

# LNG IMPORT TERMINAL AND DEEPWATER PORT SITING: FEDERAL AND STATE ROLES

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## HEARING

BEFORE THE  
SUBCOMMITTEE ON ENERGY POLICY, NATURAL  
RESOURCES AND REGULATORY AFFAIRS  
OF THE

COMMITTEE ON  
GOVERNMENT REFORM  
HOUSE OF REPRESENTATIVES  
ONE HUNDRED EIGHTH CONGRESS

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## **LNG IMPORT TERMINAL AND DEEPWATER PORT SITING: FEDERAL AND STATE ROLES**

**TUESDAY, JUNE 22, 2004**

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON ENERGY POLICY, NATURAL  
RESOURCES AND REGULATORY AFFAIRS,  
COMMITTEE ON GOVERNMENT REFORM,  
*Washington, DC.*

The subcommittee met, pursuant to notice, at 2 p.m., in room 2247, Rayburn House Office Building, Hon. Doug Ose (chairman of the subcommittee) presiding.

Present: Representatives Ose, Schrock, Tiberi, and Tierney.

Staff present: Barbara F. Kahlow, staff director; Carrie-Lee Early, professional staff member; Lauren Jacobs, clerk; Megan Taormino, press secretary; Krista Boyd, minority counsel; and Earley Green, minority chief clerk.

Mr. OSE. Good afternoon. Welcome to today's hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs. Today's subject matter is LNG import terminal and deepwater port siting, Federal and State roles.

I want to welcome my friend from Massachusetts and my friend from Virginia to today's hearing. The way we will proceed is we have four panels of witnesses today. The first will be Congressman Markey, the second will be Federal witnesses, the third will be State witnesses, and the fourth will be private individuals representing the private sector.

Now, we are conflicted because we have a series of votes that will start shortly. To the extent we can get through opening statements, we will do that. When the bells ring, we will recess, go over and vote. Probably going to be about 35 or 40 minutes, and then we will be back here to continue the hearing.

Now, in the course of this hearing, you will see a couple of things. No. 1, we swear in all our witnesses. That is standard practice on this committee. It is the way it is whether Republicans are in charge or Democrats are in charge. It is nothing personal, so just get used to it. Once we have made our statements, we will go to the witnesses. Each panel will be allowed to make their statements. Their written statements are entered into the record automatically. If you are a witness, you have 5 minutes to summarize your statement. I have a heavy gavel given the number of witnesses we have today, and the 5-minute rule will be enforced. If you are not done, then that is just too bad.

So any questions? Good.

The transformation of the U.S. natural gas industry to a healthy, efficient, competitive state has been a decades long and sometimes contentious process of interdependent changes in law and innovation by industry. Nationally, we moved from a balkanized and poorly regulated industry to a free market model which brought lower prices. Nevertheless, as witnessed recently and especially in certain parts of the country, natural gas price levels are vulnerable to shortage.

The 2000–2001 California electricity crisis was in part exacerbated by the deficiency of natural gas supply. Recent harsh winters in the Northeast depleted natural gas storage and caused significant price swings which were felt nationally.

The United States, especially on the West Coast, is relying more and more on natural gas. It is the fuel choice for electric power generation because it is reliable and is much cleaner than other fossil fuels. Natural gas is also used by individual citizens and by industry, agriculture and transportation as a raw material. As a critical resource used throughout the economy, shortages in natural gas have a profound impact much more felt, or much more closely felt than other commodities.

North American natural gas fuels are depleting at an increasing rate. Even if new domestic natural gas comes on to the market, most experts believe we will need even more.

Pipeline imports from Canada make up about 15 percent of total U.S. consumption, but there, too, experts anticipate diminishing sources.

California has particular reason for concern. In 2003, California produced only 17 percent of its natural gas consumption. More than half of California's electricity generation is based on natural gas. As coal plants are retired, this dependency is going to increase. California is especially subject to price fluctuation because it is at the far end of the pipeline grid.

For the economy of California and the rest of the United States to flourish, there must be a plentiful, affordable energy supply. Without it, our economy will go into decline.

I contend that increasing U.S. importation of LNG should be a component of the solution, either with onshore or offshore facilities. Enormous quantities of natural gas are located in places from which it is impossible or impractical to export through pipelines. These are known as stranded locations. The solution is increasing shipment to the industrialized world in liquid form. One tanker can carry enough material to power 10 million houses.

Today's hearing is going to focus on the multiple Federal agencies that have various authorities over LNG, including agencies in the Departments of Commerce, Defense, Energy, Interior, Homeland Security and Transportation as well as the Environmental Protection Agency and the Federal Energy Regulatory Commission.

We are going to discuss today how the Federal and State regulatory framework is furthering policy goals, such as competitive pricing, regional supply, safety and environmental integrity. We are also going to discuss how involved Federal and State agencies are working together and, finally, how they plan to overcome what appear to be systemic barriers such as local community fears and conflicting laws.

I look forward to the testimony of our witnesses today. They include the gentleman from Massachusetts, Mr. Ed Markey, who is invited to the witness table when I get through the rest of this list; Mr. David Garman, who is the Acting Under Secretary of the Department of Energy; Mr. Patrick H. Wood III, the chairman of the Federal Energy Regulatory Commission; Rear Admiral Thomas Gilmour, who is the Assistant Commandant of Marine Safety at U.S. Coast Guard, Department of Homeland Security.

Also joining us on the second panel, Jay Blossman from the Louisiana Public Service Commission; Chairman Ken Schisler from the Maryland Public Service Commission; and Mr. Joe Desmond, who is the Deputy Secretary for Energy for the California Resources Agency.

And, the final panel, we are joined by Mr. Donald F. Santa, Jr., who is the president of the Interstate Natural Gas Association of America; by Mr. Phillip Warburg, who's president of the Conservation Law Foundation; and, by Dr. Jerry Havens, who's the distinguished professor of chemical engineering at the University of Arkansas.

I am pleased to recognize my friend of Massachusetts for the purpose of an opening statement.

[The prepared statement of Hon. Doug Ose follows:]

Chairman Doug Ose  
Opening Statement  
LNG Import Terminal and Deepwater Port Siting: Federal and State Roles  
June 22, 2004

The transformation of the U.S. natural gas industry to a healthy, efficient, competitive state has been a decades long and sometimes contentious process of interdependent changes in law and innovation by industry. Nationally, we moved from a balkanized and improperly regulated industry to a free market model, which brought lower prices.

Nevertheless, as witnessed recently and especially in certain parts of the country, natural gas prices levels are vulnerable to shortage. The 2000-2001 California electricity crisis was exacerbated by the deficiency in natural gas supply. Recent harsh winters in the Northeast depleted natural gas in storage and caused price swings, which were felt nationally.

The United States, especially California, is relying more and more on natural gas. It is the fuel-of-choice for electric power generation because it is reliable and is much cleaner than other fossil fuels. Natural gas is also used by individual citizens, and by industry, agriculture and transportation as a raw material. As a critical resource used throughout the economy, shortages in natural gas have a more profound impact than most other commodities.

North American natural gas fields are depleting at an increasing rate. Even if some new domestic natural gas comes onto the market, most experts believe that we will need even more. Pipeline imports from Canada make up about 15 percent of total U.S. consumption but, there too, experts anticipate diminishing sources.

California has reason for particular concern. In 2003, California produced only 17 percent of its natural gas consumption. More than half of California's electricity generation is based on natural gas. As coal plants are retired, this dependency will grow. California is especially subject to price fluctuation because it is at the end of the pipeline grid.

For the economy of California and the rest of the United States to flourish, there must be a plentiful, affordable energy supply. Without it, our economy will go into decline. I believe that increasing U.S. importation of liquefied natural gas (LNG) should be a component of the solution – either by on-shore or off-shore facilities.

Enormous quantities of natural gas are located in places from which it is impossible or impractical to export through pipelines. The solution is increasing shipment to the industrialized world in liquid form. One tanker can carry enough material to power 10 million houses.

Multiple Federal agencies have various authorities over LNG, including agencies in the Departments of Commerce, Defense, Energy (DOE), Interior, Homeland Security (DHS),

and Transportation, and the Environmental Protection Agency, and the Federal Energy Regulatory Commission (FERC).

Today, we will discuss: (a) how the Federal and State regulatory framework is furthering policy goals, such as competitive pricing, regional supply, safety, and environmental integrity; (b) how the involved Federal and State agencies are working together; and, (c) how they plan to overcome what appear to be systemic barriers, such as local community fears and conflicting laws.

I look forward to the testimony of our witnesses. They include: Congressman Edward J. Markey; David Garman, Acting Under Secretary, DOE; Patrick H. Wood, III, Chairman, FERC; Rear Admiral Thomas Gilmour, Assistant Commandant of Marine Safety, U.S. Coast Guard, DHS; Jay Blossman, Commissioner, Louisiana Public Service Commission; Kenneth D. Schisler, Chairman, Maryland Public Service Commission; Joe Desmond, Deputy Secretary, Energy, California Resources Agency; Donald F. Santa, Jr., President, Interstate Natural Gas Association of America; Philip Warburg, President, Conservation Law Foundation; and, Dr. Jerry A. Havens, Distinguished Professor of Chemical Engineering, University of Arkansas.

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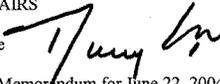
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MEMORANDUM FOR MEMBERS OF THE GOVERNMENT REFORM  
SUBCOMMITTEE ON ENERGY POLICY, NATURAL RESOURCES AND  
REGULATORY AFFAIRS

FROM: Doug Ose 

SUBJECT: Briefing Memorandum for June 22, 2004 Hearing, "LNG  
Import Terminal and Deepwater Port Siting: Federal and State Roles"

On Tuesday, June 22, 2004, at 2:00 p.m., in Room 2154 Rayburn House Office Building, the Government Reform Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs will hold a hearing on Liquefied Natural Gas (LNG). The hearing is entitled, "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles."

Background

Multiple Federal agencies have various authorities over LNG, including agencies in the Departments of Commerce (DOC), Defense (DOD), Energy (DOE), Interior (DOI), Homeland Security (DHS), and Transportation (DOT), the Environmental Protection Agency (EPA), and the Federal Energy Regulatory Commission (FERC).

FERC authorizes the siting and construction of on-shore LNG import terminals under Section 3 of the Natural Gas Act (NGA) of 1938 (15 U.S.C. §717b, Exportation or Importation of Natural Gas). In the 1970s, FERC authorized such facilities under Section 7 of the NGA (15 U.S.C. §717f, Construction, Extension, or Abandonment of Facilities), which governs natural gas facilities used in interstate commerce.<sup>1</sup> FERC's siting and construction procedural requirements are in 18 CFR §153, Applications for Authorization to Construct, Operate, or Modify Facilities Used for the Export or Import of Natural Gas.

<sup>1</sup>Under DOE Delegation Orders Nos. 0204-112 (1984) and 00-004.00 (2002), the Secretary of Energy delegated to FERC the authority to approve or disapprove: (1) the construction, modification and operation of facilities, (2) the siting for such facilities, and (3) the place of entry for imports with respect to natural gas involving construction of new domestic facilities. DOE Delegation Orders Nos. 0204-111 (1984) and 0204-127 (1989) provided that DOE's Office of Fossil Energy would authorize imports and exports of natural gas while FERC would authorize the siting and facilities used for imports and exports.

FERC also authorizes the construction and operation of interstate natural gas pipelines associated with LNG import facilities under Section 7 of the NGA and 18 CFR §§153 *et seq.*, Applications for Authorization to Construct, Operate, or Modify Facilities Used for the Export or Import of Natural Gas, and 157, Applications for Certificates of Public Convenience and Necessity and for Orders Permitting and Approving Abandonment under Section 7 of the Natural Gas Act. In conjunction with its review of on-shore siting applications, FERC serves as the lead Federal agency for National Environmental Policy Act (NEPA) reviews (42 U.S.C. Sections 4321 *et seq.*, 18 CFR §157.6, Applications: General Requirements and 18 CFR §380, Regulations Implementing the National Environmental Policy Act). Many stakeholder agencies consult with FERC during the NEPA process.

Oversight of siting for off-shore deepwater port facilities was also under FERC until Congress passed the Maritime Transportation Security Act of 2002 (MTSA) (Pub. L. 107-295, which added LNG to the definition of substances subject to the Deepwater Port Act of 1974, 33 U.S.C. 1501 *et seq.*). Since 2002, the licensing and siting decisions for off-shore LNG deepwater ports are made by DOT's Marine Administration (49 CFR §1.66 (aa), Delegations to Maritime Administrator) with the involvement of DHS's U.S. Coast Guard (USCG) and other interested agencies.

USCG's procedural requirements are in 33 CFR Subchapter NN, Deepwater Ports, §§148, General, 149, Design, Construction and Equipment, and 150, Operations. USCG also serves as the lead Federal agency for NEPA reviews for off-shore applications (42 U.S.C. §4321 *et seq.*) and consults with other interested Federal agencies.<sup>2</sup>

While FERC and USCG are the agencies ultimately responsible for siting LNG import facilities, determinations and approvals must be forthcoming from many other Federal, State, and local authorities before final approval of a terminal. Applicants typically anticipate having to obtain at least 100 permits. Numerous Federal and State laws pertaining to environmental, safety and security concerns also apply. Most prominent among the other Federal agencies are DOC's National Oceanic and Atmospheric Administration (NOAA), DOD's Army Corps of Engineers, DOI's Minerals Management Service, DOT's Research and Special Programs Administration (RSPA), and EPA.

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<sup>2</sup> With regard to on-shore facilities, USCG issues regulations governing safety and security of port areas and navigable waterways under E.O. 10173, "Regulations Relating to the Safeguarding of Vessels, Harbors, Ports, and Waterfront Facilities of the United States," the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (16 U.S.C §1801 *et seq.*, 33 CFR §6, Protection and Security of Vessels, Harbors, and Waterfront Facilities), the Ports and Waterways Safety Act of 1972 (33 U.S.C. §1221 *et seq.*, 33 CFR §§160, Ports and Waterways Safety – General, 165, Regulated Navigation Areas and Limited Access Areas, and 127, Waterfront Facilities Handling Liquefied Natural Gas and Liquefied Hazardous Gas), and MTSA (46 U.S.C. §701 *et seq.*, 33 CFR §§101, General Provisions, and 105, Facility Security). USCG is also responsible for navigation safety, vessel engineering and safety standards and all matters pertaining to the safety of facilities or equipment in or adjacent to navigable waters under the Hazardous Materials Transportation Act (49 U.S.C. §51).

An example of extensive involvement from another Federal agency is the role of DOT/RSPA's Office of Pipeline Safety (OPS). OPS has authority to regulate the safety aspects of siting, design, installation, construction, initial inspection, initial testing, operation and maintenance of LNG facilities (49 U.S.C. §60101 *et seq.*, The Natural Gas Pipeline Safety Act of 1968) They are set forth in 49 CFR §193, Liquefied Natural Gas Facilities: Federal Standards.

State agencies address a multitude of environmental concerns. In addition to applicable State laws, 33 coastal States exercise delegated authority under the Coastal Zone Management Act of 1972 (CZMA) and have adopted Coastal Zone Management Plans (CZMPs). Siting of LNG import terminals must be consistent with the CZMP of the applicable State. NOAA has promulgated regulations governing consistency review under the CZMA (15 CFR §930, Federal Consistency With Approved Coastal Management Programs).

As of this time, no State has a comprehensive, statutory scheme addressing LNG import facilities, though several regulate LNG storage facilities. California's LNG Terminal Act of 1977 (SB 1081 signed by the Governor on September 16, 1977) was repealed in 1987. On October 30, 2003, the California Public Utilities Commission (CPUC) notified the proponent of a proposed import terminal at the Port of Long Beach that it was asserting jurisdiction over siting on the grounds that the facility would be a public utility under California law subject to CPUC regulation. On March 24, 2004, FERC issued a "Declaratory Order Asserting Exclusive Jurisdiction" under Section 3 of the NGA. The question of whether FERC possesses exclusive jurisdiction over siting of on-shore facilities turns on interpretation of the NGA.

#### Energy Policy

Demand in the United States for natural gas rose sharply in the 1980s in reaction to international oil supply problems. Because of its environmental merits relative to other fossil fuels, demand for natural gas continues to grow. Today, natural gas provides nearly one-quarter of U.S. energy requirements. It provides about 19 percent of electric power generation nationally and is a clean fuel for heating and cooking in over 60 million U.S. households. U.S. industries obtain over 40 percent of their primary energy from natural gas. It is used both as an energy source and as a raw material.

According to the DOE's Energy Information Administration's (EIA) Annual Energy Outlook 2004, world energy demand will increase by 60 percent from 1997 to 2020, and U.S. energy demand over this period will increase by about 27 percent, a third of which could be for natural gas. Most new electricity generation capacity, especially in California, is expected to be fueled by natural gas because of the environmental advantages and because it requires lower capital costs and shorter construction lead-time. Natural gas prices reflect the growing demand.

Most energy experts believe that the United States should address supply needs through increases in both imports and domestic production.

Over the past year, the demand for natural gas in the United States has outstripped supply. The amount of natural gas in underground storage has dropped by 32 percent and the price of natural gas has nearly doubled. Alan Greenspan, Chairman of the Federal Reserve, has stated on several recent occasions that LNG imports should play a more significant role than they do now.<sup>3</sup>

Liquefied natural gas supplies between 1-2 percent of U.S. natural gas consumption. EIA forecasts that, by 2010, LNG imports will increase and supply 8 percent of U.S. consumption.

LNG typically is exported from stranded reserves. North Africa, West Africa, South America, the Caribbean, Middle East, Indonesia, Malaysia, Northwestern Australia and Alaska are LNG source regions today. According to the CEC, worldwide there are currently 17 LNG export terminals and 40 LNG import terminals, 23 of which are in Japan (which accounted for 48 percent of worldwide imports in 2002) and many more are planned. LNG import terminals exist also in South Korea and Europe, as well as in the United States, which currently has five import terminals. Four of the five are on-shore terminals built in the Continental United States between 1971 and 1980: Everett, Massachusetts (1971), Cove Point, Maryland (1974), Elba Island, Georgia (1978), and Lake Charles, Louisiana (1981). The fifth is Penuelas, located in Puerto Rico (2000).

LNG imports peaked at 1.3 percent of U.S. natural gas demand in 1979 but declined thereafter because of an overall natural gas surplus. In 1980 and 1981, Elba Island and Cove Point were mothballed. They were reactivated in 2001 and 2003, respectively. Applications for expansion of each of the facilities were approved in January 2001, March 2002, April 2003 and October 2003 respectively. An application for an additional expansion of the Lake Charles, Louisiana facility is pending. More applications for expansion are anticipated.

There are, furthermore, over 100 active LNG storage and operation facilities in the United States, some of which pertain to niche markets such as vehicular fuel. Most of these facilities were constructed between 1965 and 1975 as storage for utilities. Approximately 55 local utilities own and operate LNG plants as part of their distribution networks.

Five additional import terminals have been approved, none of which, however, are on the West coast. Applications for siting of approximately 35 other terminals are pending or are anticipated to be filed in the lower 48 States, Canada, Mexico and the Bahamas (ten of which are foreign). Of these, approximately six or seven are on the West coast: one in Washington State, two in Baja California, one on-shore in California

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<sup>3</sup> "If North America natural gas markets are to function with the flexibility exhibited by oil, unlimited access to the vast world reserves of natural gas is required. Markets need to be able to effectively adjust to unexpected shortfalls in domestic supply. Access to world natural gas supplies will require a major expansion of LNG terminal import capacity. Without the flexibility such facilities will impart, imbalances in supply and demand must inevitably engender price volatility (Alan Greenspan testimony before House Energy and Commerce Committee, June 10, 2003).

and two or three off-shore in California. Several California proposals have come to dead-ends. Attached is a map showing all currently pending on-shore and off-shore LNG projects.

Industry members state that local public approval of projects is essential to success; however, in California and elsewhere, local groups have been very active and influential in impeding or stopping development.

LNG import facilities are complex projects and their siting requires extensive planning, private investment in excess of 400 million dollars and significant government agency resource commitment of time and expertise. Consideration of many layers of policy objectives is required, including national and regional supply needs, domestic energy market balances, public safety, environmental effects, and aesthetic attitudes.

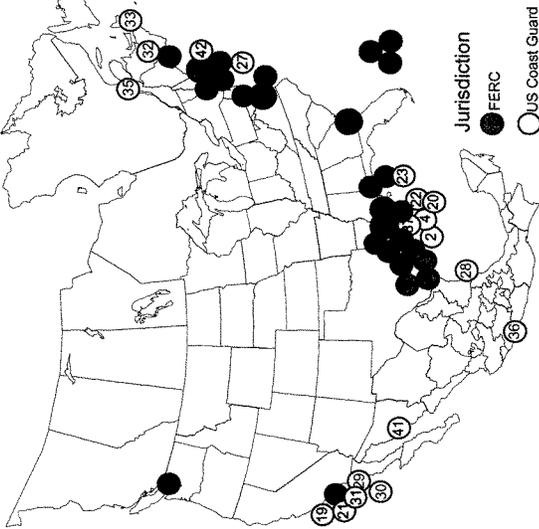
The hearing will consider the efficiency and effectiveness of the current regulatory system.

Witnesses

The invited witnesses for the hearing are: Patrick H. Wood, III, Chairman, FERC; David Garman, Acting Under Secretary, DOE; Rear Admiral Larry Hereth, Director, Office of Port Security, USCG, DHS; Jay Blossman, Commissioner, Louisiana Public Service Commission; Joe Desmond, Deputy Secretary, Energy, California Resources Agency; Kenneth D. Schisler, Chairman, Maryland Public Service Commission; Donald Santa, President, Interstate Natural Gas Association of America; and, Philip Warburg, President, Conservation Law Foundation.

Attachment

# Existing and Proposed North American LNG Terminals



June 2004

Office of Energy Projects

## Existing Terminals with Approved Expansions

1. Freeport, TX : 1.5 Bcfd, (Sempra Energy)
2. Port Pelican : 1.6 Bcfd, (Chevron Texaco)
3. Bahamas : 0.84 Bcfd, (AES Ocean Express)\*
4. Gulf of Mexico : 0.5 Bcfd, (El Paso Energy, Bridge GOM, LLC)
5. Bahamas : 0.83 Bcfd, (Calypso Tranzee)\*

## Approved Terminals

6. Freeport, TX : 1.5 Bcfd, (Cheviere / Freeport LNG Dev.)
7. Fall River, MA : 0.8 Bcfd, (Weaver's Cove Energy)
8. Long Beach, CA : 0.7 Bcfd, (SES/Mitsubishi)
9. Corpus Christi, TX : 1.6 Bcfd, (Cheviere LNG Partners)
10. Sabine, TX : 1.5 Bcfd, (Cheviere LNG Partners)
11. Corpus Christi, TX : 1.0 Bcfd (Vista Del Sol/ExxonMobil)
12. Sabine, TX : 1.0 Bcfd (Golden Pass/ExxonMobil)
13. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG - BP)
14. Lake Charles, LA : 0.6 Bcfd (Southern Union - Trunkline LNG)
15. Bahamas : 0.5 Bcfd, (Seafarer - El Paso/PPL)
16. Corpus Christi, TX : 1.0 Bcfd (Occidental Energy Ventures)
17. Providence, RI : 0.5 Bcfd (KeySpan & BG LNG)
18. Port Arthur, TX : 1.5 Bcfd (Sempra)

## Proposed Terminals and Expansions - FERC

19. California Offshore : 1.5 Bcfd, (Caballito Port - BHP Billiton)
20. Louisiana Offshore : 1.0 Bcfd (Gulf Landing - Shell)
21. So. California Offshore : 0.5 Bcfd, (Crystal Energy)
22. Louisiana Offshore : 1.0 Bcfd (McKean Exp.)
23. Gulf of Mexico : n/a (Compass Port - ConocoPhillips)

## Planned Terminals and Expansions

24. Brownsville, TX : n/a, (Cheviere LNG Partners)
25. Freeport, TX : 1.5 Bcfd, (Cheviere LNG Partners)
26. Sonoma, CA : 0.65 Bcfd (Somerset LNG)
27. Belmar, NJ Offshore : n/a (El Paso Global)
28. Altamira, Tamulipas : 1.12 Bcfd, (Shell)
29. Baja California, MX : 1.0 Bcfd, (Sempra & Shell)
30. Baja California - Offshore : 1.4 Bcfd, (Chevron Texaco)
31. California - Offshore : 0.5 Bcfd, (Chevron Texaco)
32. St. John, NB : 0.5 Bcfd, (Canaport - Irving Oil)
33. Saint Tuppens, MS : 1.0 Bcfd (Bear Head LNG - Access Northeast Energy)
34. Sonoma, CA : 0.65 Bcfd (Somerset LNG)
35. St. Lawrence, QC : n/a (TCP, and/or Gas Met)
36. Lázaro Cárdenas, MX : 0.5 Bcfd (Tractebel/Repsol)
37. Gulf of Mexico : 1.0 Bcfd (ExxonMobil)
38. Mobile Bay, AL : 1.0 Bcfd (Cheviere LNG Partners)
39. Cherry Point, WA : 0.5 Bcfd (Cherry Point Energy LLC)
40. Cove Point, MD : 0.8 Bcfd (Dominion)
41. Puerto Libertad, MX : 1.3 Bcfd (Sonora Pacific LNG)
42. Offshore Boston, MA : 0.8 Bcfd (Northeast Gateway - Escalante Energy)

\* US pipeline approved, LNG terminal pending in Bahamas

Mr. TIERNEY. Thank you, Chairman Ose. I will try to be as brief as I can.

I want to thank you for having these hearings and note it is an important issue around this country. I know in your State you have particular issues. We have some in our State, and Congressman Markey is going to talk about Everett, Massachusetts in his district and the LNG facility there. Just a couple of weeks ago, we were informed that people were speculating they would like to put an offshore facility a little more than 10 miles off the coast of Marblehead and Gloucester, which is in my district, and people are reaching out for a way to supplement our energy supplies and resources in this country, particularly as we look at rising gasoline prices and shortage of fossil fuels in other places.

We have to look at this in a number of different ways. One way we ought to look at it is first determining what is our need, and in doing that, we ought to look and see whether or not we have some other way to reduce the need for fossil fuels and for natural gas, whether it is through conservation or alternative sources, and identify what the prospects are, the feasibility of getting these alternative sources and plans into place, when they might be effective and to what degree might they reduce our need for fossil fuels and natural gas.

The other thing we have to be careful of course is not getting into the kind of reliance on natural gas coming from unstable areas of the world that we're currently in with regard to oil.

So those are things we have to do. If we determine that we cannot displace the need for natural gas production to increase, then obviously we have to look at all the other considerations, not the least of which is safety, and I am sure there will be many questions today about the safety of siting places both on land and offshore, and offshore particularly with regard to the fact that it seems that none of these technologies have ever been utilized or proved to date and there is a great deal of speculation as to what will happen if there is an incident and just whether or not they'll work and how they'll work. We have to be concerned for communities that are near these facilities and near where these ships are passing. We need to be concerned for the fishing community, which makes their livelihood out of the ocean, and what will happen if there is an incident at sea, the commercial shipping industry if they are too close to the shipping lanes. Environmentalists are concerned with what will happen to our air and our water and inhabitants of them.

All of these things come into play. From homeland security issues on through environmental and safety issues at home, we need to ask a lot of questions, particularly when the technology itself on the offshore basis is as yet unproven. We need to know that this regulatory process, while it might be streamlined, does not do so at the expense of any of those other issues being fully and completely addressed in the way that is safest and most meaningful for our citizens and the environment that we must live in.

So we want to move in that direction. I want to welcome Ed Markey, my colleague from Massachusetts here, thank him for the work he has done. He has done great work in this area, both on his Committee on Energy and Commerce and on his Committee on Homeland Security, and he has taken the lead on many, many in-

stances in energy and in safety. And, I think he will have a lot to say. I look forward to his testimony and that of the other witnesses.

Thank you, Mr. Chairman, for exercising the oversight of this committee, and I think in a very appropriate way.

Mr. OSE. Based on my friend's introduction, the gentleman from Massachusetts, we welcome Congressman Markey to our witness table. Congressman, you heard the bells, but we are going to get your statement in here. I read it. I was particularly interested in the issue of the insulation, so I hope you dwell on that a little bit. The gentleman is recognized.

**STATEMENT OF HON. EDWARD J. MARKEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MASSACHUSETTS**

Mr. MARKEY. I thank the chairman, very much, Mr. Tierney, members of the committee.

Let me begin by saying that LNG is an important component of the energy supply in New England. It represents 20 to 25 percent of all natural gas in New England, the LNG that comes in through the facility in Everett, MA, and obviously it is a big part of our energy mix and it will be a big part of America's energy mix as the years go by.

The question then is where is the most appropriate place for these facilities to be sited. I would suggest to the subcommittee that this is an issue that Congress already considered 25 years ago based in large part about the public safety concerns surrounding the siting of the Distrigas facility in Everett, MA, in one of the most densely populated parts of the United States, and the inherent difficulties in trying to address the consequences of an accident or an act of sabotage at this facility.

At that time the Congress enacted a law, which I authored, which tried to learn from the Everett experience by directing the Secretary of Transportation to consider the need for remote siting as part of the rules applicable to all new LNG importation terminals. The Secretary of Transportation unfortunately has chosen to largely ignore this law and has failed to comply with congressional intent regarding what factors the Department needs to take into account in writing rules for the siting of new LNG facilities.

Now, this failure had very little consequence for more than 25 years as no new LNG importation terminals were being built, and so this Everett experience was something that was illustrative but not relevant in terms of this energy source. Today, however, with dozens of LNG terminals being proposed around the country, this failure to comply with the existing law can no longer be tolerated.

As I see it, there are currently four critical issues that need to be addressed at the Federal level today. First, we need to have a much better scientific and technical assessment of the consequences of a terrorist attack against an LNG tanker or an LNG terminal. Such a hazard assessment is needed to better inform Federal siting decisions with respect to any new LNG terminals around the Nation. It is also needed to better inform State and local emergency planning and response activities with respect to existing LNG facilities.

Second, we need help from both the Federal Government and the facility operator to defray the costs that local governments incur in securing LNG or other critical infrastructure facilities from a terrorist attack.

Third, we need to get the Department of Transportation to upgrade its LNG siting regulations to comply with the congressional intent that all future LNG terminals be remotely sited and demand that the Department stop merely incorporating the National Fire Protection Agency standards into its siting rules.

In the report language of the 1979 law, we wrote that one area of particular concern to the committee has been the failure to adopt comprehensive Federal standards regarding the siting, design, operation and maintenance of liquefied natural gas facilities. In 1972, the industry consensus standard developed by the National Fire Protection Association were incorporated into the Federal gas pipeline safety regulations supposedly as an interim measure pending the development of comprehensive standards. Despite widespread concern over the adequacy of these interim standards and the growing importance of LNG as an energy source, the promised comprehensive standards have never been adopted.

H.R. 51, that is the 1979 law, addresses this problem by identifying the criteria to be considered by the Secretary in developing standards and setting firm guidelines for proposing and adopting them, but they still continue just to incorporate the National Fire Protection Agency standards 25 years later.

Fourth, we need the Coast Guard to undertake a more thorough analysis of the safety of LNG tankers, including the issues of brittle fracture and insulation flammability.

Looking to the future, LNG is likely to become an increasing part of our energy mix. Given that fact, Congress needs to ensure that the Federal Government takes further steps to ensure that any future LNG terminals are sited in locations that prevent them from becoming an active terrorist target.

At hearings to the congressional directive that the Secretary consider the need for more remote siting, looking at offshore siting alternatives and updating the LNG siting rules so that they reflect sound science and decisions by Federal agencies as opposed to industry self-regulatory bodies is desperately needed.

Finally, a more thorough examination of the potential consequences of a terrorist attack on an LNG tanker needs to be done. Perhaps the Sandia study will address this issue, but based on my experiences with the previous Quest and ABS consulting studies, I think the Congress needs to step up oversight in this area and demand that the studies that are being funded by the Federal Government are scientifically sound and subjected to full peer review.

I thank you, Mr. Chairman, Mr. Tierney, for holding this hearing. You can see the tremendous interest which this subject is now generating. It will only increase as the years go by.

Mr. OSE. I thank the gentleman for his participation in today's hearing. Given the time constraints, I propose that we recess, go vote. I understand there is four votes. We would welcome you back for questions if your calendar permits. I don't have any control over what goes on on the floor, despite the fact I am the chairman and what have you.

Mr. MARKEY. If I may, I have a 10-page analysis which was done on all of the issues that I would like to submit for the record.

Mr. OSE. Would you like to submit it to the record? Without objection, so ordered.

Mr. TIERNEY. Just 10 pages?

[The prepared statement of Hon. Edward J. Markey follows:]

**Testimony of Representative Edward J. Markey (D-MA)  
Before the Subcommittee on Energy Policy, Natural Resources and  
Regulatory Affairs  
Tuesday, June 22, 2004**

Chairman Ose, Ranking Member Tierney, and Members of the Subcommittee, I appreciate this opportunity to discuss the siting of Liquefied Natural Gas (LNG) Import Facilities, and I commend you for calling today's hearing.

Since 1976 I have represented the Seventh Congressional District, in which the Everett Distrigas LNG importation terminal is located. As a Member of the Energy and Commerce Committee and, more recently, the U.S. House Select Committee on Homeland Security, I have been deeply interested in issues relating to the security of the LNG facility in Everett, and the safety of the LNG carrier vessels that transport LNG to this facility.

I am also the author of the Pipeline Safety Act of 1979, the law that -- among other things -- governs the standards issued by the Transportation Department regarding the siting of new LNG terminals. In my testimony, I would like to share with the Subcommittee what I consider to be the principal lessons I have learned from the Everett experience, and what it means for the siting of other LNG importation terminals around the country.

Background

First of all, let me begin by saying that I think that LNG is an important component of the energy supply of New England, and that it has great potential to help the nation meet its growing need for natural gas. As Federal Reserve Chairman Alan Greenspan noted in his testimony before the Energy and Commerce Committee, one notable difference between the oil and natural gas markets in the United States is that our nation is able to obtain access to global supplies of oil via tanker. In contrast, virtually all of our natural gas supply comes from either U.S. or Canadian resources delivered via pipeline. Only a small portion of our supply comes in via tanker in the form of LNG. Increasing LNG imports is therefore one important way to help address America's increasing demand for natural gas. Obtaining access to the global natural gas supply through LNG imports is also one way of helping to reduce the current volatility in the U.S. natural gas marketplace.

The question then is where is the most appropriate place for these facilities to be sited? I would suggest to the Subcommittee that this is an issue that the Congress already considered nearly 25 years ago, based in large part about public safety concerns surrounding the siting of the Distrigas facility in a densely populated urban area, and the inherent difficulties in trying to address the consequences of an accident or an act of sabotage at this type of facility. At that time, the Congress enacted a law, which I authored, which tried to learn from the Everett

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experience by directing the Secretary of Transportation to consider the need for remote siting as part of the rules applicable to all new LNG importation terminals. The Secretary of Transportation, unfortunately, has chosen to largely ignore this law and has failed to comply with Congress' intent regarding what factors the Department needs to take into account in writing rules for the siting of new LNG facilities. This failure had little consequence for more than 25 years, as no new LNG importation terminals were being built. Today, however, with dozens of LNG terminals being proposed around the country, this failure can no longer be tolerated.

#### Key Issues

As I see it, there currently are four critical issues that need to be addressed at the federal level.

First, we need to have a much better scientific and technical assessment of the consequences of a terrorist attack against an LNG tanker or LNG terminal. Such a hazard assessment is needed to better inform federal siting decisions with respect to any new LNG terminals around the nation. It is also needed to better inform state and local emergency planning and response activities with respect to existing LNG facilities.

Second, we need help from both the federal government and the facility operator to defray the costs that local governments incur in securing LNG or other critical infrastructure facilities from a terrorist attack. While Distrigas provides some funding for this purpose today, and has taken other actions to facilitate the efforts of local law enforcement to secure the facility, I believe that federal support is needed to help ensure that local firefighters are given realistic training to deal with the types of large fires or explosions that could occur, that local police departments have the resources needed to help provide security during times of elevated Homeland Security alert status, and during LNG shipments.

Third, we need to get the Transportation Department to upgrade its LNG siting regulations to comply with the Congressional intent that all future LNG terminals be remotely sited, and demand that the Department stop merely incorporating the National Fire Protection Agency Standards into its siting rules.

Fourth, we need the Coast Guard to undertake a more thorough analysis of the safety of LNG tankers, including the issues of brittle fracture and insulation flammability.

Let me briefly discuss each issue and offer some recommendations to the Subcommittee for further action.

#### Consequences of an Attack

On page 15 of the memoirs of Richard Clark, the White House's former anti-terrorism czar, and a man who served in the Clinton Administration, the first Bush Administration, and the Reagan Administration there is a disturbing passage that describes one of the discussions he had on 9/11 with Admiral James Loy, then the Commandant of the Coast Guard, as follows:

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“Jim, you have a Captain in the Port in every harbor, right.” He nodded. “Can they close the harbors? I don’t want anything coming in and blowing up, like the LNG in Boston.” After the Millennium Terrorist Alert we had learned that al Qaeda operatives had been infiltrating Boston by coming in on liquid natural gas tankers from Algeria. We had also learned that had one of the giant tankers blown up in the harbor, it would have wiped out downtown Boston.

“I have that authority.” Loy turned and pointed at another admiral. “And I have just exercised it.”

The fact that al Qaeda terrorists had come into Boston on LNG tankers was extremely disturbing to those of us who live near the Distrigas LNG facility, and it heightens the importance of ensuring that this facility, and others like it, are fully protected against terrorist attack. It also underscores the need for us to better understand the hazardous presented by such an attack. In recent months, numerous press reports have raised concerns about nature and adequacy of some of the hazard studies that were performed for the Distrigas facility shortly after the September 11<sup>th</sup> attacks.

In the fall of 2001, the Department of Energy commissioned a study by Quest Consultants, Inc. regarding public safety issues relating to the transportation of LNG to the Distrigas facility and the storage of LNG at the facility. Secretary of Transportation Mineta wrote me about the study on October 26, 2001, noting that:

“Quest Consultants, Inc., has been hired by DOE [the Department of Energy] to perform studies related to security on vessels transporting LNG and on the onshore LNG storage tanks.”

On page 10 Secretary Mineta indicated that:

“Quest Consultants, an engineering firm, has been asked by DOE to perform a study to analyze the threat that could result from a five-meter diameter hole in an LNG tank on a vessel. Quest has performed some initial calculations to quantify the gas dispersion and fire scenarios that could follow a large release from the LNG storage tanks.”

Also on page 10, Secretary Mineta further stated that in addition to actions undertaken by the Department of Transportation to enhance security at the Distrigas facility, it was your understanding that:

“To improve security measures, DOE will work directly with the local law enforcement officials and Distrigas. MEMA [Massachusetts Emergency Management Agency] will review the studies performed by Quest and develop a plan of action. RSPA [the Department of Transportation’s Research and Special Projects Administration] will be involved in the review of the onshore plant protection security features.

My office was subsequently provided with a copy of the Quest study. This Quest study, along with a study prepared for the facility operator by Lloyd’s Register of Shipping, which my office was also provided, has been used by the federal government and the facility operator to

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reassure the Commonwealth Massachusetts about the potential danger of a fire and explosion at or near the Distrigas facility, thereby allowing the facility to reopen.

Last fall, several press reports called the accuracy of these studies into question. For example, the Quest study focused on accidents in Boston's Outer Harbor, when the most troubling public safety threats could occur in the Inner Harbor. The methodology of the study has also been called into question by numerous experts. Even the author backed away from the study's findings and conclusions. According to an October 19, 2003 article in the Mobile Register quotes John Cornwell, the lead scientists on the Quest study of LNG fires, as stating:

"Some of the modeling we did for DOE – in hindsight, we should have done a more complete paper. ...I've learned you never write anything you don't want public. We violated our own rules on that score."

The Register article goes on to report that Mr. Cornwell did the Quest study on short notice and that he was believed that it would be employed in-house by federal agencies as one of several tools used to examine LNG fire scenarios. However, according to the Register article:

"In Boston, the Quest study – which has never been published in scientific journals – was apparently used by the DOE to suggest that a terrorist attack on an LNG tanker would result in only limited damage immediately around the ship. In stark contrast, published scientific studies have suggested that an LNG fire could have disastrous consequences for densely populated neighborhoods around Boston Harbor."

An article in the Boston Herald further suggests that the Quest study also was used by the Coast Guard to justify the resumption of LNG shipments in the months after the September 11<sup>th</sup> attacks.

At the time these press reports first appears, Department of Energy officials were quoted as denying any connection to the Quest Study, stating that the Department "did not commission or release the study" and was "not involved" with the study in any way.

I wrote to the Department of Energy, the Department of Transportation, and the FERC about this study. In response, DOE acknowledged that it had commissioned the study, and reported that it had been used by DOE officials in a presentation to an interagency working group formed to assist Massachusetts following the September 11<sup>th</sup> attacks. FERC indicated that it had cited the Quest Study in the Environmental Impact Statements for four LNG terminals (The Trunkline LNG Expansion Project, the Elba Island Expansion Project, the Hackberry LNG Project, and the Freeport LNG project). DOT reported that it had used the Quest study "as a hazard assessment model that was applied specifically to the Distrigas facility" and that "the results were used to justify enhanced security procedures for vessels transporting LNG and the onshore LNG storage tanks.

All three agencies seem to have tacitly admitted the shortcomings of the Quest study in deciding to support additional LNG safety studies.

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The FERC commissioned a study by ABS Consulting, which was recently released to widespread criticism from both the industry and independent experts. The ABS Study found the earlier Quest study to have several flaws, and did not recommend that it be used to analyze the consequences of a terrorist attack on an LNG tanker or terminal. While the FERC put the ABS study out for public comment, it has also indicated that it regards the ABS Study to be a final study and does not plan to request a formal peer review of this study or update it to take account of the comments that have been submitted. Both industry and expert commentary submitted to the FERC about the ABS Consulting study has been largely critical, noting several flaws in its methodology and urging that it be peer reviewed before it is used. Despite this recommendation, FERC appears to have no plans to request a peer review of the ABS study, but has nonetheless cited the study in the Environmental Impact Statement for the Freeport LNG project. The Subcommittee may wish to ask the FERC about this.

I understand that the DOE has commissioned a study by the Sandia Laboratory, which is expected to be available later in the year. While I don't know what is in the Sandia Study, I can only hope that it is more thorough than the previous government-funded LNG hazard studies. I would suggest to the Subcommittee that if the EPA issued an environmental regulation based on studies with as many flaws or shortcomings as the Quest and ABS studies, the regulated industry would be in an uproar and we would be hearing complaints about "junk science" being used to justify new regulations. Here, when we are talking about a matter that directly affects public safety; Congress also needs to demand that the science be done right, that it be methodologically sound, and that it be subjected to peer review. I urge the Subcommittee to help ensure that this is done in the future.

#### *LNG Carrier Vessel Vulnerabilities*

A second issue that I would call to the Subcommittee's attention is the potential for a terrorist attack on an LNG carrier vessel to result in failure of the cargo containment systems. Earlier this year, my office received a copy of a letter that Professor Jerry Havens of the University of Arkansas had sent Secretary Ridge regarding potential LNG tanker vulnerabilities. The Department's response suggested that the concerns posed by Professor Havens regarding: 1) the susceptibility of the foam insulation used on LNG carrier vessels to fire; 2) the possibility of rupture of the LNG containment system; and, 3) the potential for vapor pressure in the ship's LNG tanks to be elevated to levels beyond the capacity of the relief valves are either unfounded or are already being adequately addressed.

I have written the Department to request further information about the Department's basis for reaching such conclusions, based on contradictory evidence which is readily available from the public record. Here are my concerns:

First, the Department alleges that "foam polystyrene insulation, cited by Professor Havens, is not used on LNG carriers precisely because it's susceptible to melting and deformation in a fire."

This statement appears to be inaccurate. The Finnish LNG vessel manufacturer, Kvaerner Masa-Yards, reports in a sales brochure that, "the majority of the world's present LNG

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fleet, including those on order, incorporate the [the company's] Kvaerner Moss LNG tank design." This document goes on to state that "The design of the cargo tank insulation is based on panels made of expanded polystyrene." [Emphasis added]

A quick look at the Kvaerner Masa-Yard website confirms that polystyrene is still being used by the company for its LNG carrier vessels (see <http://www.masa-yards.fi/publications/pdf/LNG.pdf>). This publication describes the use of "inserts of very soft polystyrene for flexibility and fiberglass fibre reinforcement to absorb forces which are built up during the cooling down of the cargo tank."

I am also informed that many of the LNG carrier vessels that employ the so-called "membrane" design in their storage containers may also use foam insulation, and that some of these may have used polystyrene or materials with similar flammability characteristics.

The Japanese firm, Kawasaki Heavy Industries, Ltd., describes the "Kawasaki Panel System" and includes a description of the companies' use of polyurethane foam and phenolic resin foam in LNG carriers. The U.S. Coast Guard web site contains a Circular 8-80, issued in 1980, which warns of the flammability of polyurethane foam (see [http://www.uscg.mil/hq/g-m/nvic/8\\_80/n8-80.pdf](http://www.uscg.mil/hq/g-m/nvic/8_80/n8-80.pdf)), and the OSHA website contains a Hazard Information Bulletin issued in May 1989 which warns that "Rigid polyurethane and polyisocyanurate foams will, when ignited, burn rapidly and produce intense heat, dense smoke and gases which are irritating, flammable and/or toxic" (see [http://www.osha.gov/dts/hib/hib\\_data/hib19890510.html](http://www.osha.gov/dts/hib/hib_data/hib19890510.html)).

In addition, I recently received a copy of an article, which is available from the GasTech web site (see <http://www.gastech.co.uk/page.cfm/Action=GasTechSearch/t=m>) entitled "Gas Carriers – Effects of Fire on the Cargo Containment System." The article discusses some rather disturbing scenarios involving what could happen in the event that a fire on an LNG carrier vessel compromised the insulation.

In light of this information, my staff contacted the Coast Guard last week to ask them to explain the basis for the Department's assertions. They were unaware of the documents I have just mentioned. I have therefore formally asked the Department to explain the basis for its statement indicating that polystyrene foam is not used on LNG carriers. I also requested that the Department report on whether other flammable insulating materials are used on such carrier vessels. I am extremely concerned that the Department does not appear to be taking this issue seriously, and I believe that the matter needs to be addressed in order for the public to have confidence that the federal government is taking every necessary step to address potential threats to public safety.

The Department told me that "the insulation on LNG carriers is a complex assembly of many layers" and that "each layer is tested for fire resistance, and its ability to stop the spread of a fire, before it can be used on LNG carriers in U.S. waters." I have several questions about this statement, which I would urge the Subcommittee to explore, including:

1. Who in the federal government tests the insulation on LNG carriers for fire resistance?

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2. Who is responsible for determining whether this insulation is acceptable for use on LNG carrier vessels operating in US waters?
3. What are the standards used by the federal government for determining whether or not the insulating materials used on LNG carrier vessels are acceptable?
4. What hazard analysis has been done to examine what would happen in the event that a fire on an LNG carrier vessel ignited the insulation or otherwise compromised it?
5. Are older ships required to be retrofitted with new insulation if they use insulating materials, like polystyrene, which have now been determined to be highly flammable? If not, why not? If so, how does the federal government verify that this has occurred?
6. In light of the post-9/11 threat, is there any plan by the Department, or by the Coast Guard, to review the safety standards applicable to LNG carriers (including fire safety standards) to determine whether they need to be upgraded to better address the threat of sabotage or terrorist attack?

In its letter, the Department stated that “the relief valve capacity of LNG carriers is designed based upon exposure to fire.” This statement appears to assume that the insulation will continue to function properly. My concern is that if the insulation should fail as the result of a fire, the relief valves would not be capable of handling the increased vapor pressure that would result, since they would not allow for a sufficient flow through the valves. Professor Havens, who you will hear from later today, has suggested that if this were to be the case, the vessels, which are designed for only a few pounds overpressure, would be endangered.

The Department further suggests that concerns about the brittle fracture problem have been anticipated by U.S. regulations, which “require the use of a special crack-arresting steel in strategic locations throughout the vessel’s hull.” However, she goes on to acknowledge that “both the U.S. and international standards for LNG carriers were developed with the potential consequences posed by conventional maritime risks such as groundings, collisions, and equipment failures in mind.” The Department then goes on to say that in recognition of the “new risks now possible in our post 9/11 world, the United States and the international community have responded by implementing additional operational security measures” under U.S. law and international maritime codes. My question is this: How does adoption of additional operational security measures suffice to address an issue – brittle fracture -- that seems to go to the fundamental design of an LNG tanker? Might not terrorist threats require the use of additional measures to address the problem of brittle fracture of the ship’s hull resulting from an LNG spill? I urge the Subcommittee to raise this question with the Department of Homeland Security and the Coast Guard when they testify later this afternoon.

#### Funding

Let me now turn to the third issue – that of funding. On February 3, 2004, I organized a letter to Homeland Security Secretary Ridge, which was signed by Senator Kerry, as well as Representatives Tierney, Frank, Capuano, Lynch, and Delahunt. Our letter urged the Department to maintain a “High”, or Orange, Threat Level in Boston Harbor and Everett whenever Liquefied Natural Gas (LNG) tankers enter the Port of Boston to be offloaded at the

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terminal in Everett. Because of the unique and significant security challenges associated with the Everett LNG facility, the letter also calls on the Department to retain the Orange designation for the LNG terminal, even when the national threat level is downgraded to indicate a lower risk of terrorist attack. Our letter also urged Secretary Ridge to maintain federal reimbursement of overtime and other supplemental funds that Everett and other communities in the vicinity of the LNG facility must spend to secure the LNG facility from terrorism during the arrival, docking and departure of the LNG tankers.

On February 9, 2004, the Department of Homeland Security told the Executive Office of Public Safety in Massachusetts the following email:

“I am responding to your request about possible including of the LNG operations and facilities in Everett, Massachusetts, and the ongoing LNG tanker ship operations in Boston Harbor as critical assets warranting continued enhanced protective measures. At this time, we cannot make an exception to our list of critical infrastructures and these facilities would not be eligible for overtime funding similar to the funding covering approved sites in your state.”

As you can imagine, our delegation was not pleased to learn of this decision to deny overtime funding for LNG security activities. During a February 12, 2004 hearing of the Homeland Security Committee, I asked Secretary Ridge a question about Everett's eligibility for reimbursement for LNG expenses. The Secretary indicated that communities like Everett, which have important infrastructure and are located near major cities, would be eligible to get some of federal Urban Area Security Initiative money. However, the Secretary did not respond to my direct question about the Department's decision to deny Everett and other communities overtime funding. While Distrigas does presently reimburse the Everett police department for costs directly attributable to providing increased security details for the LNG facility during periods when the LNG tanker is docked at the terminal and unloading its cargo. I would like to see additional funding provided to cover provision of a police security detail at the facility at all times, with an enhance presence during elevate Homeland Security Threat levels. I would also like to see additional funding for training of local firefighters in Boston, Everett, and other surrounding communities who may someday be called on to fight an LNG fire.

*Need for a New DOT Rulemaking*

Let me now turn to the fourth and final issue: DOT's failure to properly exercise its authorities over LNG siting. Under a provision of the Pipeline Safety Act 1979, the Secretary of Transportation is supposed to ensure that the siting of all new LNG terminals is subject to standards which consider: 1) the kind and use of the facility; 2) existing and projected population and demographic characteristics of the location; 3) existing and proposed land use near the location; 4) natural physical aspects of the location; 5) medical, law enforcement, and fire prevention capabilities near the location that can cope with a risk caused by the facility; and 6) the need to encourage remote siting (see 49 U.S.C. 60103).

I am concerned about the nature and adequacy of the Transportation Department's efforts to carry out this authority. In the Committee report accompanying the House Energy and

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Commerce Committee's version of what became the Pipeline Safety Act of 1979 (H.Rept. 96-201, Part 1), the Committee noted:

"One area of particular concern to the committee has been the failure to adopt comprehensive Federal standards regarding the siting, design, operation, and maintenance of liquefied natural gas facilities." In 1972, the industry consensus standards developed by the National Fire Protection Association were incorporated into the federal gas pipeline safety regulations, supposedly as an interim measure pending the development of comprehensive standards. Despite widespread concern over the adequacy of these interim standards and the growing importance of LNG as an energy source, the promised comprehensive standards have never been adopted. H.R. 51 addresses this problem by identifying the criteria to be considered by the Secretary in developing standards and setting firm deadlines for proposing and adopting them."

However, if you read the DOT regulations at 40 CFR Part 193, for example, you will find that the DOT's regulations still continue to largely incorporate by reference the National Fire Protection Association (NFPA) standards – specifically, NFPA Standard 59A.

Deputy Chief Joseph Flemming of Boston Fire Department, in his May 25, 2004 comments on the ABS Consulting Report, has raised some very serious concerns about the wisdom of continuing to rely on the NFPA standards. Deputy Chief Flemming notes, for example, that the NFPA standards call for preventing "thermal radiation flux from a fire from exceeding" certain limits. One of these limits is 1600 Btu's per hour. He notes that "this level of heat flux will cause 2<sup>nd</sup> degree burns in 30-40 seconds," that it "will cause severe pain in 13 seconds," and that it will "be fatal to 1% of the affected population in 50 seconds." Deputy Chief Flemming notes that the Society of Fire Protection Engineers Handbook recommends a level ½ of that allowable under the NFPA standard. Finally, he notes that the NFPA Committee that made up these standards is largely comprised of representatives of the LNG industry or energy industry consultants, and that public officials – including firefighters who may have to deal with an LNG fire, are not routinely brought into discussion about what the appropriate standards should be. A quick check of the NFPA website reveals that the NFPA LNG Committee has representatives from BP Amoco, Distrigas, ExxonMobil, Weaver's Cove Energy, Keyspan, the American Gas Association, the American Petroleum Institute, the American Concrete Institute, and the Steel Plate Fabricators Association.

I would urge the Subcommittee to ask the Transportation Department whether it intends to continue relying on the industry dominated NFPA standards for LNG fire safety, or whether it plans to issue new LNG standards in a public rulemaking that better take into consideration the science, the hazards, and the risks, and which better comports with Congressional intent that the Department -- not the NFPA -- issue the standards for LNG siting.

Shortly after enactment of the 1979 Act, changes in the natural gas market place resulting from the decontrol of natural gas wellhead prices lead to the withdrawal of proposals for new LNG terminals and the shut down of all but the Everett, Massachusetts terminal. In a period when no new LNG terminals were being built, and existing ones were being shuttered, it is perhaps understandable that DOT did not take action to replace the NFPA standards with

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standards of its own. However, given the current resurgence of interest in LNG and the flood of new proposals to build LNG terminals, I think that DOT needs to revisit this matter now and consider revising its standards. I would also note that FERC has the legal authority to impose additional standards for LNG terminals. If DOT fails to Act, perhaps it is time for FERC to do so.

#### Conclusion

Since the September 11<sup>th</sup> terrorist attacks, Everett and other communities surrounding the Distrigas LNG facility have invested substantial amounts of money and time to ensure that the LNG facility receives the highest levels of protection possible. These comprehensive security measures are costly, and the federal government needs to do its part to help ensure the safety of these facilities.

Looking to the future, LNG is likely to become an increasing part of our energy mix. Given that fact, Congress needs to ensure that the federal government takes further steps to ensure that any future LNG terminals are sited in locations that prevent them from becoming an attractive terrorist target. Adhering to the Congressional directive that the Secretary consider the need for remote siting, looking at offshore siting alternatives, and updating the LNG siting rules so that they reflect sound science and decisions by federal agencies – as opposed to industry self regulatory bodies – is desperately needed. Finally, a more thorough examination of the potential consequences of a terrorist attack on an LNG tanker needs to be done. Perhaps the Sandia study will address this issue, but based on my experiences with the previous Quest and ABS Consulting studies, I think that the Congress needs to step up oversight in this area and demand that the studies that are being funded by the federal government are scientifically sound and subjected to a full peer review.

Thank you, Mr. Chairman for your invitation to submit this testimony. I look forward to working with you and other Members of the Committee on this and other important homeland security matters.

Mr. OSE. We are going to recess for 40 minutes. We will be come back at 3 o'clock.

[Recess.]

Mr. OSE. All right. Welcome back. If we could have the second panel consisting of David Garman; Patrick Wood III; and Rear Admiral Thomas Gilmour. Please join us at the witness table.

All right. Gentlemen, as I explained earlier, we are going to have you rise, swear you in.

[Witnesses sworn.]

Mr. OSE. Let the record show that the witnesses answered in the affirmative.

Our first witness on the second panel is Mr. David Garman, who is the Acting Under Secretary of the Department of Energy. He is joined by Patrick Wood III, who is the chairman of the Federal Energy Regulatory Commission; and, Rear Admiral Thomas Gilmour, who is the Assistant Commandant of Marine Safety at the U.S. Coast Guard in the Department of Homeland Security.

Gentlemen, we have received your written statements. They have been entered into the record. I, in fact, have read them. We are going to recognize each of you in turn for 5 minutes to make a summary of your written statement. We appreciate you joining us today.

Mr. Garman, you are recognized for 5 minutes.

**STATEMENTS OF DAVID GARMAN, ACTING UNDER SECRETARY, DEPARTMENT OF ENERGY; PATRICK H. WOOD III, CHAIRMAN, FEDERAL ENERGY REGULATORY COMMISSION; AND REAR ADMIRAL THOMAS GILMOUR, ASSISTANT COMMANDANT OF MARINE SAFETY, U.S. COAST GUARD, DEPARTMENT OF HOMELAND SECURITY**

Mr. GARMAN. Thank you, Mr. Chairman, for inviting me to provide the Department of Energy's perspective on the importation of liquefied natural gas and the siting of the facilities necessary to do it.

In addition to serving as the Acting Under Secretary, I also serve as the Assistant Secretary for Energy Efficiency and Renewable Energy. Put another way, I am responsible for those programs designed to help us use less gas than we otherwise would, either through the development of energy-efficient technologies and through the development of power-generation technologies using renewable energy.

As bullish as I am about the future of these technologies, we will still need increasing supplies of natural gas, and we must import more gas to meet the demands of our growing economy.

We have a clash of values in this country, Mr. Chairman, as we seem to want to pursue inexpensive energy services and environmental values simultaneously. As a consequence of environmental regulations, most new electricity generation is coming from gas plants. Also, as a consequence of environmental concerns, new gas exploration and production from public lands in the intercontinental shelf is very, very controversial. Demand is climbing, supply is falling, and price increases have predictably resulted.

In response to these higher prices, LNG imports have more than doubled from 228 billion cubic feet in 2002 to 506 billion cubic feet

in 2003. Expressed in terms of the percentage of natural gas imported, LNG grew from 5.7 percent to 12.9 percent of U.S. gas imports in just 1 year. Overall imports have also been rising.

We currently receive 87 percent of our natural gas imports from Canada, but we expect gas imported from Canada to decline as Canadian fields mature, and as Canada copes with its own growing domestic demand. Alaska gas will certainly help, but even with new supplies from Alaska, we will need to import more LNG.

The Northeastern United States is in perhaps the most difficult position, lying where it does at the end of the interstate pipeline system. Consumers there already suffer higher electricity and gas prices than many other parts of the country. LNG is also providing 20 percent of New England's gas demand annually and can provide nearly 30 percent of New England's peak-day requirements.

Given the situation we face, we need more LNG both in the Northeast and around the Nation. And, it is critical that necessary LNG import facilities receive appropriate permits and approvals in a timely and orderly manner. We believe a uniform national policy and Federal regulation of LNG import and related facilities best serves this goal.

The Federal Government, pursuant to the Natural Gas Act, has authority over the siting, construction and operation of LNG import and export facilities. This authority is shared between the agencies represented on this panel.

Chairman Wood will cover aspects of Federal authority and jurisdiction, so I will not repeat them, other than to say that the Department of Energy agrees with FERC's perspective.

My fundamental point, and I will close with this, Mr. Chairman, is that our economy depends on new supplies of LNG. The chairman of the Federal Reserve, Alan Greenspan, has personally and repeatedly made this point. Therefore, we must not jeopardize our ability to import the LNG we need by complicating the siting authority with a patchwork of regulatory regimes working at cross purposes.

I will end with that and will be happy to respond to questions either today or in the future. Thank you, Mr. Chairman.

Mr. OSE. I thank the gentleman for his testimony.

[The prepared statement of Mr. Garman follows.]

Testimony of David K. Garman  
Acting Under Secretary for Energy, Science, and Environment  
U.S. Department of Energy  
Before the  
Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs  
Committee on Government Reform  
U.S. House of Representatives  
June 22, 2004

Mr. Chairman and Members of the Subcommittee, thank you for inviting me to testify concerning the Department of Energy's (DOE) policies pertaining to the importation of liquefied natural gas (LNG) and to the siting of related facilities in the United States.

Because U.S. natural gas demand continues to outstrip domestic natural gas production, the U.S. economy requires increasing supplies of natural gas from imports. According to the most recent forecasts of DOE's Energy Information Administration (EIA), net imports of natural gas are projected to supply 21 percent of total U.S. natural gas consumption by 2010, compared with 15 percent historically. In 2003, pipeline imports from Canada provided 87 percent of U.S. imports of natural gas. However, with declining production from mature Canadian fields after 2010 and increasing domestic Canadian demand, increased U.S. natural gas demand will need to be met with additional LNG imports. These factors, in combination with higher natural gas prices, lower LNG production costs, and the desire of gas producers in other countries to monetize their stranded gas reserves, set the stage for increased LNG trade in the years ahead.

LNG is currently an important part of the U.S. natural gas supply. LNG contributed 507 Bcf, or 12.9 percent of all imported gas in 2003, up significantly from the 229 Bcf, or 5.7

percent contribution in 2002. Gas storage levels were very tight during last winter and this incremental 278 Bcf of gas supplied by LNG imports had an important effect in meeting natural gas demand and a positive effect on the economy. Without a rise in LNG imports, there would have been increased pressure on prices this past year, assuming the same level of production and consumption.

In particular, northeastern states, such as Massachusetts, might have seen further price spikes and even tighter market conditions, with possible service interruptions (at least to interruptible customers) without this additional import of LNG. LNG's contribution will become even more important to these customers located at the end of the interstate pipeline system in the future as demand increases. For instance, today LNG supplies about 20 percent of New England's gas annually and can provide nearly 30 percent of New England's peak daily requirements (according to the Northeast Gas Association).

It is critical that necessary LNG import facilities receive appropriate permits and approvals in a timely and orderly fashion, if U. S. consumers are to be assured of adequate supplies of natural gas at reasonable prices. This goal is best served by a uniform national policy and Federal regulation of import and related facilities. I will summarize DOE's jurisdiction over LNG imports and provide an overview of LNG supply, demand, markets, and the industry's plans for expansion of U. S. LNG facilities.

**DOE Jurisdiction over LNG Imports**

Section 3 of the Natural Gas Act (NGA) requires prior authorization of imports (and exports) of natural gas, including LNG. For nearly 30 years since a decision by the United States Court of Appeals for the District of Columbia Circuit in *Distrigas v. F.P.C.*, Federal authorities have asserted jurisdiction over the siting, construction, and operation of LNG import and export facilities based on the authority provided in NGA section 3.

In 1977, the Department of Energy Organization Act transferred the section 3 authority from the former Federal Power Commission to the Secretary of Energy. By a series of delegation orders, the Secretary of Energy has divided the exercise of this authority between DOE and the Federal Energy Regulatory Commission (FERC). The currently applicable DOE Redefinition Order No. 00-002.04, effective January 8, 2002, delegates to the Assistant Secretary for Fossil Energy the section 3 authority to regulate the import (or export) of natural gas, including the place of entry (or exit). The Secretary has delegated to FERC, in the complementary Delegation Order No. 00-004.00, the authority to approve or disapprove proposals for the siting, construction, and operation of facilities, and whenever the import (or export) involves construction of new domestic facilities, the place of entry (or exit). Both delegation orders stipulate that DOE retains the authority to “disapprove” the siting, construction, and operation of particular facilities, and where the construction of new domestic facilities are involved, the place of entry (or exit). DOE exercised this reserved authority in a 1989 order authorizing the export of LNG from

Alaska to the Pacific Rim but disapproving any place of export other than a particular site deemed environmentally preferable to alternative export sites.

The Energy Policy Act of 1992 (EPAct) made certain amendments to NGA section 3, but in DOE's view, those amendments did not alter DOE's authority – which has been delegated to FERC – with respect to the siting, construction and operation of onshore LNG import or export facilities. Recent amendments to the Deepwater Port Act effectively transferred jurisdiction over the siting, construction, and operation of offshore natural gas facilities to the U.S. Coast Guard and the Maritime Administration.

DOE supports the recent decision issued by FERC, in a case concerning a proposed LNG facility near Long Beach, California, that exclusive authority over the siting, construction and operation of LNG import facilities lies at the Federal level under NGA section 3, and that any State permits necessary for facilities of this type must be consistent with and must not impede or unduly delay projects that have been approved by FERC. In 1938, Congress said in section 1 of the Natural Gas Act that “[f]ederal regulation in matters relating to the transportation of natural gas and the sale thereof in interstate and foreign commerce is necessary in the public interest.” That is true today, as it was 66 years ago. FERC works cooperatively with State agencies in siting and permitting LNG facilities, just as it does when issuing certificates for interstate natural gas pipelines, but it is vital to the development of infrastructure for our Nation that that exclusive jurisdiction over the siting, construction and operation of LNG facilities remain, as it is today, at the Federal level.

**Supply**

Since the mid-1970s, world natural gas proved reserves have generally trended upward each year. In 2004, worldwide proved reserve estimates increased for the ninth consecutive year. As of January 1, 2004, proved world natural gas reserves, as reported by the Oil & Gas Journal, were estimated at 6,076 trillion cubic feet (Tcf) —575 Tcf (10 percent) more than the estimate for 2003. The developing world accounted for virtually all the increase in proved reserves. Qatar, where the estimate of proved gas reserves grew from 508 Tcf for 2003 to 910 Tcf for 2004, accounted for most of the increment. Smaller but still substantial increases in estimated gas proved reserves were reported for Iran (an increase of 128 Tcf) and Nigeria (35 Tcf). Almost three-quarters of the world's proved natural gas reserves are located in the Middle East and Eastern Europe and the former Soviet Union (EE/FSU), with Russia, Iran, and Qatar accounting for about 58 percent of the total. Proved reserves in the rest of the world are fairly evenly distributed on a regional basis.

Much of this gas is considered “stranded” because it is located in regions distant from consuming markets. The 12 countries that currently export LNG have approximately 30 percent of world natural gas reserves. Three countries with 33 percent of the world's reserves are currently building their first liquefaction facilities. At least seven additional countries, with 19 percent of the world's reserves, are potential LNG exporters.

The United States has produced more than 40 percent of its total estimated natural gas resource and carries less than 10 percent as remaining reserves. In contrast, the rest of

the world has produced less than 10 percent of its total estimated natural gas resource and carries more than 30 percent as remaining reserves.

North American natural gas demand already exceeds North American production, and this gap is projected to grow in the future. In fact, North American production is expected to meet only 84 percent of U.S. gas needs in 2025. Net pipeline imports from Canada are expected to reach 3.7 Tcf in 2010, and then decline as Canadian fields mature and Canadian demand increases. Increased access to U.S. resources including natural gas located on the North Slope of Alaska could save consumers \$300 billion in natural gas costs over the next 20 years. According to EIA's most recent forecast, total net imports are projected to supply 21 percent of the total U.S. natural gas consumption in 2010 (5.5 Tcf) and 23 percent in 2025 (7.2 Tcf), compared with 15 percent historically; nearly all of this increase in net imports is expected to consist of LNG. It is projected that LNG will become the largest source of net U.S. imports by 2015, as Canadian imports decline. LNG imports are expected to rise from 5 percent of net U.S. natural gas imports in 2002 to 39 percent in 2010.

### **Demand**

Today natural gas provides nearly one-quarter of U.S. energy requirements as a clean fuel for heating and cooking in over 60 million U.S. households. U.S. industries get over 40 percent of their primary energy needs from natural gas. Power generators and industrial consumers are more dependent on gas-fired equipment and less able to respond to higher gas prices by using alternate sources of energy. Gas consumption will grow, but such

growth will be moderated as the most price-sensitive industries become less competitive, causing some industries to relocate outside North America.

### **Growing LNG Market**

The increases in world natural gas consumption projected in EIA's International Energy Outlook of 2004 reference case will require bringing new gas resources to market. Many of the natural gas assets of the developing world are remote from major consuming markets ("stranded"). This fact, coupled with cost decreases throughout the LNG chain, has made LNG increasingly competitive, contributing to the expectation of strong worldwide growth in LNG trade.

In 2002, 12 countries shipped 5.4 Tcf of LNG—up from 9 exporting countries shipping less than 4 Tcf in 1997. Global LNG liquefaction capacity is expected to increase from 6.6 Tcf per year in 2003 to 9.4 Tcf per year in 2007, based upon facilities currently under construction.

### **U.S. Expanding LNG Activity**

U. S. LNG imports in 2003 are estimated at 540 Bcf, up from 229 Bcf in 2002. The United States is both an importer and an exporter of LNG. LNG has been produced in and exported from Kenai, Alaska, to Japan for the last 30 years, with 63 Bcf exported in 2002. While historically Algeria was the largest supplier of LNG to the United States, since 2000 it has been far surpassed by Trinidad and Tobago, which now serves as the

source for 75 percent of the nation's U.S. LNG imports in 2003. The United States imported 378 Bcf from Trinidad and Tobago in 2003. In addition the United States also received LNG cargos in 2003 from Malaysia, Nigeria, Oman, and Qatar.

Current U.S. LNG regasification terminals are at Cove Point, Maryland; Elba Island, Georgia; Everett, Massachusetts; and Lake Charles, Louisiana. These four terminals have an estimated combined peak capacity of about 1.2 Tcf per year and an estimated baseload capacity of 880 Bcf per year. All four terminals either have recently completed an expansion or plan to expand their regasification capacity by 2008. Existing U.S. LNG plants are expected to be at, or close to, full capacity by 2007, importing 1.4 Tcf annually.

EIA's Annual Energy Outlook 2004 (AEO2004) projects that four new LNG regasification terminals will need to be constructed on the Atlantic and Gulf Coasts from 2007 through 2010 to meet the 54 percent increase in imported LNG demand that is projected for that timeframe. It has been projected that additional terminals will need to be constructed to serve markets in Florida, the south Atlantic states, and the western Gulf Coast.

This concludes my testimony. I would be glad to answer any questions you may have.

Mr. OSE. Our next witness is the chairman of the Federal Energy Regulatory Commission, who has been with us regularly on energy issues. It is good to see him again.

Chairman Wood, welcome. You are recognized for 5 minutes.

Mr. WOOD. Thank you, Chairman Ose, Mr. Tierney. In my testimony I discuss some of the issues relating to the Commission's view of its jurisdiction vis-a-vis State regulators over LNG facilities. But, in my opening statement, I would like to focus on the broader processes, because I think there is some incorrect information or just some misunderstanding about the broad role that goes on in permitting these new facilities today.

Currently we do have, as the map indicates, four existing facilities in the continental United States. There is one in Puerto Rico as well as an export facility in Alaska, and then a number of smaller ones.

Mr. OSE. We are going to recess for 5 minutes.

[Recess.]

Mr. OSE. We will reconvene.

Mr. WOOD. In addition, we have 13 pending applications before the Commission, and then another—the bottom half of this chart which is attached to my testimony—another 20 or 30 potential out there, in the United States, as well as about half a dozen, maybe 8 to 10, being considered in Mexico and in Canada. There is a tremendous need to have the sufficient staffing at the Commission to address these filings as they come forth to make sure that the safe and reliable operations come out of these permitted facilities.

So we have established a stand-alone office in our Division of Energy Projects to make sure that we give these the proper review, both the new permits as well as the existing ones. We, of course, oversee the safety of the cryogenic facilities, and of the environmental conditions of the facility's operations, as well as the safety and security on an ongoing basis.

As to the new permits, which I think is the main focus of the hearing today, we encourage parties to meet with the Commission staff early on before they move forward into seeking permit authority from the Commission, and engage in a pre-filing process.

The pre-filing process is an effort to engage in a nonconfrontational manner other agencies, State, Federal and local, our sister agencies represented here as well as the DOT; to also talk to local elected officials, to landowners, to environmental groups to bring out all of the interests, again in a nonconfrontational format, in advance of an application being filed with the Commission. We found that this has worked very successfully in our hydroelectric licensing program, and that we want it to be a useful tool for us in reviewing in a thorough but expeditious manner any LNG siting facility that is brought forth.

And we did actually yesterday or last Friday approve the second new LNG facility in the last quarter century, in Freeport, TX, that did use this process. And it was a very successful and well-vetted application that I think addressed all of the issues, including safety, that were raised throughout the year and 3 months that we were reviewing it.

As a final point before heading off to questions, I did want to mention the very involved role that a number of other agencies

played in the process besides the Commission. Attached to the back of my testimony are charts of the two permits that have happened on our watch at the Commission in 2002, and this one last week in Louisiana and in Texas, that indicate the tremendous involvement of other sister Federal agencies, as well as State agencies and local entities such as police departments and departments of transportation, both in Texas and in Louisiana. I think they have demonstrated, certainly to me, that there is broad consultation and broad involvement of States to participate, but not in an overlapping format, but in a collaborative format in a way that we all do what we are good at together to bring the process to a head through the environmental impact review process.

So I would just recommend those to you, Mr. Chairman, to the committee, for review as you look at the balance between State and Federal entities with regard to our appropriate roles in reviewing the permitting of new LNG facilities. I look forward to any questions.

Mr. OSE. I thank the gentleman.

[The prepared statement of Mr. Wood follows.]

**Testimony of  
Pat Wood, III  
Chairman, Federal Energy Regulatory Commission  
Before the  
Subcommittee on Energy Policy, Natural Resources,  
And Regulatory Affairs  
Committee on Government Reform  
United States House of Representatives  
June 22, 2004**

Mr. Chairman and Members of the Subcommittee:

Thank you for the opportunity to speak today on the siting of Liquefied Natural Gas (LNG) import facilities, which can be a crucial component of the infrastructure necessary to meet America's energy needs. I will first discuss the Federal Energy Regulatory Commission's LNG Program, and then review the Commission's legal authority with respect to LNG facilities.

**I. The Commission's LNG Program**

The goal of the Commission's LNG Program is to assure the safe operation and system reliability of jurisdictional liquefied natural gas (LNG) facilities throughout the United States. As I will discuss in more detail, the Commission thoroughly examines all aspects of a proposed project, including environmental impact, safety, and security, to ensure that the Commission's decision satisfies the public interest. As part of this process, Commission staff solicits comments and recommendations at several points in the review process from federal, state, and local authorities, and members of the public, in order to obtain the broadest possible range of information and opinion.

Currently, there are 17 facilities under Commission jurisdiction. Twelve of the facilities are land-based peakshaving plants which liquefy and store LNG during the summer (low demand) months for sendout during winter (high demand) months. The remainder are baseload LNG import terminals, with the exception of the Phillips/Marathon terminal in Kenai, Alaska, which exports LNG to Japan. Recently, there has been a resurgence in developing new import projects to meet the growing demand for natural gas in the United States. I have attached to my testimony a map showing the locations of existing and proposed North American LNG terminals.

As I have noted, the Commission's process for reviewing LNG facility applications is designed to provide for a complete examination of all aspects of proposed projects and to provide for extensive input from federal and state agencies, the public, and other interested parties.

Prior to a company filing an LNG-related application, company representatives commonly meet with the Commission's Office of Energy Projects (OEP) staff to explain the proposal and solicit advice. These meetings provide prospective applicants the opportunity for Commission staff to offer suggestions related to the environmental, engineering and safety features of the proposal. At this stage, Commission staff reviews conceptual designs of planned LNG facilities, provides guidance on resolving potential environmental, safety, and design issues, and explains the level of design detail and safety analysis required for a complete application. In this manner, Commission staff learns

about future projects which may be filed at the Commission and helps direct companies in their application preparation.

The Commission strongly encourages potential applications to engage in the National Environmental Policy Act (NEPA) pre-filing process, in which the applicants begin environmental review well before the filing of an application. This provides for early identification of issues, increased federal and state government and public involvement, and the opportunity to begin developing consensus and working on the issue resolution.

Once an application has been filed, the Commission prepares an environmental impact statement (EIS) to fulfill the requirements of NEPA and the Commission's implementing regulations under Title 18, Code of Federal Regulations, Part 380. The purpose of the document is to inform the public and the permitting agencies about the potential adverse and/or beneficial environmental impacts of proposed projects and their alternatives.

A thorough analysis of any substantive environmental issue raised by a proposed project is undertaken during the preparation of the EIS. The NEPA documents for new LNG facilities (and major expansions of existing sites) include a thorough study of potential impacts to public safety. The Commission also develops a separate *Cryogenic Design Review*, which includes detailed technical information and a design review, as well as conclusions and recommendations regarding a proposed project, to assure the safe

design of the proposed facilities and system reliability to meet the country's natural gas requirements.

Federal and state agencies and the public play crucial roles in the Commission's LNG authorization process. The Commission works with all stakeholders during the NEPA pre-filing process, to identify issues and establish partnerships for developing solutions. In the course of the NEPA process, the Commission holds public scoping meetings, notifies the public when a draft environmental document is available for review and comment, and holds public meetings to receive comments regarding the draft document. Stakeholders are also given the opportunity to intervene and file comments in the LNG proceeding. In addition, state resource agencies may have the authority to issue approvals under statutes such as the Clean Water Act, the Clean Air Act, and the Coastal Zone Management Act. Attached to my testimony is a chart showing the federal, state, and local authorizations that were required for two recent LNG projects.

As discussed below, LNG projects are licensed under section 3 of the Natural Gas Act, and there is no eminent domain authority under that section; therefore, applicants will also have to comply with local requirements concerning property acquisition and related matters. To the extent that state and other federal agencies accept our invitations to work jointly during necessary reviews, the efficiency of the process is increased, and the possibility of sequential, and possibly conflicting, record development and authorizations, can be eliminated.

During construction, Commission staff visits the project site as frequently as needed throughout the entire construction process. These inspections allow us to identify any deviations from the approved facility design.

Commission oversight continues after an LNG project goes into operation, with a focus on system reliability and integrity. Each LNG facility under FERC jurisdiction is required to file semi-annual reports to summarize plant operations, maintenance activity and abnormal events for the previous six months. In addition, our staff periodically conduct inspections (focusing on equipment, operation, safety, and security) of each facility throughout its operational life. About half of the total LNG facilities are inspected every year, allowing a 2-year rotation schedule for all jurisdictional facilities. Following the first biennial inspection after the commencement of operations, the facility's inspection manual is updated to incorporate any authorized design changes or facility modifications since the original manual was prepared. This process provides an "as-built" manual for use in future inspections.

The inspection manual provides a permanent record documenting the operating history of the facility and is continually revised to reflect any facility changes and operating problems. The revised document includes Commission staff's conclusions and recommendations from the current inspection and discusses specific operating problems and facility modifications over the previous 2-year period. The company is requested to

address all recommendations and outstanding issues in the next semi-annual report to the Commission.

Throughout the LNG siting process, the Commission works closely with other federal agencies that have jurisdiction concerning LNG facilities. In 1985, the Department of Transportation (DOT) and the Commission entered into a Memorandum of Understanding (MOU) which acknowledged DOT's authority to promulgate general federal safety standards for LNG facilities, and the Commission's authority to impose more stringent safety requirements, when warranted, as well as to impose requirements to ensure or enhance operational reliability of its jurisdictional LNG facilities.

In 2003, interest in constructing additional LNG import terminals led to heightened public concern regarding the safety of the terminals and the associated LNG vessel traffic. In February 2004, in an effort to address these and other related issues, the Commission, the U.S. Coast Guard, and DOT's Research and Special Programs Administration (RSPA) entered into an Interagency Agreement for the Safety and Security Review of Waterfront Import/Export Liquefied Natural Gas Facilities. The agreement states that the Commission is "responsible for authorizing the siting and construction of onshore LNG facilities" under NGA section 3 and "conducts environmental, safety, and security reviews of LNG plants and related pipeline facilities" in its role as "the lead agency responsible for the preparation and analysis and decisions required under NEPA for the approval of new facilities."

In sum, the Commission's process is designed to ensure the safe, reliable construction and operation of LNG facilities, based on extensive input from all affected parties.

## **II. The Commission's Jurisdiction over LNG Facilities**

Pursuant to section 3 of the Natural Gas Act, the Commission has exclusive jurisdiction to license onshore LNG import and export facilities. Section 3 provides, in part, that

no person shall export any natural gas to a foreign or import any natural gas from a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so. The Commission shall issue such order upon application, unless, after opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with the public interest. The Commission may by its order grant [an LNG] application, in whole or in part, with such modification and upon such terms and conditions as the Commission may find necessary or appropriate . . ."

Section 3 does not expressly reference the authorization of the facilities necessary for importing or exporting LNG. However, the courts have held that the Commission's authority to impose terms and conditions on import and export authorizations includes the authority to approve and condition the facilities needed to conduct these activities. The leading case on this point is the decision of the U.S. Court of Appeals for the District of Columbia Circuit in Distrigas Corporation v. FPC, 495 F.2d 1057, cert. denied, 419 U.S. 834 (1974).

At one time, the Commission authorized all or part of LNG import and export facilities under NGA section 7, which governs the transportation of natural gas in interstate commerce. In recent years, however, the Commission has determined that issuing LNG authorizations solely under section 3 allows for more flexibility and avoids the need to deal with matters more germane to interstate natural gas pipelines.

When the Department of Energy (DOE) was established in 1977, all of the section 3 functions of the Federal Power Commission (the Commission's predecessor) were transferred to the new department. However, in 1978, DOE delegated back to the Commission various authorities, including "all functions under section 3 of the Natural Gas Act to approve or disapprove the construction and operation of particular facilities and the site at which they would be located, and with respect to imports of natural gas, the place of entry." This is set forth in DOE Delegation Order No.02044-26, 43 FR 47769 (October 17, 1978). In 1982, the D.C Circuit noted that Secretary of Energy had delegated to the Commission "the power, recognized under section 3 since Distrigas, to approve or disapprove the site, construction and operation of particular facilities, as well as the place of entry for imports." West Virginia Public Services Commission v. Department of Energy, 681 F.2d 847, 858 (D.C. Cir. 1982).

In 1992, Congress passed the Energy Policy Act of 1992. That legislation, among other things, amended NGA section 3, in order to ensure that all LNG imports were deemed to be in the public interest. In the Commission's view, this change was made to ensure that DOE, which has the authority to approve requests to import or export natural gas, would ministerially grant requests relating to LNG, as a commodity. It has been argued that by amending section 3, Congress also removed the Commission's discretion with respect to LNG facilities, such that the authority to regulate those facilities devolved to the states. I believe that, in light of the fact that nothing in the 1992 Act or its legislative history shows any intent by Congress to alter the Commission's jurisdiction over LNG facilities, the correct reading of the legislation is that it applies to DOE's permitting authority for the commodity, but not the Commission's facilities' siting authority.

In a recent order, the Commission confirmed the long-term understanding of federal agencies and the courts that the Commission has the exclusive authority to approve the siting of LNG facilities. See Sound Energy Solutions, 106 FERC ¶ 61,279, reh'g denied, 107 FERC ¶ 61,263 (2004). The Commission recognizes the important role that the states and other stakeholders have in the siting process, and we are committed to doing everything we can to work with them on LNG matters. At the end of the day, however, it is the Commission that must approve and condition onshore LNG facilities.

We will strive to do so in a manner that recognizes the needs and interests of all affected parties, and that fully comports with the public interest.

Thank you again for this opportunity to discuss the Commission's LNG program. The Commissioners and staff of the FERC are always available to assist the Committee in any manner.

## Major Permits, Approvals, and Consultations for the Hackberry LNG Project

| Agency   | Permit/Approval/Consultations  |
|--|--|
| <b>FEDERAL</b>   |  |
| U.S. Army Corps of Engineers (COE)<br><b>*Participant in the EIS Process</b>   | Authorization for activities that will occupy, fill, or grade land in a floodplain, streambed, or channel of a stream under Section 10 of the Rivers and Harbors Act of 1899 (33 USC § 403)<br><br>Authorization to discharge dredged or fill material into waters of the United States under Section 404 of the Clean Water Act (CWA) (33 USC § 1344)   |
| U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA)<br>Office of Coastal Zone Management | Federal Consistency Certification (1465 and 15 CFR Part 930, 16 USC §§ 145) (permitting authority delegated to the Louisiana Department of Natural Resources Coastal Management)   |
| NOAA Fisheries<br><b>*Participant in the EIS Process</b>   | Consultation regarding compliance with Section 7 of the Endangered Species Act; the Magnuson-Stevens Fishery Conservation and Management Act; and the Marine Mammal Protection Act (16 USC §§ 1856 et seq.)  |
| U.S. Department of the Interior<br>U.S. Fish and Wildlife Service<br><b>*Cooperating Agency in the EIS Process</b>       | Consultation regarding compliance with Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act, and the Fish and Wildlife Coordination Act (16 USC § 1531 et seq.)  |
| U.S. Environmental Protection Agency<br><b>*Provided Comments on the EIS</b>   | Water Quality Certification under Section 401 of the CWA, (33 USC § 1341, 40 CFR § 131) (permitting authority delegated to the Louisiana Department of Environmental Quality)<br><br>National Pollutant Discharge Elimination System (NPDES) permits for stormwater and wastewater under Section 402 of the CWA, (33 USC § 1342 and 40 CFR §§ 122-125), (in conjunction with Louisiana)<br><br>Section 404 of the CWA (veto power for wetland permits issued by the COE)   |
| U.S. Department of Homeland Security<br>U.S. Coast Guard<br><b>*Participant in the EIS Process</b>                       | Letter of Intent (33 CFR 127); Waterfront Facilities Handling Liquefied Natural Gas and Liquefied Hazardous Gas; Permission to establish Aids to Navigation (33 CFR Part 66, 14 USC §§ 84-86)  |
| <b>STATE</b>   |  |
| Louisiana Department of Natural Resources<br>Coastal Management Division<br><b>*Participant in the EIS Process</b>       | Federal Consistency Review with CZMP Program Policies  |
| Louisiana Department of Environmental Quality  | Water Quality Certification pursuant to Section 401 of the CWA<br>Louisiana Pollution Discharge Elimination System (LPDES)<br>Permit to Discharge Industrial Wastewater<br>Notice of Intent for Stormwater Discharges Associated with Industrial Activity under the LPDES Multi-Sector General Permit<br>Notice of Intent to Discharge Stormwater Associated with Construction Activity<br>Notice of Termination of Coverage under LPDES General Permit for Stormwater Discharges Associated with Construction Activity<br>LPDES Notice of Intent to Discharge Hydrostatic Test Wastewater<br>Part 70 Air Permit |

|  |  |
|--|--|
| Louisiana Department of Wildlife and Fisheries<br><b>*Participant in the EIS Process</b>   | State-listed threatened and endangered species consultations   |
| Louisiana Department of Culture, Recreation, and Tourism – Division of Archaeology & Historic Preservation<br><b>*Participant in the EIS Process</b> | Review and comment on undertakings potentially affecting cultural resources (Section 106, National Historic Preservation Act ) |
| Louisiana Department of Transportation   | Road Crossing Permits  |
| <b>LOCAL</b>   |  |
| Beauregard Parish Police Jury  | Road Crossing Permit   |
| Calcasieu Parish Police Jury   | Road Crossing Permit   |
| Cameron Parish Police Jury   | Road Crossing Permit   |

## Major Permits, Approvals, and Consultations for the Freeport LNG Project

| Agency   | Permit/Approval/Consultations  |
|--|--|
| <b>FEDERAL</b>   |  |
| U.S. Army Corps of Engineers (COE)<br><b>* Cooperating Agency in the EIS Process</b>   | Authorization for activities that will occupy, fill, or grade land in a floodplain, streambed, or channel of a stream under Section 10 of the Rivers and Harbors Act of 1899 (33 USC § 403)  |
|  | Authorization to discharge dredged or fill material into waters of the United States under Section 404 of the Clean Water Act (CWA) (33 USC § 1344)  |
| U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA)<br>Office of Coastal Zone Management           | Federal Consistency Certification (1465 and 15 CFR Part 930, 16 USC §§ 145) (permitting authority delegated to the Texas General Lands Office)   |
| NOAA Fisheries<br><b>* Cooperating Agency in the EIS Process</b>   | Consultation regarding compliance with Section 7 of the Endangered Species Act; the Magnuson-Stevens Fishery Conservation and Management Act; and the Marine Mammal Protection Act (16 USC §§ 1856 et seq.)  |
| U.S. Department of the Interior<br><b>*Provided Comments on the EIS</b>  |  |
| U.S. Fish and Wildlife Service<br><b>*Cooperating Agency in the EIS Process</b>  | Consultation regarding compliance with Section 7 of the Endangered Species Act, the Migratory Bird Treaty Act  |
| U.S. Environmental Protection Agency<br><b>*Provided Comments on the EIS</b>   | Water Quality Certification under Section 401 of the CWA, (33 USC § 1341, 40 CFR § 131) (permitting authority delegated to the Texas Commission for Environmental Quality)<br><br>National Pollutant Discharge Elimination System (NPDES) permits for stormwater and wastewater under Section 402 of the CWA, (33 USC § 1342 and 40 CFR §§ 122-125), (in conjunction with Texas)<br>Industrial Storm Water Permit<br>Process Waste Discharge Permit<br>Industrial Non-process Waste Water Permit<br>Storm Water Construction Permit<br><br>Section 404 of the CWA (veto power for wetland permits issued by the COE) |
| U.S. Department of Homeland Security<br>U.S. Coast Guard<br><b>* Cooperating Agency in the EIS Process</b>                         | Letter of Intent (33 CFR 127); Waterfront Facilities Handling Liquefied Natural Gas and Liquefied Hazardous Gas; Permission to establish Aids to Navigation (33 CFR Part 66, 14 USC §§ 84-86)  |
| U.S. Department of Agriculture<br>Natural Resources Conservation Service<br><b>*Provided Comments on the EIS</b>                   |  |
| U.S. Department of Health and Human Services<br>Centers for Disease Control and Prevention<br><b>*Provided Comments on the EIS</b> |  |
| <b>STATE</b>   |  |
| Railroad Commission of Texas   | Section 401, Clean Water Act, Water Quality Certification<br>National Pollutant Discharge Elimination System Hydrostatic Discharge Permit  |

|  |  |
|--|--|
| Texas General Lands Office<br><b>*Participant in the EIS Process</b>                 | Federal Consistency Review with CZMP Program Policies  |
| Texas Commission for Environmental Quality<br><b>*Participant in the EIS Process</b> | Permit-by-Rule in lieu of Title V Permit<br>Temporary Water Use Permit<br>Wastewater Permit<br>CAA Conformity Determination    |
| Texas Parks and Wildlife Department<br><b>*Participant in the EIS Process</b>        | State-listed threatened and endangered species consultations   |
| Texas Historical Commission<br><b>*Participant in the EIS Process</b>                | Review and comment on undertakings potentially affecting cultural resources (Section 106, National Historic Preservation Act ) |
| Texas Department of Transportation   | Road Crossing Permits  |
| Texas Parks and Wildlife Department<br><b>*Provided Comments on the EIS</b>          |  |
| Port of Freeport<br><b>*Provided Comments on the EIS</b>                             |  |
| <b>LOCAL</b>   |  |
| Brazoria County  | Building Permits   |
| Brazoria County Floodplain Administrator   | Permit for Construction in Flood Zone  |
| Velasco Drainage District  | Levee Construction Plan Review and Approval  |
| Village of Quintana  | Permit for Construction in Flood Zone  |
| Village if Surfside Beach  | Conditional Use Permit   |

Mr. OSE. Our third witness on the second panel is Rear Admiral Thomas Gilmour, who is the Assistant Commandant of Marine Safety, the U.S. Coast Guard, for the Department of Homeland Security.

Sir, this I believe is your first appearance before our subcommittee, and as always, welcome. We have read your testimony. It has been entered into the record. You are invited to summarize in 5 minutes.

Admiral GILMOUR. Yes, sir. It is my pleasure to discuss the Coast Guard's role in safety security of natural gas vessels and facilities and how we are cooperating, as was said, with other Federal agencies.

The Coast Guard plays a major role in ensuring all facets of marine transportation of LNG, including vessel, shoreside terminals and proposed deepwater ports, are operated safely.

Today I will briefly review the jurisdiction and partnerships the Coast Guard uses to ensure the safe operation of vessels, terminals and offshore ports.

As noted in the January 2004 Congressional Research Service report to Congress on LNG, the LNG tanker industry claims an impressive safety record over the last 40 years. Since international shipping began in 1959, tankers have carried over 33,000 LNG cargoes without a serious accident at sea or in port. LNG tankers have experienced groundings, collisions during this period, but none has resulted in a major spill or compromise of a cargo tank. The LNG marine safety record is partly due to a double hull design.

Today there are approximately 150 LNG vessels operating worldwide, although a majority of them are foreign flag. All LNG vessels calling in the United States meet both our domestic regulations and international requirements. Our domestic regulations for LNG vessels were developed in the early 1970's, and various vessel inspections are now codified in 46—Title 46 of the U.S. Code.

Our domestic regulations closely parallel international requirements, but there are more stringent requirements, such as a requirement for enhanced steels to deter brittle fracture in certain areas of the hull.

Before being allowed to trade in the United States, LNG carriers must submit detailed vessel plans and other information to the Coast Guard, and upon the satisfactory plan review and onsite verification, the vessel is listed—given a certificate of compliance. They are boarded by marine safety personnel prior to each U.S. port entry to verify proper operation of navigational safety, fire-fighting and cargo control systems.

LNG vessels are also subjected to additional measures, many of the special security precautions that predated the September 11 tragedy, and include such things as vessel control measures that are implemented when an LNG vessel is transiting a port, or as it approaches; safety zones around vessels to prevent other vessels from approaching the LNG carrier; escorts by Coast Guard patrol craft; and, coordination with other State and local organizations.

Since September 11th, additional security measures have been implemented by the Coast Guard. We now subject LNG vessels to at-sea boardings, where Coast Guard personnel conduct special security sweeps of vessels to ensure positive control of the vessel is

maintained throughout its port transit. This is in addition to everything I just mentioned.

And, of course, the most important post-September 11 maritime development has been the passage of the Maritime Transportation Security Act of 2002 [MTSA]. The Coast Guard has developed a comprehensive new body of security measures applicable to vessels, marine facilities, and our maritime personnel. It is closely aligned with the International Ship and Port Facility Code, which becomes effective this July, or in about 10 days. Under the ISPF code, vessels, including LNG tankers, must have certificates, and we will rigorously enforce this requirement on July 1st.

Regulations developed under the authority of the Ports and Waterways Safety Act assign the Coast Guard responsibility for safety issues within the marine transfer area of shore-side LNG terminals, and this area is defined as a waterfront facility between the vessel, or where the vessel moors, and the first shutoff valve of the pipeline immediately before the receiving tanks. The rest of the facility is regulated by RSPA.

New maritime security regulations were developed under MTSA, and these require the LNG terminal operator to conduct a facility security assessment and to develop a threat-scalable security plan that addresses the risks identified within the assessment. The six existing U.S. LNG terminals have submitted their security plans to Coast Guard review and approval last December. In contrast to our safety responsibility, where our authority is limited to the transfer area, our authority regarding security encompasses or could encompass the entire facility.

The Federal Energy Regulatory Commission has siting authority for shoreside LNG terminals. However, our role is that we review the construction of the existing facility and submit a letter of intent to the Coast Guard Captain of the port where the facility is located. The Captain of the port looks at the application of the owner and operator and looks at those things adjacent to the facility in the navigational waterway.

On February 10th the Coast Guard entered into an interagency agreement with FERC and RSPA to work in a coordinated manner to address these issues of safety and security in waterfront LNGs.

For deepwater ports, the Coast Guard authority to regulate these ports is from the Deepwater Ports Act, and the regulations pertaining to licensing, design, equipment operation are found in Title 33, in subchapter NN. MARAD is the licensing authority, while Coast Guard is the lead on application review and has the primary jurisdiction over design, equipment, and operations.

To expedite the process and more efficiently coordinate activities, the Coast Guard entered into an MOU involving more than a dozen agencies, including FERC, Minerals Management Service, and the Environmental Protection Agency. This MOU establishes a commitment on the part of all participating agencies to work together to meet an aggressive time line mandated by the Deepwater Ports Act.

Thank you for giving me the opportunity to discuss our role in LNG safety. I will be happy to answer any questions.

Mr. OSE. Thank you, Admiral.

[The prepared statement of Admiral Gilmour follows:]

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**DEPARTMENT OF HOMELAND SECURITY**

**U. S. COAST GUARD**

**STATEMENT OF**

**REAR ADMIRAL THOMAS H. GILMOUR**

**ON**

**COAST GUARD'S ROLE IN LNG SAFETY AND SECURITY**

**BEFORE THE**

**SUBCOMMITTEE ON ENERGY POLICY, NATURAL RESOURCES AND  
REGULATORY AFFAIRS**

**COMMITTEE ON GOVERNMENT REFORM**

**U. S. HOUSE OF REPRESENTATIVES**

**JUNE 22, 2004**

DEPARTMENT OF HOMELAND SECURITY  
UNITED STATES COAST GUARD  
STATEMENT OF  
REAR ADMIRAL THOMAS H. GILMOUR  
ASSISTANT COMMANDANT FOR MARINE SAFETY, SECURITY AND  
ENVIRONMENTAL PROTECTION  
ON THE  
COAST GUARD'S ROLE IN LIQUEFIED NATURAL GAS SAFETY AND  
SECURITY  
BEFORE THE  
COMMITTEE ON GOVERNMENT REFORM  
SUBCOMMITTEE ON ENERGY POLICY, NATURAL RESOURCES AND  
REGULATORY AFFAIRS

**Introduction**

Good morning Mr. Chairman and distinguished members of the Subcommittee. I am Rear Admiral Thomas Gilmour, Assistant Commandant for Marine Safety, Security and Environmental Protection. It is my pleasure to appear before you today to discuss the Coast Guard's role in the safety and security of Liquefied Natural Gas (LNG) vessels and facilities, and how the Coast Guard is cooperating with other Federal Agencies on this important National issue.

As the Federal Government's lead agency for Maritime Homeland Security, the Coast Guard plays a major role in ensuring that all facets of marine transportation of LNG, including LNG vessels, shoreside terminals, and proposed LNG deepwater ports, are operated safely, and that the risks associated with the marine transportation of LNG are managed responsibly. Today, I will briefly review the applicable laws and regulations that provide our authority and the requirements for the safe and secure operation of the vessels, shoreside terminals, and deepwater ports. I will also describe how the Coast Guard is working with the other Federal entities here today, as fellow stakeholders in LNG safety and security.

**LNG Vessel Safety**

Today, there are approximately 150 LNG vessels operating worldwide; only two of these vessels are U.S. flag, the POLAR EAGLE and the ARCTIC SUN, which operate out of the export facility in Kenai, AK. Although the majority of the world's LNG fleet is foreign flag, all LNG vessels calling in the U.S. must meet both our domestic regulations and international requirements. Our domestic regulations for LNG vessels were developed in the 1970s under the authority of the various vessel inspection statutes now codified in Title 46, United States Code. Relevant laws providing the genesis for LNG vessel regulation include the Tank Vessel Act (46 U.S.C. 391a) and the Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1978 (33 U.S.C. 1221, *et. seq.*). Regulations located in Title 46, Code of Federal Regulations (CFR) Part 154, "Safety Standards for Self-Propelled Vessels Carrying Bulk Liquefied Gasses," specify requirements for the vessel's design, construction, equipment and operation. Our domestic regulations closely parallel the applicable international requirements, but are more stringent in the following areas: the requirements for

enhanced grades of steel for crack arresting purposes in certain areas of the hull, specification of higher allowable stress factors for certain independent type tanks, and prohibiting the use of cargo venting as a means of cargo temperature or pressure control.

All LNG vessels in international service must comply with the major maritime treaties agreed to by the International Maritime Organization (IMO), such as the International Convention for the Safety of Life at Sea, popularly known as the "SOLAS Convention" and the International Convention for the Prevention of Pollution from Ships, popularly known as the "MARPOL Convention." In addition, LNG vessels must comply with the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk, known as the "IGC Code."

Before being allowed to trade in the United States, operators of foreign flag LNG carriers must submit detailed vessel plans and other information to the Coast Guard's Marine Safety Center (MSC) to establish that the vessels have been constructed to the higher standards required by our domestic regulations. Upon satisfactory review of the plan by the MSC and on-site verification by Coast Guard marine inspectors, the vessel is issued a Certificate of Compliance. This indicates that it has been found in compliance with applicable design, construction and outfitting requirements.

The Certificate of Compliance is valid for a two-year period, subject to an annual examination by Coast Guard marine inspectors, who verify that the vessel remains in compliance with all applicable requirements. As required by 46 U.S.C. 3714, this annual examination is required of all tank vessels, including LNG carriers.

The Coast Guard has long recognized the unique safety and security challenges posed by transporting millions of gallons of LNG or "cryogenic methane." Accordingly, LNG vessels typically undergo a much more frequent and rigorous examination process than conventional crude oil or product tankers. LNG vessels are boarded by marine safety personnel prior to each U.S. port entry to verify the proper operation of key navigation safety, fire fighting and cargo control systems.

#### **LNG Vessel Security**

In addition to undergoing a much more rigorous and frequent examination of key operating and safety systems, LNG vessels are subject to additional measures of security. Many of the special security precautions the Coast Guard has established for LNG vessels derived from our analysis of "conventional" navigation safety risks such as groundings, collisions, propulsion or steering system failures. These precautions predated the September 11, 2001 tragedy, and include such things as special vessel traffic control measures that are implemented when an LNG vessel is transiting the port or its approaches, safety zones around the vessel to prevent other vessels from approaching nearby, escorts by Coast Guard patrol craft, and, as local conditions warrant, coordination with other Federal, State and local transportation, law enforcement and/or emergency management agencies to reduce the risks to, or minimize the interference from other port area infrastructure or activities. These activities are conducted under the authority of existing port safety and security statutes, such as the Magnuson Act (50 U.S.C. 191 *et. seq.*) and the Ports and Waterways Safety Act, as amended.

Since September 11, 2001, additional security measures have been implemented, including the requirement that all vessels calling in the U.S. must provide the Coast Guard with a 96 hours advance notice of arrival (increased from 24 hours advance notice pre-9/11). This notice includes information on the vessel's last ports of call, crew identities, and cargo information. The Coast Guard has classified LNG vessels as "High Interest Vessels," and now subjects them to at-sea boardings, where Coast Guard personnel conduct special "security sweeps" of the vessel and ensure "positive control" of the vessel is maintained throughout its port transit. This is in addition to the safety oriented boardings previously described.

Of course, one of the most important post-9/11 maritime security developments has been the passage of the Maritime Transportation Security Act of 2002 (MTSA). Under the authority of MTSA, the Coast Guard developed a comprehensive new body of security measures applicable to vessels, marine facilities and maritime personnel. Our domestic maritime security regime is closely aligned with the International Ship and Port Facility Security (ISPS) Code. The ISPS Code, a mandatory requirement of the SOLAS Convention, was adopted at the IMO in December 2002 and comes into effect on July 1<sup>st</sup> of this year. Under the ISPS Code, vessels in international service, including LNG vessels, must have an International Ship Security Certificate (ISSC). To be issued an ISSC by its flag state, the vessel must develop and implement a threat-scalable security plan that, among other things, establishes access control measures, security measures for cargo handling and delivery of ships stores, surveillance and monitoring, security communications, security incident procedures, and training and drill requirements. The plan must also identify a Ship Security Officer who is responsible for ensuring compliance with the ship's security plan. The Coast Guard will rigorously enforce this international requirement by evaluating security compliance as part of our ongoing port state control program.

#### **Shoreside LNG Terminal Safety**

Presently there are six shoreside LNG terminals in the U.S. and U.S. Territories: the export facility in Kenai, AK; and, import terminals in Everett, MA; Cove Point, MD; Elba Island, GA; Lake Charles, LA; and Penuelas, PR. Regulations developed under the authority of the Ports and Waterways Safety Act assign the Coast Guard the responsibility for safety issues within the "marine transfer area" of LNG terminals. These regulations are located in Title 33 CFR Part 127. The "marine transfer area" is defined as that part of a waterfront facility between the vessel, or where the vessel moors, and the first shutoff valve on the pipeline immediately before the receiving tanks. The Department of Transportation (DOT) Research and Special Programs Administration's (RSPA) Office of Pipeline Safety has jurisdiction from that point inland. Safety issues within our purview in the marine transfer area include electrical power systems, lighting, communications, transfer hoses and piping systems, gas detection systems and alarms, firefighting equipment, and operational matters such as approval of the terminal's Operations and Emergency Manuals and personnel training.

#### **Shoreside LNG Terminal Security**

New "Maritime Security Regulations for Facilities", found in Title 33 CFR Part 105, were developed under the authority of MTSA. These regulations require the LNG terminal operator to conduct a facility security assessment and develop a threat-scalable security plan that addresses the risks identified in the assessment. Much like the

requirements prescribed for vessels, the facility security plan establishes access control measures, security measures for cargo handling and delivery of supplies, surveillance and monitoring, security communications, security incident procedures, and training and drill requirements. The plan must also identify a Facility Security Officer who is responsible for ensuring compliance with the facility security plan. The six existing U.S. LNG terminals were required to submit their security plans to the Coast Guard for review and approval last December, and full implementation of the plan is required by July 1, 2004. These reviews have been completed, and the terminals' compliance with the plans will be verified by local Coast Guard port security personnel through scheduled on-site examinations. In contrast to our safety responsibility, whereby our authority is limited to the "marine transfer area," our authority regarding the security plan can, depending upon the particular layout of the terminal, encompass the entire facility.

#### **Shoreside LNG Terminal Siting**

The Federal Energy Regulatory Commission (FERC) has siting authority for LNG terminals. However, the Coast Guard plays a role in the siting process. As required by 33 CFR 127.007, an owner or operator who intends to build a new LNG facility, or who plans new construction on an existing facility, must submit a "Letter of Intent" to the Coast Guard Captain of the Port in whose zone the facility is located. This letter must be submitted no later than 60 days prior to construction and must provide information on: the physical location of the facility; a description of the facility; the characteristics of the vessels intended to visit the facility and the frequency of visits; and, charts that show waterway channels and identify commercial, industrial, environmentally sensitive, and residential areas in and adjacent to the waterway to be used by vessels enroute to the facility, within 15.5 miles of the facility.

The Captain of the Port reviews the information provided by the applicant and makes a determination on the suitability of the waterway for LNG vessels. Factors considered include: density and characteristics of marine traffic in the waterway; locks, bridges or other man made obstructions in the waterway; the hydrologic features of the waterway, e.g., water depth, channel width, currents and tides, natural hazards such as reefs and sand bars; and underwater pipelines and cables. As required by 33 CFR 127.009, the Captain of the Port issues a "Letter of Recommendation" to the owner or operator of the proposed facility, and to the state and local government agencies having jurisdiction, as to the suitability of the waterway for the proposal.

On February 10, 2004, the Coast Guard entered into an Interagency Agreement with FERC and RSPA to work in a coordinated manner to address issues regarding safety and security at waterfront LNG facilities, including terminal facilities and tanker operations, to avoid duplication of effort, and to maximize the exchange of relevant information related to the safety and security aspects of LNG facilities and the related maritime concerns. An example work product of the enhanced cooperation between FERC and the Coast Guard brought about by this Interagency Agreement, is the recently completed Final Environmental Impact Statement (EIS) for the proposed Freeport, TX, LNG Import Terminal Project (FERC Docket CP03-75-000). In addition to more timely and efficient interaction between the local Coast Guard Captain of the Port and FERC staff, this LNG terminal EIS was the first to take into account the security measures required by MTSA, as well as the recent study sponsored by FERC, entitled: *Consequence Assessment Methods for Incidents Involving Releases from Liquefied Natural Gas Carriers*.

The issue of constructing new shoreside LNG terminals has been controversial, due in large part to public concerns over the safety and security of LNG vessel operations. Although there is no specific regulatory requirement to take into account the capacity of the LNG vessel when calculating the size of the exclusion zone surrounding the facility, this factor is considered in the EIS. The models presented in the FERC study are but one tool used to determine the overall suitability of the terminal site. In this regard, it is important to note that all the work in this area of science is theoretical, as a large scale marine release of LNG has not occurred in the history of this industry. Therefore, the Coast Guard is focusing on deterrent measures, which can be taken to responsibly manage the risks associated with the marine transportation of LNG.

#### **LNG Deepwater Ports: Authority and Agency Relationships**

The Coast Guard's authority to regulate deepwater ports (DWP) derives from the Deepwater Port Act of 1974 (DWPA); and, the regulations pertaining to the licensing, design, equipment and operation of DWPs are found in Title 33 CFR Subchapter NN (Parts 148, 149 and 150). Originally pertaining only to oil, the MTSA amended the Deepwater Port Act to include natural gas. This Act allows for the licensing of deepwater ports in the Exclusive Economic Zone along all maritime coasts of the United States. The Secretary of Homeland Security and the Secretary of Transportation delegated the processing of deepwater port applications to the Coast Guard and the Maritime Administration (MARAD), respectively. MARAD is the license issuing authority, while the Coast Guard is the lead on the application review, and has primary jurisdiction over design, equipment and operations. The DWPA establishes a specific time frame of 330 days from the date of publication of a Federal Register notice of a "complete" application to the date of approval or denial of a deepwater port license. Among other requirements, an applicant for a DWP license must demonstrate consistency with the Coastal Zone Management Plan of the adjacent coastal States.

The Coast Guard and MARAD, in cooperation with other Federal agencies, must comply with the requirements of the National Environmental Policy Act in processing DWP applications within the timeframes prescribed in the Deepwater Port Act. Currently, the Coast Guard is processing eight DWP applications, including two that have already been licensed: Chevron-Texaco's Port Pelican project and El Paso Corporation's Energy Bridge project, both of which are located offshore of Louisiana. A variety of energy corporations have announced their intentions to submit future applications for LNG DWPs.

To expedite the application review process, and more efficiently coordinate the activities of the numerous stakeholder agencies, the Coast Guard entered into a Memorandum of Understanding (MOU), involving more than a dozen agencies, including FERC, the National Ocean Service, the Environmental Protection Agency, the U.S. Department of the Interior, and the Minerals Management Service. The MOU obliges the participating agencies to work with each other, and with other entities as appropriate, to ensure that timely decisions are made and that the responsibilities of each agency are met. Briefly, these responsibilities include: assessing their particular role in the environmental review of DWP licenses; identifying agency contacts for the proposed project; meeting with prospective applicants and other agency representatives to identify areas of potential concern and to assess the need for and availability of agency resources

to address issues related to the proposed project; and identifying environmental issues and concerns related to the proposed project that need to be addressed in order for the lead agency to meet its obligations.

**LNG Deepwater Ports Safety and Security**

While conventional crude oil DWPs have been in operation around the world for many years, LNG DWPs are an emerging concept; currently there are none in operation anywhere. There are a variety of different designs under development that borrow from designs and technology that have been time-tested in the crude oil and the LNG industries. Proposals include ship-shaped hull designs similar to existing Floating Production, Storage and Offloading (FPSO) units, platform based storage and degasification units, gravity based structures, and innovative docking structures that attach directly to the LNG carrier as it ties off to a single point mooring. Because this is a new concept, the Coast Guard's regulations apply a "design basis" approach, rather than mandate a series of prescriptive requirements. Under a "design basis" approach, each concept is evaluated on its own technical merits, using relevant engineering standards and concepts that have been approved by recognized vessel classification societies and other competent industrial and technical bodies. In addition, the Coast Guard's DWP regulations require that all LNG DWPs develop and implement a security plan that addresses the key security plan elements provided in Title 33 CFR Part 106, "Maritime Security: Outer Continental Shelf Facilities."

Thank you for giving me this opportunity to discuss the Coast Guard's role in LNG safety and security and our relationships with other stakeholder agencies. I will be happy to answer any questions you may have.

Mr. OSE. As I explained earlier, what we do is we go by panel through a series of questions. Each Member is allowed 5 minutes. If there are sufficient questions, we will have multiple rounds. I want to welcome the gentleman from Utah. And, I will commence with the questions.

Mr. Garman, I looked in today's Wall Street Journal, and the futures for heating oil are—excuse me, not for heating oil, for natural gas are—least through May 2005 are over \$6 per million BTUs.

Now, I am curious about from the DOE's perspective what your projections are for natural gas prices nationally for the next 24 months.

Mr. GARMAN. I think as the futures, current prices are also around \$6 per million BTUs. And, I think that it is a safe bet; \$6 is about right.

Now, we are in reasonably good shape in the storage capacity this year compared to last year. So we are hoping that we will be heading into the heating season with an adequate or more than adequate supply for the winter, which would bode well for price stability during the winter heating months.

Mr. OSE. If today's price is \$6, both on the spot and the futures market, what has been a historical price for natural gas?

Mr. GARMAN. They have ranged in years past from \$2 to \$4.

Mr. OSE. So, if it was \$4, that \$2 increment, what does that translate to in terms of consumer expenditures compared to the historical norm? Does the DOE have anything of that nature?

Mr. GARMAN. We do. It depends on, of course, how much gas you use. It has forced some consumers to be more efficient, which is, of course—if there is a silver lining in this dark cloud, it is that higher prices do get consumers thinking about ways to use that energy more efficiently. And, that is something that we want to help them with and have been trying to help them with.

But, it is a substantial—it can be hundreds of dollars per household during heating season, and additional fuel adjustment charges for electricity purchased during the summertime for peak electricity use as well.

Mr. OSE. Well, I am specifically interested in those markets where we have a deficit situation; for instance, California. I did a back-of-the-napkin calculation last night. I am within one order of magnitude, so that is quite a bit of variability, but I am not sure of my math either, but it is somewhere on the order of \$2 billion in added consumer expense, if you consider having an LNG importation facility as opposed to not having an LNG importation facility. That is the difference in the dampening effect on price from having an LNG facility. Are those in the ballpark?

Mr. GARMAN. You ask a tough question of a witness under oath, Mr. Chairman.

Mr. OSE. You can say, I don't know.

Mr. GARMAN. What I would like to do is to task the Energy Information Administration to work with your staff, and with reasonable assumptions in the matter of, I would say, a week or so come up with some numbers that—

Mr. OSE. Why don't we give you the markets and deficits that we are particularly concerned about, and you and EIA can put that number together. I am specifically interested about California, New

England and Florida, being the ends of the pipe, so to speak, with little, if any, domestic production.

Mr. GARMAN. Happy to do that, Mr. Chairman.

[The information referred to follows:]

COMMITTEE: HOUSE COMMITTEE ON GOVERNMENT  
REFORM, SUBCOMMITTEE ON ENERGY  
POLICY, NATURAL RESOURCES AND  
REGULATORY AFFAIRS

DATE: June 22, 2004

WITNESS: David Garman

INSERT FOR THE RECORD

For this question, the Energy Information Administration compared the natural gas projections of the *Annual Energy Outlook 2004* reference case (AEO2004) to a model simulation which precluded new LNG terminals from being built, but permitted the planned expansions of existing terminals to be completed, as currently scheduled.

The table below provides the expected impacts of no new LNG terminals on gas consumer prices, consumption, and expenditures for California, Florida, and New England. These figures provide the aggregate consumer impacts for all residential, commercial, industrial, and electric power consumers in that region.

**U.S. Delivered Natural Gas Prices for the AEO2004  
Reference Case and the No New LNG Case**

|  | 2010    |            |            | 2025    |            |            |
|--|---------|------------|------------|---------|------------|------------|
|  | AEO2004 | No New LNG | Difference | AEO2004 | No New LNG | Difference |
| <b>Natural Gas Prices (2002 dollars per thousand cubic feet)</b> |         |            |            |         |            |            |
| California   | 6.05    | 6.13       | 0.08       | 6.73    | 7.16       | 0.43       |
| Florida  | 4.98    | 5.12       | 0.14       | 5.85    | 6.41       | 0.56       |
| New England  | 6.60    | 6.75       | 0.15       | 7.10    | 7.76       | 0.66       |
| <b>Natural Gas Consumption (billion cubic feet)</b>              |         |            |            |         |            |            |
| California   | 2.39    | 2.39       | 0.00       | 2.74    | 2.67       | - 0.07     |
| Florida  | 0.71    | 0.62       | - 0.09     | 0.87    | 0.77       | - 0.10     |
| New England  | 0.91    | 0.90       | - 0.01     | 1.14    | 0.98       | - 0.16     |
| <b>Natural Gas Consumer Expenditures (billion 2002 dollars)</b>  |         |            |            |         |            |            |
| California   | 14.46   | 14.65      | 0.19       | 18.44   | 19.11      | 0.67       |
| Florida  | 3.54    | 3.17       | - 0.37     | 5.09    | 4.94       | - 0.15     |
| New England  | 5.95    | 6.03       | 0.08       | 7.98    | 7.52       | - 0.46     |

Source: Energy Information Administration, National Energy Modeling System runs aeo2004.d101703e and nolng.d071204b.

The no new LNG terminal impact on aggregate consumer expenditures depends upon the changes expected in both delivered gas prices and delivered gas volumes. While the no new LNG case results in higher delivered natural gas prices, aggregate gas consumption is generally lower, thereby somewhat offsetting the impact of the higher prices.

The extent to which gas consumption declines determines whether net consumer expenditures increase or decrease under the no new LNG case. The extent to which gas consumption is reduced in the no new LNG case, in turn, depends upon the projected rate of gas consumption growth for that region in the AEO2004 reference case. For example, California's projected gas consumption grows by 15 percent from 2010 through 2025 in the reference case, while both Florida and New England are projected to grow by 23 and 25 percent, respectively. So these higher gas growth regions are projected to cut back their consumption more than lower-growth California. Both Florida and New England are projected to reduce their aggregate gas consumption expenditures under the no new LNG case, because these regions reduce their gas consumption to a greater degree than the rise in gas prices. In California, where gas consumption is not expected to grow as much, total gas consumption expenditures increase because gas prices rise more than the decline in gas consumption.

Mr. OSE. The gentleman from Massachusetts.

Mr. TIERNEY. Thank you.

Mr. Garman, I guess we are having a full day with your testimony to both committees. Thank you for being here. Thank the other witnesses on that.

Admiral Gilmour, let me ask you, it is my understanding there has never—no one has an offshore or deepwater port facility operating just yet; am I right?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. The one that has been approved most recently, and maybe the only one that has been approved, is the one in Louisiana?

Admiral GILMOUR. Yeah. We have two that have record decisions, and they are both in Louisiana. Yes, sir.

Mr. TIERNEY. How far offshore are those that were approved in Louisiana?

Admiral GILMOUR. The Chevron-Texaco Port Pelican is 36 miles offshore, and the El Paso Energy Bridge is 100 nautical miles offshore.

Mr. TIERNEY. When you were reviewing those for approval, was there any standard distance offshore of how far it had to be before you would reconsider your approval? Was there a point that you wanted to get them beyond in order for it to be considered, or is that just a factor that you weigh in with other things, and it could be as close as a mile or two?

Admiral GILMOUR. There was no minimum distance, but I think the closest is on the order of 10 miles, in that magnitude.

Mr. TIERNEY. I notice that there is a proposal off of the northeast coast in my district for about 10 miles out. I want to know what the considerations should be with respect to that siting. Just what will you look at in terms of a fishing community, the commercial shipping community, the environmental community, and the people's landway on the land as to what dangers there might be there?

Admiral GILMOUR. Yes, sir. We would certainly consider all of those factors. We haven't received that application yet, but certainly the traffic part would be something we would look at, and we have received questions and comments on the fishing side of that. But I would add that there are a lot of offshore facilities in the Gulf and a lot of fishing going on in the Gulf also, sir.

Mr. TIERNEY. Are there established standards for those considerations, or is it case by case? Do you have standards of how far it has to be from a particular fishing ground or how far it has to be from a shipping lane, or do you deal with it on a case-by-case basis?

Admiral GILMOUR. No, sir. But there are other agencies that would be concerned with a lot of those issues. I would add that due to the significance of these particular structures, there would be some sort of security zone around them when there was, you know, a vessel present. So that would be a concern certainly to fishermen. But I am sure that we would get that in our public hearings.

Mr. TIERNEY. Well, what would interest me is that we don't even know whether this technology will work or not. Am I right?

Admiral GILMOUR. No, sir. I think that the technology itself is proven, it just hasn't been done offshore yet.

Mr. TIERNEY. In what context was it proven? Just theoretically?

Admiral GILMOUR. No, sir. There are a number of these kinds of facilities operating onshore now.

Mr. TIERNEY. It is not done offshore, which I think would be a substantially different situation, right?

Admiral GILMOUR. Different environment. Yes, sir.

Mr. TIERNEY. So there are none of them that are actually up and operational, none of them that have been proven other than theoretically. So how is it that you go about establishing your standards for what you expect to happen or that could happen with respect to how they operate and what problems might arise?

Admiral GILMOUR. We have standards for our offshore structures. I think the structures are pretty well known—the standards for the structures. And we are working with industry and—to meet our regulations and other agencies to look at the natural gas side of that operation.

The Louisiana offshore oil port is a similar type operation, obviously not operating for LNG, but for crude oil importation, and it has operated quite successfully. But you are right. This is a different kind of operation.

Mr. TIERNEY. And so who is going to be—you talk about some of these where the owner-operator is responsible for the safety plan. Is that going to be the same case on the deepwater port?

Admiral GILMOUR. They are required to submit a plan, an operations plan, to us, and we indeed will review it.

Mr. TIERNEY. You are reviewing against nonexistent standards is my concern. You don't really have a set standard for this type of operation because it has never been done before. So we are really flying a little bit in the dark here.

Admiral GILMOUR. We have interim final rules in 33 CFR. So we do have standards for that.

Mr. TIERNEY. You are going to apply them against 33 CFR?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. You established the standards in that CFR. They then develop the plan and submit them, and you measure it against that?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. That is with respect to all of the safety features?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. Concerns terrorism threats?

Admiral GILMOUR. Well, terrorism threats would come under the requirements in MTSA for offshore facilities, which we have on the order of 40 in the Gulf that are currently being reviewed, and will be applied by July 1st.

Mr. TIERNEY. But those are not 40 gas operations?

Admiral GILMOUR. No, sir. Those are oil production. They will meet the same kind of plan for security as oil production platforms.

Mr. TIERNEY. Is there no difference in security considerations for oil and gas?

Admiral GILMOUR. I wouldn't say there weren't any differences, but they would be quite similar in the kinds of threats that they would have. Yes, sir.

Mr. TIERNEY. I notice that my time is up, But I would like to explore that a little bit more at some other point. Thanks.

Mr. OSE. The gentleman from Utah.

Mr. CANNON. Thank you, Mr. Chairman.

Mr. Garman, the chairman was talking a little bit about price. And the current price is about \$6 here in America. What has the world price been? And I take it we influence world price, but can you give a comparison about where world price is and what will happen if we have more LNG facilities in America?

Mr. GARMAN. I will try. Actually there is not a fungible world market price of natural gas in the same way that there is for oil, for the very reason that oil is more fungible, it can move in and out more freely, and the absence of LNG terminals in the United States make it more of a regionalized market.

Anecdotally I am told that prices in the United States are trending higher than they have been in, say, Europe. Europe is maybe closer to \$3.50 per million BTUs. As a consequence, this has put large consumers of natural gas, particularly processed gas consumers, fertilizer plants, and others, in a really tough position, even considering moving some of their operations overseas where gas prices are cheaper than they are here.

Mr. CANNON. Did you say that current prices in Europe are \$3.50 per million BTUs?

Mr. GARMAN. I would want to check on that. That is my recollection, somewhere around \$3, \$4. They are cheaper than they are here.

Mr. CANNON. Largely because of LNG facilities.

Mr. GARMAN. Through pipelines with Russia, the former Soviet Union, they have access to supplies that we obviously don't.

Mr. CANNON. So it is going to take us a while to actually get some LNG facilities and to transform ourselves. But the EIA predicts growth in short-term trade in LNG. How much LNG industry growth is needed to create a vibrant and efficient LNG short-term trading market?

Mr. GARMAN. Well, let me try to answer that question a couple of ways. The National Petroleum Council, which Secretary Abraham commissioned to look at this situation we face, estimated sort of—to have a balanced future, we probably need nine new terminals and nine expansions of three existing terminals in the years ahead, between now and 2025.

The Energy Information Administration has a different estimate, but is somewhat similar. They expect to see four new terminals in the Atlantic Coast and Gulf in the 2007 to 2010 timeframe, and then maybe expanding to 9 to 12 terminals between now and 2025. So different assumptions, obviously, and different methodologies.

We are not going to need all 43 of those that are being talked about, but we probably need somewhere between 5 and 15 terminals here.

Mr. CANNON. What efforts has DOE taken, including any in conjunction with the FTC or other Federal agencies, to educate State and local governments and the public about LNG?

Mr. GARMAN. This was also one of the recommendations of the National Petroleum Council. And we have been working with NARUC to try to communicate to consumers the opportunities to—safety aspects and considerations for LNG.

Let me always put in my pitch for energy efficiency. We are also using this opportunity to work with consumers to understand how they can save and use, obviously, less natural gas for residential uses and less electricity, which translates into lower—I mean, these are part of—a balanced strategy, we think, is not only to identify new sources of supply, new opportunities for importation in LNG, but we also want to use what we have more efficiently and remind consumers of the opportunities to do that as well.

Mr. CANNON. One final question. What is DOE doing to facilitate importation of LNG from countries, especially Mexico and Canada, our neighbors?

Mr. GARMAN. Well, we have—even though Mexico has supplies of natural gas, we have tended to export natural gas, small amounts, to them. As I have mentioned in testimony, we are a large—Canada is our largest provider by far, but we expect, or EIA expects, in 2010 that their supplies will peak and start to decline as they struggle to deal with their more mature fields, and also take care of their own domestic demand.

So we have looked to Mexico. We have looked to Canada. We are looking to Norway. We are looking to Peru. We are looking to a variety of different countries that aren't necessarily the same countries that supply us with oil to try to provide us with our energy needs for the future.

Mr. CANNON. Thank you, Mr. Chairman.

I yield back.

Mr. OSE. Thank the gentleman.

Mr. Garman, did I understand you correctly in your testimony that you don't think we can conserve our way to self-sufficiency in natural gas?

Mr. GARMAN. No. As important as efficiently using the supplies are, and as important as it is to develop new renewable energy resources to augment our supplies of energy, we still need more natural gas.

Mr. OSE. Commissioner Wood, to try and simplify things just so I can understand them, I want to make sure that I have it clear. FERC is responsible by derivation from DOE with siting and permitting—permit and siting questions for onshore facilities?

Mr. WOOD. Yes, sir.

Mr. OSE. And, Admiral, you are responsible for permitting and siting facilities offshore in conjunction with MARAD?

Admiral GILMOUR. That is correct, sir.

Mr. OSE. As it relates to onshore facilities, it would seem to me—and I have looked at that health care proxy, health care system proxy, that defines the permitting process, and it would seem to me that if FERC could say adopt a standard that says if you meet these or this template, you will be approved, it would seem to me that would expedite quite a bit of FERC's considerations, or at least narrow the questions to peculiarities about individual sites.

Has FERC said to industry or to the developers who do these things: For an onshore facility, this is the type of template we expect?

Mr. WOOD. Specifically, no. However, the filings that we have seen, again, the 13 that are before us in either the pre-filing or filing process, do have a relatively similar approach, which is the cry-

ogenics, which is the heart of the actual vaporization process, and the continuing to keep it cold, if they are storing it in liquid form. Those are relatively defined through the Transportation Department regs, back again to what Mr. Markey referenced, and those were done quite a few years ago.

But those standards have been really the ones that define what the onshore apparatus looks like.

Mr. OSE. Do they also address like setbacks from an adjacent development?

Mr. WOOD. Yes, for the new ones going forward. There is some question about the historical ones, but for the going forward, after the adoption of those regs, there are set-asides, or exclusion zones is the term that is used in the regulations, if the liquid were to spill and catch fire.

Mr. OSE. Do you have minimum setbacks under these exclusion zones?

Mr. WOOD. Yes. And they vary based on the design. But the formula is known in advance, so if the design has, for example, a tall concrete wall around where the fluid could spill out, and that wall, in fact, can shield some of the adjacent area from the heat, then the heat radius is smaller.

If the wall is smaller, if it is earthen than your heat radius can actually go farther, so the exclusion zone would be larger in those cases.

But it is actually a specific kind of formulaic approach that is used, but it depends again on the actual design, which, as your question indicates, there is not a standard onshore facility design that, therefore, if you know you are going to build it this way, it is 2,200 feet from this point to the edge of the property.

Mr. OSE. Well, the reason I ask the question is that I am a sufficient student of technology to understand that the more you can use off-the-shelf technology that is standardized, the faster you can get to market. And I am curious whether FERC is moving in a direction as it relates to the facilities themselves or the exclusion zone to say, you use this type of technology, these are the parameters, or this type, or this type of technology, these are the parameters, where they can just pull it off the shelf and just basically hunt for a site where it would fit.

Mr. WOOD. I think that idea has a lot of merit. It is not one that we have adopted up to now.

Mr. OSE. I have the same question for the Coast Guard as it relates to offshore facilities. Has there been any effort to define a template, if you will, or, as Mr. Tierney was driving at, the standards under which these facilities would be constructed?

Admiral GILMOUR. Yes, sir. I think that the regulations would certainly for construction give a template of—and there are a number of gas-drilling offshore structures operating out there right now. And we use things like class society rules, industry or recommended practices, and regulations that are used by MMS for those kinds of things.

Now, as far as a template for siting, offshore distances and those kinds of issues, we really haven't done that. But we have through the Sandia lab studies and the other studies that are being done

by the gentleman to my right, with our assistance, I think we are going to look at some of those issues.

Mr. OSE. This is my final point on this round—it would seem to me that given the 330-day timeframe that you have to work with, to the extent that you can say on day zero, before I walk in, Congressman Ose, this is the template you have, you can meet this template, or you can meet that template, but if you meet one, then these are the parameters, if you take this other one, these are the parameters, you are not picking the winners or losers, you are just saying what the parameters are, it just seems to me that would go a long way toward making it easier for you to meet your timelines.

Admiral GILMOUR. Yes, sir. We are working on doing just that. I think our biggest problem so far was putting together a staff to address this issue at the same time the regulations were in effect.

Mr. OSE. I suspect that Mr. Tierney is going to followup, because sitting up here, I didn't hear you talk in response to his questions about having a template. You talked about the unique characteristics of individual applications, but not about a template. So I don't mean to hijack your questions, but I suspect that is where you are going back. But my time is expired.

Mr. TIERNEY. Well, yeah. I think you obviously are where I am going on this. If you want to use industry regulations, the problem that we have with the offshore, the deepwater ports, is there are no examples, no experience on this. So am I wrong to think that there is some problem with that, or some issues there about using industry standards where they have not done it before; there are no examples to point back to, and we are talking about whatever assumptions the industry settles on from their experts that are going to be used by the Coast Guard? It concerns me a bit.

Admiral GILMOUR. No, sir. But there are a plethora of shoreside operations doing exactly the same operation. We need to adapt to an offshore environment.

Mr. TIERNEY. But it is not exactly the same. The offshore environment is substantially different than the onshore environment, the considerations are different, and the environment out there is substantially different. So it has not been done before. Particularly some of the models that I have heard talked about where the boat will pull up and just hook up to an already-existing buoy of some sort and pull up, that is not done on land, right?

Admiral GILMOUR. No, sir, but it is done in loop. I mean, we have articulated lines in loop. So we do have some experience, although, granted, not for cryogenic—

Mr. TIERNEY. So, again, I get back to, shouldn't we be establishing independently our norms and our standards and the things we are going to measure it against, and not necessarily just relying on industry where we are coming up with something that is so totally new on that? I would like to think that we are at least making an effort to do that so we have our own standards to evaluate it against.

Admiral GILMOUR. Yes, sir. I would say more than relying on industry, we are adapting existing standards to the offshore environment.

Mr. TIERNEY. But you did indicate that you are using industry regulations and industry examples on that. So are you independ-

ently having evaluations done and having independent individuals tell you how they might adapt that, and what differences there are, and what concerns we ought to have, and how they ought to be addressed?

Admiral GILMOUR. Yes, sir. And we are working certainly in conjunction with all of the other regulatory agencies that have done this kind of regulation on the shoreside for years. So, yes, sir, those are the standards that exist that we are using.

Mr. TIERNEY. Bear with me, if you will, for a second, all three of you, because I want to sort of walk through this.

With respect to a deepwater port, who has the ultimate authority? The Department of Transportation? Who is going to finally say yes or no with respect to that?

Admiral GILMOUR. Yes, sir. We will.

Mr. TIERNEY. They are divided there between two agencies. One is the Coast Guard, and the other is the Maritime Safety—

Admiral GILMOUR. The Maritime Administration. Yes, sir.

Mr. TIERNEY. And so you both recommend to the Secretary, and the Secretary makes the final determination?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. What role does the State play? And are they able to have a veto on that, or only to contribute information?

Admiral GILMOUR. The State will work in—certainly their voice will be heard in a number of areas.

Mr. TIERNEY. So do they have a veto, or do they merely have a way to put their voice in and weigh in on some issues?

Admiral GILMOUR. Yes, sir. They will be able to weigh in on the issues.

Mr. TIERNEY. But not make the final determination and not change the direction. If the Department of Transportation decides it wants to go one direction, the State wants to go into another, DOT is going to make the final determination?

Admiral GILMOUR. Under oath, as the previous gentleman stated, I think that is the case, but we can get written confirmation.

Mr. TIERNEY. If you can do that for me.

[The information referred to follows:]

The Federal Government does not directly participate in selection of the site proposed by an applicant. Applicants select and propose their sites based on various internal company and market factors and the application is processed in accordance with the Deepwater Port Act of 1974 (DWPA), as amended, and the Temporary Interim Rule, 33 CFR, Subchapter NN. We do advise potential applicants of concerns they should consider, such as navigational safety and impacts on existing lease blocks in the Gulf of Mexico. In development of the Environmental Impact Statement (EIS) and preparation of the Record of Decision by the Maritime Administration (MARAD), considerable opportunity exists for input by all interested parties, public and private, at the national, regional, state and local levels. The DWPA affords the Governor of an adjacent coastal state considerable authority and ability to influence a siting decision. While the DWPA does not contain specific authority for input at the local level, all levels are able to participate through involvement in the scoping process, public hearings and input to respective Governors.

The following national issues/implications are considered during the licensing process:

1. Whether the deepwater port will be in the national interest and consistent with national security and other national policy goals and objectives, including energy sufficiency and environmental quality;
2. Whether the deepwater port will not unreasonably interfere with international navigation or other reasonable uses of the high seas, as defined by treaty, convention, or customary international law; and
3. Whether the deepwater port would effect the programs under the respective jurisdictions of the Secretary of the Army, the Secretary of State, and the Secretary of Defense.

The scope of involvement expands during the post-Notice Of Availability (NOA) phase (the Notice of Availability (NOA) is published to inform the public and others that a **National Environmental Policy Act** document is available for review), when the EIS or Environmental Assessment (EA) is developed in accordance with the NEPA requirements outlined in the DWPA. Inputs and comments from the specific cooperating federal agencies (the Environmental Protection Agency, the National Oceanic and Atmospheric Agency, Minerals Management Service, and the U.S. Army Corps of Engineers) and other federal agencies (in their respective areas of expertise), state agencies in the adjacent coastal states responsible for Coastal Zone Management (CZM) consistency, and the public are solicited, documented and incorporated into the EIS and EA, to ensure all interested parties' interests and considerations are addressed. The public is allowed to provide written comment prior to the drafting of the NEPA document with the publishing of a Notice of Intent in the Federal Register. After the preliminary draft EIS/EA is ready for publishing and distribution, a Notice of Availability is also published to capture comments on the status of the document at this stage.

In accordance with the DWPA, at least one public scoping hearing is held in each adjacent coastal state during the application evaluation period. In actuality, the U.S.

Coast Guard and MARAD hold a preliminary scoping meeting, in addition to the formal public hearing, in each adjacent coastal state after the Notice of Intent is published and prior to development of the preliminary draft EIS. The formal public meeting is conducted prior to completion of the final EIS/EA, but not later than 240 days after the Notice of Application is published. The hearings and meetings enable the public to interact with the applicant and the U.S. Coast Guard and MARAD and to verbally augment any written comments they may have presented.

Every effort is made to capture the considerations of all stakeholders in the deepwater port process in the Final EIS/EA, the Record of Decision and any License conditions.

Mr. TIERNEY. Who else weighs in on it? Do you have at the tip of your fingers there as to what other agencies weigh in, and what do they weigh in about?

Admiral GILMOUR. Yes, sir. There are 11 other agencies, including NOAA on the fisheries issues and the EPA, etc.

Mr. TIERNEY. Bear with me and give me the etc. You told 11 or 13. Can you give them to me and what they weigh in on? NOAA is weighing in on the fishing industry's issues. EPA is weighing in on the environmental issues. Conservation areas, are they weighing in?

Admiral GILMOUR. Yes, sir. And the folks that are sitting here are looking at other areas, too.

Mr. TIERNEY. Well, Mr. Wood, what are you looking at when you look at the offshore facility?

Mr. WOOD. Our contribution to the offshore, sir, is minimal. Again, it is theirs.

Mr. TIERNEY. Mr. Gilmour, we are back to you. That didn't go too far in that direction. So what else have you got on it?

Admiral GILMOUR. If we had a question on an issue involving the gasification part of a system that we weren't familiar with, we would go to someone in FERC or DOE and talk to them about the system and get their input on that.

Mr. TIERNEY. So that is you reaching out to them. Are there any automatic people that have to be consulted and automatically have to weigh in on this? What about the issues around Showhegan, the area that is set aside up in the New England area off the coast out there, all of the conservation and environmental concerns up there, does someone automatically get a right to weigh in on those, or is that only if you reach out to them?

Admiral GILMOUR. Well, it would be like a number of other issues. When FERC issues a facility, shoreside facility, you know, there are a number of other agencies that look at the navigational side, too. And when it comes out, it is sent to all of those other agencies automatically. And I am sure that some of our Federal agencies certainly that are worried about fisheries conservation and/or national sanctuaries would—

Mr. TIERNEY. I don't want to make this torture. I was going to ask you if you would do me a favor. Would you submit to the committee a list of what State and Federal agencies as a matter of right are engaged in the determination process for deepwater ports, and which others might be an elective contributor if the Coast Guard or Department of Transportation elects to do that? If you can give me that, I would appreciate that. Thank you.

Admiral GILMOUR. Yes, sir.

[The information referred to follows:]

The Deepwater Port Act of 1974 (DWPA), as amended, identifies the following federal agencies as having specific roles and responsibilities or expertise concerning the construction and operation of deepwater ports:

- Department of Defense (including the Departments of the Army, Navy, and Air Force and the U.S. Army Corps of Engineers),
- Department of State,
- Department of the Interior (Mineral Management Service and the U.S. Fish and Wildlife Service),
- Department of Commerce (National Oceanic and Atmospheric Agency (NOAA), NOAA Fisheries (formerly National Marine Fisheries Service) and National Ocean Service)),
- Department of Energy (Office of Fossil Energy),
- Department of Transportation (Maritime Administration and Research and Special Programs Administration),
- Environmental Protection Agency, and
- Department of Homeland Security (“the agency in which the U.S. Coast Guard resides”).

The Governor will base his/her recommendation on the evaluation of the state agency designated with establishing a coastal zone management program, in accordance with the Coastal Zone Management Act of 1972. The state authorities will review a license application to ensure it is consistent with state programs relating to environmental protection, land and water use and coastal zone management.

The White House Task Force on Streamlining Energy Projects fostered the development of an Interagency Memorandum of Understanding (MOU) for processing deepwater port applications after the passage of the Maritime Transportation Security Act of 2002, which added natural gas to the DWPA. Each federal agency listed above is signatory to the MOU, which identifies their specific roles and responsibilities in the deepwater port license application process.

Mr. OSE. There is one aspect to this. If there is an offshore facility, FERC is charged with the responsibility for permitting and siting onshore tanks to store the stuff transported on and for the pipelines that service those.

Mr. TIERNEY. Right.

Mr. OSE. I am pleased to recognize the gentleman from Ohio.

Mr. TIBERI. Thank you, Mr. Chairman.

Just kind of following up on Mr. Tierney's line of questioning with respect to homeland security, Admiral, there has been concern, Admiral, in the past about security issues, that potentially a terrorist attack could occur through attempting the use of LNG tankers offshore to inflict harm on U.S. citizens. And, in fact, there were—there was a Massachusetts link to this, at least a rumor that maybe terrorists at one point in time were stowed away on a tanker that landed in Massachusetts several years ago.

What is the Coast Guard doing to ensure safety with respect to potential terrorist activity?

Admiral GILMOUR. Well, sir, you know, immediately after September 11, we did a number of things, and we are still doing. These kinds of vessels are boarded offshore. They provide a 96-hour advance notice of arrival listing crews. And actually MTSA will increase those things that they are looking at. So we vet the crew members, board them offshore, and then do a security sweep, which includes identifying crew members, have positive control of the vessel as it comes into port.

Again, as I said in my opening statement, we provide waterside escorts to ensure the vessels do not approach too closely. We have done that for a number of years for safety purposes. We have a zone that does not allow, in many cases, other vessels to even be transiting in the area.

The safety inspection, we look at critical systems such as fire-fighting, cargo and navigational equipment, but we have been doing that from the very beginning for LNG vessels. The security requirements for MTSA are based on the international ISPF codes, ports and vessel security code.

So on the vessel side, we will also look at their security plan and how they are adapting it both from their—on their way in and when they are at the facility. We also will look at previous ports they have been to determine if, after July 1st, they are ISPF-approved ports.

So we will look at the port that they have been to, we will look at the crew as they come in, and we will look at their security plan. And again, there is facility plans, both required both on the shore side and for offshore platforms, on the offshore side.

Mr. TIBERI. Does the Coast Guard have a process in place to review protocols periodically based upon different types of threats that may pop up?

Admiral GILMOUR. Oh, yes, sir. We are a member of the Intelligence Community, and we talk about those every morning. Yes, sir, we do have those.

Mr. TIBERI. So you have a process in place where you review that?

Admiral GILMOUR. Yes, sir. That includes vetting of crew members and any threat streams that may be available to the Intelligence Community.

Mr. TIBERI. Thank you.

Mr. Wood, still on the subject of safety, I think that we would agree that the international safety record of the LNG industry is superb, quite impressive, and even including the onshore LNG storage sites in the United States. We have been very lucky.

Having said that, opponents and critics of the industry have—like many others in the energy sector have been very critical in using tactics to scare both community leaders and members of particular communities over the potential risks.

Has FERC, the Federal Government, thought about putting anything in place, a review process to work with local communities to let them know about the scientific evidence of what exists today?

Mr. WOOD. Yes, sir. In fact, that is one of the strongest reasons that we have to encourage applicants—again, this chart over here I was describing a little earlier—has a number of applications there, particularly the list on the bottom half, that have not yet come before the Commission that are out there being talked about.

What we have encouraged companies to do, and, in fact, a number that are in the 13 that are pending before our Commission have done, is engage in the pre-filing process, which is a much less confrontational, more collaborative format that worked pretty successfully on the hydropower side and gas pipeline side, and to use here as well, to bring the communities in, as is being done by all of these 13 now, to have open houses, to exchange information, to bring Commission staff there, to bring them together with members of the community, environmental groups, elected officials, the State resource agencies, to sit down and discuss, again, in a very collaborative roundtable format the issues here, as well as give us the opportunity to explain why this is important not just to the community, but to the State and the region.

We found that there have been three highly publicized places where local projects have been rejected in Maine, in Alabama and in California. None of them came in and took advantage of the pre-filing process at FERC. And we do think that there is a direct nexus between community buy-in, community understanding, proper mitigation of safety concerns, of environmental concerns. A lot of that getting worked out in advance makes it much easier for an application to go through a process and be successful on the other end.

Mr. TIBERI. Thank you, Mr. Chairman.

Mr. OSE. Admiral, along the line of Mr. Tierney's line of questioning, I would refer you to section 9, paragraph (b)(1) of the Deepwater Port Act of 1974 regarding the ability of Governors of adjacent Coastal States to approve or disapprove of a license that the Secretary may issue.

There is a specific prohibition in here in paragraph (b)(1) that the Secretary shall not issue a license without the approval of the Governor of each adjacent Coastal State. You might want to check on that.

Admiral GILMOUR. Yes, sir.

Mr. OSE. I also understand that in the memorandum that the Department of Energy signed delegating authorities, that the Secretary retained the ability to disapprove the issuance of a permit or siting decision?

Mr. GARMAN. That is correct.

Mr. OSE. So an applicant may end up getting a permit for an onshore, offshore facility and the Department of Energy—Secretary of the Department of Energy could even then veto that?

Mr. GARMAN. It has happened one time.

Mr. OSE. 1989.

Mr. GARMAN. And it is a reserved authority that the Department, in transferring these authorities to the FERC, has maintained for itself.

Mr. OSE. But your authorities don't extend to the offshore facilities in terms of the veto? They do or they don't?

Mr. GARMAN. We still have authorities over the general question of importing or exporting natural gas generically. So in theory, whether the facility was onshore or offshore, DOE could exercise authority to reject the importation of natural gas irrespective of its method of importation.

Mr. OSE. If for no other reason, you have the storage tanks on-site that have to be sited, or onshore that have to be sited that you could decline to issue a permit on?

Mr. GARMAN. I would like to have an attorney to check my answer.

Mr. OSE. We will direct that question to you in writing.

[The information referred to follows:]

[DOE Veto Authority]

FERC LNG Permits. The Secretary of Energy has divided the exercise of his Natural Gas Act (NGA) section 3 authority between DOE and the Federal Energy Regulatory Commission (FERC). The DOE Assistant Secretary for Fossil Energy is delegated the section 3 authority to regulate the import or export of the commodity. The Secretary has delegated to FERC the section 3 authority to approve or disapprove proposals for the siting, construction, and operation of import or export facilities, including onshore facilities connecting to offshore facilities, and whenever the import or export involves construction of new domestic facilities, the place of entry or exit. Both delegations stipulate that DOE retains the authority to “disapprove” the siting, construction, and operation of particular facilities, and where the construction of new facilities are involved, the place of entry or exit.

The statutory criterion for review of applications filed under section 3 of the NGA is the “public interest.” The language of section 3(a) establishes a statutory presumption in favor of the approval of applications, a presumption that can be overcome only by evidence in the record of the proceeding that the requested authority will not be consistent with the public interest. DOE applied this public interest standard when it exercised its reserved “veto” authority in a 1989 order approving the export of LNG from Alaska to the Pacific Rim. The order explicitly rejected any place of export for the LNG other than Anderson Bay, Port Valdez, Alaska. On the basis of its environmental review, DOE had concluded that the Anderson Bay site was environmentally preferable to all other sites considered. In 1995, FERC approved the Anderson Bay place of export for the LNG project and granted the related application to site, construct, and operate the proposed Anderson Bay facilities.

With respect to LNG imports, the Energy Policy Act of 1992 (EPAct) amended section 3 of the NGA to deem imports of LNG to be in the public interest and to give DOE only a ministerial role in granting requests to import the commodity “without modification or delay.” So, with respect to LNG imports, DOE would authorize the LNG import by order but would not engage in an evaluative decision-making process, including environmental review. The EPAct amendment does not apply to exports of LNG, nor does DOE believe it applies to FERC’s delegated facility siting authority.

Mr. OSE. Now a question in California has arisen where there are some who believe that they have jurisdiction over these decisions. Mr. Wood, would you please step me through the FERC—I want the cliff notes version—the FERC’s decision as it relates to the ultimate authority on siting and permits for either interstate or intrastate natural gas.

Mr. WOOD. Under section 3, which is the import-export authority to which we have been delegating the import piece—we have export duties as well—section 3 authority is really just the foreign commerce piece, so it is irrelevant whether that is interstate or intrastate, which after our decision in 2002 to forebear from reviewing these under section 7 unless an applicant requests it, we just reviewed it under section 3 of the Natural Gas Act. That really is irrelevant as to interstate and intrastate. For that reason we have the open question in California as to whether we have jurisdiction, exclusive jurisdiction or the State had jurisdiction as well. We view this as the ultimate use of the gas being in a single State or multiple States. Section 3 alone just deals with the import nature of it. And so the review is based on a public interest standard.

Mr. OSE. Foreign commerce issue is what you are talking about?

Mr. WOOD. Exactly. Section 7 is a different provision that was used to approve the existing operating facilities. We did it under section 3 and section 7 in the 70’s. And we looked at the law there and concluded that in fact that section 7 is not required to be the reviewing standard. So to streamline it, but to make sure we are still looking at these issues, we looked at section 3 as being sufficient. That is triggered by the import from a non-American site, which all these would be, as opposed to an interstate commerce problem.

Mr. OSE. You have a difficulty that is coming at you, if I understand you correctly, the duration of the permits for existing facilities, are they permanent?

Mr. WOOD. There is no time limit on these.

Mr. OSE. The facility that Distrigas has in Boston, that is a permanent permit?

Mr. WOOD. It has no limit. It is permanent.

Mr. OSE. Do the permits that you are considering now, have you started to include a time limitation?

Mr. WOOD. We have not.

Mr. OSE. How is FERC going to go about effectively communicating to industry that this is the type of template we are looking for?

Mr. WOOD. Clearly the ones we have set up a standard. I think you have to have a few data points about what is working in the real world. We do have, and to answer your earlier question, the technology of vaporization, the vaporizers and the storage tanks are all relatively standard. And so the applicants, in fact, look for a location that will actually be big enough to handle those and handle the exclusion zones that are associated with those technologies. I will give some detail to you and submit it for the record. But the types of plans that we have already approved apparently do come from a relatively standard technology. It is not a standard where you kind of walk into FERC and get a rubber stamp approval if you have all these things met.

[The information referred to follows:]

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, DC 20426

July 7, 2004

OFFICE OF THE CHAIRMAN

The Honorable Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs  
Committee on Government Reform  
U.S. House of Representatives  
Washington, D.C. 20515

Re: The Federal Energy Regulatory Commission's LNG Terminal Site Selection Process

Dear Mr. Chairman:

This letter is a follow-up to the June 22, 2004 hearing on Liquefied Natural Gas (LNG) issues you held as Chairman of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs. I indicated during my testimony that I would submit in writing for the record a more thorough explanation of how the Federal Energy Regulatory Commission regulations identify the siting requirements that must be addressed in an LNG application submitted to the Commission.

Enclosed is an explanation of the Commission's LNG Terminal Site Selection Process and these requirements mirror your suggestion of a standard template that LNG applicants should use in the siting and design of such facilities. I am also enclosing a copy of the Commission's regulations regarding siting requirements.

I hope this information is helpful. Please let me know if I can be of further assistance in this or any other Commission matter.

Best regards,



Pat Wood, III  
Chairman

Enclosure

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**The FERC's LNG Terminal Site Selection Process**

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The selection of a suitable site for an LNG import terminal involves the consideration of environmental, engineering, economic, safety, and regulatory factors. The basic criteria for any proposed LNG terminal must include:

- deepwater access to accommodate LNG ship traffic;
- proximity to natural gas pipeline systems;
- safe engineering and design of the proposed facility; and
- sufficient land area to comply with the Department of Transportation's exclusion zone regulations under 49 CFR 193.

From FERC's perspective, our regulations provide requirements to the prospective applicants on the issues they must address in proposing to develop a site. There are also regulatory requirements from the US Department of Transportation, and the US Coast Guard, and also various state requirements which may have to be addressed. These state requirements deal with coastal zone management, Clean Water Act, and Clean Air Act requirements.

The FERC's regulations in 18 CFR 380.12 (enclosed) identify the siting issues which must be addressed in the 13 resource reports required for an application under the Natural Gas Act. Alternative sites considered as part of the site selection process must be identified and the applicant must provide the environmental characteristics of each site, as well as the reasons for rejecting it. In addition, the applicant must demonstrate how environmental benefits and costs were weighed against economic benefits and costs, as well as technological and procedural constraints.

Proper engineering and design are essential to ensure the safe and reliable operation of the LNG terminal. The applicant must describe how the project facilities would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes. In accordance with Section 380.12, the applicant is required to submit conceptual plans and studies that show the engineering planning or design approach to the construction of new facility.

In resource report 13, the applicant must provide engineering information on all major components to be installed, including marine facilities, storage, transfer piping, vaporization, truck loading/unloading, vent stacks, pumps, and auxiliary or appurtenant service facilities. This information is to include up-to-date piping and instrumentation diagrams and should show the fire protection system, the hazard detection system, and the spill containment system. Specific details and construction drawings for the LNG

storage tanks are also required. For facilities in seismically active areas, specific information regarding the seismic review of the proposed LNG facilities must also be provided.

Section 380.12 also requires each applicant to demonstrate compliance with the U.S. Department of Transportation's (DOT) regulations under 49 CFR Part 193 which adopt the National Fire Protection Association (NFPA) 59A LNG Standards. The regulations under 49 CFR Part 193 specify safety requirements for the siting, design, construction, fire protection, operation, and maintenance of on-shore LNG facilities placed in service after March 31, 2000. These federal regulations set requirements for exclusion zones which must be met by a proposed terminal site. In accordance with Sections 193.2057 and 193.2059, thermal radiation and vapor dispersion exclusion zones are to be calculated based on specific spill scenarios and heat flux levels. These zones minimize the possibility that damaging effects of an LNG pool fire or a flammable vapor mixture extend beyond an LNG plant property boundary.

During the FERC siting review, there is close coordination with the US Coast Guard (USCG). Under Title 33 CFR, the USCG has regulations which apply to the facility security and design, and well as the establishment of operating plans for the tankers. Requirements for maintaining security of the marine terminal are in 33 CFR 105. The USCG regulates the design, construction, equipment, operations, inspections, maintenance, testing, personnel training, fire fighting, and security of LNG waterfront facilities. In addition, the USCG may establish a safety and/or security zone under 33 CFR 165 for LNG vessels in transit and while docked. Only personnel or vessels authorized by the Captain of the Port or the District Commander are permitted in the safety/security zone.

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law judge or the decision of the Commission.

(3) In a rulemaking proceeding, the major decision points are the Notice of Proposed Rulemaking and the Final Rule.

(b) *Environmental documents as part of the record.* The Commission will include environmental assessments, findings of no significant impact, or environmental impact statements, and any supplements in the record of the proceeding.

(c) *Application denials.* Notwithstanding any provision in this part, the Commission may dismiss or deny an application without performing an environmental impact statement or without undertaking environmental analysis.

**§ 380.12 Environmental reports for Natural Gas Act applications.**

(a) *Introduction.* (1) The applicant must submit an environmental report with any application that proposes the construction, operation, or abandonment of any facility identified in § 380.3(c)(2)(i). The environmental report shall consist of the thirteen resource reports and related material described in this section.

(2) The detail of each resource report must be commensurate with the complexity of the proposal and its potential for environmental impact. Each topic in each resource report shall be addressed or its omission justified, unless the resource report description indicates that the data is not required for that type of proposal. If material required for one resource report is provided in another resource report or in another exhibit, it may be incorporated by reference. If any resource report topic is required for a particular project but is not provided at the time the application is filed, the environmental report shall explain why it is missing and when the applicant anticipates it will be filed.

(3) The appendix to this part contains a checklist of the minimum filing requirements for an environmental report. Failure to provide at least the applicable checklist items will result in rejection of the application unless the Director of OPR determines that the applicant has provided an acceptable

reason for the item's absence and an acceptable schedule for filing it. Failure to file within the accepted schedule will result in rejection of the application.

(b) *General requirements.* As appropriate, each resource report shall:

(1) Address conditions or resources that might be directly or indirectly affected by the project.

(2) Identify significant environmental effects expected to occur as a result of the project;

(3) Identify the effects of construction, operation (including maintenance and malfunctions), and termination of the project, as well as cumulative effects resulting from existing or reasonably foreseeable projects;

(4) Identify measures proposed to enhance the environment or to avoid, mitigate, or compensate for adverse effects of the project;

(5) Provide a list of publications, reports, and other literature or communications, including agency contacts, that were cited or relied upon to prepare each report. This list should include the name and title of the person contacted, their affiliations, and telephone number.

(6) Whenever this section refers to "mileposts" the applicant may substitute "survey centerline stationing" if so desired. However, whatever method is chosen should be used consistently throughout the resource reports.

(c) *Resource Report 1—General project description.* This report is required for all applications. It will describe facilities associated with the project, special construction and operation procedures, construction timetables, future plans for related construction, compliance with regulations and codes, and permits that must be obtained. Resource Report 1 must:

(1) Describe and provide location maps of all jurisdictional facilities, including all aboveground facilities associated with the project (such as: meter stations, pig launchers/receivers, valves), to be constructed, modified, abandoned, replaced, or removed, including related construction and operational support activities and areas such as maintenance bases, staging areas, communications towers, power lines, and new access roads (roads to be

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built or modified). As relevant, the report must describe the length and diameter of the pipeline, the types of aboveground facilities that would be installed, and associated land requirements. It must also identify other companies that must construct jurisdictional facilities related to the project, where the facilities would be located, and where they are in the Commission's approval process.

(2) Identify and describe all nonjurisdictional facilities, including auxiliary facilities, that will be built in association with the project, including facilities to be built by other companies.

(i) Provide the following information:

(A) A brief description of each facility, including as appropriate: Ownership, land requirements, gas consumption, megawatt size, construction status, and an update of the latest status of Federal, state, and local permits/approvals;

(B) The length and diameter of any interconnecting pipeline;

(C) Current 1:24,000/1:25,000 scale topographic maps showing the location of the facilities;

(D) Correspondence with the appropriate State Historic Preservation Officer (SHPO) or duly authorized Tribal Historic Preservation Officer (THPO) for tribal lands regarding whether properties eligible for listing on the National Register of Historic Places (NRHP) would be affected;

(E) Correspondence with the U.S. Fish and Wildlife Service (and National Marine Fisheries Service, if appropriate) regarding potential impacts of the proposed facility on federally listed threatened and endangered species; and

(F) For facilities within a designated coastal zone management area, a consistency determination or evidence that the owner has requested a consistency determination from the state's coastal zone management program.

(ii) Address each of the following factors and indicate which ones, if any, appear to indicate the need for the Commission to do an environmental review of project-related nonjurisdictional facilities:

(A) Whether or not the regulated activity comprises "merely a link" in a corridor type project (e.g., a transportation or utility transmission project).

(B) Whether there are aspects of the nonjurisdictional facility in the immediate vicinity of the regulated activity which uniquely determine the location and configuration of the regulated activity.

(C) The extent to which the entire project will be within the Commission's jurisdiction.

(D) The extent of cumulative Federal control and responsibility.

(3) Provide the following maps and photos:

(i) Current, original United States Geological Survey (USGS) 7.5-minute series topographic maps or maps of equivalent detail, covering at least a 0.5-mile-wide corridor centered on the pipeline, with integer mileposts identified, showing the location of rights-of-way, new access roads, other linear construction areas, compressor stations, and pipe storage areas. Show nonlinear construction areas on maps at a scale of 1:3,600 or larger keyed graphically and by milepost to the right-of-way maps.

(ii) Original aerial images or photographs or photo-based alignment sheets based on these sources, not more than 1 year old (unless older ones accurately depict current land use and development) and with a scale of 1:6,000 or larger, showing the proposed pipeline route and location of major aboveground facilities, covering at least a 0.5 mile-wide corridor, and including mileposts. Older images/photographs/alignment sheets should be modified to show any residences not depicted in the original. Alternative formats (e.g., blue-line prints of acceptable resolution) need prior approval by the environmental staff of the Office of Pipeline Regulation.

(iii) In addition to the copy required under § 157.6(a)(2) of this chapter, applicant should send two additional copies of topographic maps and aerial images/photographs directly to the environmental staff of the Office of Pipeline Regulation.

(4) When new or additional compression is proposed, include large scale (1:3,600 or greater) plot plans of each compressor station. The plot plan should reference a readily identifiable point(s) on the USGS maps required in paragraph (c)(3) of this section. The

maps and plot plans must identify the location of the nearest noise-sensitive areas (schools, hospitals, or residences) within 1 mile of the compressor station, existing and proposed compressor and auxiliary buildings, access roads, and the limits of areas that would be permanently disturbed.

(5)(i) Identify facilities to be abandoned, and state how they would be abandoned, how the site would be restored, who would own the site or right-of-way after abandonment, and who would be responsible for any facilities abandoned in place.

(ii) When the right-of-way or the easement would be abandoned, identify whether landowners were given the opportunity to request that the facilities on their property, including foundations and below ground components, be removed. Identify any landowners whose preferences the company does not intend to honor, and the reasons therefore.

(6) Describe and identify by milepost, proposed construction and restoration methods to be used in areas of rugged topography, residential areas, active croplands, sites where the pipeline would be located parallel to and under roads, and sites where explosives are likely to be used.

(7) Unless provided in response to Resource Report 5, describe estimated workforce requirements, including the number of pipeline construction spreads, average workforce requirements for each construction spread and meter or compressor station, estimated duration of construction from initial clearing to final restoration, and number of personnel to be hired to operate the proposed project.

(8) Describe reasonably foreseeable plans for future expansion of facilities, including additional land requirements and the compatibility of those plans with the current proposal.

(9) Describe all authorizations required to complete the proposed action and the status of applications for such authorizations. Identify environmental mitigation requirements specified in any permit or proposed in any permit application to the extent not specified elsewhere in this section.

(10) Provide the names and mailing addresses of all affected landowners

specified in § 157.6(d) and certify that all affected landowners will be notified as required in § 157.6(d).

(d) *Resource Report 2—Water use and quality.* This report is required for all applications, except those which involve only facilities within the areas of an existing compressor, meter, or regulator station that were disturbed by construction of the existing facilities, no wetlands or waterbodies are on the site and there would not be a significant increase in water use. The report must describe water quality and provide data sufficient to determine the expected impact of the project and the effectiveness of mitigative, enhancement, or protective measures. Resource Report 2 must:

(1) Identify and describe by milepost perennial waterbodies and municipal water supply or watershed areas, specially designated surface water protection areas and sensitive waterbodies, and wetlands that would be crossed. For each waterbody crossing, identify the approximate width, state water quality classifications, any known potential pollutants present in the water, or sediments, and any potable water intake sources within 3 miles downstream.

(2) Compare proposed mitigation measures with the staff's current "Wetland and Waterbody Construction and Mitigation Procedures," which are available from the Commission Internet home page or the Commission staff, describe what proposed alternative mitigation would provide equivalent or greater protection to the environment, and provide a description of site-specific construction techniques that would be used at each major waterbody crossing.

(3) Describe typical staging area requirements at waterbody and wetland crossings. Also, identify and describe waterbodies and wetlands where staging areas are likely to be more extensive.

(4) Include National Wetland Inventory (NWI) maps. If NWI maps are not available, provide the appropriate state wetland maps. Identify for each crossing, the milepost, the wetland classification specified by the U.S. Fish and Wildlife Service, and the length of the crossing. Include two copies of the NWI

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maps (or the substitutes, if NWI maps are not available) clearly showing the proposed route and mileposts directed to the environmental staff. Describe by milepost, wetland crossings as determined by field delineations using the current Federal methodology.

(5) Identify aquifers within excavation depth in the project area, including the depth of the aquifer, current and projected use, water quality and average yield, and known or suspected contamination problems.

(6) Describe specific locations, the quantity required, and the method and rate of withdrawal and discharge of hydrostatic test water. Describe suspended or dissolved material likely to be present in the water as a result of contact with the pipeline, particularly if an existing pipeline is being retested. Describe chemical or physical treatment of the pipeline or hydrostatic test water. Discuss waste products generated and disposal methods.

(7) If underground storage of natural gas is proposed:

(i) Identify how water produced from the storage field will be disposed of, and

(ii) For salt caverns, identify the source locations, the quantity required, and the method and rate of withdrawal of water for creating salt cavern(s), as well as the means of disposal of brine resulting from cavern leaching.

(8) Discuss proposed mitigation measures to reduce the potential for adverse impacts to surface water, wetlands, or groundwater quality to the extent they are not described in response to paragraph (d)(2) of this section. Discuss the potential for blasting to affect water wells, springs, and wetlands, and measures to be taken to detect and remedy such effects.

(9) Identify the location of known public and private groundwater supply wells or springs within 150 feet of proposed construction areas. Identify locations of EPA or state-designated sole-source aquifers and wellhead protection areas crossed by the proposed pipeline facilities.

(e) *Resource Report 3—Fish, wildlife, and vegetation.* This report is required for all applications, except those involving only facilities within the im-

proved area of an existing compressor, meter, or regulator station. It must describe aquatic life, wildlife, and vegetation in the vicinity of the proposed project; expected impacts on these resources including potential effects on biodiversity; and proposed mitigation, enhancement or protection measures. Resource Report 3 must:

(1) Describe commercial and recreational warmwater, coldwater, and saltwater fisheries in the affected area and associated significant habitats such as spawning or rearing areas and estuaries.

(2) Describe terrestrial habitats, including wetlands, typical wildlife habitats, and rare, unique, or otherwise significant habitats that might be affected by the proposed action. Describe typical species that have commercial, recreational, or aesthetic value.

(3) Describe and provide the affected acreage of vegetation cover types that would be affected, including unique ecosystems or communities such as remnant prairie or old-growth forest, or significant individual plants, such as old-growth specimen trees.

(4) Describe the impact of construction and operation on aquatic and terrestrial species and their habitats, including the possibility of a major alteration to ecosystems or biodiversity, and any potential impact on state-listed endangered or threatened species. Describe the impact of maintenance, clearing and treatment of the project area on fish, wildlife, and vegetation. Surveys may be required to determine specific areas of significant habitats or communities of species of special concern to state or local agencies.

(5) Identify all federally listed or proposed endangered or threatened species and critical habitat that potentially occur in the vicinity of the project. Discuss the results of the consultation requirements listed in § 380.13(b) at least through § 380.13(b)(5)(i) and include any written correspondence that resulted from the consultation. The initial application must include the results of any required surveys unless seasonal considerations make this impractical. If species surveys are impractical, there must be field surveys to determine the presence of suitable

habitat unless the entire project area is suitable habitat.

(6) Identify all federally listed essential fish habitat (EFH) that potentially occurs in the vicinity of the project. Provide information on all EFH, as identified by the pertinent Federal fishery management plans, that may be adversely affected by the project and the results of abbreviated consultations with NMFS, and any resulting EFH assessments.

(7) Describe site-specific mitigation measures to minimize impacts on fisheries, wildlife, and vegetation.

(8) Include copies of correspondence not provided pursuant to paragraph (e)(5) of this section, containing recommendations from appropriate Federal and state fish and wildlife agencies to avoid or limit impact on wildlife, fisheries, and vegetation, and the applicant's response to the recommendations.

(f) *Resource Report 4—Cultural resources.* This report is required for all applications. In order to prepare this report, the applicant must follow the principles in § 380.14 of this part. Guidance on the content and the format for the documentation listed below, as well as professional qualifications of preparers, is detailed in "OPR's Guidelines for Reporting on Cultural Resources Investigations," which is available from the Commission Internet home page or from the Commission staff.

(1) Resource Report 4 must contain:

(i) Documentation of the applicant's initial cultural resources consultation, including consultations with Native Americans and other interested persons (if appropriate);

(ii) Overview and Survey Reports, as appropriate;

(iii) Evaluation Report, as appropriate;

(iv) Treatment Plan, as appropriate; and

(v) Written comments from State Historic Preservation Officer(s) (SHPO), Tribal Historic Preservation Officers (THPO), as appropriate, and applicable land-managing agencies on the reports in paragraphs (f)(1)(i)-(iv) of this section.

(2) *Initial filing requirements.* The initial application must include the documentation of initial cultural resource

consultation, the Overview and Survey Reports, if required, and written comments from SHPOs, THPOs and land-managing agencies, if available. The initial cultural resources consultations should establish the need for surveys. If surveys are deemed necessary by the consultation with the SHPO/THPO, the survey report must be filed with the application.

(1) If the comments of the SHPOs, THPOs, or land-management agencies are not available at the time the application is filed, they may be filed separately, but they must be filed before a final certificate is issued.

(ii) If landowners deny access to private property and certain areas are not surveyed, the unsurveyed area must be identified by mileposts, and supplemental surveys or evaluations shall be conducted after access is granted. In such circumstances, reports, and treatment plans, if necessary, for those inaccessible lands may be filed after a certificate is issued.

(3) The Evaluation Report and Treatment Plan, if required, for the entire project must be filed before a final certificate is issued.

(4) The Evaluation Report may be combined in a single synthetic report with the Overview and Survey Reports if the SHPOs, THPOs, and land-management agencies allow and if it is available at the time the application is filed.

(i) In preparing the Treatment Plan, the applicant must consult with the Commission staff, the SHPO, and any applicable THPO and land-management agencies.

(iii) Authorization to implement the Treatment Plan will occur only after the final certificate is issued.

(4) Applicant must request privileged treatment for all material filed with the Commission containing location, character, and ownership information about cultural resources in accordance with § 388.112 of this chapter. The cover and relevant pages or portions of the report should be clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION—DO NOT RELEASE."

(5) Except as specified in a final Commission order, or by the Director of the Office of Pipeline Regulation, construction may not begin until all cultural

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resource reports and plans have been approved.

(g) *Resource Report 5—Socioeconomics.* This report is required only for applications involving significant above-ground facilities, including, among others, conditioning or liquefied natural gas (LNG) plants. It must identify and quantify the impacts of constructing and operating the proposed project on factors affecting towns and counties in the vicinity of the project. Resource Report 5 must:

(1) Describe the socioeconomic impact area.

(2) Evaluate the impact of any substantial immigration of people on governmental facilities and services and plans to reduce the impact on the local infrastructure.

(3) Describe on-site manpower requirements and payroll during construction and operation, including the number of construction personnel who currently reside within the impact area, would commute daily to the site from outside the impact area, or would relocate temporarily within the impact area.

(4) Determine whether existing housing within the impact area is sufficient to meet the needs of the additional population.

(5) Describe the number and types of residences and businesses that would be displaced by the project, procedures to be used to acquire these properties, and types and amounts of relocation assistance payments.

(6) Conduct a fiscal impact analysis evaluating incremental local government expenditures in relation to incremental local government revenues that would result from construction of the project. Incremental expenditures include, but are not limited to, school operating costs, road maintenance and repair, public safety, and public utility costs.

(h) *Resource Report 6—Geological resources.* This report is required for applications involving LNG facilities and all other applications, except those involving only facilities within the boundaries of existing aboveground facilities, such as a compressor, meter, or regulator station. It must describe geological resources and hazards in the project area that might be directly or

indirectly affected by the proposed action or that could place the proposed facilities at risk, the potential effects of those hazards on the facility, and methods proposed to reduce the effects or risks. Resource Report 6 must:

(1) Describe, by milepost, mineral resources that are currently or potentially exploitable;

(2) Describe, by milepost, existing and potential geological hazards and areas of nonroutine geotechnical concern, such as high seismicity areas, active faults, and areas susceptible to soil liquefaction; planned, active, and abandoned mines; karst terrain; and areas of potential ground failure, such as subsidence, slumping, and landsliding. Discuss the hazards posed to the facility from each one.

(3) Describe how the project would be located or designed to avoid or minimize adverse effects to the resources or risk to itself, including geotechnical investigations and monitoring that would be conducted before, during, and after construction. Discuss also the potential for blasting to affect structures, and the measures to be taken to remedy such effects.

(4) Specify methods to be used to prevent project-induced contamination from surface mines or from mine tailings along the right-of-way and whether the project would hinder mine reclamation or expansion efforts.

(5) If the application involves an LNG facility located in zones 2, 3, or 4 of the Uniform Building Code's Seismic Risk Map, or where there is potential for surface faulting or liquefaction, prepare a report on earthquake hazards and engineering in conformance with "Data Requirements for the Seismic Review of LNG Facilities," NBSIR 84-2833. This document may be obtained from the Commission staff.

(6) If the application is for underground storage facilities:

(i) Describe how the applicant would control and monitor the drilling activity of others within the field and buffer zone;

(ii) Describe how the applicant would monitor potential effects of the operation of adjacent storage or production facilities on the proposed facility, and vice versa;

(iii) Describe measures taken to locate and determine the condition of old wells within the field and buffer zone and how the applicant would reduce risk from failure of known and undiscovered wells; and

(iv) Identify and discuss safety and environmental safeguards required by state and Federal drilling regulations.

(i) *Resource Report 7—Soils.* This report is required for all applications except those not involving soil disturbance. It must describe the soils that would be affected by the proposed project, the effect on those soils, and measures proposed to minimize or avoid impact. Resource Report 7 must:

(1) List, by milepost, the soil associations that would be crossed and describe the erosion potential, fertility, and drainage characteristics of each association.

(2) If an aboveground facility site is greater than 5 acres:

(i) List the soil series within the property and the percentage of the property comprised of each series;

(ii) List the percentage of each series which would be permanently disturbed;

(iii) Describe the characteristics of each soil series; and

(iv) Indicate which are classified as prime or unique farmland by the U.S. Department of Agriculture, Natural Resources Conservation Service.

(3) Identify, by milepost, potential impact from: Soil erosion due to water, wind, or loss of vegetation; soil compaction and damage to soil structure resulting from movement of construction vehicles; wet soils and soils with poor drainage that are especially prone to structural damage; damage to drainage tile systems due to movement of construction vehicles and trenching activities; and interference with the operation of agricultural equipment due to the probability of large stones or blasted rock occurring on or near the surface as a result of construction.

(4) Identify, by milepost, cropland and residential areas where loss of soil fertility due to trenching and backfilling could occur.

(5) Describe proposed mitigation measures to reduce the potential for adverse impact to soils or agricultural productivity. Compare proposed mitigation measures with the staff's cur-

rent "*Upland Erosion Control, Revegetation and Maintenance Plan*", which is available from the Commission Internet home page or from the Commission staff, and explain how proposed mitigation measures provide equivalent or greater protections to the environment.

(j) *Resource Report 8—Land use, recreation and aesthetics.* This report is required for all applications except those involving only facilities which are of comparable use at existing compressor, meter, and regulator stations. It must describe the existing uses of land on, and (where specified) within 0.25 mile of, the proposed project and changes to those land uses that would occur if the project is approved. The report shall discuss proposed mitigation measures, including protection and enhancement of existing land use. Resource Report 8 must:

(1) Describe the width and acreage requirements of all construction and permanent rights-of-way and the acreage required for each proposed plant and operational site, including injection or withdrawal wells.

(i) List, by milepost, locations where the proposed right-of-way would be adjacent to existing rights-of-way of any kind.

(ii) Identify, preferably by diagrams, existing rights-of-way that would be used for a portion of the construction or operational right-of-way, the overlap and how much additional width would be required.

(iii) Identify the total amount of land to be purchased or leased for each aboveground facility, the amount of land that would be disturbed for construction and operation of the facility, and the use of the remaining land not required for project operation.

(iv) Identify the size of typical staging areas and expanded work areas, such as those at railroad, road, and waterbody crossings, and the size and location of all pipe storage yards and access roads.

(2) Identify, by milepost, the existing use of lands crossed by the proposed pipeline, or on or adjacent to each proposed plant and operational site.

(3) Describe planned development on land crossed or within 0.25 mile of proposed facilities, the time frame (if

available) for such development, and proposed coordination to minimize impacts on land use. Planned development means development which is included in a master plan or is on file with the local planning board or the county.

(4) Identify, by milepost and length of crossing, the area of direct effect of each proposed facility and operational site on sugar maple stands, orchards and nurseries, landfills, operating mines, hazardous waste sites, state wild and scenic rivers, state or local designated trails, nature preserves, game management areas, remnant prairie, old-growth forest, national or state forests, parks, golf courses, designated natural, recreational or scenic areas, or registered natural landmarks, Native American religious sites and traditional cultural properties to the extent they are known to the public at large, and reservations, lands identified under the Special Area Management Plan of the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, and lands owned or controlled by Federal or state agencies or private preservation groups. Also identify if any of those areas are located within 0.25 mile of any proposed facility.

(5) Identify, by milepost, all residences and buildings within 50 feet of the proposed pipeline construction right-of-way and the distance of the residence or building from the right-of-way. Provide survey drawings or alignment sheets to illustrate the location of the facilities in relation to the buildings.

(6) Describe any areas crossed by or within 0.25 mile of the proposed pipeline or plant and operational sites which are included in, or are designated for study for inclusion in: The National Wild and Scenic Rivers System (16 U.S.C. 1271); The National Trails System (16 U.S.C. 1241); or a wilderness area designated under the Wilderness Act (16 U.S.C. 1132).

(7) For facilities within a designated coastal zone management area, provide a consistency determination or evidence that the applicant has requested a consistency determination from the state's coastal zone management program.

(8) Describe the impact the project will have on present uses of the affected area as identified above, including commercial uses, mineral resources, recreational areas, public health and safety, and the aesthetic value of the land and its features. Describe any temporary or permanent restrictions on land use resulting from the project.

(9) Describe mitigation measures intended for all special use areas identified under paragraphs (j)(2) through (6) of this section.

(10) Describe proposed typical mitigation measures for each residence that is within 50 feet of the edge of the pipeline construction right-of-way, as well as any proposed residence-specific mitigation. Describe how residential property, including for example, fences, driveways, stone walls, sidewalks, water supply, and septic systems, would be restored. Describe compensation plans for temporary and permanent rights-of-way and the eminent domain process for the affected areas.

(11) Describe measures proposed to mitigate the aesthetic impact of the facilities especially for aboveground facilities such as compressor or meter stations.

(12) Demonstrate that applications for rights-of-way or other proposed land use have been or soon will be filed with Federal land-management agencies with jurisdiction over land that would be affected by the project.

(k) *Resource Report 9—Air and noise quality.* This report is required for applications involving compressor facilities at new or existing stations, and for all new LNG facilities. It must identify the effects of the project on the existing air quality and noise environment and describe proposed measures to mitigate the effects. Resource Report 9 must:

(1) Describe the existing air quality, including background levels of nitrogen dioxide and other criteria pollutants which may be emitted above EPA-identified significance levels.

(2) Quantitatively describe existing noise levels at noise-sensitive areas, such as schools, hospitals, or residences and include any areas covered by relevant state or local noise ordinances.

(1) Report existing noise levels as the  $L_{eq}$  (day),  $L_{eq}$  (night), and  $L_{dn}$  and include the basis for the data or estimates.

(i) For existing compressor stations, include the results of a sound level survey at the site property line and nearby noise-sensitive areas while the compressors are operated at full load.

(ii) For proposed new compressor station sites, measure or estimate the existing ambient sound environment based on current land uses and activities.

(iii) Include a plot plan that identifies the locations and duration of noise measurements, the time of day, weather conditions, wind speed and direction, engine load, and other noise sources present during each measurement.

(3) Estimate the impact of the project on air quality, including how existing regulatory standards would be met.

(i) Provide the emission rate of nitrogen oxides from existing and proposed facilities, expressed in pounds per hour and tons per year for maximum operating conditions, include supporting calculations, emission factors, fuel consumption rates, and annual hours of operation.

(ii) For major sources of air emissions (as defined by the Environmental Protection Agency), provide copies of applications for permits to construct (and operate, if applicable) or for applicability determinations under regulations for the prevention of significant air quality deterioration and subsequent determinations.

(4) Provide a quantitative estimate of the impact of the project on noise levels at noise-sensitive areas, such as schools, hospitals, or residences.

(i) Include step-by-step supporting calculations or identify the computer program used to model the noise levels, the input and raw output data and all assumptions made when running the model, far-field sound level data for maximum facility operation, and the source of the data.

(ii) Include sound pressure levels for unmuffled engine inlets and exhausts, engine casings, and cooling equipment; dynamic insertion loss for all mufflers; sound transmission loss for all compressor building components, including

walls, roof, doors, windows and ventilation openings; sound attenuation from the station to nearby noise-sensitive areas; the manufacturer's name, the model number, the performance rating; and a description of each noise source and noise control component to be employed at the proposed compressor station. For proposed compressors the initial filing must include at least the proposed horsepower, type of compression, and energy source for the compressor.

(iii) Far-field sound level data measured from similar units in service elsewhere, when available, may be substituted for manufacturer's far-field sound level data.

(iv) If specific noise control equipment has not been chosen, include a schedule for submitting the data prior to certification.

(v) The estimate must demonstrate that the project will comply with applicable noise regulations and show how the facility will meet the following requirements:

(A) The noise attributable to any new compressor station, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a day-night sound level ( $L_{dn}$ ) of 55 dBA at any pre-existing noise-sensitive area (such as schools, hospitals, or residences).

(B) New compressor stations or modifications of existing stations shall not result in a perceptible increase in vibration at any noise-sensitive area.

(5) Describe measures and manufacturer's specifications for equipment proposed to mitigate impact to air and noise quality, including emission control systems, installation of filters, mufflers, or insulation of piping and buildings, and orientation of equipment away from noise-sensitive areas.

(1) *Resource Report 10—Alternatives.* This report is required for all applications. It must describe alternatives to the project and compare the environmental impacts of such alternatives to those of the proposal. The discussion must demonstrate how environmental benefits and costs were weighed against economic benefits and costs, and technological and procedural constraints. The potential for each alternative to meet project deadlines and

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the environmental consequences of each alternative shall be discussed. Resource Report 10 must:

(1) Discuss the "no action" alternative and the potential for accomplishing the proposed objectives through the use of other systems and/or energy conservation. Provide an analysis of the relative environmental benefits and costs for each alternative.

(2) Describe alternative routes or locations considered for each facility during the initial screening for the project.

(i) For alternative routes considered in the initial screening for the project but eliminated, describe the environmental characteristics of each route or site, and the reasons for rejecting it. Identify the location of such alternatives on maps of sufficient scale to depict their location and relationship to the proposed action, and the relationship of the pipeline to existing rights-of-way.

(ii) For alternative routes or locations considered for more in-depth consideration, describe the environmental characteristics of each route or site and the reasons for rejecting it. Provide comparative tables showing the differences in environmental characteristics for the alternative and proposed action. The location of any alternatives in this paragraph shall be provided on maps equivalent to those required in paragraph (c)(2) of this section.

(m) *Resource Report 11—Reliability and safety.* This report is required for applications involving new or recommissioned LNG facilities. Information previously filed with the Commission need not be refiled if the applicant verifies its continued validity. This report shall address the potential hazard to the public from failure of facility components resulting from accidents or natural catastrophes, how these events would affect reliability, and what procedures and design features have been used to reduce potential hazards. Resource Report 11 must:

(1) Describe measures proposed to protect the public from failure of the proposed facilities (including coordination with local agencies).

(2) Discuss hazards, the environmental impact, and service interrup-

tions which could reasonably ensue from failure of the proposed facilities.

(3) Discuss design and operational measures to avoid or reduce risk.

(4) Discuss contingency plans for maintaining service or reducing downtime.

(5) Describe measures used to exclude the public from hazardous areas. Discuss measures used to minimize problems arising from malfunctions and accidents (with estimates of probability of occurrence) and identify standard procedures for protecting services and public safety during maintenance and breakdowns.

(n) *Resource Report 12—PCB contamination.* This report is required for applications involving the replacement, abandonment by removal, or abandonment in place of pipeline facilities determined to have polychlorinated biphenyls (PCBs) in excess of 50 ppm in pipeline liquids. Resource Report 12 must:

(1) Provide a statement that activities would comply with an approved EPA disposal permit, with the dates of issuance and expiration specified, or with the requirements of the Toxic Substances Control Act.

(2) For compressor station modifications on sites that have been determined to have soils contaminated with PCBs, describe the status of remediation efforts completed to date.

(o) *Resource Report 13—Engineering and design material.* This report is required for construction of new liquefied natural gas (LNG) facilities, or the recommissioning of existing LNG facilities. If the recommissioned facility is existing and is not being replaced, relocated, or significantly altered, resubmittal of information already on file with the Commission is unnecessary. Resource Report 13 must:

(1) Provide a detailed plot plan showing the location of all major components to be installed, including compression, pretreatment, liquefaction, storage, transfer piping, vaporization, truck loading/unloading, vent stacks, pumps, and auxiliary or appurtenant service facilities.

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(2) Provide a detailed layout of the fire protection system showing the location of fire water pumps, piping, hydrants, hose reels, dry chemical systems, high expansion foam systems, and auxiliary or appurtenant service facilities.

(3) Provide a layout of the hazard detection system showing the location of combustible-gas detectors, fire detectors, heat detectors, smoke or combustion product detectors, and low temperature detectors. Identify those detectors that activate automatic shutdowns and the equipment that would shut down. Include all safety provisions incorporated in the plant design, including automatic and manually activated emergency shutdown systems.

(4) Provide a detailed layout of the spill containment system showing the location of impoundments, sumps, subdikes, channels, and water removal systems.

(5) Provide manufacturer's specifications, drawings, and literature on the fail-safe shut-off valve for each loading area at a marine terminal (if applicable).

(6) Provide a detailed layout of the fuel gas system showing all taps with process components.

(7) Provide copies of company, engineering firm, or consultant studies of a conceptual nature that show the engineering planning or design approach to the construction of new facilities or plants.

(8) Provide engineering information on major process components related to the first six items above, which include (as applicable) function, capacity, type, manufacturer, drive system (horsepower, voltage), operating pressure, and temperature.

(9) Provide manuals and construction drawings for LNG storage tank(s).

(10) Provide up-to-date piping and instrumentation diagrams. Include a description of the instrumentation and control philosophy, type of instrumentation (pneumatic, electronic), use of computer technology, and control room display and operation. Also, provide an overall schematic diagram of the entire process flow system, including maps, materials, and energy balances.

(11) Provide engineering information on the plant's electrical power generation system, distribution system, emergency power system, uninterruptible power system, and battery backup system.

(12) Identify of all codes and standards under which the plant (and marine terminal, if applicable) will be designed, and any special considerations or safety provisions that were applied to the design of plant components.

(13) Provide a list of all permits or approvals from local, state, Federal, or Native American groups or Indian agencies required prior to and during construction of the plant, and the status of each, including the date filed, the date issued, and any known obstacles to approval. Include a description of data records required for submission to such agencies and transcripts of any public hearings by such agencies. Also provide copies of any correspondence relating to the actions by all, or any, of these agencies regarding all required approvals.

(14) Identify how each applicable requirement will comply with 49 CFR part 193 and the National Fire Protection Association 59A LNG Standards. For new facilities, the siting requirements of 49 CFR part 193, subpart B, must be given special attention. If applicable, vapor dispersion calculations from LNG spills over water should also be presented to ensure compliance with the U.S. Coast Guard's LNG regulations in 33 CFR part 127.

(15) Provide seismic information specified in Data Requirements for the Seismic Review of LNG facilities (NBSIR 84-2833, available from FERC staff) for facilities that would be located in zone 2, 3, or 4 of the Uniform Building Code Seismic Map of the United States.

[Order 603, 64 FR 26611, May 14, 1999, as amended by Order 603-A, 64 FR 54537, Oct. 7, 1999; Order 609, 64 FR 57392, Oct. 25, 1999]

**§ 380.13 Compliance with the Endangered Species Act.**

(a) *Definitions.* For purposes of this section:

(1) *Listed species* and *critical habitat* have the same meaning as provided in 50 CFR 402.02.

Mr. OSE. That wouldn't be a bad approach.

Mr. WOOD. Now I would say just on the two we have done since I have been on the Commission, Chairman Ose, the issue is not dominated about the actual facilities themselves and the exclusion zones. Those have been relatively understood and accepted. And then you have to get a relatively significant size piece of land to be sufficiently buffered. It is the other issues that surface in the environmental review process under NEPA. It requires that issues such as water discharges, dredging, air emissions, which this one in Freeport was in the Houston air zone, so the State agency that was delegated with Clean Air Act authority had to look at the impact on air of vaporizing gas. The impacts of navigation that the Coast Guard is concerned with as well as the safety issues we are concerned with, all these things are unique to the actual geography of the place, and so it is hard to standardize that. If you put it here, we still have to look at wetlands impacts, bird impacts, archeological impacts under the whole suite of environmental protection laws that we have in this country.

The bulk of what we have to do in looking at each of these is not the actual footprint of the facility itself, but the surrounding impacts that putting that footprint on a piece of land and ocean has with regard to all the other things we need to consider. And I think certainly, as I mentioned to the gentleman from Ohio, the way to streamline that is to start in an early phase and work through those things collaboratively with the agencies and citizens in those areas, and that's how you streamline a process.

Mr. OSE. On that particular point, I get many pieces of input from lots of different sources, some of which are suggesting to me that the pre-filing collaborative effort is not very well organized at present and could stand sufficient or significant improvement, to share with you.

Mr. WOOD. Send them to me. We want it to be successful.

Mr. OSE. My question deals with those things that you know you are going to have. You know you are going to have a tanker come into a facility. You might have it onshore, in which case you have to have a harbor that has sufficient draft to hold the vessel. You have to have exclusion zones. You have to be able to turn that vessel. Why can't you do—let me back up a minute. Mr. Tierney hit on a needs assessment earlier in terms of where do we need these facilities. Mr. Markey also mentioned it, where do we need these facilities. It doesn't seem like rocket science to me to go into those regions and identify the different spots where you have existing infrastructure you could plug in. My question really becomes why could you not do, in effect, a programmatic environmental document of that nature that takes 95 percent of this stuff off the table?

Mr. WOOD. That's a good question. The question is, do you expend a lot of effort picking a preferred LNG part as we did in your home State in the 80's and then no one ever showed up at the party. Is that an effective use of the Federal resources, or do we look at what someone who is quite willing to make a half-billion dollar investment at a minimum, those type of operators who, in my experience with the 13 we have in the door, have done a significant amount of homework in advance. We don't rubber-stamp that, to be sure, but it does help that someone who is putting significant

investment into these big projects is going to look at the dredging, the harbor issues, the navigation issues, the potential wetlands issues, wildlife issues; where does the dredge go; what kind of pipelines are we tying into; is there sufficient downstream capacity to actually hold this big slug of gas as it goes into the grid. I mean, those kind of things, quite frankly, are being thought through by all the applicants that we have seen come in our door so far. And while I think there is certainly room for improvement, I would think that picking preferred spots might be counter productive, it is kind of a role we got away from on gas pipeline.

Mr. OSE. I don't think it is rocket science. It seems to me that industry knows where those spots are and where the infrastructure is.

So that brings me to a question to Admiral Gilmour. From a harbor standpoint, from a vessel working in the waters of the United States, it seems to me that the manner in which that vessel works isn't going to vary from one place to the next. I mean, you are not going to want boats approaching it. You are going to need a turning radius of X, you are going to need a draft clearance of Y. Why is it not possible to set up that kind of a template under a programmatic basis or otherwise so that people can get on with frankly taking a process that in your case is 330 days, but in FERC's case might be endless, and telescoping it down? Is that possible?

Admiral GILMOUR. The applications that we have, we are again trying to work with industry to develop things that—the things they should address as early as possible regarding some of those issues. I would say to a degree, depending on how they decide to gasify, there may be different kinds of environmental impacts that they would have to address in their environmental impact statement, but in general—

Mr. OSE. But the gasification facilities are going to be onshore.

Admiral GILMOUR. If you are talking to the onshore side, then yes, sir, I would say it is quite standard what they would address on the onshore side.

Mr. TIERNEY. There is at least one prototype that would have the gasification process on the ship?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. There is one prototype. It is the one I understand that some people are contemplating off the shore of Gloucester and Marblehead and up that way, would be to hook up with the buoy, hydraulically pull up with that liquefied on board and put it right in and just flow right into the pipe, right? And the thing would be contained in the ship.

Mr. OSE. Gasify it on the ship, am I right?

Admiral GILMOUR. There is one such application. So there would be—in that case they would require no cooling. They would not have to use water to help cool and send it over the side. So it would be a different kind of situation than doing it on the fixed platform. But from the shore side, yes, sir. I think industry pretty much knows the kinds of things they need to address with us. I would say the only unknown or not unknown, but perhaps issues that we need to look at and in fact are looking at are some of those that Congressman Markey brought up.

Mr. OSE. If I walked in your office today, could I go to some place and get a defined set of parameters that you would expect me to meet for an offshore facility?

Admiral GILMOUR. Seeing that we have only approved two of them, no, sir. We couldn't hand you something and say, if you fill all the blanks here. From a security side, I would say to a large degree, yes, but what we would encourage is to have people to come in and look at the issues with us and we can talk about areas where we have had problems before.

Mr. OSE. Gentleman from Massachusetts.

Mr. TIERNEY. Is there a ship that we know about that we have already seen that has the gasification process on board? Does such a thing exist or is that in construction?

Admiral GILMOUR. I really don't know the status of that vessel. I think it's under construction.

Mr. TIERNEY. Mr. Garman, I ask you, are there studies within your Department that indicate what Department of Energy at least thinks is the necessary amount of liquid natural gas that will have to be imported and then further studies that indicate how that amount might be decreased by the conservation or alternative fuels progress and what reasonable expectation we have of meeting that progress by certain dates and how it might be impacted? Are those types of studies around?

Mr. GARMAN. I think it's fair to say that the Energy Information Administration studies made an attempt to understand what we could reasonably expect to achieve through efficiency and conservation efforts in its modeling of future gas needs.

Mr. TIERNEY. Would you think that would be in English so that Members of Congress would understand those studies and what they're modeling and what their assumptions were?

Mr. GARMAN. I, too, am perplexed and overwhelmed by EIA modeling efforts.

Mr. TIERNEY. If it is, I would ask you to please submit it. If it isn't, I would like you to submit it with a scientist to interpret it.

Mr. GARMAN. I will try to interpret it.

Mr. TIERNEY. I would like to see what it is they thought are the projections and see how reasonable those might be and what goals we might have set for people to get to the place where we need to get. I would appreciate that. Why don't I yield?

[The information referred to follows:]

COMMITTEE: HOUSE GOVERNMENT REFORM,  
SUBCOMMITTEE ON ENERGY POLICY,  
NATURAL RESOURCES AND REGULATORY  
AFFAIRS

DATE: June 22, 2004

WITNESS: David Garman

INSERT FOR THE RECORD

EIA has performed numerous studies that project demand for natural gas under varying assumptions including the *Annual Energy Outlook 2004 (AEO2004)*, where current laws and regulations are unchanged; restricted supply cases where LNG, unconventional gas, and Alaskan gas are limited; cases that restrict the emissions of SO<sub>2</sub>, NO<sub>x</sub>, Hg, and CO<sub>2</sub>; and several proposed energy initiatives. Specific studies include:

- 1.) *Analysis of Senate Amendment 2028, the Climate Stewardship Act of 2003,*
- 2.) *Analysis of S.139, the Climate Stewardship Act of 2003,*
- 3.) *Analysis of S. 1844, the Clear Skies Act of 2003; S. 843, the Clean Air Planning Act of 2003; and S. 366, the Clean Power Act of 2003,*
- 4.) *Analysis of Restricted Natural Gas Supply Cases, and*
- 5.) *Summary Impacts of Modeled Provisions of the 2003 Conference Energy Bill.*

These studies, along with *AEO2004* side cases that include high and low economic growth scenarios, high and low oil and gas technology scenarios, and high and low world oil price scenarios, project the demand for natural gas and how much of that demand will

be satisfied by LNG imports. The special studies are available on the EIA website, [www.eia.doe.gov/oiaf/analysis.htm](http://www.eia.doe.gov/oiaf/analysis.htm) and the *AEO2004* is available on [www.eia.doe.gov/oiaf/aeo/index.html](http://www.eia.doe.gov/oiaf/aeo/index.html). The cases in these reports project domestic US levels of natural gas demand that range from 26.9 (in the restricted unconventional gas, Alaskan gas, and LNG case) to 38.6 (in the S. 139 restricted greenhouse gas emissions case) trillion cubic feet in 2025, with corresponding percentages of gas consumption satisfied by LNG imports in 2025 ranging from 7.7 to 11.9 tcf. The highest percentage of LNG imports occurs in the *AEO2004* low oil and gas technology case, where LNG imports equal 18.5 percent of total supply.

The *AEO2004* reference case and integrated high and low technology cases provide an indication of the impact that increased efficiency has on natural gas demand and LNG imports. These three scenarios (published in the *Annual Energy Outlook 2004*) show a range of possible natural gas consumption levels in response to different assumptions about the availability of equipment with improved technologies. The Integrated 2004 Technology Case assumes that the efficiency of all end-use generating technologies remains at 2004 levels. The Reference Case assumes that available technologies reflect both Federal standards and anticipated changes in the marketplace. The specific selection of equipment is determined within the forecasting model based on fuel prices and characteristics of the available equipment (e.g., installed cost, maintenance cost, efficiency, and equipment life) and are exogenously specified to the model. The High Technology Case assumes earlier availability, lower costs, and/or higher efficiencies for more advanced equipment than the Reference Case. In addition to the equipment changes, residential and commercial heating shell efficiencies for new and existing

buildings are assumed to have a 25-percent improvement relative to the Reference Case. In these cases, net LNG imports in 2020 in the low technology, reference, and high technology scenarios are 4.6, 4.1, and 3.7 trillion cubic feet, respectively. Corresponding natural gas demands in the three scenarios are 31.8, 30.4, and 29.3 trillion cubic feet, respectively. Thus, LNG represents 14.5 percent, 13.6 percent, and 12.8 percent, respectively, of the gas consumption in the three cases.

Mr. OSE. Mr. Garman, the estimate for the 2007 to 2010 timeframe that specified I think we needed four—

Mr. GARMAN. Energy Information estimate, that we would need four new facilities in the Atlantic and the Gulf by the 2007–2010 timeframe.

Mr. OSE. And the estimate of supply and demand and balance in the market is based upon—and pricing that might be affected is based upon those new facilities being built?

Mr. GARMAN. Yes.

Mr. OSE. If those new facilities aren't being built—that is what Congressman Tierney and I actually have to endure is the outcry that comes from a pricing perspective. So if the assumptions on the EIA study are that price is going to be X because these facilities are being built or on-line, if those facilities aren't on-line it is a whole different ball game, is it not?

Mr. GARMAN. That's correct.

Mr. TIERNEY. If they don't go on-line, what are our prospects of making up the difference by either conservation or alternative fuels and the feasibility of moving those? And that would be helpful if you put those in the reports to us.

Mr. GARMAN. What will happen if those facilities are not built, prices will climb and consumers will conserve, because they will be responding to a price signal.

Mr. TIERNEY. Unless you develop an alternative source of energy for them within that timeframe to take up some of that need or unless they get conservation conscious overnight. There might be goals we could set or ways to at least help us in our policy decisions in what we ought to be pushing for, whether we should be going for liquid natural gas or understanding that some of the siting things might be difficult. What should we be pushing out in the meantime in case that doesn't happen?

Mr. GARMAN. Our approach is to plant many seeds.

Mr. TIERNEY. Let me do a little leg work for Congressman Markey here. He didn't ask us to do this, but I thought he had some reasonable questions to ask. Who in the Federal Government tests the insulation on LNG carriers for fire resistance?

Admiral GILMOUR. Sir, in things like that, they would be tested to industry standards.

Mr. TIERNEY. Who does make the determination?

Admiral GILMOUR. Independent organizations for whoever would require it. In our case it would be the Coast Guard.

Mr. TIERNEY. That's your job. The Coast Guard is responsible for making sure that LNG carriers have fire resistant insulation?

Admiral GILMOUR. Yes, sir. We are required to ensure that they have the proper type of insulation that meets certain requirements. But I wouldn't say necessarily in all cases it had to be fire resistant, I guess is where I am going with that.

Mr. TIERNEY. There are LNG carriers out there where the insulation isn't fire resistant and that is OK with the Coast Guard?

Admiral GILMOUR. It would depend on how it were applied. There are other ways to skin that cat, if you will. There are other things you can do.

Mr. TIERNEY. And the Coast Guard makes the determination of what is acceptable and what isn't?

Admiral GILMOUR. Absolutely.

Mr. TIERNEY. Do you use industry standards on that?

Admiral GILMOUR. Some of our own regulations and some independent labs test those, but I would say, you know, industry standards developed by you know API, ANSI, other third party type.

Mr. TIERNEY. And that is what the Coast Guard uses? None of its own analysis?

Admiral GILMOUR. We have some of our own requirements and we use industry standards in some cases.

Mr. TIERNEY. What hazard analysis has been done to examine what would happen in the event of a fire on an LNG carrier ignited the insulation or otherwise compromised it? Has somebody done those analyses?

Admiral GILMOUR. We have looked at some point at just about every kind of accident that could happen on any kind of vessel in developing our regulations. So, yes, sir, we have looked at collisions, groundings, fires and developed criteria for all of those areas.

Mr. TIERNEY. What Mr. Markey is most concerned about is polystyrene.

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. You have done study or analysis to examine what would happen if that particular product were ignited on an LNG carrier?

Admiral GILMOUR. We could certainly know what the properties of any kind of insulation material would be and how it would react to flame.

Mr. TIERNEY. You know that because you have already had analysis done?

Admiral GILMOUR. We have either had analysis done or would require analysis for a given application.

Mr. TIERNEY. As I understand it, Mr. Markey's concern is that polystyrene is being used on some ships and he is concerned that people have not made this analysis. Can you help us out there?

Admiral GILMOUR. Sir, you are asking a very complex and difficult question that you would have to know where it was used, how it were used and if it were encapsulated. There are a number of complicating issues. So that the insulation itself might burn, but if it were put into a steel container, you wouldn't have that concern. Or if it were put into another environment, you wouldn't have that concern. So it is a very complicated question.

Mr. TIERNEY. Let me help you here. It's not something I thought of here. The Department responded to a letter that Mr. Markey sent indicating that foam polystyrene insulation is not used on LNG carriers precisely because it is susceptible to melting and deformation in a fire. Mr. Markey then indicated that he has since found that statement to be inaccurate, that the LNG vessel manufacturer reports in a sales brochure that it uses that polystyrene—there is more information that goes on. So my question would be if it is used, as he seems to believe that it is, are there analyses that you could provide to this committee as to what the effect would be if it was compromised?

Admiral GILMOUR. We can look at that. I don't know what context—and I am sure I will get the opportunity to look at his letter,

but I don't know what context that was in. But we can certainly——

Mr. TIERNEY. It was in the context of this polystyrene being used as insulation on an LNG carrier. At some point he is concerned that it is going to be compromised and what results from that. I don't know what other context to put it in for you.

Admiral GILMOUR. As I stated earlier, we would have to look at if we thought it indeed could happen. I mean there are a lot of——

Mr. TIERNEY. Will you provide that analysis to us with respect to that polystyrene? If you have done analysis with respect to polystyrene's possible use or use on LNG carriers, would you provide that to the committee?

Admiral GILMOUR. We can discuss that issue.

Mr. OSE. Will you provide it or won't you?

Admiral GILMOUR. Yes, sir.

Mr. OSE. We don't want to discuss it, we want to see it. That's the difference. If you have a report, will you provide it to the committee?

Admiral GILMOUR. Sir, first of all, I don't know the context of the letter, so I don't know we have an exact report that is going to address Congressman Markey's issue, but we can provide an analysis to you of insulation used on——

Mr. TIERNEY. Forget Mr. Markey for a second. I am going to make a direct request. Will you provide to this committee any analysis that you have done with respect to polystyrene's use on LNG vessels?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. That pretty much covers everything, whether you think it is there or you don't think it is there or if it's there, what you think is going to happen, and that should give us whatever we need. I would appreciate that if you would do that.

Admiral GILMOUR. Yes, sir.

[The information referred to follows:]

Discrete asset level comparisons have not been made by the U.S. Coast Guard. However, the U.S. Coast Guard did evaluate the competing Integrated Deepwater System (IDS) proposals at the system level. Integrated Coast Guard Systems (ICGS) proposed the Multi-mission Cutter Helicopter (MCH), which is a major improvement of the existing HH-65 helicopter, as part of their system solution. During the source selection evaluation, the Coast Guard evaluated the competing cost proposals to ensure the prices were reasonable and realistic and that system level requirements were met.

During the first phase of the IDS Program, the competing industry teams performed an analysis of alternatives in the development of their proposed system solutions. A wide array of aviation asset solutions was considered by ICGS, ranging from modifications, upgrades, and service life extensions to existing legacy assets to new replacement platforms. The MCH upgrade was proposed by ICGS as the best value within their system that stayed under the notional funding level available for the Integrated Deepwater System. The MCH is a low risk, cost-effective, non-developmental solution, involving mature off-the-shelf components, which has greatly improved capability when compared to the legacy HH-65.

The table below provides a cost comparison of the MCH and the AB-139.

| Assets               | Average Unit Cost (\$M) | # of Units | Total System Cost (\$M) |
|----------------------|-------------------------|------------|-------------------------|
| MCH (Upgraded HH-65) | \$6.2M                  | 93         | \$576.60                |
| AB-139               | \$15.0M                 | 93         | \$1,395                 |

Notes: A. Amounts are presented in FY2002 Dollars.  
B. Unit costs are based on the full production of these assets and if a smaller amount is acquired, the unit cost will increase.

The AB-139 is a representative type of new helicopter that would be acquired to provide the capability of the HH-65 or the MCH, even though the AB-139 is not directly equivalent to the MCH.

Based on the prices in the ICGS proposal, it would require approximately \$9M more per helicopter to require a new asset when compared to upgrading and extending the service life of the HH-65. This would require an additional investment of over \$800M to achieve a comparable result in system performance.

Mr. TIERNEY. In the light of the post-September 11 threat, is there any plan by the Department, Coast Guard in particular, but the Department on the whole to review the safety standards applicable to LNG carriers, including fire safety standards, to determine whether they need to be upgraded to better address the threat of sabotage or terrorist attack?

Admiral GILMOUR. Yes, sir. There is a study through Sandia Labs that we are working in conjunction with DOA that will look at that threat.

Mr. TIERNEY. Are they still in process?

Admiral GILMOUR. Yes, sir.

Mr. TIERNEY. Will you provide those to the committee when they are done?

Mr. GILMOUR. Absolutely.

[The information referred to follows:]

The Sandia report is sponsored by the Department of Energy (DOE) and is still being finalized. The Department of Energy point of contact to obtain a completed report is Ms. Sally Kornfeld, DOE Office of Natural Gas & Petroleum Import/Export Activities, 100 Independence Ave., SW, Washington, DC 20585, (202) 586-3814.

Mr. TIERNEY. I think my time is up.

Mr. OSE. I want to go back to the national fire standards that were used in the original design criteria for the carriers, the vessels. Now there has been some comment and discussion here that those were adopted I think in 1974. And have those standards been updated periodically since then, Mr. Wood, Mr. Garman, Admiral Gilmour?

Mr. WOOD. I am not aware of when they were adopted or when they have been amended.

Mr. GARMAN. I do not know.

Mr. OSE. How contemporaneous are the standards—I can't remember the exact phraseology, it is like the national fire safety—National Fire Protection Association—those standards. How contemporaneous are they in terms of currency?

Admiral GILMOUR. Sir, I am not sure that those were applied to the vessel side, but we can give you what does apply. And in fact, we have updated fire fighting and fire protection capabilities since 1974.

Mr. OSE. I think that is at the heart of the question, is whether or not we are using standards that are 30 years old or something a little more current, and that would be a big help to us in terms of addressing some of these concerns.

Admiral GILMOUR. We can provide that information to you, too, sir.

[The information referred to follows:]

The firefighting equipment standards for U.S. flag liquid natural gas (LNG) vessels are located in Title 46 CFR Part 154. These standards were published in May 1979. The International Maritime Organization (IMO) first adopted firefighting equipment standards for all LNG vessels in international service in November 1975; additional fire protection amendments were made in 1978, 1983 and 1990. The United States participated in the development of these amendments. The United States is also a member of the IMO Maritime Safety Committee's Subcommittee on Bulk Liquids and Gases (BLG Subcommittee), which may recommend amendments to the fire safety requirements specified in the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) should circumstances warrant. The U.S. Coast Guard believes the fire fighting and fire protection standards presently in effect for LNG carriers adequately address the current fire safety risks.

Mr. TIERNEY. Last question I have, if you have an old ship that might have had some sort of insulation or problem, I think it has since been decided that is not safe, is there a provision or process by which they are asked to remove that? And if so, who then checks and inspects to see whether or not that has occurred?

Admiral GILMOUR. Yes, sir. That would be the case, and we would look at it and we would make that determination. You must—you gentlemen must realize, though, the only vessels we can apply standards to are those that come to the United States, that trade with the United States, and that is what we will give our analysis based on.

Mr. TIERNEY. There are about 150 of those?

Admiral GILMOUR. I am not sure there is that many. I think it is in the 40 range that are trading currently with the United States.

Mr. TIERNEY. And if there is a vessel that comes to a deepwater port 12 miles out or 112 miles out, that would still be considered within your jurisdiction and you would check on those?

Admiral GILMOUR. Absolutely. And most of those are new vessels under construction.

Mr. TIERNEY. Only two of them under U.S. flag?

Admiral GILMOUR. Yes, sir.

[The information referred to follows:]

Through further research we have determined that there are no longer any U.S. flagged liquid natural gas (LNG) vessels in the worldwide fleet. The POLAR EAGLE and the ARCTIC SUN, referenced in the statements, are U.S. owned and are classed by the American Bureau of Shipping, but are not U.S. flagged.

Mr. OSE. I want to thank this panel for your patience and perseverance. I do want to emphasize the concept of a programmatic template both for onshore and offshore facilities that would, I think in the end, it might be a dime invested to save \$5 worth of processing or resource allocation, and it just seems to me like it would be a huge step. I am a little bit curious from the Department of Energy the parameters under which the Secretary would veto a siting or permit decision made by FERC or Coast Guard-MARAD. Could you share that with us?

Mr. GARMAN. Our only data point is that one experience in Alaska when there was a proposal, not a project, to export Alaskan natural gas to Japan. As I recall, the Department had a preference that the export site occur at the Port of Valdez rather than closer to Seward, which is what the project proponents had wanted. FERC had approved the project. The Department of Energy disapproved it. And then FERC reapproved the project at the export site at the Port of Valdez. That is the only experience that exists on the record. I don't believe there is set criteria, and I don't know the detailed history of why the Secretary at that time made those decisions or the reasons he used.

Mr. OSE. It would be helpful to flush that out.

Mr. GARMAN. We will do a little investigation.  
[The information referred to follows:]

Coast Guard/MARAD LNG Permits. Recent amendments to the Deepwater Port Act vested jurisdiction over the siting, construction, and operation of offshore natural gas facilities in the U.S. Coast Guard and the Maritime Administration. Those amendments do not alter DOE's authorities under section 3 of the NGA with respect to the import or export of natural gas (as opposed to the facilities for such import or export).

Mr. OSE. Final point. If you look around the Pacific Rim, that is the source of significant supply or generation of natural gas. A lot of that stuff is being flared off. Australia, as I understand it, just entered into an agreement with China for a significant importation into China. We are behind the curve here, gentlemen, and we need that gas big time. To the extent that this committee can help you expedite permitting or siting decisions, whether they be onshore or offshore, I think we stand ready to do our share.

We thank you for your testimony today. We are going to take a 5-minute recess and will reconvene at 4:30 with the third panel.

[Recess.]

Mr. OSE. We are going to reconvene. I want to welcome our third panel of witnesses today. We are joined by Jay Blossman, who is the commissioner of the Louisiana Public Service Commission; also by the chairman of the Maryland Public Service Commission, Mr. Kenneth Schisler; and by the deputy secretary for energy in the California Resources Agency from the Golden State, Mr. Joe Desmond. Gentleman, you saw we swear our witnesses in. So if you please rise.

[Witnesses sworn.]

Mr. OSE. Let the record show the witnesses have answered in the affirmative. We have received your written statements and they have been entered into the record. I have read them and reviewed them accordingly. We are going to recognize you for 5 minutes to summarize your testimony.

Mr. Blossman, you are first.

**STATEMENTS OF JAY BLOSSMAN, COMMISSIONER, LOUISIANA PUBLIC SERVICE COMMISSION; KENNETH D. SCHISLER, CHAIRMAN, MARYLAND PUBLIC SERVICE COMMISSION; AND JOSEPH DESMOND, DEPUTY SECRETARY, ENERGY, CALIFORNIA RESOURCES AGENCY**

Mr. BLOSSMAN. Thank you, Mr. Chairman. It is my distinct pleasure to be here today to address you on one important topic, jurisdiction over siting of liquefied natural gas import facilities. In my comments I will address State policies involved in siting LNG import facilities.

Liquefied natural gas has long played a role in U.S. energy markets, but concerns about rising natural gas prices, current price volatility and the possibility of domestic shortages are sharply increasing the demand for LNG imports. To meet this demand, dozens of new onshore and offshore LNG import terminals have been proposed in coastal regions throughout the United States. There are five onshore LNG terminals in the United States. In addition to these active terminals, developers have been proposing numerous new LNG import terminals in the coastal United States.

Louisiana Public Service Commission is interested in the siting of LNG regasification facilities because they have a potential of representing a major capital investment in our State. LNG siting in Louisiana will allow the State to leverage and even extend our existing energy infrastructure. Our State has energy intensive users of natural gas, and LNG terminals will expand a vital energy resource needed to preserve these energies.

The development of LNG is an important national energy concern in which Louisiana can make a significant contribution. According to a study done by Louisiana State University Center for Energy Studies, the construction of an LNG regasification facility in Louisiana has the potential impact of \$2.2 billion and nearly 14,000 jobs associated with the construction of this facility. The center also stated that there is a potential \$220 million impact associated with the annual operation of an LNG facility in Louisiana and the Gulf of Mexico, with an estimated 1,600 jobs associated with that operation.

As it relates to economic opportunities for LNG development in Louisiana, we are in a unique position. Louisiana is the second largest producer of natural gas. It is the third largest consumer of natural gas in the United States, beyond Texas and California. Louisiana's high natural gas consumption ranking is due to high industrial use per customer. Louisiana's industrial consumption ranks second in the United States behind Texas. Proposed LNG terminals will directly impact the safety of our communities and a number of States and congressional districts, and they are likely to influence energy costs nationwide.

Faced with the widely perceived national need for greater LNG imports and the persistent public concerns about LNG hazards, Congress is justifiably examining the adequacy of safety provisions in Federal LNG siting regulations. The FERC grants the Federal approval for the siting of the new onshore LNG facilities under the Natural Gas Act of 1938. This approval process incorporated minimum safety standards for LNG established by the Department of Transportation, which in turn incorporated siting standards set by the National Fire Protection Agency. Although LNG has a record of relative safety for the last 40 years and no LNG tanker or land-based facility has been attacked by terrorists, experts have questioned the adequacy of key LNG siting regulations relating to safety zones, marine hazards, and remote siting.

While the Federal Government is primarily responsible for LNG terminal safety, State and local laws such as environmental, health and safety codes can affect LNG facilities as well. Under the Pipeline Safety Act, a State may also regulate intrastate pipeline facilities if a State submits a certification or makes an agreement with the Department of Transportation.

Regulation of interstate facilities remains the primary responsibility of Federal agencies. The Office of Pipeline Safety, however, may authorize a State to act as its agent to inspect interstate pipelines associated with LNG facilities while retaining its enforcement responsibility. State regulation of LNG safety siting ranges from comprehensive to piecemeal.

Apart from State regulation aimed specifically at LNG facilities, generally applicable State and local laws such as zoning laws and permit requirements for water, electricity, construction and waste disposal also may serve to impact the planning and development of LNG facilities. With respect to LNG in particular, local laws have been overridden by State legislation in the past. It should also be noted that federally authorized LNG projects cannot be frustrated by contrary provisions found in State or local law.

I look forward to answering your questions, Mr. Chairman. I think it is a very important part of the energy policy with LNG, and I am here to support the Lake Charles facility. Thank you.  
[The prepared statement of Mr. Blossman follows:]

**Liquefied Natural Gas (LNG) Terminals:  
Economic Development Opportunities and Siting**

Testimony Prepared for a Hearing on  
Jurisdiction over siting of Liquefied Natural Gas (LNG) import facilities  
The Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs  
Tuesday, June 22, 2004

The Honorable Jack "Jay" Blossman, Jr.  
Louisiana Public Service Commission

It is my distinct pleasure to be here today to address you on an important topic: jurisdiction over siting of Liquefied Natural Gas (LNG) import facilities. In my comments I will address state policies involved in siting LNG import facilities.

**INTRODUCTION**

Liquefied natural gas (LNG) has long played a role in U.S. energy markets, but concerns about rising natural gas prices, current price volatility, and the possibility of domestic shortages are sharply increasing demand for LNG imports. To meet this demand, dozens of new onshore and offshore LNG import terminals have been proposed in coastal regions throughout the United States. There are five onshore LNG import terminals in the United States at Everett, Massachusetts; Lake Charles, Louisiana; Cove Point, Maryland; Elba Island, Georgia; and Peñuelas, Puerto Rico. There is also an export terminal in Kenai, Alaska. In addition to these active terminals, developers have been proposing numerous new LNG import terminals in the coastal United States.

**LOUISIANA SPECIFIC**

The Louisiana Public Service Commission is interested in the siting of LNG regasification facilities because they have the potential of representing a major capital investment for the state. LNG siting in Louisiana will allow the state to leverage and even extend our existing energy infrastructure. Our state has energy intensive users of natural gas and LNG terminals will expand a vital energy resource need to preserve these industries. The development of LNG is an important national energy concern in which Louisiana can make a significant contribution.

According to the Louisiana State University Center for Energy Studies, the construction of LNG regasification facilities in Louisiana has a potential impact of \$2.2 billion with an estimated 13,877 jobs associated with the construction of the facilities. The Center also stated that there is potentially a \$220.7 million impact associated with the annual operation of LNG facilities in Louisiana and the Gulf of Mexico with an estimated 1,607 jobs associated with the operation of these facilities.

As it relates to the economic opportunities for LNG development in Louisiana, we are in a unique position. Louisiana is the 2<sup>nd</sup> largest producer of natural gas. Louisiana is the 3<sup>rd</sup> largest consumer of natural gas in the United States behind Texas and California. Louisiana's high natural gas consumption ranking is due in large part to high industrial use per customer. Louisiana's industrial consumption ranks 2<sup>nd</sup> in the United States behind Texas.

Proposed LNG terminals will directly impact the safety of communities in a number of states and Congressional districts, and they are likely to influence energy costs nationwide. Faced with the widely perceived nation need for greater LNG imports, and persistent public concerns about LNG hazards, Congress is justifiably examining the adequacy of safety provisions in federal LNG siting regulation.

#### **CURRENT REGULATORY FRAMEWORK**

The Federal Energy Regulatory Commission (FERC) grants federal approval for the siting of new onshore LNG facilities under the natural gas act of 1938. This approval process incorporated minimum safety standards for LNG established by the Department of Transportation, which in turn, incorporated siting standards set by the National Fire Protection Association (NFPA). Although LNG has had a record of relative safety for the last 40 years, and no LNG tanker or land-based facility has been attacked by terrorists, experts have questioned the adequacy of key LNG siting regulations related to safety zones, marine hazards, hazard modeling, and remote siting.

While the federal government is primarily responsible for LNG terminal safety and siting regulation, state and local laws, such as environmental, health and safety codes, can affect LNG facilities as well. Under the Pipeline Safety Act, a state may also regulate intrastate pipeline facilities if the state submits a certification under section 60105(a) or makes an agreement with the Department of Transportation under section 60106. Of course, if a particular LNG facility would otherwise not fall under FERC and

DOT jurisdiction, states may regulate without going through the certification or agreement process. Regulation of interstate facilities remains the primary responsibility of federal agencies. The Office of Pipeline Safety, may however, authorize the state to act as its agent to inspect interstate pipelines associated with LNG facilities while retaining its enforcement responsibility. As of 2002, all states but three were participants in the natural gas pipeline safety program and fifteen were in the hazardous liquid pipeline safety program.

#### **STATE REGULATION OF LNG SITING**

State regulation of LNG safety and siting ranges from comprehensive to piecemeal. Apart from state regulation aimed specifically at LNG facilities, generally applicable state and local laws, such as zoning laws and permit requirements for water, electricity, construction, and waste disposal, also may serve to impact the planning and development of LNG facilities. However, with respect to LNG in particular, local laws have been overridden by state legislation in the past. It should also be noted that a federally authorized LNG project cannot be frustrated by contrary provisions found in state or local law.

In order for new LNG terminals to be expeditiously approved and in service, cooperation in the permitting process between local, State and Federal authorities is essential. The Louisiana Commission encourages coordination among State agencies that oversee permitting of regasification, and between local, State and Federal government agencies, in order to facilitate and streamline regasification terminal permitting.

I appear here today in hopes that I may convince you of the compelling state interest in regulating the siting of LNG facilities. State regulatory commissions are more appropriately situated to help ensure that any LNG development is consistent with state energy policy balancing environmental protection, public safety, and local community concerns. The states acknowledge that the United States is in need of additional natural gas sources based on supply/demand and price expectations. LNG appears to be one of the most promising options state commissions have identified for importing natural gas supplies.

LNG projects by their nature present significant environmental and safety hazards. Although LNG technology has improved in recent years, if LNG facilities are sited near populated centers, the LNG facilities will continue to present significant risks to the public because of the potential for catastrophic events resulting from human error or terrorist attacks. The siting of LNG facilities raises several significant public policy issues for which state commissions have both regulatory authority and statutory obligations. State commissions have the responsibility to assure that LNG projects that are ultimately approved and constructed, do not unduly compromise public safety or the effective and efficient operations of state energy markets.

Mr. OSE. I thank you. I appreciate your testimony and the adherence to the time requirement.

We are pleased to welcome the chairman of the Maryland Public Service Commission, Mr. Kenneth Schisler.

Mr. SCHISLER. Thank you, Mr. Chairman. I am pleased to be here to testify. I will not read my statement. As you indicated, you have it in the record.

But to summarize, my testimony primarily supports any change to Federal law necessary to clarify that FERC and its sister Federal agencies have exclusive jurisdiction over the siting of new liquefied natural gas import terminal facilities. There certainly is a role for States. But in terms of siting, given the importance of the energy supply as an important global economic issue as well to the United States, as noted by Fed Chairman Greenspan on several notable occasions, I believe that the siting issues are best left to the Federal Government, where regulatory issues can be addressed, as you mentioned, Mr. Chairman, the interest in having one template for siting LNG. Imagine, if you will, if you had 50 plus different templates for businesses seeking to site an import facility to have to navigate through. These investments are hundreds of millions of dollars of capital necessary to be raised in order to support one of these facilities, and regulatory certainty certainly should take front seat. And State issues, while certainly are addressed, I believe the Federal jurisdiction is important to ensure that regulatory certainty.

State commissions regulate local distribution companies. We have a lot of important work to do to ensure that intrastate business activity is taken care of. Maryland law as it relates to siting facilities actually is nonexistent. There is no statute in Maryland law relating to LNG siting. We do have a statute that in my interpretation is subordinate to Federal law to ensure the operational safety of LNG facilities. But, until quite recently, there was no question as to the exclusive nature of the Federal jurisdiction.

Recently—and FERC issued its order in the SES Long Beach case determining, following principles of foreign commerce, asserting exclusive jurisdiction. That jurisdiction has been challenged by the California Public Utilities Commission. The analysis would be the same whether the jurisdiction was derived under interstate commerce or foreign commerce, but I certainly agree with the FERC in its order asserting jurisdiction.

Maryland's experience with LNG started with the Cove Point facility, which is fairly close to the Nation's Capital, about 50 miles away. In 1978 to 1980, Cove Point received import shipments from Algeria. Market conditions and pricing in Algeria caused that plant to be mothballed in 1980. It was mothballed until 1994, when liquefaction facilities were added to that facility and it was used for gas storage for peak periods until 2003, when Cove Point reactivated and began importing LNG. And to date nearly 60 deliveries have been made into that facility.

In October 2001, just after the September 11 terrorist attacks on our country, FERC approved the Cove Point facility. Obviously the application had been underway for some time at that point. Immediately following that approval at the request of Maryland's junior U.S. Senator Barbara Mikulski and others, FERC was asked to re-

consider its approval and did reconsider its approval and re-affirmed its approval and reactivation of Cove Point. Following Maryland's statute to ensure the operational safety of the facility, the Maryland commission in 2002 also approved the reactivation and shipments began in 2003.

In terms of cooperation with local authorities, I have a letter which I am happy to enter into the record from the office of Maryland State Fire Marshal noting the cooperation not only by the Federal authorities but the owners of Dominion have had with Cove Point. Cove Point is located very close to the Calvert Cliffs nuclear power plant and those two facilities work in cooperation to ensure the safety of the nearby community. Again, as noted by the fact that Maryland endorsed the reactivation after the Federal agencies completed their work, I have a great deal of confidence in the Federal agency's review. The role of the States is one more of collaboration. And, through Federal-State partnerships and regulation, the Office of Pipeline Safety comes to mind, the air quality issues, the certificate of public convenience and necessity as it relates to the onsite generation or cogeneration at Cove Point, we have relationships and they work well. But, in terms of the exclusive siting, it is my belief that the regulatory certainty is paramount and therefore siting should remain vested in FERC exclusively.

[The prepared statement of Mr. Schisler follows:]

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**TESTIMONY OF KENNETH D. SCHISLER  
CHAIRMAN  
MARYLAND PUBLIC SERVICE COMMISSION**

**House Committee on Government Reform  
Subcommittee on Energy Policy  
Natural Resources and Regulatory Affairs**

**June 22, 2004**

*Testimony of Kenneth D. Schisler*

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*June 22, 2004*

Thank you Mr. Chairman and members of the committee for providing me with this opportunity to present my perspective on the emerging jurisdictional issues concerning the siting of Liquefied Natural Gas (LNG) terminal facilities in the United States. To provide some context for this discussion, I want to present the Subcommittee with Maryland's experience with the recently reactivated LNG terminal at Cove Point on the Chesapeake Bay, approximately 50 miles southeast of Washington D.C. in Maryland. I hope to impress upon you the importance of LNG infrastructure development not only to Maryland economy, but the economy of the mid-Atlantic region. LNG is without question an important emerging component of the nation's energy policy. It is much more than that, however. LNG is a global trade and geopolitical issue of worldwide import.

Maryland enjoyed a positive working relationship with federal regulatory agencies concerning the reactivation of the Cove Point terminal after its twenty year hiatus as an LNG import terminal. Maryland found the federal agencies not only responsive to state concerns, but fully collaborative and cooperative. As a result of this cooperation, the Cove Point facility is fully operational and undergoing an expansion that will yield many benefits for Marylanders and our neighboring states in the mid-Atlantic and Northeast.

As a state regulator, I recognize the important impacts LNG infrastructure development has upon interstate commerce. I believe the framework for federal regulation of LNG siting should continue accommodating and remain respectful of state

*Testimony of Kenneth D. Schisler*  
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interests in important issues as safety, security, and environmental protection. Let me also state, however, that I believe siting jurisdiction is and should remain vested in the Federal Energy Regulatory Commission (FERC).

I respectfully differ my colleagues on the California Public Utilities Commission seeking to assert jurisdiction over LNG terminal siting. While I too seek to protect my state's interests, in the final analysis I conclude that LNG commerce is a component of the nation's natural gas supply strategy, and as such is interstate in nature. Moreover, exclusive jurisdiction in FERC does not mean state issues will be ignored. On the contrary, both Maryland and California have cooperated quite well in the past with federal agencies evaluating proposed LNG sites in our states. Most importantly, our nation needs confidence and certainty in its energy policy. State jurisdiction siting would undermine that goal.

I have a fair amount of information with me concerning Cove Point's history and Maryland's experience with LNG. Instead of bombarding you with information you may already have, I would prefer to answer whatever questions committee members may have. Thank you again for the opportunity to testify today.

Mr. OSE. I thank the gentleman. We will enter the letter into the record as requested.

Our third witness on this panel is Mr. Joseph Desmond, a Deputy Secretary for Energy at the California Resources Agency. Sir, welcome to our witness table and you are recognized for 5 minutes.

Mr. DESMOND. Good afternoon. The Governor's Deputy Cabinet Secretary sends his warmest regards.

You have before you today an important issue of direct concern to both the Nation and the State of California. It is an honor to appear before you to let you know what we are doing in California as it relates to our need for sources of natural gas and consideration of liquefied natural gas import terminals. While California has a very successful track record in aggressively promoting energy efficiency and renewable energy, let me be clear: Our State has determined that we need to pursue additional sources of natural gas supplies such as LNG. The State's Energy Commission recently completed a comprehensive review and assessment of our energy situation and in its recent report identified the need to embrace additional sources of natural gas supply such as LNG.

California recognizes that the current record high natural gas prices represent a significant cost to businesses and residential customers and it is imperative we seek out ways to ensure reliable and competitively priced gas supplies for the future. To that end the Secretary of Resources has directed State agencies to work together to develop the information necessary to provide the public and decisionmakers information on various LNG issues and to provide an effective coordinated review of LNG import terminal applications.

Please be aware our interest in seeing LNG facilities developed on the West Coast is balanced by our expectation that any development is done in a manner that protects the health and safety of our citizens and the quality of our environment.

Currently, the State of California's role in approving LNG terminals differs depending on whether the proposed project is located onshore or offshore. For offshore LNG facilities, the lead State agency is the State Lands Commission which works with other State and Federal agencies. The Deepwater Ports Act provides that the Governor of California has final review to approve or reject any offshore LNG proposal.

For onshore projects, there are many State and local agencies that are involved in the local permit process but ambiguities in the law have given rise to recent jurisdictional disputes over onshore permits.

As I mentioned earlier, we have already taken steps to organize our agencies to effectively respond to new applications for LNG import terminals. First we started working with FERC over a year and-a-half ago when we heard that California might receive LNG applications. We responded with a 2-day training session on LNG for all public agency staff members to provide them technical background.

Third, over a year ago, we established the LNG Interagency Permit Working Group of governmental agencies potentially involved in the review of new LNG import terminals. That working group

meets regularly to define roles and responsibilities, resolve issues and establish a technically consistent information base.

Fourth, we have been identifying issues and taking action to resolve them on a timely basis at all levels of government. And last we sponsored a comprehensive workshop on natural gas supply and demand and infrastructure issues with FERC participating in the event.

Based on our experience, I believe we can offer you several suggestions for action, particularly as they relate to Federal-State roles. We have declared our intent to work collaboratively with our Federal colleagues when reviewing LNG import terminal applications and have a long history of successfully working with them on other energy projects.

Currently State agencies are conducting joint environmental reviews of the Long Beach LNG import terminal application with FERC and the Cabrillo Port LNG import terminal application with the U.S. Coast Guard. The Coast Guard has distinguished itself by coming to California several times to establish a close working relationship at all levels of government by making their staff available to work closely on an informal and formal basis. We have technical staff and agencies capable of independently reviewing complex projects and willing and able to conduct our work on a collaborative basis with our Federal and State colleagues.

Not only do we work collaboratively, but we also try to make our work transparent to the public. We have established several Web sites to educate the public of both the permit application review process and LNG in general. These themes of continued collaboration and working relationships and transparency are good guides for the future.

So how does this apply to the issue at hand? First, we ask that you look at Congress' most recent action in this area when it amended the Deepwater Port Act to permit it to be used for licensing. It is a good model that serves to reflect the current thinking and actual practice on this issue. And second, we suggest that we all look at ways to increase the transparency of our work so the public can become better informed and more fully participate in the process.

Our many decades of conducting reviews, holding local workshops and hearings, and posting as much information as available on Web sites and mailing lists has taught us we often don't fully understand all the issues until we frequently meet with the local communities. Local events are particularly useful in flushing these issues out, particularly for those communities who have already expressed reservations about LNG safety.

Last, Federal agency rules that shield critical energy information from the public should be reexamined to ensure they are necessary as written or could be slightly relaxed and still meet legitimate security objectives, and I would be happy to expand on these further.

[The prepared statement of Mr. Desmond follows:]

Testimony of Joseph Desmond,  
Deputy Secretary for Energy  
Resources Agency  
State of California

Before the

Government Reform Subcommittee on Energy Policy, Natural Resources, and  
Regulatory Affairs

June 22, 2004

LNG Import Terminal and Deepwater Port Siting: Federal and State Roles

Good Morning Congressman Ose and fellow members. The Governor's Deputy Cabinet Secretary gives his warmest regards. You have before you an important issue of direct concern to both the nation and to California. It is an honor to appear before you to let you know what we are doing in California as it relates to our need for additional sources of natural gas and consideration of liquefied natural gas (LNG) import terminals.

First, let me be clear that our state has already determined that we need to pursue additional sources of natural gas supplies such as LNG. The state's Energy Commission recently completed a comprehensive review and assessment of our energy situation and, in its recent Integrated Energy Policy Report, identified the need to embrace additional sources of natural gas supply such as LNG. California recognizes that current record high natural gas prices represent a significant cost to businesses residential customers. It is imperative that we seek out ways to ensure competitively priced gas supplies for the future.

To that end, the Secretary for Resources has directed state agencies to work together to develop information necessary to provide the public and decision-makers information on various LNG issues and to provide an effective, coordinated review of LNG import terminal applications. Please be aware that our interest in seeing LNG facilities developed on the west coast is balanced by our expectation that any development is done in a manner that protects the health and safety of our citizens and the quality of our environment.

In terms of our natural gas needs, we determined that our overall net natural gas demand is expected to grow at a little less than 1 percent/year over the next 10 years. This low growth rate is the result of a very aggressive energy efficiency program and a very aggressive renewable energy program, both of which are funded and supported by our state. The Governor has affirmed that energy efficiency and renewables are our top priorities when taking action to balance supply and demand for both electricity and natural gas. Electricity energy efficiency is particularly effective in reducing our demand

for natural gas. Natural gas provides the fuel for over 33 percent of our total annual electricity generation during average weather years, and over 40 percent when we have an extended drought or extreme temperatures.

In spite of aggressive efforts to reduce energy demand and to increase our state's onshore gas production, we import over 85 percent of our natural gas supply and are very concerned about the availability of this important fuel. As you well know, the North American natural gas production forecast is bleak and production increases are not expected to keep up with North American demand increases. Since natural gas is distributed and sold on a national basis, we carefully track not just California, but national natural gas demand, supply, infrastructure, operations, and market conditions.

Further, California is in a unique position caused by geography and the national natural gas pipeline network. We are at the end of a very long set of pipelines and the physical delivery of our supplies can be jeopardized by many factors. Therefore, our interest in LNG is driven by two major factors: our desire to help the nation increase its overall supply of natural gas so that we all benefit, and our desire to develop a more balanced delivery system for our state. We are also very fortunate to have already established positive relationships with many developers in the natural gas industry and very much appreciate both the private and public investments that they have made in our pipeline and storage infrastructure to make it as robust as it is today. We are concerned, from both an energy and an environmental perspective, about our state's and nation's potentially deteriorating position relative to the supply/demand balance of natural gas.

Currently, the State of California's role in approving LNG import terminals differs depending on whether the proposed project is located off-shore or on-shore. For off-shore LNG facilities, the lead state agency is the State Lands Commission which works with other State and Federal agencies. The Deepwater Ports Act provides that the Governor of California has final review to approval, amend or reject any off-shore LNG proposal. For on-shore projects, there are many State and local agencies that are involved in the permit process. Ambiguities in the law have given rise to a jurisdictional dispute over on-shore permitting.

As I mentioned earlier, we have already taken steps to organize our agencies to effectively respond to the new applications for LNG import terminals. First, we started working with FERC over a year and a half ago when we first heard California might receive applications for LNG terminals. We met with them to learn as much as we could about their work and permit review processes. Second, we sponsored a two-day training session on LNG for all public agency staff members to provide them technical background on LNG and LNG import terminals. Third, over a year ago we established the LNG Interagency Permit Working Group of governmental agencies potentially involved in the review of new LNG import terminals. That Working Group meets regularly to define roles and responsibilities, resolve issues, and establish a technically-consistent information base. I want to emphasize that early on we declared our intent to work on a collaborative basis with our federal and local government partners and have generally made very good progress in that area. For example, we are preparing joint

federal/state environmental documents for both the current SES Long Beach and BHP Cabrillo Port LNG import terminal application reviews. Fourth, we have been identifying issues and taking action to resolve them at all levels of government. Fifth, we sponsored a comprehensive workshop on natural supply, demand, and infrastructure issues with FERC participating in our event.

Based on our experience, I believe we can offer you several insights and suggestions for action, particularly as they relate to federal/state roles and responsibilities when reviewing LNG import terminal applications.

First, we have declared our intent to work collaboratively with our federal colleagues when reviewing LNG import terminal applications and have a long history of successfully working with them on other energy projects. Our state agencies have worked collaboratively with FERC for several years when conducting joint permitting of interstate natural gas pipelines in California. In fact, we are very appreciative that FERC instituted an accelerated permitting process for critical pipelines and that we worked together to meet those deadlines. Our state agencies also have a long history of working collaboratively with our federal land management colleagues on power plant and transmission line projects in California, preparing joint environmental documents where possible.

Currently, state agencies are conducting joint environmental reviews of the Long Beach LNG import terminal application with FERC and the Cabrillo Port LNG import terminal application with the US Coast Guard. The USCG has distinguished itself by coming to California several times to establish a close working relationship at all levels of government, by making their California staff available to work closely on an informal and formal basis in the LNG Interagency Working Group, and on tanker traffic and port security issues. In short, we have technical staff and agencies capable of independently reviewing complex energy projects and are willing and able to conduct our work on a collaborative basis with our federal and local agency colleagues.

Not only do we work collaboratively, but we also try to make our work transparent to the public. We have established several websites to help educate the public about both LNG permit application review processes and about LNG in general. Let me direct you to two fine examples at [www.cabrilloport.ene.com](http://www.cabrilloport.ene.com) for the joint website between the state and the US Coast Guard, and to [www.energy.ca.gov/lng](http://www.energy.ca.gov/lng) for LNG information in general.

These themes of continued collaboration in our working relationships and transparency in our work efforts are good guides for future government policy that your Committee can consider. How does this apply to the issues at hand?

First, we suggest that you look to Congress' most recent action in this arena when it amended the Deepwater Port Act to permit it to be used to license offshore LNG import terminals located beyond the state's territorial waters. The federal/state working

relationship defined in that recent federal legislation serves as a good model that reflects current thinking and actual practice on this issue.

Second, we suggest that we all look at ways to increase the transparency of our work so that the public can become better informed and more fully participate in the process. Our many decades of conducting application reviews, holding local workshops and hearings, and posting as much information as possible on websites and mail lists has taught us that we often don't fully understand all the issues unless we frequently meet with local communities. A better understanding of local communities' concerns allows us to better identify local environmental and public issues and then develop more effective avoidance, protection, and mitigation measures since our ultimate responsibility is to protect the public, the environment, and our economy. Local events are particularly useful in LNG siting cases due to the need to also increase our communication with local communities—communities who have already express reservations about LNG safety issues. Federal agency rules that shield critical energy information from the public should be reexamined to ensure they are necessary as written or could be slightly relaxed and still meet legitimate security objectives.

I'd be happy to expound on several related topics, but I realize that our time is limited so I will stop here and make myself available to respond to specific questions or concerns you may have.

Again, thank you for inviting the State of California to present our views today on this important topic.

Mr. OSE. I thank the gentleman.

Mr. Blossman, you have in Louisiana an operating onshore facility. You have approved an offshore facility. My question is what has been your experience in terms of working with the Federal permitting agencies in getting to a conclusion? Has it been positive, negative or ambivalent?

Mr. BLOSSMAN. It has been very, very easy. The Public Service Commission along with the Governor sent a letter to the FERC requesting the project, requesting approval, and it was done. I mean, I guess it is easier to grant an expansion of our existing and a new one when you have one there. So it was quite easy.

Mr. OSE. What about Port Pelican? Port Pelican is not an existing facility, is it?

Mr. BLOSSMAN. Not an existing facility, no, sir.

Mr. OSE. In terms of an expansion, FERC did all the analytical stuff that they needed to do. The Governor weighed in with a letter requesting approval and FERC agreed and they approved the expansion. But in terms of the offshore facility, is it your testimony that the work with the Coast Guard and MARAD proceeded very well, that they took into account local concerns, environmental issues and the like?

Mr. BLOSSMAN. It is my belief that—we did not hear that there was any problems with that.

Mr. OSE. How does the siting issues for other utilities in Louisiana differ from the siting consideration for an LNG facility, if at all?

Mr. BLOSSMAN. As I stated, we use so much natural gas in Louisiana with our industries along the Mississippi River that the siting for the LNG was, like I said, somewhat—it was easy. And other sitings that we had for other things that the Public Service Commission regulates, we haven't had a whole bunch of problems with that either other than what you all aren't talking about, merchant plants with local community involvements about water. But the opposition was virtually nonexistent.

Mr. OSE. Certainly over a long period of time in Louisiana communities have come to understand how to deal with these risks and hazards that might come with them and they are just prepared for them?

Mr. BLOSSMAN. Apparently so. I know there was some concern and there is some concern about the LNG ships coming in the Calcasieu River with the pilotage and the channel having to be shut down when they bring a ship of that size into the port. But other than that there is no major difficulty.

Mr. OSE. But that activity has transpired for any number of years successfully?

Mr. BLOSSMAN. Yes, sir.

Mr. OSE. And you have never had any collisions?

Mr. BLOSSMAN. None whatsoever.

Mr. OSE. Now, Mr. Schisler, out at Cove Point you are 3 miles from a nuclear power plant, as I understand it. In terms of taking the plant out of mothball status, what was your experience in working with Federal agencies to make that happen?

Mr. SCHISLER. Well, Mr. Chairman, I became chairman of the Maryland Commission July 1 of last year, which was after the re-

activation had been finally approved. However, I was a member of the legislature and observer of the Commission's activities, and actually member of the legislature on the Eastern Shore just across the Chesapeake from the Cove Point terminal, and my observation was that the reactivation was a smooth process. There was a fair amount of cooperation already between State and Federal agencies, and I think the evidence of that process is that the State was satisfied with it. The cooperation it received from the Federal agencies was the Maryland Commission's own endorsement of the review process that Federal agencies undertook.

There was a fair amount of community information disseminated, particularly about the Coast Guard issues, with bringing the LNG ships up the Chesapeake Bay, and that information was disseminated, community input welcomed and other issues resolved.

Mr. OSE. What's the closest community to Cove Point?

Mr. SCHISLER. There is a community just south of the facility. I believe it is Solomon's Island and it is immediately adjacent to the terminal property. However, the property is probably 1,000 acres or so, and the footprint of the plant is located in the center of that, and there is a substantial green buffer between the plant and the nearby communities.

Mr. OSE. So your exclusion zone is the perimeter of the property around the plant?

Mr. SCHISLER. That's correct.

Mr. OSE. In terms of the impact on the price of natural gas in Maryland, have you been able to quantify the dampening effect of access to this natural gas?

Mr. SCHISLER. That would be very difficult to quantify the impact. But certainly having more diverse supplies in the mid-Atlantic region is a positive. Cove Point is proposing another expansion to come on-line in 2008, and what that expansion would do likely is make economic—some pipeline expansion in Pennsylvania and in Virginia, and that would further add to the infrastructure available in the mid-Atlantic both to increase the diversity of supply, increase competition. And obviously the benefits of competition could realize lower prices for consumers. I wouldn't want to speculate on the price impacts of reopening that LNG terminal, but I would suggest that it would have to be positive for consumers.

Mr. OSE. Do you regulate the retail price of natural gas in Maryland? In other words, you set the pricing?

Mr. SCHISLER. Yes and no. We have a restructured gas market. We have opportunities for consumers to go off of default service, but we also have default service that is price regulated.

Mr. OSE. What is the price on default service?

Mr. SCHISLER. The only figure I want to venture here today is the approximate wholesale price that we are hearing today. About \$6.

Mr. OSE. I am trying to quantify the impact of an LNG facility and the natural gas that it brings to an area, just so that we have some scientific or empirical data to do that. In terms of Cove Point, you talked about the pipeline changes in Virginia and Pennsylvania. What about locally around Cove Point? What kind of changes had to be accounted for?

Mr. SCHISLER. The gas that is gasified from the LNG facility at Cove Point immediately enters the interstate pipeline system on the property at Cove Point and travels approximately 90 miles to the main distribution of the interstate pipeline system. There are several city gates along the way.

One of the things I was asked to prepare for today is what changes needed to be taking place as a result of a reactivation. Washington Gas Light has a gate that serves the Chalk Point power plant, and the utility was on notice that the pressures would be higher if LNG reactivated but there was some 20-year hiatus at the facility. The utility needed to update some of its infrastructure. But again the high pressures called for by LNG coming from Cove Point were known.

So again that was a risk, I guess, that the utility took. There were some gas quality issues that needed to be addressed, but those were addressed to the satisfaction of the utility to ensure first of all that water wasn't entering the system through—from the LNG that was being added—gasified and being added to the system.

And finally because of we are now looking at LNG coming from many nations around the world, there is concern about the BTU content and the gas quality. And onsite at Cove Point, there is a nitrogen facility such that if the BTU content of that gas is too high for distribution in the system, nitrogen is added to reduce that BTU content and to interstate quality range. And so there really are no changes other than the anticipated changes necessary to WTL gates off the interstate pipeline.

Mr. OSE. Did you have to take special security measures at Cove Point?

Mr. SCHISLER. I asked company representatives that very question in terms of what—two-fold. One, what as a result of September 11 did they have to do different? And they reactivated after September 11, so it was a general increased awareness. The secluded nature of the facilities on the Cove Point property lent itself to ensuring—they never wanted anyone around that facility and those facilities were fairly protected. The patrols, the level of security does increase as the threat level changes. I am not sure I could recount all of those changes, but the security of the facility as an inactive site was one thing.

Now there is gas on the site, there is heightened security. The gas docks where the gas is offloaded in liquid form just into the Chesapeake Bay used to be prime fishing. Now of course that is off limit. There is an exclusion zone. Whether there is a ship at the dock or not, fishermen, commercial fisherman are not permitted within a 500-yard radius of the gas docks.

Mr. OSE. How do these security measures differ from other hazardous materials within the State and the transport thereof; for instance, chlorine, ammonia or gasoline?

Mr. SCHISLER. Mr. Chairman, I'm not sure that I'm competent to answer those questions. Those would be questions more appropriately addressed by our environmental officials that regulate those materials, and I wouldn't want to venture a guess and be inaccurate.

Mr. OSE. And you have a storage facility also in Maryland?

Mr. SCHISLER. Yes.

Mr. OSE. So you have the regasification facility, and you have a storage facility?

Mr. SCHISLER. And at some point, Cove Point was also used a storage facility.

Mr. OSE. Do the security measures at the storage facility differ from those at the regasification facility?

Mr. SCHISLER. I don't know the answer to that question.

Mr. OSE. Here is what is going on. I've got four votes over on the floor. It's likely to take 45 to 50 minutes.

Mr. Desmond, I need to move on to the floor. Are you able—are the three of you able to wait for our return?

Mr. BLOSSMAN. Mr. Chairman, I have a flight at 7 a.m. out of Reagan National, and I did not plan to stay.

Mr. OSE. 7 a.m.?

Mr. BLOSSMAN. 7 p.m.; I could stay if it was 7 a.m.

Mr. OSE. Well, I've gone through the questions I had for you. If it would be possible, I'd like Mr. Schisler and Mr. Desmond to stick around for our return.

Mr. Blossman, I understand your schedule requirements, and I'm OK with dismissing you as a witness here. If we have additional questions, we will submit them to you in writing, and we would appreciate a timely response accordingly.

Mr. BLOSSMAN. Absolutely, Mr. Chairman. Thank you very much.

Mr. OSE. We will take at least a 45-minute recess here. So we will be at back at 5:45 or shortly thereafter.

[Recess.]

Mr. OSE. The hearing will reconvene.

Mr. Desmond, you heard a long conversation earlier about trying to identify programmatically a template for siting a facility, both onshore and off. Has the California Energy Commission, which I understand hierarchically reports through the Resource Agency—

Mr. DESMOND. That's correct.

Mr. OSE. Has the California Energy Commission taken any affirmative steps to identifying locations with you where LNG import facilities could be constructed?

Mr. DESMOND. No. It has left it to the marketplace to determine which sites they would propose for review and permitting.

Mr. OSE. Similar to the questions that I posed to the previous panel, has the Energy Commission taken any affirmative steps to define the parameters under which they would otherwise approve an LNG facility?

Mr. DESMOND. Yes, it has. The best evidence I can cite to that end is the formation of the Interagency LNG Permitting Work Group which pulls together all the relevant State agencies to identify their appropriate roles. This is where we have that sort of bifurcation of responsibilities depending on whether it is onshore or offshore.

In the case of offshore, we have the State Lands Commission. Also, now, we have enhanced that authority. And in the case of onshore, it tends to be the local siting which takes the lead, but we still have all of the agencies from Fish and Game to Wildlife to Local Air Quality Board, all of which have to do this.

Now, in the case of the Long Beach onshore, I will tell you they're having to organize this information and put it together jointly between the Port of Long Beach and FERC, is a flowchart that identifies the appropriate roles in a template form identifying which agency has to have which permit and what are the appropriate points of time in which the public can comment on each of those steps.

The State has continued to go further. It is in the process of crafting an action plan for the Governor to look at the issues around the data requirements, the criteria that he would need to apply in order to make the decisions that come about from the Deep Water Port Act that requires him to either approach, disallow, approve with amendments or suggestions back or take no action. So California is actively involved in documenting this and communicating it in a number of different forms.

Mr. OSE. Have you been able to work pretty cooperatively with FERC in one case and Coast Guard and NARAD in the other?

Mr. DESMOND. FERC has been very cooperative, but there are two areas which we think make some sense to revisit. The first is, around the use of restricted information that we need to share with the public—and it is the opinion of the folks working so far with FERC that they have taken a broad view of that and some relaxation of the standards around the location of the facilities and the discussion of the sensitivity on safety issues, particularly with respect to terrorism, would benefit the public evaluation of a proposed project. So that is one area.

The second area is that FERC has developed ex parte rules that currently prohibit legitimate conversations between Government organizations where both are pursuing the same public objective. So in that case, we believe that the increased communication between the two respective agencies, the State and FERC, would increase the efficiency of the Government in accelerating the approval process for LNG import terminals.

Mr. OSE. Long story short, how many LNG terminals do you think we need to build in California to maintain an appropriate supply?

Mr. DESMOND. Long story short, I believe the market will support two facilities. And I say that because 1 billion—let me give you some figures to put that into perspective. The average daily consumption of natural gas is about 6 billion cubic feet per day.

Mr. OSE. In California?

Mr. DESMOND. In California, that is average. We have a peak demand of 10,000, but 6 billion cubic feet per day is average. A 1-billion LNG import terminal then would supply about 17 percent of the average daily need. And so you can see two 1-billion terminals could supply as much as 34 percent of the average daily or something less.

I think the market fundamentals make it difficult to justify that you would see more than two facilities over the next 10 years. But that's not to say that, over the long run, we would see a third or a fourth added. And a lot of this will be due to where that gas is sold. In the case of the Baja or, I should say, the Sempra proposal down in Mexico, 50 percent of the output of that LNG terminal is dedicated to the supply of Mexico. And it is then, because it is open

season, we are competing for that gas with States such as Arizona and Nevada with whom we share those pipelines.

It is possible it could support more, but as far as California's needs in the short term, we're looking at price differentials to probably handle about two.

Mr. OSE. Has your analysis gone so far as to make some determination as to what the price of—what the target price for natural gas in California should be?

Mr. DESMOND. The original IEPR report that we put out in 2003 is already much out of date in terms of our expectations of where the price was. The State is in the process of updating that information. I have seen analyses from industry experts to indicate the cost of delivered LNG into California being supported even if the long-term price of natural gas was between \$4 and \$5.

At its current level, certainly it supports bringing the LNG terminals in. But we still go back to the basic question that California needs new sources of natural gas supply, and there are four ways that we can do that. Either there is going to be a new interstate pipeline bringing gas in from Alaska or the Rocky Mountain areas, increased instate production, instate gas storage or LNG terminals.

Mr. OSE. Or some combination thereof?

Mr. DESMOND. Or some combination of those, that's correct.

Mr. OSE. If we don't site them in California, I presume we rely on our Mexican friends or our Oregonian friends?

Mr. DESMOND. If we don't site them in California on the import terminals, there is still the opportunity to bring natural gas in from the Rocky Mountain areas, such as Wyoming or Alaska, but that is a very long-term outlook, and I am not sure it would be delivered in time.

Likewise, we could look at siting additional terminals in the Gulf of Mexico, in through Texas-Louisiana, and bringing that gas into the existing pipeline, but already, California is competing for that capacity and for that gas that is already there. So we still have the issue of the physical infrastructure being very limited because California is at the end of that pipeline. So there are certain benefits that come about from having access, essentially, to new sources, not just the entire Pan-Pacific region that has that gas.

Mr. OSE. As I understand it, the cost to transport from the Gulf via pipeline is about \$2 per million cubic feet. Is that accurate?

Mr. DESMOND. I don't have those figures handy.

Mr. OSE. OK.

All right. I don't have any further questions at this point. We may well have some things that occur to some of the Members up here post-hearing, to which we will certainly send them to you in writing and hope for a timely response—and ask for a timely response.

I do appreciate you both taking time to come down and testify and share with us what you have. If you have suggestions, we would take them prospectively, too, in writing. Thank you both. You are both excused.

Mr. DESMOND. Thank you, Chairman.

Mr. OSE. I want to call our final panel up to the witness table.

We have in our fourth panel, Mr. Donald Santa, Jr., who is president of the Interstate Natural Gas Association of America. We have

Mr. Philip Warburg, who is president of the Conservation Law Foundation. And our third witness is Dr. Jerry Havens, who is the distinguished professor of chemical engineering at the University of Arkansas.

Gentlemen, as you saw in the previous panels, we swear all of our witnesses in. If you would please rise and raise your right hands.

[Witnesses sworn.]

Mr. OSE. Let the record show that the witnesses answered in the affirmative.

As we shared with the previous panels, we have received your written testimony. And it has been read, and it will be part of the record, and we invite each of you to summarize your testimony in the 5-minute period.

Mr. Santa, you are first. You are recognized for 5 minutes. Thank you for joining us.

**STATEMENTS OF DONALD F. SANTA, JR., PRESIDENT, INTER-STATE NATURAL GAS ASSOCIATION OF AMERICA; PHILIP WARBURG, PRESIDENT, CONSERVATION LAW FOUNDATION; AND JERRY A. HAVENS, DISTINGUISHED PROFESSOR OF CHEMICAL ENGINEERING, UNIVERSITY OF ARKANSAS**

Mr. SANTA. Thank you, Mr. Chairman, and thank you for the opportunity to testify today.

I am Donald Santa, and I'm the president of the Interstate Natural Gas Association of America which represents the interstate and interprovincial natural gas pipelines in North America. Our member companies deliver 90 percent of the natural gas consumed in the United States. Our members also include the owners and operators of the four existing operational LNG terminals in the continental United States.

I'm also here today on behalf of the Center for LNG, a consortium that includes approximately 60 trade associations, LNG terminal operators, project sponsors, suppliers, transporters and others involved in the LNG business.

To begin with, let me place LNG in perspective. While the focus of today's hearing is LNG, we must develop gas supply from multiple sources to meet the existing and still-growing domestic demand for natural gas. LNG is not the silver bullet. It is one of several sources, all of which we need.

An important corollary to this supply message is the importance of public policies that promote the construction of pipeline and storage infrastructure to help to meet demand.

Let me now comment on the existing regulatory framework for LNG terminal permitting. Both FERC and the U.S. Coast Guard are doing exemplary jobs with their responsibilities here in responding to the demands of the marketplace. I would especially commend FERC on the recently issued Freeport LNG order authorizing the second of the new domestic terminals.

Now, let me address industry concerns. The first concern I would highlight is safety and security and some of the misperceptions and fears associated with that. It is very important that the industry, the Congress, regulators and the administration show leadership

on these issues in terms of developing an authoritative record with respect to safety and security.

As has been mentioned, there are a number of Government and other reports that either have been recently released or soon will be released. For example, the Sandia report, commissioned by DOE, will be out shortly. The DNV report, which is a private risk-assessment group report, is coming out shortly. These reports will help to establish the record for having a grounding for discussion of security and safety.

Are there safety risks associated with LNG? Yes, there are. However, there are safety risks associated with a host of other undertakings that we undertake as individuals and commercially. Against that, we must put this in perspective. Look at the exemplary safety record of over 30 years of the international LNG business, and also consider the focus that has been given to these issues here in the United States by FERC, the Coast Guard, Department of Transportation, and other agencies.

Another concern for the industry is approval and siting issues, with the first of these issues being jurisdictional conflicts. As has been referenced today, there is an ongoing dispute between the Federal Energy Regulatory Commission and the California Public Utilities Commission over jurisdiction over LNG terminal siting onshore. We believe that FERC has a right, both as a matter of law and as a matter of public policy. We believe that there is nothing different about the facts of this case that would distinguish it from other cases in which the courts have considered FERC's Section 3 authority. And we also believe, as a matter of policy, it is important that FERC have the exclusive jurisdiction over siting LNG terminals onshore.

While FERC has the exclusive jurisdiction for the threshold decision on authorizing construction of a project, it is very important to point out that there are a host of other State and Federal authorities that apply to permitting these facilities. As a matter of fact, with respect to the Freeport project that's been referenced, I looked at application for that project, and there were eight separate Federal agencies, and 11 State and local agencies, that were part of the process, and over 33 separate authorizations that were required.

The FERC process under the National Environmental Policy Act provides a very inclusive process in which all of those agencies are included as participating agencies. The FERC takes steps to be very inclusive and cooperative with State and local agencies. And in fact, our experience on the natural gas pipeline side has been that, with respect to some of those authorities, particularly delegated authorities, such as the Coastal Zone Management Act, the States end up having considerable leverage on that process.

Let me also talk about the economic consequences associated with these decisions and the costs of delay and the costs of doing nothing. A group affiliated with INGAA, the INGAA Foundation, recently commissioned a report to look at natural gas infrastructure requirements in light of the current supply and-demand situation. That report, which will be released in mid-July, will include a finding that, if you assume a 2-year delay for needed natural gas infrastructure—being pipelines, storage facilities, LNG import ter-

minals—that the costs to the economy from that delay will be \$200 billion between now and the year 2020. The cost alone in the State of California over that period will be \$30 billion.

Mr. Chairman, I would emphasize that the costs would be even greater if nothing is done, if these facilities are not constructed.

Now let me briefly address legislation. There are provisions in the pending comprehensive energy bill—

Mr. OSE. Mr. Santa, I just have to tell you, I have had a history of enforcing the 5-minute rule, and you are a minute over already. You have 30 seconds.

Mr. SANTA. Mr. Chairman, these facilities are very capital intensive. Delays can be fatal to these facilities and can be very costly to consumers and the sponsors. It is very important that there be a clear path, a consolidated path, for siting these facilities.

We thank you for the opportunity to testify on behalf of INGAA and the Center for LNG and thank you for your interest in this topic.

[The prepared statement of Mr. Santa follows:]

**SUBCOMMITTEE ON ENERGY POLICY,  
NATURAL RESOURCES AND REGULATORY AFFAIRS  
COMMITTEE ON GOVERNMENT REFORM  
U.S. HOUSE OF REPRESENTATIVES**

**HEARING ON  
SITING OF LIQUEFIED NATURAL GAS IMPORT FACILITIES**

**JUNE 22<sup>ND</sup>, 2004**

**TESTIMONY OF  
DONALD F. SANTA, JR.  
PRESIDENT  
INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA**

**ON BEHALF OF THE  
CENTER FOR LNG**

Mr. Chairman and Members of the Subcommittee,

Thank you for the opportunity to testify today on the regulatory framework for siting new liquefied natural gas (LNG) terminals in the United States. My name is Donald Santa, and I am President of the Interstate Natural Gas Association of America (INGAA). INGAA represents the interstate and interprovincial natural gas pipeline industry in North America. INGAA's members transport over 90 percent of the natural gas consumed in the U.S., through a 180,000 mile pipeline network. In addition, the association's members include the owners of all of the existing LNG terminals in the continental U.S., as well as several of the developers of proposed new LNG terminals.

I am also here on behalf of the Center for LNG, a consortium of over 60 companies and trade associations, including LNG asset owners and operators, gas transporters, suppliers and service companies and natural gas end users. The Center is dedicated to public education and advocacy for liquefied natural gas.

Over the past year, LNG has captured the attention of the energy industry and energy policy makers. Still, the reality is that LNG is not a new product in the U.S. energy market. LNG has been utilized in various applications in this country since the Second World War. Many of our pipelines and distribution companies, for example, use LNG as a method for storing natural gas. In the 1970s, as a result of supply shortages in the U.S. interstate market, the nation developed and constructed a number of LNG importation terminals in order to supplement domestic supply with natural gas from other parts of the world. LNG's role in the domestic natural gas market was short-lived, however, once wellhead decontrol and the removal of other artificial market barriers ended the supply shortage. Imported LNG quickly became too expensive to compete against much more affordable natural gas supplies from the U.S. and Canada. Three of the four terminals that were built in the 1970s were, to a large extent, mothballed until several years ago.

Why are we again focused on LNG? It now is widely recognized that North America is experiencing a fundamental shift in the supply and demand equation for natural gas. For many years, this country had a significant excess of natural gas deliverability (what was commonly referred to as the “natural gas bubble”). This kept prices low and contributed to a shift to greater use of natural gas for electric power generation, home heating and industrial processes. Demand growth gradually eliminated this excess deliverability. Supplies now are tight and prices are considerably higher -- on a sustained basis -- than in previous years.

Therefore, we now must develop new natural gas supply options from multiple sources to keep pace with the still growing demand for this clean-burning fuel. INGAA agrees with the assessment that we are not running out of natural gas; rather, we are running out of places where we are permitted to explore for and produce it. Abundant natural gas resources do still exist in North America and worldwide, and can supply the market with natural gas at reasonable prices, provided that public policies do not unreasonably limit resource and infrastructure development.

While it is the focus of today’s hearing, LNG should not be mistaken for a “silver bullet” that alone will solve the Nation’s natural gas supply problem. Our current natural gas supply challenges will not be solved only by expanding production in the Rocky Mountain region or the Outer Continental Shelf, or only by building an Alaska natural gas pipeline, or only by importing more LNG. In order to meet anticipated demand, we must avail ourselves of all of these options, and more.

An important corollary to this supply message is the critical role that pipeline and storage infrastructure play in ensuring that natural gas supply can satisfy market demand. As part of a comprehensive energy policy, removing barriers to pipeline and storage infrastructure development must go hand-in-hand with efforts to enhance gas supply.

#### **The Existing LNG Regulatory Framework**

The Federal Energy Regulatory Commission (FERC) and the U.S. Coast Guard, respectively, have the authority for the approval and siting of on-shore and off-shore LNG import terminals. Both agencies have done an excellent job in streamlining the approval process for these facilities. The Coast Guard has demonstrated its willingness, in two cases to date,<sup>1</sup> to consider off-shore terminal siting proposals expeditiously. For purposes of this testimony, however, I will focus principally on FERC’s authority over on-shore terminals.

FERC’s authority to approve and site on-shore LNG terminals is pursuant to section 3(a) of the Natural Gas Act (NGA).<sup>2</sup> While this statutory provision does not expressly refer to

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<sup>1</sup> The Energy Bridge and Port Pelican projects.

<sup>2</sup> Section 3(a) states that: [N]o person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so. The Commission shall issue such order upon application, unless, after

the authorization and siting of facilities for importing natural gas, the courts have made clear that this function is an integral part of authorizing natural gas imports and, therefore, is within the scope of the authority conferred by section 3(a). This was addressed by the U.S. Court of Appeals for the D.C. Circuit in the 1974 Distrigas decision.<sup>3</sup> The court said, in part:

...while imports of natural gas are a useful source of supply, their potentially detrimental effect of domestic commerce can be avoided and the interests of consumers protected only if...the Commission exercises with respect to them the same detailed regulatory authority that it exercises with respect to interstate commerce in natural gas. In short, we find it fully within the Commission's power, so long as that power is responsibly exercised, to impose on imports of natural gas *the equivalent of Section 7 certificate requirements both as to facilities and ... as to sales within and without the state of importation* (emphasis added). Indeed, we think that Section 3 supplies the Commission not only with the power necessary to prevent gaps in regulation, but also with the flexibility in exercising that power.

Section 7 of the NGA empowers FERC to issue certificates of public convenience and necessity authorizing the construction and operation of interstate natural gas pipelines and storage facilities.<sup>4</sup> The U.S. Department of Energy and FERC have consistently applied the Distrigas case's construction of section 3 of the NGA in administering this part of the law.<sup>5</sup>

Mr. Chairman, without going into the extensive case law, let me state that, whenever FERC's authority under either section 3 or section 7 of the NGA has come into conflict with state law, courts have consistently held in favor of federal primacy in matters of interstate and foreign commerce. The Commerce Clause of the U.S. Constitution provides the foundation for these decisions.

While FERC has exclusive jurisdiction under the NGA over the threshold decision on whether an LNG facility or interstate pipeline can be constructed, other state and federal agencies still play a substantive role in permitting this natural gas infrastructure. There are a myriad of other state and federal permits that must be obtained before a project sponsor may begin constructing its facility. FERC's application process requires that a

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opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with the public interest. The Commission may by its order grant such application, in whole or in part, with such modifications and upon such terms and conditions as the Commission may find necessary or appropriate, and may from time to time, after opportunity for hearing, and for good cause shown, make such supplemental order in the premises as it may find necessary or appropriate. 15 U.S.C. 717b(a).<sup>2</sup>

<sup>3</sup> Distrigas Corp. v. FPC, 495 F.2d 1057, 1064 (D.C. Cir. 1974), cert. denied, 419 U.S. 834 (1974).

<sup>4</sup> 15 USC 717f(c)

<sup>5</sup> FERC's authority to regulate LNG terminals in section 3 of the NGA is independent of, and does not depend upon, the exercise of section 7 authority. In other words, it does not matter whether the imported supplies are ultimately sold or delivered into interstate commerce – FERC must still review and approve the siting, construction and operation of LNG import terminals under section 3.

project sponsor list all other permits that must be obtained. And FERC's orders authorizing these facilities routinely are conditioned upon the sponsor obtaining these other authorizations.

As part of discharging its responsibilities under the National Environmental Policy Act (NEPA), FERC makes all other federal, state and local permitting agencies "participating agencies" for purposes of the comprehensive NEPA process. Apart from the NEPA process and these independent sources of authority over pipeline permitting, state agencies can, and do, participate in FERC's proceedings as intervenors in order to represent the interests of their citizens.

The industry's experience in the context of interstate natural gas pipelines has been that FERC devotes significant resources to working cooperatively with these other agencies. Furthermore, the pipeline industry's experience has been that these other sources of authority over pipeline permitting, which often are federal authorities delegated to the states, provide state agencies with considerable leverage.

### **Industry Concerns**

#### **Safety and Security**

While regulatory certainty and permit streamlining are important to constructing new LNG terminal capacity, the most significant immediate challenge facing the industry is public perception regarding safety and security. Fear of the unknown appears to be the greatest hurdle, followed closely by the various misconceptions about LNG. Such misconceptions are difficult to overcome. All of us – industry, regulators, the Executive Branch and the Congress – have a role to play in educating the public, so that we can make informed decisions about constructing needed energy infrastructure.

Fortunately, better information is on the way. In May, FERC released a report prepared by a contractor that addressed the consequences of potential LNG spill scenarios. While the Center for LNG believes that this report needs further refinement, it still is an important step in developing a public record that will support a balanced, fact-based consideration of the safety issues associated with LNG. Within the next several weeks, the Department of Energy's Sandia National Laboratory is scheduled to complete an LNG safety and security analysis that should supplement the FERC report by addressing probability of an LNG incident. Finally, Det Norske Veritas, a private risk analysis firm, soon will be completing its own study. We hope that these studies will put to rest many of the misconceptions that have characterized some of the recent public discussion of LNG safety and security issues.

Are there risks associated with LNG? Of course there are. Still, just as with any activity, this must be placed in perspective. LNG has a long and outstanding safety record. The robust worldwide trade in LNG that takes place every day is proof that LNG can be handled safely and securely. And here in the United States, FERC and the Coast Guard, working with the Department of Transportation's Office of Pipeline Safety, can mitigate

risk to an even greater extent through their safety/security regulations and enforcement. We need your help, and your leadership, in getting that message out to the public.

#### **Approval and Siting Authority**

Another set of challenges facing the industry concerns jurisdictional disputes over LNG siting authority and the potential for protracted proceedings before multiple permitting agencies. The focal point for the jurisdictional issue is the dispute between FERC and the California Public Utility Commission (CPUC) regarding the authority to site an LNG terminal in the State of California.

The jurisdictional issue has been fully adjudicated by FERC and is now ripe for judicial review. FERC has gotten it right on both the law and the policy. As already noted, the courts have interpreted the NGA to provide FERC with the authority to site an LNG import facility and to attach the necessary conditions to its determination. The facts of the California case do not include anything that we believe would cause a reviewing court to reach a conclusion at odds with the Distrigas decision. FERC also is on firm ground as a matter of policy. To an even greater extent than with interstate commerce, the regulation of foreign commerce clearly is a function for the federal government. The siting of facilities directly associated with foreign commerce is an obvious extension of such regulation. If this regulation were left to the states, LNG facilities almost certainly would be subject to inconsistent regulation and likely would not be constructed if they were subject to traditional public utility regulation or other burdens. The nation as a whole would suffer if the ability to enhance the capacity to import this critical source of supplemental natural gas supply were frustrated. FERC jurisdiction is important to ensuring that the larger, national public interest is served, rather than just local, parochial interests.

Some have asked whether the Congress should amend section 3 of the NGA to clarify jurisdictional boundaries. We believe that, in exercising exclusive jurisdiction over the siting of LNG import facilities, FERC is acting within the bounds of the authority already conferred by the Congress under section 3 of the NGA. Still, to the extent that such an amendment would “clear the air” and permit worthy LNG projects to proceed without what may be perceived to be a cloud over jurisdiction, such an amendment may be advisable.

Beyond this threshold jurisdictional question, we also want to draw the Subcommittee’s attention to the ability of federal, state and local regulators to erect impediments to the efficient, timely construction of natural gas infrastructure already authorized by FERC. While the NGA provides FERC with the exclusive authority for determining whether such projects should be constructed, other agencies increasingly are using the jurisdictional hook provided by other laws to second guess aspects of the decisions that FERC has made following the thorough review conducted under the NGA.

As noted earlier, other state and federal agencies have an integral role to play in permitting decisions related to interstate pipeline and LNG facility construction. Our point is that fairness and administrative efficiency would be served best if these other agencies coordinate the timing of their reviews with the FERC process. The already inclusive FERC NEPA process provides a vehicle for this to occur. In that way, all of the interested federal, state and local government agencies can come together under one concurrent and comprehensive review, so that all parties have equal standing and balanced decisions can be made.

In discussing regulatory impediments to LNG import facilities, we have referred frequently to the experience with interstate pipelines. We have done so for several reasons. First, the experience with interstate pipelines provides a window on what LNG facilities likely will experience as they attempt to reach the finish line of the regulatory gauntlet that must be run before ground can be broken. Second, adequate pipeline capacity is critical to bringing new natural gas supplies to consumers, whether it be LNG or North American supply. Third, specifically with respect to LNG, import facilities must be able to interconnect with the transmission pipeline network in order for the natural gas supply to reach customers. This point is demonstrated by Dominion Resources' recent announcement of plans to increase the capacity of its Cove Point LNG terminal from 1 billion cubic feet per day ("Bcf/day") to 1.8 Bcf/day, which is dependent upon FERC approval of two associated pipelines that will move the increased supply from the terminal and into the market.

#### **Economic Impacts**

What happens if the United States is unable to construct the natural gas infrastructure that we need? Quite simply, delays in pipeline and LNG terminal construction will reduce the amount of natural gas available to consumers and thereby increase the price that they must pay. This likely will cause further job losses in industrial sectors that depend on affordable supplies of natural gas, such as chemical and fertilizer manufacturing. Because an increasing amount of electricity is generated by natural gas, electricity prices will be higher for virtually all consumers.

The INGAA Foundation, Inc. now is completing an economic analysis that quantifies some of the consumer costs associated with delays in constructing new pipeline and LNG import capacity. The preliminary results are startling. The study estimates that a two-year delay in building natural gas infrastructure (both pipelines and LNG terminals) would cost U.S. natural gas consumers in excess of \$200 billion by 2020. Mr. Chairman, your own home state of California, alone, would experience increased natural gas costs of almost \$30 billion over that period. And, of course, should the end result be that certain facilities are never constructed, the economic effect would be even more severe. This INGAA Foundation study is scheduled to be published in mid-July. We will provide the Subcommittee with a copy for the record.

The bottom line is that natural gas infrastructure delays and cancellations have consequences. Every consumer will pay higher prices for natural gas, electricity and the

goods produced using natural gas if we do not act to ensure that adequate LNG and pipeline capacity are constructed in time to keep supplies affordable.

#### **Legislative Proposals**

Several important provisions in H.R. 6, the pending comprehensive energy legislation, would remove impediments to building LNG and pipeline infrastructure. These provisions include the following:

- The bill would codify FERC's Hackberry decision to remove the open access requirement on new and expanded LNG terminals.
- The bill would amend section 7 of the Natural Gas Act to authorize an appeal to the U.S. Court of Appeals for the D.C. Circuit if an action by a federal or state agency unreasonably delays or conditions the construction of a pipeline project authorized by FERC.
- The bill also would specify that the extensive record developed by FERC in its certificate proceeding must be used by other agencies in any administrative appeals concerning a project that has been reviewed by FERC.

These provisions represent areas where changes in the statutory framework for U.S. energy policy can make a real contribution to ensuring that there is adequate LNG import and pipeline infrastructure to serve the energy needs of the nation's consumers and its economy. We continue to urge the Congress to pass this legislation.

We also wish to comment on H.R. 4413, a bill recently introduced by Representative Lee Terry that would establish clear authority for LNG terminal approval, siting, and regulation. The bill would clarify exclusive FERC authority for on-shore terminal siting decisions, and require other federal and state agencies involved in permitting to work within the FERC process and make final decisions within one year of the original application. The Terry bill would also codify the FERC's Hackberry decision by prohibiting a requirement that new LNG terminals, or expansions of existing terminals, be open-access. Both the Center for LNG and INGAA strongly support this legislation, and believe that it should be the model for future discussions in Congress on removing impediments to new LNG import capacity.

#### **Conclusion**

In conclusion, let me emphasize the importance of public policies that foster a positive environment for natural gas infrastructure construction and investment. These large and capital-intensive projects will be constructed only if there is a rational process for reviewing and siting these facilities. Delays and detours are costly, both to project sponsors and ultimately to consumers, and in some cases the cumulative effect can be fatal to a project. We believe that the FERC provides an appropriate and inclusive forum for authorizing on-shore LNG import terminals and that FERC has done an admirable job in discharging its responsibilities. If anything, FERC's authority in these matters should

be enhanced by Congress, to send a clear message as to the national importance of building natural gas infrastructure on a timely, responsible basis.

I thank you for the opportunity to testify today, and would be happy to answer any questions you might have.

Mr. OSE. Thank you, Mr. Santa.

Our next witness joins us from the Conservation Law Foundation where he serves as president. That would be Philip Warburg.

Sir, welcome to our witness table. You are recognized for 5 minutes.

Mr. WARBURG. Thank you for the opportunity to appear before the committee today. The Conservation Law Foundation is the oldest and largest regionally focused environmental advocacy group in the Nation with offices throughout New England. We work extensively on energy, marine and coastal issues, and we approach those issues with a regional New England perspective. We believe, however, that New England's concerns regarding the siting of new LNG terminals are widely shared by other parts of the Nation.

Recent proposals for new LNG terminals in New England have been extremely controversial. In Maine, Massachusetts and Rhode Island, several siting proposals are advancing rapidly on a community-by-community basis. They are not part of a coherent strategy for evaluating the overall need for terminal capacity in New England, nor are they based on rigorously defined criteria for identifying potential sites.

From our organization's perspective, this ad hoc approach fails to provide an adequate basis for decisionmaking about individual proposals. It has also pitted New England communities against one another in wrestling with the merits and risks of specific proposals.

During the 1990's, the Conservation Law Foundation was the leading advocate for replacing oil- and coal-fired power plants in New England with less polluting natural gas facilities. Those efforts led to the building of over 9,000 megawatts of capacity at natural-gas-fired power plants, a very significant component of New England's overall power supply.

The environmental benefits of natural gas should not, however, cause us to ignore or belittle the negative environmental impacts that may be associated with LNG import facilities. We must soberly consider the public safety risks and other environmental hazards posed by these facilities. But before individual siting decisions can be made, we all would benefit from a much clearer picture of the actual need for added terminal capacity.

We therefore propose a two-pronged approach to the siting of new LNG terminals in New England and other parts of the country. First, a regional needs assessment should be conducted, led by key Federal agencies with the full involvement of State governments. This assessment can build upon the wealth of existing analyses in determining a realistic level of need in order to avoid overbuilding or underbuilding of terminals.

It is essential that this assessment be based on a balanced approach that looks to increased efficiency and demand-side management of gas and electricity in addition to supply side answers, like augmenting terminal capacity. The efficiency measures we favor do not require anyone to sit shivering in the cold or sweltering in the heat. We are talking about high-efficiency appliances, better building codes and smart building management that will reduce consumers' bills without damaging the economy or lowering anyone's quality of life.

Increased deployment of renewable energy resources like wind and solar power can have the same salutary effect on fuel demand. Every megawatt of renewable energy displaces a megawatt of production from conventional fossil fuel and nuclear power plants.

The many agencies working on LNG terminal siting literally need to work off the same page in assessing LNG demand and the corresponding need for additional capacity.

The second prong in our proposal is a regional siting approach that will involve Federal, State, and local leadership in determining the actual site or sites for new terminals.

Community stakeholders should be included in an informed participatory process that can translate the assessed regional need for expanded LNG supplies into a coordinated effort to build appropriate LNG infrastructure. New facilities should not be approved unless there is a clearly demonstrated need for the facility and a very high degree of confidence that the facility is sited in the right location—a location that takes both public safety and environmental protection concerns into account.

There is a real risk that LNG terminals will be sited in communities that either want them the most or are able to oppose them least effectively. What we need is a proactive approach that gives us tools to identify the best site or sites for these facilities from an environmental and public safety standpoint. We also need an approach that would avoid unnecessary duplication of costly and environmentally damaging infrastructure.

I'd like to close by emphasizing that we do not believe that Congress should impose a moratorium on the current review of proposed LNG terminals. We strongly believe, however, that a regional evaluation should be undertaken before any new LNG import facilities are approved. Time for initiating a regional approach is of the essence.

In light of certain remarks made earlier today, I want to be clear on one final point: This regional approach that we are proposing should harmonize with, rather than override, relevant State laws regarding environmental protection and public safety. A coherent and coordinated strategy should guarantee a meaningful role for State government, particularly on siting decisions. Thank you.

[The prepared statement of Mr. Warburg follows:]



## Conservation Law Foundation

**Testimony of Philip Warburg  
President, The Conservation Law Foundation**

**Before the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs  
Committee on Governmental Reform  
United States House of Representatives**

**Hearing on LNG Import Terminal and Deepwater Port Siting:  
Federal and State Roles**

**June 22, 2004**

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**Conservation Law Foundation**

Mr. Chairman and Members of the Committee,

Thank you for this opportunity to appear before you today to present testimony on LNG import terminal and deepwater port siting. My name is Philip Warburg. I am President of the Conservation Law Foundation (CLF), the oldest and largest regional environmental advocacy organization in the nation, with offices throughout New England. Our organization works extensively on energy, marine, and coastal issues. We approach these issues from a regional New England perspective, but we believe that New England's concerns regarding such matters as the siting of new LNG terminals are widely shared by other parts of the nation.

**New England and LNG**

Recent proposals for new onshore LNG terminals in New England (now joined by a proposal for an offshore deepwater LNG port) have been extremely controversial, as is the case across the country. Numerous potential LNG terminal sites have been promoted in New England, specifically in Maine, Massachusetts and Rhode Island. These proposals are advancing on a community-by-community basis, and at a rapid pace. As such, they are not part of a coherent strategy for evaluating the overall need for additional terminal capacity in New England, nor are they based on rigorously defined criteria for identifying potential sites. From CLF's perspective, this *ad hoc* approach has not been effective, does not provide an adequate basis for decision-making about individual proposals, and will continue to founder. It has also pitted New England communities against one another in wrestling with the merits and the risks of specific proposals.

Rather than simply registering our objections to the existing regulatory approach to LNG import facility siting, we would like to provide the members of the Subcommittee with an affirmative view of what an effective and efficient approach to LNG terminal and deepwater port siting would encompass, and what administrative and regulatory reforms should be undertaken in order to improve the efficacy of the process. For the reasons previously noted, it is CLF's view that any decisions by the Federal Energy Regulatory Commission (FERC) and the U.S. Coast Guard (USCG) to site LNG import facilities must be based on a New England region-wide evaluation of the potential merits and environmental impacts of adding one or more new terminals to New England's energy infrastructure. This can be accomplished through a two-pronged approach:

**First, an energy and gas supply needs assessment led by key federal agencies with full involvement of state governments needs to be conducted.** This assessment, which can build upon the wealth of existing analyses in order to determine a realistic level of need in order to avoid overbuilding or underbuilding of facilities, can then serve as a key determinant in decision-making and in explaining regional demand and need to affected local communities. It is essential that this assessment be based on a balanced approach that looks to increased efficiency and demand-side management of gas and electricity in addition to supply-side answers like augmenting LNG import facilities.

**Second, a regional siting approach needs to be created, involving federal, state and local leadership in determining the actual site(s) for LNG import facilities, based upon rigorously developed criteria that address both public safety and environmental protection concerns.**

**Conservation Law Foundation**

Community stakeholders should be included in an informed, participatory process that can translate the assessed regional need for expanded LNG import capacity into a coordinated effort to build appropriate LNG infrastructure to serve the region.

Our perspective on these issues is shaped by CLF's work as marine, coastal and energy advocates.

**Protecting our Ocean and Coast**

CLF's past work has included litigation that established the initial moratorium on oil and gas drilling off the coast of New England, the lawsuit that forced the cleanup of Boston Harbor, and a series of landmark cases on New England fisheries management that have defined enforcement and implementation of the Magnuson-Stevens Fishery Conservation and Management Act. Beyond these cases, over 30 years of coastal advocacy – fighting for public access to beaches and harbors, advocating for responsible development of urban waterfronts, and protecting national parks like the Cape Cod National Seashore – reflect our organization's commitment to ensuring the vibrancy, diversity and environmental sustainability of New England's coastal and marine environment.

Over a quarter century ago, CLF advocates were cloistered in a basement room at the United States Supreme Court, just across the street, hammering out responses to emergency motions on manual typewriters as they successfully fought to defend the judicial injunction against oil and gas drilling on the extraordinarily productive fishing grounds of Georges Bank, off the New England coast. This injunction evolved into the statutory moratorium still in place today. More recently, a CLF lawyer and marine scientist spent a grueling week in the Prettyman Federal Courthouse on the other side of Capitol Hill in April 2002, working out the final details of a groundbreaking consensus agreement on New England fisheries management that brought together the governments of coastal communities, fishermen and environmental interests.

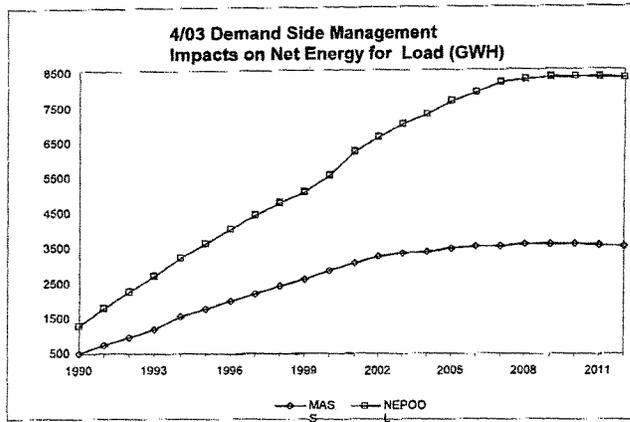
We bring the perspective of seasoned marine advocates, with all of this history of having fought long and hard to protect our oceans and our coasts, to the question of LNG terminal siting. Our history and experience lead us to demand that all LNG terminal proposals, whether onshore or offshore, be subject to a rigorous environmental review that considers potential impacts on the local environment and host communities.

Similarly, our work as Smart Growth advocates pressing for the revitalization of our urban areas – heavily concentrated along New England's coast – leads us to press hard on questions of LNG tanker and terminal safety. The risk of catastrophic accident involving LNG terminals and tankers is a real one. Far too little is known about the vulnerability of LNG terminals and ships to terrorist attack, and about the possible consequences of such an attack. Indeed, the recent report submitted to FERC by its own consultant, ABSG Consulting, Inc., confirmed the alarming information vacuum on these critical subjects. Having recently returned from nine years in Israel, where I ran a similar environmental advocacy organization, I am painfully aware of the critical need to understand the potentially catastrophic risks associated with the infrastructure choices we make. Promoting economic and social well-being while minimizing such risks is a key task of responsible government.

Conservation Law Foundation

**Building a Sustainable and Effective Energy System**

Along with protecting New England's marine and coastal environment, CLF has been a longtime advocate for sustainable energy policies and practices. Our energy efficiency efforts in the 1980s led to the creation of path-breaking utility efficiency programs in New England, enlisting local utilities in first-in-the-nation "Demand Side Management" programs. These early and ongoing energy efficiency programs have yielded tremendous results. The Independent System Operator (ISO) for New England last year estimated that these programs have reduced total electrical load for New England by about 3,500 Gigawatts, as illustrated by the following graph:



Source: David J. Ehrlich, Principal Analyst, Load Forecasting, System Planning for ISO-NE, ISO-NE Load Forecast Methodology: Presentation to the Massachusetts Department of Telecommunications and Energy, June 19, 2003.

During the 1990s CLF was a leading voice pressing for the restructuring of New England's electricity system. We were motivated by a desire to unleash a wave of construction of new high-efficiency, low-emissions natural gas-fired power plants to replace the region's aging oil and coal plants. Those efforts led to the building of over 9,000 megawatts of capacity at natural gas-fired power plants, a very significant component of New England's power supply infrastructure. Regional demand today only exceeds 21,000 megawatts in the hottest hours of the hottest summer days.

Why would an environmental organization become so involved in reform of the electricity sector? And why would such an organization be proud of having helped foster the creation of a fleet of new gas-fired power plants? The answer is simple: the dramatically lower emissions of harmful pollutants from the



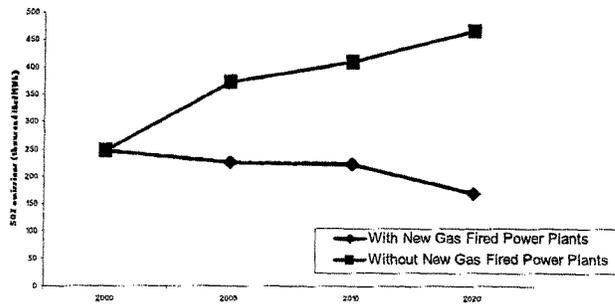
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natural gas-fired power plants, especially the newest "combined-cycle" facilities that use waste heat from primary electricity generation to produce supplemental power.

Natural gas power plants emit almost 30 percent less carbon dioxide (the leading contributor to global warming) than plants fired by oil, and nearly 45 percent less than plants that burn coal. An average American coal-fired power plant produces 2,249 pounds per megawatt hour ("lbs/MWh") of carbon dioxide, 13 lbs/MWh of sulfur dioxide (a health-endangering pollutant and the primary cause of acid precipitation that has devastated New England's forests, lakes and streams), and 6 lbs/MWh of nitrogen oxides (a major contributor to the summertime smog that envelopes rural as well as urban areas downwind of major sources such as power plants).<sup>1</sup> In comparison, a properly operated large-scale combined cycle power plant emits 776 lbs/MWh of CO<sub>2</sub>, 0.01 lbs/MWh of nitrogen oxides, and no sulfur dioxide.<sup>2</sup>

The three charts below demonstrate the air quality benefits that we forecast flowing from the increasing use of the new gas-fired power plants that have been built in Massachusetts, home to most of the large oil and coal-fired power plants in New England. These charts illustrate the dramatic difference that these plants can make in reducing air pollution, so long as reasonable pricing and adequate supplies ensure their widespread use.

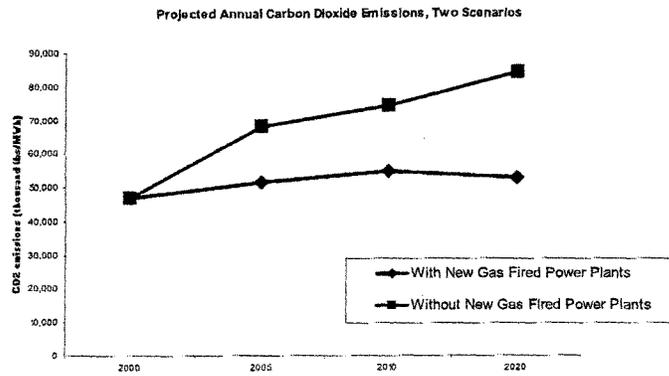
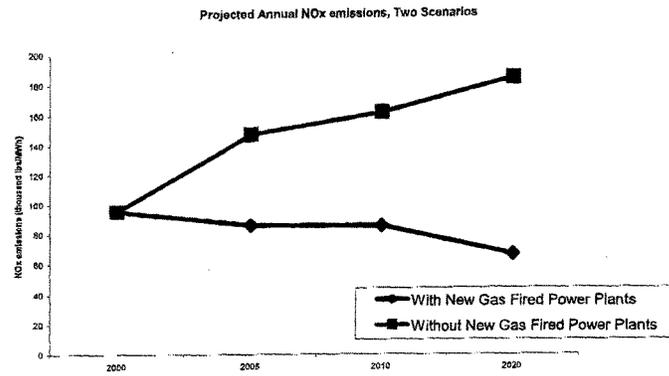
Projected Annual SO<sub>2</sub> Emissions, Two Scenarios



<sup>1</sup> <http://www.epa.gov/cleanenergy/coal.htm>

<sup>2</sup> See Emissions Factors compiled at pp. 45-46, The Regulatory Assistance Project, *Model Regulations for the Output of Specified Air Emissions from Smaller-Scale Electric Generation Resources: Model Rule and Supporting Documentation*, 31 October 2002. <http://www.raonline.org/ProjDocs/DREmsRu/Colfile/ReviewDraftModelEmissionsRule.pdf>

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Source: CLF Analysis derived from Massachusetts Division of Energy Resources 2000, 2005, 2010 and 2020 generation reports and predictions and emissions factors compiled by the Regulatory Assistance Project (See prior footnote).

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The compelling benefits of natural gas as a power-generating fuel should not, however, cause us to ignore or belittle the negative environmental impacts that may be associated with LNG import facilities. To be concrete – the nation needs a region-by-region review of gas supply and demand that clearly establishes the level of need for new terminal capacity. At the same time, we must collectively, soberly and clearly consider the risks these facilities pose. LNG facilities that are proposed for urban areas or require tanker travel through heavily settled areas demand that priority consideration be given to the potential for a catastrophic event that could devastate nearby populations. In rural areas, potential impacts on marine and coastal resources, like fish and wildlife habitat, must be carefully considered, along with public safety hazards. But before these siting issues can be responsibly considered, we need a much clearer picture of the actual need for additional LNG terminal capacity in New England.

**Prong 1. Needs Assessment and Effective Communication**

Given the increased use of natural gas for electricity generation, it is impossible to disentangle natural gas demand from electricity demand. The National Petroleum Council recently observed: “Approximately 200,000 megawatts of gas-fired generation will have been added to the generation fleet by the end of 2005, representing a 31% increase of total generation capacity and a 290% increase in the gas-fired only generating capacity, measured from the end of 1998.”<sup>3</sup> As observed above, from the point of view of air pollution control this is very good news as natural gas-fired plants have dramatically lower emissions than oil and coal-fired plants.

Significant air quality benefits would accrue if the natural gas power plants that now make up a substantial portion of New England’s generating base were fully utilized. While seeking fuller utilization of our natural gas-fired power plants, we must take careful account of the profound role that energy efficiency can play in reducing demand for gas. The efficiency measures we favor do not require anyone to sit shivering in the cold or sweltering in the heat. We are talking about approaches like high-efficiency appliances, better building codes, and reductions in energy use through smart building management that will reduce consumers’ bills without damaging the economy or lowering anyone’s quality of life.

Increased deployment of renewable energy resources, like wind and solar power, has the same salutary effect on natural gas demand. Every megawatt of renewable energy displaces a megawatt of production from existing plants.

Current FERC analyses project that peak monthly natural gas use can be met with the existing import capacity through 2005, and that proposed additions to import capacity would provide adequate capacity through 2010. But that analysis assumes that, in addition to planned additions to pipeline capacity, some of which are under construction, by 2010 there will be: (a) at least one new major LNG terminal built in Eastern Canada; (b) significant expansion of the existing LNG terminal in Boston Harbor; and (c) at least one other new major LNG terminal, or two to three smaller LNG terminals with roughly the same capacity as a single large facility, in New England.

<sup>3</sup> National Petroleum Council, Report to the Secretary of Energy, *Balancing Natural Gas Policy: Fulfilling the Demands of a Growing Economy* (Sept. 2003), p. 85.

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It is critical that calculations of gas demand and therefore the need for LNG facilities in New England (and nationwide) provide a frank, accurate portrayal of the role that energy efficiency and increased deployment of renewable energy can play in controlling gas demand and the need for LNG. The short-term, stopgap role of efficiency measures warrants careful attention, as many of these measures can be rolled out much faster than LNG terminals can be built. Also deserving of attention are the longer-term impacts on demand caused by efficiency measures and the deployment of renewables.

The many agencies working on LNG terminal siting need to ensure that they are literally working off the same page in assessing LNG demand and the corresponding need for additional import capacity. This will require a careful weighing of energy efficiency and renewable energy technology potential in curbing our demand for fossil fuels, including natural gas.

**Prong 2. Import Facility Siting**

New or expanded LNG import facilities represent substantial long-term commitments of capital and present significant potential environmental impacts. Therefore, new facilities should not be approved unless there is a clearly demonstrated need for the facility and a very high degree of confidence that the facility is sited in the "right" location.

New England is currently host to one of the five existing LNG terminals in the U.S. This facility is located near Boston in Everett, Massachusetts, and LNG deliveries to the terminal require that LNG ships travel through the heart of Boston Harbor. Many are concerned about the possible plans for expanding that facility, while others have suggested that this facility be retired, which would heighten the need for additional siting elsewhere in New England.

There are now numerous announced LNG terminal proposals in New England, many more, in fact, than appear in the appendix to your briefing materials. In March of this year, one such proposal for Harpswell, Maine was voted down by the local community under very acrimonious circumstances that included a bomb threat at the polling station on the day of the vote. That result immediately focused attention on a relatively undefined proposal to build an LNG terminal on Sears Island, Maine. In May, the community of Searsport voted against the Sears Island proposal in a non-binding straw poll by a 10-1 margin. That same month, several additional proposals for LNG terminals surfaced for Casco Bay, closer to Portland. These proposals also engendered an immediate negative local reaction that has delayed local consideration of these proposals.

Most recently, on June 8, Maine's Governor Baldacci announced an apparent partnership between Quoddy Bay LLC of Tulsa, OK, a conglomerate of energy developers, and the Passamaquoddy Tribe at Pleasant Point. Together, they are seeking approval of an LNG facility on tribal lands in eastern Maine near Eastport. The Governor hailed the proposal as a tremendous opportunity for economic development in one of the poorest areas of the state. The Tribe has been relatively quiet regarding the proposal. Meanwhile, just last week competing petitions were submitted to town officials in Harpswell, one by residents seeking a revote to support an LNG terminal, and another asking town officials to respect the outcome of the initial March vote.

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Elsewhere in New England, three additional proposed terminals are clustered at the upper end of Narragansett Bay in Rhode Island and Massachusetts. All three would require LNG tankers to travel up the main shipping channel of Narragansett Bay through the heart of Rhode Island waters. Two of these applications have been submitted and are currently being evaluated by FERC: one in Fall River, Massachusetts (Weaver's Cove Energy) and one in Providence Rhode Island (KeySpan LNG). These proposals have aroused controversy primarily due to safety concerns and the fear of a catastrophic event. Nevertheless, in the absence of a comprehensive needs assessment and comparative site analysis, one or both of these applications could be approved before other proposed import facilities in New England are evaluated. This outcome would be particularly unfortunate if a more careful review might have shown one or more other sites in the region to be a better choice, taking the full range of safety and environmental factors into account.

Finally, there is now an offshore LNG port facility that Exceleerate Energy is proposing for a location about 10 miles east of Gloucester, Massachusetts. The Northeast Gateway Project, as its promoters call it, is strategically triangulated between a state ocean sanctuary, the Stellwagen Bank National Marine Sanctuary, and an offshore ocean dumping site. Though none of these designations would necessarily preclude the siting of an offshore terminal, advancement of this proposal is proceeding in the same *ad hoc* manner as the various onshore proposals.

The risk of a catastrophic event would seem to argue against siting an LNG terminal in heavily settled areas such as those that surround the proposed terminal sites in Rhode Island and Massachusetts. While the extent of this risk is the subject of considerable debate, CLF believes that such a risk is, at a minimum, sufficiently credible to require a complete review as part of a regional approach to siting. On the other hand, there are numerous potential environmental impacts to less-populated coastal areas such as the proposed sites in Maine. The Harpswell site was voted down, in part, because of the potentially adverse impacts on lobster fishing. Although Sears Island is attractive to developers because it offers access to a deepwater port with suitable infrastructure, the island is widely valued as Maine's largest undeveloped island; the project would also require considerable dredging. Sears Island, moreover, is located in the upper reaches of Penobscot Bay, a tremendous scenic and natural resource with some of the richest lobstering grounds in the world. Further east, the facility on Passamaquoddy tribal land would require that tankers navigate Cobscook and Passamaquoddy Bays, known for some of the highest tides in the world, frequent fog, and even a whirlpool – all factors that contributed to the failure of a proposed oil refinery in the 1970s.

More generally, there is also concern that LNG terminal siting, including potential deepwater ports such as the Northeast Gateway Project, may provide additional infrastructure that will move us down the slippery slope toward exploration and development of offshore resources such as Georges Bank, long defended by Congress, CLF and many others because of its unique national importance as a fishery resource. An offshore pipeline was recently built through Massachusetts Bay from Danvers, MA to Weymouth, MA, referred to locally as the "Hubline." At the time, no one conceived that the Hubline would facilitate development of an offshore LNG port facility. However, Exceleerate Energy now views the Hubline as providing the critical link for the pipeline running landward from its proposed deepwater port.

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Complicated issues such as these lead us to conclude that the best approach to terminal siting would be proactive, regional, and strategic. There is a real risk that LNG import facilities will be sited in communities that either want them the most, are able to oppose them least effectively, or in areas where it is perceived there is no constituency at all; rather than in the "best" location for importing LNG. It is our view that undertaking a regional approach to LNG import facility siting represents an important opportunity to address this controversial issue in a strategic manner and propel consideration beyond the current, site-specific, polarized siting debates. Most importantly to all of us, a more rational approach to LNG siting could help reduce New England's dependence on dirtier fuels like coal and oil while ensuring that the site selection process provides an economically sensible and environmentally acceptable result.

In our view, there may be several existing tools that could serve as vehicles for a regional approach. The idea of taking a regional approach is not new, as the National Environmental Policy Act provides for the preparation of programmatic Environmental Impact Statements (EISs) in order to evaluate "broad actions" geographically (e.g., by region) or generically (e.g., common timing, impacts, alternatives), and anticipates that connected, cumulative or similar actions should be evaluated in a single EIS. 40 C.F.R. §§ 1502.4(b)(c); 1508.25(a)(1)-(3). The programmatic EIS can then be used to facilitate and expedite the preparation of subsequent project-specific EISs ("tiering"), allowing those documents to concentrate only on site-specific issues. 40 C.F.R. §§ 1500.4-5; 1502.4(d); 1502.20.

It is our view, however, that a regional evaluation and approach to siting could also be accomplished through an equally rigorous regional alternatives study involving federal and state agencies as well as non-governmental experts and public representatives. The White House Task Force on Energy Streamlining and the Department of Energy are two federal bodies we have identified that could play a significant role in assisting and/or convening such a regional evaluation. It is our view that this approach could accomplish results similar to the NEPA programmatic EIS, thereby leaving EIS, siting and permitting procedures to be focused on individual sites.

**Conclusion and Recommendations**

I would like to summarize briefly several recommendations that I hope you will consider as you deliberate on improving the efficiency and effectiveness of the current LNG regulatory system:

1. The purpose of any LNG import facility siting process should be to establish a comprehensive regional approach to siting that ensures that any necessary development occurs not only in a timely manner, but also based on regional need, in the right locations, subject to terms that fully protect the public interest, and through processes that ensure ample public input.
2. FERC and others must address the threshold issue of how much natural gas New England needs, including reconciling the tremendous variability in forecasts for New England's demand for natural gas.
3. The region must take advantage of every opportunity to reduce overall energy demand through increased efficiency.

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4. Appropriate investment in efficiency can help meet our gas needs more quickly and with greater results than investment in capital construction. Put simply, efficiency measures can be deployed far more quickly than terminals can be built.
5. The region must also reduce demand for fossil fuels through increased use of renewable energy – the next generation of energy supply that will eventually provide a substantial portion of our energy needs.
6. Given the real and pervasive public apprehensions about LNG import facilities, FERC and others need to improve very substantially their communications regarding how much new gas import capacity is needed in the region and why new LNG import facilities are necessary.
7. Key policymakers, including the Congress, our Senators and Governors, and our local leadership, need to engage in finding a solution to the LNG import facility siting issue that respects and provides a meaningful response to public concerns about safety and environmental harm.
8. It would be premature for FERC to approve any pending applications including those in Fall River, Massachusetts, and Providence, Rhode Island, given the concerns highlighted here today and the possibility that one or more other proposals might meet New England's regional demands in a manner less threatening to public safety and the environment.
9. The scope of the alternatives analysis for the Fall River and Providence applications, and any other onshore LNG facilities, should be expanded to consider the recent proposals for a deepwater port and other LNG terminals proposed elsewhere in New England. As part of this analysis, FERC should also evaluate the regional implications of siting one or both of these facilities and evaluate whether their siting forecloses consideration of additional terminals in New England.
10. Members of this subcommittee should support an appropriate regional evaluation and approach to siting LNG import facilities. Helping to identify an appropriate entity to convene such reviews would be one important contribution that the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs could make.

While we would support legislation or regulatory changes incorporating these recommendations, we also believe that FERC and the USCG can coordinate their activities and undertake a regional approach to LNG import facility siting within existing law. I would also like to clarify that we do not believe that Congress should impose a moratorium on the current review of proposed LNG import facilities pending the initiation of an appropriate regional approach. We strongly believe, however, that a regional evaluation should be undertaken before any new LNG import facilities are approved. It is therefore our view that time for initiating a regional approach is of the essence.

Thank you for the Subcommittee's attention to these matters.

Mr. OSE. Thank you, Mr. Warburg.

Our final witness on the panel is the distinguished professor of chemical engineering at the University of Arkansas, Dr. Jerry Havens.

Sir, welcome to our panel. We have received your testimony; it is in the record. You are recognized for 5 minutes to summarize.

Mr. HAVENS. Thank you, Mr. Chairman.

I also appreciate this opportunity. And I am speaking here today as an individual and not an agent of my university.

I have, for some 30 years now, been studying methods for assessing the potential consequences of major accidental releases of LNG, and my remarks here today are confined to the estimation of the extent of danger to the public around such spills. I believe that the potential danger to the public from LNG spills is mainly from the very large fires that could occur. I want to emphasize that I am talking about fires resulting from the spillage of several millions of gallons of LNG. A single tank on a typical LNG carrier contains 6 or more million gallons of liquified natural gas. The fire from such a spill, if it occurs on to water and was therefore uncontained, would be very large, perhaps up to a half mile in diameter or larger if more of the containment system failed.

We have no experience with fires this large, but we do know that they could not be extinguished. They would just have to burn themselves out, and the radiant heat extending outward from the fire's edge could cause serious burns to people at large distances.

There are two ways that very large fires can follow a major LNG spill. If LNG is spilled, it will rapidly evaporate, and the vapors will mix with air to form a mixture in the concentration range of approximately 5 percent to 15 percent LNG vapor. Such mixtures of LNG vapor and air will inevitably form when LNG is spilled. And if an ignition source, such as an open flame or a spark, is present, as would be highly likely to accompany the violent circumstances that would cause such a release, a large pool fire would result.

However, if no ignition sources are present in the flammable gas mixture, a vapor cloud will result, and the cloud will spread downwind from the spill until it either contacts an ignition source or disperses harmlessly. The maximum distances of the danger zones extending from a pool fire or a flammable vapor cloud determine the zones which would endanger the public.

It is the estimation of these distances, which are identified in 49 CFR 193 as pool fire radiation and vapor cloud dispersion exclusion zones, that I want to inform you about, because such exclusion zones are required in order to ensure that people are not exposed to danger if such a fire should occur, and such requirements will therefore determine the effectiveness of the LNG siting regulations to provide for public safety.

I first began studying these questions in the 1970's when, as this committee knows, the first wave of interest in LNG importation arrived in the United States. I am privileged to have had an important role in the development of the current regulatory requirement for determining vapor cloud exclusion zones. The computer models currently required in 49 CFC 193 for calculating such exclusion

zones were the result of developments by my associates and I at the University of Arkansas.

I have also been involved in the development of the methods required in 49 CFR 193 for determining pool fire radiation exclusion zones. In my opinion, the current requirements in 49 CFR 193 for determining these exclusion zones are based on good science, and they are adequate for their purpose. Indeed, the present regulations are the result of considerably more research on LNG safety than has been performed for many other hazardous materials that are routinely transported in very large quantity.

Furthermore, I believe it is important to emphasize that the hazards associated with LNG, aside from the localized dangers involved with handling any cryogenic fluid, are neither unique nor extreme when compared with other hazardous materials. The potential dangers we are discussing here today are brought into the present focus because the enormous amounts of energy that must necessarily be concentrated to enable economical transport of LNG across the world's oceans.

However, the suitability of the methods required by the regulations for determining these exclusion zones, in my opinion, are not in serious dispute. The problem lies in the specification of the LNG spills that must be considered as possible. Current U.S. regulations require that exclusion zones be calculated for spills in the landbased portion of an LNG import terminal only. The regulations do not currently apply to spills that might occur from the LNG vessel on to water.

Because spills on land are subject to a variety of control measures to limit the area and extent of the spill, such as dikes or impounds in the systems, exclusion zones in support of requests for siting landbased LNG terminals are typically, in my experience, less than about 1,000 feet. However, if exclusion zones were required to protect the public from LNG spills on to water from an LNG vessel, either at the jetty or in route to or from the terminal, there is good scientific consensus that the fire radiation exclusion zones could extend to a mile or more if the entire contents of a single tank were rapidly spilled. And if the regulations were applied to the determination of vapor clouds, they could extend to several miles.

I want to emphasize the present regulations do not require the address of spills from a tanker at the facility. It is very sobering and surprising to me to realize that the ongoing LNG siting debate regarding public safety comes down to this. And I sincerely hope that those responsible for protecting the public recognize and seriously consider this very important question.

Since September 11—

Mr. OSE. Dr. Havens.

Mr. HAVENS. We no longer—

Mr. OSE. You are 2 minutes over your time. I am going to give you 30 seconds to wrap up. OK, 30 seconds to wrap up.

Mr. HAVENS. 30 seconds?

Mr. OSE. Correct.

Mr. HAVENS. I must also tell you that I am very concerned that spills from LNG vessels caused by terrorist attacks might not be limited to the partial contents of a single tank on the vessel, as is

widely assumed. Because of these concerns, I have written to the Secretary of Homeland Security in late February to urge the Department to consider the vulnerability of LNG tankers. I am very disappointed that I haven't received any response from the Department of Homeland Security regarding my concerns.

Thank you. That concludes my comments.

[The prepared statement of Mr. Havens follows:]

Comments by Jerry Havens  
June 22, 2004 Hearing  
LNG Import Terminal and Deepwater Port Siting: Federal and State Roles

Mr. Chairman and Members of the Committee: My name is Jerry Havens. I am a Distinguished Professor of Chemical Engineering at the University of Arkansas. I appreciate this opportunity to address this hearing on Federal and State Roles in LNG Import Terminal and Deepwater Port Siting. I am speaking here today as a citizen-scientist, and not as an agent of my University.

I have for some thirty years been studying methods for assessing the potential consequences of major accidental releases of LNG. My remarks here today are about the estimation of the extents of danger to the public around such spills.

I believe that the potential danger to the public from LNG spills is mainly from the very large fires that could occur. I want to emphasize that I am talking about fires resulting from the spillage of several millions of gallons of LNG -- a single tank on a typical LNG carrier contains six or more million gallons of liquefied natural gas. The fire from such a spill, if it occurred onto water and was therefore uncontained, would be very large, perhaps up to a half-mile in diameter, or larger if more of the containment system failed. We have no experience with fires this large, but we do know that they could not be extinguished, they would just have to burn themselves out, and the radiant heat extending outward from the fires edge could cause serious burns to people even at larger distances.

There are two ways that very large fires can follow a major LNG spill. If LNG is spilled it will rapidly evaporate and the vapors will mix with air to form a mixture which will burn in the concentration range of approximately 5% to 15% LNG vapor. Such mixtures of LNG vapor and air will inevitably form when LNG is spilled, and if an ignition source such as an open flame or spark are present, as would be highly likely to accompany the violent circumstances that would cause a major release, a large pool fire will result. However, if no ignition sources are present in the flammable gas mixture a vapor cloud will result, and the cloud will spread downwind from the spill until it either contacts an ignition source or becomes diluted below its flammable concentration - it will then disperse harmlessly.

The maximum distances of the danger zones extending from a pool fire or a flammable vapor cloud determine the zones which would endanger the public. It is the estimation of these distances, which are identified in 49 CFR 193 as pool fire radiation and vapor cloud dispersion exclusion zones, that I want to inform you about, because such exclusion zones are required in order to ensure that people are not exposed to danger if such a fire should occur, and such requirements determine the effectiveness of the LNG siting regulations to provide for public safety.

I first began studying the prediction with mathematical models of vapor cloud travel distances in the 1970's, when as this Committee knows, the first wave of interest in LNG

importation arrived in the United States. I am privileged to have had an important role in the development of the current regulatory requirements for determining vapor cloud exclusion zones to support requests to FERC for LNG terminal siting. Both of the computer models currently required by 49 CFR 193 for calculating vapor cloud exclusion distances were the result of developments by my Associates and I at the University of Arkansas. I have also followed closely and have been involved in, if less directly, the development of the methods required by 49 CFR 193 for determining pool fire radiation exclusion zones.

In my opinion the current requirements in 49 CFR 193 for determining both pool fire radiation and vapor cloud dispersion exclusion zones around LNG terminals are based on good science, and they are adequate for their purpose. Indeed, the present regulations are the result of considerably more research on LNG safety than has been performed for many other hazardous materials that are routinely transported and stored in very large quantity. Furthermore, I believe it is important to emphasize that the hazards associated with LNG, aside from the localized dangers involved with handling any cryogenic fluid, are neither unique nor extreme when compared with other hazardous materials handled in bulk. The potential dangers we are discussing today are brought into the present focus because of the enormous amount of energy that must necessarily be concentrated to enable economical transport of liquefied natural gas across the world's oceans.

However, the suitability of the methods required by the regulations for determining exclusion zone distances is not in serious dispute. The problem lies in the specification of the LNG spill scenarios that must be considered.

Current U.S. regulations require that exclusion zones be calculated for spills in the land-based portion of an LNG import terminal only – the regulations do not currently apply to spills that might occur from the LNG vessel onto water.

Because spills on land are subject to a variety of control measures to limit the area extent of the spill, such as dikes or impoundment systems, exclusion zones in support of requests for siting land-based LNG terminals are typically, in my experience, less than one thousand feet. However, if exclusion zones were required to protect the public from LNG spills onto water from an LNG vessel at the jetty or in route to or from the terminal, there is good scientific consensus that the fire radiation exclusion zones could extend to a mile or more if the entire contents of a single tank were rapidly spilled, and the vapor cloud dispersion zone could extend for a similar spill to several miles. Obviously, if the regulations were applied to the determination of exclusion zones to protect the public from LNG tanker spills onto water, it would have a very important effect on siting decisions. It seems clear to me that such consideration would raise very serious concerns about the siting of LNG terminals where people within the exclusion zone distances would be endangered. It is very sobering to me to realize that the ongoing LNG siting debate regarding public safety comes down to this, and I sincerely hope that those responsible for protecting the public recognize and seriously consider this very important question.

Since 911 we no longer have the luxury of considering only means for reducing the probability of accidents to a level that justifies the attendant risk. I believe that it is imperative that the dangers to the public from possible releases from a LNG carrier onto water be considered in the siting of LNG terminals in our country.

I must also tell you that I am very concerned that spills from LNG vessels caused by terrorist attack might not be limited to the partial contents of a single tank on the vessel, as is widely assumed. Because of those concerns, I wrote to the Secretary of Homeland Security in late February to urge the Department to consider the vulnerability of LNG carriers to terrorist attacks as part of their deliberations on LNG terminal siting. Because some of the matters that I believed worthy of consideration are sensitive, I do not think it is appropriate to discuss them in detail here, but I will try as best I can to address any questions you may have about this subject. I am very disappointed that I have not received any response from the Department of Homeland Security regarding my concerns.

Thank you, that concludes my comments.

Mr. OSE. I thank the gentleman for his testimony.

Would you care to go first?

The gentleman from Massachusetts.

Mr. TIERNEY. Thank you.

Thank all the witnesses for your testimony. I appreciate it.

Dr. Havens, if we assume that there is a spill on water in one of these deep water port proposals that are being made, you have indicated that the vapor could go downwind for some unspecified number of miles.

Mr. HAVENS. Well, 3 or 4 miles, as calculated for the entire contents of a single tank, which is about 6 million gallons.

Mr. TIERNEY. And if we had more than a single tank, would the distance somehow correlate to the spillage?

Mr. HAVENS. If the amount spilled were twice as large, it would not be twice as far, but it would be further.

Mr. TIERNEY. So if you had a whole tanker go up?

Mr. HAVENS. Well, it would be, in my judgment, probably physically impossible to spill the entire tanker rapidly. But nevertheless, if it were released, then it would be a danger that would extend greater than 3 or 4 miles. This is the vapor cloud exclusion zone, not the fire radiation zone.

Mr. TIERNEY. In a proposal that suggests a site 10 miles offshore, if you had a multicompartments spill, no ignition, so the vapors were up, what is the likelihood in reaching land? What would be the danger if it did? And is that something we should be concerned about, reasonably?

Mr. HAVENS. And the distance is 10 miles?

Mr. TIERNEY. 10 miles.

Mr. HAVENS. Everything I know about this problem suggests to me that there are no conceivable circumstances that I can consider, even with the loss of the entire tanker, where the vapor cloud travel would be as much as 10 miles.

Mr. TIERNEY. Assuming that this is sited, as proposed, a distance from fishing activity, how far would an exclusion zone reasonably be put around this site to protect people on fishing vessels or, for that matter, people on commercial vessels passing by?

Mr. HAVENS. Well, first of all, let me say that the idea of an exclusion zone to protect the public—and ordinarily, we are concerned primarily with gatherings of people and so forth. So for example, on a landbased facility, the approximate distance to schools or gathering places would be much more sensitive than some other areas.

Anyone in these exclusion zones, should there be a fire in that vapor cloud, is going to be in severe trouble.

Mr. TIERNEY. So people in a fishing fleet out there, if they go too close, how far ought the fishing fleet be kept away from this site?

Mr. HAVENS. Well, for a single tank spill, if it were spilled very rapidly, the distances that have been calculated and actually have even been published by the Department of Energy are 3 or 4 miles.

Mr. TIERNEY. And that is for both the fire, if it happened—

Mr. HAVENS. No, sir. That is for the vapor cloud distance. The fire distance is somewhat less. Typically, it might be on the order of a mile. And it would be at the distance of 1 mile that people

would be subjected to heat radiation that would cause severe burn. This is in about 30 seconds.

Mr. TIERNEY. Mr. Warburg, your organization obviously has some concerns, I would imagine, about Stellwagen Bank, an area like that. What questions would you like to ask Dr. Havens through me about the dangers to that area? You don't know what questions yourself, you go right to the source. Sometimes I am willing to admit that I don't know everything about this, and sometimes I don't know the questions to ask to get where I want to go, but I am suspecting that you do.

Mr. WARBURG. We are also at the stage of asking the right questions because I think we have not satisfied ourselves that there has been a sufficiently rigorous process of looking at the environmental and public safety issues pertaining to both the onshore and offshore facilities.

I think we have to put the risks associated with the proposed offshore facility in perspective in that we are currently facing an onshore facility at Everett, MA, which exposes tens of thousands of people, maybe more, to a very high level of risk if there were a tanker incident. So that is a concern that we have.

We also have a concern about the various other heavily populated sites that are being considered in New England for the siting of new LNG terminals, and this is where, again, we see that there is a need for more coherent delineation of criteria vis-a-vis distance from large population centers for the siting of any new terminals.

We are certainly concerned about the marine resource protection issues raised by the offshore proposal. This is a proposal that really only surfaced in the last 2 months. We certainly don't have the information on the various risks that could be involved and the various levels of encroachment on the fishing community that placing this kind of a facility would entail.

Mr. TIERNEY. Let me take a stab at it. Dr. Havens, are you familiar with Stellwagen Bank?

Mr. HAVENS. I'm sorry.

Mr. TIERNEY. Are you familiar with Stellwagen Bank off the coast?

Mr. HAVENS. Off Gloucester?

Mr. TIERNEY. Off Gloucester, yes.

Mr. HAVENS. Yes.

Mr. TIERNEY. If there is spillage on to the water and say it did get to flow over the Stellwagen Bank area, first the vapor and then a fire, what damage, if any, to things under the ocean or to the ocean itself?

Mr. HAVENS. Under the water?

Mr. TIERNEY. Right.

Mr. HAVENS. We are talking now about a vapor cloud fire, which means that, if it were a flammable cloud and it extended out there and it were ignited somehow, then it would flash through the cloud. I would not expect that would have any effect on anything in the water because it would be a very rapid fire.

Now, people that were exposed to that fire would be in serious trouble.

Mr. TIERNEY. And if it never caught fire, it would eventually dissipate into the environment, into the atmosphere, as opposed to settling on the water?

Mr. HAVENS. That is correct.

Mr. TIERNEY. Do you want to jump in?

Mr. OSE. I am ready when you are.

Mr. TIERNEY. Mr. Warburg, what would your regional assessment process look like? How much time would it take? You said you didn't want to have a moratorium necessarily on LNG placements. So how would it be structured that you would have a regional assessment, as you suggested, to coincide with the placement process?

Mr. WARBURG. I want to clarify: I said that I thought there shouldn't be a moratorium on the review of proposals. I think there should be a freeze on any decisions vis-a-vis particular sites. That's a very important distinction. We need all the information we can get regarding the various environmental and public health impacts, for example, the ones you have been raising vis-a-vis Stellwagen Bank and the offshore site. We feel that there needs to be a look at what is the need—and that means looking very creatively at some of the issues that you raised with the representative of the Department of Energy, namely, what can we expect from energy conservation in the region? What can we expect from renewable energy resources in the region such that we, perhaps, need less of an additional capacity for LNG import than we now assume?

Our concern is that we're seeing one proposal after the other placed on the table along New England's coastline. There is no constraint right now on the number of facilities that conceivably could be approved. And there is insufficient systematic consideration of very vital factors, such as public health and safety.

Mr. TIERNEY. And how do you and your organization strike the balance between what some will say is a serious need for that fuel now against the risks that you propose?

Mr. WARBURG. We are, in principle, supportive of natural gas as a transitional fuel, a cleaner-burning, less-polluting transitional fuel, though a fossil fuel. However, we feel that we shouldn't rush to build major new infrastructure with all of the environmental and public health implications of that infrastructure until we are very sure we know what is essential and that we are not duplicating capacity.

Mr. TIERNEY. Thank you.

I yield.

Mr. OSE. Thank you.

Dr. Haven, I am curious about something. You heard me ask this question of the previous panels, about a template for design. And if I followup on your exclusion zone onshore from a facility, you are suggesting that this 1-mile standard is sufficient? Is that correct?

Mr. HAVENS. No, I think that is not exactly what I said. I talked about an exclusion zone that would be the order of a mile, and that was for a pool fire rather than a vapor cloud problem.

Mr. OSE. And the vapor cloud was 3 to 4 miles.

Mr. HAVENS. About 3 miles. And these were spills on water, spills on water.

Mr. OSE. I want to go onshore for a moment.

Mr. HAVENS. Yes.

Mr. OSE. If you go onshore, if you were to say to Pat Wood, "Pat come over here in the corner and tell me what kind of safety framework I need to set up for this site," what would be the size of your exclusion zone?

Mr. HAVENS. I would agree with the methodology that has been followed in the siting of the present onshore terminals. And that is this, they specify—they have to specify what—how much material might be spilled and that, usually, the assumption has to be made that the largest transfer line in the facility, which would normally be the line that goes from the ship to the storage tanks, was severed and that it remained pumping for 10 minutes. That kind of a spill would be on the order of 50,000 gallons a minute, and it is a very large spill.

However, on the land, there are a number of measures that are taken so that, where that material might be spilled, there are trenches and sumps and impoundment basins and all kinds of things that keep that spill contained and minimize the resulting pool fire or vapor cloud dispersion. And as a result of those control measures, normally you wouldn't expect the people to have accidents that would extend more than about 1,000 feet.

Now, my understanding of the regulations and my experience—I've had a lot of experience in applying them for people—is that you must calculate these distances, and then, as the terminal operator, you must own that property. If you don't own that property, you are not going to build the terminal.

The point that I'm trying to raise is that, if we are going to be talking about protecting the public, the additional feature of protecting the public from spills associated with a marine site that are from the tanker are controlling, in my view. Nevertheless, they are not required to be addressed by the current regulations.

Mr. OSE. It's the difference—your point is the difference between risk and hazard, if I understand the terms correctly.

Mr. HAVENS. The difference between?

Mr. OSE. Risk and hazard. You think the methodology properly quantifies the risk, but it doesn't properly quantify the hazard?

Mr. HAVENS. No, what I'm saying is that the tools, the methods that are prescribed in the regulations, which are computer models which you have to tell how much you spill and what the atmospheric conditions are and so forth, and they spit out these exclusion zones.

What I'm saying to you is that I believe that those tools are perfectly adequate. There is nothing wrong then.

But you can get any answer from those models that you want depending on how much material you spill and so forth. And at the end of the day, I believe that the really vulnerable situation that controls the public safety issue anymore, post-September 11, is the LNG tanker.

Mr. OSE. Let me just dwell on something for a minute. On the incident that you define where you had the 50,000 gallons spilled in 10 minutes—

Mr. HAVENS. 50,000-gallons-per-minute for 10 minutes.

Mr. OSE. 500,000 gallons. You talked about a radius from that point of 1,000 in any given direction?

Mr. HAVENS. The 50,000-per-minute, 10-minute spill is required on the land. On land, that spill would always occur into an impoundment basin, so it would not spread.

Mr. OSE. All right. That ends up being about 300 acres in size, that site, if it is a 1,000 foot radius from that point.

Mr. HAVENS. No, no, no, the 1,000 feet is the downwind distance beyond which the flammable vapor cloud would no longer be flammable. In other words, we spill the LNG into a ditch. All right? It vaporizes and forms a cloud. The cloud drifts off downwind.

Mr. OSE. 1,000 feet in any direction.

Mr. HAVENS. No, downwind.

Mr. OSE. As it moves down in the wind.

Mr. HAVENS. In the wind, from that kind of spill, the models predict—and I agree with them—that the cloud would be harmless beyond about 1,000 feet. On land—

Mr. OSE. 1,000 feet from the point of spillage?

Mr. HAVENS. From the point of spillage.

Mr. OSE. Now, that would mean that you have a minimum-sized facility of about 300 acres?

Mr. HAVENS. 300?

Mr. OSE. Acres. But it is my understanding that the facility in Boston is nowhere near that size.

Mr. TIERNEY. Right.

Mr. OSE. So how do you deal with the situations you're talking about as the rules are currently applied? How do you deal with situations where you have a change in circumstances or a change in risks on existing facilities?

Mr. HAVENS. Well, I think—let me say this again. I'm not sure that I'm making the point that I want to make. I think the consideration of the exclusion zones for the landbased facilities, the land side of the facility, is handled appropriately today.

My major point, the only one I'm really coming here to try to convey is that there surely is a danger to the public associated with events that might occur from the tanker. And what I am saying is that the current application of the law to the landbased facilities will typically give exclusion zones within about 1,000 feet.

Mr. OSE. OK.

Mr. HAVENS. If they were applied to spills from the tanker of the type that have already been considered, there is a scientific consensus that the fire radiation dangers would go up to about a mile.

Mr. OSE. Because of the lack of a containment?

Mr. HAVENS. Exactly. Because the LNG is not contained. It can spread.

Mr. OSE. I've just been trying to get you on record on landbased. I think I have succeeded here.

Mr. HAVENS. I'm having a little trouble hearing you for some reason.

Mr. OSE. I've been trying to get you on record as it relates to landbased facilities, and you have been very clear, and I appreciate that.

Mr. Santa, I want to talk about something. We have heard testimony earlier today that the capital investment in a facility of this nature is somewhere on the order of \$500 million?

Mr. SANTA. The numbers that I have seen, Mr. Chairman, are that, for a 1 Bcf regasification facility—that is the import terminal—the cost is in the range of \$600 million.

However, I think, when you look at the capital that is involved in this, you also need to look at upstream in terms of the waterborne transport and liquefaction facility, both of which are significant. I think the costs now are about \$100 billion per tanker, and for a 390 Bcf liquefaction facility, I think it is in the range of \$1.5 billion to \$2 billion.

Mr. OSE. So you are talking about \$2.2 to \$2.7 billion for the entire package?

Mr. SANTA. Yes, sir.

Mr. OSE. Now, if I am a lender and I'm out in the financial markets, I don't give you \$2.2 to \$2.7 billion without you being able to tell me, if something goes wrong, my investment is insured. Do you have insurance for these facilities?

Mr. SANTA. I'm sure the facilities carry insurance. I think also, in terms of the lenders on these or for that matter to the extent that someone is financing it internally, there is the whole issue of, to what degree do you have someone who is willing to contract for the off-take of that facility to back-stop the deal?

Mr. OSE. My concern is the insurance. Because it seems to me that, over and above all, the Federal agencies and their interests, all the State agencies and their interests, and all the local agencies and their interests, the insurers are going to go through your operation with a fine-tooth comb. Because if they are going to assume a liability on the order of \$2.2 to \$2.7 billion just for the system, let alone the impacts elsewhere—

Mr. SANTA. I believe there is a lot of commercial discipline that is applied to these with respect to what one needs to borrow, finance this and insure it.

Mr. OSE. Give us some sense of that discipline. Do the insurers delve into the types of insulation that goes into the tankers?

Mr. SANTA. Sir, I don't know the answer to that, but we can get that and supply that to you in terms of what may be applied there in terms of their diligence on the tankers and other parts of the infrastructure.

Mr. OSE. Do they delve into who crews the tankers, who is the captain and all that sort of thing?

Mr. SANTA. I would think there are standards that are applied in terms of that. However, again, I am not intimately familiar with that, and we could supply that for you.

Mr. OSE. Do they rate exposures based on source of material, like Australia is a less risky source than say Qatar?

Mr. SANTA. I don't know for a fact, but that seems a reasonable assumption that enters into that.

Mr. OSE. Where could I go to get answers to that question? I understand the Federal agencies and support their curiosity about the safety and the operational integrity. But at the end of the day, the people who are enforcing it, with all due respect, are the people who have their capital at risk. And the insurance companies definitely have that. And I'm trying to get some sense from the industry, operational side, how rigorous that is. Where can I go to get that information?

Mr. SANTA. I would think—well, sir, I don't know, and we could get back to the committee with that answer.

Mr. OSE. Why don't I give you a written question to that effect?

Mr. SANTA. I would be happy to respond to that.

Mr. OSE. I will list the questions, from the operational side, that I am curious about.

Mr. SANTA. OK.

Mr. OSE. Mr. Warburg, I'm actually sympathetic to your concerns.

I'm curious, where should we build LNG facilities? Describe for me the geographic or the circumstantial location, separate and apart from what State it is in or whatever. Give me a sense of where we ought to build them.

Mr. TIERNEY. Mars.

Mr. OSE. Mars. That is a long pipeline.

Mr. WARBURG. I think we have to look very carefully at each individual site in terms of its particular characteristics. I think that remoteness from major population centers should be one very, very important criterion and one which is clearly not uniformly enforced today, by FERC or any other agency. And that is a major concern that we have.

That said, there are high-value natural resources that are at stake in various non-urban locations, and we certainly want to look very carefully at those to make sure that any terminal is built in an appropriate manner and does not destroy valuable fisheries. For example, along Maine's coastline, one of the major concerns that has come up—

Mr. OSE. Well, I have to—I'm curious about, in particular, up along Maine, they get some northeasters that are pretty severe. They have some storms up that way.

And I am trying to conceptualize—you know, we have nor' easters up there. You have hurricanes in the Gulf. You have a very steep drop-off on the coastal shelf of northern California. You have a shallow one in southern California. I am trying to figure out where is it that we should build these things, where is it we should focus. I mean I can tell you for a fact because of the must offer requirements that seem to occur every winter, that we seem to be short—that is inconsistent—that we are short in New England. I know we are short in Florida. But I am trying to figure out where can we put these LNG facilities in a manner—I am just curious as to your feedback on that.

Mr. WARBURG. There isn't a categorical answer. We want to turn to FERC, as well as the relevant State agencies, to help us define what the criteria should be. Clearly, there are dredging issues in some coastal locations that we would need to look at as well, to evaluate disruption of the natural environment.

One of the sites that is proposed in Maine is a rather precarious site in terms of whirlpool activity as well as the need for dredging. So I think there need to be broad criteria that define the outer limits of acceptability, again vis-a-vis proximity to major population centers, and one has to look very closely at the particular environments at stake.

We are not categorically opposed to the construction of additional natural gas facilities. We want to make sure of the need before they are authorized to go forward.

Mr. OSE. Have you ever supported one?

Mr. WARBURG. Sorry?

Mr. OSE. Have you ever supported one?

Mr. WARBURG. The only natural gas facility in Massachusetts is the Everett facility, which was built decades ago.

Mr. OSE. When you and I were young.

Mr. TIERNEY. 1972.

Mr. WARBURG. And we have major concerns about that facility and we would like to explore the possibility of transferring that facility at some point to a less precarious location, because right now it requires tankers to operate very close to downtown Boston and other neighborhoods.

Mr. OSE. All right. Mr. Santa, what are the parameters that you think—I mean out of all of us, you have practical operating exposure as to how this stuff works in the field. What do you think the parameters of a design facility should be? What are the minimums, if you will?

Mr. SANTA. I think the minimums are compliance with all of the currently applicable State and Federal laws that apply to these facilities, all of which are considered as part of the FERC process and collaboratively as part of the NEPA process before the Commission.

Mr. OSE. You are satisfied with the current process as it operates?

Mr. SANTA. I am satisfied with the legal framework, but I do think there are difficulties because that while the Commission has the NEPA process and includes all of the other agencies as participating agencies, there is the ability of other agencies who have separate legal authority, and particularly when it is State agencies acting pursuant to delegated Federal authorities, such as under the Coastal Zone Management Act or Clean Water Act, for those proceedings to become very, very protracted and also at times for some of those other agencies to second guess things which the Commission considered as part of the certificate process. We have seen that happen on several occasions with respect to interstate pipelines in coastal areas, and I think there is no reason to believe it might not also happen with LNG facilities.

Mr. OSE. There is a study done by DNV. When is that due out?

Mr. SANTA. I believe it is due out this summer.

Mr. OSE. We have the Sandia study that's pending and the DNV study that's pending. Are there other studies?

Mr. SANTA. There is a study that FERC commissioned that was released in May on which FERC is taking public comment.

Mr. OSE. Gentleman from Massachusetts.

Mr. TIERNEY. First, Mr. Chairman, let me make one clarification on the record. One other Member has notified me that they wish to put something on the record. Am I clear in indicating that you had expressed 10 days for Members to put things on the record, 10 calendar days, and that will be members of the committee as well as nonmembers?

Mr. OSE. All Members of Congress are welcome to submit things to the record. Priority will be given to members of the committee.

Mr. TIERNEY. So 10 calendars days?

Mr. OSE. Yes.

Mr. TIERNEY. Sorry for that interruption. Mr. Warburg, you heard me earlier ask the Department of Energy representative whether they had any studies concerning the actual need for more liquid natural gas and other studies that tell us where we might go in the future with respect to conservation and alternative fuels. Are you aware of any studies that this committee ought to have in front of it that will give us information relative to those points?

Mr. WARBURG. We can provide you with some of those studies. There are a number of studies that point to double-digit percentage opportunities for electricity and gas savings resulting from energy efficiency investments. I should point out that a lot of those energy efficiency investments could be achieved over a much shorter time horizon than the construction of a new LNG terminal, and that is a very important point in terms of the sense of haste and sense of urgency that I have heard many people express today regarding the construction of these new facilities.

Mr. TIERNEY. You anticipated my next question. I thank you for that. You should get those to us with haste.

I would like to know how much of a timeframe, whether these are realistic proposals you believe that would be put in as opposed to pie in the sky stuff.

Dr. Havens, if I could followup with you, when a tanker comes in to Boston Harbor through the channel, there are some very narrow channels there. I don't know if you are familiar with that area or not. So if we suppose for a moment that there is an incident that happens, not while the tanker is actually at dock and unloading but passing through, and there is a spill, could that spill affect those neighboring communities if it is a vapor or if it's a fire? Does it change the fact that the vessel is moving when the spill occurs as opposed to at the dock and there is no container area involved?

Mr. HAVENS. No. If it were in a narrow enough area that the shore contained the spill, the lateral threat, then it would spread down the channel, and so as a result the kinds of separation distances that I am talking about would apply to the tanker wherever it is.

Mr. TIERNEY. If a tanker were heading down the channel near shore and a spill happened and the gas went over to the shore and it was spread out along the shore, if it ignited, all of those people, communities on the shore would be at risk?

Mr. HAVENS. That's right. We would have a moving exclusion zone that would go along with the tanker.

Mr. TIERNEY. Except that we don't, and that is the problem that we have up there. We don't.

Mr. HAVENS. We have no exclusion zone that applies to the tanker. Not a Federal requirement today.

Mr. SANTA. As we talk about spills, I think it is important to bear in mind the—not only looking at what is the worst case scenario, but also the part of this what is the risk of analysis, what is the probability of it happening. One thing that has not been mentioned in this discussion is that LNG tankers are double hulled vessels. There is an outer hull of steel, that there typically is an 8-foot separation between that and the containment vessel for the

LNG; that vessel has an outer wall, insulation—we've talked about insulation before and then an inner wall, so that there may be another foot before you actually get to the LNG. So in looking at the probability that some event would lead to a puncture of the outer hull, something would need to penetrate 8 to 9 feet in before getting to the LNG and the point that there was any puncture of the inner hull, I think we just need to bear in mind.

Mr. TIERNEY. I don't discount that at all. I still have in mind what happened to the *U.S.S. Cole* and then of course the airline situation for another on that, and I suspect both of those would possibly create the kind of scenario would go through both hulls, am I right?

Mr. SANTA. I am not saying it is impossible.

Mr. TIERNEY. Those two things come to my mind and make it seem less unlikely than it might otherwise seem. Before September 11 and before the *U.S.S. Cole*, I might have said, well, when would that ever happen? Mr. Warburg, did you want to add something to that?

Mr. WARBURG. You anticipated my comment. One thing I learned from my graduate statistics course was that rare events do happen and sadly, post-September 11, we have learned that is a very real fact. And even if we are talking about low-probability events, we are talking about potentially catastrophic events and we need to take all necessary measures to prevent those from happening.

Mr. TIERNEY. What I learned from my statistics course was try to get through it and get out the other side of it. Is there anything that Mr. Ose or I have not asked any of the witnesses that you wish we had that you want to put on the record at this point in time?

Mr. HAVENS. I would like to say that all of my concerns that I related to you here today, none of them—we wouldn't be talking about them if September 11 hadn't happened. A possibility of a terrorist attack on an LNG tanker I think is something that needs to be seriously considered, because it involves questions that Congressman Markey brought up earlier today that get into technical details about the construction of the tanker that all relate to the vulnerability of that tanker to a terrorist attack.

Mr. TIERNEY. Mr. Warburg.

Mr. WARBURG. One final comment vis-a-vis Georges Bank and the offshore facility. The Conservation Law Foundation in the 1970's litigated and achieved a moratorium on oil and natural gas drilling in Georges Bank, and we very much regard that area as a cherished resource—one that we have to be very vigilant in protecting. So any consideration of a facility in or adjacent to that area would need to be scrutinized very, very carefully in terms of the possible environmental impacts.

Mr. TIERNEY. Mr. Santa.

Mr. SANTA. Earlier Mr. Warburg suggested a comprehensive regional assessment to determine need and determine the optimal sites for LNG facilities. I would add that the policy that the FERC has used for about the last 20 years with respect to interstate pipelines and other energy infrastructure is to let the market decide. It is important to note that while that map over there shows 40 something proposed LNG facilities, in fact those facilities within a

particular region are all competitors of one another. The likelihood is that a significant number of them, probably most of them, don't get built because given the significant capital investment involved, unless someone has a market for the offtake for that facility in the form of contracts or someone who is willing to accept the commercial risk associated with that, the facilities are not going to be built. I would also—

Mr. TIERNEY. I have to refer you to my friends in the refinery industry who don't seem to think that way, who have been closing down about 100 of them as late. So they obviously built them and then made the decision later. So I am not sure that always flows through. There are numerous incidents where people have built anticipating that the need was going to be there and then later on found out that it wasn't. And should all of these things with conservation and alternative fuels actually come into play after they are built and they get surprised because public policy all of a sudden wakes up, then of course we will have that situation. And last, I would think maybe there are some areas that as public policy we would think would be more acceptable than others. If, in fact, someone is going to fall by the wayside, ought we not have some say in which ones fall by the wayside and which don't?

Mr. SANTA. I would suggest to you if someone comes up with a location that is not acceptable in terms of applying the current laws that apply with respect to environment siting and others, that facility could be rejected or if the regulatory gauntlet to get it approved proves to be too protracted and costly, the sponsor may not proceed. We have seen instances where in the face of opposition, both with respect to the facilities in Maine and also down in Mobile Bay, sponsors have chosen not to proceed on facilities. So I think that in fact the process does work.

Mr. WARBURG. I would like to add that I think we could look at the construction of natural gas power plants as an example of a situation in which market forces caused facilities to be built that are now lying idle. So we are very concerned that the market not be allowed to govern the placement of facilities that, even under the best circumstances, will be very damaging to the environment and potentially damaging to public health and safety.

Mr. TIERNEY. Well, I want to thank all of you. It has been very enlightening.

Mr. HAVENS. I would like to make another comment for the record. The recent study that has been talked about today that was commissioned by FERC, the ABS Group study which has just been in—you will find my comments on the Web site—that report was commissioned by FERC in order to answer the question—I know this because I proposed to do the work for them—to answer the question, what would be the danger zones associated with a single tank spill from an LNG tanker? That report is on record by the ABS Group specifying distances very similar to the ones I have told you about. The question that I am anxious to find out is what FERC intends to do with that information now that they have it.

Mr. TIERNEY. Thank you. Thank you, Mr. Chairman.

Mr. OSE. Do any of you know of any incident involving an LNG tanker that compromised the safety of surrounding community or environment?

Mr. HAVENS. Anything about that would compromise—

Mr. OSE. One that has occurred. We have 30 years of operating history on these tankers and their receiving facilities and their liquefaction facilities. Do you know of any incident in which loss of life or something of that nature occurred related to these?

Mr. HAVENS. There have been a number of incidents, but they were not large scale like we are talking about. They were contained. And I think the LNG industry in general, including the shipping side, both sides has an exemplary record.

Mr. OSE. I am told in the Persian Gulf there was one of these tankers that was hit and in fact the outer skin was punctured, but the design worked and the inner skin held.

Mr. HAVENS. I believe that was a propane or an LPG tanker, and that goes to some questions associated with the kind of insulation that are used and so forth, and I don't think we ought to probably talk too much about that in this forum.

Mr. OSE. Mr. Warburg.

Mr. WARBURG. I would add that the political context has utterly changed and that the past decades are not the right predictor of the kinds of risks that we are talking about today, and I think we have to be very cognizant of that fact. We are not talking about routine tanker operations. We are talking about the risk of an intentional attack on a tanker as a terrorist target.

Mr. OSE. Something like Cove Point, which has reopened since September 11, gives us our best empirical data base for that particular question, and we heard testimony earlier that things have gone very well there so far.

Mr. Santa.

Mr. SANTA. I had been told of the LPG tanker incident in the Persian Gulf that a missile was fired that Mr. Havens talked about. Twenty some odd years ago in Staten Island, NY there was a tank under construction where an incident occurred during the construction where there was a fire and some workmen were asphyxiated. However, it had nothing to do with the fact that it was an LNG facility. It was not an operational incident.

Mr. OSE. I want to thank our witnesses for joining us on this fourth panel today. Clearly, I think this is perhaps the most well attended hearing that Congressman Tierney and I have put together for obvious reasons. At the end of the day, I am not sure we are closer to an answer than where we started, but I think we have narrowed the question. We appreciate your participation in this hearing and the education you have shared with us and we will stay on course to try and find a solution.

We are adjourned.

[Whereupon, at 7:10 p.m., the subcommittee was adjourned.]

[Additional information submitted for the hearing record follows:]

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July 1, 2004

**BY FACSIMILE**

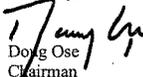
The Honorable David Garman  
Acting Under Secretary of Energy  
Department of Energy  
1000 Independence Avenue #7B-138  
Washington, DC 20585

Dear Mr. Garman:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed follow-up questions for the hearing record.

Please hand-deliver the agency's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 23, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on 225-1962.

Sincerely,



Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs

Enclosure

cc The Honorable Tom Davis  
The Honorable John Tierney

- Q1. Price of Natural Gas. If no new liquefied natural gas (LNG) import terminals are authorized:
- a. in California, how much will the price of natural gas increase by 2010? And, by how much will the cost of natural gas increase in California through 2025?
  - b. in New England, how much will the cost of natural gas increase by 2010? And, by how much will the cost of natural gas increase in New England through 2025?
  - c. in Florida, how much will the cost of natural gas increase by 2010? And, by how much will the cost of natural gas increase in Florida through 2025?
- Q2. Current Consumer Expenditures. Assuming an historic price of \$4 per million cubic feet, what is the total annual increase in direct consumer (individual, industrial and commercial) expenditures for natural gas and natural gas fueled electricity generation in each of the following regions: California, New England and Florida for 2003, 2004 to date and projected for 2005? What is the annual cost increase for an average household in California, New England, and Florida for 2003, 2004 to date, and projected for 2005?
- Q3. Future Consumer Expenditures. Assuming an historic price of \$4 per million cubic feet, what would be the total annual increase in direct consumer expenditures (individual, industrial and commercial) for natural gas and natural gas fueled electricity generation in each of the following regions if regional LNG terminals are not built: California, New England and Florida for 2010 and 2015? What is the annual cost increase to an average household in each of these years and regions?
- Q4. Economic Effects. What are the scope and conclusions of any study conducted by the Energy Information Administration (EIA) to estimate probable economic dampening effects on the U.S. economy if an insufficient number of LNG import terminals are built by 2025?
- Q5. Air Emissions. To what extent will air emissions, including but not limited to nitrogen dioxide, sulfur dioxide, and water vapor, diminish in California and nationally if LNG imports increase, as forecasted?
- Q6. Liquid Market. In a December 2003 EIA report, EIA predicted growth in short-term trade in LNG. How much LNG industry growth is needed to create a liquid and efficient LNG short-term trading market?

- Q7. Education. What educational efforts has the Department of Energy (DOE) taken in conjunction with other Federal agencies or the National Association of Regulatory Commissions to educate State and local governments and the public about LNG?
- Q8. Future Study. DOE has commissioned an LNG study from Sandia Laboratories. Does DOE intend to commission any further research on LNG? If so, please describe the specific purpose and scope of any such studies.
- Q9. DOE Authority. Does DOE have ultimate legal authority over siting of LNG on-shore storage tanks that are connected to off-shore facilities?
- Q10. DOE Veto. What criteria does the DOE follow in determining whether to veto an LNG siting or permit decision made by FERC or to reject an application to import or export LNG through an on-shore or off-shore facility?

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July 2, 2004

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 INDEPENDENT

BY FACSIMILE

Mr. David Garman  
 Acting Under Secretary of Energy  
 Department of Energy  
 1000 Independence Avenue, S.W. #7B-138  
 Washington, DC 20585

Dear Mr. Garman:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed followup questions from Ranking Member John F. Tierney for the hearing record.

Please hand-deliver the agency's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 26, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on 225-1962. Thank you for your attention to this request.

Sincerely,



Doug Ose  
 Chairman

Subcommittee on Energy Policy, Natural  
 Resources and Regulatory Affairs

Enclosure

cc: The Honorable Tom Davis  
 The Honorable John Tierney

Questions for the Record  
Hearing Held on June 22, 2004  
On LNG Import Terminal and Deepwater Port Siting: Federal and State Roles  
For David Garman, Acting Under Secretary for Energy,  
Science and Environment, Department of Energy  
From Ranking Member John F. Tierney

1. As requested at the hearing, please submit for the record any EIA studies on current and projected demand for LNG. Please include any information on projections of how much natural gas, and specifically LNG, will need to be imported to meet this demand. Also include any studies on how the demand for natural gas, and specifically LNG, might be affected by increased efficiency and conservation as well as increased use of alternative fuels. Include any timetables projecting the amount of conservation and alternative fuels use needed by certain time frames in order to meet projected energy demands.
2. Please provide copies of the Sandia Laboratory study of LNG hazards. Please also provide the Subcommittee with the following information relating to this report:
  - a. A copy of the contract or work order directing Sandia to undertake the study;
  - b. Copies of all draft of the report submitted to the Department;
  - c. Copies of any progress reports or memoranda submitted to the Department by the contractor;
  - d. Copies of any correspondence or memoranda between the Department, the contractor, or any other government agencies relating to the report.
3. During the hearing, Chairman Ose asked you about the fire safety standards applicable to LNG facilities, which incorporate by reference the NFPA LNG fire protection standards. Mr. Markey has raised concerns about the nature and adequacy of those standards, pointing to critical testimony submitted to FERC by the Boston Fire Department. Does the Department believe that these standards should be upgraded or made more protective – as recommended by the Boston Fire Department and by Mr. Markey in his testimony? If so, how? If not, what is the Department's basis for reaching such a conclusion?
4. During the Subcommittee hearing, several references were made to a DOE-funded Quest Study. Please provide the Subcommittee with the following information:
  - a. A copy of the contract or work order directing Quest to undertake the study;
  - b. A copy of the Quest study submitted to the Department;

- c. Copies of any progress reports or memoranda submitted to the Department by the contractor;
  - d. Copies of any subsequent correspondence or memoranda between the Department, the contractor, or any other government agencies relating to the Quest study.
5. What was the purpose of the Quest study? How has this study been used by the Department? In light of the concerns that have been raised about this study, does the Department believe that it should no longer be used as the basis for decisions or analysis relating to LNG hazards?
6. Was the Quest study peer-reviewed? If not, why not?
7. At what point did DOE become aware of methodological and other flaws in the Quest report? What action did it take in response?
8. In his testimony to the Subcommittee, Dr. Havens said at a distance of one mile people would be subjected to heat radiation that would cause severe burns in about 30 seconds in an LNG fire. Do you agree? If not, why? If so, for each of the LNG facilities currently licensed to operate, how many people live within the one mile radius of the facility, and therefore could theoretically be exposed to such severe burns? Do you think that this number poses an acceptable risk for each such facility?



**Department of Energy**

Washington, DC 20585

August 23, 2004

The Honorable Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural Resources  
and Regulatory Affairs  
Committee on Government Reform  
U.S. House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

On June 22, 2004, David K. Garman, Acting Under Secretary for Energy, Science, and Environment, testified regarding "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles."

Enclosed are the answers to 18 questions that you and Ranking Member John F. Tierney submitted for the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

A handwritten signature in black ink, appearing to read "Rick A. Dearborn".

Rick A. Dearborn  
Assistant Secretary  
Congressional and Intergovernmental Affairs

Enclosures



**QUESTIONS FROM CHAIRMAN DOUG OSE**

- Q1. Price of Natural Gas. If no new liquefied natural gas (LNG) import terminals are authorized:
- in California, how much will the price of natural gas increase by 2010? And, by how much will the cost of natural gas increase in California through 2025?
  - in New England, how much will the price of natural gas increase by 2010? And, by how much will the cost of natural gas increase in New England through 2025?
  - in Florida, how much will the price of natural gas increase by 2010? And, by how much will the cost of natural gas increase in Florida through 2025?
- A1. For this and the following questions regarding the impact of no new LNG terminals, the Energy Information Administration compared the natural gas projections of the *Annual Energy Outlook 2004* reference case (AEO2004) to a model simulation which precluded new LNG terminals from being built, but permitted the planned expansions of existing terminals to be completed, as currently scheduled. Delivered natural gas prices in 2025 are projected to be 6.4 percent higher in California, 9.6 percent higher in Florida, and 9.3 percent higher in New England. The table below provides the projected delivered prices in these regions for 2010 and 2025.

**U.S. Delivered Natural Gas Prices for the AEO2004  
Reference Case and the No New LNG Case  
(2002 dollars per thousand cubic feet)**

|             | 2010    |            |            | 2025    |            |            |
|-------------|---------|------------|------------|---------|------------|------------|
|             | AEO2004 | No New LNG | Difference | AEO2004 | No New LNG | Difference |
| California  | 6.05    | 6.13       | 0.08       | 6.73    | 7.16       | 0.43       |
| Florida     | 4.98    | 5.12       | 0.14       | 5.85    | 6.41       | 0.56       |
| New England | 6.60    | 6.75       | 0.15       | 7.10    | 7.76       | 0.66       |

Source: Energy Information Administration, National Energy Modeling System runs aeo2004.d101703e and nolng.d071204b.

Q2. Current Consumer Expenditures. Assuming an historic natural gas wellhead price of \$4 per million cubic feet, what is the total annual increase in direct consumer (residential, industrial and commercial) expenditures for natural gas and natural gas-fueled electricity generation in each of the following regions: California, New England and Florida for 2003, 2004 to date and 2005 projected? What is the annual cost increase for an average household in California, New England, and Florida for 2003, 2004 to date and 2005 projected?

A2. [Note: The question as received mentioned historical natural gas wellhead prices of "\$4 per million cubic feet" when what was meant may have been either "\$4 per million Btu" (British thermal units) or "\$4 per thousand cubic feet." This answer is based on \$4 per thousand cubic feet.] The table below indicates the total annual expenditures on natural gas for the residential, industrial, commercial and electric power sectors for California, New England and Florida in 2003, 2004 and 2005. The table also shows the annual natural gas costs for average households in those areas for the same years. The forecasts are based on assuming that average sector prices in the specified regions follow the trends in the national-level price forecasts provided in the Energy Information Administration's July 2004 Short-Term Energy Outlook, as well as assuming that recent volume trends in the specified regions continue through 2005.

Among the three areas covered, total expenditures on natural gas range from

| Natural Gas Expenditures for Selected Regions |                            |            |             |                |                              |                           |
|---|----------------------------|------------|-------------|----------------|------------------------------|---------------------------|
|   | Commercial                 | Industrial | Residential | Electric Power | Total Delivered to Consumers | Residential per Household |
|   | (million dollars per year) |            |             |                |                              | (dollars per year)        |
| <b>California</b>                             |                            |            |             |                |                              |                           |
| 2003  | \$1,923                    | \$5,043    | \$4,491     | \$3,597        | \$15,053                     | 456                       |
| 2004  | \$2,015                    | \$5,122    | \$4,795     | \$4,042        | \$15,973                     | 480                       |
| 2005  | \$2,115                    | \$5,196    | \$5,010     | \$4,111        | \$16,433                     | 495                       |
| <b>Florida</b>                                |                            |            |             |                |                              |                           |
| 2003  | \$589                      | \$557      | \$274       | \$3,193        | \$4,613                      | 444                       |
| 2004  | \$615                      | \$561      | \$281       | \$3,636        | \$5,094                      | 445                       |
| 2005  | \$635                      | \$550      | \$288       | \$3,678        | \$5,150                      | 444                       |
| <b>New England</b>                            |                            |            |             |                |                              |                           |
| 2003  | \$1,594                    | \$1,046    | \$2,550     | \$2,022        | \$7,212                      | 1191                      |
| 2004  | \$1,643                    | \$1,041    | \$2,646     | \$2,466        | \$7,796                      | 1220                      |
| 2005  | \$1,704                    | \$1,067    | \$2,754     | \$2,515        | \$8,039                      | 1254                      |

about \$5 billion per year in Florida to approximately \$16 billion per year in California. Expenditures are expected to increase between 6 percent and 10 percent in 2004, depending on the region, with the largest percentage increases occurring in the electric power sector.

Wellhead natural gas prices averaged about \$5.00 per thousand cubic feet in 2003 and are projected to average \$5.70 and 5.80 per thousand cubic feet in 2004 and 2005, respectively. Relative to a presumed baseline of \$4.00 per thousand cubic feet, and assuming that State-level or regional-level consumption would not be different between higher and lower price cases (an assumption which would not actually hold), then it is estimated that in 2003, total natural gas expenditures would have been: \$2.1 billion lower than actually incurred in California; \$0.7 billion lower in Florida; \$0.8 billion lower in new England. The expenditure differences in 2004 and 2005 are, for each region, about the same, with approximately \$6 billion implied in both years for California, and about \$2 billion implied for both Florida and New England. These expenditure differences represent maximum differences because offsetting volume changes would be expected when moving from higher to lower price regimes.

At the household level, wellhead prices averaging about \$1 per thousand cubic feet below the actual in 2003 would have meant about \$50 less per household in California, \$30 less in Florida and about \$100 less in New England. A \$4 per thousand cubic feet wellhead price for 2004 and 2005 yield estimates of about \$140 per year less than currently projected in California per household, \$70 less in Florida and between \$250 and \$260 less in a New England household using

natural gas. These estimates are also to be considered maximum differences since households are likely to conserve at least some fuel under higher prices.

- Q3. Future Consumer Expenditures. Assuming an historic price of \$4 per million cubic feet, what would be the total increase in direct consumer expenditures (individual, industrial, commercial) for natural gas and natural gas fueled electric generation in each of the following regions if regional LNG terminals are not built: California, New England and Florida for 2010 and 2015? What is the annual cost increase to an average household in each of these years and region?
- A3. The following table shows the incremental consumer expenditures for natural gas in California, Florida, and New England for 2010 and 2015, by consuming sector.

**Consumer Natural Gas Expenditures  
for the AEO2004 Reference Case and the No New LNG Case  
(Billion 2002 dollars)**

| Region      | Sector      | 2010    |            |            | 2015    |            |            |
|-------------|-------------|---------|------------|------------|---------|------------|------------|
|             |             | AEO2004 | No New LNG | Difference | AEO2004 | No New LNG | Difference |
| California  | Residential | 4.96    | 5.01       | 0.05       | 5.56    | 5.73       | 0.17       |
|             | Commercial  | 2.27    | 2.29       | 0.02       | 2.62    | 2.69       | 0.07       |
|             | Industrial  | 3.35    | 3.41       | 0.06       | 3.94    | 4.13       | 0.19       |
|             | Electric    | 3.30    | 3.37       | 0.07       | 3.54    | 3.67       | 0.13       |
|             | Total       | 13.88   | 14.07      | 0.19       | 15.66   | 16.21      | 0.55       |
| Florida     | Residential | 0.25    | 0.25       | 0.00       | 0.27    | 0.28       | 0.01       |
|             | Commercial  | 0.44    | 0.45       | 0.01       | 0.51    | 0.53       | 0.02       |
|             | Industrial  | 0.40    | 0.41       | 0.01       | 0.48    | 0.54       | 0.06       |
|             | Electric    | 2.51    | 2.28       | -0.23      | 2.17    | 2.32       | 0.15       |
|             | Total       | 3.60    | 3.39       | -0.21      | 3.44    | 3.68       | 0.24       |
| New England | Residential | 2.09    | 2.11       | 0.02       | 2.26    | 2.31       | 0.05       |
|             | Commercial  | 1.29    | 1.31       | 0.02       | 1.45    | 1.49       | 0.04       |
|             | Industrial  | 0.87    | 0.88       | 0.01       | 1.06    | 1.12       | 0.06       |
|             | Electric    | 1.70    | 1.72       | 0.02       | 1.89    | 1.69       | -0.20      |
|             | Total       | 5.95    | 6.03       | 0.08       | 6.66    | 6.61       | -0.05      |

Source: Energy Information Administration, National Energy Modeling System runs aeo2004.d101703e and nolng.d071204b.

The impact on consumer expenditures resulting from not allowing new LNG terminals is expected to be somewhat muted by the reduction in gas consumption, which results from higher natural gas prices. In the highly price-responsive electric power sector, net consumer expenditures in Florida and New England decline for certain years, when no new LNG terminals are permitted to be built. For example, in New England, 2015 natural gas consumption in the electric power sector is 16 percent lower in the no new LNG case relative to the AEO2004 reference case, with both coal and petroleum substituting for natural gas in this sector. In Florida, increased petroleum-fired electricity generation substitutes for the reduction in gas-fired electricity generation in 2010. The increase in the electric power sector expenditures for petroleum and coal for these two regions is shown in the table below.

**Electric Power Sector Fuel Expenditures for Florida and New England  
For the AEO2004 Reference Case and the No New LNG Case  
(Billion 2002 dollars)**

| Region      | Fuel      | 2010    |            |            | 2015    |            |            |
|-------------|-----------|---------|------------|------------|---------|------------|------------|
|             |           | AEO2004 | No New LNG | Difference | AEO2004 | No New LNG | Difference |
| Florida     | Petroleum | 0.57    | 0.88       | 0.31       | 1.32    | 2.59       | 1.27       |
|             | Coal      | 1.65    | 1.64       | -0.01      | 1.65    | 1.68       | 0.03       |
| New England | Petroleum | 0.64    | 0.67       | 0.03       | 1.09    | 1.56       | 0.47       |
|             | Coal      | 0.44    | 0.44       | 0.00       | 0.44    | 0.44       | 0.00       |

Source: Energy Information Administration, National Energy Modeling System runs aeo2004.d101703e and nolng.d071204b.

The next table examines the change in natural gas expenditures per residential gas customer. Because EIA's household projections are on a Census Division basis, the requested projections are provided for the New England, South Atlantic, and Pacific Census Divisions. For the purposes of the calculations made in the following table, a

residential gas customer is a residence that has either gas-fired space heating and/or gas-fired hot water heaters.

**Average Annual Natural Gas Expenditures  
Per Residential Gas Customer, by Census Division,  
for the AEO2004 Reference Case and the No New LNG Case  
(2002 dollars)**

| Region         | 2010    |            |            | 2015    |            |            |
|----------------|---------|------------|------------|---------|------------|------------|
|                | AEO2004 | No New LNG | Difference | AEO2004 | No New LNG | Difference |
| New England    | 950     | 961        | 11         | 955     | 981        | 25         |
| South Atlantic | 601     | 615        | 14         | 620     | 647        | 27         |
| Pacific        | 465     | 469        | 4          | 492     | 508        | 16         |

Source: Energy Information Administration, National Energy Modeling System runs aeo2004.d101703e and nolng.d071204b.

As noted in the answer to the prior question, the gas price increase reduces future natural gas consumption levels, so the percentage change in average household expenditures is not as large as the percentage change in delivered natural gas prices.

- Q4. Economic Effects. What are the scope and conclusions of any study conducted by the Energy Information Administration (EIA) to estimate probable economic dampening effects on the U.S. economy if an insufficient number of LNG import terminals are built by 2025?
- A4. EIA projects the influence of energy market conditions on future levels of Gross Domestic Product (GDP). The difference in projected GDP between the AEO2004 reference case and the no new LNG case is small (e.g., in 2025, \$10 billion, or less than one-tenth of 1 percent of GDP) for the following reasons. First, higher natural gas prices in the no new LNG case reduce gas consumption so that the change in gas consumption expenditures is less than the change in natural gas prices. Second, natural gas consumption expenditures are a small proportion of total GDP (1.3 percent in 2003) so that a small change in gas consumption expenditures has an even smaller impact on the GDP component

associated with total aggregate consumption. Third, the GDP impact of the no new LNG case is further reduced by the fact that lower LNG imports results in greater domestic gas production of just over 1 trillion cubic feet in 2025. The higher gas production in conjunction with the higher gas prices results in a larger GDP contribution from the gas production industry.

- Q5. Air Emissions. To what extent will air emissions, including but not limited to nitrogen dioxide, sulfur dioxide, and water vapor, diminish in California and nationally if LNG imports increase, as forecasted?
- A5. EIA does not project all air emissions (e.g., water vapor) across all energy consumption sectors (e.g., residential and commercial). In the electric power sector, where air emissions are projected, there is no difference in the emissions of sulfur dioxide and nitrogen oxide between the two cases. The Clean Air Act Amendments (CAAA) place a national limit on sulfur dioxide emissions. Compared to the AEO2004 Reference Case, electric utility coal consumption in the no new LNG case is higher and generators employ more low sulfur coal to keep these emissions within their regulated limits. The CAAA also specify a limit on nitrogen oxide emissions in several eastern States, so changes in coal use will not affect emissions in these areas, which account for most of the total nitrogen oxide emissions. In the no new LNG case, the increase in coal use primarily results from new coal plants, which are equipped with pollution control devices and emit very little nitrogen oxide. Consequently, there is no appreciable difference in nitrogen oxide emissions between the two cases.

Nationwide carbon dioxide emissions are slightly higher in no LNG case than in the reference case (31 million metric tons or 0.4 percent). All of the increase comes from the electric power sector.

- Q6. Liquid Market. In a December 2003, EIA report, EIA predicted growth in short-term trade in LNG. How much LNG industry growth is needed to create a liquid and efficient LNG short-term trading market?
- A6. Recent trends indicate the development of an increasing reliance on short-term transactions in LNG trading. The short-term market (all cargoes not traded under long-term agreements) has grown from virtually zero before 1990 to 1 percent of the LNG market in 1992 and 8 percent (approximately 400 billion cubic feet of natural gas equivalent or about 8.4 million tons of LNG) in 2002.<sup>1</sup>

In 2002, 32 companies traded 218 shipments of LNG either as short-term transactions or as swaps. The leading sellers in 2002 were Algeria, Oman, Qatar, Trinidad and Tobago, and Abu Dhabi. Short-term imports were dominated by the United States and Spain, followed by South Korea and France. Short-term trading is expected to grow, especially in the Atlantic Basin, and could reach 15 to 20 percent of LNG imports over the next decade.

Traditionally, long-term LNG contracts, generally covering 20 to 25 years, were written to protect the buyer's security of supply and to protect the LNG producer's investment. These LNG contracts fully committed all the sellers' LNG capacity, so that short-term sales were not permissible. In order for LNG's

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<sup>1</sup> Energy Information Administration, *The Global Liquefied Natural Gas Market: Status and Outlook*, (Washington, D.C. December 2003), p. 40.

short-term market share to expand, there must be spare capacity throughout the LNG supply chain (i.e., in liquefaction, transportation, and regasification), and the long-term contracts in-place must provide the LNG suppliers with the flexibility to supply LNG to parties other than those under long-term contract. For example, a long-term LNG contract could preclude short-term sales, if the contract fully committed the in-ground gas reserves associated with that particular supply chain to a specific buyer (i.e., life-of-reserves commitment), regardless of whether spare capacity existed at any point in time. So EIA's expectation that the short-term LNG market will grow, is based on the expectation that as the LNG market grows, the long-term contracts negotiated in the future will provide more flexibility to both LNG sellers and buyers to participate in the short-term LNG market.

Market liquidity is a relative measure of the ease and speed at which buyers and sellers can buy and sell a commodity, while market efficiency is measured by the spread between that market's "bid" and "ask" price. Generally, a market becomes more liquid as the number of participants increases and the volumes purchased increase. As a market becomes more liquid, it also becomes more efficient, so that the difference between the bid and ask price diminishes. There is no absolute threshold, which differentiates an "efficient" from an "inefficient" market.

Because market liquidity and efficiency are relative terms, as the number of participants and the volume traded in the short-term LNG market grows, it is expected that the liquidity and efficiency of that market will grow commensurately.

(FERC). The DOE Assistant Secretary for Fossil Energy is delegated the section 3 authority to regulate the import or export of the commodity, including the place of entry or exit. The Secretary has delegated to FERC the section 3 authority to approve or disapprove proposals for the siting, construction, and operation of import or export facilities, whenever the import or export involves construction of new domestic facilities, the place of entry or exit. Both delegations stipulate that DOE retains the authority to "disapprove" the siting, construction, and operation of particular facilities, and, where the construction of new domestic facilities are involved, the place of entry or exit.

The statutory criterion for review of applications filed under section 3 of the NGA is a public interest test. The language of section 3(a) establishes a statutory presumption in favor of the approval of applications, a presumption that must be overcome by evidence in the record of the proceeding that the requested authority will not be consistent with the public interest. DOE applied this public interest standard when it exercised its reserved "veto" authority in a 1989 order approving the export of LNG from Alaska to the Pacific Rim but disapproving any place of export other than a particular site considered environmentally preferable to alternative export sites. In authorizing the LNG export itself, the 1989 order relied upon guidelines which designated domestic need for the gas proposed to be exported as the only explicit criterion that had to be considered in determining the public interest. DOE considered other, relevant public interest factors, including the impact of the proposed export on the State of Alaska, and the broad energy policy that market forces generally brought about results more in the public interest than extensive regulation.

siting, safety, and security. We have funded the FY 04 ongoing work with Sandia National Laboratories from a limited infrastructure budget. The importance of LNG to the Nation's future energy mix highlights the need for funding the President's FY 2005 Budget request for LNG.

- Q9. DOE Authority. Does DOE have ultimate legal authority over siting of LNG on-shore storage tanks that are connected to off-shore facilities?
- A9. The Secretary of Energy has jurisdiction, under section 3 of the Natural Gas Act, to license onshore LNG import and export facilities, including onshore LNG storage tanks connecting to offshore facilities. The Secretary has delegated this section 3 facility licensing authority to the Federal Energy Regulatory Commission (FERC). DOE retains disapproval authority, which is delegated to the Assistant Secretary for Fossil Energy.

As a practical matter, although the authority delegated to FERC would include the licensing of onshore LNG storage tanks, it is DOE's understanding that there currently are no onshore LNG storage tanks connected to offshore facilities. DOE further understands that any pipeline connecting an offshore LNG facility with an onshore storage tank would have to be cryogenic and would be economic only if the offshore facility was located close to shore.

DOE Veto

- Q10. What criteria does DOE follow in determining whether to veto an LNG siting or permit decision made by FERC or to reject an application to import or export LNG through an on-shore or off-shore facility?
- A10. The Secretary of Energy has divided the exercise of his Natural Gas Act (NGA) section 3 authority between DOE and the Federal Energy Regulatory Commission

Education

- Q7. What educational efforts has the Department of Energy (DOE) taken in conjunction with other Federal agencies or the National Association of Regulatory Commissions to educate State and local governments and the public about LNG?
- A7. DOE has multiple actions underway or completed to educate State and local governments and the public about LNG. These include:
- A DOE grant to the National Association of Regulatory Utility Commissioners (NARUC) for information packages on LNG issues for state regulatory commissioners;
  - The drafting of a comprehensive LNG Primer: Understanding the Basic Facts, which will be available to State officials and the public in the near future;
  - Office of Fossil Energy web pages which address LNG basics. (<http://www.fossil.energy.gov/features/lng/whyimportant.html>), <http://www.fossil.energy.gov/features/lng/howisitshipped.html>);
  - Energy Information Administration (EIA) documents specifically on LNG, including: "The Global Liquefied Natural Gas Market: Status & Outlook" and the LNG section of their "Annual Energy Outlook 2004" which are available on EIA's web page; and,
  - A March 13, 2002, Secretary of Energy Abraham request to the National Petroleum Council (NPC) to undertake a new study on natural gas markets in the 21st century that would update the NPC's 1992 and 1999 reports on the subject. The Executive Summary and the Integrated Report Summary have been released and the full report is expected this summer. These reports include specific recommendations regarding LNG permitting. A draft of the full report is currently on the NPC web site (<http://www.npc.org>); the printed final report is expected late summer.

Future Study

- Q8. DOE has commissioned an LNG study from Sandia Laboratories. Does DOE intend to commission any further research on LNG? If so, please describe the specific purpose and scope of such studies.
- A8. DOE has requested \$5 million in FY 05 for LNG policy and outreach work. Depending on Congressional appropriations, DOE will conduct an LNG road mapping exercise to determine the greatest technical and policy challenges and a process to find answers. The focus will be new analytic work that will improve

Regarding the import of LNG, the Energy Policy Act of 1992 (EPAct) amended section 3 of the NGA to ensure that imports of LNG were deemed to be in the public interest and to require DOE to grant, ministerially, requests to import the commodity “without modification or delay.” This statutory mandate does not apply to exports of LNG. Furthermore, while the EPAct amendment applies to DOE’s commodity permitting authority, DOE does not believe it applies to FERC’s delegated facility siting authority.

**QUESTIONS FROM RANKING MEMBER JOHN F. TIERNEY**

Q1. As requested at the hearing, please submit for the record any EIA studies on current and projected demand for LNG. Please include any information on projections of how much natural gas, and specifically LNG, will need to be imported to meet this demand. Also include any studies on how the demand for natural gas, and specifically LNG, might be affected by increased efficiency and conservation as well as increased use of alternative fuels. Include any timetables projecting the amount of conservation and alternative fuels use needed by certain time frames in order to meet projected energy demands.

A1. EIA has performed numerous studies that project demand for natural gas under varying assumptions including the *Annual Energy Outlook 2004 (AEO2004)*, where current laws and regulations are unchanged; restricted supply cases where LNG, unconventional gas, and Alaskan gas are limited; cases that restrict the emissions of sulfur dioxide, nitrogen oxides, mercury, and carbon dioxide; and several proposed energy initiatives. Specific studies include:

- 1.) *Analysis of Senate Amendment 2028, the Climate Stewardship Act of 2003,*
- 2.) *Analysis of S.139, the Climate Stewardship Act of 2003,*
- 3.) *Analysis of S. 1844, the Clear Skies Act of 2003; S. 843, the Clean Air Planning Act of 2003; and S. 366, the Clean Power Act of 2003,*
- 4.) *Analysis of Restricted Natural Gas Supply Cases, and*
- 5.) *Summary Impacts of Modeled Provisions of the 2003 Conference Energy Bill.*

These studies, along with *AEO2004* side cases that include high and low economic growth cases, high and low oil and gas technology cases, and high and low world oil price cases, project the demand for natural gas and how much of that demand will be satisfied by LNG imports. The special studies are available on the EIA website, [www.eia.doe.gov/oiaf/analysis.htm](http://www.eia.doe.gov/oiaf/analysis.htm) and the *AEO2004* is available on [www.eia.doe.gov/oiaf/aeo/index.html](http://www.eia.doe.gov/oiaf/aeo/index.html). The cases in these reports project levels of natural

gas demand that range from 26.9 (in the restricted unconventional gas, Alaskan gas, and LNG case) to 38.6 (in the S. 139 restricted greenhouse gas emissions case) trillion cubic feet in 2025, with corresponding percentages of gas consumption satisfied by LNG imports in 2025 ranging from 7.7 to 11.9 percent. The highest and lowest percentages of LNG imports do not correspond with the highest and lowest gas demand cases. The lowest percentage observed, 6.9 percent, occurs in the LNG restricted supply case in which LNG imports are constrained. Conversely, the highest percentage observed, 18.5 percent, occurs in the *AEO2004* low oil and gas technology case, in which, oil and gas producing technologies improve at a slower rate, resulting in relatively low levels of production.

The *AEO2004* reference case and integrated high and low demand side technology cases provide an indication of the impact that increased efficiency has on natural gas demand and LNG imports. These three cases (published in the *Annual Energy Outlook 2004*) show a range of possible natural gas consumption levels in response to different assumptions about the availability of equipment with improved technologies. The integrated 2004 demand side technology case assumes that the efficiency of all end-use and generating technologies remains at 2004 levels. The reference case assumes that available technologies reflect both Federal standards and anticipated changes in the marketplace. The specific selection of equipment is determined within the forecasting model based on fuel prices and characteristics of the available equipment (e.g., installed cost, maintenance cost, efficiency, and equipment life); the latter are exogenously specified to the model. The demand side high technology case assumes earlier availability, lower costs, and/or higher efficiencies for more advanced equipment than the reference case. In addition to the equipment changes, residential and commercial heating

shell efficiencies for new and existing buildings are assumed to have a 25-percent improvement relative to the reference case. In the demand side low technology, reference, and demand side high technology cases, natural gas demands are 31.8, 30.4, and 29.3 trillion cubic feet, respectively. Corresponding LNG imports in 2020 are 4.6 trillion cubic feet (14.5 percent of total gas consumption), 4.1 trillion cubic feet (13.6 percent of total gas consumption), and 3.7 trillion cubic feet (12.7 percent of total gas consumption).

Sandia Report on LNG

- Q2. Please provide copies of the Sandia Laboratory Study of LNG Hazards. Please also provide the Subcommittee with the following information relating to this report:
- a. A copy of the contract or work order directing Sandia to undertake the study;
  - b. Copies of all draft of the report submitted to the Department;
  - c. Copies of any progress reports or memoranda submitted to the Department by the Contractor;
  - d. Copies of any correspondence or memoranda between the Department, the contractor, or any other government agencies relating to the report.
- A2. The Sandia report on LNG is still in draft and undergoing agency review. The copy requested in (a) of the contract or work order directing Sandia to undertake the study is attached.
- The documents requested in (b) – (d) are predecisional and deliberative or contain predecisional and deliberative information. After giving your request careful consideration, the Department of Energy has decided to follow relevant Department of Justice policy and withhold these documents. Department of Justice Freedom of Information Act (FOIA) policy distinguishes between requests made by a committee or subcommittee chairman, and requests from an individual member of Congress, the latter of which do not trigger the special access rule of 5

U.S.C. 552 (d) even if made by a member acting in the member's official capacity. The Department will provide the Subcommittee with copies when the report is completed.

Fire Safety Standards

- Q3. During the hearing, Chairman Ose asked you about the fire safety standards applicable to LNG facilities, which incorporates by reference the NFPA LNG fire protection standards. Mr. Markey has raised concerns about the nature and adequacy of those standards, pointing to critical testimony submitted to FERC by the Boston Fire Department. Does the Department believe that these standards should be upgraded or made more protective – as recommended by the Boston Fire Department and by Mr. Markey in his testimony? If so, how? If not, what is the Department's basis for reaching such a conclusion?
- A3. Chairman Ose correctly addressed this question to USCG Rear Admiral Gilmore, Assistant Commandant for Marine Safety, during the hearing, not to the Department of Energy. The Department defers to USCG on this matter.

Quest Study

- Q4. During the Subcommittee hearing, several references were made to a DOE-funded Quest Study. Please provide the Subcommittee with the following information:
- a. A copy of the contract or work order directing Quest to undertake the study;
  - b. A copy of the Quest study submitted to the Department;
  - c. Copies of any progress reports or memoranda submitted to the Department by the Contractor;
  - d. Copies of any subsequent correspondence or memoranda between the Department, the contractor, or any other government agencies relating to the Quest study.
- A4. The LNG safety analysis was conducted in the wake of the events of September 11, 2001, and performed by Quest Consultants, Inc. (Quest), a contractor to the Department of Transportation. The work was commissioned by the Department of Energy through the Department of Transportation.

Use of the Quest Analysis

Q5. What was the purpose of the Quest study? How has this study been used by the Department? In light of the concerns that have been raised about the study, does the Department believe it should no longer be used as the basis for decisions or analysis relating to LNG hazards?

A5. The LNG safety analysis was conducted in the wake of the events of September 11, 2001, and performed by Quest Consultants, Inc. (Quest), a contractor to the Department of Transportation. The work was commissioned by the Department of Energy through the Department of Transportation.

Our Nation took a number of emergency measures to ensure the safety of our citizens following September 11th. The closing of the Boston Harbor was one of those measures. The barring of the delivery of natural gas to Boston in the form of LNG at the beginning of the heating season was of great concern to the State of Massachusetts, as well as a number of Federal agencies. The Department of Energy was one of the Federal agencies which responded to a call from Massachusetts for assistance.

Press reports implied that the Federal government relied on invalid or incomplete scientific information in assessing the public safety consequences of a terrorist attack or accident at or near the Distrigas LNG facility in Everett, Massachusetts.

DOE has stood behind the use of the Quest analysis in the manner for which it was intended. However, the criticisms of the Federal Government's use of the Quest results in other applications caused DOE to initiate the more rigorous Sandia National Laboratories study on certain LNG safety issues.

- a. A copy of the signed Procurement Request and Statement of Work for the Quest work is attached.
- b. There were two Quest letters, comprising the work Quest was contracted to perform, submitted to the Department on October 2, 2001, and October 3, 2001. Both letters are attached.
- c. No progress reports or memoranda were submitted to the Department by the Contractor.
- d. After questions were raised about the Quest work, two additional letters from Quest were received on November 17, 2003, and November 21, 2003. Enclosed with the November 17 letter was a document entitled "Modeling LNG Spills in Boston Harbor." All are attached.

Additional subsequent correspondence between the Department and other government agencies relating to the Quest study contain predecisional information. After giving your request careful consideration, the Department has decided to follow relevant Department of Justice policy and withhold these documents. Department of Justice Freedom of Information Act (FOIA) policy distinguishes between requests made by a committee or subcommittee chairman, and requests from an individual member of Congress, the latter of which do not trigger the special access rule of 5 U.S.C. 552 (d) even if made by a member acting in the member's official capacity.

Quest Peer Review

- Q6. Was the Quest study peer-reviewed? If not, why not?
- A6. The Quest analysis was not peer-reviewed, due to the importance of making a timely decision on shipments into Boston Harbor after September 11, 2001, to secure New England natural gas supply for the coming winter. However, the flammable dispersion calculation model, QuestFOCUS package, which was the predecessor to the CANARY model used in the Quest analysis for DOE, had been subject to peer review prior to its application. QuestFOCUS was reviewed by a U.S. Environmental Protection Agency-sponsored study and an American Petroleum Institute study.

Quest Report Methodology

- Q7. At what point did DOE become aware of methodological and other flaws in the Quest report? What action did it take in response?
- A7. Press reports implied that the Federal government relied on invalid or incomplete scientific information in assessing the public safety consequences of a terrorist attack or accident at or near the Distrigas LNG facility.

Although DOE has stood behind the use of the Quest analysis in the manner for which it was intended, criticisms of the Federal Government's use of the Quest results in other applications caused DOE to initiate the more rigorous Sandia National Laboratories study on LNG safety over water.

Dr. Havens Testimony

- Q8. In his testimony to the Subcommittee, Dr. Havens said at a distance of one mile people would be subjected to heat radiation that would cause severe burns in

about 30 seconds in an LNG fire. Do you agree? If not, why? If so, for each of the LNG facilities currently licensed to operate, how many people live within the one mile radius of the facility, and therefore could theoretically be exposed to such severe burns? Do you think that this number poses an acceptable risk for each facility?

- A8. We believe it is appropriate to wait until the DOE-sponsored Sandia study concerning LNG safety is ready for release before commenting on these specific risk and consequence determinations.

DOE defers to FERC with respect to data concerning the number of people living near existing LNG facilities.

All LNG import facilities must be licensed by FERC or USCG. Although all fuel transportation and storage have inherent risks, these risks are studied and mitigated through, among other things, the licensing processes and the process of preparing an Environmental Impact Statement or Environmental Assessment. Acceptable risk levels should be developed in conjunction with the general public and public safety officials, balancing public health and safety with available resources. Acceptable potential risks must be balanced with both the cost of mitigating the risk and the risks and hazards of alternatives.

*FE's Attachment for Q2 Tierney from June 22 2004*

**Sandia National Laboratories  
U. S. Department of Energy  
Field Work Proposal**

Page 1 of 2

|   |  |   |  |  |
|---|--|---|--|--|
| 1. Work Package Number<br><b>FEW47515</b>   |  | 1A. Contractor Project Number<br><b>47515</b> | 2. Revision No.<br><b>01</b>   | 3. Date Prepared<br><b>02-12-2004</b>            |
| 4. Work Package Title<br><b>CAES Monitoring to Support RMRCT</b>                              |  |   |  | 5. Budget and Reporting Code<br><b>AB0545000</b> |
| 6. Work Proposal Term<br>Begin (mm dd yyyy) End: (mm dd yyyy)<br><b>02/15/2002 09/30/2004</b> |  |   | 7. Is this work package included in the institutional plan?<br><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 8. Headquarters Program Manager<br><b>Christopher Freitas</b>                                 |  | (FTS Number)<br><b>202-586-1657</b>           | 11. Headquarters Organization<br><b>Fossil Energy</b>  | 14. DOE Organization Code<br><b>FE</b>           |
| 9. Operations Office, WorkPackage Manager<br><b>Gary Sames</b>                                |  | <b>412-386-5067</b>                           | 12. Operations Office<br><b>ALBUQUERQUE OPERATIONS OFFICE</b>  | 15. DOE Organization Code<br><b>AL</b>           |
| 10. Contract Project Manager<br><b>BAUER,STEPHEN J.</b>                                       |  | <b>505-844-9116</b>                           | 13. Contractor Name<br><b>SANDIA NATIONAL LABORATORIES</b>   | 16. Code (See Instructions)<br><b>8</b>          |

17. Work Package Description for Budget Year FY (Approach, anticipated benefit in 270 words or less.)

This project will provide demonstration-scale data for establishing the potential for full-scale deployment and commercialization of Refrigerated-Mined Rock Cavern Technology (RMRCT), a technology that has been developed conceptually [Advanced Underground Gas Storage Concepts: Refrigerated-Mined Cavern Storage; Department of Energy (DOE) Contract No. DE-AC26-97FT34349]. Measurements and analyses of large-scale rockmass response in a compressed air energy storage facility will be made to refine the RMRCT concept. The in situ conditions and rockmass properties, pressurization range, and thus deformations for both the CAES and RMRCT facilities will be similar. Measurements of pressure-induced deformations in the compressed air energy storage facility will be conducted. The data gathered will be directly applicable to understanding the physical nature of the deformations which could occur at an RMRCT facility and thus reduce the risk, both technical and financial, of further development of the RMRCT concept. Full funding did not arrive until the end of FY2002 so projects did not get started until later than expected. Funding will be costed out over FY2003 & FY2004.

Additional tasks to be performed relate to LNG study of large-scale on-water release safety implications and include literature review and evaluation and the preparation of interim reports.

Tasks:

1. Conduct a broad literature search and review of appropriate LNG spill studies, testing, and analyses.
2. Develop a Probability-based Risk Assessment approach for potential LNG spills over water.
3. Identify Spill probability for various threat scenarios.
4. Assess impacts of a potential LNG spill on ship damage and other hazards for various threat scenarios.
5. Provide a written report outlining the elements of Tasks 1-4.

Equipment Justification for Budget Year BY need (Scope, object, programs, alternatives, consequences of request denied) Total est.

|                         |  |                          |  |
|-------------------------|--|--------------------------|--|
| 18. Signature Approvals | Contract Project Manager                     | Contract Program Manager | 19. DOE Operations Office Review Official Date |
|                         | Signature on File<br><b>BAUER,STEPHEN J.</b> | <b>TATRO,MARJORIE L.</b> |  |

20. Detail Attachments (see instructions) (No more than 20 pages.)

- |   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> a. Facility requirements | <input type="checkbox"/> d. Background         | <input type="checkbox"/> g. Future accomplishments          | <input checked="" type="checkbox"/> j. Explanation of milestones |
| <input type="checkbox"/> b. Publications          | <input type="checkbox"/> e. Approach           | <input type="checkbox"/> h. Relationships to other projects | <input type="checkbox"/> k. Other (Specify)                      |
| <input type="checkbox"/> c. Purpose               | <input type="checkbox"/> f. Technical progress | <input type="checkbox"/> i. Environmental assessment        |  |

**Field Work Proposal Requirements for  
Obligations and Cost**

Page 2 of 2

| Contractor Name   | Work Package Number | Contractor Project Number | Revision Number | Date Prepared           |
|---|---------------------|---------------------------|-----------------|-------------------------|
| <b>Sandia National Labs</b>   | <b>FEW47515</b>     | <b>47515</b>              | <b>01</b>       | <b>02-12-2004</b>       |
| 21. Staffing (in staff years)   | FY 2003             | FY 2004                   | FY 2005         | FY 2006                 |
| a. Scientific   |                     | 0.91                      | 0.00            | 0.00                    |
| b. Other Direct   |                     | 0.00                      | 0.00            | 0.00                    |
| c. Total Direct   |                     | 0.91                      | 0.00            | 0.00                    |
| 22. Operating Expenses (000)  |                     |                           |                 |                         |
| a. Total Obligations (BA)   | 230.2               | 240.0                     | 0.0             | 0.0                     |
| b. Total Costs (BO)   |                     | 470.2                     | 0.0             | 0.0                     |
| 23. Equipment (000)   |                     |                           |                 |                         |
| a. Equipment Obligations  | 0.0                 | 0.0                       | 0.0             | 0.0                     |
| b. Equipment Costs  |                     | 0.0                       | 0.0             | 0.0                     |
| 24. Milestones Schedules (Tasks)  |                     |                           |                 | Proposed Schedule Dates |
| Please see attached.  |                     |                           | 03-01-2002 to   |                         |
| Please see attached for additional tasks/milestones to be added to this FWP related to the LNG Study of Large-Scale On-Water Release Safety Implications. |                     |                           | 12-01-2003 to   |                         |
| Please see attached SOW which includes Cost and Sceduled Milestones table.  |                     |                           | 02-01-2004 to   |                         |

25. Reporting Requirements (Description)

Monthly Project Highlights Report, Draft and Final Project Management Plan, Phase II Topical Report, Draft Final Report, Final Report

**Sandia National Laboratories  
DOE LNG Study  
Phase II Statement of Work  
Project 47515**

**Statement of Work**

Sandia will provide DOE with the manpower, facilities, and equipment required to identify the appropriate models and assumptions required to adequately identify the appropriate classes of threats and consequences associated with a potential LNG tanker spill over water.

To accomplish this, Sandia will conduct and complete the following tasks.

**Tasks:**

1. Conduct a broad literature search and review of appropriate LNG spill studies, testing, and analyses.
  - a. Include available national and international LNG spill studies.
  - b. Assess and evaluate the associated experimental data, thermal hazard analyses, and overall results and conclusions.
2. Develop a Probability-based Risk Assessment approach for potential LNG spills over water.
  - a. Develop the general probability risk assessment approach based on an event tree approach that includes evaluation of container breach scenarios, spill and dispersion dynamics, and spill impacts and consequences.
  - b. Include the US Coast Guard for support in collecting and evaluating appropriate ship, shipping, port and port restriction data
  - c. Include the US Coast Guard in evaluating and reviewing the developed risk assessment approach and in identifying operational and management systems available for LNG container breach, damage, and consequence mitigation.
3. Identify Spill probability for various threat scenarios.
  - a. Work with various government agencies to identify appropriate and realistic spill threats and potential mitigation approaches.
  - b. Assess probability of spills from different threats.
  - c. Include the US Coast Guard in our evaluation of potential mitigation techniques and strategies and safety systems available to reduce LNG spill probability and consequences.
4. Assess impacts of a potential LNG spill on ship damage and other hazards for various threat scenarios.
  - a. Assess potential cryogenic damage to the ship and short and long term impacts and identify appropriate models and assumptions.
  - b. Assess the potential for thermal damage to the ship and short and long term impacts and identify appropriate models and assumptions.
  - c. Include metal fracture, fracture extent, subsequent damage from potential thermal and other loads, etc.

- d. Include other federal agencies, such as the US Coast Guard, to provide a general assessment and evaluation of the potential impacts of LNG spills over water and associated thermal and other hazards to people and property including port facilities, port operations, LNG operations, and short term and long term LNG availability.
  - e. Identify appropriate models and assumptions to use in the analyses and identify appropriate spill mitigation approaches and techniques to help minimize the consequences of an LNG spill.
5. Provide a written report outlining the elements of Tasks 1-4 including a summary of the available data reviewed and general conclusions, risk evaluation of LNG spill probability and mitigation strategies, summary of spill hazard modeling analyses, and finally recommendations on appropriate models and assumptions required to adequately identify the consequences associated with a potential LNG tanker spill over water. Interim draft reports showing the current status of activities and analyses will be provided to DOE on both March 22, 2004 and April 19, 2004. The final report shall include the following:
- A. Situation Overview (
    - Risk vs. Consequences
    - Defining Probability
    - Key Issues
  - B. The Framework/Universal Model for site specific studies
  - C. Post 9/11 Comparisons
    - a. Analyses of Literature Studies

It is expected that the detailed final report will be classified, so an abridged unclassified report will also prepared.

As part of this statement of work, travel will be required to meet with the US Coast Guard, FERC and its contractors, other federal agencies, and the DOE to coordinate efforts and provide interim progress reports and project reviews. Approximately four trips are anticipated. Project reviews should be provided on or about April 2, 2004, April 30, 2004, and May 14, 2004.

#### **Cost and Schedule**

| TASK         | START   | COMPLETE | COST          |
|--------------|---------|----------|---------------|
| 1            | 2/20/04 | 4/1/04   | \$50K         |
| 2            | 2/20/04 | 4/23/04  | \$40K         |
| 3            | 2/20/04 | 4/23/04  | \$60K         |
| 4            | 2/20/04 | 4/23/04  | \$60K         |
| 5            | 4/1/04  | 4/30/04  | \$15K         |
| Travel       |         |          | \$15K         |
| <b>Total</b> |         |          | <b>\$240K</b> |

#### **Report and Study Classification**

It is anticipated that the threat scenario analyses may include classified discussions with federal agencies and their contractors and evaluation of data that is classified. As such, it is important to realize that provisions for handling classified and proprietary information may be necessary and should be considered from the outset.

Depending on the expected classification level of the final report, care must be taken in preparing the report to insure that classified information and analyses are protected. This may require classified and unclassified volumes of the report, development of an abridged unclassified report summary, etc.

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 INDEPENDENT

July 1, 2004

BY FACSIMILE

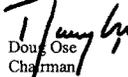
The Honorable Patrick H. Wood, III  
 Chairman  
 Federal Energy Regulatory Commission  
 888 First Street, N.E.  
 Washington, DC 20426

Dear Chairman Wood:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed follow-up questions for the hearing record.

Please hand-deliver the Commission's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 23, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on 225-1962.

Sincerely,



Doug Ose  
 Chairman

Subcommittee on Energy Policy, Natural  
 Resources and Regulatory Affairs

Enclosure

cc The Honorable Tom Davis  
 The Honorable John Tierney

- Q1. Collaborative Process. What plans or recommendations can the Federal Energy Regulatory Commission (FERC) make to better foster a collaborative process by which LNG terminal developers and FERC identify viable prospective sites and educate stakeholders at the earliest stage of site consideration about all aspects and effects of LNG import terminal presence and operation?
- Q2. Community Guidance. Will FERC provide a handbook or other guidance to local communities including information about LNG and LNG facilities and recommendations for obtaining further information about individual proposals to assist them in making preliminary determinations?
- Q3. Template for Terminal Development. Can FERC provide a template or other additional guidance, such as specific data points for exclusion zones, to prospective developers regarding model LNG facility designs and to locate requirements, such as definitive set-back or buffer zones, to provide clearer guidance in choosing potential facility sites?
- Q4. Comparison with International LNG Importation. Nearly 100 percent of Japan's natural gas supply comes from imported LNG. Japan uses about 23 terminals for that purpose. Several LNG import terminals operate and several more were recently approved in Western Europe.
- a. Has FERC compared the U.S. regulatory processes with those used internationally in siting LNG facilities?
  - b. If so, what lessons has FERC learned from the experience with LNG development internationally?

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, DC 20426

July 20, 2004

OFFICE OF THE CHAIRMAN

The Honorable Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs  
Committee on Government Reform  
U.S. House of Representatives  
Washington, D.C. 20515

Re: Follow-up Questions on the June 22, 2004 LNG Hearing

Dear Mr. Chairman:

This letter is in response to your July 1, 2004 letter in which you asked four questions as a follow-up to the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." The following are the responses:

Collaborative Process – We will continue to promote the use of our formal National Environmental Policy Act (NEPA) Pre-Filing Process which is designed to involve and educate all stakeholders at the earliest stages. In addition, we make staff available for informal pre-filing consultation on the potential viability of sites (in some cases visiting candidate sites in conjunction with other Commission travel) and to attend meetings with agencies and the public, including making educational presentations.

Community Guidance – Through our website ([www.ferc.gov](http://www.ferc.gov)), the public can access all filings at the Commission (eLibrary) on a particular proposal. In addition, our website provides substantial information on the general topics of LNG properties, ships, plants, and safety (under industries/gas/lng), as well as stakeholder rights and responsibilities. We will continue to expand this resource as new information becomes available.

Template for Terminal Development – Our regulations, in 18 CFR 380.12, assist developers identify potentially acceptable project sites by listing the information required in support of an application. This information must include (in resource report 13) a description of how the proposed terminal site would comply with the U.S. Department of Transportation's (DOT) regulations in 49 CFR Part 193. In accordance with Sections 193.2057 and 193.2059, thermal radiation and vapor dispersion exclusion zones must be

calculated based on specific spill scenarios and heat flux levels. These zones minimize the possibility that damaging effects of an LNG pool fire or a flammable vapor mixture extend beyond an LNG plant property boundary.

In addition to the siting guidance provided by the FERC and DOT regulations, our recent environmental impact statements for LNG import terminals provide practical examples of the application of exclusion zone calculations to specific facilities and sites. These studies are widely used by prospective applicants in identifying potential LNG terminal sites. Because exclusion zone calculations are based on site-specific topography and meteorology, as well as specific design features of the LNG storage and process equipment, they do not lend themselves to the development of a generic template.

Comparison with International LNG Importation – Through our intergovernmental cooperation with Canada and Mexico, we are familiar with the regulatory processes for LNG import terminals in these nations. In addition, we have been briefed on LNG development including regulatory issues in Japan, and have examined European tank design and international codes/standards relative to introduction of full containment tank designs in the U.S. market. However, further detailed comparisons with regulatory siting processes in Western Europe and Japan may provide “lessons learned” from international experience and we will continue this effort.

Through our February 2004 Interagency Agreement with the U.S. Coast Guard and the DOT, we have ensured a consistent review process among these agencies for import terminal sites proposed throughout the U.S. Nevertheless, we continue to observe that the regulatory review at the level of the state and federal agency field offices exhibit significant regional differences in both the processing of applications and the general acceptance of LNG facilities.

I hope this information is helpful. Please let me know if I can be of further assistance in this or any other Commission matter.

Best regards,



Pat Wood, III  
Chairman

cc: The Honorable Tom Davis  
The Honorable John Tierney

TOM DAVIS, VIRGINIA  
CHAIRMAN  
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July 2, 2004

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**BY FACSIMILE**

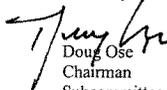
The Honorable Patrick H. Wood, III  
Chairman  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

Dear Chairman Wood:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed followup questions from Ranking Member John F. Tierney for the hearing record.

Please hand-deliver the agency's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 26, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on 225-1962. Thank you for your attention to this request.

Sincerely,



Doug Ose  
Chairman

Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs

Enclosure

cc: The Honorable Tom Davis  
The Honorable John Tierney

Questions for the Record  
Hearing Held on June 22, 2004  
On LNG Import Terminal and Deepwater Port Siting: Federal and State Roles  
For Patrick Wood, Chairman,  
Federal Energy Regulatory Commission  
From Ranking Member John F. Tierney

1. During the Subcommittee hearing, there was some discussion about the issue of the flammability of polystyrene foam insulation. In the final Environmental Impact Statement for the Freeport LNG facility, FERC states, on page 4-144, that “[t]he insulation on LNG carriers is a complex assembly of many layers, with each layer tested for fire resistance and its ability to stop the spread of fire before it can be used on carriers in U.S. waters.” Who tests this insulation? Who determines that it is adequately fire resistant?
2. The Freeport EIS also states that, “[f]oam polystyrene insulation is not used on LNG carriers precisely because it is susceptible to decomposition, melting and deformation in a fire.” Mr. Markey’s testimony to the Subcommittee indicated that this statement by FERC may not be accurate. Does FERC intend to correct the Freeport EIS, or require additional studies or analyses to be performed to look at whether a fire on an LNG carrier vessel could ignite the insulation, resulting in a loss of containment of the ship’s cargo? If not, why not?
3. FERC solicited and received public comment on the ABS report, much of which was critical (including a submission from the report’s author indicating that more work needed to be done in light of other studies not considered in the original report). Nevertheless, FERC then cited the ABS report in the Freeport EIS. Why? Does FERC intend to go back and redo the EIS in light of the criticisms submitted by various commenters on the ABS report?
4. If the ABS report was a final report, what was the point of soliciting comments on it? Why, for example, wasn’t the report issued as a draft report, subject to comment and revision to respond to comments?
5. Was the ABS report peer-reviewed? If not, why not?
6. During the hearing, Chairman Ose asked the Coast Guard about the fire safety standards applicable to LNG facilities, which incorporate by reference the NFPA LNG fire protection standards. Mr. Markey has raised concerns about the nature and adequacy of those standards, pointing to critical testimony submitted to FERC by the Boston Fire Department. Does FERC believe that these standards should be upgraded or made more protective – as recommended by the Boston Fire Department and by Mr. Markey in his testimony?
7. If so, is FERC willing to use its authorities to require stronger standards to be applied to any new LNG facilities seeking a permit?

8. If not, what is FERC's basis for reaching a conclusion that the NFPA standards are adequately protective, in light of the concerns raised by Mr. Markey and by the Boston Fire Department's comments on the ABS study?
9. Please provide the Subcommittee with the following information about the ABS study:
  - a. A copy of FERC's RFP for the study;
  - b. A copy of all proposals submitted to FERC in response to the RFP;
  - c. A copy of the contract, any contract modifications and all work orders or other directives to ABS relating to the study;
  - d. A copy of the ABS study submitted to FERC;
  - e. Copies of any progress reports or memoranda submitted to FERC by the contractor;
  - f. Copies of any subsequent correspondence or memoranda between FERC, the contractor, or any other government agencies relating to the ABS study.
10. Please explain how FERC intends to make use of the ABS study.
11. On page 4-147 of the Freeport EIS, FERC reports that a Lloyd's Register study done for the Weaver's Cove LNG project found a 1-meter diameter hole at the waterline to be the worst case scenario of hazard consequence assessments. The EIS goes on to say, however, that this was consistent with the attack on the double-hulled oil tanker Limberg, "which caused greater than a 5-meter hole on the outer hull but only minor damage to the inner hole." Why is it acceptable to assume that the worse case is a 1 meter hole, when there was a 5 meter hole in the outside of the Limberg? Couldn't the release of the LNG and a subsequent fire result in a larger hole than the 1 to 2.5 meter holes discussed in the ABS report? If so, how much larger would the area affected by a poor fire be?
12. In his testimony to the Subcommittee, Dr. Havens said that at a distance of one mile people would be subjected to heat radiation that would cause severe burns in about 30 seconds in an LNG fire. Do you agree? If not, why? If so, for each of the LNG facilities currently licensed to operate, how many people live within the one mile radius of the facility, and therefore could theoretically be exposed to such severe burns? Do you think that this number poses an acceptable risk for each such facility?

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, DC 20426

OFFICE OF THE CHAIRMAN

July 30, 2004

The Honorable Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs  
Committee on Governmental Reform  
U.S. House of Representatives  
Washington, D.C. 20515

Re: Follow-up Questions on the June 22, 2004 Hearing of the Subcommittee on  
Energy Policy, Natural Resources and Regulatory Affairs

Dear Mr. Chairman:

Thank you for your July 2, 2004 letter forwarding questions from Ranking  
Member John F. Tierney for the record of your Subcommittee's June 22, 2004 hearing  
entitled: "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles."

Responses to those questions are enclosed. I hope this information is helpful.  
Please let me know if I can be of further assistance in this or any other Federal Energy  
Regulatory Commission matter.

Best regards,



Pat Wood, III  
Chairman

Enclosures

RESPONSES TO QUESTIONS FROM REP. JOHN F. TIERNEY

1. **During the Subcommittee hearing, there was some discussion about the issue of the flammability of polystyrene foam insulation. In the final Environmental Impact Statement for the Freeport LNG facility, FERC states, on page 4-144, that “[t]he insulation on LNG carriers is a complex assembly of many layers, with each layer tested for fire resistance and its ability to stop the spread of fire before it can be used on carriers in U.S. waters.” Who tests this insulation? Who determines that it is adequately fire resistant?**

*In the interest of completeness, we are coordinating our reply with the U.S. Coast Guard and will supplement this letter as soon as possible.*

2. **The Freeport EIS also states that, “[f]oam polystyrene insulation is not used on LNG carriers precisely because it is susceptible to decomposition, melting and deformation in a fire.” Mr. Markey’s testimony to the Subcommittee indicated that this statement by FERC may not be accurate. Does FERC intend to correct the Freeport EIS, or require additional studies or analyses to be performed to look at whether a fire on an LNG carrier vessel could ignite the insulation, resulting in a loss of containment of the ship’s cargo? If not, why not?**

*Similarly, we are coordinating our reply with the U.S. Coast Guard and will supplement this letter as soon as possible.*

3. **FERC solicited and received public comment on the ABS report, much of which was critical (including a submission from the report’s author indicating that more work needed to be done in light of other studies not considered in the original report). Nevertheless, FERC then cited the ABS report in the Freeport EIS. Why? Does FERC intend to go back and redo the EIS in light of the criticisms submitted by various commenters on the ABS report?**

*The report “Consequence Assessment Methods for Incidents Involving Releases From Liquefied Natural Gas Carriers” (Report) outlined the methods which FERC staff will use in National Environmental Policy Act review of proposed LNG import facilities. The final environmental impact statement for the Freeport LNG Project included site-specific calculations of the thermal radiation and flammable vapor dispersion distances for hypothetical 1- and 2 ½-meter-diameter holes in an LNG tanker. On June 18, 2004, staff’s responses to the comments received on the Report were issued. Also on that date, the Commission issued an Order Granting Authorization Under Section 3 Of The Natural Gas Act for the Freeport LNG Project (Order). As stated in paragraph 34 of the Order, various components of the consequence assessment methodologies outlined in the Report*

were modified. This revised methodology was used to re-calculate the estimated distances to thermal radiation of 1,600 Btu per square foot per hour; 3,000 Btu per square foot per hour; and 10,000 Btu per square foot per hour. The Commission Order revised the Freeport EIS and therefore the record in the docket is complete.

4. **If the ABS report was a final report, what was the point of soliciting comments on it? Why, for example, wasn't the report issued as a draft report, subject to comment and revision to respond to comments?**

*On June 18, 2004, staff's responses to the comments were posted on the Commission's website in Docket No. AD04-6-000. As discussed in the response to Comment #26, various components of the consequence assessment methodologies were revised in response to comments. These changes include: the orifice discharge coefficient for calculating spill rates was changed from 1.0 to 0.65; the approximate pool shape of an uncontained LNG spill on water was altered to represent a semicircle instead of a circle; the estimated effects of friction between the LNG pool and the water surface on pool spread was reduced; the relationship between decreasing spill rate and pool size was refined; the rate of heat influx from water was set at 85 kW/m<sup>2</sup>; and the solid flame model was modified to represent a two-zone pool fire. As new research, data and improved modeling techniques appear, the methodology will continue to be revised as appropriate.*

5. **Was the ABS report peer-reviewed? If not, why not?**

*On May 14, 2004, we issued a notice of availability of the Report, and mailed it directly to experts in the scientific community who have been directly involved with LNG spill and consequence modeling. Comments on the report were filed by 49 parties, including 22 individuals, nine industry groups, three local governments, three environmental organizations, and 12 from the scientific community.*

6. **During the hearing, Chairman Ose asked the Coast Guard about the fire safety standards applicable to LNG facilities, which incorporate by reference the NFPA LNG fire protection standards. Mr. Markey has raised concerns about the nature and adequacy of those standards, pointing to critical testimony submitted to FERC by the Boston Fire Department. Does FERC believe that these standards should be upgraded or made more protective – as recommended by the Boston Fire Department and by Mr. Markey in his testimony?**

*As the lead Federal agency responsible for authorizing the siting and construction of onshore LNG facilities under Section 3 of the Natural Gas Act, we analyze proposed facilities using the standards specified by the Department of Transportation's regulations under 49 CFR Part 193, which incorporates by reference NFPA 59A. The Research and*

*Special Programs Administration (RSPA) within the U.S. Department of Transportation promulgates the safety regulations and standards for LNG facilities in or affecting interstate or foreign commerce. RSPA's authority extends to the siting, design, installation, construction, initial inspection, initial testing, operation, maintenance, fire prevention, and security planning of LNG facilities. On March 31, 2000, the RSPA incorporated NFPA 59 A (1996 edition) into its LNG regulations, following a public rulemaking process starting with a notice of proposed rulemaking on December 22, 1998. On April 9, 2004, the RSPA incorporated NFPA 59 A (2001 edition) into its LNG regulations, following a similar public rulemaking process. The credibility of the NFPA 59 A standards contributed to RSPA's ability to incorporate them.*

- 7. If so, is FERC willing to use its authorities to require stronger standards to be applied to any new LNG facilities seeking a permit?**

*FERC can and does impose requirements on a site-specific basis to ensure or enhance operational reliability and safety of LNG facilities within its jurisdiction. In our review of each proposed onshore LNG facility, FERC staff conduct a cryogenic design review, which may result in recommendations to be included in our environmental impact statement and/or Commission order. For example, of the 69 recommended mitigation measures contained in the Freeport Order, 38 were a result of the cryogenic design and safety review.*

- 8. If not, what is FERC's basis for reaching a conclusion that the NFPA standards are adequately protective, in light of concerns raised by Mr. Markey and by the Boston Fire Department's comments on the ABS study?**

*See above.*

- 9. Please Provide the Subcommittee with the following information about the ABS study:**

- a. **A copy of FERC's RFP for the study;** *A copy of the RFP issued on January 16, 2004 (with proposals due February 2, 2004) is provided in Attachment 1.*
- b. **A copy of all proposals submitted to FERC in response to the RFP;** *A total of eight proposals were submitted by: MMI Engineering, Inc; Det Norske Veritas, Inc; Project Technical Liaison Associates; ABS Consulting; Quest Consultants Inc; O&N Engineering – Development, P.C; University of Arkansas; and Lloyd's Register North America Inc. The proposals contain business confidential information and cannot be released without the contractor's permission, pursuant to 18 CFR 388.112. We have requested release of the proposals from each contractor.*

- c. **A copy of the contract, any contract modifications and all work orders or other directives to ABS relating to the study; The contract was issued on February 11, 2004. The contract period of performance was extended from March 31 to April 30, 2004, by an amendment issued on April 2, 2004, and amended to increase the scope and total price on May 27, 2004. A copy of each is in Attachment 2.**
- d. **A copy of the ABS study submitted to FERC; A copy of the final report, Consequence Assessment Methods for Incidents Involving Releases from Liquefied Natural Gas Carriers, submitted by ABS Consulting on May 13, 2004, and issued by the Commission on May 14, 2004 is in Attachment 3.**
- e. **Copies of any progress reports or memoranda submitted to FERC by the contractor; Due to the short timeframe in the RFP (February 10 to March 31, 2004), there was no requirement to submit progress reports or memorandum. Project status was provided by telephone on a weekly basis.**
- f. **Copies of any subsequent correspondence or memoranda between FERC, the contractor, or any other government agencies relating to the ABS study. Following the release of Consequence Assessment Methods for Incidents Involving Releases from Liquefied Natural Gas Carriers, on May 14, 2004, the contract with ABS Consulting was amended on May 27, 2004 (see response 9.c.) to provide assistance in responding to comments on the study. Subsequent correspondence and memoranda between FERC staff and the contractor are in Attachment 4.**

**10. Please explain how FERC intends to make use of the ABS study.**

*The methodology in the Report, as modified in our June 18, 2004 response to comments, is being applied on a site-specific basis to analyze marine hazards in the environmental impact statements for LNG import terminal proposals before the Commission.*

- 11. On page 4-147 of the Freeport EIS, FERC reports that a Lloyd's Register study done for the Weaver's Cove LNG project found a 1-meter diameter hole at the waterline to be the worst case scenario of hazard consequence assessments. The EIS goes on to say, however, that this was consistent with the attack on the double-hulled oil tanker Limberg, "which caused a greater than a 5-meter hole on the outer hull but only minor damage to the inner hole." Why is it acceptable to assume that the worse case is a 1 meter hole, when there was a 5 meter hole in the outside of the Limberg? Couldn't the release of the LNG and a subsequent fire result in a large hole than the 1 to**

**2.5 meter holes discussed in the ABS report? If so, how much larger would the area affected by a pool fire be?**

*The methodology in the Report for estimating the rate of release of LNG from a ship uses the orifice model to represent a breach of an LNG cargo tank. It is the location and amount of damage to the cargo tank that controls the rate of LNG release, not the size of a breach in the outer hull. Although damage to the Limberg's outer hull may have been greater than a 5-meter diameter hole, the damage to the inner hull was substantially less. For an LNG vessel, there is an additional layer of insulation between the cargo tank and the inner hull which is likely to reduce the size of the actual cargo tank breach. The 1- and 2 ½- meter diameter holes of the inner hull represent the probable worst case damage scenarios, and in the Freeport LNG Project Order we presented the area affected by a pool fire for each event (see response to question 12). We have not calculated pool fires for larger hole sizes.*

12. **In his testimony to the Subcommittee, Dr. Havens said that at a distance of one mile people would be subjected to heat radiation that would cause severe burns in about 30 seconds in an LNG fire. Do you agree? If not, why? If so, for each of the LNG facilities currently licensed to operation, how many people live within the one mile radius of the facility, and therefore could theoretically be exposed to such severe burns? Do you think that this number poses an acceptable risk for each such facility?**

*While Dr. Havens' efforts in developing the models that are used to calculate exclusion zones for onshore LNG facilities are widely recognized, our review of consequence assessment methodologies for LNG spills on water did not find any analysis by Dr. Havens to evaluate the thermal hazards from an unconfined LNG spill on water or to support the referenced one mile distance to severe burns. Without having reviewed the theoretical basis, we can neither agree nor disagree with the statement. However, we note that in our site-specific analysis for the Freeport LNG Project, we estimated that the distances to an incident heat flux level of 1,600 Btu/ft<sup>2</sup>-hr (the level associated with an exposed person experiencing burns within about 30 seconds) to be 2,200 and 4,340 feet for a 1- and 2 ½- meter diameter holes in an LNG cargo tank, respectively. As noted in the Freeport Order, we estimated approximately 120 to 300 permanent and vacation residences within these two distances, and determined that operational restrictions imposed by the local pilots and U.S. Coast Guard will minimize the possibility of a hazardous event.*

*The methodology recommended in the Report and revised in staff's comment responses, has not been applied to the pre-existing authorized LNG import terminals nor do we have population data for each. However, we can offer these general observations about the land use in the vicinity of the other import facilities: the marine terminal at Dominion's Cove Point Maryland facility is more than 1 mile offshore; Southern LNG occupies a*

*dredge spoil island with no nearby residences; the Trunkline LNG, Distrigas and EcoElectrica import terminals are in industrial areas adjacent to storage, manufacturing or power generation facilities, and Semptra's authorized Cameron LNG Project is adjacent to dredge spoil disposal and energy extraction/processing facilities.*

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July 1, 2004

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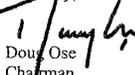
Rear Admiral Thomas Gilmour  
Assistant Commandant of Marine Safety  
U.S. Coast Guard  
Department of Homeland Security  
2100 Second Street, S.W.  
Washington, DC 20593-0001

Dear Admiral Gilmour:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed follow-up questions for the hearing record.

Please hand-deliver the Coast Guard's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 23, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on 225-1962.

Sincerely,



Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs

Enclosure

cc The Honorable Tom Davis  
The Honorable John Tierney

- Q1. Application Process Delays. The complex application and permitting process for an off-shore liquefied natural gas (LNG) import terminal entails various Federal and State statutes and regulations and multiple Federal and State agencies. Recognizing that LNG terminals involve several layers of sophisticated engineering that require review, I am concerned that the longer the LNG siting process takes, the less investment there will be in LNG projects. Can you describe the U.S. Coast Guard's (USCG) regulatory provisions to:
- a. manage the timeline for this process?
  - b. protect against undue delays?
  - c. eliminate bottlenecks?
- Q2. Federal Interagency Relations. Siting of off-shore LNG facilities requires coordination with the Federal Energy Regulatory Commission (FERC) for trunk pipeline siting and the Minerals Management Service (MMS) of the Department of the Interior regarding oil and gas leasing and lease operations, including gathering pipelines, which in some cases may exist in the vicinity of proposed LNG tanker fairways/routes or offshore LNG facilities. In February 2004, the USCG, FERC, and the Department of Transportation entered into a Memorandum of Understanding (MOU) clarifying their respective roles in on-shore siting.
- a. What provisions are included in this MOU or Federal rules to ensure efficient coordination with all involved Federal agencies?
  - b. Are additional MOUs or rules planned to address USCG's relations with other agencies? If so, what are they?
- Q3. Initial Role. The USCG deals with tanker safety aspects of on-shore facilities siting but does not have a formal role until an application has been filed with FERC. Some opponents are very active during the pre-filing period in making claims about restrictions that the USCG will put on maritime commerce and harbor operations (e.g., harbor closures, changing homeland security alert status, massive exclusion zones, etc.). If not addressed, exaggerated or false claims can incite ill-informed opposition by local communities.
- a. What is the USCG's role during the pre-filing, site consideration process?
  - b. At what stage in the process, does the USCG engage with stakeholders to explain its requirements and limitations?
  - c. Has USCG pre-decisional silence ever been used by project opponents to energize opposition? If so, how often has this occurred?

- Q4. Policy Considerations. Considerations of national, regional, State and local concerns may arise in determining whether to approve an LNG terminal siting application. To what extent do you consider:
- a. off-shore siting determinations that may require national planning?
  - b. conditions asserted by States in their Coastal Zone Management plans?
  - c. objectives of State and local stakeholders?
- Q5. Fire Protection Standards. What measures has the USCG taken to update the standards it follows for designing and maintaining its fire fighting and fire protection capabilities?
- Q6. Comparison with International LNG Importation. Nearly 100 percent of Japan's natural gas supply comes from imported LNG. Japan uses about 23 terminals for that purpose. Several LNG import terminals operate and several more were recently approved in Western Europe.
- a. Has the USCG compared the U.S. processes with those used internationally in siting LNG facilities?
  - b. If so, what lessons has USCG learned from the international experience with LNG development?

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**BY FACSIMILE**

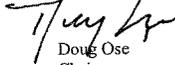
Rear Admiral Thomas Gilmour  
Assistant Commandment for Marine Safety,  
Security, and Energy Policy  
U.S. Coast Guard  
Department of Homeland Security  
2100-2<sup>nd</sup> Street, S.W.  
Washington, DC 20593-0001

Dear Admiral Gilmour:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed followup questions from Ranking Member John F. Tierney for the hearing record.

Please hand-deliver the agency's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 26, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on 225-1962. Thank you for your attention to this request.

Sincerely,



Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs

Enclosure

cc: The Honorable Tom Davis  
The Honorable John Tierney

Questions for the Record  
Hearing Held on June 22, 2004  
On LNG Import Terminal and Deepwater Port Siting: Federal and State Roles  
For Rear Admiral Thomas Gilmour,  
Assistant Commandant for Marine Safety, Security, and Energy Policy  
From Ranking Member John F. Tierney

1. You indicated that the technology to be used at offshore LNG facilities has been proven through use at onshore facilities. Has the specific technology proposed for the El Paso Energy Bridge facility and the proposed facility off the coast of Gloucester, Massachusetts, using on-ship regasification been previously tested and proven at any active LNG facility? If so, which facilities have used this technology?
2. You stated at the hearing that the Coast Guard has not studied a minimum safety standard of how far from shore an offshore LNG facility must be located. Is the Coast Guard or any other federal agency currently studying or planning to study how far from land an offshore LNG facility must be located in order to adequately protect public safety?
3. As requested at the hearing, please describe the jurisdictional authority of states with regard to siting offshore LNG terminals, particularly in light of 33 U.S.C. § 1508(b)(1) which reads:

The Secretary shall not issue a license without the approval of the Governor of each adjacent coastal State . . . .If the Governor notifies the Secretary that an application, which would otherwise be approved pursuant to this paragraph, is inconsistent with State programs relating to environmental protection, land and water use, and coastal zone management, the Secretary shall condition the license granted so as to make it consistent with such State programs.
4. Please submit for the record a list of the state and federal entities that are required and/or permitted to participate in the determination process for deepwater ports as well as the specific role of each agency in the process.
5. Does the Coast Guard process each application for an offshore LNG project as it is proposed or is there any kind of coordination with the Department of Energy or FERC to determine whether there is even a need for a proposed facility? For example, could a new onshore LNG facility be sited in Massachusetts as well as a new offshore facility, without regard to the actual need for LNG supply?
6. You referenced a pending study by Sandia Laboratories that looks at the issue of threats to LNG carriers and safety standards relevant to LNG carriers. As requested at the hearing, please submit this study to the Committee upon its completion.

7. What additional security measures are being taken related to LNG transportation during the upcoming Democratic National Convention in Boston? How long will any such security measures remain in place?
8. You indicated at the hearing that you would provide the Committee any analysis that the Coast Guard has performed on the use of polystyrene on LNG vessels. Please submit this information as requested, including an explanation of whether any hazard analysis has been done with regard to the fire risk of insulation used on LNG vessels.
9. During the hearing, you stated that the Coast Guard is required to ensure that LNG carriers have the proper type of insulation that meets certain requirements with respect to fire safety and that the Coast Guard has some of its own requirements and in some cases uses industry standards. According to Mr. Markey, the Department of Homeland Security told him that polystyrene foam insulation was not used on LNG carriers because of its flammability. Mr. Markey has found some evidence that this material is used. Was the Coast Guard aware of the use of this material on LNG carriers transiting U.S. waters? Does this use comply with Coast Guard fire safety standards and requirements?
10. During the hearing, you suggested that the use of polystyrene foam insulation is a complicated question and that you would have to know where it was used, how it was used and whether it were encapsulated. However, the Department of Homeland Security stated in its letter to Mr. Markey that this material was not used in LNG carriers because of its susceptibility to melting or deformation in fire. In light of that very strong statement about the hazard, are you now suggesting that its use might be acceptable depending on how it were used or whether it is encapsulated? If not, what did you mean? If so, upon what studies or analyses are you basing your conclusion?
11. In your testimony, you indicated that there are about 40 LNG carrier vessels currently trading with the United States. You also testified that before being allowed to trade in the United States, LNG carriers must submit detailed vessel plans and other information to the Coast Guard.
- a) Please provide the Subcommittee with a chart containing the following information about each LNG carrier vessel which has made a port call in the U.S. in each of the last five years, along with the following information: 1) name of vessel; 2) flag of vessel; 3) port of origin; 4) U.S. port(s) visited; 5) dates of visits; 6) capacity of vessel (i.e., how much LNG it can carry); 7) carrier tank type (i.e., spherical or membrane); and 8) type of insulation used on cargo containers (i.e., polystyrene foam, polyurethane foam, balsa wood, etc.).
  - b) For each of the vessels listed, please report when, and upon what basis, the Coast Guard determined that the vessel was in compliance with applicable safety standards, including but no limited to, fire safety standards.

12. In his testimony to the Subcommittee, Mr. Markey suggested that “we need the Coast Guard to undertake a more thorough analysis of the safety of LNG tankers, including the issues of brittle fracture and flammability of insulating materials.” Dr. Havens testimony also raised concerns on this point. Do you agree that more and better analysis of these hazards is needed? If not, why not? If so, what actions is the Coast Guard taking to address the safety issues raised by Mr. Markey and Dr. Havens in their testimony?

13. In his testimony, Mr. Markey also suggested that the existing DOT LNG facility siting regulations fail to fully comply with the Congressional directive that remote siting be considered. Given the implications of siting for issues that the Coast Guard must address with respect to the movement of an LNG vessel to a waterfront terminal, and the post-9/11 threat of terrorism, do you agree that remote siting of future LNG terminals would be preferable from a security perspective?

14. In his testimony to the Subcommittee, Dr. Havens said that at a distance of one mile people would be subjected to heat radiation that would cause severe burns in about 30 seconds in an LNG fire. Do you agree? If not, why? If so, for each of the LNG facilities currently licensed to operate, how many people live within the one mile radius of the facility, and therefore could theoretically be exposed to such severe burns? Do you think that this number poses an acceptable risk for each such facility?

**LNG FACILITY APPLICATION PROCESS DELAYS**

QUESTION: The complex application and permitting process for an offshore-liquefied natural gas (LNG) import terminal entails various Federal and State statutes and regulations and multiple Federal and State agencies. Recognizing that LNG terminals involve several layers of sophisticated engineering that require review, I am concerned that the longer the LNG siting process takes, the less investment there will be in LNG projects. Can you describe the U.S. Coast Guard's (USCG) regulatory provisions to:

- o Manage the timeline for this process?
- o Protect against undue delays?
- o Eliminate bottlenecks?

ANSWER: The Deepwater Port Act (DWPA) defines the processing timeline, and stipulates that a decision be made by the Secretary of Transportation within 365 days of publication of the notice of application. Included in this timeline is compliance with the National Environmental Policy Act (NEPA) in conducting an environmental analysis. Historically, NEPA compliance documents of this magnitude (non-Deep Water Port) would take 12-18 months. This process has been streamlined into a compressed and aggressive 240-day timeframe to complete. Additionally, the DWPA stipulates that all agencies work together and avoid duplicative processes.

The Coast Guard has taken a number of steps to help streamline the processing of deepwater port applications and meet statutory timelines:

1. Extra Coast Guard staff was added, and more staff is being hired in an effort to address the higher than expected number of Deep Water Port applications. The President's FY05 budget request includes the resources required for the Coast Guard to meet its statutory requirements under the DWPA.
2. Excellent working relationships with other Federal Agencies have been established. An interagency MOU governing responsibilities, communications and processes was formed with the help of the interagency Task Force formed pursuant to E.O. 13212.
3. Environmental contractors are used to augment staff and meet the demanding NEPA compliance timeline.
4. Frequent meetings between the Coast Guard and the applicant including pre-filing meetings where regulatory requirements are explained in detail, lessons learned are disseminated, the application reviewed, potential data gaps identified, and procedures are outlined.

**LNG FACILITY APPLICATION FEDERAL INTERAGENCY RELATIONS**

QUESTION: Siting of off-shore LNG facilities requires coordination with the Federal Energy Regulatory Commission (FERC) for trunk pipeline siting and the Minerals Management Service (MMS) of the Department of the Interior regarding oil and gas leasing and lease operations, including gathering pipelines, which in some cases may exist in the vicinity of proposed LNG tanker fairways/routes or offshore LNG facilities. In February 2004, the USCG, FERC, and the Department of Transportation entered into a Memorandum of Understanding (MOU) clarifying their respective roles in on-shore siting.

- What provisions are included in this MOU or Federal rules to ensure efficient coordination with all involved Federal agencies?
- Are additional MOUs or rules planned to address the USCG's relations with other agencies? If so, what are they?

ANSWER: To answer this question we need to differentiate between onshore and offshore LNG terminals. The USCG/FERC/DOT Memorandum Of Understanding (MOU) addresses how the federal agencies will work, coordinate, communicate and cooperate with one another for on-shore or near shore LNG terminals (inside the state waters). This MOU recognizes FERC as lead Federal agency for National Environmental Policy Act (NEPA) and permitting actions. It serves as a cooperating agency agreement for the development of the NEPA analysis and requires the agencies to work together and communicate on all aspects of the permitting process. Because of this MOU, Coast Guard field units are now engaged at the beginning of the siting review process.

For offshore LNG terminals, an MOU was established among all Federal agencies governing responsibilities, communication and process involved in the siting or approval of a deepwater port. This MOU establishes timelines and lays out specific responsibilities of each agency.

In addition to the two MOUs described above, the Coast Guard also entered into a Cooperating Agency Agreement with the Minerals Management Service to establish responsibilities for the development of Environment Impact Statements for Deep Water Ports. Finally, to facilitate the challenges of completing both the Federal NEPA documentation and the California Environmental Quality Act report for two Deep Water Ports off the coast of California, the Coast Guard, the Maritime Administration and the California State Lands Commission entered into an MOU to allow completion of a single environmental document.

**CG INITIAL ROLE DURING PRE-FILING**

QUESTION: The USCG deals with tanker safety aspects of on-shore facilities siting but does not have a formal role until an application has been filed with FERC. Some opponents are very active during the pre-filing period in making claims about restrictions that the USCG will put on maritime commerce and harbor operations (e.g., harbor closures, changing homeland security alert status, massive exclusion zones, etc.). If not addressed, exaggerated or false claims can incite ill-informed opposition by local communities.

- What is the USCG's role during the pre-filing, site consideration process?
- At what stage in the process, does the USCG engage with stakeholders to explain its requirements and limitations?
- Has USCG pre-decisional silence ever been used by project opponents to energize opposition? If so, how often has this occurred?

ANSWER: Under the terms of the February 2004 Interagency Agreement (IA) with the Federal Energy Regulatory Commission (FERC) the Coast Guard participates as a cooperating agency in the National Environmental Policy Act (NEPA) process. The Coast Guard is continuing to work with FERC to ensure timely and effective interaction between these agencies at the field level as early in the application process as practicable. One aspect of this interaction is to ensure that the Coast Guard engages with FERC during the pre-filing process to ensure that the waterway safety issues identified in 33 CFR 127.009 are addressed in a timely manner.

The Coast Guard engages stakeholders as soon as we become aware of a project and participates along with FERC in pre-filing scoping and informational meetings.

The Coast Guard is not aware of any occasion where opponents have used "pre-decisional silence" to energize opposition to a shore side LNG terminal.

**LNG FACILITY POLICY CONSIDERATIONS**

QUESTION: Considerations of national, regional, State and local concerns may arise in determining whether to approve an LNG terminal siting application. To what extent do you consider:

- o Off-shore siting determinations that may require national planning?
- o conditions asserted by States in their Coastal Zone Management plans?
- o objectives of State and local stakeholders?

ANSWER: The Federal government does not directly participate in selection of the site proposed by an applicant. Applicants select and propose their site based on various internal company and market factors. The application is processed in accordance with the Deepwater Port Act of 1974 (DWPA), as amended, and the Temporary Interim Rule, 33 CFR, Subchapter NN. We do advise potential applicants of concerns they should consider such as navigational safety, and impacts on existing lease blocks in the Gulf of Mexico. In development of the Environmental Impact Statement and preparation of the Record of Decision by the Maritime Administration, considerable opportunity exists for input by all interested parties, public and private, at the national, regional, state and local levels. The DWPA affords the Governor of an adjacent coastal state considerable authority and ability to influence a siting decision. No such specific authority is provided at the local level by the DWPA, but through involvement in the scoping process, public hearings and input to the Governor, all parties are able to participate in the process.

The Maritime Administrator certainly considers national issues/implications when:

1. Determining that the deepwater port will be in the national interest and consistent with national security and other national policy goals and objectives, including energy sufficiency and environmental quality;
2. Determining that it will not unreasonably interfere with international navigation or other reasonable uses of the high seas, as defined by treaty, convention, or customary international law;
3. Consulting with the Secretary of the Army, the Secretary of State, and the Secretary of Defense, to determine their views on the adequacy of the application, and its effect on programs within their respective jurisdictions;
4. Ensuring that the Governor of the adjacent coastal state, or states, approves, or is presumed to approve issuance of the license.

The scope of involvement is expanded when the Environmental Impact Statement or Environmental Assessment is developed in accordance with the NEPA requirements outlined in the DWPA. Inputs and comments from cooperating federal agencies (EPA, NOAA, MMS and the USACE), other federal agencies (in their respective areas of expertise), state agencies in the adjacent coastal states responsible for Coastal Zone Management (CZM) consistency, and the public are solicited, documented and incorporated into the Environmental Impact Statement (EIS) or Environmental Assessment (EA), to ensure all interested parties' interests and considerations are addressed. The public can provide written comment prior to the drafting of the NEPA document following the publishing of a Notice of Intent in the Federal Register. After the preliminary draft EIS/EA is ready for publishing and distribution, a Notice of Availability is also published to capture comments on the status of the document at this stage.

In accordance with the DWPA, at least one public scoping hearing is held in each coastal state adjacent to the proposed project during the application evaluation period. In actuality, the Coast Guard and MARAD hold a preliminary scoping meeting, in addition to the formal public hearing, in each adjacent coastal state after the Notice of Intent is published and prior to development of the preliminary draft EIS. The formal public meeting is conducted prior to completion of the final EIS/EA, but not later than 240 days after the Notice of Application is published. The hearings and meetings enable the public to interact with the applicant and the U.S. Coast Guard and MARAD and to verbally augment any written comments they may have presented.

Every effort is made to capture the considerations of all stakeholders in the deepwater port process in the Final EIS/EA, the Record of Decision and any License conditions.

**FIRE PROTECTION STANDARDS**

**QUESTION:** What measures has the USCG taken to update the standards it follows for designing and maintaining its fire fighting and fire protection capabilities?

**ANSWER:** The International Maritime Organization (IMO)'s most recent Firefight equipment standards for all LNG vessels in international service were adopted in 1990 (the original standards were published in November 1975; additional fire protection amendments were made in 1978, 1983 and 1990). The United States participated in the development of these amendments, and is a member of the IMO Maritime Safety Committee's Subcommittee on Bulk Liquids and Gases (BLG Subcommittee), which may recommend amendments to the fire safety requirements specified in the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code). The firefighting equipment standards for US flag LNG vessels are located in Title 46 CFR Part 154 and were published in May 1979. The USCG believes the fire fighting and fire protection standards presently in effect for LNG carriers adequately address the current fire safety risks.

**COMPARISON WITH INTERNATIONAL LNG IMPORTATION**

QUESTION: Nearly 100 percent of Japan's natural gas supply comes from imported LNG. Japan uses about 23 terminals for that purpose. Several LNG import terminals operate and several more were recently approved in Western Europe.

- o Has the USCG compared the U.S. processes with those used internationally in siting LNG facilities?
- o If so, what lessons has USCG learned from the international experience with LNG development

ANSWER: Onshore LNG facilities are permitted through the Federal Energy Regulatory Commission (FERC). The Coast Guard and MARAD are the lead agencies for processing offshore LNG Deepwater Ports (DWP) applications. At present, there is no offshore LNG DWP anywhere in the world. The current distribution of worldwide LNG facilities include 17 LNG export terminals and 40 LNG import terminals. The majority of those LNG import terminals are operating in Japan, South Korea and Europe. The United States currently has five onshore LNG import terminals. Given that another DWP facility does not exist, it is not possible to compare DWP permitting processes with those used internationally.

Onshore LNG facilities are permitted through the Federal Energy Regulatory Commission (FERC). While the Coast Guard does not have first hand knowledge about FERC's use of any previous studies or lessons learned with the siting of international onshore LNG terminals, the Coast Guard does have an MOU with FERC and we are attempting to engage at a much earlier point in the permitting process to allow navigational and security concerns to be fully considered in the permitting process.

Although there are no LNG DWPs in operation, credible and proven offshore developments in the oil and gas industries allow engineers to design safe alternatives using existing technologies. The following four conventional technologies have paved the way to ensure capable LNG facilities.

- Floating Production Storage & Offloading Units (FPSO), commonly used throughout the world, share many features with proposed floating LNG DWPs
- The Submerged Turret Loading System has an outstanding track record for oil in the North Sea
- Gravity Based Structures (GBS) have a long success record internationally
- Platform Terminals are used extensively in the US and internationally

In comparison with the United States, Japan and Europe face many similar public concerns, environmental and engineering challenges during the licensing and siting process. Although processes may differ administratively and culturally, all industrialized countries face similar opposition and support from its citizens and their supporting industries. The LNG industry maintains an excellent safety record compared to refineries and other oil industry activities. Worldwide, there are 17 LNG export (liquefaction) terminals, 40 import (regasification) terminals, and 136 LNG ships, altogether handling approximately 120 million metric tons of LNG every year. LNG has been safely delivered across the ocean for over 40 years. In that time there have been over 33,000 LNG carrier voyages, covering more than 60 million miles, without major accidents

Coast Guard Responses to QFRs from the 22 June 2004 Liquid Natural Gas Hearing Before the House  
Committee on Government Reform, Subcommittee on Energy Policy, Natural Resources, & Regulatory Affairs

(only 8 spills in over 40 years and NO explosions or fires) or safety problems either in  
port or on shore.

**EL PASO ENERGY BRIDGE AND PROPOSED GLOUCESTER, MA FACILITY****QUESTION:**

You indicated that the technology to be used at offshore LNG facilities has been proven through use at onshore facilities. Has the specific technology proposed for the El Paso Energy Bridge facility and the proposed facility off the coast of Gloucester, Massachusetts, using on-ship regasification been previously tested and proven at any active LNG facility? If so, which facilities have used this technology?

**ANSWER:** Yes, the on-ship gasification technology to be used at the El Paso Energy Bridge facility and the proposed facility off the coast of Gloucester, Massachusetts, has been in existence for decades. The use of on-ship regasification at these facilities is different only by placing the system on a vessel rather than at a shore side facility. The vendor for this regasification technology is Chicago Power and Process, Inc. El Paso built a simulator and tested the regasification equipment by exposing it to the motions that it would see offshore. This proven shore side technology is used at a variety of locations throughout the country and internationally. The following list is of those facilities that employ regasification technology:

Austell Gas Systems, Lithia Springs, GA  
 United Cities Gas, Midland, GA  
 Peoples Gas Light and Coke Co., Fisher IL  
 Kokomo Gas, Kokomo, IN  
 Iowa Public Service/Midwest Energy Co., Waterloo, IA  
 Northern Utilities, Lewiston, ME  
 Baltimore Gas and Electric, Westminster, MD  
 Distrigas, Everett, MA  
 Berkshire Gas Co., Whately, MA  
 Minnesota Natural Gas, Burnsville, MN  
 North States Power, Wescott, MN  
 Southwest Gas, Lovelock, NV  
 Keyspan Energy, Tilton, NH  
 Transco Gas Pipeline, Carlstadt, NJ  
 South Jersey Gas, McKee City, NJ  
 Public Service of North Carolina, Cary, NC  
 Greenville Utilities, Greenville, NC  
 Transco/Pine Needle, Guilford, NC  
 South Union – Northeast Gas, Cumberland, RI  
 Providence Gas, Exeter, RI  
 Providence Gas, Middleton, RI  
 Tennessee Natural Gas Co., Kingsport, TN  
 Memphis Light Gas and Water, Memphis, TN  
 Roanoke Gas Co., Roanoke, VA  
 LNG import terminal, Penuelas, PR  
 LNG import terminal, Cabo Cauledo, Dominican Republic  
 Petronet LNG terminal, Gujarat, India  
 EGE Gas A.S., Izmer, Turkey

**LNG FACILITY LOCATION STUDY**

**QUESTION:** You stated at the hearing that the Coast Guard has not studied a minimum safety standard of how far from shore an offshore LNG facility must be located. Is the Coast Guard or any other federal agency currently studying or planning to study how far from land an offshore LNG facility must be located in order to adequately protect public safety?

**ANSWER:** The Coast Guard is not aware of any such study. By definition a deepwater port is located beyond state waters, or more than 3 miles from land. A proposed location for a project is chosen by the applicant based on numerous safety, navigation, and business issues. In rendering a decision, the Maritime Administrator, who has been delegated authority to issue a license on behalf of the Secretary of Transportation, must consider whether a particular deepwater port is in the national interest. Certainly safety is one of the major concerns. Each proposed location is evaluated on a case-by-case basis. While it is premature to make any statement about applications currently under evaluation, none of the currently pending DWP applications appear to pose risks to onshore populations. Thus far we have not received an application for a DWP less than 11 miles offshore. Individual studies, such as vapor dispersion modeling, would be done for each facility as deemed necessary.

**STATE JURISDICTION**

QUESTION: As requested at the hearing, please describe the jurisdictional authority of states with regard to siting offshore LNG terminals, particularly in light of 33 U.S.C. § 1508(b)(1) which reads:

The Secretary shall not issue a license without the approval of the Governor of each adjacent coastal State . . . If the Governor notifies the Secretary that an application, which would otherwise be approved pursuant to this paragraph, is inconsistent with State programs relating to environmental protection, land and water use, and coastal zone management, the Secretary shall condition the license granted so as to make it consistent with such State programs.

ANSWER: The authority of an "adjacent coastal state" is significant as stated above. If the Governor of the adjacent coastal state does not approve of a proposed port the Secretary cannot issue a license. If the Governor identifies aspects of the deepwater port project that are inconsistent with state programs, then conditions addressing those inconsistencies would need to be incorporated in the license.

In accordance with the DWPA, "an 'adjacent coastal State' means any coastal State which (A) would be directly connected by pipeline to a deepwater port, as proposed in an application; (B) would be located within 15 miles of any such proposed deepwater port; or (C) is designated by the Secretary in accordance with section 1508(a)(2) of this title." Also, should another state seek such status, the "Secretary may designate such State as an 'adjacent coastal State' if he determines there is a risk of damage to the coastal environment of such State equal to or greater than the risk posed to a State directly connected by pipeline to the proposed deepwater port. This paragraph shall apply only with respect to requests made by a State not later than the 14th day after the date of publication of notice of an application."

In accordance with 33 C.F.R. 148.105(j), each deepwater port license applicant must submit a request for each certification required by section 307 of the Coastal Zone Management Act (CZMA). If an applicant is unable to meet the section 307 certification requirements, the relevant State Coastal Zone Management agency (as approved under the CZMA pursuant to 16 U.S.C. Sec 1455) may deem the application inconsistent with the State Coastal Zone Management program, and present an unfavorable recommendation to the Governor regarding the application. As outlined in the DWPA, the Governor is authorized up to 45 days after the last public hearing to recommend either approval or denial of a license. Failure to make a recommendation, either pro or con, will result in approval being "conclusively presumed."

Since the passage of the DWPA, four deepwater port licenses have been issued (two for oil DWP's, two for LNG DWP's). To date, no Governor of an adjacent coastal state has recommended denial of a deepwater port license.

**STATE AND FEDERAL PARTICIPATION**

**QUESTION:** Please submit for the record a list of the state and federal entities that are required and/or permitted to participate in the determination process for deepwater ports as well as the specific role of each agency in the process.

**ANSWER:** The Deepwater Port Act of 1974, as amended (DWPA), identifies the following federal agencies as having specific roles and responsibilities or expertise concerning the construction and operation of deepwater ports.

- Department of Defense (including the Departments of the Army, Navy, and Air Force and the U.S. Army Corps of Engineers)
- Department of State
- Department of the Interior (Mineral Management Service and the U.S. Fish and Wildlife Service)
- Department of Commerce (NOAA, NOAA Fisheries (formerly NMFS) and NOS)
- Department of Energy (Office of Fossil Energy)
- Department of Transportation (MARAD and RSPA)
- Environmental Protection Agency
- Department of Homeland Security ("the agency in which the U.S. Coast Guard resides")
- Adjacent Coastal State

The Governor will base his/her recommendation on the evaluation of the state agency designated with establishing a coastal zone management program, in accordance with the Coastal Zone Management Act of 1972. The state authorities will review a license application to ensure it is consistent with state programs relating to environmental protection, land and water use and coastal zone management.

The interagency Task Force chartered under E.O. 13212 fostered the development of an Interagency Memorandum of Understanding (MOU) for processing deepwater port applications after the passage of the Maritime Transportation Security Act of 2002, which added natural gas to the DWPA. Each federal agency listed above is signatory to the MOU, which identifies their specific roles and responsibilities in the deepwater port license application process.

**ATTACHMENT**

In accordance with the Deepwater Port Act of 1974, as amended the following federal agencies are recognized as having expertise in areas directly affecting deepwater ports. The Secretary of Transportation is authorized to consult with them in determining whether to approve or deny a deepwater port license application.

**OTHER AGENCIES WHICH MUST BE CONSULTED:**

**EPA**

Sec. 1503. - License for ownership, construction, and operation of deepwater port  
\* \* \*

(c) Conditions for issuance The Secretary may issue a license in accordance with the provisions of this chapter if -

\* \* \*

(6) he has not been informed, within 45 days of the last public hearing on a proposed license for a designated application area, by the Administrator of the Environmental Protection Agency that the deepwater port will not conform with all applicable provisions of the Clean Air Act, as amended (42 U.S.C. 7401 et seq.), the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.), or the Marine Protection, Research and Sanctuaries Act, as amended (16 U.S.C. 1431 et seq., 1447 et seq.; 33 U.S.C. 1401 et seq., 2801 et seq.);

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#### **ARMY CORPS OF ENGINEERS**

Sec. 1503. - License for ownership, construction, and operation of deepwater port

\* \* \*

(d) Application for license subject to examination and comparison of economic, social, and environmental effects of deepwater port facility and deep draft channel and harbor; finality of determination If an application is made under this chapter for a license to construct a deepwater port facility off the coast of a State, and a port of the State which will be directly connected by pipeline with such deepwater port, on the date of such application -

(1) has existing plans for construction of a deep draft channel and harbor; and

(2) has either

(A) an active study by the Secretary of the Army relating to the construction of a deep draft channel and harbor, or

(B) a pending application for a permit under section 403 of this title for such construction;

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#### **ARMY AND DEFENSE**

Sec. 1503. - License for ownership, construction, and operation of deepwater port

\* \* \*

(c) Conditions for issuance The Secretary may issue a license in accordance with the provisions of this chapter if -

\* \* \*

(7) he has consulted with the Secretary of the Army, the Secretary of State, and the Secretary of Defense, to determine their views on the adequacy of the application, and its effect on programs within their respective jurisdictions;

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#### **OTHER AGENCIES [INTERIOR, NOAA]**

Sec. 1503. - License for ownership, construction, and operation of deepwater port

\* \* \*

(e) Additional conditions; removal requirements, waiver; Outer Continental Shelf Lands Act applicable to utilization of components upon waiver of removal requirements

(1) In issuing a license for the ownership, construction, and operation of a deepwater port, the Secretary shall prescribe those conditions which the Secretary deems necessary to carry out the provisions and requirements of this chapter [2] or which are otherwise required by any Federal department or agency pursuant to the terms of this chapter.

\* \* \*

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**INTERIOR**

Sec. 1503. - License for ownership, construction, and operation of deepwater port

\* \* \*

(e) Additional conditions; removal requirements, waiver; Outer Continental Shelf Lands Act applicable to utilization of components upon waiver of removal requirements

\* \* \*

(3) The Secretary shall establish such bonding requirements or other assurances as he deems necessary to assure that, upon the revocation or termination of a license, the licensee will remove all components of the deepwater port. In the case of components lying in the subsoil below the seabed, the Secretary is authorized to waive the removal requirements if he finds that such removal is not otherwise necessary and that the remaining components do not constitute any threat to navigation or to the environment. At the request of the licensee, the Secretary, after consultation with the Secretary of the Interior, is authorized to waive the removal requirement as to any components which he determines may be utilized in connection with the transportation of oil, natural gas, or other minerals, pursuant to a lease granted under the provisions of the Outer Continental Shelf Lands Act (43 U.S.C. 1331 et seq.), after which waiver the utilization of such components shall be governed by the terms of the Outer Continental Shelf Lands Act.

\* \* \*

(h) Nonrefundable application fee; processing costs; State fees; "land-based facilities directly related to a deepwater port facility" defined; fair market rental value, advance payment

\* \* \*

(3) A licensee shall pay annually in advance the fair market rental value (as determined by the Secretary of the Interior) of the subsoil and seabed of the Outer Continental Shelf of the United States to be utilized by the deepwater port, including the fair market rental value of the right-of-way necessary for the pipeline segment of the port located on such subsoil and seabed.

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INTERIOR, EPA, ARMY CORPS OF ENGINEERS, NOAA, AND THE HEADS OF ANY OTHER FEDERAL DEPARTMENT OR AGENCIES HAVING EXPERTISE CONCERNING CONSTRUCTION OR OPERATION OF DEEPWATER PORTS (oil and natural gas)

Sec. 1504. - Procedure

\* \* \*

(e) Recommendations to Secretary of Transportation; application for all Federal authorizations; copies of application to Federal agencies and departments with jurisdiction; recommendation of approval or disapproval and of manner of amendment to comply with laws or regulations

(1) Not later than 30 days after January 3, 1975, the Secretary of the Interior, the Administrator of the Environmental Protection Agency, the Chief of Engineers of the United States Army Corps of Engineers, the Administrator of the National Oceanic and Atmospheric Administration, and the heads of any other Federal department or agencies having expertise concerning, or jurisdiction over, any aspect of the construction or operation of deepwater ports shall transmit to the Secretary written comments as to their expertise or statutory responsibilities pursuant to this chapter or any other Federal law.

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**NOAA AND EPA**

Sec. 1505. - Environmental review criteria

Coast Guard Responses to QFRs from the 22 June 2004 Liquid Natural Gas Hearing Before the House Committee on Government Reform, Subcommittee on Energy Policy, Natural Resources, & Regulatory Affairs

(a) Establishment; evaluation of proposed deepwater ports The Secretary, in accordance with the recommendations of the Administrator of the Environmental Protection Agency and the Administrator of the National Oceanic and Atmospheric Administration and after consultation with any other Federal departments and agencies having jurisdiction over any aspect of the construction or operation of a deepwater port, shall establish, as soon as practicable after January 3, 1975, environmental review criteria consistent with the National Environmental Policy Act (42 U.S.C. 4321 et seq.). Such criteria shall be used to evaluate a deepwater port as proposed in an application, including -

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**NOAA**

Sec. 1508. - Adjacent coastal States

(a) Designation; direct pipeline connections; mileage; risk of damage to coastal environment, time for designation

\* \* \*

(2) The Secretary shall, upon request of a State, and after having received the recommendations of the Administrator of the National Oceanic and Atmospheric Administration, designate such State as an "adjacent coastal State" if he determines that there is a risk of damage to the coastal environment of such State equal to or greater than the risk posed to a State directly connected by pipeline to the proposed deepwater port. This paragraph shall apply only with respect to requests made by a State not later than the 14th day after the date of publication of notice of an application for a proposed deepwater port in the Federal Register in accordance with section 1504(c) of this title. The Secretary shall make the designation required by this paragraph not later than the 45th day after the date he receives such a request from a State.

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**INTERIOR, COMMERCE, STATE, AND DEFENSE**

Sec. 1509. Marine environmental protection and navigational safety

\* \* \*

(d) Safety zones; designation; construction period; permitted activities (1) Subject to recognized principles of international law and after consultation with the Secretary of the Interior, the Secretary of Commerce, the Secretary of State, and the Secretary of Defense, the Secretary shall designate a zone of appropriate size around and including any deepwater port for the purpose of navigational safety. In such zone, no installations, structures, or uses will be permitted that are incompatible with the operation of the deepwater port. The Secretary shall by regulation define permitted activities within such zone. The Secretary shall, not later than 30 days after publication of notice pursuant to section 1504(c) of this title, designate such safety zone with respect to any proposed deepwater port.

**APPLICATION COORDINATION WITH DOE AND FERC**

QUESTION: Does the Coast Guard process each application for an offshore LNG project as it is proposed or is there any kind of coordination with the Department of Energy or FERC to determine whether there is even a need for a proposed facility? For example, could a new onshore LNG facility be sited in Massachusetts as well as a new offshore facility, without regard to the actual need for LNG supply?

ANSWER: The Maritime Administrator must consider the financial viability and whether the terminal is in the national interest, which includes energy supply consideration. One aspect of the recent statutory change to the Deep Water Port Act (DWPA) was that Congress chose not to apply the geographic restriction requirement to natural gas ports. Projections by the Energy Information Administration have indicated that perhaps 10 to 15 new terminals may be needed to meet natural gas demands through 2025. Over 40 different projects have been identified, though we expect that many of these will never actually be permitted or built. Given the fact that these projects may not go into operation for several years from the date of submission, it would be difficult to know whether another facility serving a given area will or will not be built. Additionally, gas coming into the Gulf of Mexico serves markets in other parts of the country so a facility importing gas may be supplying gas to areas other than in the immediate vicinity of where the pipeline would make landfall. Therefore, a proposal for an onshore facility would not preclude the development of an offshore facility.

The following note, taken from the Deepwater Port Modernization Act, appears to indicate Congressional desire to allow the market to control decisions on development of DWPs:

**Congressional Purposes for 1996 Amendments**

Section 502(a) of title V of Pub. L. 104-324 provided that, "[T]he purposes of this title are to--

- “(1) update and improve the Deepwater Port Act of 1974 [33 U.S.C. 1501 et seq.];
- “(2) assure that the regulation of deepwater ports is not more burdensome or stringent than necessary in comparison to the regulation of other modes of importing or transporting oil;
- “(3) recognize that deepwater ports are generally subject to effective competition from alternative transportation modes and eliminate, for as long as a port remains subject to effective competition, unnecessary Federal regulatory oversight or involvement in the ports' business and economic decisions; and
- “(4) promote innovation, flexibility, and efficiency in the management and operation of deepwater ports by removing or reducing any duplicative, unnecessary, or overly burdensome Federal regulations or license provisions.”

**SANDIA STUDY**

**QUESTION:** You referenced a pending study by Sandia Laboratories that looks at the issue of threats to LNG carriers and safety standards relevant to LNG carriers. As requested at the hearing, please submit this study to the Committee upon its completion.

**ANSWER:** We will forward a copy of the Sandia Study as soon as we receive it from the Department of Energy, the study's sponsor. We expect to receive it before 30 September 2004.

**ADDITIONAL SECURITY FOR DEMOCRATIC NATIONAL CONVENTION**

**QUESTION:** What additional security measures are being taken related to LNG transportation during the upcoming Democratic National Convention in Boston? How long will any such security measures remain in place?

**ANSWER:** There were no deliveries of LNG by vessels to the Everett, MA facility during the Democratic National Convention. This was a voluntary action by the terminal in recognition of the security concerns. Deliveries resumed after the Convention.

#### **CG ANALYSIS OF POLYSTYRENE**

**QUESTION:** You indicated at the hearing that you would provide the Committee any analysis that the Coast Guard has performed on the use of polystyrene on LNG vessels. Please submit this information as requested, including an explanation of whether any hazard analysis has been done with regard to the fire risk of insulation used on LNG vessels.

**ANSWER:** The CG has not performed any specific hazard analysis of the polystyrene insulation. The CG is contacting the manufacturer of this insulation, and other relevant technical bodies, to obtain detailed specifications on its resistance to fire and flame spread characteristics, so that we may determine what, if any, hazard it poses. We will provide the Subcommittee with additional information on this issue when we obtain it.

**LNG VESSEL INSULATION**

QUESTION: During the hearing, you stated that the Coast Guard is required to ensure that LNG carriers have the proper type of insulation that meets certain requirements with respect to fire safety and that the Coast Guard has some of its own requirements and in some cases uses industry standards. According to Mr. Markey, the Department of Homeland Security told him that polystyrene foam insulation was not used on LNG carriers because of its flammability. Mr. Markey has found some evidence that this material is used. Was the Coast Guard aware of the use of this material on LNG carriers transiting U.S. waters? Does this use comply with Coast Guard fire safety standards and requirements?

ANSWER: The May 19, 2004 DHS response to Congressman Markey indicating that foam polystyrene insulation was *not used* on LNG carriers, was incorrect. The inaccurate May 19<sup>th</sup> statement may be attributed to a case many years ago where one particular polystyrene-based insulation system was not approved for an LNG carrier intended for service to the U.S.

The Coast Guard has asked the ship builders and industry groups related to LNG carrier construction to provide information on the characteristics of the insulation on each vessel. Insulation on LNG carriers is a complex assembly of many layers. Depending upon the particular chemical and physical characteristics of the overall insulation assembly, polystyrene components may be used. All LNG carriers must meet International Maritime Organization (IMO) and Safety of Life at Sea (SOLAS) standards, which include fire safety standards, to enter the United States. At this point, the Coast Guard is not certain of the technical characteristics of each vessel's insulation system, but we will provide that information as soon as it is available.

**POLYSTYRENE FOAM INSULATION**

QUESTION: During the hearing, you suggested that the use of polystyrene foam insulation is a complicated question and that you would have to know where it was used, how it was used and whether it were encapsulated. However, the Department of Homeland Security stated in its letter to Mr. Markey that this material was not used in LNG carriers because of its susceptibility to melting or deformation in fire. In light of that very strong statement about the hazard, are you now suggesting that its use might be acceptable depending on how it were used or whether it is encapsulated? If not, what did you mean? If so, upon what studies or analyses are you basing your conclusion?

ANSWER: As previously stated, the DHS' statement that foam polystyrene insulation was *not used* on LNG carriers, was incorrect. Depending upon the particular characteristics of the overall insulation assembly, polystyrene components may be used. This is a complex technical matter. To provide a complete answer, the Coast Guard is contacting shipyards, insulation manufacturers, and vessel classification societies to obtain detailed material specifications on the insulation referenced in Congressman Markey's letter, and to explain how the insulation is used in different cargo containment designs. We will provide the Subcommittee with additional information on this issue when we obtain it.

**LNG CARRIERS OPERATING IN U.S**

**QUESTION:** In your testimony, you indicated that there are about 40 LNG carrier vessels currently trading with the United States. You also testified that before being allowed to trade in the United States, LNG carriers must submit detailed vessel plans and other information to the Coast Guard.

- Please provide the Subcommittee with a chart containing the following information about each LNG carrier vessel which has made a port call in the U.S. in each of the last five years, along with the following information: 1) name of vessel; 2) flag of vessel; 3) port of origin; 4) U.S. port(s) visited; 5) dates of visits; 6) capacity of vessel (i.e., how much LNG it can carry); 7) carrier tank type (i.e., spherical or membrane); and 8) type of insulation used on cargo containers (i.e., polystyrene foam, polyurethane foam, balsa wood, etc.).
- For each of the vessels listed, please report when, and upon what basis, the Coast Guard determined that the vessel was in compliance with applicable safety standards, including but no limited to, fire safety standards.

**ANSWER:** The Coast Guard has been searching its databases, consulting shipbuilders, and compiling responses in order to supply you with accurate, complete information. As your request requires an extensive search of historical information, we expect to have this information compiled by September 2004.

**MORE ANALYSIS OF LNG VESSEL BY THE USCG**

QUESTION: In his testimony to the Subcommittee, Mr. Markey suggested that “we need the Coast Guard to undertake a more thorough analysis of the safety of LNG tankers, including the issues of brittle fracture and flammability of insulating materials.” Dr. Havens testimony also raised concerns on this point. Do you agree that more and better analysis of these hazards is needed? If not, why not? If so, what actions is the Coast Guard taking to address the safety issues raised by Mr. Markey and Dr. Havens in their testimony?

ANSWER: We are awaiting the results of the Sandia study to determine if additional analysis of the issues of brittle fracture and flammability of insulating materials is necessary for us to continue to responsibly manage the risks of LNG marine transportation.

**DOT LNG SITING REGULATIONS**

**QUESTION:** In his testimony, Mr. Markey also suggested that the existing DOT LNG facility siting regulations fail to fully comply with the Congressional directive that remote siting be considered. Given the implications of siting for issues that the Coast Guard must address with respect to the movement of an LNG vessel to a waterfront terminal, and the post-9/11 threat of terrorism, do you agree that remote siting of future LNG terminals would be preferable from a security perspective?

**ANSWER:** Each application for an LNG facility, whether shore side or offshore, must be evaluated on its own individual merits. Siting at remote locations away from high-density population areas or other critical infrastructure reduces public safety and health risks. However, remoteness may make the facility itself a more attractive target for those whose primary focus is to disrupt energy supplies and create economic distress.

**ONE MILE POPULATION RADIUS OF LNG FACILITIES**

**QUESTION:** In his testimony to the Subcommittee, Dr. Havens said that at a distance of one mile people would be subjected to heat radiation that would cause severe burns in about 30 seconds in an LNG fire. Do you agree? If not, why? If so, for each of the LNG facilities currently licensed to operate, how many people live within the one mile radius of the facility, and therefore could theoretically be exposed to such severe burns? Do you think that this number poses an acceptable risk for each such facility?

**ANSWER:** There are many variables that factor into the potential thermal radiation-affected range of an LNG pool fire. We do not have sufficient information on the methodology or parameters Professor Havens used to arrive at his conclusion to render an informed response to this question.

TOM DAVIS, VIRGINIA, CHAIRMAN  
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CHRISTOPHER SHAYS, CONNECTICUT  
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**House of Representatives**

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July 1, 2004

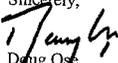
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BERNARD SANDERS, VERMONT,  
INDEPENDENT

**BY FACSIMILE**  
Mr. Joe Desmond  
Deputy Secretary, Energy  
California Resources Agency  
1416 Ninth Street #1311  
Sacramento, CA 95814

Dear Mr. Desmond:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed follow-up questions for the hearing record.

Please hand-deliver the agency's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 23, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on (202) 225-1962.

Sincerely,  
  
Doug Ose  
Chairman

Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs

Enclosure

cc The Honorable Tom Davis  
The Honorable John Tierney

- Q1. Air Quality. Natural gas fired power plants have fewer emissions, use less water, take less time to site, and produce reliable energy. As a consequence, natural gas is the “fuel of choice” for new power development. What specific air quality effects would importation of liquefied natural gas (LNG) through a California sited facility have on Southern California and the State as a whole?
- Q2. Pipeline Capacity.
- a. What practical barriers exist to pipeline siting for take-way from LNG import facilities on the Pacific coast?
  - b. Are there any legal barriers to pipeline siting for national, regional and international transmission on the Pacific coast?
  - c. What efforts is California making to site and build pipelines to import natural gas from Mexico?
- Q3. Federal Rules. Which specific rules regarding LNG facility siting and authorization, including *ex parte* communication rules, should the Federal Energy Regulatory Commission reexamine?

TOM DAVIS, VIRGINIA  
CHAIRMAN

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BY FACSIMILE

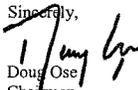
Mr. Donald Santa Jr.  
President  
Interstate Natural Gas Association of America  
10 G Street, N.E. #700  
Washington, DC 20002

Dear Mr. Santa:

This letter follows up on the June 22, 2004 hearing of the Subcommittee on Energy Policy, Natural Resources and Regulatory Affairs, entitled "LNG Import Terminal and Deepwater Port Siting: Federal and State Roles." As discussed during the hearing, please respond to the enclosed follow-up questions for the hearing record.

Please hand-deliver the association's response to the Subcommittee majority staff in B-377 Rayburn House Office Building and the minority staff in B-350A Rayburn House Office Building not later than noon on July 23, 2004. If you have any questions about this request, please call Professional Staff Member Carrie-Lee Early on 225-1962.

Sincerely,

  
Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural  
Resources and Regulatory Affairs

Enclosure

cc The Honorable Tom Davis  
The Honorable John Tierney

- Q1. Regulatory Barriers. What barriers, if any, does the Interstate Natural Gas Association of America (INGAA) see in the current Federal and State statutory and regulatory system to efficient siting of on-shore and off-shore liquefied natural gas (LNG) import terminals?
- Q2. Agency Coordination. In your written submission, you state, “Our point is that fairness and administrative efficiency would be served best if these other agencies coordinate the timing of their reviews with the FERC process. The already inclusive FERC NEPA process provides a vehicle for this to occur. In that way, all of the interested federal, state and local government agencies can come together **under one concurrent and comprehensive review**” (emphasis added, p. 6). What do you specifically recommend to improve coordination among the stakeholder agencies? Are changes needed in the regulations governing the non-National Environmental Policy Act (NEPA) processes to ensure simultaneous vs. sequential processes?
- Q3. Legal Barriers to Pipeline Siting. The U.S. will not have an adequate natural gas supply without sufficient pipeline capacity.
- a. Are there any legal procedural impediments to pipeline siting for take-away from LNG import facilities on the Pacific coast? If so, what are they?
  - b. Are there any legal procedural impediments to pipeline siting for regional and national transmission on the Pacific coast? If so, what are they?
- Q4. Cartel Concerns. Do the companies you represent have any concerns that dependence on LNG could foster a sellers’ cartel? If so, please elaborate.
- Q5. Historical Lessons. What lessons has INGAA learned from the history of pipeline industry regulation and use in developing new policies for the LNG sector?
- Q6. Geographic Concentration of Infrastructure. All of the existing LNG import facilities are along the Gulf of Mexico or Atlantic Coast. If no LNG terminals are located off the California Coast in the next 5 to 10 year timeframe:
- a. would it be possible to build sufficient pipelines from the Gulf or the East Coast to supply California?
  - b. what would be the price effects in California for natural gas?
- Q7. State Siting Oversight. In your written statement, you state that, if regulation were left to the States, LNG facilities would almost certainly be subject to inconsistent regulation and likely would not be constructed. Construction of power plants and other complex, capital intensive facilities are overseen by State regulators. Why would variations in State regulations be especially detrimental to LNG terminal construction?

- Q8. International Standards. LNG import and export terminals have been used safely and successfully for decades especially in Japan. Many new facilities have been built and more are authorized in Asia, Western Europe and throughout the world. Does the natural gas industry follow certain standards internationally to ensure security and safety?
- Q9. Underwriting Information Requirements. What information do insurers of LNG tankers, import terminals, and import operations require in order to underwrite activities and property?

**SUBCOMMITTEE ON ENERGY POLICY,  
NATURAL RESOURCES AND REGULATORY AFFAIRS  
COMMITTEE ON GOVERNMENT REFORM  
U.S. HOUSE OF REPRESENTATIVES**

**HEARING ON  
SITING OF LIQUEFIED NATURAL GAS IMPORT FACILITIES**

**JUNE 22<sup>ND</sup>, 2004**

**ADDITIONAL QUESTIONS FOR  
DONALD F. SANTA, JR.  
PRESIDENT  
INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA**

**ON BEHALF OF THE  
CENTER FOR LNG**

**Question 1: What barriers, if any, does the Interstate Natural Gas Association of America (INGAA) see in the current Federal and State statutory and regulatory system to efficient siting of on-shore and off-shore liquefied natural gas (LNG) import terminals?**

The written testimony submitted by INGAA and the Center for LNG (CLNG) addresses our concerns in this area. Our position is that the optimal arrangement would be a single, clear and coordinated process for reviewing and deciding all siting and permitting matters. The absence of such an arrangement creates the possibility of protracted, sequential proceedings before multiple permitting authorities and the potential for inconsistent requirements being imposed upon an applicant. LNG import facilities are, by definition, engaged in foreign commerce. Therefore, a federal process for the approval and siting of import facilities is the most logical and efficient method for ensuring that the nation has adequate LNG infrastructure.

This is not to say that state and local governments have no role at all in the permitting of LNG import terminals; they do. It is our belief, however, that all permitting authorities – federal, state and local – should work within the FERC’s overall National Environmental Policy Act (NEPA) review process to ensure that all parties may have equal standing and that there is a predictable timeframe for receiving all applicable permits.

**Question 2: In your written submission, you state, “our point is that fairness and administrative efficiency would be served best if these other agencies coordinate the timing of their reviews with the FERC process. The already inclusive FERC NEPA process provides a vehicle for this to occur. In that way, all interested federal, state and local government agencies can come together under one concurrent and comprehensive review.” What do you specifically recommend to improve**

**coordination among stakeholder agencies? Are changes needed in the regulations governing the non-National Environmental Policy Act (NEPA) process to ensure simultaneous vs. sequential processes?**

The legislative language of H.R. 4413, the “Liquefied Natural Gas Import Terminal Development Act of 2004”, incorporates much of what we would recommend in this regard. I would direct the Committee to the following sections in that bill:

- 1) Proposed Section 3(d)(4) of the Natural Gas Act (Page 5, lines 1 through 10 of H.R. 4413 as introduced) would require that any decision by a federal or state permitting authority must be consistent with any authorization by the Federal Energy Regulatory Commission for the construction of an LNG terminal, and that such decision may not “prohibit or unreasonably delay the siting, construction, expansion, or operation” of a FERC-approved facility. This would encourage other agencies to work with FERC prior to the FERC-approval of a given facility.
- 2) Proposed Section 3(e) of the Natural Gas Act (Page 5, line 15, through page 7, line 12) would: (a) require FERC either to approve or deny an application for the siting/construction of an LNG terminal within one year of receiving an application; (b) require FERC to establish a schedule during which other federal or state administrative proceedings authorized by federal law must be completed; (c) provide that, for those federal and state administrative proceedings that do not complete action within the timeframe specified by FERC, positive action would be conclusively presumed and siting/construction could proceed without condition; and (d) states that FERC shall compile a single administrative record for all federal and state proceedings authorized by federal law.
- 3) Proposed Section 3(f) of the Natural Gas Act (Page 7, line 13 through Page 8, line 6) provides for expedited judicial review of any LNG terminal permit decision made by a federal agency, or by a state agency acting pursuant to federal delegated authority.
- 4) Proposed Section 3(g) of the Natural Gas Act (Page 8, lines 7 through 12) makes FERC the lead agency for siting and construction permitting activities made pursuant to the National Environment Policy Act.

Taken together, the enactment of these legislative proposals would create a unified process for reviewing and acting upon proposals to construct LNG import terminals.

**Question 3: The U.S. will not have an adequate natural gas supply without sufficient pipeline capacity.**

- a) **Are there any legal procedural impediments to pipeline siting for take-away from LNG import facilities on the Pacific coast? If so, what are they?**

There is an emerging issue that is presenting problems for permitting of pipelines (and potentially, LNG terminals) in coastal areas. Section 7 of the Natural Gas

Act (NGA) provides FERC with exclusive authority to approve interstate natural gas pipelines it finds to meet the “public convenience and necessity.” Congress preempted the states when it enacted this section of the NGA in 1942, in large part out of concern that leaving such matters to individual states would frustrate the efficient development of an interstate network for transmitting natural gas from production areas to consuming markets.

In the intervening decades since the enactment of NGA Section 7, other federal statutes that include permitting requirements applicable to interstate pipelines have delegated significant authority to the states. Two prime examples are the Clean Water Act (CWA) and the Coastal Zone Management Act (CZMA).

Where state laws and regulations have come into conflict with FERC’s authority under the NGA, the courts (including the U.S. Supreme Court) have held that Congress preempted the states when it enacted the NGA pursuant to its authority under the Commerce Clause of the U.S. Constitution. However, when states act pursuant to delegated federal authority (such as when they act under the CWA and CZMA), the law of preemption does not apply. Rather, should such state action frustrate FERC’s exercise of its authority under the NGA, there is a conflict of federal law. To our knowledge, the courts have not yet litigated this issue as it applies to the NGA.

Why is this important? Because the CWA and CZMA provide the states the ability to frustrate projects in interstate commerce (and in the case of LNG import terminals, projects in foreign commerce) even after those projects have been found by FERC to be in the public convenience and necessity (or, in the case of LNG import terminals, found to have met the public interest criteria under NGA Section 3). This situation calls into question whether the Congressional intent of the NGA – preemption of the states in matters of interstate and foreign commerce – is being turned on its head by other federal statutes.

This is not an academic debate. In at least three recent cases, individual states have used the CWA and/or the CZMA to veto interstate pipeline projects already approved by FERC under Section 7 of the NGA. This is relevant to the Committee’s interest in LNG import terminal siting, because the terminals as well as the associated pipeline infrastructure will be located in coastal areas, thereby subjecting them to state review under the delegated CWA and CZMA authority. For example, FERC could authorize the construction of a new LNG import terminal, only to have the relevant state government deny the CZMA consistency review for the associated pipelines, thus making the whole project untenable.

We believe that Congress ultimately must resolve this tension between the federal statutory schemes under the NGA and these other permitting authorities. The proposed statutory changes referenced in the response to question 2 would address this matter, and we urge Congress to enact these provisions in the near future.

**b) Are there any legal procedural impediments to pipeline siting for regional and national transmission on the Pacific coast? If so, what are they?**

Same as previous answer.

**Question 4: Do the companies you represent have any concerns that dependence on LNG could foster a sellers' cartel? If so, please elaborate.**

No, this is not now a serious concern, with the caveat that we do not have a crystal ball that can be used to forecast geopolitical events and the evolution of the international LNG market. We believe that the global LNG market is sufficiently deep, with supply available from a diverse, and expanding, group of regional supply basins, to discourage the emergence of a sellers' cartel. For example, Russia has acted as a spoiler to OPEC in the global oil market and likely can do so in natural gas markets. Russia is not alone in this role, because major producers such as Australia, Norway and the West African nations are not politically allied to the OPEC producers, or each other. The global LNG market is a new and rapidly growing market. Suppliers are likely to be competing intensely with one another for market share.

**Question 5: What lessons has INGAA learned from the history of pipeline industry regulation and use in developing new policies for the LNG sector?**

We already have discussed at length one of the most important lessons: that is, the value of having one clear process for approval and siting of those facilities used in interstate and foreign commerce. The proliferation of other federal, state and local permitting requirements adds greatly to the likelihood of significant delay and cost, which ultimately can (and often does) kill needed projects altogether. At some point, a single agency must have the authority to determine whether a project is in the greater public interest, and if so, give the approval to move forward. If we leave these matters to the whims of parochial interests, the most likely outcome will be inaction, which carries with it significant costs to American consumers and our economy.

Another lesson is the shift from adjudicated determinations of the need for energy infrastructure to determinations based on demonstration of market support. Prior to natural gas industry restructuring, FERC's process for determining whether a proposed pipeline was in the public convenience and necessity involved adjudicated, trial-type proceedings in which the Commission evaluated voluminous evidence of whether sufficient supply and market demand existed to support the proposed project. This process was costly, protracted and litigious. FERC now looks to market support for a proposed pipeline, in the form of long-term shipper agreements for firm pipeline capacity, as the determinant of whether a project is in the public convenience and necessity. The process is much more streamlined and relies upon the willingness of project sponsors and shippers to put capital at risk as the signal that there is a need for the

proposed facility. This thinking has been applied to LNG siting. FERC's approach to LNG import terminal authorization is consistent with this market-driven philosophy for determining need.

**Question 6: All of the existing LNG import facilities are along the Gulf of Mexico or Atlantic Coast. If no LNG terminals are located off the California Coast in the next 5 to 10 year timeframe:**

**a) would it be possible to build sufficient pipelines from the Gulf or the East Coast to supply California?**

While this technically could be achieved, it is an unlikely outcome. The interstate pipeline infrastructure to California remains fairly constrained, although there have been some recent capacity expansions (such as the Kern River Gas Transmission system). Most of the existing natural gas supplied to Southern California comes from West Texas, New Mexico and Wyoming. Northern California receives additional natural gas from Western Canada. In order to access the Gulf Coast, significant new pipeline capacity would need to be constructed across the State of Texas to tie into existing pipeline systems. In addition, it is possible that the existing interstate pipelines serving California would have to be expanded to accommodate this additional supply.

The other challenge facing California is a fairly limited *intrastate* pipeline network that would also need considerable expansion. This intrastate pipeline system is regulated by the California Public Utility Commission (CPUC), not FERC. With some exceptions, interstate natural gas pipelines delivering natural gas to California stop at the state line and interconnect with intrastate transmission and distribution systems. Therefore, in order to meet the challenge suggested in your question, the CPUC also would need to act on corresponding pipeline expansions within the state.

It is also important to note that, if California was forced to rely on moving significant new natural gas supplies from Gulf Coast LNG terminals, the state would be competing with other regions of the country for that natural gas. The existing pipeline infrastructure in the Gulf Coast region makes it possible to move natural gas to virtually every region of the country, including the Midwest and the Northeast. In other words, California would not be the only state vying for Gulf Coast LNG supply.

**b) what would be the price effects in California for natural gas?**

It is difficult to answer that question fully. Clearly, in addition to the cost of the natural gas commodity, California consumers also would have to pay for the costs associated with expanding the natural gas pipeline infrastructure that would be needed to accommodate the additional supplies of natural gas. In other words, even if the price of the regasified LNG at the Gulf Coast terminal remained the

same as the price for gas delivered to a West Coast terminal, the cost of the pipeline transportation would make this a more expensive option.

While it does not answer this question precisely, a study released recently by The INGAA Foundation, Inc. is instructive. Among other things, the INGAA Foundation study quantifies the consumer impacts of delaying needed natural gas infrastructure development. In one of its scenarios, the study assumed a two-year delay in building natural gas infrastructure – which includes interstate pipelines, storage facilities and LNG import terminals. The study’s authors estimate that a two-year delay would result in higher natural gas commodity prices that would ultimately cost consumers an additional \$200 billion by 2020. For California alone, the additional costs would be about \$30 billion.

Please note, however, that this is just from a two-year *delay*. The costs would be even greater if needed projects were not built at all. A copy of this report, “An Updated Assessment of Pipeline and Storage Infrastructure for the North American Gas Market: Adverse Consequences of Delays in the Construction of Natural Gas Infrastructure”, is appended to these answers.

**Question 7: In your written statement, you state that, if regulation were left to the States, LNG facilities would almost certainly be subject to inconsistent regulation and likely would not be constructed. Construction of power plants and other complex, capital intensive facilities are overseen by State regulators. Why would variations in State regulations be especially detrimental to LNG terminal construction?**

States have tended to take a more positive view towards new power plant construction out of a belief that the additional power supplies will benefit local customers much more than distant and often inaccessible customers. The ability to move power across states and regions remains limited, and thus a local power plant is more likely to see its power benefit local economies. This provides a built-in incentive for states to site power plants. Even with these incentives, however, it sometimes has proven difficult for the states to site power plants and electric transmission lines in the areas where they are needed to address load pockets and transmission bottlenecks.

Furthermore, while the states regulate the siting of power plants, they do not regulate such power plants as public utilities if sales of electricity from those plants are wholesale sales subject to regulation by FERC under the Federal Power Act. (The states regulate retail sales of electricity.) In contrast, should LNG import terminals be subject principally to state regulation, there is the possibility that such facilities could be subject to public utility regulation, which could include regulation of the rates charged for the sale of natural gas from such terminals as well as the allocation of supply. In fact, in its attempt to regulate the Sound Energy facility, the CPUC has stated that the facility would be treated as a public utility under California law. LNG developers would see this as a powerful disincentive to entry into the U.S. market. Such a development would be

directly contrary to the direction that FERC has taken in signaling its desire to remove the barriers to entry associated with economic regulation.

We take the view that natural gas facilities engaged in interstate and foreign commerce should be approved, sited, and (if need be) regulated by the federal government. This model has worked well for the natural gas industry for over 60 years. The electricity industry, on the other hand, remains largely subject to state regulation – and most experts agree that such regulation has hampered the development of an interstate power market.

**Question 8: LNG import and export terminals have been used safely and successfully for decades, especially in Japan. Many new facilities have been built and more are authorized in Asia, Western Europe and throughout the world. Does the natural gas industry follow certain standards internationally to ensure security and safety?**

The LNG industry relies on standards and guidelines established by the Society for International Gas Tanker and Terminal Operators (SIGTTO), and the International Maritime Association, as well as commonly applied engineering standards used in industrial construction (National Fire Protection Association, American Petroleum Institute, American Society of Mechanical Engineers, Uniform Building Codes in the U.S., American Society of Civil Engineers and American Institute of Steel Construction all have standards and codes relevant to the LNG industry) as well as accepted practices outlined by the industry's insurance underwriters assurance societies, like Det Norsk Veritas, Lloyds, etc. LNG ships and facilities doing business with U.S. ports are required by law to comply with the International Ship and Port Facility Security Code of the Safety of Life At Sea (SOLAS) treaty, or the requirements of the Maritime Transportation Security Act, both of which are enforced domestically by the U.S. Coast Guard.

**Question 9: What information do insurers of LNG tankers, import terminals, and import operations require in order to underwrite activities and property?**

The underwriters will look to one of the assurance societies, such as Det Norsk Veritas, to review the design of the vessel or facility in order to assure compliance with all relevant and applicable codes and standards, and best practices. FERC does the same thing before it authorizes the siting of an import terminal in the United States pursuant to NGA Section 3.

Congress  
of the  
United States  
House of Representatives

JOHN F. TIERNEY  
MASSACHUSETTS  
SIXTH DISTRICT



July 2, 2004

The Honorable Doug Ose  
Chairman  
Subcommittee on Energy Policy, Natural Resources,  
and Regulatory Affairs  
Committee on Government Reform  
B-377 Rayburn House Office Building  
Washington, DC 20515-6145

Dear Mr. Chairman:

As a follow-up to our recent hearing concerning the siting of LNG terminals and facilities, I ask that this brief letter and the accompanying letter from our colleague, Mr. Markey (MA-07), be entered into the record.

With respect to the existing Distrigas facility in Everett, Massachusetts, Mr. Markey recommends, and we should consider, action that would lead to requiring maintenance of "orange alert" status at all times. Coincidental with the status, of course, would be all of the heightened security and safety precautions and practices attendant to such an alert. Certain facilities located so closely to large populations and so perilous by their very nature warrant such consideration.

In the event such a designation were made, it would be incumbent on Congress to appropriate adequate funds to the Department of Homeland Security (DHS) and for DHS to allocate sufficient resources to the site and host community, to properly implement necessary protections. Manpower, training, overtime, equipment, and supervisory costs would be substantial and would require federal participation in making resources available.

As we continue hearings on this topic, and move toward the Committee report, I recommend that this proposal be included and I thank you in advance for your consideration.

Sincerely,  
  
John F. Tierney  
Member of Congress

COMMITTEES  
GOVERNMENT REFORM  
RANKING MEMBER, SUBC ON ENERGY POLICY, NATURAL RESOURCES AND REGULATORY AFFAIRS  
SUBC ON NATIONAL SECURITY, VETERANS AFFAIRS AND INTERNATIONAL RELATIONS

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**Congress of the United States**

Washington, DC 20515

February 3, 2004

The Honorable Tom Ridge  
Secretary  
U.S. Department of Homeland Security  
Washington, DC 20528

Dear Mr. Secretary:

We are writing to urge the Department to support maintaining an alert level of "High" (Threat Condition Orange) in Boston Harbor and Everett, Massachusetts whenever Liquefied Natural Gas (LNG) tankers enter the Port of Boston to be offloaded at the terminal in Everett. Specifically, the Everett LNG facility should be considered a critical asset that warrants enhanced protective measures consistent with those implemented when the Threat Level was elevated to Orange in December 2003. We also call on the Department to maintain federal reimbursement of overtime and other extraordinary expenditures by local authorities for the purpose of securing this vulnerable target from terrorism during the arrival, docking and departure of the LNG tankers.

Since the terrorist attacks on September 11, 2001, local law enforcement authorities, working with federal officials, have implemented comprehensive, and costly, security measures to protect inbound shipments of LNG through Boston Harbor. As you know, shipments to the LNG facility in Everett must travel through Boston Harbor and in very close proximity to downtown Boston and densely populated communities like Everett and neighboring cities and towns. This particular configuration is unlike any other LNG terminal in the United States and warrants the special attention of the Department. Ongoing security expenditures by these local communities are straining already tight budgets, particularly during the ongoing economic downturn.

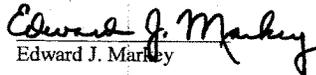
We understand that local spending on security measures implemented during LNG deliveries to the Everett facility over the course of the recent Orange Threat Level was eligible for federal reimbursement. Despite the subsequent lowering of the Threat Level to Yellow, significant security issues associated with LNG shipments to the Everett terminal persist, and they still require the local communities surrounding the terminal to expend funds at the level spent on security during the recent Orange alert. In fact, we have been informed that the LNG deliveries to the Everett terminal require security measures consistent with those in effect during Orange Threat Levels, regardless of whether the national threat level is at Orange. We also note that, even during periods at which the nation is at a Yellow Threat Level nationally, the potential threat to LNG facilities and LNG tankers may prompt warnings to local responders and facility operators that suggest increased security measures be undertaken. Therefore, we urge the Department to ensure that local governments' expenditures on security associated

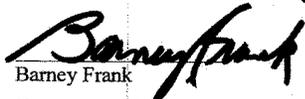
with the weekly LNG shipments to the Everett terminal are reimbursable from federal funds.

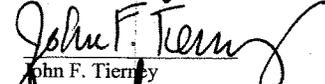
According to the terms of the FY 2004 formula grants distributed to the states and the FY 2003 supplemental appropriation for critical infrastructure protection, it appears that funds spent on enhanced security measures such as those implemented by local authorities in the vicinity of the Everett LNG terminal may be reimbursable from federal funds. We request that the Department clarify these eligibility criteria, particularly as they relate to reimbursement for overtime pay and similar expenditures required for enhanced protection of critical infrastructure such as the Everett LNG facility.

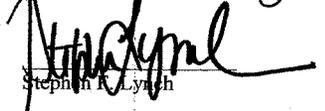
We appreciate your attention to this important issue and look forward to the Department's response. If you have any questions, please have a member of your staff contact Mark Bayer or Jeff Duncan of Rep. Markey's office at 202-225-2836.

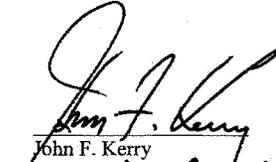
Sincerely,

  
Edward J. Markey

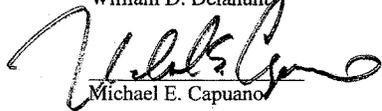
  
Barney Frank

  
John F. Tierney

  
Stephen K. Lynch

  
John F. Kerry

  
William D. Delahunt

  
Michael E. Capuano

**STATEMENT OF U.S. REPRESENTATIVE BARNEY FRANK****Testimony Before The House Subcommittee On Energy Policy,  
Natural Resources and Regulatory Affairs**

June 22, 2004

Thank you, Mr. Chairman for the opportunity to submit testimony. I am glad that you are having this hearing to assess the threats and safety concerns that Liquefied Natural Gas (LNG) facilities pose to cities and their surrounding communities. As you know, fires of tremendous magnitude can result if an LNG tanker or onshore storage tank is ruptured due to either terrorism or even an accident, such as the recent tragic explosion of an LNG plant in Algeria. Taking these safety concerns into account, I believe that the primary factor in the siting of these facilities should be maximizing their safety, and placing these facilities away from densely populated areas is the best way to protect the public and to avoid the regular disruptions in the lives of residents in crowded urban settings.

In my district, Weaver's Cove Inc. is currently attempting to construct a large-scale LNG operation in Fall River, Massachusetts, which would require a 900-foot tanker visiting the city every 5-7 days through its waterways. These LNG deliveries would require shutting down several major bridges in Southeastern Massachusetts and Rhode Island – effectively cutting off traffic in the region. This proposed plant in Fall River would also add up to 100 daily tanker truck trips through the local neighborhoods, adding yet another potential danger.

This brings us to one key question -- why are we even considering building more LNG facilities in urban areas when we already know the threats that these plants pose and the great economic and social costs of the precautions that must be taken to protect them? These urban LNG facilities employ a number of extraordinary precautions, such as shutting down airports, closing bridges, and the use of a Coast Guard mandated safety zone around each LNG tanker as it enters a harbor or waterway. These precautions are taken out concern for the destructive potential that might result from a LNG tank rupture. While these precautions are necessary, they also come with a great financial cost to their respective local communities.

While our communities are burdened with the high financial cost of protecting these facilities, they surprisingly play only a minimal part in FERC's LNG application process. Our cities and towns may submit comments to FERC on proposed LNG facilities, but they have no formal role in determining the project's approval, which I find astonishing. FERC needs to reform its application process so that it will provide the local communities, which ultimately ensure the safety of these facilities, with an equal voice in the decision making process. I also believe that FERC needs to adopt a more regional

approach to LNG siting. Under the current system in use by FERC, several LNG facilities could be concentrated in one area. Locating one LNG near another one could double the high financial burden of providing safety for these facilities, and I believe it would make sense to review applications for LNG facilities on a regional basis.

I also would like to voice my concerns regarding FERC's recently released LNG spill study, conducted by ABS Consultants. This safety report has stirred intense debate and I believe that the two-week public comment period on the original ABS report that FERC announced on May 13 was far too short. I believe that FERC should extend this comment period so that this report can be properly reviewed and that FERC should draft new LNG siting regulations once this report has been properly updated to reflect some of the concerns about LNG safety that have come to light.

In closing, I would like to remind the committee that an integral component of Homeland Security is the mitigation of future threats, and allowing the construction of LNG facilities in urban areas could have potentially disastrous consequences. I believe that we must work together to ensure that any new LNG storage facilities are built only in less populated areas and with the support of the local community. Thank you, Mr. Chairman, for the opportunity to discuss this important matter.