, as support for his decision, where the FPC approved flow-through of costs triggered by an escalator based upon the cost of No. 2 and No. 6 fuel oil landed in New York harbor.

The FPC Staff opposes the automatic flow-through of costs tied to the price of Indonesian crude oil because the rate thus established is not cost based. The staff admits that the Judge's approval of the escalator is consistent with the FPC approval of a similar escalator in Trunkline LNG, Opinion No. 796-A, but request that the DOE reconsider the FPC's action in Trunkline, insofar as the precedent established in that case would be applicable to the instant case.

Pertamina, Tennessee Gas, Mobil, Indonesia and Pac Indonesia all support

the Law Judge's decision and oppose the FPC Staff's proposed modification and alternatives to the Judge's decision as unsound and unsupported by record evidence. They note that the escalator is clear and definable, as required by Opinion No. 796-A, and involves costs (i.e., Indonesia crude oil prices) over which the DOE has no control. Furthermore, they argue that if the flow-through is not approved, it may jeopardize the financing of the project.

The DOE is not persuaded that the Trunkline pricing policy would necessarily serve the public interest if applied in the instant proceeding. The fact that an escalator formula is "reasonably well defined and predictable as to timing" does not, in our opinion, justify a finding that the provision is in the public interest; a judgment must be made as to whether the price increases which might result from application of the formula are reasonable, in light of the need for the gas. At the time of the Initial Decision, the operation of the escalator had already added an estimated $.17 to the base price. We estimate that another $.21 has since been added.

The DOE recognizes that escalation provisions are a customary method for sellers of a commodity to insure that the price they receive over the life of a long-term contract will be a fair price. In recent years it has not been unusual for sellers of energy supplies on the international market to negotiate escalation clauses which link the contract price to future increases in the world price of petroleum.

If world petroleum prices were established through the interplay of free market forces, it would be possible to find that the operation of such clauses results in prices that are reasonable, since purchasers of the energy would be paying a price throughout the life of the contract that reflected the true value of the commodity when measured against the value of all other commodities. However, this is not the case. World petroleum prices are administered prices, established by agreement among major producing countries. We note that the price of Indonesian oil, which comprises 50 percent of the escalation formula in the Pertamina contract, is directly tied to the price established by the Organization of Petroleum Exporting Countries (OPEC), of which the Republic of Indonesia is a member. In such a climate, it is not possible to find in advance that prices for LNG, however high they might rise through the operation of an escalator linked to cartel-established petroleum prices, are in the public interest.

The BLS index, to which the other 50 percent of the escalation provision is tied, is weighted so that 57.9 percent of the index is composed of petroleum prices, about half of which now represent imported oil and are directly affected by changes in OPEC-administered prices. In addition, it is possible that the BLS index would be affected by the enactment of energy tax proposals advanced by the President and now under consideration by Congress. The proposed crude oil equalization tax would have the effect of raising

refiners' crude oil acquisition costs to world market levels. This increase would be reflected in the wholesale prices of petroleum products that are taken into account in the BLS index. To permit an escalation that could reflect these increases would confer on Pertamina a windfall that was not intended or contemplated by the parties to the agreement or by the Administrative Law Judge in his decision to approve the provision. A further objection to the use of the BLS index arises from the fact that 13.7 percent of the index is comprised of gaseous fuels, and would be influenced by the very price of the LNG in this project. While the impact of this particular project alone on the index would be small, we can not, in principle, approve the use of an index which is influenced by the price which is tied to it.

The fact that the DOE cannot control the Indonesian crude oil prices does not in our view support an argument that the flow-through of these costs should `e approved. On the contrary, it appears that the only way we can protect the public interest in this proceeding is to assert some measure of control over the price of the gas proposed to be imported by disapproving this provision.

Applicants argue that disapproval of the flow-through of these costs will jeopardize the financing of this project. Applicants and Pertamina also maintain that our failure to approve this provision will result in cancellation of the contract. The DOE is not persuaded that no contract can be concluded for sale of this gas if this particular provision is disapproved. We are not disapproving the concept of an escalator and recognize that approval of the flow-through of costs associated with an escalator may be necessary to project financing. We would, in fact, be inclined to approve such costs if they were associated with an escalator linked to an index that reflects world or U.S. economic conditions, such as the Consumer Price Index or the Gross National Product. Such an escalator might still result in prices during the life of the contract which would eventually appear to be unreasonable when compared to the price of future alternatives such as domestic coal gasification (which presumably would be priced on the basis of a large fixed cost component which would not increase over time and a smaller operating cost component which would be subject to inflation). However, we must recognize the Applicants' need for certainty with respect to future recovery of costs over which they have no control, and accept the concept that flow-through of costs incurred through the operation of a reasonable escalation provision should be permitted to ensure that the project may go forward. We will therefore disapprove the Applicants' request to automatically flow-through the increased costs associated with this escalation provision with leave to refile, based upon a renegotiated escalator.

The currency revaluation factor contained in the sales contract establishes as an initial monetary value the average of the commercial exchange rates of eleven industrialized countries' currencies with the U.S.

dollar, as of the date of first delivery. Thereafter, whenever the dollar loses one-tenth of one percent (or more) of its initial value, the contract sales prices is adjusted upwards to maintain the international value of the proceeds to the seller; a limit of 25 percent depreciation per calendar quarter is established. In the event of an appreciation of the dollar versus the other eleven currencies, however, the dollar payments are not adjusted downwards; by the contract terms, dollar payments cannot fall below the initial monetary value on the date of first delivery.

The DOE neither objects to nor requires a currency fluctuation clause per se. However, these provisions do not afford equitable distribution of currency fluctuation risk between buyer and seller. If applicants wish to cover the risk of fluctuations in the international value of the dollar, these provisions should spread the risk fairly and symmetrically between buyer and seller. We will therefore disapprove the automatic flow-through of costs associated with this provision, with leave to refile.

b. Requirement That Financing Plans be Filed with DOE

The Presiding Judge required, as a condition to the approval granted herein, that applicants file a financing plan for FPC approval, covering the capital costs of the Indonesian-based facilities involved in this project. The Judge based his decision on recent financial problems experienced by Pertamina (I.D. pp. 99-101) and the fact that the financing used by Pertamina will directly affect United States consumers since the cost is flowed through to them.

Pertamina opposes the Judge's condition as unnecessary and inappropriate because the evidence clearly indicates that financing will be available for the Indonesian-based facilities. In any event, Pertamina argues that the Indonesian-based facilities are a necessary part of the project and that the entire project will fail if the Pertamina facilities are not constructed due to lack of financing. The FPC Staff and the California Public Utilities Commission support the Presiding Judge's decision based upon evidence of Pertamina's past financial problems.

The financing plans should be filed in order to keep the DOE informed of the progress and the continuing viability of the project. However, the DOE is not persuaded that approval of the plans is necessary in view of the continuing authority to review changes in the initial rate. Accordingly, the DOE shall require the financing plans to be filed as provided by the Judge without the requirement that such plans be specifically approved. However, as discussed above, any change in the initial rate occasioned by increases in the financing arrangements will be subject to review when and if Pac Indonesia files for a change in the initial rate.

c. Shipping Costs

Pac Indonesia has contracted with five shippers to provide a total of nine vessels to transport the LNG from Indonesia to the U.S. Each contract is for a period of 20 years. Three foreign owners, Gazocean S.A. (Gazocean), Zodiac Shipping Company N.V. (Zodiac) and Odyssey Trading Company Limited (Odyssey), will provide one ship each. Construction of these vessels either has been completed or is nearly finished. Two U.S. shippers, Ogden Marine Indonesia, Inc. (Ogden) and Zapata Western LNG, Inc. (Zapata), will construct and provide three ships each.

The Presiding Judge (I.D. at 70-80) found that a shipping cost component of $1.23 per MMBtu was reasonable for inclusion in Pac Indonesia's initial certificate rate. He based the rate on, among other things, a cost per ship of $155 million as opposed to the contract cost of $140 million per ship. The cost component also reflects estimates in the record of reasonably projected operating costs. To the extent that the shipping cost component of Pac Indonesia's initial certificate rate is higher than $1.23 per MMBtu, due to provisions of the charter hire contracts other than the currency adjuster provisions, the Judge permitted Pac Indonesia to apply for an increase in the shipping cost component but would require justification under a "prudent cost incurrence" test in a Section 4-type proceeding. His action was similar to that taken in Opinion Nos. 796 and 796-A.

The FPC staff suggests a further review of the construction costs at the time all of the ship construction is completed. Pac Indonesia and certain of the shippers oppose such a condition, arguing that such a second review of the costs would jeopardize the financing of the project. In fact, the shippers argue that any increases in ship construction or operation and maintenance costs should be automatically flowed through to Pac Indonesia's customers without the necessity of a Section 4 filing utilizing the "prudent cost incurrence test". They argue that such costs are calculated pursuant to specific contractual formulas based upon actual costs and therefore are similar to the oil index escalator approved in Opinion No. 796-A. The FPC Staff opposes the shippers' proposal.

The DOE shall affirm the Judge's decision and reject the modifications proposed by the FPC Staff, Pac Indonesia and the shippers. The Judge, based upon substantial evidence in the record, has established a cost component for shipping which reflects an increase above the base contract price for construction of the ships as well as a reasonable estimate of operation and maintenance expenses. Any changes in the initial rate which Pac Indonesia wishes to flow through shall be the subject of a Section 4-type filing and reviewed under the "prudent cost incurrence test". For this reason, the proposals by the FPC Staff and others to change the decision are rejected.

d. Prestartup Charter Shipping Payments

The Judge denied the request of Pac Indonesia and the Gastransco shipping group to collect, from the ultimate customers, prestartup charter shipping payments paid to Gastransco by Pac Indonesia prior to deliveries of gas. The payments may be due, to a large extent, to the delay in the startup of the project. The Judge required such costs to be capitalized and flowed through, subject to a Section 4-type filing, at such time as gas begins to flow. The Judge compared this treatment to the denial of including construction work in progress (CWIP) in the base prior to the plant going into service.

Gastransco, in its Brief on Exceptions, has agreed to capitalize these costs on the condition that the Commission now approve the automatic flow-through of any such costs in the future, when gas begins to flow. The FPC Staff supported the capitalization of such costs, but urged the DOE to retain the right to review these costs in the future.

The DOE shall require such costs to be capitalized but shall reserve the right to review these costs under the "prudent cost incurrence test" when they are proposed to be passed on to consumers. This is, in effect, what the Judge required in his Initial Decision (I.D. at 70-80). For the reasons stated in his Initial Decision, his determination on this issue shall be affirmed.

With respect to the contractual provisions of operating and maintenance costs as contained in the shipping charters, the decision of the Judge requiring a Section 4-type hearing to determine the amount and timing of the recovery of these costs is hereby affirmed.

e. Cost of Service Tariff

As noted previously, the Presiding Judge established a volumetric fixed tariff rate of $3.59 per MMBtu, subject to certain adjustments. In so doing, he rejected Pac Indonesia's request for an all-events cost-of-service tariff that would have permitted Pac Indonesia to flow through automatically all of its and Terminal Associates' cost, "including, in effect, repayment of principal and interest on debt, taxes payable, equity capital and operation and maintenance expense." (I.D. at 86) This provision would have operated even in the event of project interruption or failure. The Judge also rejected the FPC Staff's more limited cost-of-service tariff, proposed as a means of reducing the project rate of return, which included:

(1) cost-based review of costs associated with the Indonesian and shipping phases of the project; and

(2) permitting the flow-through of terminal and pipeline costs subject

to a "fixed" rate of return and of the tax, rate base and depreciation components.7/

The Judge found that a volumetric fixed tariff rate would, inter alia, provide more protection to consumers, not unduly jeopardize project financeability, and be consistent with Opinion 796 and 796-A.

Pac Indonesia and Zapata oppose the Judge's decision on this issue. They argue that the financing of the project may be endangered by the volumetric fixed tariff rate. Pac Indonesia states that it would be willing to accept a cost-of-service tariff for the costs of the terminal facilities with the "fixed" elements suggested by the FPC Staff. The FPC Staff supports the Judge's decision and urged the FPC to affirm the initial decision on the issue.

In establishing a volumetric fixed tariff rate, the Law Judge included the cost factor for the stateside facilities. The DOE affirms his decision in this matter and adopts his conclusions with regard to CWIP, the 15 percent equity return, and the management fee.8/ We recognize that substantial changes may occur in the costs which are included in the volumetric fixed tariff approved herein between the date of this decision and the completion of the project. Applicants are free to make a Section 4-type filing when such changes occur. However, the DOE is persuaded that, absent a showing that specific increases in the tariff are based upon prudently incurred costs, it cannot find that the importation of this gas is in the public interest. Finally, we are not persuaded that a volumetric fixed tariff will unduly jeopardize the financing of the project..

The Law Judge established a fixed tariff of $3.59, which included an estimated increase in the price of the Indonesian gas (as a result of the operation of the escalator clause) of $.17. As discussed supra, the DOE will not adopt the Law Judge's conclusions with respect to the escalator, and will therefore approve herein a volumetric fixed tariff of $3.42, subject to increases due to a renegotiated escalator provision that is subsequently approved by the DOE and the operation of the minimum bill provision discussed infra.9/

f. Minimum Bill

The Presiding Judge adopted the following minimum bill provision for Pac Indonesia's and for Western LNG's tariffs (I.D. at 88):

In the event that Seller is unable to deliver 100 percent of the gas contracted for by Buyer during a monthly billing period, Buyer shall reimburse Seller not only for volumes delivered, but also for contract volumes not delivered such that Seller will recover on the nondelivered volumes an apportioned share of Seller's nonequity-related fixed expenses incurred during

such period, limited to the following:

(a) Operating and maintenance expenses;

(b) Taxes payable;

(c) Interest expense based on that portion of Seller's then existing debt which was incurred for the construction of the LNG and related facilities;

(d) The requirements for repayment of such debt;

(e) Amounts, if any Seller shall be obligated to pay for LNG supplies, for ocean transportation and for terminating charges under the LNG supply, shipping and terminalling contracts;

(f) All return of and return on equity in the event Seller has delivered at 90 percent of the contractual volumes calculated on a monthly basis;

(g) On an annual basis, the minimum bill shall be recomputed according to the above formula and an appropriate refund made, or surcharge collected, as appropriate.

Provided, however, that Buyer's obligation to pay for nondelivered amounts shall not extend beyond the time at which Seller, if it is the party claiming force majeure, could have remedied the cause in an adequate manner with all reasonable dispatch in order to resume deliveries to Buyer.

For Terminal Associates, the minimum bill provision shall be the same as that for Pac Indonesia, amended (1) to reflect Terminal Associates' service rather than sales function, and (2) to delete item (e) above.

Judge Gordon explained the operation of the minimum bill as follows (I.D. at 89):

> "These minimum bill provisions mean that while Pac Indonesia and Terminal Associates, during an interruption period of reduced (less than 90%) delivery or total nondelivery, may not recover a return on or of equity on that portion of contract volumes not delivered, still Pac Indonesia can recoup from its customers the LNG, shipping and terminalling charges (less Terminal Associates return on and of equity), plus its own nonequity related costs. Thus, while Pac Indonesia and Terminal Associates would suffer such loss of and on equity during periods of service interruption, the minimum bill would operate to ensure that the distributors (and ultimately their consumers) would have to pay all the other costs of the project.

"To remove any possible element of ambiguity in the Pac Indonesia minimum bill provision [items (a) and (e) supra], it is construed herein as permitting recovery by Pac Indonesia of those shipping and terminalling charges which are reflected in the effective rates of Pac Indonesia and Terminal Associates, viz., either those rates initially approved or those changed rates made effective pursuant to the standards of Section 4 and 5 of the Act. Otherwise, the absurd situation might arise where Pac Indonesia and Terminal Associates could recover a higher price during periods of impaired delivery than for full delivery of gas."

Pac Indonesia challenges the Judge's minimum bill as "unacceptable" because it is not justified by record evidence. Pac Indonesia requests that it be modified to permit recovery of all return of and return on common equity in the event that the interruption is not Pac Indonesia's fault. In the alternative, Pac Indonesia requests that, if the Judge's minimum bill is adopted, Pac Indonesia have the right to recover any return of and return on common equity lost during a period of interruption in a subsequent Section 4-type rate filing (presumably through a temporary rate surcharge). Staff and the California Commission support the Judge's minimum bill provision and urge that it be adopted.

For the reasons contained in the Judge's Initial Decision, we shall adopt the Judge's minimum bill provisions for inclusion in Pac Indonesia's and Terminal Associates' tariffs, respectively, with the exception that amounts Pac Indonesia is obligated to pay for LNG supplies through the operation of the Pertamina contract escalator and currency adjustment clauses shall not be included. The Judge's minimum bill provisions are similar to those approved in Trunkline and represent an appropriate sharing of the risks of temporary interruption between applicants and the ultimate consumers of the gas. While Pac Indonesia is not foreclosed from initiating a Section 4-type filing requesting the recovery of lost equity as a result of delivery reduction, a showing of extraordinary circumstances will be required in order to obtain such recovery.

g. Project Failure

The minimum bill as set forth in the Initial Decision and adopted herein does not provide, in advance, for the automatic flow-through of all project costs in the event of project failure. However, it does provide for the flow-through, after project start-up, of nonequity costs in the event of the reduction or interruption of deliveries. These nonequity costs would include shipping charter costs to the extent that they are not offset by short-term hire.

In tracking the Trunkline decision, the Law Judge declined to assure at

this time the automatic recovery of any costs after the time of project failure, whether such failure results from project noncompletion or failure after project start-up. (I.D. at 90-91) The recovery of any project costs in the event of project failure would be subject to a filing by Pac Indonesia to amortize the remaining project costs over an appropriate period.

The FPC Staff and the California Commission contend that in the event of project failure, the flow-through of equity related costs should not be permitted under any circumstances. Pac Indonesia is willing to defer the determination of the equity loss issue but requests approval to flow-through at a future date nonequity costs (primarily debt costs) in the event of project failure. Several shippers request approval of an automatic flow-through of their termination costs in the event of project failure. Tennessee Gas argues for approval of automatic flow-through of all termination costs in the event of project failure. All of the parties arguing for approval of flow-through of costs related to project failure argue that such action is necessary in order to assure the financing of the project. Staff argues against approval of flow-through of equity costs, stating that it would be a penalty to the ultimate consumers of the gas.

With respect to cost recovery in the event of project noncompletion, the DOE affirms the Judge's decision to defer consideration of which costs to flow through subject to a filing by Pac Indonesia for the recovery of costs incurred. This is consistent with the Trunkline decision and will result in a decision which incorporates the considerations of what costs (if any) should be passed on to the consumers.

While Pac Indonesia argues reasonably that the project lenders may require protection against "the unlikely event of abandonment" (Pac Indonesia's Br. on Excep. at 9), this does not mean that this risk is more fairly borne by the consumers. Other credit worthy parties with a substantial economic interest in seeing that the project is financeable (e.g., the distributors, Mobil Oil Indonesia, Pertamina and perhaps the Republic of Indonesia itself) stand in a better position of assuring lenders during the construction phase of the project that the project will be completed. Moreover, the involvement of these parties might simultaneously serve to minimize any potential cost overruns, with a consequent savings to the consumers. Once gas flows and benefits the consumer, it is appropriate for risk bearing to then shift to the consumers.

With respect to cost recovery in the event of project failure after start-up, nonequity costs associated with the jurisdictional assets of Terminal Associates may be automatically flowed through to the consumer. If, as Applicants state, "the probability of permanent project failure after start-up is so remote that it is virtually nonexistent" (Pac Indonesia's Br. on Excep. at 9), the requirement of a filing by Pac Indonesia to recover all

other costs at the time of this remotely possible event will not unnecessarily jeopardize project financeability. Moreover, the same credit worthy parties have an interest in assuring that the project is financeable. We therefore will require a "Section 4-type" filing for approval of these costs in the event of project failure.

h. Incremental Pricing

Incremental pricing of high cost supplemental gas supplies has been a subject of considerable controversy for a number of years. Advocates of incremental pricing argue that gas consumers should be made aware of the high cost of marginal supplies, so that they might make a reasoned economic choice among alternatives, including increased use of gas, use of an alternate fuel, or increased conservation. In addition, it is argued that "rolled in" pricing of imported gas, or of synthetic gas made from imported feed stocks, subsidizes foreign producers which are able to sell their high-priced products because the impact of the high price is "cushioned" by being rolled in with the lower, government-controlled price of domestic gas. The effect is to discourage development of more exotic domestic energy sources such as coal gasification, solar energy, and the like, which presently are more costly incrementally than imports, and which will not be competitive as long as the prices of these imports continue to be rolled in.

Opponents of incremental pricing point out that there are technical and legal problems with the concept. State regulatory commissions, which control the price charged by gas distribution companies, are generally reluctant unilaterally to adopt rate structures which would require incremental pricing, because of the competitive impact on gas-reliant industries in their states, not to mention the potential impact on residential customers. Even more troublesome are the problems of financing a long term project when incremental pricing is required. Although LNG projects are typically organized primarily in an effort to meet high priority requirements which are anticipated to develop several years after the project begins operation, the imposition of an incremental pricing requirement might mean that there will be little demand for the gas until that future, inelastic, high priority requirement develops. Arranging financing when cost recovery depends on such uncertainties could be difficult if not impossible.

In general, the DOE supports the concept of incremental pricing, while recognizing that there are genuine difficulties in implementing that concept. Incremental pricing is one of the issues that will be addressed in the development of the DOE's overall LNG policy. In the meantime, the DOE will closely scrutinize pending projects to determine the extent to which an incremental pricing requirement will serve the public interest in each case.

In the instant proceeding, the purchasers of the gas, as noted by Judge

Gordon, are not interstate transmission companies which could roll in the price of this gas at the wholesale level, but distribution companies (SoCal and PG & E) which serve ultimate consumers. These companies and their customers will bear the full cost of the imported LNG, and in this sense, the gas will be incrementally priced at the wholesale level.

The Administrative Law Judge declined to impose an incremental pricing requirement at the retail level as a condition to the import, because there was no record evidence to support such a condition and because such a condition would be inconsistent with previous FPC decisions. We are not necessarily bound by FPC precedent in this proceeding and would not therefore hesitate to impose such a condition if it were in the public interest. We note, however, that the state of California is one of the few states which has adopted an inverted rate structure which takes a partial step toward placing the burden of paying for incremental supplies on those customers which will benefit from them. Two recent CPUC rate decisions--PG & E Decision 87585 and SoCal Decision 87587 (both dated August 12, 1977) established rates for residential customers which increase from a low "lifeline" rate with increased usage. A uniform rate for small commercial and industrial customers (Priorities 1 & 2) was established at the same level as the highest residential rate. Rates for large industrial customers (Priorities 3, 4 and 5) were established at levels closer to the cost of alternative fuels.

This retail price structure accomplishes many of the purposes which the DOE would seek to accomplish through an incremental pricing policy. Thus, we find that this structure is designed to minimize the attractiveness of increased gas consumption, and hence will serve to minimize California's reliance on imports. Bearing in mind the experimental aspect of incremental pricing systems and California's pioneering lead, which promises to continue, we do not find it necessary in the public interest to condition approval of this import on further changes in the retail rate structure.

5. Siting, Safety, and Environmental Issues

a. Siting of the Terminal

The application that Terminal Associates filed in Docket No. CP74-206 was for authority to construct, own and operate LNG reception, storage, and regasification facilities at Oxnard, California. Over the course of the ensuing three and a half years, the FPC conducted an extensive evidentiary inquiry focused on the proposed Oxnard facility. Parties intervened, prepared and submitted written testimony and exhibits, cross-examined witnesses and filed briefs and reply briefs--all on the premise that the LNG facility at issue was the facility that the Applicants proposed to construct and operate in Oxnard.

Judge Gordon concluded that (subject to conditions) the application to construct and operate the LNG facility at Oxnard should be approved. (I.D. at 132, 142). He based his recommendation of Oxnard on a number of considerations, including public health, safety, reliability, and environmental consequences. Pursuant to the Commission's May 19, 1976 order, a joint hearing on siting, economic and safety factors involved in three separate and unconsolidated proceedings pertaining to West Coast regasification terminals at Point Conception (El Paso Alaska, Dkt Nos. CP 75-96, et al.), Los Angeles Harbor (Pacific Alaska, Dkt Nos. CP 75-140, et al.), and Oxnard (Pacific Indonesia), was held before Administrative Law Judge Nahum Litt. As a result of the joint hearing, Judge Litt in his Initial Decision concluded that Oxnard is the "preferred location for an LNG regasification facility." (El Paso Alaska, supra, I.D. at 136). Judge Litt also concluded that, although not preferred, Point Conception is an acceptable site (I.D. at 125); that conclusion, however, cannot be relied upon herein because it is based on evidence regarding Point Conception that is not a part of the record of this proceeding. The Commission subsequently concurred in Judge Litt's conclusions regarding LNG siting. FPC, Report to the President on Alaska Natural Gas Transportation Systems, at VII-20 (May 1, 1977).

In their Brief on Exceptions, the Applicants did not except "to either the authorization for the Oxnard site or the condition requiring that all Federal, state, and local authorizations be secured." (Brief, p. 14). The Applicants did, however, request the FPC to make an additional finding regarding Point Conception as an alternate "acceptable" and "preferred" site and proposed the following language:

> "Oxnard is a proper site and, subject to state and local approvals, it is the preferred site for the construction and operation of the marine terminal and regasification facilities for this project. If Oxnard does not receive the necessary state and local authorizations, Point Conception is an acceptable and the preferred site for these facilities, subject to state and local authorizations." (Brief, p. 16).

Then, on November 11, 1977, Terminal Associates filed an amendment to its application requesting "that the necessary approvals be issued for an alternative site for Indonesian LNG volumes, said alternative being Terminal Associates' Point Conception site." At the oral argument, the Applicants urged DOE to bifurcate the proceeding and to decide all of the pending issues other than siting, severing and deferring the siting issue for a subsequent additional hearing. (Tr. 11-13). The Applicants expressed the opinion that such a bifurcated procedure would not result in cancellation of their contract by Pertamina. (Tr. 13-14).

Prior to the Judge's Initial Decision, the CPUC did not take a position

on site selection. In its Brief on Exceptions, the CPUC supported the Applicants' request that the FPC find Point Conception to be an acceptable alternate site.

Both the Applicants and the CPUC based their change of position on legislation then pending in the California legislature. That legislation--Senate Bill 1081--was subsequently enacted into law on September 16, 1977, as the Liquefied Natural Gas Terminal Act of 1977 (Terminal Act). At the oral argument on October 20, 1977, the Applicants stated that the Terminal Act would preclude the siting of an LNG facility at the proposed location in Oxnard, due to the population density remote siting criteria prescribed by the statute (Tr. 27), and no other party at the argument disputed that contention, although some of the parties disputed the validity of the statute.

Other parties to the proceeding have taken various positions on the siting issues in the motions and other pleadings that have been filed. Aside from those parties that were opposed outright to approval of one or the other sites, primarily on safety or environmental grounds, the principal issues raised can be summarized as follows:

(1) There is insufficient evidence in this record to support approval of Point Conception even as an alternate site;

(2) Consideration of Point Conception at this late stage would constitute a denial of due process to those parties that would have presented evidence at the hearing in opposition to the Point Conception site had they known it was under serious consideration;

(3) The FERC, rather than the ERA, has exclusive jurisdiction over any consideration of the Point Conception site, since it is the Applicants' intention to commingle the gas imported from Indonesia at that site with interstate gas that is proposed to be transported to the site from southern Alaska;

(4) Even if the FERC's jurisdiction is not exclusive with regard to the Point Conception application, in the interests of efficiency and consistency ERA should refer decision on the application to the FERC;

(5) If Oxnard is found to be an acceptable site, there is no need to consider the effect of the Terminal Act, since either it is automatically preempted by the Natural Gas Act or it is within the discretion of the DOE to preempt it; and

(6) If Applicant's request to defer the siting issue to a later proceeding is accepted, no issues could be decided now, since selection of the site inherently affects the cost of the facility to be constructed, thereby

affecting the cost of the natural gas ultimately delivered, which in turn has a critical bearing on the threshold question of whether any importation of the gas should be approved.

As discussed more fully below, Oxnard is conditionally approved as an acceptable site for the proposed LNG terminal. However, the DOE has determined it has the authority to take into account the procedures established in the California legislation for state consideration of an appropriate site, and we choose to exercise that authority. We also recognize the inherent right of the Applicants to file a new application for approval of any other site besides Oxnard. However, the DOE here decides every factual issue capable of resolution from the record before it, subject to the completion of the state site-selection process and further Federal proceedings if necessary.

(1) Federal Preemption and ERA/FERC Jurisdiction

An important threshold question raised by some of the parties is whether DOE's authority under Section 3 of the Natural Gas Act to approve the site of the project is exclusive and preemptive of any efforts by the state of California to establish and apply its own siting criteria. Some of the parties contend not only that DOE can preempt the state, but that in fact Congress has already done so by its enactment of the Natural Gas Act.

In Distrigas Corp. v. FPC, supra, the court held that Section 3 authority is "plenary" and "elastic":

> "Under Section 3, the Commission's authority over imports of natural gas is at once plenary and elastic . . ."
>
> * * *
>
> "It is for the Commission in the first instance to determine, after reasoned consideration and on the basis of substantial evidence, whether and in what manner to exercise its flexible Section 3 power, and this determination will in turn be subject to the normal review processes provided in the Act." (495 F.2d at 1064, 1066) (emphasis added).

Since it is clear from the Court's use of the word "elastic" that DOE is afforded a degree of latitude in asserting its jurisdiction over "Section 7 type" issues such as siting in an import case, it follows that DOE has discretion in such cases to determine whether and the extent to which a state has a legitimate interest in the siting issues and should be deferred to in whole or in part to resolve those issues.10/

In the circumstances of this case, and at least at this stage of the proceeding, California should have an opportunity to decide whether or not the

operation of an LNG facility at Oxnard is acceptable to it as a means of facilitating the import and distribution of that gas to its citizens. Thus, pursuant to the Terminal Act, as well as any other applicable California legislation (present or future), California will have the opportunity to weigh and evaluate the safety and environmental characteristics of LNG site, taking into account the projected need for gas and supply thereof. We can, of course, reconsider at a later date whether Federal jurisdiction should be exercised exclusively, in the event that the public interest then requires such a decision.

It is not necessary to determine at this time whether the FERC has exclusive jurisdiction to consider the Point Conception application or, even if it does not, whether it should be delegated that function given its parallel proceedings in the Pacific Alaska case. The DOE clearly has jurisdiction to rule conditionally on the Oxnard site. That is all that is being done here. Whether further Federal proceedings are required to consider the Point Conception or some other site for this project depends to a large extent on the success of the state selection process between now and July 31, 1978.11/

(2) Selection of Oxnard12/

As a practical matter, ERA cannot approve any site other than the Oxnard site because there is insufficient evidence in the record to justify approval of any other site--either as an "alternate" site or for any other purpose. The Applicants themselves conceded at oral argument that the evidence in the record regarding Point Conception is insufficient to support approval of that site (Tr. 30-31). The environmental impact statement for Point Conception, for instance, was filed in a different proceeding and is not part of the record herein. To incorporate that and other evidence into the record of the instant proceeding by means of post facto consolidation would raise grave questions of notice, fairness and due process.

Judge Gordon found that "Oxnard is the preferred site from combined considerations of public health, safety, reliability, and environmental aspects." (I.D. at 110). In particular, he noted that the Oxnard site is in an existing industrial area, thus minimizing the impact on the biological environment. The seawater exchange system that could be developed with the Ormand Beach Electric Generating Station would mitigate the effects of a cold water outfall plume. The connecting pipeline would not be excessively long and would follow existing pipeline rights-of-way for much of its length.

In reaching his conclusion, Judge Gordon examined in detail the evidence regarding safety, land use and geology, vegetation, wildlife, socioeconomic effects, air, noise and water quality, and archaeological and historical resources (I.D. at 108-130). He concluded that "the detrimental effects will

be clearly outweighted in the public interest by the numerous public benefits which will be conferred by this project, not the least of which is the supply of large volumes of much needed gas over a twenty-year period to high priority California gas consumers." (I.D. at 130). DOE agrees with that conclusion and adopts it herein.

(3) Need for Conditional Approval of a Site at this Time.

Postponement of any decision on siting would only serve to prolong uncertainty. A bifurcated Federal hearing on siting, combined with California's own administrative proceedings on that subject, would not necessarily result in approval of Point Conception or of any other site besides Oxnard that might be proposed. There is already substantial indication that the Point Conception site will be vigorously opposed by responsible parties on environmental grounds.

In any event, DOE's decision today approving Oxnard does not preclude anyone from pursuing an LNG project (including this one) sited at Point Conception. DOE is not disapproving any alternative site.

b. Inspection During Construction and Final Safety Analysis Report

At the hearing, the California Energy Resources Conservation and Development Commission (on behalf of the CPUC) presented evidence in support of imposition of a condition in the form of a Final Safety Analysis Report (FSAR) to be submitted and approved prior to commencement of operation of the LNG terminal in California (Exhibit No. 132; Tr. 4022-4032). The proposal was presented in rather general form, modelled somewhat on the two-step approval system customary in regulating nuclear power plants, but leaving the specific details of implementation to be worked out by the Applicants and the FPC. The cost of the proposal was estimated at $1,000,000, which cost would be borne by the Applicants. (Ex. 132, page 12).

The Applicants objected to this proposal on grounds that the Report would be redundant to other safety requirements and would therefore be unnecessary. (Exhibit No. 151; Tr. 4088-4118). On brief, the FPC staff also opposed the proposal as unnecessary. In his Initial Decision, Judge Gordon did not accept the proposal as a condition, stating that the desired objective could be achieved through less costly and burdensome procedures already incorporated in the proposed order. (I.D. at 137-139).

After careful consideration of these arguments, we conclude that it is better to run the risk of possible redundancy than to run the risk of failure to expose a potential danger that additional inspection might have exposed. The DOE will, therefore, impose as a condition of its approval, a safety inspection program modelled along the lines California proposed, with certain

modifications.

The CPUC proposed that the Applicants be required to present to the FPC within 90 days of issuance of the certificate, detailed procedures and schedules for the FSAR, with opportunity thereafter for intervenors to participate in the formulating of these procedures and schedules. That approach will be adopted. Intervenors will be required to file their comments within 45 days of the filing of the Applicants' submission, but may, if they wish, file their own proposals contemporaneously with the Applicants' filing.

The inspection and review system should encompass ongoing review of the design of the facility as well as its construction so that, to the maximum extent feasible, potential hazards that may presently be unknown can be discovered and corrected prior to completion of construction, and certainly prior to commencement of operation. There should be a mechanism whereby interested persons can bring to the attention of an inspector any knowledge they may have or acquired regarding potential hazards. The procedures should also include extensive quality control by the Applicants themselves, with effective Federal monitoring of that quality control program.

The functions of the inspector could be performed by either a governmental or a private organization. The cost should be borne by the Applicants. In the event that the inspector and the Applicants disagree as to the necessity of correcting or modifying any aspect of the design or construction of the facility, and if such disagreement can not be resolved through informal negotiation, such disagreement would then be referred to DOE for final decision. The process would culminate in the FSAR which would be submitted for the DOE's review.

Comments and suggestions are requested as to qualified governmental or private organizations who could best perform the role of inspector. The views of the FERC Staff are particularly requested, either in the form of comments on the Applicants' proposed schedules and procedures, or in the form of the Staff's own proposal (submitted contemporaneously), or both. The final format of the inspection program will be determined after the proposals and comments of the parties, as outlined above, have been received and evaluated.

The above described safety control program is, of course, in addition to all otherwise applicable local, state and federal safety requirements including, but not limited to, the U.S. Department of Transportation's regulations for the transportation of natural gas by pipeline, 49 C.F.R., Parts 191 and 192.

c. Safety Conditions

In its brief on exceptions, the FPC Staff requested certain findings

pertaining to seismic design criteria of the LNG plant components. On July 6, 1977, the Staff requested that the Dames and Moore Report of May 26, 1977 be included in evidence and copies were served on all parties in this proceeding. This Report was commissioned by Applicants and calculates that a 7.5M earthquake translates to a .38g acceleration at ground level. This report was never made a part of the record. However, "Staff has no objection to the use of this design criteria and the specified safety factors for these items as long as a .38g force `would not cause structural failure which would result in the necessity to discontinue service.' " (Staff's Br. on Excep. at 14). In Ordering Paragraph H, the Law Judge has required that this condition be met and we concur in that conclusion.

In addition, a report has been prepared for the FPC Staff by the National Bureau of Standards on seismic design for a terminal at Los Angeles Harbor. In order to analyze the sufficiency of the structural design of the tanks, concrete dikes, and components, the FPC Staff has contracted with the National Bureau of Standards to evaluate the Oxnard facilities. The Staff states that this report will be completed by February 1978.

> "(I)n order to assure that all critical components . . . are designed to withstand a .38g force, the Staff requests that in adopting . . . Ordering Paragraph (G)(8), the Commission specifically provide that this further study will be considered in evaluating the sufficiency of the final seismic design plans (i.e., whether all components are actually designed to withstand a .38g acceleration)." Staff's Br. on Excep. at 15).

No party objects to the Staff's request. After careful review of this recommendation, we find that consideration of this study in evaluating final seismic design plans is in the public interest.

Oxnard, in its brief on exceptions, alleges that there are more desirable alternatives to portions of the facilities which were not adequately presented in this proceeding. Specifically, Oxnard states that the record does not consider underground tanks or undersea facilities to transport the LNG from the ships to the storage tanks. Applicants and the FPC Staff object to Oxnard's exceptions. The allegations made by Oxnard are supported by its own Environmental Impact Report (EIR). This EIR is not a part of the record in this proceeding. However, the DOE does not believe that the concerns of a local government for the safety of its citizens should be lightly dismissed; therefore, we will require the Applicants to place storage tanks underground unless they can make a showing that their original design is more advantageous. As to undersea piping facilities, the applicants must show that placement of these transfer pipes underwater will not be more beneficial than the design for which approval is requested.

Oxnard also requested that the Commission allow local authorities to exercise final approval of the facilities. Any conditions on the final plant design must be approved by the DOE because of the effect these conditions might have on economic, environmental and safety factors. If the City of Oxnard wishes to require certain other conditions, not addressed herein, it can present those conditions to the DOE for approval, through the Final Safety Analysis Report procedures described in the preceding section.

d. Other Siting and Safety Issues

Ventura Country Concerned Citizens Committee (VCCCC) listed several objections to the approval of the Oxnard site. These objections include, among others, the alleged failure of the Initial Decision to recognize the dangers of LNG vessels; failure to take into account recent information on the LNG Vapor Cloud model; and failure to consider the Administration's position and other industrial and governmental positions regarding the location of LNG terminals.

As to the argument regarding the failure of the initial decision to analyze the risks involved in LNG shipping, the FPC Staff has pointed out studies in the record which conclude "that the hazards of marine transportation impose little risk upon the public." (Staff's Br. Opp. Excep. at 15). After reviewing those studies and the allegations of the VCCCC, we can see no reason to conclude that the risks involved in LNG transport are unacceptable. Cf. Office of Technology Assessment, Transportation of Liquefied Natural Gas, September 1977. Also, we find that the other statements of the VCCCC regarding the shipping dangers involved with LNG are based on statements which are simply not supported by the record in this proceeding.

The VCCCC also alleges that the Initial Decision improperly accepted the FPC Staff's vapor cloud modeling technique. In support of its argument opposing Staff's model and conclusion, the VCCCC cites a study for the U.S. Coast Guard conducted by Dr. Jerry A. Havens. As pointed out by the Staff, Dr. Havens has not been presented for cross-examination nor is there any evidence that Dr. Havens has either accepted or rejected Staff's model. DOE is aware that numerous vapor cloud models have been constructed by various research organizations in an effort to assess the effects of a large scale LNG spill. We note that vapor cloud modeling techniques are a subject of considerable controversy, and we are not persuaded by anything in this record to arrive at a conclusion on public risk which differs from that of the Initial Decision.

A responsible decision-maker must maintain a healthy skepticism towards all analyses which purport accurately to assess the risks or consequences of LNG accidents. While such analyses may be a useful tool in the decision-making process, they cannot be substituted for the application of judgment and

reason to the issues of safety and sitting.13/

LNG transportation and handling carries safety risks, as do many other human endeavors, including the handling of some other liquid fuels. Responsible decision-making must face up to risks and potentials for disaster in any energy or transportation technology. The decision-maker considers numerical estimates, but in the end decides qualitatively whether to exploit a given technology. Therefore the decision-maker should use all reasonable powers to minimize risks and to forestall the potential for disasters in case something goes wrong. As discussed above, DOE here imposes conditions designed to minimize both the risk and the potential consequences of a mishap.

The VCCCC further alleges that the Initial Decision failed to consider adequately the views of those opposed to LNG terminal siting except in remote areas. In this regard, we note that the National Energy Plan (NEP) included the policy statement that "[s]trict siting criteria would foreclose the construction of other LNG docks in densely populated areas." The NEP does not define the word "densely," however, and it is not clear that the proposed Oxnard site, which, to be sure, is in proximity to populated areas, would necessarily be inconsistent with the NEP statement of general policy. The question of remote siting and the extent to which such criteria should be applied remains an issue upon which Departmental policy has not been fully defined, as indicated in the DOE's December 12, 1977 Notice of Inquiry. Absent such further development of general DOE policy and based on the record before us, we accept the Law Judge's conclusion (I.D. at 113) that Oxnard is a proper site for the project.

6. Contingency Plan for Service Interruption

The Initial Decision included a requirement that one year prior to the commencement of LNG deliveries, Applicants must submit a proposed contingency plan for use during periods of LNG service interruption. The Energy Resources Council (ERC) concurs in this requirement; however, the ERC argues that instead of one year as set out in the Initial Decision, the Applicants should be required to file a contingency plan 90 days after the project is certificated. No party objects to this procedure. We find that it is in the public interest to require Applicants to file a reliable and workable contingency plan within 90 days after the project is approved.

7. Motions and Interventions

On August 22, 1977, the City of Oxnard, California, pursuant to Section 1.12 of the Commission's Rules of Practice and Procedure requested the Commission to reopen the record in order to introduce portions of Oxnard's Environmental Impact Report (EIR) and a Summary of Responses to Comments prepared by Socio-Economic Systems, Inc. (SES). Oxnard alleges in its motion

to reopen that the EIR was unavailable until recently and that approval of the project without considering this new evidence will "prejudice the fundamental rights of Oxnard and its residents . . ." (Mtn. at 2).

Commission Staff and Applicants filed responses in opposition to Oxnard's motion to reopen. Both parties state that the Commission's order issued July 29, 1977, granting Oxnard's petition to intervene out of time was conditioned on Oxnard's accepting the record as established. The FPC Staff argues that Oxnard could have introduced this material prior to the issuance of the initial decision: first, when the EIR was certified by the Oxnard Planning Commission on April 25, 1977, and next, when the EIR was certified by the City Council on June 14, 1977. Therefore, the Staff concludes that this motion is "inexcusably late." Also, the Staff asserts that denial of Oxnard's motion will not prejudice Oxnard or the public interest. The changes which Oxnard requests in its brief on exceptions are briefly mentioned on pages 196 and 233 of the EIR, and, it is the Staff's conclusion that "[n]othing can be gained by adding this material to the record."

After careful consideration of the arguments of all the parties, we conclude that Oxnard's motion must be denied. First, we agree with the Staff's statement that this motion is "inexcusably late." No reason has been given by Oxnard as to why the City waited until August 22, 1977, to include the EIR in the record when a draft EIR was released for comment in August 1976 and certified by the Oxnard Planning Commission on April 25, 1977, and by the City Council on June 14, 1977. As to the Draft Summary by SES, we note that this material is dated April 1977. All of these dates occurred prior to the issuance of the initial decision. Oxnard has not attempted to explain why it delayed in requesting this material to be included in the record. However, our decision to deny Oxnard's motion to reopen will not prejudice the City or the public interest, since we place the burden on Applicants to satisfy Oxnard's proposal unless they show good cause to the contrary. As more fully discussed above, we are requiring applicants to make a showing that the placement of storage tanks underground or the LNG transfer piping under water will not be more advantageous than the LNG facility design for which approval is requested.

On September 12, 1977, the Sierra Club, pursuant to Section 1.33 of the Commission's Rules of Practice and Procedure, filed a motion to reopen for the purpose of introducing additional evidence. It is the Sierra Club's contention that the FEIS and the Initial Decision failed to consider an offshore LNG site. The Sierra Club asserts that information on offshore siting has recently been completed. This data includes a report by Stratos Division of Fairchild Industries (Stratos) on behalf of the Applicants regarding terminals offshore California; data from General Dynamics Corporation (GD) on a floating, single moored LNG terminal; material from Global Marine Development, Inc. (Global) on proposals for offshore LNG

facilities; and information from a Los Angeles environmental planning firm on a site in Ventura County for onshore and offshore LNG facilities. The Sierra Club alleges that the above-mentioned reports only recently became available to it. However, the Sierra Club states that based on the preceding allegations, "the necessary environmental evaluation has not yet been made by Staff to enable a reasoned judgment on whether offshore siting should be adopted." (Mtn. at 2).

The FPC Staff, Applicants, and Hollister and Santa Barbara Citizens filed responses in opposition to the Sierra Club's motion to reopen. The FPC Staff notes that the Sierra Club proposes to offer the evidence on offshore siting; however, it has not attached any of the alleged evidence to its motion for examination. In opposing the motion, the Applicants state that the possibility of offshore siting was considered in the FEIS. (Exhibit No. 152, p. 248). The result of the FEIS analysis is that the project by Strator concludes that "the period to implement an offshore terminal was 63/4 to 8 years, assuming the resolution of statutory and regulatory insufficiencies." (Applicants' Response at 2).

After careful consideration of Sierra Club's motion and the responses, we conclude that this motion to reopen must be denied. It appears from Sierra Club's motion that it has had the Stratos report since June 23, 1977, and the report was issued on March 31, 1977. Both events occurred prior to the issuance of the Initial Decision, yet Sierra Club has failed to state why it delayed in filing this motion to reopen. As to the other data which Sierra Club requests be included in the record, there is nothing which indicates when this material became available to the Sierra Club or how it would substantially change the FEIS' conclusions regarding offshore siting. Sierra Club has stated no "material changes of fact or of law" which have occurred to warrant reopening the record.

On October 20, 1977, the County of Santa Barbara filed a motion to reopen the record in order to consider the Point Conception site and offshore sites. Specifically, Santa Barbara states that it is not advocating one site over another, but rather that Point Conception not be found the preferable site unless the record is reopened in order to include substantial evidence on Point Conception. On November 8 and 9, 1977, Pac Indonesia and the CPUC, respectively, filed responses in opposition to Santa Barbara's motion. On November 10, 1977, the Sierra Club filed an answer in support of the motion.

As more fully discussed above, DOE has concluded, based on the record, that Oxnard is an acceptable site and will not rule in this record on the Point Conception site. Therefore, Santa Barbara's motion is moot.

Ogden Marine Indonesia filed a motion to reopen the record on October

28, 1977, in order to permit the inclusion of an affidavit of Mr. C. G. Caras, counsel to Ogden Marine, and the Honorable Roy H. Yawell, Assistant Administrator for Maritime Aids, Department of Commerce (Maritime Administration). The FERC staff filed an answer objecting to reopening the record in order to include the additional evidence. After careful consideration of the arguments presented by all parties, it is concluded that Ogden Marine's motion to reopen the record should be denied. Mr. Roy H. Yawell was a witness in the proceeding and all parties were given an adequate opportunity to cross-examine Mr. Yawell. Ogden Marine has failed to meet the requirements of Section 1.33 which states that the petition "shall set forth the facts claimed to constitute grounds requiring reopening of the proceeding, including material changes of fact or of law alleged to have occurred since the conclusion of the hearing . . ,"

Petitions to intervene out-of-time have been filed by Hollister Ranch Owners' Associations and the Santa Barbara Citizen for Environmental Defense, Bixby Ranch Company, the County of Santa Barbara, Scenic Shoreline Preservation Conference and General Motors. The petitions for late intervention are hereby granted.

III. Order

The DOE orders:

(A) Pursuant to Section 3 of the Natural Gas Act and subject to conditions that follow, the Department of Energy approves the applications, as amended, of Pacific Indonesia LNG Company (Pac Indonesia), and Western LNG Terminal Associates (Terminal Associates) for: (a) an order under Section 3 of the Natural Gas Act authorizing importation into the United States by Pac Indonesia of liquefied natural gas from Indonesia over a 20-year period as outlined herein (Docket No. CP74-160); (b) an order authorizing Terminal Associates to construct, own and operate a marine terminal and regasification facilities at and offshore Oxnard, California, to receive, store, and regasify the volumes of LNG to be imported by PAC Indonesia, and to construct, own and operate a 42-inch pipeline from the Oxnard facility to the pressure limiting station of Southern California Gas Company (SoCal) at LaVista, California, in order to deliver the resultant gas to the distribution systems of SoCal and Pacific Gas and Electric Company (PG&E), as outlined herein (Docket No. CP75-83-3); and (c) an order authorizing Pac Indonesia to sell the resultant gas to SoCal and PG&E, at LaVista, as outlined herein (Docket No. CP74-207).

(B) Pac Indonesia and Terminal Associates (Applicants) shall be bound to all the provisions and requirements of the Natural Gas Act and the rules and regulations thereunder to the same extent as if they were "natural-gas companies" under the Act.

(C) No later than six months prior to the initiation of the sales and services authorized herein, Applicants shall submit for DOE approval tariffs, rate schedules and executed sales and service agreements covering the sales and services authorized by ordering paragraph (A), or resulting from such authorization and consistent with the terms and conditions of this decision, pursuant to the applicable provisions of 18 C.F.R., Part 154.

(D) The tariffs, rate schedules and service agreements pursuant to ordering paragraph (C) shall reflect a flat volumetric delivered rate of $3.42 per MMBtu for the regasified LNG, subject to adjustment to reflect the minimum bill provisions set forth below. Said delivered rate shall govern sales of the resultant gas by Pac Indonesia to SoCal and PG&E at their now existing pipeline systems as outlined herein. For Pac Indonesia LNG Company, the minimum bill is as follows:

In the event that Seller is unable to deliver 100 percent of the gas contracted for by Buyer during a monthly billing period, Buyer shall reimburse Seller not only for volumes delivered, but also for contract volumes not delivered, such that Seller will recover on the nondelivered volumes an apportioned share of Seller's nonequity-related fixed expenses incurred during such period, limited to the following:

(a) Operating and maintenance expenses;

(b) Taxes payable;

(c) Interest expense based on that portion of Seller's then existing debt which was incurred for the construction of the LNG and related facilities;

(d) The requirements for repayment of such debt;

(e) Amounts, if any, Seller shall be obligated to pay for LNG supplies, for ocean transportation and for terminalling charges under the LNG supply, shipping and terminalling contracts excluding contract provisions that are not approved herein;

(f) All return of and return on equity in the event Seller has delivered at least 90% of the contractual volumes calculated on a monthly basis;

(g) On an annual basis, the minimum bill shall be recomputed according to the above formula and an appropriate refund made, or surcharge collected, as appropriate.

Provided, however, that Buyer's obligation to pay for nondelivered amounts shall not extend beyond the time at which Seller, if it is the party claiming force majeure, could have remedied the cause in an adequate manner

with all reasonable dispatch in order to resume deliveries to Buyer.

For Terminal Associates, the minimum bill provision shall be the same as that for Pac Indonesia, amended (1) to reflect Terminal Associates' service rather than sales function, and (2) to delete item (e) above.

(E) Applicants will not change the initial rate or tariffs except pursuant to the procedures prescribed in Sections 4, 5 and 9 of the Natural Gas Act and 18 C.F.R. 154.63, with the exception of the changes in rates caused by the minimum bill provision discussed in ordering paragraph (D) above.

(F) Ninety days after initial sites and tariffs are approved, Applicants will submit a proposed contingency plan for use in periods of LNG service interruption which will ensure to the extent possible noncurtailable supply continuity for high priority customers of SoCal and PG&E at the burner tip for the five consecutive months of peak use on the systems in the form of a specific plan describing actions to be taken. The plan shall contain the following information as well as any other information deemed appropriate by Applicants:

1. A full accounting of the storage capacity of SoCal, PG&E and all their customers. The current and future utilization of this storage as well as the cost of storage shall be provided.

2. The ability to replenish gas storage depleted by curtailment of LNG deliveries and development of additional underground storage capacity.

3. A full accounting of average and peak volumes of LNG in storage at the terminal and on board the ships in transit to the terminal.

4. A study showing the feasibility of using cushion gas and line pack on the systems of SoCal, PG&E and all their customers.

5. A full accounting of gas which can be saved on a five-month peak period basis using conservation methods. The study shall cover the systems of SoCal and PG&E.

6. A full report of possible exchanges among SoCal, PG&E and their customers, such that high priority customers are protected.

7. The availability of gas from Elk Hills or from producers from whom SoCal and PG&E provide transportation.

8. The availability of Canadian storage and emergency gas which Alberta and Southern can make available to subsidiaries or affiliates of PG&E.

9. The ability to obtain greater utilization of existing vessels; the ability to obtain LNG deliveries using other vessels for short periods; and the ability to obtain ship load volumes of LNG from other sources.

10. Such data shall be provided with a view to providing full LNG volumes for a five-month peak period through other alternatives.

(G) Safeguards, recommended by the FPC Staff's FEIS, to which Applicants have agreed, shall be implemented as follows (the "Applicant" referred to is Terminal Associates):

1. The Applicant will provide adequate spill containment, ditching and land sloping on the marine trestle and/or on shore so that the maximum amount of LNG which could spill in the event of an LNG transfer line failure between the shoreline of Ormond beach and the diked tank area would be contained within Terminal Associates' property boundary.

2. The Applicant will outline procedures to be utilized in the event that the evacuation of nearby areas and the suspension of local highway and shipping traffic are necessitated by a major accident. Such procedures should contain measures for the immediate notification or nearby inhabitants of any potentially dangerous situation that might arise and notification and mobilization of emergency personnel such as Civil Defense, hospitals, police and fire departments. The Applicant shall also take whatever steps are necessary to assist the City of Oxnard with integrating these procedures into the Oxnard Emergency Plan.

3. The Applicant will provide additional thermocouples on the tank floor and lower shell of the inner tank in order to obtain more comprehensive data on the thermal stresses imposed during cooldown.

4. The internal storage tank LNG temperature probe shall be located in such a way that the accuracy of its data sendout would not be thermally influenced by fluid circulation within the tank or by other structural members.

5. Linear movement indicators between the inner and outer tank shells shall be installed on the proposed LNG storage tanks in order to provide data on the relative position of the inner and outer shells.

6. Primary and backup signal lines installed for all instrumentation and control systems at the LNG terminal shall be routed separately to each such system in order to avoid simultaneous damage in the event of an accident.

7. Any significant changes in facility design, construction, operations, or operating philosophy made after the date of the technical conference or December 9, 1975, shall be reported by applicant to the DOE on a timely basis.

8. The final design plans for the proposed LNG terminal will be submitted by the Applicant to the DOE for review and approval prior to commencement of the construction of the terminal. As part of the submission of the final design plans, the Applicant shall address and provide data concerning items 5 through 8 on page 181 in the "Mitigating Measures" section of the Staff's FEIS. The Applicant shall also give consideration to the use of anchor bolts on the outer shell of the LNG storage tanks and provide reasons for using or not using such bolts in the final tank design. The study done by the National Bureau of Standards on the Oxnard facilities shall be considered in evaluating the sufficiency of the final seismic design plans.

9. If the terminal is approved for operation, the Applicant will submit operational reports semiannually, within 45 days after each period ending December 31 and June 30, describing facility operations for the period covered--noting only abnormal operating experiences or behavior. Abnormalities shall include, but not be limited to, rollover, geysering, cold spots on the tank, significant equipment malfunctions or failures, non-scheduled maintenance or repair (and reasons therefor), relative movement of the inner vessel after each cooldown and following local seismic activity, vapor or liquid releases, negative pressures (vacuum) within the storage tank, and higher than predicted boil-off pates. The technical information supplied by the Applicant should be in sufficient detail to allow a complete understanding of such events consistent with the existing state-of-the-art or knowledge. Such information, in addition, can provide DOE and the FERC with useful technical data that may be applied to other LNG facilities. In the event that an abnormality is of sufficient magnitude to endanger the facility or operating personnel, the DOE should be notified immediately.

10. The marine facilities will be designed to minimize interference with longshore sediment transport. Such design should conform to Coastal Plan Policy 19, p. 44, or revisions thereto, and be subject to the approval of the California Coastal Zone Conservation Commission.

11. The Applicant will contact the Regional Water Quality Control Board and the Ventura County Air Quality Control Board to discuss the possibility of eliminating or curtailing the use of the proposed seawater heaters in order to reduce NO2 and SO2 emissions from the LNG plant and also to further conserve fuel gas.

12. The Applicant will reroute the proposed stormwater discharge pipeline to avoid construction across the salt marsh or along the sand dunes.

13. The right-of-way will be located as far as possible from known landslides, and consideration should be given to the possibility of stabilizing existing slide areas which cannot be avoided and which could pose a significant threat to the pipeline.

14. The Applicant will consider the installation of additional sectionalizing transmission line block valves, over and above those required by the minimum Federal safety standards, in areas such as those near mileposts 30, 36, 46.5 and 51 on the ultimate development pipeline route, where active fault zones would be crossed.

15. Springs along the proposed or ultimate development pipeline routes which are known or suspected to be of value to wildlife shall be avoided.

16. Prior to beginning construction, qualified biologists should survey the proposed rights-of-way and access road routes to determine if any rare and endangered animal species located along the proposed or ultimate development routes would be adversely affected. Mitigating measures such as relocating the route, moving animals to other suitable habitat, or scheduling construction to avoid the breeding season shall be considered.

17. Prior to construction, rare and endangered plant species located within all areas to be disturbed should be identified to the extent practical. Areas of concentrations of such plants shall be avoided.

18. The Applicant will coordinate the location of any access roads or areas along the ultimate development route where it would diverge from existing rights-of-way in mountainous areas, with the California Department of Fish and Game to select the most environmentally sound routes.

19. The Applicant will consult with appropriate departments within the California Resources Agency, local offices of the U.S. Soil Conservation Service (SCS) and any other pertinent agencies to determine the proper means to control erosion and revegetate the proposed rights-of-way. If periodic inspections of the completed right-of-way reveal that revegetation and/or erosion control measures have not been successful, reseeding and other measures recommended by such agencies will be accomplished.

20. The Applicant will take steps to prevent access by offroad and other unauthorized vehicles onto the right-of-way.

21. Pursuant to the National Historic Preservation Act of 1966, as amended and the Archaeological and Historic Preservation Act of 1974, the Applicant will conduct an archaeological survey of those offshore areas that may be affected by construction of the LNG terminal and docking facilities and by construction of the ultimate development pipelines between LaVista and Quigley Canyon Station. The survey shall be conducted in consultation with the California Historic Preservation Officer. Any sites discovered will be avoided or, where avoidance is not feasible or prudent, will be salvaged prior to construction of the facilities. Identified sites will be evaluated for listing in the National Register of Historic Places and those sites that are eligible

for listing will be referred to the Advisory Council on Historic Preservation as required by 36 CFR Part 800, Procedures for the Protection of Historic and Cultural Properties.

A report of the survey findings and of the salvage program (if necessary), will be filed with the California Historic Preservation Officer; the San Francisco regional office of the Interagency Archaeological Services Division, Office of Archaeology and Historic Preservation, National Park Service; and the DOE.

(H) The marine terminal, regasification facilities and pipeline to LaVista will be designed and constructed so that a design maximum earthquake of Richter Magnitude 7.5 using the bedrock acceleration time history with a maximum peak acceleration of at least 0.5g would not cause structural failure which would result in the necessity to discontinue service from the facility for an extended period or prevent operations at least until contingency gas supply plans can be implemented and shutdown can occur in an orderly fashion. Applicants' proposed design criteria of a maximum horizontal acceleration at foundation level of 0.32g may be used, so long as it meets the standards set forth in the preceding sentence. Notwithstanding anything to the contrary in this paragraph, the cryogenic storage tanks, concrete dikes, land-anchored pipes, and unloading dock and trestle shall be designed and constructed with safety factors of 2.23, 2.43, 2.48 and 1.57, respectively.

(I) Additional safeguards recommended by the CPUC and which have been accepted herein, will be implemented as follows:

1. Terminal Associates will ensure that the LNG regasification facility incorporates a system capable of delivering fire control water to all protective water sprays and high expansion foam units for a continuous period of at least 24 hours immediately following the occurrence of a maximum credible earthquake for the site.

2. The LNG regasification facility will have adequate onsite emergency electrical generating capacity to nonsimultaneously satisfy the following two requirements: (a) adequate capacity for an orderly cessation and disconnection of an LNG ship and drainage of LNG transfer lines; (b) adequate capacity to operate continuously for a period of 24 hours all heat and fire protection and fighting systems including high expansion foam, water sprays, fire water monitors and all security systems.

3. The highest structure on the site and the LNG storage tanks will be lighted and marked as though they were sufficiently high to require the lowest standard of marking for an airspace obstruction, unless such lights and markings are contrary to FAA requirements.

4. Prior to the receipt of any liquefied natural gas into the LNG regasification terminal, Terminal Associates will prepare operating plans for the terminal. These plans will include the unloading operations of vessels. They will be accompanied by an operations manual. This operations manual will include, but not be limited to, the following information:

(1) The geographic locations of the facility.

(2) A physical description of the facility including a plan of the facility showing mooring areas, transfer locations, control stations, systems schematics, and fire and safety equipment.

(3) The number of personnel required during each operation and their duties.

(4) The names and telephone numbers of facility, Coast Guard, and other personnel who may be called by the employees of the facility in an emergency as well as detailed emergency procedure plan for the facility.

(5) A description of each communication system operation required.

(6) The location and facilities of each personnel shelter.

(7) A description and the location of each emergency shutdown system.

(8) The maximum relief valve setting (or maximum system pressure when relief valves are not provided) for each transfer system.

(9) Procedures for each operation including, as applicable, but not limited to:

a. Vessel loading and discharge

b. Storage tank and system purging

c. Truck loading and unloading

d. LNG pump startup and shutdown

e. Vaporizer startup and shutdown

f. Odorant handling, startup and shutdown

g. Product transfer between storage tanks

h. Startup and shutdown of boiloff compressor

i. Boiloff handling

j. Venting

k. Sendout gas system including stabilization

l. Liquefaction and reliquefaction

m. Utility systems

n. Extinguishment and control systems

o. Control room operations

p. Security

(10) Training program.

(11) Maintenance, repair and retest programs.

The above-referenced manuals will be made available to any government agency upon request.

(J) The Applicant will construct underground storage tanks and underwater LNG transfer piping, unless it demonstrates to DOE that there are significant advantages to above-ground construction and includes in such demonstrations data on the comparative safety, engineering and environmental consequences.

(K) Applicants will coordinate with the U.S. Coast Guard prior to operation of the terminal to investigate and establish further vessel traffic safety procedures to be implemented during the LNG tanker transit in U.S. waters to the terminal.

(L) As a minimum, nine tankers to be used to deliver the LNG will be constructed and operated in compliance with the Safety and reliability requirements of the U.S. Coast Guard. without precluding the use of construction and operation criteria which result in higher degrees of safety.

(M) Reports outlining compliance with ordering paragraphs (G), (H), (I), (J), (K), and (L) herein, will be submitted by Applicants within 45 days after each period ending June 30 and December 31.

(N) To the extent not inconsistent with other paragraphs of this Order which require higher safety standards, as a minimum, the terminal and regasification facilities will be constructed and operated in compliance with

the National Bureau of Standards Cryogenic Safety Review (Ex. 163), without precluding the use of construction and operation criteria which result in higher degrees of safety.

(O) Reports on the status of this LNG import program, outlining the progress of construction of the components of this project, the cost of such construction in contrast to projected costs, the effect of any cost changes in the cost of regasified LNG to gas users and the quantity of gas effectiveness of this program, will be submitted by Applicants to the DOE semiannually, 45 days after each period ending June 30 and December 31.

(P) Applicants will report to the DOE the definitive financing plans and arrangements made and entered into by Pertamina, by the U.S. shipowners (Zapata and Ogden) and by Applicants, for the facilities needed for this project, within 20 days after said plans and arrangements are known to Applicants.

(Q) The authorizations granted herein will not take effect as to any facility, or operation of any part of any facility, until all necessary Federal, state and local authorizations as to that part of the facility, or operation thereof, have been secured, including the appropriate authorization from the California Public Utility Commission under the State's Liquefied Natural Gas Terminal Act of 1977. A copy of each such authorization for each utility, or part thereof, will be submitted to the DOE prior to the commencement of service of such facility or part thereof. Such authorizations will include, but are not limited to, building permits, Coast Guard clearances of vessels and harbor operations, and statements of compliance with applicable industry codes or regulatory codes governing the design, construction and operation of facilities in a safe manner. If any state or local permit is unreasonably delayed or withheld, applicants may seek appropriate relief from the DOE, including modification of this paragraph.

(R) Within 90 days of the issuance of this Order, Applicants will file with the DOE detailed procedures and schedules for a Final Safety Analysis Report (FSAR) to be submitted prior to the initial operation of the plant. Intervenors will file any comments or suggestions within 45 days thereafter. Applicants will not commence operation of the facilities authorized herein until the schedule and procedures established by the DOE for submission and/or acceptance of the FSAR have been completed.

(S) The general terms and conditions set forth in the regulations issued pursuant to the Natural Gas Act, and particularly those contained in Parts 154 and 157.20, thereof, shall attach to the authorizations issued herein.

(T) Pac Indonesia will use its best efforts to amend, modify or renegotiate its shipping contracts and time charters with Gazocean and

Gastransco (Zodiac and Odyssey) for the three foreign flag LNG vessels, or shall use its best efforts to find alternate service for said vessels by subchartering or otherwise, in order to eliminate or substantially reduce the additional shipping charges resulting from project delay. Pac Indonesia will submit reports to the DOE, within 45 days after each period ending on June 30 and December 31, outlining compliance with this condition.

(U) Motions to reopen the record filed by the City of Oxnard, the Sierra Club, the County of Santa Barbara and Ogden Marine Indonesia are hereby denied.

(V) Hollister Ranch Owners' Association and the Santa Barbara Citizens for Environmental Defense, Bixby Ranch Company, the City of Santa Barbara, Scenic Shoreline Preservation Conference and General Motors are permitted to intervene in the above-entitled proceeding, subject to the rules and regulations of DOE provided, however, that their participation shall be limited to matters affecting asserted rights and interests specifically set forth in their petitions for leave to intervene; and provided, further, that the admission of such intervenors in the manner provided shall not be construed as recognition by DOE that these intervenors might be aggrieved because of any order or orders entered in this proceeding, and that such intervenors agree to accept the record as it now stands.

(W) DOE reserves the right to issue supplemental orders in this proceeding pursuant to the Natural Gas Act.

Issued in Washington, D.C., December 30, 1977.

--Footnotes--

*/ One Quad = 1015/ Btu's

1/ See Exhibit Nos. 3 and 79. The September 6, 1973, contract and January 9, 1975, amendment were executed by Pertamina and by Pacific Lighting International S.A., owned by Pacific Lighting Corporation. The October 28, 1975 amendment (Exhibit No. 79) substituted Pac Indonesia for Pacific Lighting International.

2/ The contract set a base price of 63 cents per MMBtu with fixed escalation of 2 percent per year.

3/ Terminal Associates is a partnership composed of Western Terminal and Pacific Gas LNG Terminal Company.

4/ The FPC consolidated Docket Nos. CP74-160 and CP74-207 and granted all petitions to intervene in those dockets in its order dated April 8, 1974. In the FPC's April 18, 1975, Notice Docket No. CP75-83-8 was consolidated in

this proceeding. All parties who have intervened in Docket No. CP75-83 were automatically granted intervention in the consolidated proceeding.

5/ The following parties participated in the oral argument: PAC Indonesia, CPUC, the FERC staff, Sierra Club, Ventura County Concerned Citizens Committee, Hollister Ranch Owners and Santa Barbara Citizens for Environmental Defense, Bixby Ranch, Concerned Citizens of Santa Barbara, County of Santa Barbara, Public Service Electric and Gas Company, California Gas Producers, Ogden Marine Indonesia, Odyssey Trading Co., Ltd., Zodiac Shipping Co., N.V., Zapata Western LNE, Inc., Southern California Edison Company, and San Diego Gas and Electric. In addition to the above intervenors, the following persons or organizations made presentations as amicus curiae: Point Conception Preservation Committee, Jane Tomack, Paul Christiansen, San Pedro Environmental Action Committee, Scenic Shoreline Preservation Conference, Inc., and Robert James Whitacre.

6/ The $3.59 price is based on record evidence which assumes that the stateside facilities will be those that were proposed to be constructed by the Applicants at Oxnard. If another site is selected that requires higher cost state side facilities, the resulting delivered cost would be higher, and thus the tentative approval of the price given in this decision would have to be reconsidered in accordance with the same principles applied here.

7/ These components could be charged subject to a Section 4-type filing.

8/ But see footnote 6, supra.

9/ Id.

10/ Thus, it is unnecessary to decide here whether, under some other less flexible section of the Natural Gas Act, a Federal decision could or would automatically preempt state participation in the site selection process.

11/ A separate order will be issued by DOE on the Point Conception amendment. That order will also rule on the motions filed by Bixby Ranch and by Hollister and Santa Barbara Citizens.

12/ Terminal Associates' amendment does not preclude us from approving the Oxnard site because DOE will decline to accept the amendment to the extent that it is intended to substitute Point Conception for Oxnard, but instead will construe it as seeking approval of an alternative site to the Oxnard site. We would reject the amendment if it was intended to delete Oxnard from further consideration, since to do so would unnecessarily eliminate from any further consideration a site with respect to which voluminous evidence was taken and that DOE could find acceptable. Pending

formulation and adoption by DOE of its own rules of practice and procedure for resolution of natural gas import/export cases, it has adopted the Rules of Practice and Procedure utilized by the FPC in deciding these cases prior to the activation of the Department of Energy, 18 C.F.R., Part 1. (Notice of Procedures for Natural Gas Import and Export Proceedings, November 30, 1977, 42 F.R. 61856). Section 1.11(a) of those rules authorizes DOE, "upon its own motion," and "for good cause," to "decline to permit . . . any amendment."

13/ Cf. Lovins, A., Cost Risk-Benefit Assessments in Energy Policy, 45 Geo. Wash. L. Rev. at 911 (August 1977):

> "As Ida Hoos suggests, `We are witnessing a repeat performance of Moliere's play, Le Bourgeois Gentilhomme, in which an uneducated tradesman, bent on acquiring instant culture, hires a tutor and learns with delight that what he has been talking all his life is prose!' Nevertheless, the impressive formalism of cost-risk-benefit assessments has given them remarkable credence among the credulous, especially those analysts and decision-makers seeking an escape from genuinely perplexing problems.
>
> "I believe that this credence is misplaced, that cost-risk-benefit assessments are more a part of the energy problem than of the solution, and that their aura of reliability, relevance, and cost-effectiveness is undeserved. As ritual, they are often useful, not for their results, but for the explicit data they elicit and the critical thought they may encourage. As science, however, such assessments tend to be subtly and irredeemably defective; as rhetorical art, sophistical; and as a decision-making tool, useless and dangerous. Like the street lamp under which the proverbial drunkard searched for his wallet, not because he lost it there but because that was the only place he could see, they only make the surrounding darkness darker."