

PIPELINE SAFETY ACT OF 1979

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HEARINGS

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

NINETY-SIXTH CONGRESS

FIRST SESSION

ON

S. 411

TO IMPROVE THE PROTECTIONS AFFORDED THE PUBLIC
AGAINST RISKS ASSOCIATED WITH THE TRANSPORTATION
OF HAZARDOUS COMMODITIES BY PIPELINE

FEBRUARY 8, APRIL 25 AND 26, 1979

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PIPELINE SAFETY ACT OF 1979

THURSDAY, FEBRUARY 8, 1979

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D.C.

The committee met at 10 a.m., in room 235 of the Russell Senate Office Building, Hon. Howard W. Cannon (chairman of the committee) presiding.

OPENING STATEMENT BY THE CHAIRMAN

The CHAIRMAN. The hearings will come to order.

On behalf of the Committee on Commerce, Science, and Transportation, I would like to welcome the Secretary of Transportation, Brock Adams, other departmental representatives, and members of the public, to this third set of hearings on the topic of liquefied gases.

During the past few months this committee has devoted a great deal of attention to assembling information on the safety issues associated with the transportation of liquefied gases, particularly liquefied natural gas and liquefied petroleum gas.

Last August the committee held 1 day of general hearings in the New England area. Senator Ford, chairman of the Consumer Subcommittee, chaired 2 full days of hearings in early December in order to solicit legislative recommendations from the affected industries, the representatives of State and local governments, and concerned citizen groups.

During extensive hearings by the House of Representatives and in Federal governmental reports several issues have emerged on which the committee has focused.

Among those issues which the committee identified are: Jurisdictional ambiguities, regulatory delays, preemption, liquefied gas accident control, liability and compensation, and the adequacy of inspection and enforcement efforts.

Today the Secretary of the Federal Department which is charged with protecting the public against the hazards of these highly volatile fuels will respond to some of these same policy questions.

I understand that the Secretary will present two major departmental actions. The first is an administration and legislative proposal, the Pipeline Safety Act of 1979, which I will introduce later.

I would like to commend the Department of Transportation (DOT) for its work in drafting this bill. Although I have not yet had the opportunity to examine the legislation in detail, I understand it addresses many of the areas of concern that the committee identified in its earlier hearings.

Interested persons can rest assured that they will have ample opportunity to comment on this proposed legislation.

The second departmental action before us today is a long-awaited proposed rulemaking on LNG facility siting and safety.

Nearly 2 years ago DOT's Office of Pipeline Safety Operations published an advanced notice of proposed rulemaking which has now had the benefit of several thousand pages of comments from the public. These regulations appear in today's Federal Register and should go at least part way to assure the affected industries and the public that the Government is carrying out its responsibilities to protect its citizens as LNG moves through commerce.

Without further comment, I would like to welcome Secretary of Transportation Brock Adams and his associates.

STATEMENT OF HON. BROCK ADAMS, SECRETARY, DEPARTMENT OF TRANSPORTATION; ACCOMPANIED BY DR. JAMES PALMER, ADMINISTRATOR, RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION; AND LEON D. SANTMAN, DIRECTOR, MATERIALS TRANSPORTATION BUREAU

Secretary ADAMS. Thank you very much, Mr. Chairman.

Prior to putting my statement in, I would like to introduce the Administrator of our Research and Special Programs Administration, the permanent Director of it, Dr. Palmer.

I also would like to reintroduce to the committee the Director and head of the Materials Transportation Bureau, Mr. Santman.

I also have with me today officers of the Coast Guard who have responsibilities in the marine area for bringing LNG and other hazardous materials into certain specific locations, a matter about which this committee has also expressed concern.

Mr. Chairman, I request permission to place my full statement in the record, so that I may refer to it and go through it in summary fashion, and so that I may highlight it.

The CHAIRMAN. The statement will be made a part of the record, and you may summarize as you see fit.

Secretary ADAMS. Thank you, Mr. Chairman.

Departing from the statement for a moment and addressing directly the policy issues that were contained in the chairman's statement, I want to say that we live with hazardous materials transported by pipelines and by other means of transportation, as, yes, a dangerous part of our society; but we are as safe in this area as we are in any other part of our rapidly changing technical society.

But past records of what may have happened cannot stand alone as a basis for charting a course for the future because the quantity and the type of materials being shipped, such as the importation of liquefied natural gas, which used to be basically produced domestically and moved by pipeline, requires a change both in legislation and in rulemaking, both as to the design of the facilities in terms of their safety, and the operations by which the gas is transported once it has started.

Since taking office—and there was great concern on Capitol Hill and elsewhere about the state of this program—we reorganized the whole area; we took people from the Office of the Secretary and created a new administration.

The one I refer to is headed by Dr. Palmer.

There was concern that there were acting people in position rather than permanent people. We now have in place permanent people, except two, and those are working through the civil service system to be approved.

In other words, the only delays are the fact of the time that the system takes to approve people who we have requested and who we expect to be the permanent employees.

We now come before the committee with a record of accomplishment in this area.

First, we have the administration bill, and I thank the chairman for his comments that he is prepared to introduce the administration bill.

What it does is highlight some of the pipeline safety problems and try to address them.

At the time of the authorization hearing last year, we offered certain suggestions for legislation. However, there was not an opportunity to complete legislative action last year. We now come before you with a comprehensive legislative proposal based upon a decade of pipeline safety experience.

We have also reorganized the Materials Transportation Bureau. It is now divided into four offices in a manner which separates the pipeline safety and hazardous materials rulemaking and regulation functions from the conduct of actual operations and field inspections.

We have a fifth office with responsibilities relating to the planning and construction of the Alaska natural gas transportation system. That office will go out of existence once that project is completed. This office was created, Mr. Chairman, was so that we would be out in front of the problem and not have to come in at the end of an operation as we did with the Alaska oil pipeline.

In addition to developing those management systems, we have filled most of the vacancies we once had in MTB's authorized positions and are now over 90 percent staffed. In other words, we have managed to move all these people through the system.

The Department's LNG rulemaking has advanced considerably since April of 1977 when the advanced notice was issued. We received over 4,500 pages of comments on that notice and have since split the subject matter addressed by that notice into separate notices of proposed rulemaking.

We divided them into today's Federal Register notice, which basically addressed LNG facility design construction and site selection safety standards, and a forthcoming notice, which will concern the operation and maintenance of LNG facilities.

We are not involved in LNG facility licensing, Mr. Chairman, and do not propose through the administration bill to enter that field. That function rests with the Federal Energy Regulatory Commission.

But we are involved in setting the general design standards for LNG facilities.

We have now——

THE CHAIRMAN. You are really talking about design standards there?

Secretary ADAMS. Exactly; we are not talking about siting, but we are talking about design standards. While compliance with those design standards may indirectly mandate or exclude certain sites, the Natural Gas Pipeline Safety Act specifically excludes the Department from prescribing the location or routing of any pipeline facility. This includes LNG facilities.

Where it is located and that kind of question is within the authority of the Energy Department, and we have had no problem with that.

The CHAIRMAN. What about the licensing itself?

Secretary ADAMS. The licensing itself is in the DOE, and what they have done in the past is to attach conditions to a proposed license.

What we are trying to do is get an overall safety standard for facilities—and I am addressing now particularly LNG facilities—I will talk about LPG in a minute.

And, incidentally, Mr. Chairman, we do not refer to these as liquefied energy gases, because the characteristics of the two products are very different.

We are dealing in one case with liquefied natural gas which must be cooled to be put into liquefied form, and if it escapes containment it rises in a cloud and will tend, if it is ignited, to burn. In other words, it will produce a type of fireball.

Whereas liquefied propane gas is heavier than air, so, if it escapes from containment and gasifies, it will follow the terrain; it can be blown by the wind, and if it is ignited along the way, it has the quality of exploding.

In other words, in the pipeline liquefied natural gas moves as a gas.

Liquefied propane, in the so-called Matco pipeline, moves as a liquid.

So that is the reason for treating these differently and why the regulations zero in on particular types of movement.

Now, we intend that today's notice of proposed rulemaking on the design and construction of LNG facilities be issued in final form by September.

The Administrative Procedure Act requires us to issue the notice, which we have now done, and then there is a period of time for comment, and at the end of that period of time and analyzing these comments, we issued a final rule, which we expect to do in September.

We intend to issue the operations and maintenance notice within 60 days. That regulatory action should be completed by December, under the Administrative Procedure Act.

Concurrent with these rulemaking activities, because the Committee has been concerned about jurisdiction, we have the Coast Guard operation that is involved with liquefied natural gas, specifically and with the bringing in of the vessels to the various locations. The locations, Mr. Chairman, are Everett, Mass., which started in operation in 1971, Cove Point, Md., which started operation in 1977, and Elba Island, Ga., which started in 1978.

There is a terminal facility in Providence, R.I., that is used for storage at the present time, but could be used for importation.

Also, a facility is expected to be on line in Lake Charles, La., in 1980 and there is in Boston a storage facility that was used for importation from 1968 through 1975, but it is now not used for importing.

The importing now goes into the Everett facility.

A facility is also proposed at Point Conception, Calif., for 1982. There are nine other LNG import facilities that have been talked about. I have mentioned these specifically to the committee so that we can all focus on the number of facilities that we are talking about, the time considerations that are involved, and what we are trying to do to meet what you can see is a shifting problem.

In other words, we are now beginning to get significant proposals for importation.

Now, the Coast Guard, with regard to this, has also issued, on August 3, 1978, their advance notice of proposed rulemaking. The Coast Guard anticipates having comments on this notice analyzed, so as to be ready for publication of a proposed rule in July of this year.

To avoid regulatory conflicts from the exercise of the respective authorities over waterfront LNG facilities, the Coast Guard and the MTB have executed a memorandum of understanding that establishes a division of regulatory responsibility addressing all the offshore and onshore activities relating to the safe operation of a waterfront facility. We have our people here if there are detailed questions you wish to ask about what we are currently doing regarding both the law and the regulations.

Now, Mr. Chairman, I would like to turn now, since I have tried to outline what the regulation system is, so that you know we are using the full scope of the powers that we have now, to move with what we consider a growing problem, and that we meet that problem to the bill we have now proposed for this reason: The Natural Gas Pipeline Act which we introduced and passed in 1968 governs basically thing such as LNG.

We operate under two statutes. That statute, and a second one, which is the Transportation of Explosives Act, and I will mention in a minute why we feel there needs to be a change in that, because it was never developed for pipelines.

Pipelines came into the Transportation of Explosives Act in a rather convoluted manner. At one time pipelines were taken out of the act, and the Congress put them back in, and so we have powers under that now over pipelines, but they do not pattern on the natural gas pipeline legislation as we think they should and further, in the legislation we are proposing, we are proposing in title II that hazardous liquid operations be treated as under the gas pipeline statute, which we believe is working well.

Our natural gas pipeline proposal, in other words title I of the proposed bill, goes to the Natural Gas Pipeline Safety Act and proposes to amend it, in such things as authority to enforce its provisions by providing authority to issue compliance orders and subpoenas to impose criminal penalties, and to use Federal magistrates for collection of relatively small civil penalties.

Title II of the act proposes legislation for hazardous liquid pipeline transportation which would establish a statutory framework

similar to what we are proposing for gas in our proposed amendments to the existing Natural Gas Pipeline Safety Act.

Now, the first thing we have done in proposing the changes to the Natural Gas Pipeline Safety Act is to be certain that we have the power, which we believe we have, and which we are exercising in these regulations, to assure compliance with our design and construction safety regulations during the design and construction stages of a pipeline facility.

Because, as you can see, new plants are coming on, and we believe that there should be a general examination and covering of that design safety problem, so we would add the words "intended for use" at the appropriate point in the statute. Our bill would also give the Department express discretionary authority to delay pipeline, I mean, facility construction pending assurance that the facility will be designed and constructed in compliance with our safety standards. However, the vast majority of facilities that come under the Natural Gas Pipeline Act are not of the type that would warrant delay of their construction.

So, we are asking for a discretionary authority, so that when you get, for example, a very large new facility or one being built in an area that might be a problem with our general safety regulations, we would have the right to determine compliance with safety standards before construction begins.

You see, what we have done in the past was that we would look at the locations, but we would only arrive there after it was already in operation, and that is a very late time and could result in great expense for the industry if changes to facility design were then required. An operator should know from us before it starts if we consider that general safety regulations are being violated.

We have found in our discussions with the Department of Justice that the relatively small civil fines we very often impose for violations of safety standards, particularly if you get into a distribution company, that are not able to be collected by the Department are not considered by Justice to be significant enough on them to pursue collection of the fine.

We would like to be able to handle these cases before the Federal magistrates as an alternative to the exclusive district court collection procedures presently mandated because it helps to broaden our enforcement potential.

The CHAIRMAN. Do those standards get to the issue of where the facility may be located with respect to the populace?

Secretary ADAMS. Yes, in terms of general safety standards. But we do not pass on whether a particular location is to be the location. From the Federal Government perspective, that decision is with the Energy Department. But our regulations do address such things as diking around facilities, and whether or not an area should be cleared, and what size area should be cleared, because the size of the area will have a direct relationship to the amount of insurance that should be carried because it will be partly determinative of the risk factor in that area.

We also believe that we should have, under the Natural Gas Pipeline Safety Act, a criminal penalty for willful destruction or attempted destruction of interstate gas transmission facilities.

In other words, we are trying to make the two acts parallel. There would be criminal penalties for such things as willful sabotage or willful attempts to destroy, and there would be a civil penalty that could also be invoked for a variety of violations, which would depend upon both the intent of the violator, and the size or danger of the violation. That matter is addressed on page 10 of my statement.

The final thing, Mr. Chairman, that we have asked for in title I is that we have asked for subpoena authority to examine what has happened in a particular accident.

What we are usually asking for is a pipe segment, and the reason for that is our desire is to determine what happened, if there has been a change in technology, or a change in materials being used, and whether we should be changing our regulations to say you should or shouldn't be doing that.

And we need that authority for that kind of investigation.

The National Transportation Safety Board (NTSB) makes the examinations with regard to the probable cause of a particular incident. But it was mentioned in the call for this hearing and I know there was concern by the committee, for example, as to the cause of last year's accident in Houston. To this date, we have not been able to determine precisely what happened to the metal in that accident.

Now, that is the kind of thing I am talking about and we need to be certain we have ample ability to get that information.

The CHAIRMAN. Does the NTSB have the authority to subpoena that type of thing?

Secretary ADAMS. Not under the Natural Gas Pipeline Act. However, the Independent Safety Board Act of 1974 provides the NTSB with subpoena authority.

Now, Mr. Chairman, that is what we would propose to do with title I of the pipeline safety bill. Basically, the Natural Gas Pipeline Safety Act is working well. It envisions, as you know, Mr. Chairman, a Federal force that really examines the State inspection forces and the industry inspection forces.

Since there are 1.1 million miles of pipeline in the United States, we do not envision creating the thousands of people in the Federal Establishment that would perform those inspections but rather, we would, as we do now, issue specific standards to be met and then to have our people see that the States and the industry people are meeting those standards.

Now, in title II, we are proposing that the same kind of legislation be applicable to hazardous liquid pipelines as is applicable to gas pipelines.

Take, for example, liquid propane. There is only one major pipeline of this kind of facility in the country now, but there is potential that there will be more of them.

These are the pipelines that I mentioned to you that we regulate only under the Transportation of Explosives Act, which was a 1908 act.

We think that we should change that system, and I have outlined that in my statement how we got to the point of regulating these pipelines under the Transportation of Explosives Act, rather than under a pipeline act. We present the background for our

proposal which is that, what we would do is that we would regulate hazardous liquids, like propane within the same administrative and legal framework, both with regard to regulations and with administrative people drafting the regulations out of the department and inspecting in the field, as we do with the present gas pipelines.

This would allow us to use the same, both people and techniques that we have learned in the last 10 years, and where we have had problems, we could correct them without having to start a whole new administrative group.

Now, here are the things that we presently lack jurisdiction under the Transportation of Explosives Act and why we need a change from that act. We can't regulate storage of hazardous materials under the present act. We can't regulate intrastate transportation of hazardous liquids and we can't use civil penalties to enhance enforcement of our regulations in this area, because the Transportation of Explosives Act is in the criminal code only. So, we are requesting in title II that we be given the powers that we have under the Gas Pipeline Act.

Further, we think that these gas and liquid matters should be handled together, that they should be handled out of the same department, and that they should be handled by one regulatory team drafting regulations, and by one field operations and safety examination group.

Mr. Chairman, I close my statement by saying that I find this a very difficult area. The movement of new, very technical-type material, such as anhydrous ammonia, liquefied natural gas, and liquefied propane gas, are increasing in quantity as our society becomes more technical.

We have had to change our whole viewpoint as to how much the Government should be involved with these, but we are trying, while doing it, to build a rather good safety record that has been established as this industry has grown.

We do not want the American people to be panicked about these, but we do want the Congress and the public to understand that we share deeply your concern that these are hazardous materials, and we are moving an awful lot of them.

Just today, for example, we had to slow down the whole L. & N. Railroad and issue an order to them that they must do certain things because there have been too many accidents on that railroad.

This is the first time this has ever happened. But that railroad carries a number of hazardous materials, and we had to restrict the movement of hazardous cargoes over that railroad; and this is in addition to the work that we have done in saying that tank cars must be coated, that there must be head shields on them, and other new safety requirements we have established in that area.

We also are requiring speed indicators on the locomotives. I mention that because we transport hazardous materials not only by pipeline, but by rail, by barge, and by truck, and all three of those are being addressed by this division that we have, both as to labeling, as to the types of containers, and as to where they can be carried.

I do not indicate to you, Mr. Chairman, that I think we have solved the problem. We have started the steps that I believe are

necessary, but we are certainly waiting for additional comments that will be made on our regulations and on the bill from those knowledgeable people who feel that we should be doing something differently.

Thank you, Mr. Chairman.

The CHAIRMAN. You say that past experience cannot predict future levels of danger from these highly volatile gases, and that your existing regulatory tools are not completely adequate to assure the public safety.

Let me ask you: How great a danger is there to the average citizen?

Secretary ADAMS. I would say less danger than traveling on the highway, and more danger than traveling in an airplane.

The CHAIRMAN. That is a pretty good comparison.

Secretary ADAMS. Yes. In other words, we have got thousands of people in the Department working on aviation safety. In fact, we have a complete regulatory system that costs us over \$2 billion a year just for operations.

On the highways, we have a more minimum system. There are 224,000 miles of highway system out there, and all we can do is look at it generally.

But we have a limited number of these pipeline facilities. We are trying to upgrade them in terms of being certain that we are focusing on them. But I can't describe to you better than by the description that I just gave to you the amount of danger.

In other words, the facilities have had a good accident record overall, but when one goes, it is extraordinarily dangerous to those in the area.

So you are trying to prevent something from happening. And when you do that in a safety field you achieve safety, but you do it by margins.

I think our margin right now is pretty good, but I think if we don't change to meet the increasing quantity and the new locations that that margin will decrease, and I don't think it should decrease.

The CHAIRMAN. How does this fit into the issue of transportation by ship into a particular area, or by a truck going through the heart of a city rather than around it, and so on?

Secretary ADAMS. All right. Let's take as an example the Everett facility, one of the oldest, near the city of Boston.

When a ship comes in carrying Algerian natural gas in liquefied form, the Coast Guard will pick up that ship as it comes in and escort it. If the Coast Guard considers that there is too much traffic in the harbor, they will close the harbor until that ship is docked.

Then, as it is docked, and the gas is transferred off, they maintain a perimeter. When the ship has finished unloading, they escort it back out and then release it. So that you have a control in and a control out of the maritime vessel.

The same type of procedure is used at Elba, and also at Cove Point.

The CHAIRMAN. What about the truck that is going through the city?

Secretary ADAMS. Now, with the trucks, we operate basically on a complaint basis there because it is entirely in private industrial

hands; in other words, where people are going to be using either LPG or LNG, it moves out, and if we have a complaint, we have in the past for certain hazardous materials required rerouting; in other words, for the trucks to go through a different area, go around a city, or travel at a particular hour of the day or night.

The CHAIRMAN. But that is on a complaint basis? You don't require a predecision as to what the routing can be?

Secretary ADAMS. As I say, we handle it on a complaint basis.

Now, the regulatory system that operates now is based on localities. In other words, each local area, through its fire chief, its police chief, is entitled to, and does regulate the movement of such trucks through their streets. They work with our people to determine whether the container is safe, as to its size and so on.

Now, if there is a complaint that the local people are not doing it properly, then we can be summoned into that.

But, for example, recently in Seattle there was a proposal to shift the size of a container carrying a hazardous material from 1 ton to 17 tons, because they could load it on the ship more easily; but the fire chief shut that off.

Now the company is appealing, and they are fighting back and forth about it.

We do not interfere with that fire chief's authority to do that.

The CHAIRMAN. So this is a decision of the local law enforcement and safety people to make their determinations as to the routing, and under what conditions and so on?

Secretary ADAMS. Particularly as to highway movements.

Now, with rail, again they do that; but, as you can see from the order we issued today, if there becomes—in other words, if we see a situation deteriorating, we move on that in a more particular fashion than we do in the highway area. So highway is different from rail, from marine, from pipeline.

The CHAIRMAN. The administration's bill does not include a liability and compensation scheme for damages resulting from LNG and LPG accidents. What is the Department doing to determine financial responsibility and funding requirements?

Secretary ADAMS. Well, what we have done is we have looked at the levels of coverage that are available to these companies, and whether they have coverage.

Are you referring now to the tank trucks, or are you referring to the facilities themselves?

The CHAIRMAN. Well, basically to the facilities.

Secretary ADAMS. All right. Elba Island has available \$100 million; Cove Point, \$190.4 million. Everett has not disclosed the information to us, and we can't subpoena it.

The CHAIRMAN. They have not disclosed what their insurance levels are?

Secretary ADAMS. That is correct.

[The following information was subsequently received for the record:]

THE SECRETARY OF TRANSPORTATION,
Washington, D.C., April 13, 1979.

Hon. HOWARD W. CANNON,
Chairman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, D.C.

DEAR HOWARD: During your February 8 hearing on Liquefied Gases, you asked about the Department's efforts to determine financial responsibility and liability coverage of LNG facility operators. In my response regarding the range of insurance coverage maintained by the large import facilities, I mentioned that Elba Island carries \$100 million and Cove Point \$190.4 million while we had no information on the coverage of Distrigas of Massachusetts Corporation in Everett.

Since the hearing I have received information from Mr. Donald Oakley, President of Distrigas, that their present liability coverage is \$122 million. Mr. Oakley also informs me that the company has in the past made this information available to government agencies studying LNG.

I am pleased to be able to provide this additional information regarding liability coverage and want to correct the possible impression that Distrigas has been uncooperative with the Department.

Sincerely,

BROCK ADAMS, *Secretary.*

The CHAIRMAN. Would this bill give you the authority to subpoena their records for that purpose?

Secretary ADAMS. Yes. Of course we would only use subpoena authority in the unlikely case of that information not being voluntarily released.

The CHAIRMAN. We understand that the cost impact analysis that accompanies your proposed LNG facilities regulations indicates that some of the proposed standards may not be cost beneficial.

Can you tell us about that analysis, and how it is going to be used?

Secretary ADAMS. Yes. The analysis that we had done was to lay out a series of operations based upon the so-called worst case situation. In other words, that if the facility where material was stored, or was being handled, leaked that total quantity into the air, how large a fireball, for example, would be created, and what area would have to be cleared.

The expense is very high if you clear the total area for that.

Now, you can handle that by zoning, and you can also handle it by just buying up the property in a 2-mile radius around a facility.

Now, for an established and old facility, that becomes very costly. But, for other measures, such as burying the pipeline, which was done at Cove Point, the total cost of that was \$50 million, which amounts to—they don't even calculate it on the rate base over the next 40 years.

The CHAIRMAN. There are a number of municipally owned distribution systems that are in poor condition, but the municipalities lack the funds to repair them. What are you going to do to help those municipalities?

Secretary ADAMS. What we have done, Mr. Chairman, is we have gone to HUD and EDA, which are the ones that basically have jurisdiction in that area, to try and get assistance for them, and we have a model program running in Kentucky which indicates to them how they could proceed to do this.

But I don't want to minimize the fact that those small distribution systems, municipally owned, many of which are older facilities

in place, they are not financially capable of changing their system unless they work with their local authorities to change it.

In other words, even for the amounts of money involved in 1968, we left that in the local jurisdictional areas. We do not have the funds in the DOT, nor the program, to buy out and replace those underground pipeline systems.

The CHAIRMAN. What are you doing to assist the States in carrying out quality inspection programs, other than providing Federal grants?

Secretary ADAMS. I will let Mr. Santman state to you specifically what they do with them, since he operates that specific program.

Mr. SANTMAN. As the States have joined the program, we have increased the guidance that we give to them both in terms of how their inspectors should operate, what we believe they should try to cover, and the frequency of inspection.

We have done this through written guidance, through a series of periodic meetings with the State officials, both collectively in regions, and individually.

Part of the time of our field inspectors is spent attending inspection activities along with the State inspectors, and we have tried to supplement their ability to train their inspectors through our transportation safety institute training courses in Oklahoma City.

Each year we have been increasing the number of students and the quality of the courses available to the State inspection personnel.

Secretary ADAMS. We monitor them twice a year.

The CHAIRMAN. Senator Heflin?

Senator HEFLIN. I have no questions.

The CHAIRMAN. Senator Warner?

Senator WARNER. No questions.

The CHAIRMAN. In your testimony you allude to the fact that the FERC has the authority to set site-specific safety requirements for the LNG facilities.

Now, in its enforcement efforts, do DOT personnel inspect to make sure that these FERC requirements are being met?

Secretary ADAMS. No, Mr. Chairman, we do not. That is what I mentioned, that now and as we are proposing by our bill, we examine facilities for compliance with applicable general safety standards.

As of now, we do not have authority to issue site specific safety requirements for interstate gas pipeline facilities that is done by licensing conditions. We do not inspect for compliance with those requirements nor would we have the authority to enforce such compliance.

The CHAIRMAN. Well, who actually does that?

Secretary ADAMS. The Federal Energy Regulatory Commission or the local authorities. I mean they have local jurisdictional authorities. We don't have the jurisdictional authority to do that at this time.

The CHAIRMAN. Would this bill give you a closer coordination in this particular area?

Secretary ADAMS. Yes, it will. That is its purpose.

The CHAIRMAN. In your testimony, you state that the Department will exercise the discretionary authority for preconstruction

approval only with regard to classes of facilities identified through a rulemaking process.

Would you describe how the Department would formalize this selection process?

Secretary ADAMS. Yes; the rule would be issued indicating the types of design, the size of facility, and the general area where it would be constructed that would be considered to be such potential safety hazards as to warrant examination, as opposed to very small, routine operations.

In other words, the size of risk, as I mentioned in my opening remarks, is directly proportional to the size of your storage facility and/or the amount of pipeline activity you have in that area.

We would examine and work with the Federal Energy Regulatory Commission when we are involved with a site of considerable size or risk.

But a small municipality building a small facility in an area we would leave to the local authorities to cover, because those are not the type of things that creates that amount of risk, and have been generally well handled by the local authorities.

The CHAIRMAN. Would this of necessity then include its relation or its proximity to a populated area?

Secretary ADAMS. Yes.

The CHAIRMAN. In your statement on the recent LNG proposed rulemaking, you mentioned that the Department has done a cost-benefit analysis on the cost of regulation.

What were the conclusions of that analysis?

Secretary ADAMS. With regard to this, or to all of our regulations?

The CHAIRMAN. Well, the cost of regulation with respect to this specific subject matter.

Secretary ADAMS. We found it cost beneficial, in other words, that the benefits on reduced potential liability, made it cost beneficial unless you were required to go to a 2-mile radius of clearing.

Because, if you do that, then your cost-benefit ratio shifts.

For example, if you annualize the cost over the next 20 years on the existing facility designs and sites, they range from \$29 to \$54 million per year, depending upon the number of facilities built.

In other words, ranging from a low of 6, which we are certain will be built, to a high of 64.

Now, if the operator is protected by zoning, or local government land controls as to the type of things that can be adjacent, then a 2-mile zone is practical.

If you require that the operator buy it in an urban area, then the cost-benefit ratio shifts and the Arthur D. Little report indicates that the regulation is very expensive.

The CHAIRMAN. Well, now, I'm told that there are 11 areas where the cost exceeded the benefits.

Were those areas that were related to the acquisition of the properties then, rather than the zoning?

Secretary ADAMS. Those 11 areas were those where the costs exceeded \$50,000.

We are talking, Mr. Chairman, about diking, fencing, and having a secure area around particularly the storage area, or the storage facility.

The CHAIRMAN. And what portion of the entire cost of the rule-making did these noncost-efficient sections comprise?

Secretary ADAMS. If you go to the high option, 80 percent is in the land acquisition.

At the low option, then it becomes cost efficient, and I was describing to you the number of facilities that would have to be changed, and the general cost.

But the 11 facilities that you mentioned was an arbitrary line drawn where costs would be more than \$50,000.

The CHAIRMAN. Now, in analyzing health and safety regulations, measuring the benefits is often very, very difficult.

How did the Department quantify the benefits of these safety regulations?

Secretary ADAMS. I will answer that it is terribly difficult, because you have to balance the number of accidents that have occurred in the industry, and this industry does have a good overall record of not causing accidents.

That becomes your low-range benefit.

On the other, high-end benefit that we used to quantify it, was if the material got away from the people that were there, how many people were in the area, what size of cloud would be formed, and if it were LNG, a potential for fireball, or LPG, potential for explosion, or anhydrous ammonia, potential for asphyxiation, these benefits we balanced off, and the more urbanized the population, you get to enormous potential liability.

What I am asking about is, I wanted to give you an example of one facility, like Everett, which happens to be in an area that there is a junkyard on one side, but there is a propane plant on the other, and the potential for explosion there was in the billions of dollars if there was such an explosion.

Of course, we haven't had one.

Dr. Palmer says to me the potential in that area could run as high as \$50 billion for the damage.

The CHAIRMAN. \$50 billion?

Secretary ADAMS. Billion.

The CHAIRMAN. Under section 3(b), you would have the preconstruction approval authority.

Now, if an applicant wishes to challenge the terms and conditions, what recourse is available?

Secretary ADAMS. He can proceed to the appropriate U.S. Court of Appeals under the judicial review procedures of the Natural Gas Pipeline Safety Act and those proposed in title II of our bill.

The CHAIRMAN. They would have the right to go directly into district court; no further administrative action is required?

Secretary ADAMS. It can be done. We could fashion an administrative procedure if the committee so wished.

The CHAIRMAN. Is there a precedent for this type of preconstruction approval?

Secretary ADAMS. There are a number of areas, but examples, Mr. Chairman, would be with the Alaska oil pipeline, we moved in during the preconstruction phase there, particularly with regard to wells.

Now, we have a licensing procedure on deepwater ports, and the Coast Guard does a preconstruction analysis of those, but we

haven't any that have come online yet. The first one is being built now off of Louisiana.

So there are precedents for it, but this I want to emphasize is a departure in the area of pipelines, a rather dramatic departure from the kinds of activities that have taken place in the past.

These have been basically industry and locally regulated other than the big interstate transmission lines.

The CHAIRMAN. Section 3 clarifies that the safety standards that are generally applicable to new pipeline facilities could be made applicable to existing facilities that are considered hazardous to life or property.

Wouldn't they all be considered hazardous to life or property?

Secretary ADAMS. No, sir. If they meet the general standards that we have there, they would not be so considered.

Mr. Chairman, as Secretary of Transportation, I do look at the safety areas, as I know the chairman does, of aviation, trucks or rails and every place else, and the only way you can have absolute safety is not move it at all.

And, therefore, once you move beyond that point, you deal with what your margins are, and you use the best technology that you have, unless a State or the community or the Congress says we consider it so dangerous, we won't move it at all.

So your examination of these is to take the technology and the rules that have proven safe, and that they have carried it safely for a long period of time, and to apply those with our experts updating all the time.

That is what we mean by using general rules to examine existing facilities.

Now, when we get down to the local area, in other words, a local gas company in a small town, that is being left to the localities and the State inspectors with our monitoring, as Mr. Santman said. And I am not trying to say to the committee that there aren't some out there that are dangerous, because some of them are old, and that margin of safety we have had to leave to local authorities with our assistance to see if they come up to standards.

So, I can't answer if every place in the country is positively safe.

The CHAIRMAN. Is the Department prepared to conduct an onsite inspection of every facility to make a determination?

Secretary ADAMS. No. We do not have the personnel to do that. We can with these big facilities.

The CHAIRMAN. How are you going to handle it?

Secretary ADAMS. We must again divide the categories. With the LNG facilities, the number that are proposed and the number that are available, we have the personnel that can do that.

But if we go to looking at individual distribution systems, the answer is, no, we do not have the personnel to do that.

There are 1.1 million miles of pipeline in the United States, and we do not have the personnel to personally inspect every mile of that.

The CHAIRMAN. Section 3(f) provides that the Secretary may waive in whole or in part compliance with any standard established under the act if he determines that waiver of compliance with such standard is not inconsistent with gas pipeline safety.

How many of those waivers does DOT grant a year, or have they granted any?

Secretary ADAMS. We grant an average of about six a year.

The CHAIRMAN. And the States that have a certified program are authorized to grant waivers as well?

Secretary ADAMS. There are an additional, approximately 12 a year that the States grant, and then we either must approve or disapprove.

Most of those involve pressure changers within a system.

The CHAIRMAN. Have you disapproved any of them that the States have approved?

Secretary ADAMS. The answer is, yes. I will supply you for the record the exact number.

Our remembrance of it is about six or seven have been disapproved in the last 3 years.

The CHAIRMAN. The proposed legislation as I understand it changes the procedures for granting waivers.

Have you encountered difficulties in the waiver procedure in the past, and, if so, what way?

Secretary ADAMS. No. We do not propose a change in the waiver procedure, and it has worked well in the past in terms of the manner in which they have applied and the way in which our people have been able to monitor and respond.

We have not had any bad occurrences in this regard.

The CHAIRMAN. Is that now subject to judicial review?

Secretary ADAMS. Yes, sir.

The CHAIRMAN. What kind of a consultation process do you have with FERC with respect to waivers and the cooperative action that has to be taken with them?

Secretary ADAMS. We are working toward a memorandum of understanding with them, Mr. Chairman.

I also note that they have also reviewed and worked with us on the proposed regulation that we have put out. So we have had cooperation from them.

The CHAIRMAN. Now, you eventually have to get to the point that somebody makes a decision. When you have your consultation, do you require a unanimity between DOT and FERC, or have you had any problems in that area in the past?

Secretary ADAMS. We do not require unanimity.

I really don't know how to quantify the problem, Mr. Chairman.

In other words, we have a working relationship with them and we have not had any severe problem on siting and on their putting in conditions.

What we are requesting to clarify in this bill is our authority in the preconstruction and design area to assure that safety standards are complied with before gas is put in a facility.

So we have had a good working relationship with FERC but we think the jurisdictional differences should be clarified.

The CHAIRMAN. In the Natural Gas Pipeline Safety Act there was a grant-in-aid program to assist the States. Why didn't you have any proposed grant-in-aid provision such as that in the act?

Secretary ADAMS. We still have it, Mr. Chairman. It is in title I. Ours are just amendments. We do not remove that.

The CHAIRMAN. I see. There isn't anything in title II with respect to a grant-in-aid provision?

Secretary ADAMS. No, sir. We have not proposed it there.

The CHAIRMAN. Will the States have any incentives to participate in the Federal program?

Mr. SANTMAN. The dimension of the liquid pipeline program is considerably smaller. You have got about 1.1 million miles of gas pipeline. You have got less than a quarter of that of liquid lines.

Further, I would say that about 80 percent of the liquid lines are in about 20 States or so. You do not have the distribution systems, which are really the principal source of accidents in the gas system.

And, at this point in time, it is not clear how many States—there are States that have indicated a desire to participate in a liquid program, but the size of a Federal-State program on the liquid side will be considerably smaller, and I think we have to see how the States interest shape up before we can really talk to the question of whether or not there should be a companion grant program.

The CHAIRMAN. Senator Warner?

Senator WARNER. Thank you, Mr. Chairman.

The chairman has given me responsibilities on the committee relating to the maritime aspects of commerce. Like if we may, Mr. Chairman, to digress into the marine safety aspects of hazardous materials transportation.

You are familiar with the GAO report which in so many words directed the Coast Guard to begin to devise regulations, and under the Tanker and Vessel Safety Act of 1978 you specifically were directed to implement regulations.

Could you bring us up to date on that?

Secretary ADAMS. Yes. The reports' findings were that they thought the designs of the ships were inadequate.

Senator WARNER. This is the GAO report that you are referring to?

Secretary ADAMS. Right. So we have addressed that both with a notice of proposed rulemaking, which will be final—the notice will come out in July, and we anticipate—that is for the terminals.

We have stepped up now, and inspect the vessels as they come in, to be certain that they have adequate crew training, and that the designs of them are adequate.

We have a boarding program on tankers, too, Senator.

In other words, for example, the way it will be done is—we had one that was leaking coming into Elba Island, and the Coast Guard held it off of Elba Island until it was fixed.

Senator WARNER. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Secretary, in earlier hearings the committee heard some very strong complaints about the lengthiness of the application process, particularly with respect to the FERC proceedings.

How long do you imagine the DOT review might take?

Is this something that is going to take weeks or months or years?

Secretary ADAMS. No, sir, I believe in one-stop proceedings, and we would be proceeding at the same time that they are.

We already conduct joint inspections with them of existing facilities, Mr. Chairman, and we would not intend to make these one behind the other, but both occurring at the same time.

The CHAIRMAN. So you would expect to try to speed up the process, if any?

Secretary ADAMS. In other words, that is up to the Federal Energy Regulatory Commission, as to how long they take to do that, and the rules that are applicable.

What we would be doing is seeing that our basic safety matters were included in the design and construction, and we would do that at the same time that they were proceeding with their site selection.

The CHAIRMAN. Now, in light of the bill's preemption of States over interstate facilities, what effect would DOT's granting of preconstruction approval have on the States authority of the facilities.

Mr. SANTMAN. Mr. Chairman, I believe that the large facilities that we are talking about, the LNG facilities, are all interstate activities. They are ones that do become subject to the Federal Energy Regulatory Commission, which identifies them as being interstate in nature.

The CHAIRMAN. So you are really saying, then, in that type of situation, the State would have no authority over the facilities?

Mr. SANTMAN. I believe that most of the large facilities, the ones the Secretary spoke of as having large storage capacities, are going to be basically import facilities that are big and by their very nature are interstate.

The CHAIRMAN. Well, you did everything but answer my question. That was so the States will not have any authority in those cases with respect to facilities siting?

Mr. SANTMAN. That would be correct.

The CHAIRMAN. Thank you very much, Mr. Secretary, and your associates. You have been very helpful.

As I said, I intend to introduce the bill today or tomorrow. I'm going to put it in as by request, because I still want the opportunity to have my staff go through it thoroughly, I'm going to want to go over it quite thoroughly in light of the answers that you have given us today. We look forward to moving along in this area as rapidly as we can.

Secretary ADAMS. Mr. Chairman, I appreciate the opportunity of being here.

When I came to this Department I found that this area needed a lot of work, both organizationally and regulatorily, and now we have proposed a bill, proposed regulations and to make progress.

It is a very difficult area, and I appreciate the committee taking the time to enable us to explain what we are doing. And we are certainly available to the committee for your comments as to what additional things you think we could be doing better.

The CHAIRMAN. Thank you very much.

[The statement follows.]

STATEMENT OF HON. BROCK ADAMS, SECRETARY, DEPARTMENT OF TRANSPORTATION

Mr. Chairman and members of the committee, I thank you for this opportunity to appear before your committee to discuss the Department of Transportation's pipeline safety program, and, in particular, to express our support for an Administra-

tion bill, offered for introduction today, to improve the Department's ability to ensure the safe movement in commerce of hazardous gases and liquids by pipeline.

Before discussing the benefits that would be realized from the enactment of the Administration's bill, I would like to highlight some of the important pipeline safety activities that the Department has undertaken since February 27, 1978, the date of the last authorization hearing held by this Committee on our pipeline safety programs. Although the Congress was not able to complete work on a pipeline safety authorization bill for fiscal year 1979, sufficient funds to carry out these programs were appropriated for that period. However, we still need authorizations for fiscal years 1980 and 1981 and the Administration's bill would authorize appropriations for those years in support of our pipeline safety efforts.

Although the Department's pipeline safety functions continue to be carried out by the Materials Transportation Bureau within the Research and Special Programs Administration, the Bureau has recently completed an internal reorganization which will improve management of the pipeline safety and hazardous materials programs. This was accomplished by separating rulemaking activities from the implementation and enforcement responsibilities for these two programs. The realignment of functions was accomplished by restructuring the old Offices of Pipeline Safety Operations and Hazardous Materials Operations into four new offices. The new Offices of Pipeline Safety Regulation and Hazardous Materials Regulation are concerned with all rulemaking and waiver activities. The new Office of Operations and Enforcement, in addition to compliance and enforcement, manages our State grant-in-aid program and monitors implementation of NTSB recommendations. The Office of Program Support consolidates all administrative, budget, research, and data functions in support of the other offices. At this time, we also have a fifth office which manages the Department's participation in the Alaska Natural Gas Transportation System. The staffing and resources committed to the activities of this Office will vary with the workload through the phases of design review and construction monitoring for the System. This Office will go out of existence approximately one year after completion of the Alaska Natural Gas Transportation System, following review of initial operations and assurance that all DOT safety requirements have been met.

In addition to the management improvements provided by the MTB reorganization, staffing of the pipeline safety program has also improved since our hearings last year. At that time we had been able to staff only two-thirds of our authorized positions. Aside from the positions authorized in fiscal year 1979 for the Alaska Gas System, we are now at nearly 90 percent staffing level. We have not moved as quickly on the Alaska Gas positions because of delays associated with that project. We have also installed a permanent Director of MTB and an Associate Director for Pipeline Safety Regulation. And, of course, Dr. Palmer is the new Administrator of the Research and Special Programs Administration. We look forward to even more responsive and expeditious personnel actions as a result of the new Civil Service Reform Act.

Over this last year we have also made significant progress in developing regulations to assure that only safe LNG facilities are built and that all such facilities are safely operated.

The MTB has now completed the review of over 4,000 pages of comments submitted in response to its April 1977 advance notice of proposed rulemaking pertaining to new Federal safety standards for LNG facilities. The advance notice proposed more stringent LNG safety standards providing for: (1) protection of persons and property near an LNG facility from thermal radiation (heat) caused by ignition of a major spill of LNG, (2) protection of persons and property near an LNG facility from dispersion and delayed ignition of a natural gas cloud arising from a major spill on LNG, and (3) reduction of the potential of a catastrophic spill of LNG resulting from natural phenomena such as earthquakes, tornadoes, and flooding.

The MTB has decided to treat the subject matter of the original advance notice in two rulemaking actions and has published the first notice of proposed rulemaking in today's Federal Register. Today's notice will cover the design (including site selection) and construction of new facilities and existing facilities that are replaced, relocated, or significantly altered.

We realize that this is a very difficult area. Liquefied natural gas has the potential to play a substantial role in meeting the nation's future energy needs. Yet, it is vital that we examine the risks associated with the movement and storage of LNG and assure ourselves that we are providing the full measure of protection to the public.

The notice of proposed rulemaking issued today demonstrates our efforts to see how we could accomplish this, proposing regulations which are not so costly as to

unnecessarily rule out LNG, but which will provide adequate safety assurance for the public. Any prediction of accidents and damage is, of course, very imprecise. Yet, we had to consider them and evaluate what different measures were available, some of which are quite costly, to contain the effects of any such accidents and limit them. In preparing the notice of proposed rulemaking, we analyzed these costs and benefits, to provide us guidance for what must eventually be a difficult decision. What we are seeking through this process is the most reasonable alternative among many difficult ones, or maybe even better alternatives which might come forth as a result of this rulemaking.

The second notice of proposed rulemaking will pertain to standards for the operation and maintenance of LNG facilities. We expect to issue this second notice within 60 days. This notice of proposed rulemaking will address operational and transfer procedures, site security, emergency procedures, employee training requirements, and various maintenance procedures.

We expect to issue the final rule on design and construction of LNG facilities in September and the final rule on LNG facility operations by the end of the year.

Concurrent with the MTB's LNG regulatory activities, the United States Coast Guard has been developing regulations for storage and handling of hazardous materials, including LNG, at ports. On August 3, 1978, the Coast Guard issued an advance notice of proposed rulemaking inviting public participation at the earliest stages in the development of regulations to provide standards for safety, security, and environmental protection in the transportation, transfer, handling, and storage of liquefied natural gas at waterfront facilities. The Coast Guard is analyzing the comments received as a result of this advance notice and is drafting a notice of proposed rulemaking. The Coast Guard expects that the proposal will be ready for publication in July of this year, or shortly thereafter.

Because of overlapping safety jurisdiction for waterfront LNG facilities, the MTB and the Coast Guard carry out their respective regulatory activities on this subject under the terms of a Memorandum of Understanding executed by the agencies in February 1978. Cooperation between these two agencies on this important safety matter has been excellent.

In the liquid pipeline area, the MTB has several rulemaking proceedings in process aimed at reducing the potential for accidents involving the transportation of Highly Volatile Liquids (HVL). Examples of such liquids are liquefied petroleum gas and anhydrous ammonia.

The record of liquid pipeline accidents through 1976 shows that although HVL accidents comprise only 10 percent of the liquid pipeline accidents, the HVL accidents caused 66 percent of the deaths, 50 percent of the injuries and 30 percent of the property damage. The higher potential for destruction occurs because HVL, when released into the atmosphere, forms a gas cloud which is a markedly different and more insidious hazard than those presented by spills of less volatile liquids. The gas cloud will move downhill or downwind depending on the terrain, type of liquid involved, and atmospheric conditions. Because it is generally heavier than air, the gas cloud will tend to hug the ground as it continues to move. If a source of ignition is encountered, a petroleum gas cloud will burn or explode. If anhydrous ammonia is spilled, the greatest danger is that of toxicity or asphyxiation. With either commodity the hazards are severe.

The Highly Volatile Liquid rulemakings that were initiated in 1978 propose safety plans for normal operations and emergencies and standards designed to reduce spill size, and pipeline failure rates. In addition, the MTB recently issued an advance notice of proposed rulemaking soliciting public comments on the need for additional and more stringent requirements for design, construction, operation, and maintenance of Highly Volatile Liquid pipelines.

I would now like to turn to a discussion of the bill we are offering for introduction today.

The Natural Gas Pipeline Safety Act of 1968 and the Transportation of Explosives Act in the Federal criminal code are the primary authorities for the Department's current gas and hazardous liquid pipeline safety programs. We believe, after a decade of experience, that these underlying authorities do not provide all the tools necessary for a comprehensive and effective Federal pipeline safety program. It is for this reason that we propose this legislation, which will substantially improve the ability of the Department to progress toward the goal of a fully effective and comprehensive pipeline safety program. The bill contains two titles. Title I amends the Natural Gas Pipeline Safety Act in a manner that would permit a more effective realization of the original purposes of the Act. Title II proposes new and comprehensive legislation for the safety regulation of hazardous liquid pipeline transportation.

I would like to briefly discuss the more important amendments made by Title I and then discuss in some detail the need for the new law proposed by Title II.

While the Natural Gas Pipeline Safety Act authorizes the Department to prescribe safety standards for, among other things, the design, installation, construction, initial inspection, and initial testing of pipeline facilities, some have questioned whether the Department can enforce, by civil penalty or otherwise, compliance with those standards prior to a facility's being put into service. This question presents itself because the actual risks to life and property sought to be ameliorated by complying with safety standards present themselves only after a facility goes into operation. We believe that an effective way to assure operational safety is to assure that safety standards can be met before a facility is placed in operation. Because the question of the ability of the Department to assure such compliance through enforcement sanctions has been raised, we believe there is a need to clarify the extent of the Department's jurisdiction. This is accomplished in Title I by broadening the Natural Gas Pipeline Safety Act's definition of "pipeline facilities" to expressly include facilities "intended for use." This clarifies the Department's authority to enforce compliance with applicable safety standards prior to a facility's going into operation and creating the potential for actual hazards.

Title I also amends the Natural Gas Pipeline Safety Act to expressly provide the Department with discretionary authority to require that any construction associated with a new or existing pipeline facility not begin until it approves that construction. Approval would be contingent only on compliance with applicable safety standards and such other terms and conditions as the Department determines are appropriate to assure compliance with standards.

Mr. Chairman, I would like to discuss this provision in some detail. To date, it has not been the practice of the Department to pass on whether facility design standards issued under the Natural Gas Pipeline Safety Act are being complied with before construction of a facility begins. In recent years however, the environmental and safety concerns associated with the location, construction (including extension and replacement), and operation of certain major pipeline facilities, especially those used or intended for use in the import and export of LNG have led the Department to conclude that approval of facility design before construction begins is warranted in specific cases. Because some may question whether the Natural Gas Pipeline Safety Act currently provides the Department with authority to review and approve a facility design before construction begins, it is proposed under Title I to expressly provide that authority. However, we do feel we have this authority at the present time.

The bill would give the Department discretion in exercising this approval authority, because we believe that relatively few pipeline facilities warrant this kind of close scrutiny and that only in those few cases will commensurate safety benefits be derived from the exercise of this authority. It is intended that the Department will exercise this authority only with regard to classes of facilities identified through a rulemaking process as warranting pre-construction review. We do not intend to conduct such reviews for the vast majority of facilities.

Also, I want to emphasize that our pre-construction review would focus exclusively on whether a facility meets our generally applicable safety standards. While we recognize the need to consider whether additional safety requirements are appropriate on a site specific basis, we do not seek such authority. As you are aware, the Department of Energy and the Federal Energy Regulatory Commission already have such authority under the Natural Gas Act. Lastly, it is our view that any pre-construction activities that might be undertaken under this proposed provision, as those undertaken pursuant to existing law, will be done expeditiously, to avoid delay in the development of new energy facilities.

While the two amendments just discussed seek to clarify existing Natural Gas Pipeline Safety Act authority, several other amendments under Title I of our legislative proposal clearly provide new authority to assist the Department in carrying out its gas pipeline safety responsibilities. Primary among these amendments are those pertaining to enforcement and investigative powers.

Currently, if the Department is unable to collect a civil penalty assessed under the authority of the Natural Gas Pipeline Safety Act, the matter may be referred for collection only to the Attorney General for district court action. The success in convincing the Department of Justice to pursue the collection of a civil penalty depends on the significance of the case which is at times considered synonymous to the level of the assessed penalty.

While understanding the reluctance of the Department of Justice to commit already strained resources to cases that, when viewed individually, are not considered significant, we also recognize the need to pursue to final collection all civil

penalty actions notwithstanding the penalty amount. Because many of the Department's pipeline civil penalty cases involve relatively small assessments, we believe that an alternative to the current Attorney General/District Court collection procedures is both desirable and workable.

For these reasons, Title I proposes to amend the Natural Gas Pipeline Safety Act to permit the Department, under certain conditions imposed by the appropriate district court, to go directly to Federal Magistrates for collection of civil penalties ranging to \$1,500.

Precedent for using Federal Magistrates to collect relatively small civil penalties is found in the Federal Boat Safety Act of 1971 (Public Law 92-75). Because the U.S. Coast Guard has successfully used this procedure under that Act, the Department believes the availability of the procedure to the Pipeline safety enforcement program will lead to similar benefits.

There are situations where violations of law or regulations justify the imposition of criminal penalties. With regard to gas pipeline safety, the Department believes that willful violations of the Natural Gas Pipeline Safety Act, or regulations or orders issued under the Act, and willful destruction or attempted destruction of interstate gas transmission facilities fall into that category. However, the Natural Gas Pipeline Safety Act does not currently authorize criminal sanctions for such violations or actions. Title I of our bill would amend the Act to permit the imposition of such sanctions.

To further enhance the pipeline enforcement program, Title I also provides the Department with compliance order authority. This authority has been found to be most useful in situations where monetary penalties alone are not fully effective in achieving compliance with the Natural Gas Pipeline Safety Act or regulations issued under the Act. I would like to cite a few examples:

When an otherwise appropriate civil penalty may be too burdensome on the alleged violator. The burden may be created when the violator must pay both the penalty and the cost necessary to achieve compliance, which may result in a substantial risk that he may be put out of business. Most typically, this situation arises with gas distribution systems owned and operated by small municipalities located in the south and southwestern U.S.

In cases where a civil penalty is not warranted, the issuance of a compliance order permits the formal establishment of a precise description of the noncompliance or violation and provides the evidentiary framework for follow-up inspections. Failure to meet the terms of the compliance order could lead to a more supportable civil penalty assessment or Government action to seek court enforcement of the terms.

As a method of closing out cases, which because of their age may make them unacceptable to the U.S. Attorney's office for prosecution, the compliance order enables the Government to recognize violations and impose formal sanctions to record thereon.

The benefits of compliance order authority in these situations are already being experienced by the MTB in its hazardous materials enforcement program.

The Department does not currently have authority under the Natural Gas Pipeline Safety Act to issue subpoenas or require the production of property. The Absence of such authority has frustrated, on several occasions, the Department's responsibility to expeditiously and effectively carry out gas pipeline compliance and accident investigations. For example, we have experienced operator reluctance and refusal to release property (usually a pipe segment) that is considered relevant to determining the cause of pipeline accidents. To avoid this problem in the future, Title I of our bill proposes to provide the necessary authority.

As I previously stated, Title II of our bill proposes new and comprehensive legislation for the safety regulation of hazardous liquid pipeline transportation. The need for this legislation can be better understood with some background on the Federal involvement in liquid pipeline safety matters.

The authority to regulate liquid pipeline carriers for safety purposes originated with the Act of May 30, 1908 (33 Stat. 554), popularly known as the Transportation of Explosives Act, which gave the Interstate Commerce Commission (ICC) the authority to regulate the safe transportation of explosives by common carriage. A 1921 amendment brought liquid pipelines under the Act for the first time. When Title 18 was enacted into positive law in 1948, these provisions were reenacted in substance as 18 U.S.C. sections 831-835.

Although amendments made to the Transportation of Explosives Act in 1960 broadened the applicability of the Act to include private carriers as well as common carriers, a new definition of "carrier" expressly excluded "pipeline carriers." The

legislative history of the 1960 amendments provides no insight into the reasons for repealing this 40-year old legislative authority.

In a report titled "Report on Movement of Dangerous Cargoes", dated September 30, 1963, an interagency study group coordinated by the Department of Commerce made the following recommendation:

"The ICC should be given specific authority and responsibility for the safety regulation of all pipelines operating in interstate and/or foreign commerce (other than water pipelines and gas pipelines)."

In Congressional hearings that followed, industry spokesmen stated a preference for a set of uniform national liquid pipeline regulations rather than regulations promulgated by various States and local jurisdictions and, for this reason were in favor of being brought under the authority of the ICC for safety purposes once again. By Public Law 89-95, approved July 27, 1965, this was accomplished by removing the three words "other than pipelines" from the definition of "carrier" in the Transportation of Explosives Act. To this date, no other amendments to the Transportation of Explosives Act have been made.

Regulations were promulgated only after the responsibility was transferred from ICC to DOT, and there have been several amendments since 1970.

In January 1975, the Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.) (HMTA) was signed into law.

Although a much more cohesive and effective piece of legislation than the Transportation of Explosives Act for regulating the nonpipeline transportation of hazardous materials, section 112 of the HMTA (49 U.S.C. 1811) provides that the provisions of the HMTA do not apply to liquid pipelines already subject to safety regulation under the Title 18 criminal provisions. This means that liquid pipelines are the only mode of transportation still regulated for safety under the Transportation of Explosives Act.

This background evidences a lack of full attention to the needs of an effective Federal liquid pipeline safety program. Unlike the Natural Gas Pipeline Safety Act of 1968, for gas pipelines, the Transportation of Explosives Act was not written with pipeline safety in mind and in fact does not even use the word pipeline in its provisions, and applies to pipelines only because of its general applicability to hazardous materials transportation. We believe that necessary and appropriate improvement of the Secretary's liquid pipeline safety programs requires the enactment of legislation specifically pertaining to such programs.

The Department further believes that the safety regulation of hazardous liquid pipeline transportation can best be carried out using the same administrative and legal framework as the safety regulation of gas pipeline transportation. But as you are aware, there are substantial differences between the philosophy of the Transportation of Explosives Act and that of the Natural Gas Pipeline Safety Act. For example, the Department lacks jurisdiction under the Transportation of Explosives Act to: regulate storage of hazardous liquids; regulate intrastate pipeline transportation of hazardous liquids; or impose civil penalties for violation of hazardous liquid pipeline safety standards.

We have all these powers under the Natural Gas Pipeline Safety Act.

Because the Department considers the Natural Gas Pipeline Safety Act to be a comprehensive piece of legislation and believes that the same administrative and legal framework should exist for the safety regulation of both gas and hazardous liquids, the new safety law for hazardous liquid pipeline transportation which we propose in Title II of our bill is patterned very closely after the Natural Gas Pipeline Safety Act as it is proposed to be amended under Title I of the bill.

[Whereupon, at 12:05 p.m., the hearing was adjourned.]

[The following information was subsequently received for the record:]

QUESTIONS OF THE COMMITTEE AND THE ANSWERS THERETO

Question 1. Are there general areas in the United States where LNG facilities would not be able to be constructed if the criteria in sec. 193.111 were promulgated as final rules (e.g. California coast)? Where on the California coast could a facility be constructed?

Answer. Under proposed section 193.111, LNG facilities would be prohibited in any area where there is more than a 0.5 percent probability that within 50 years there will occur: (a) surface faulting within one mile; (b) seismic acceleration above .8g; or (c) soil liquefaction or landslide.

For areas where similar but lower magnitude occurrences are predictable, proposed section 193.111 would impose certain additional design requirements.

A location being considered for construction of an LNG facility would have to be investigated to determine whether it meets the geological requirements in proposed section 193.111. Although we have not conducted a national survey to determine the precise areas in the United States where LNG facilities would be prohibited, there appear to be numerous sites in California which would be acceptable under DOT seismic standards. The FERC environmental staff, in the preparation of the Final Environment Impact Statement on the proposed LNG receiving terminal at Point Conception, California, evaluated forty-one locations along the Western Coast of the United States, of which thirty-nine were in California. Only five of the sites in California, including Point Conception, were found to present an unacceptable seismic risk. The other thirty-four California sites were considered adequate from a standpoint of seismic risk, although field investigations were not conducted at all of these sites. FERC, Final Environmental Impact Statement, Vol. II, pp. 324-34.

Question 2. How do the regulations in sec. 193.111 compare with the California Public Utility Commission's latest seismic requirements?

Answer. DOT is in the process of comparing the proposed seismic requirements in sec. 193.111 with the latest proposed seismic regulations developed by the staff of the California Public Utility Commission which were published on February 1, 1979. The Administrative Law Judge of the Commission is scheduled to make a final determination on these proposed regulations in the near future. The results of our comparison will be provided as soon as it is completed.

Question 3. In its Notice of Proposed Rulemaking, DOT could have chosen to ban the construction of LNG tanks in heavily populated areas. Why was this policy not adopted?

Answer. A rule prohibiting the construction of LNG tanks in any densely populated area was not proposed because the safety objectives of such a ban can be achieved more reasonably and appropriately through the "exclusion zone" and "planned ignition" approach used in the NPRM, which would provide protection in both high and low population areas. Establishing an "exclusion zone" involves obtaining land area around each facility sufficient in size to minimize the potential harm that could occur from fire or dispersion of flammable vapors. Development within the "exclusion zone" would be limited to the facility and certain other structures which will provide protection to its inhabitants, contents and related activities in the event of a major accident. Where it is not practical to build a new facility at a site with enough land to protect against gas dispersion, under the NPRM approach, an operator could seek approval from DOT to use a "planned ignition" system as an alternative means of protection. Under this system, LNG vapor is intentionally ignited to protect against gas dispersion. This is a technique now employed at a number of metropolitan LNG storage facilities. As compared to an outright ban on construction in heavily populated areas, the NPRM approach also would allow the use of sites in areas of high population that are desirable from other important safety and economic standpoints not related to population, including the land use, geological conditions, navigational considerations, and proximity to existing pipeline facilities.

The election not to propose an absolute ban on the construction of tanks in heavily populated areas was also made in recognition that such action would adversely affect the continued supply of natural gas to household consumers by arbitrarily preventing replacement or enlargement of many existing facilities. Under these circumstances, storage tanks needed to meet peak demands for natural gas would have to be built elsewhere at increased costs. This would have the added side effect of exposing additional areas to the risks of LNG.

The "exclusion zone" requirements in the proposed rules can be expected to provide an economic incentive for locating LNG facilities in areas of lowest possible land costs (i.e., rural and other lightly populated areas). At the same time, the approach is flexible enough so that construction in heavily populated areas is not foreclosed when on balance, all relevant factors favor such construction.

Question 4. The Notice of Proposed Rulemaking indicates that MTB has made considerable improvements over NFPA standards. Your own independent analysis, comments received in response to the advanced notice of proposed rulemaking, and the work of Arthur D. Little seem to be the primary basis for your proposed regulations.

(A) Did MTB examine the regulatory work and information gained by LNG deliberations in California?

(B) What other technical basis was used in formulating these regulations?

(C) What input did the Coast Guard have in this Notice of Proposed Rulemaking?

Answer. A. In preparing the NPRM, MTB considered the proposed regulations and supplementary information that was issued last July by the LNG task force of the California Public Utilities Commission.

B. The additional technical basis used in formulating the regulations were published in the form of a bibliography in the August 22, 1977, issue of the Federal Register (copy attached).

C. As discussed in the preamble to the NPRM, the proposed rules were coordinated with Coast Guard throughout the developmental stages. Coast Guard review and MTB's adoption of their suggested textual adjustments are expected to avoid conflicts and overlaps with related Coast Guard regulations. Comments on the NPRM will be thoroughly considered by the MTB and the Coast Guard.

Question 5. What are your plans for adopting these proposed regulations into the Federal Code? When do you estimate they will become final regulations?

Answer. Our current plans call for publication of final regulations on the siting, design, and construction aspects of LNG facilities in September 1979. Final regulations on operation, maintenance, security and fire prevention (for which an NPRM is expected to be issued next month) are scheduled for December of this year. Together these two sets of regulations will form a new Part 193 of Title 49 of the Code of Federal Regulations.

Question 6. Please estimate the total expected costs to industry of these proposed regulations if they are incorporated into the Federal Code?

Answer. Because of the various options made available to comply with the proposed standards, it is difficult to determine precisely the costs to industry. In a Draft Evaluation analyzing costs and benefits of the proposed LNG regulations, the 130 sections of the NPRM have been analyzed and compared to NFPA 59A, 1975 edition. In that analysis, it was concluded that: 95 sections would involve no incremental costs, 22 sections would have minor incremental costs (less than \$50,000 per facility), and 13 sections could increase costs more than \$50,000 per component of an LNG facility. Eleven of these 13 sections were subjected to detailed quantitative cost and benefit analysis because they comprise the bulk of the overall cost impacts.

The report concludes that, assuming the future distribution of LNG facilities adheres to the current pattern of urban, suburban and rural locations, the incremental costs (in 1977 dollars, discounted at 10 percent) of these 11 NPRM sections will range over the next 20 years from \$275 million to \$502 million for the minimum (6 facilities) and maximum (64 facilities) estimated level of planned facilities. These costs were projected on the basis of a detailed analysis of the design and construction costs of 5 facilities, chosen as representative of LNG facilities throughout the nation. At least one facility each was selected from an urban, suburban, and rural location.

The annualized cost of the proposed regulations over the next 20-year period ranges from \$29 million to \$54 million per year. Land costs to meet the proposed vapor dispersion zone requirements in Section 193.109 account for 80 percent of the projected incremental costs of these 11 NPRM sections. If the compliance alternative of zoning the land or having a planned vapor ignition were chosen instead of land acquisition, the 20-year incremental costs would be reduced to a range of \$55 million to \$106 million, again depending on the number of facilities to be built, and annualized costs could be as low as \$6 million.

Question 7. The Department proposes to exclude several types of LNG facilities from the proposed regulations. For example, an "LNG facility used by an ultimate consumer of the product" would not be covered.

(A) Please explain why these facilities would be exempt.

(B) What is the average size of these facilities?

(C) Where are these facilities generally located?

(D) Isn't the LNG contained in these structures just as dangerous as the LNG contained at major import terminals?

Answer. In accordance with Section 193.1(b), the proposed LNG safety standards would not apply to the following types of facilities: Type (a), facilities used by ultimate consumers of LNG or natural gas; Type (b), facilities used in processing natural gas or other hydrocarbons that do not store LNG; and Type (c), the portion of an LNG facility at a marine terminal which is between the vessel and storage tanks.

(A) Type (a) facilities are exempt from the proposed safety standards because the jurisdiction of the Natural Gas Pipeline Safety Act of 1968 (49 USC 1671 et seq.), under which the standards are proposed, does not extend to "pipeline facilities" (which includes LNG facilities) which are not involved in the transportation of gas, such as those facilities owned or operated by ultimate consumers of gas.

Type (b) facilities are exempt because they do not receive, store, or transport LNG, and therefore, do not present a high level of risk.

Type (c) facilities are exempt because under the MTB/USCG memorandum of understanding for waterfront LNG facilities, the portion of a facility between a vessel and the storage tanks will be regulated by the USCG.

(B) The average storage capacity of type (a) facilities is small. The largest that we are aware of has a storage capacity of 15,000 barrels. Type (b) facilities, of course, have no storage, and any storage associated with type (c) facilities would be subject to the proposed standards.

(C) Type (a) facilities are generally located in industrial plants where the facility serves as a supply of energy or feedstock for the plant. Type (b) facilities are generally located in refinery-type plants near places of hydrocarbon extraction where most processing occurs. Type (c) facilities are located at waterfront marine terminals which receive or send out LNG by vessel.

(D) The dangers associated with LNG facilities are largely related to the volume of LNG which could spill in the event of an accident. Since the volume of LNG stored at the exempted facilities is small, the danger from these facilities is small compared to major import terminals.

Question 8. MTB claims that these regulations will provide "a final level of safety through safe distances around a facility." Please describe the basis upon which these determinations have been made.

Answer. This statement refers to the proposed "exclusion zone" around a facility under §§ 193.107 and 193.109 as the final level of protection against the risks of an LNG facility; the first level of protection being proper facility design and construction, and the second, the use of diked areas to hold spills of LNG. The "exclusion zone" essentially would provide sufficient distance between persons living or working near a facility to protect them against the hazards of thermal radiation or vapor cloud dispersion. These are hazards which could arise if, in spite of sound design and construction requirements, a major spill into an impounding space does occur and the vapor from the impounded liquid either burns at the impounding space or carries downwind in the form of a combustible cloud until dispersed.

The technical basis for determining the zone size is comprehensively explained in the preamble to the NPRM on pages 8148 thru 8151. Essentially, for thermal radiation, the safe distance to the exclusion zone boundary is calculated by using prescribed mathematical models and allowable heat levels which vary according to the features of the area. A definitive method of measuring the calculated distance is also proposed.

A safe distance for dispersion of a combustible gas cloud would be calculated in a somewhat similar manner. Again, a specific mathematical model for calculating a safe dispersion distance is prescribed. Also, because dispersion distance is very dependent on the rate of vaporization of the liquid within the impounding space, methods for predicting this rate are clearly proposed.

Question 9. MTB chose to use a thermal flux figure of 45,000 Btu/square foot hour. How was this determination made?

Answer. The MTB proposes that a thermal flux of 45,000 BTU/ft.² hr. be used in the model for distance determination in Section 193.107(c)(2) in view of the uncertainties regarding this value. Nothing approaching full scale verification testing has yet been performed to determine maximum flux from a large fire, which some experts believe may exceed 50,000 BTU/ft.² hr. For example, the American Gas Association report IS-3-1 suggests a value of 56,000 BTU/ft.² hr. for use in one instance. Preliminary results from research performed for the Department at China Lake, California, have shown that there are still uncertain characteristics about LNG fires. The Department of Energy proposed research program includes further testing to more definitively establish a thermal flux figure. Because of these uncertainties, MTB believes that a conservative value of thermal flux should be used.

Question 10. Does DOT plan to utilize its experience and expertise in assisting FERC evaluation of applications for LNG facilities and, if so, are there specific timetables for such a process?

Answer. As indicated in more detail in response to Question 40, clarifying DOT's ability to address LNG facility safety questions through the preconstruction design approval contained in S. 411 and the new and more stringent LNG facility regulations should reduce FERC's need for its own separate safety evaluation of proposed interstate LNG facilities. Moreover, even if S. 411 is not enacted, the employment of DOT's LNG safety capability in any FERC safety evaluation that may be necessary would seem to be more appropriate than the former Federal Power Commission (predecessor of FERC) practice of contracting out for such assistance. DOT has

significant expertise in this area and this expertise should be fully utilized by FERC. Of course, we are also using FERC's expertise whenever possible.

Question 11. The proposed regulations refer to preliminary results from research being used to determine LNG fire characteristics. Much of the present LNG research is being sponsored by DOE with an additional small amount by the U.S. Coast Guard. What specific future research is needed to assist in developing and improving DOT safety standards? How will DOT coordinate its needs and its uses of LNG research with those agencies conducting the research? Does DOT have any additional plans for any R&D in the area of LNG? If so, please describe.

Answer. The specific research needed to improve DOT safety standards is in the fields of: Thermal radiation from burning pools of LNG, thermal radiation from ignited LNG vapor clouds, detonation or other overpressure from LNG in partial confinement and nonconfinement with varying admixtures of other hydrocarbons, expansion of LNG vapor due to foaming or frothing, integrity of different impoundment design, and numerous associated matters, such as refinement of gas dispersion, modeling, reliability of methods used to seal dike surfaces, data analysis techniques, and the development of reliable instrumentation.

The U.S. Coast Guard has conducted some research in the first three areas of this list and needs to perform additional research only to follow-up and finalize the preliminary results.

DOE has outlined an extensive program in LNG research that would address many of these research needs. DOT is in general agreement with the proposed research but believes the work should be expedited and extended to larger verification testing and LPG, in order to meet anticipated regulatory needs in a timely manner. DOT intends to continue its staff coordination and input into DOE research plans in these areas and to monitor all related research in process.

DOT planned research includes two areas to be sponsored by the Coast Guard: (1) detonation or other overpressure from LNG in non-confinement with varying admixtures of other hydrocarbons and (2) refinement of gas dispersion modeling.

In addition, by September 1979, the National Academy of Sciences is expected to release its report on LNG safety evaluation, a study sponsored by the Coast Guard to provide further guidance for DOT and DOE future LNG research.

Question 12. I understand that if enacted, S. 411 will be administered by the Materials Transportation Bureau. However, the Coast Guard also has important regulatory functions with respect to marine terminals for liquefied gases.

(A) What will be the role of the Coast Guard in the Department's granting of preconstruction approvals?

(B) For example, the siting standards in the new regulations deal only with land-based conditions and activities. Many additional factors should probably be considered for any coastal or offshore facility (e.g., exposure to severe ocean weather, waves or tides; location and condition of harbor entrances, coastline or bathymetry; degree of ship traffic and traffic control systems; and proximity to other marine activities). How will DOT coordinate the consideration of these additional factors in the preconstruction approval process?

Answer. (A) Effective February 7, 1978, the U.S. Coast Guard (USCG) and the MTB executed a memorandum of understanding (MOU) with respect to a division of regulatory responsibility for waterfront LNG facilities (43 F.R. 30381, July 14, 1978). The division of responsibilities agreed to in the MOU was considered necessary due to the overlapping regulatory authority of the USGC and the MTB affecting the siting, design, construction, operation and maintenance of waterfront LNG facilities.

By the terms of the MOU, the USCG will establish, and the MTB will refrain from establishing, regulatory requirements for: (1) facility site selection as it relate to management of vessel traffic in and around a facility; (2) fire prevention and fire protection equipment, systems, and methods for use at a facility; (3) security of a facility; and (4) all other matters pertaining to the facility between the vessel and the last manifold (or valve) immediately before the receiving tank(s). Absent the MOU, such matters would be subject to the MTB's regulatory authority under the Natural Gas Pipeline Safety Act (NGPSA).

To enable the MTB and the USCG to exercise their respective responsibilities under the terms of the MOU in a manner that achieves a uniform approach to Federal/State regulation of waterfront LNG facilities, the USCG has been authorized, by the Secretary, to exercise its MOU responsibilities under the authority of the NGPSA.

Because the preconstruction approval authority included in S. 411 speaks to approval in relation to standards issued under the NGPSA, the USCG's exercise of its MOU regulatory responsibilities under the NGPSA would result in the MTB and

the USCG sharing a lead role in the granting of preconstruction approvals for waterfront LNG facilities.

(B) The additional factors that are given as examples would be considered by the USCG in carrying out its regulatory responsibilities under the MOU referred to in A. above. The MOU currently requires close coordination between the MTB and the USCG in the carrying out of their respective regulatory responsibilities. To assure like coordination during the preconstruction approval process, the MOU would be amended to specifically address that process.

Question 13. The standards address qualifications for facility construction personnel and for inspectors. Does DOT plan to evaluate specific training programs or testing procedures or issue any kind of personnel certification?

Answer. The DOT standards would set a uniform, minimum level of required competency for construction personnel and for inspectors. The periodic inspections of LNG facilities by Federal and State inspectors would include evaluation of the adequacy of an operator's training programs and testing procedures in accordance with the DOT standards. However, it is not believed that the situation warrants greater Federal involvement in the industry's employee qualification programs to the extent of requiring Federal certification of construction personnel or inspectors.

Question 14. The standards include attention to fire prevention and safety devices, however, do not include standards for fire fighting equipment procedures or requirements for levels of training for fire fighters. Page 22 states this will be a matter for future regulations. In general, does not DOT plan to include such regulations or to evaluate local fire fighting capabilities and LNG training or to require emergency contingency planning in case of an accident?

Answer. The NPRM on operations and maintenance of LNG facilities expected to be issued next month will propose standards for fire prevention and control methods, including equipment, procedures, and training. The standards will apply to all LNG facilities except those located adjacent to navigable waterways, where fire prevention measures will be regulated by the USCG. The NPRM will also propose standards for emergency procedures to be followed at each LNG facility if an accident occurs. Evaluation of local fire fighting capabilities in regard to LNG facilities, is not contemplated under the standards to be proposed. However, each LNG operator would be required to have sufficient fire protection equipment, including portable fire extinguishers or a water supply system, to minimize the consequences of a fire. This equipment would have to be available regardless of the fire fighting capabilities of local fire departments. In addition, operators would be required to maintain liaison with local officials, advise them of the fire fighting capabilities at the plant facility, and cooperate with local fire departments in handling emergencies.

Question 15. On Page 19, it is stated that these standards would not apply if the LNG facility had no pipeline connection. What standards would apply to a peak shaving facility which received LNG from ships or barges and shipped it out by trucks or barge? Do we need special legislation to cover that possibility?

Answer. The referenced statement (44 FR 8146) is a description of the jurisdictional scope of the Natural Gas Pipeline Safety Act and states that "[t]he jurisdiction of that Act is limited to LNG facilities which are used in connection with a system for pipeline transportation of natural gas to consumers." All existing LNG peak shaving facilities are connected with and used to augment the supply of natural gas into a pipeline distribution system and therefore would be subject to the proposed standards irrespective of whether or not they also handled transshipments from vessels to trucks. Any future LNG facility that might be constructed to handle vessels or barges and not be connected to a pipeline would be subject to the Coast Guard's waterfront facility standards under the Ports and Waterways Safety Act. Should the future also bring inland, nonpipeline connected LNG transshipment facilities, the regulatory authority provided by the Hazardous Materials Transportation Act (49 U.S.C. 1801 *et seq.*) would be applicable.

Question 16. What constitutes "surface faulting" in Section 193.111?

Answer. The term "surface faulting" used in Section 193.111 refers to displacement or distortion at or near the ground surface caused by seismic activity. It is expected that this definition will undergo refinements based on comments received in response to the NPRM. For example, the proposed California standards propose to treat any faulting within 50 feet of the ground surface as surface faulting (§ 193.5).

Question 17. Some industry representatives have asserted that a difference exists between enforcement activities by the CG and OPSO, which operates through a State certification program. (They cite, for example, a difference in technical experience and training.) Since the two agencies share responsibility for implementing the

department's policies in the LNG safety area, would you please describe in detail the Department's efforts to assure that these safety standards are implemented and enforced on a uniform basis?

Answer. There are several fundamental differences between the enforcement activities of the Coast Guard as applied to LNG safety and those performed by MTB and the States under the Federal/State regime established by the Natural Gas Pipeline Safety Act.

Under various statutes concerned with safety to life and property at sea, the Coast Guard has for many years carried out a preconstruction design approval, periodic inspection, and certification program to assure safety in the operation of U.S. flag vessels including LNG vessels. In this connection, the Coast Guard has been a major participant in United States basic LNG research and containment techniques. In more recent years, under the Ports and Waterways Safety Act, the Coast Guard has been able to exercise operational control over all LNG vessels moving in and out of U.S. ports and assure that foreign LNG vessels calling at U.S. ports meet out concepts of safety in the vessel movement and delivery of LNG.

The land-based development and commercial adoption of the processes for the liquefaction, liquid storage and regasification of natural gas has occurred under an entirely different safety regulatory framework. There are now three active U.S. waterfront import facilities (Everett, Mass.; Cove Point, Md.; Elba Island, Ga.) and one export facility (Kenai, Alaska). There are also, however, over 100 inland facilities handling LNG for peak shaving operations. Most are intrastate facilities and thus, as provided by the Natural Gas Pipeline Safety Act, under State jurisdiction. A survey of State inspection activities for 1977 indicates that in the 15 States where 80 percent of the interstate LNG facilities are located there were slightly over 200 State inspector-performed inspection of LNG facilities. State inspection figures for 1978 are not yet available; however, Federal pipeline safety inspectors dedicated a total of 34 person days to conducting five inspections of the three interstate import facilities in 1978. Also in 1978, the Coast Guard personnel spent 459 person days carrying out inspections of LNG waterfront facilities for the purpose of port safety and security, and protection of the marine environment. Many of the Coast Guard inspections are carried out when facility-vessel LNG transfers are planned or occurring.

As discussed briefly in answer to Question 41, the LNG facility standards issued by MTB will be enforced by MTB and State inspectors with regard to inter- and intrastate facilities, respectively. Enforcement of the divided MTB/Coast Guard regulations at interstate facilities located on waterfronts will be carried out by MTB and Coast Guard inspectors working their respective agency's areas of responsibility under the MTB/Coast Guard MOU. Considerable collaboration and sharing of information and logistical support is inevitable and to be expected.

Question 18. In light of the bill's preemption of states over interstate facilities, what effect would DOT's granting of preconstruction approval have on a State's authority over facility siting? How does the Coastal Zone Management Act's requirement of Federal consistency affect this preemption? Please be specific as to how the MTB will comply with consistency provision of the CZMA, and give examples.

Answer. Exercise of the preconstruction approval authority provided for by S. 411 would in no way diminish a State's existing authority over facility siting. The preemption provision in the Natural Gas Pipeline Safety Act of 1968 (NGPSA), which would be reenacted without change by S. 411, only preempts States from issuing safety standards that are authorized to be issued under the NGPSA and that are applicable to interstate facilities. Even as amended by S. 411, the NGPSA specifically prohibits the Department from prescribing the location or routing of any pipeline facility.

Even if a proposed facility is shown to fully comply with safety regulations issued under the NGPSA (and this is all the preconstruction approval is meant to assure) that facility could not be built if its location would be inconsistent with an applicable State land-use plan adopted under authority of the CZMA.

In the case of a proposed facility found to be consistent with the controlling State land-use plan but not meeting DOT's facility safety standards, the Federal standards prevail and facility construction could be delayed until compliance with those standards is assured.

Question 19. There is now one application for an LNG import facility on file with the Department of Energy. That is the application of Western LNG Association for a facility at Point Conception, California. If S. 411 were to be enacted, how would it affect the permitting process for this facility?

Answer. It is first emphasized that DOT is of the view that the preconstruction design approval envisioned by S. 411 (See Question No. 22) is impliedly authorized by the Natural Gas Pipeline Safety Act (NGPSA). This view is supported by DOT's responsibilities under that Act to issue and enforce compliance with pipeline facility design standards. It is clearly more appropriate, in terms of safety and economic, to assure compliance with those standards before a facility becomes operational. Expressly providing design approval authority in S. 411 is intended only to clarify the Secretary's existing authority on this matter. Therefore, while it is presently contemplated that the S. 411 preconstruction design approval authority would be exercised with regard to major LNG import terminals like the proposed Point Conception facility, the affect of such an approval process would have no more affect on the DOE permitting process than would a full exercise of the Secretary's current review and compliance authority.

Cooperation between DOE and DOT in the exercise of their respective authorities regarding the proposed Point Conception facility is mandated by section 7 of the NGPSA (under section 105 of S. 411 the language of section 7 would be relocated without change, to section 3(g)(2)). That section mandates that the Point Conception applicants certify to DOE that its proposed facility meets DOT's safety standards. However, if DOT advised DOE as a result of its design review, that the proposed facility does not meet those standards, the certification by the applicants is not binding on DOE. In such a case, the legislative history of section 7 provides that DOE may give such weight to the absence of a certificate as it may feel appropriate in connection with awarding a certificate. This is construed to permit DOE to issue a certificate on Point Conception even in the absence of DOT's approval of facility design. S. 411 does not alter this DOT/DOE cooperative process, nor is it intended that DOT's preconstruction review delay the DOE permitting function. In the unlikely case of an applicant refusing to amend the facility design to achieve compliance with DOT's safety standards, and notwithstanding that refusal DOE issues the certificate, DOT would depend, as it always has, on its enforcement powers under the NGPSA to seek compliance with the standards.

Question 20. Several witnesses identified liability and compensation in the event of an accident as a major problem area. Some recommended a Federally administered liability fund modeled after the oil spill "superfund." Did the Department examine these issues in drafting this legislation? If so, why were no provisions included?

Answer. The Department has examined the levels of available liability coverage for certain liquefied natural gas facilities and carriers. The amounts vary—the facility at Elba Island, for example, is insured to \$100 million while that at Cove Point is insured to \$190.4 million. For tank truck carriers of LNG and LPG, the Interstate Commerce Commission requires insurance of \$350,000 per incident, which is quite a bit lower than the \$10-30 million required by some natural gas companies.

Before informed conclusions can be reached as to whether a Federally administered liability fund is required and, if so, what form it should take, we believe that further study of the entire issue is essential. To determine levels of financial responsibility, study is needed to define compensable damages, and to determine the type of liability and defenses to be allowed and limitations on liability and indemnification. Additional effort should be directed towards determining the method of operation and administration of a fund. The Department currently is a major participant in just such a study being done by an interagency group led by the Department of Justice. The study is examining the issues detailed above and will cover all hazardous materials rather than be limited to LNG or LPG. The study report is scheduled for completion in mid-spring of this year.

Question 21. In your testimony you state that the Department will exercise the discretionary authority for preconstruction approval only with regard to classes of facilities identified through a rulemaking process. Would you describe how the Department could formalize this selection process? By size? By age? By proximity to populated areas? By volume of product?

Answer. The Department presently contemplates conducting a facility design and preconstruction review of the following LPG and LNG facilities: All import terminals; all LNG peak-shaving and LPG storage facilities with a total tank storage capacity larger than 200,000 bbls. (It is expected that future LNG peak-shaving and LPG storage facilities, other than remotely sited satellite facilities, will have a capacity exceeding 200,000 bbls.)

In addition, criteria based on unusual circumstances, such as proximity to populated areas or high seismic activity, would be developed and formalized through a rulemaking process. It should be noted that all such facilities, regardless of size,

proximity to populated areas, etc., would be subject to the Department's safety regulations.

Question 22. Section 3(b) would expressly provide the Secretary with preconstruction approval authority for any construction associated with a new or existing pipeline facility.

(A) Does the Department consider this to be a licensing function?

(B) Please explain in detail the procedures which will be followed in imposing additional terms and conditions. Also, please construct a hypothetical example of the entire preconstruction approval process giving descriptions of necessary documents and projected time required.

(C) If an applicant wishes to challenge these terms and conditions, what recourse is available?

(D) Is there precedent for this type of preconstruction approval? If so, please detail.

Answer. (A) No. The approval process is only intended to assure that a proposed facility will be designed, installed, and operated in accordance with applicable safety regulations.

(B) The DOT's pipeline facility safety standards are written in performance language. As such, the safety goal is mandated but the means of reaching that goal are, to a large degree, left to the discretion of the facility owner or operator. This approach permits application of new technologies without awaiting specific authorization through the public rulemaking process.

In the preconstruction approval process, it can be expected that DOT could be in a position to disagree with or suggest a better alternative to the course of action chosen by the owner of a proposed facility to achieve compliance with a DOT standard. In the vast majority of such cases, a mutually agreeable course of action would be decided on during informal negotiations. There may be times, however, during such negotiations when DOT may need to insist that a course of action be followed other than the course proposed by the owner. In either case, the preconstruction approval would be conditioned on the applicant's following the mutually agreed to or mandated course of action. Additional conditions (or terms) of this nature are the only kind intended to be authorized under the preconstruction approval provision of S. 411.

In operation, it could be expected that the approval process would involve two phases: a preliminary approval phase and a secondary approval phase.

The preliminary phase would provide the applicant with preliminary assurance that a proposed site can be developed to meet DOT standards before he commits further resources or obtains financing for the detailed site investigations, plans, and specifications needed to support approval of more detailed facility design. An applicant may be required to submit: (a) Results of preliminary site investigations and evaluations, with calculations to show compliance with site-related design requirements; (b) Facility plot plans showing overall location and component layout; (c) Description of critical components indicating type and size or capacity, with sufficient details about materials, specifications, and design for compliance evaluation; (d) Detailed design of any unique features which are necessary to meet specific circumstances or are otherwise to be incorporated in the facility; (e) Flow diagrams showing the functions, functional location, and types of controls, safety devices, and other critical components.

Following initial review and evaluation of the documents, DOT would confer with the applicant as needed to expand the site investigations, make necessary modifications, or develop additional design detail, before the preliminary approval is granted or denied.

The projected time for this preliminary approval, from the date original documents are received, is three or four months where a site is free of adverse environmental conditions and the facility design is relatively common. Where environmental conditions are unfavorable modifications in conceptual design are needed, or additional detail is necessary to evaluate a submission, six or eight months may be needed to complete this phase of the review of the design.

A secondary phase would provide assurance that there would be compliance with design aspects of the safety standards. The DOT review process could, at the applicant's option, run concurrently with the applicant's design development. During this phase, DOT would review and evaluate the results of more detailed site investigations and calculations, and detailed design drawings and specifications for critical components.

For a facility of ordinary design, without adverse environmental conditions, this phase of the approval process could be completed in a matter of weeks after

documents are received from the applicant. Four to six months may be needed for facilities of unique design or with adverse environmental conditions.

(C) In the rare case where DOT would impose a term or condition to its approval that is not agreed to by the owner of the proposed facility, the owner may challenge that term or condition administratively and judicially. The procedures for administrative appeals will be spelled out in the rulemaking that will be issued to implement the preconstruction approval authority expressly provided for in S. 411. The procedures for judicial review are those currently spelled out in section 6 of the NGPSA.

(D) Trans Alaska Crude Oil Pipeline

As a member of the Technical Advisory Board of the Department of the Interior Task Force on Alaskan Oil Development, DOT participated in the approval of the multi-volume Project Description of the pipeline. The DOT also considered and approved The structural design criteria of the pipeline. The Alaska line is unique among cross-country pipelines in that stresses caused by temperature differences and earthquakes must be resisted along with the usual stresses which act on a pipeline from dead loads and internal pressure; the valving plan for the pipeline. This plan established a spillage limit rather than valve placement criteria for water crossings. The DOT regulations require valves on either side of certain water crossings unless the Secretary finds in a particular case that valves are not justified; the corrosion control plan for the pipeline. This approval was made necessary by the unusual technical problems involved with protecting a hot oil line buried in permafrost.

Proposed Alaska Gas Transportation System

The President, in September 1977, in his Decision and Report to Congress selected the route and designated the persons to construct and operate the system. The Decision and Report to Congress identified several activities to be performed by the Department of Transportation by itself and in conjunction with other Departments and Agencies. Certain of these activities must take place prior to construction of gas pipeline system and generally involve preconstruction approvals. Examples include:

The Decision and Report indicated certain economic benefits were to be gained by utilizing a high-strength, grade X-70 pipe in the Alaska portion of the system. The DOT, after analysis of the specifications and formal rulemaking procedures, amended the Federal gas pipeline safety regulations (49 CFR 192) to permit its use on this project.

The Trans Alaska crude oil pipeline encountered certain problems developed in the quality control of the field girth welds. This resulted in the utilization of the methods of fracture mechanics analysis to evaluate the probable performance of certain welds that did not meet current standards. This activity indicated the possibility of the use of fracture mechanics techniques as a basis for amending the weld acceptance criteria in certain cases and reduce construction costs without affecting the structural integrity of a pipeline. The National Bureau of Standards (NBS) is working for DOT in determining the revised criteria.

Question 23. In earlier hearings, the Committee heard devastating complaints about the lengthiness of the application process (particularly with respect to FERC proceedings).

(A) How long do you imagine the DOT review might take? Weeks? Months? Years?

(B) Would DOT favor the setting of time limits by statute or by regulation?

Answer. (A) Review time would be expected to vary from facility to facility because of wide variations in site conditions, facility size, and design features that may exist. For a facility of relatively common design at a site nominally free of adverse features, preconstruction approval may require only 4 or 5 months following receipt of the necessary documents. Where conditions are highly complex, 10 to 14 months of total Departmental review time may be needed, to conduct the preliminary and secondary phase review depending on the number and extent of design modification, additional design detail, and expanded site investigations required. However, we emphasize that DOT intends to carry out its preliminary and secondary phases of review in a manner that would minimize any disruption or delay to the DOE/FERC certification process.

(B) In view of the possibly varying conditions at each facility, it would be difficult to adhere to an arbitrary time limit set by either a statute or regulation. However, if Congress determines that setting a statutory time limit is necessary, we believe that such a provision should provide authority to the Secretary to extend that time limit upon a finding that such an extension is in the interest of safety.

Question 24. What kinds of documents would the Department require in granting this preconstruction approval (please give examples)? Could the environmental

impact statement for the Department of Energy and the supporting documentation for FERC proceedings be used?

Answer. As discussed in the response to question 22B, during initial phases of the approval process, the principal documents would include a plan of the plant layout; flow diagrams showing the location and type of controls, safety devices, and other critical components; and sufficient details of site characteristics, materials, and specification and design of critical components. Also as discussed, final preconstruction approval will require more detailed design and specification of critical components, details of site related features, and calculations to assure conformance with design standards. This detailed review would be accomplished concurrently with the development of work by the applicant.

In the rulemaking that would be issued to implement the preconstruction design approval authority provided in S. 411, we would expect to spell out in some detail the kinds of documents required to support an application. We would also expect the procedural rules to recognize EIS's prepared in support of related FERC proceedings. An EIS and support documentation prepared for FERC could provide a great deal of the information needed for the initial phases of preconstruction approval.

Question 25. Section 3(g) requires that DOT consult with the Federal Energy Regulatory Commission (FERC) when such a waiver would affect continuity of any gas sources. What machinery is in place to accomplish this consultation (e.g. memorandum of understanding)?

Answer. As in Section 3(g) of the Administration's bill, Section 7 of the NGPSA now requires that DOT consult with the Federal Energy Regulatory Commission (FERC) whenever DOT action on a requested waiver of DOT pipeline safety standards would affect continuity of gas service. No special machinery is necessary to accomplish the consultation, since there is continuing dialogue between MTB and FERC with regard to each agency's program. There have been very few such waivers in the past, and no problems have developed that would indicate a need for a more formalized consultation process.

Question 26. The Department recommends that the issuance of a compliance order would, in many cases, be a more effective enforcement tool than the assessment of monetary penalties. Would you outline the Department's reasoning in reaching this conclusion?

Answer. Compliance orders provide a vital enforcement sanction alternative which supports the general Congressional intent that regulatory enforcement be dealt with, to the greatest extent practicable, administratively rather than judicially. Within the last year, MTB has acquired some experience in the hazardous materials field with use of the compliance order as an administrative enforcement alternative. This experience has been acquired in the following types of cases, and can be expected to be valuable in the pipeline area as well:

1. Where an otherwise appropriate civil penalty may be too burdensome on the alleged violator. The burden may be created when the violator must pay both the penalty and the cost necessary to achieve compliance, which may result in a substantial risk that he may be put out of business. Most typically, this situation arises with gas distribution systems owned and operated by small municipalities located in the south and southwestern U.S.

2. Where the respondent is the subject of repeated enforcement cases involving a variety of regulations, such that it is apparent he lacks the fundamental direction to comply. In these cases, the compliance order can provide the direction necessary and enable the agency to more closely monitor his activities.

3. Where an inspection reveals violations of a type that may be industry-wide and may represent a regulatory problem, but which nonetheless should be dealt with formally. In this situation the agency can deal with the enforcement issue, and also obtain information which will contribute to a regulatory solution to industry-wide problems.

Question 27. Would you describe what you consider to be the authority of the Natural Gas Pipeline Safety Act to extend to peak-shaving facilities? Please be as specific as possible, not necessarily naming specific facilities, but with respect to the standard use to determine whether the Act reaches a facility of a certain size and age.

Answer. The Natural Gas Pipeline Safety Act applies to "pipeline facilities," which are defined to include "any equipment, facility, or building used in the transportation of gas or the treatment of gas during the course of transportation" (49 U.S.C. 1671(4)). The term "transportation of gas" is defined to include "the distribution of gas by pipeline." Peak-shaving facilities are an interrelated and often

essential part of gas distribution systems and thus fall within the intended coverage of the term "pipeline facilities."

The applicability of the Act is not restricted by size or age of facilities. However, under Section 3(b) of the Act (49 U.S.C. 1672(b)), safety standards affecting design, installation, construction, initial inspection, and initial testing cannot be applied to facilities in existence when such standards are adopted. These facilities are subject only to operation and maintenance standards adopted under the Act.

Question 28. In your statement you refer to the Memorandum of Understanding between the MTB and the Coast Guard, delegating regulatory responsibilities with respect to Waterfront LNG facilities. Is a similar delegation anticipated with respect to Waterfront Hazardous Liquids facilities?

Answer. The Memorandum of Understanding for the Regulation of Waterfront Liquefied Natural Gas Facilities recognizes the overlapping safety regulatory authorities being exercised by two elements within the Department of Transportation with respect to the waterborne and shoreside movement of natural gas and its storage at waterfront locations. Outside the MOU one element, the Coast Guard, exercises safety regulatory authority over LNG vessel design, construction and operation. Likewise the other element, the MTB, exercises regulatory authority not affected by the MOU over inland LNG activities and the pipeline transportation and related storage of natural gas. Under the MOU, each element exercises its authority with respect to waterfront LNG activities so as to optimize each's available expertise, resources and regulatory powers and eliminate duplication.

The Coast Guard's responsibility for waterfront facility safety under the Ports and Waterways Safety Act is not limited to LNG. It extends to all substances which pose a port or waterfront safety risk. In the case of LNG, it presented a very distinct and highly visible overlap with the MTB's responsibilities under the Natural Gas Pipeline Safety Act. There are, of course, other laws which may become candidates for similar MOU treatment. For example, if Title II of S. 411 is enacted we contemplate establishing safety standards for liquefied petroleum gas import facilities similar to those now being established for LNG facilities. Again the Ports and Waterways Safety Act overlap would come into play. The LNG MOU and its proven workable split of responsibilities would be the model for handling this overlap—either by amendment or the execution of another MOU.

Question 29. Title II does not contain a grant-in-aid provision similar to the one found in the Natural Gas Pipeline Safety Act.

(A) Why did the Department omit such a program when such a grant-in-aid is found in the Natural Gas Pipeline Safety Act?

(B) Will States have any incentives to participate in the Federal program?

Answer. (A) In the belief that States could effectively assist the DOT in carrying out its liquid pipeline safety responsibilities, section 205 of S. 411 provides States with the opportunity to exercise authority over intrastate liquid pipeline facilities similar to that which currently exists under the NGPSA for intrastate gas pipeline facilities. However, the DOT has consciously deferred asking for a liquid pipeline grant-in-aid program because neither the extent of State interest in exercising safety authority over such pipelines or the level of effort that States would be willing to expend in the exercise of that authority has been determined. In this regard, some differences between gas and liquid pipelines should be noted:

The State programs for gas pipelines focus on gas distribution systems, which comprise approximately two-thirds of gas pipeline mileage and are involved in the majority of gas pipeline accidents.

Liquid pipelines do not involve distribution systems and have a total mileage considerably less than gas lines.

Liquid pipelines are concentrated in less than half of the States. All States have gas pipeline activities.

Because the magnitude of the problem is smaller, current State expenditures for monitoring liquid pipelines are considerably less than that expended for gas pipelines.

(B) Because States are concerned with the health and safety of its citizens, DOT believes that the States will take advantage of the opportunity to exercise the safety authority provided for by section 205 of S. 411. Beyond the benefits to public safety, the exercise of such authority is necessary to generate the information needed to make the determinations referred to in (A) above.

Question 30. At earlier hearings, some witnesses suggested that there is a need for "good Samaritan" legislation to insulate local LPG distributors against liability if they come to the aid of local fire officials in the event of an LPG accident for which they are not responsible. Does the Department favor such a concept? Please explain your views.

Answer. Mutual-aid programs exist for some hazardous materials whereby one producer will service field emergencies involving another producer's product. Arrangements of this sort are established on chlorine through the Chlorine Institute and on pesticides through the National Agricultural Chemicals Association.

The former CHLOREP, the Chlorine Emergency Plan, in which the nearest producer responds to a problem. NACA has a Pesticide Safety Team Network of some 40 emergency teams distributed throughout the country. CHEMTREC serves as the communication link for both programs.

DOT endorses the concept of these mutual-aid programs and as we press for more industry groups to establish them, we are becoming increasingly aware of the associated liability exposure concerns. The liquefied petroleum gas industry represents, perhaps, both the area of greatest need and greatest liability concern.

Currently, nearly every State has some form of "Good Samaritan" law. They differ greatly from State to State and in many cases have one or more features that render them ineffective in hazardous materials emergency response situations. For example, in over half of the States the assistance must be gratuitous for the law to apply. In nearly half of the States the protection extends only to doctors, nurses and various other persons trained to give emergency medical aid. In nearly every State, protection of the law goes only to ordinary negligence situations. It does not extend to cases where gross or willful negligence accompanied the assistance.

To foster the development of more industry borne mutual-aid programs, the Department favors expanding the concept of "Good Samaritan" protection to parties who provide emergency response assistance for the purpose of reducing or eliminating risks to public health and safety from the actual or threatened release of hazardous materials in transportation or related storage. It is our feeling that such protection should (1) probably be limited to situations in which the assistance is requested by some public official with responsibility for dealing with the emergency, (2) apply irrespective of whether the assistance is gratuitous or for compensation, and (3) remain limited to ordinary negligence situations.

Question 31. H.R. 51 includes a provision which allows the Secretary to apply the provisions of the Natural Gas Pipeline Safety Act to other types or classes of facilities or equipment used in the transportation of gas or liquefied petroleum gas. This provision was apparently included in order to avoid regulatory gaps with respect to other modes of transportation. Is such a provision necessary and, if so, why did not DOT include it in this bill?

Answer. Both H.R. 51 and the Administration's proposal (S. 411) recognize a need to strengthen pipeline safety regulatory coverage. The referenced provision in H.R. 51 (Section 106), which was dropped from the bill in subcommittee mark-up on March 20, 1979, would have authorized DOT to administratively extend the coverage of the Natural Gas Pipeline Safety Act to facilities and equipment used in the interstate or foreign land transport of natural gas (including LNG) and LPG and to storage in connection with such transport. The Administration's proposal attempts to reach the same basic objective by (1) strengthening that Act's already extensive coverage of pipeline transportation of natural gas and its related storage, and (2) strengthening and expressly expanding liquid pipeline safety regulatory coverage to intrastate pipeline transportation and related storage of all hazardous liquids.

Question 32. H.R. 51 includes a provision prohibiting the Secretary from making payments to State inspection and enforcement programs unless the State maintains a specified number of inspectors and those inspectors are adequately trained. Did the Department consider including such a provision in this bill, and if so, why wasn't it included?

Answer. Successful operation of the Federal/State program requires an open dialogue between DOT and the States. This cooperation in developing a national pipeline safety program was intended by the NGPSA and requires a flexible Federal Government position to take into consideration the 52 State jurisdiction's diverse political views, budgets, and statutory limitations. A mandatory cut-off of grant-in-aid funds for failure to meet DOT set standards does not recognize this diversity and would be too harsh in the case of minor discrepancies. It is also inappropriate to jeopardize State participation in assuring pipeline safety unless the Federal Government is ready and willing to provide Federal staff and resources, often at considerably higher cost, to assume that responsibility.

The DOT is continually seeking to improve State pipeline programs. When it is determined that a State enforcement program is generally deficient or deficient in specific areas, the DOT applies concerted efforts to raise the program to an acceptable level. These efforts include: Advising and working with State agency personnel in upgrading their program; increased monitoring of the adequacy of the program; direct communication with the Chairman of the responsible State Commission or

other supervisory body, indicating the deficiencies of its program and DOT's recommendations for corrective action; encouraging State agencies to seek and support the enactment of State legislation intended to improve or enhance their programs, and conducting training for State personnel at the Transportation Safety Institute in Oklahoma City.

Question 33. H.R. 51, a bill which is similar to the one passed by the House last year, includes extensive reporting requirements for pipeline facility operators and sets forth specific details of what must be included in these reports. Did the Department consider including these types of requirements in this bill? If so, why were they not included?

Answer. The two sections of H.R. 51 (Sections 102 and 103) containing the referenced reporting requirements were deleted from the bill during a subcommittee work-up session on March 20, 1979, in favor of a provision that would require the Department to conduct a cost-benefit analysis to determine whether such legislation would be beneficial.

The deleted reporting requirements, which new Section 102 of H.R. 51 would have the Department analyze and report on within 12 months, would:

Require natural gas pipeline operators to file detailed descriptions of their pipeline locations with State and local governments unless: (1) the Secretary finds the financial and administrative burden on an operator to outweigh the benefits; (2) the operator participates in a State of local one call system.

Require each operator to report all leaks which the operator knew about or should have known about unless the Secretary finds the financial and administrative burdens on the operator don't justify the results.

The first requirement is directed at reducing the problem of damage to pipelines, particularly distribution systems, resulting from excavation. The second requirement is directed at better detection and repair of gas pipeline leaks. While we cannot predict the results of the cost-benefit analysis contemplated by the amended H.R. 51, both subject areas are currently receiving Departmental attention.

Since 1972, we have encouraged States to remedy, through State legislation, the serious problem of outside force damage. We have drafted and encouraged States to support model State legislation dealing with outside force damage.

Several States now have active programs for encouraging voluntary one-call systems such as those favored by the American Public Works Association's Utility Location and Coordination Councils.

Even so, we recognize that State laws may be needed in areas where such councils or voluntary programs are not active, or in instances where a utility or underground line operator chooses not to join in such a voluntary cooperative program.

We have recently completed a study on the "Effectiveness of Programs for Prevention of Damage to Pipelines by Outside Forces." The findings of the study support continued encouragement of State and local solution to the problem of outside force damage.

With regard to "leaks," we are in the process of revising our leak reporting requirements to make reporting easier and to improve the quality of the information being received. These changes together with our recently established data processing capability will enhance our analytical capability far more than placing into statute the specific items of information that an operator must report.

Question 34. Section 3 clarifies that safety standards which are generally applicable to new pipeline facilities can be made applicable to existing facilities that are considered "hazardous to life or property."

(A) Would you expand on your interpretation on that "hazardous to life or property" standard?

(B) Is the Department prepared to conduct a site-by-site evaluation of existing facilities to inspect for such hazards?

(C) Please give several examples of situations which would fall under that standard.

Answer. (A) It should be noted that the NGPSA currently provides DOT with the authority to apply standards generally applicable to new pipeline facilities to existing facilities that are considered "hazardous to life or property." S. 41 expands on this current authority by adding the requirement for notice and hearing, by spelling out the kinds of corrective action DOT may require, and by providing district courts with the jurisdiction to enforce orders requiring corrective action. While it is difficult to state exactly how the standard of "hazardous to life and property" was intended to be applied, the Senate Report on the NGPSA of 1968 provides some enlightenment: "... This provision requires the Secretary to make a finding of potential hazard before applying, by order, certain standards to existing pipe. When such finding and order has been issued, the standards can be made ... applicable

to remedy the hazardous situation since all of the requirements of the rulemaking will have been previously satisfied.

"... the Committee does feel that when it develops that existing pipelines ... develop hazards, these must be corrected and corrected promptly.

"... Just so, when the Secretary finds that a particular type of pipeline valve is hazardous, the Secretary should have and the bill does give to him the authority to require the removal of this hazard by removing or replacing this type of valve wherever it exists. If the Secretary finds that a particular kind of pipe has metallurgical specification when located in a particular type of soil which leads to accelerated corrosion, the bill gives him the authority to require the replacement of this type of pipe wherever the same soil conditions exist.

"The Committee believes that in giving the Secretary this authority to move directly to remove a hazard, the Secretary has the power permitting him to achieve protection to the public much more quickly and effectively than he might have were he to invoke the cumbersome and more restrictive route of attempting to apply standards of general applicability to a given situation." (Sen. Rept. No. 733, Nov. 7, 1967).

This legislative history indicates that the Secretary is authorized to classify a pipeline facility to be "hazardous to life or property" if the facility presents a degree of hazard severe enough to justify removal in a more expeditious manner than that which is available through the rulemaking process. It is not intended, under S. 411, to expand on this authority. In fact the requirement for notice and hearing gives greater assurance to the pipeline operators that the authority will be exercised in a reasonable manner. This notice and hearing requirement can only be waived if the Secretary determines that failure to do so would result in the substantial likelihood that serious harm would occur.

(B) DOT does not believe site-by-site evaluation of existing facilities could be justified in terms of the expected safety benefit derived from such an activity, nor could we conduct such evaluations without additional staff. On the other hand, we are prepared and do react expeditiously when we are alerted to the existence of a hazardous situation through incident reports, day-to-day inspections, and other available information.

(C) See discussion of defective valves and pipe in A. above.

Question 35. H.R. 51 brings within the scope of the Natural Gas Pipeline Safety Act gas distribution in connection with the rental or lease of real property. Did the Department consider such an inclusion and if so, why was it rejected?

Answer. The referenced provision in H.R. 51 (Section 105) would make those distribution systems commonly described as master meter systems expressly subject to the Act. The DOT has no objection to such a clarifying provision but does not consider it necessary. The DOT has always applied both the Act and the regulations to master meter systems which it has consistently considered to be distribution systems falling within the meaning of "pipeline facilities" and "transportation of gas."

The major problem faced by both the States and DOT with regard to master meter systems is the mammoth task of enforcement. The problem stems from the large number of operators involved and the fact that most operators of master meter systems are in the housing business and are not knowledgeable in pipeline operations. The proposed amendment would not alleviate this problem because in the instances where local codes apply to master meter systems, they normally cover only the installation of piping and are silent with respect to sound operating and maintenance practices that are essential for public safety.

A renewed effort has just begun within DOT regarding the master meter question. During the initial phases of this effort, DOT hopes to develop numerical, geographical, economic and other characteristics for use in formulating viable options for solutions to the question.

Question 36. In your statement, you state that "the MTB has several rulemaking proceedings in process involving the transportation of highly volatile liquids (HVL). Could you state the status of these rulemaking proceedings and your plans for completing this rulemaking process?"

Answer. A notice of proposed rulemaking regarding plans for preventing and handling emergencies for pipelines carrying highly volatile liquids was published August 10, 1978. The comments received in response to this notice are now being reviewed. A final rule is expected to be published in March or April 1979.

A notice of proposed rulemaking regarding valve spacing to minimize the amount of highly volatile liquid that might be spilled in populated areas was published August 28, 1978. A final rule on this subject is scheduled for June 1979.

A notice of proposed rulemaking concerning testing pipelines carrying highly volatile liquids which have not been previously tested was published November 7, 1978. A final rule as a result of this notice is scheduled for September 1979.

An advance notice of proposed rulemaking concerning more stringent standards for the design and construction of pipelines carrying highly volatile liquids was published in February 1979. A notice of proposed rulemaking on this subject is scheduled for September 1979.

Question 37. To how many LP Gas import facilities does DOT see Title II extend?

(A) How many LP Gas import facilities does DOT project will be built within the next 5 years? 10 years? 15 years?

Answer. Title II will extend to all LP Gas import terminals constructed after passage of the revised legislation.

(A) DOT projects that four LP Gas import facilities will be constructed over the next 5 years and that at least seven additional LP Gas import terminals will be constructed over the ensuing 15 years.

Question 38. Please provide the Committee with a list of the hazardous substances transmitted by pipeline which the Department considers to fall within the authority of Title II or which the Department reasonably anticipates might fall within that group.

Answer. Title II covers the transportation of hazardous liquids transported by pipeline. The term "hazardous liquid" is defined in the bill to mean any substance in liquid form that the Secretary determines may pose an unreasonable risk to life or property, including petroleum, petroleum products, or any other liquid that is flammable, corrosive, or toxic. The substances capable of falling within this proposed definition are already subject to safety regulation under the existing liquid pipeline law. DOT is not, by proposing Title II, creating a major new program of regulation for previously uncontrolled substances. The proposed definition aligns closely with the definition of "hazardous material" contained in the Hazardous Materials Transportation Act—"a substance or material in a quantity or form which may pose an unreasonable risk to health and safety when transported in commerce." There are numerous substances that meet this definition which the Secretary has classified as hazardous for purposes of the present hazardous materials and pipeline safety programs.

The hazardous liquids most commonly transported by pipelines are petroleum, petroleum products (such as gasoline, diesel fuels, and heating oils), liquefied petroleum gases, and anhydrous ammonia. Increasing use of pipelines to move chemical feed stocks between processing facilities poses the possibility that substances such as bromine and various sulfates can be moved efficiently in solution by pipelines.

(A) In your testimony, you stated that sufficient funds "were appropriated for fiscal year 1979 to carry out the Materials Transportation Bureau's program." How do these appropriations compare with the MTB's request and the Department's request to the Office of Management and Budget?

(B) What was the MTB's request to the Department and the Department's request to OMB in the pipeline safety area?

Answer.

FISCAL YEAR 1979 PIPELINE SAFETY BUDGET REQUESTS AND APPROPRIATIONS

[Dollars in thousands]

	Operations	Research & development	Grants-in-aid	Total
Initial MTB request	4,542	\$872	\$3,000	8,414
DOT submission to OMB	4,542	400	3,000	7,942
President's budget to Congress	3,969	350	2,840	7,159
Appropriated by Congress	3,784	350	2,820	6,954

Question 39. Are there established methods of designing against liquefaction or landslides? If so, why is a facility prohibited under sec. 193.111(d)(3) if there is a 0.05 percent probability of any liquefaction or landslide occurring in 50 years?

Answer. There are design methods for protecting against limited liquefaction or small landslides. Methods to protect against limited liquefaction include draining the soil, compacting the soil to restrict the entry of water, or replacing the soil with more stable material. Measures to protect against small landslides include locating revetments, terraces, or vegetation on hillsides.

Nonetheless, because these design methods are of little or no use against a catastrophic, large-scale soil liquefaction or landslide, the proposed Section 193.111 would prohibit the construction of an LNG facility at a location subject to such occurrences. Where design methods such as soil replacement can be used to reduce the probability of liquefaction or landslide occurring to less than the specified level, the prohibition would not apply.

Question. 40. At earlier Commerce Committee hearings, many witnesses testified that one of the biggest problems in the safety area is the jurisdictional ambiguity between DOT and FERC.

(A) How does this bill resolve that ambiguity?

(B) Since FERC will remain the authority to require additional site-specific safety measures, what means of coordination will there be between DOT and FERC in exercising this authority? For example, if a memorandum of understanding (MOU) has been used (or is contemplated) please furnish the Committee with a copy of the agreement. If no such agreement exists, please state what plans the DOT has to develop one. If some other form of coordination is contemplated, please describe this agreement (or planned agreement) in detail for the Committee.

(C) If FERC imposes additional site-specific safety requirements, what will the procedure be to include them in the DOT inspection process on an initial *and* continuing basis?

Answer. (A) The Administration's bill, S. 411, does not speak directly to the overlapping DOT/FERC natural gas transportation safety authorities. Rather it would strengthen DOT's ability to address and deal with natural gas pipeline and related facility safety considerations (particularly with regard to LNG) that is one of concern to both DOT and FERC. Specifically, S. 411 would: Clarify the Secretary's authority to prescribe and enforce safety standards over nonoperating gas pipeline facilities still under construction; expressly provide the Secretary with discretionary authority to require design review and approval before construction may begin on new or existing facilities (this pertains to compliance with safety standards and conditions, not to site determinations; and improve enforcement and investigative powers by (1) allowing use of Federal Magistrates for collection of civil penalties up to \$1,500, (2) adding criminal penalty provisions; (3) providing authority to issue compliance orders, and (4) giving the Secretary subpoena authority.

Enactment of these improvements together with the more stringent LNG facility standards now being put in place by DOT will, in our opinion, serve to reduce the need which FERC has seen in the past for imposing site-specific safety requirements in the certificates of public convenience and necessity it issues for interstate LNG facilities.

(B) The potential for duplicate or overlapping actions is recognized and the two agencies have initiated steps to develop a memorandum of understanding to ensure efficient and effective accomplishment of responsibilities. Drafts of such an MOU, based upon the two agencies' perception of their respective existing statutory authorities and responsibilities, have been exchanged at the staff level. Attached is a copy of the most recent FERC draft. The underlined words represent changes which FERC staff would make to an earlier DOT draft. Several places in the draft underlined FERC changes concern a continuation of the agency's practice of including additional safety conditions in its certificates. This is stated perhaps most concisely in the underlined clause at the end of the first paragraph on page 2.

(C) As indicated in response to part (A) or this question, DOT believes that the Natural Gas Pipeline Safety Act amendments in S. 411 and DOT's new LNG regulations will go a long way toward limiting FERC's need to impose site-specific safety requirements. Thus there would be little or no need for inspections to determine compliance with FERC conditions. This will, of course, be dependent on the disposition of S. 411 and subsequent discussions with FERC.

To date, discussions with FERC have focused on the need for standards and conditions and who should issue them. The subject of possible DOT monitoring of FERC issued certificate conditions has not been discussed. However, DOT's Materials Transportation Bureau and FERC routinely exchange information on the construction progress and routinely exchange information on the construction progress and operation of FERC certificated LNG facilities. On occasion they have performed joint on-site inspections. Because DOT's pipeline safety inspection program calls for its regional field inspectors to monitor all interstate natural gas pipeline facilities, we are obviously already performing periodic inspections of LNG facilities.

MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT OF TRANSPORTATION
AND THE FEDERAL ENERGY REGULATORY COMMISSION REGARDING LIQUEFIED NATURAL GAS FACILITIES

INTRODUCTION

The Department of Transportation (DOT), through the Materials Transportation Bureau (MTB) and the United States Coast Guard (USCG), is responsible for promulgating and enforcing safety regulations for the transportation and storage of liquefied natural gas (LNG) in or affecting interstate or foreign commerce. Under the Natural Gas Pipeline Safety Act of 1968 (49 USC 1671 et seq.), the Transportation of Explosives Act (18 USC 831 et seq.), and the Hazardous Materials Transportation Act (49 USC 1801 et seq.), MTB has authority to establish safety regulations and standards for facilities used in the transportation of LNG by any mode and the associated storage of LNG.

The USCG, under E.O. 10173, the Magnuson Act (50 USC 191), and the Ports and Waterways Safety Act of 1972 (33 USC 1221 et seq.), has regulatory authority over LNG facilities which affect the safety of port areas and navigable waterways.

The Federal Energy Regulatory Commission (FERC), under Section 7 of the Natural Gas Act (15 USC 717 et seq.), issues certificates of public convenience and necessity with terms and conditions for facilities proposed for use in the sale for resale or transportation of natural gas, including LNG, in interstate commerce. As required by the National Environmental Policy Act (42 USC 4321 et seq.), FERC also prepares environmental impact statements for proposed LNG facilities in conjunction with the issuance of certificates.

In addition, the Department of Energy under Section 3 of the Natural Gas Act (15 USC 717 et seq.) has approval authority for the import and export of natural gas including LNG.

PURPOSE

In recognition of their respective statutory responsibilities, FERC and DOT agree that this Memorandum of Understanding is needed to avoid duplication of effort regarding assuring the safe design, construction, and operation of LNG facilities. The agreement also results in the exercise by DOT of exclusive authority to promulgate minimum Federal safety standards over LNG facilities used in the transportation and associated storage of LNG in or affecting interstate or foreign commerce except, however, that in the event that the FERC shall determine that a particular special circumstance at a proposed LNG facility within its jurisdiction warrants design consideration not covered in DOT's regulations, then the FERC shall maintain the authority to impose more stringent requirements as conditions to its certificates.

Therefore, FERC and DOT agree to the following cooperative program:

1. *The FERC shall:*

(a) Invite DOT to participate in LNG facility inspections and technical conferences with applicants. (This will be accomplished by sending DOT a copy of the notification sent to the applicant of any such inspection or conference. FERC will also attempt to provide DOT verbal notification.)

(b) Whether or not the FERC conditions its certificate, as a result of FERC's review of an LNG application, LNG facility inspections, or otherwise, advise DOT in writing of every hazard, design deficiency or operational practice within the safety regulatory jurisdiction of DOT considered by FERC to warrant corrective action or further analysis including—

- (i) The nature of the hazard, deficiency, or practice;
- (ii) The extent to which the matter is covered by DOT regulations or industry code; and
- (iii) The type of action recommended.

(c) Advise the applicant of the details of each matter which has been referred to DOT for consideration with notice that the applicant may submit written comments on the matter to DOT and the Commission within a period not to exceed 30 days.

(d) In ruling on applications where a safety matter has been referred to DOT for action and any such matter falls within the scope of DOT jurisdiction and is otherwise within the public interest, grant the requested authorization with appropriate safety conditions in the certificate and an indication that DOT may act on the matter in a rulemaking or other proceeding.

(e) When a Final Environmental Impact Statement (FEIS) is required as part of the Commission's decisionmaking process, the FERC staff shall, if possible, detail the alleged safety matter and its impact on the environment in the FEIS. If the applicant has not proposed to take remedial action or if the alleged safety matter is

outside the scope of DOT jurisdiction, FERC staff will recommend conditioning of the certificate appropriately in these cases.

2. The DOT shall:

(a) Maintain LNG facility safety regulations consistent with technological advances.

(b) Consider each matter, referred by FERC, for rulemaking or enforcement action along with any comments received from the applicant.

(c) Take whatever action considered appropriate to settle the matter referred by FERC, including issuing a hazardous condition order, beginning a rulemaking of either general or particular applicability, issuing an interpretation of an existing safety standard, enforcing an existing safety standard, or deciding that no action is necessary or that the matter is outside DOT jurisdiction.

(d) Advise the applicant and FERC of the action contemplated in each matter referred by FERC, or advise that the matter is outside the scope of DOT jurisdiction, within a period of 30 days from date of FERC referral.

3. Working arrangements:

The DOT and FERC will designate appropriate staff representatives and will establish joint working arrangements from time to time for the purpose of administering this Memorandum of Understanding.

4. Effect:

This agreement shall take effect upon signing by authorized representatives of DOT and FERC.

5. Nothing in this Memorandum of Understanding is intended to restrict the statutory authority of the DOT or FERC.

Question 41. Much of the OPSO field inspection is done by State agencies and thus these new standards will be enforced by persons who are not within DOT. What plans does DOT have for setting guidelines for State inspectors and for requiring certain levels of inspection and monitoring?

Answer. Once the specifics of the new LNG facility standards are finalized, inspection guidelines for LNG facilities for State inspectors will be prescribed as well as a requirement for an annual inspection of each LNG facility by State agency personnel. We are auditing and reviewing LNG training courses being offered by private educational institutions to determine their value for training State inspectors in LNG technology and LNG plant facility inspection techniques. Consideration is also being given to the establishment of an LNG facilities inspection course at our Transportation Safety Institute in Oklahoma City.

Question 42. The standards address qualifications for facility construction personnel and for inspectors. Does DOT plan to evaluate specific training programs or testing procedures or issue any kind of personnel certification?

Answer. Refer to Question 13 for answer.

Question 43. Several of the bills introduced in the last session included provisions establishing a permitting process for offshore LNG terminals.

(A) Are such provisions necessary and, if so, why were they not included in this bill?

(B) Under what legal authority would the Department of Transportation regulate the safety of offshore LNG facilities?

Answer. (A) Any authorizing legislation for licensing or approving an offshore LNG facility should expressly provide for location and routing approvals. The NGPSA expressly precludes the DOT from prescribing location or routing of any pipeline facility. Therefore, S. 411 is not the appropriate vehicle for addressing the offshore question.

(B) The Natural Gas Pipeline Safety Act of 1968, based on the Submerged Lands Act (43 U.S.C. 1301 et seq.) and the Outer Continental Shelf Lands Act, as amended (43 U.S.C. 1331 et seq.), authorizes DOT to regulate the safety of offshore pipelines used in the transportation of natural and other gases in or affecting interstate or foreign commerce.

The Transportation of Explosives Act (18 U.S.C. 831-835), based on the Submerged Lands Act and the Outer Continental Shelf Lands Act, as amended, authorizes DOT to regulate the safety of offshore pipelines used in the transportation of hazardous liquids by a carrier engaged in interstate or foreign commerce, including (as concurrently provided by section 8 of the Deepwater Port Act (33 U.S.C. 1507)) pipelines used in the transportation of oil by a carrier operating a deepwater port.

The Ports and Waterways Safety Act of 1972 (Pub. L. 92-340, 33 U.S.C. 1221-1227) authorizes DOT to regulate the safety of LNG terminals in the navigable waters of the U.S.

Question 44. Some industry representatives have criticized Title II of the bill on the grounds that it would establish a major new regulatory system at a time when the Administration has committed itself to reducing excessive regulations. How do you respond to this criticism?

Answer. Title II of S. 411 is not intended to nor would it establish a "major new regulatory system" for the safety regulation of hazardous liquid pipeline transportation. Rather, it would provide DOT with improved tools to more effectively carry out its safety responsibilities under the existing regulatory system for such transportation.

The DOT currently regulates hazardous liquid pipelines under the Transportation of Explosives Act (18 U.S.C. 831-835) (TOEA). Because of inherent weaknesses in the TOEA, the regulatory programs established under it are not as effective as they necessarily should be given the risks to life and property that are associated with the pipeline transportation of hazardous liquids. For example, DOT lacks the ability under the TOEA to protect the public against risks associated with: Storage of hazardous liquids; and, Much of the intrastate pipeline transportation of such liquids (only intrastate pipeline transportation under the control of carriers engaged in interstate or foreign commerce is covered by the TOEA).

In this connection it is also to be noted that the General Accounting Office in its recent report on "Liquefied Energy Gases Safety" (EMD-78-28) and citing its earlier report on "Pipeline Safety—Need for a Stronger Federal Effort" (CED-78-99) has recommended extending Federal pipeline safety regulations

"... to cover intrastate LPG and naphtha pipelines, including import terminals and storage complexes, affecting intrastate commerce."

Also, the TOEA does not provide DOT with the opportunity to enhance its liquid pipeline safety program through the establishment and implementation of an effective enforcement effort. With only criminal sanctions available under the TOEA, violations of liquid pipeline safety standards are most often not able to be pursued to a conclusion satisfactory to DOT.

The weaknesses of the TOEA stem from the fact that it was developed before the need for pipeline safety law became evident. It was not written with pipeline safety in mind and applies to pipelines only because of its general applicability to hazardous materials transportation. The DOT believes that effective improvement of its liquid pipeline safety programs requires legislative language that deals specifically and unambiguously with the subject. Title II of S. 411 was proposed for this reason.

Question 45. If S. 411 were to contain a provision establishing a pilot grant-in-aid program for State participation on liquid pipeline, how should it be structured? Beyond the procedures under which such a program would operate, include your estimate on the time for program should run and the annual cost ("seed" money) of the program.

Answer. The word "pilot" connotes a temporary program. If a grant-in-aid program is authorized, it should be a continuous one. For this reason, a pilot grant-in-aid program for State participation on liquid pipelines does not seem to be in order. Sufficient background and experience has been gained through 10 years of Federal involvement in both gas and liquid pipelines and the interface of the five Regional offices with the State agencies, to know a grant program would be successful if State representatives are internally committed to such a program.

Although the miles of liquid pipe to be included in the pipeline safety program defined by the proposed legislation are not currently known, it is expected that the mileage will be minor compared to the miles of natural gas pipelines in the existing program. The increase in program costs due to the liquid program would be proportional to the cost of the natural gas program, defined in terms of miles of pipelines.

It appears that implementation and enforcement of a well-defined safety requirement, as proposed in the pending legislation, should be defined in detail in a yet-to-be-developed conceptual program plan. Implementation of such a plan should be on a scheduled basis. This timing would assure an ongoing program review and periodic revision to help assure satisfactory effectiveness. Funds for such a program must be of a continuing nature if program success is to be maintained.

In summary, a decision on a grant-in-aid program should be made after an analysis of all relevant factors—State motivation, location of the program within a State organization, continuous funding, percentage of Federal funds, State enforcement statutes, Federal oversight authority and process, etc. If the decision is yes, the program should be implemented nation-wide in consonance with a published plan developed through DOT-State participation.

Question 46. How does DOT propose to avoid jurisdictional conflicts with the NTSB regarding pipeline accident investigations if the subpoena authority proposed

in S. 411 is enacted into law? Is there an existing agreement between DOT and NTSB that could be used to avoid such conflicts?

Answer. The investigation of a pipeline accident by DOT and NTSB will not result in jurisdictional conflicts if the subpoena authority proposed in S. 411 is enacted into law because DOT and the NTSB conduct their pipeline accident investigations for different purposes. While NTSB investigates to determine causal effect of such an incident, the purpose of the DOT investigation is primarily to determine if there is a violation of the Federal pipeline safety regulations. A secondary effect of the DOT investigation of a pipeline accident is to assess the adequacy of the DOT pipeline safety standards or the need for revisions of such standards.

There is currently a memorandum of understanding between DOT and NTSB (attached) that would continue the cooperative arrangements between the two agencies even in the event of S. 411 becoming law.

Question 47. Does the NGPSA or S. 411 establish a definition for "existing facility"?

Answer. Neither the NGPSA of S. 411 defines "existing facility". They do address existing facilities, however, by prohibiting, except under certain conditions, the application of any standard affecting the design, installation, construction, initial inspection, and initial testing to pipeline facilities in existence on the date the standard is adopted.

DOT abides by this prohibition through the rulemaking process. In any regulation addressing the "pre-operational" standards referred to above, the applicability or non-applicability of the standard to any given facility is established. Examples follow:

1. In part, the applicability of Part 192 is written so that no person may operate a segment of pipeline that is readied for service after March 12, 1971, or in the case of an offshore gathering line after July 31, 1977, unless that pipeline has been designed, installed, constructed, initially inspected, and initially tested in accordance with Part 192.

2. The applicability of the proposed LNG standards reads in part: No person may operate any component of an LNG facility upon which construction, installation, replacement, relocation, or significant alteration was begun after (dated proposed Part 193—Design and Construction is issued) unless that component meets the applicable requirements of this part [Part 193] governing siting, design, installation, and construction.

Question 48. Does the existing NGPSA provision (repeated, without change in Titles I and II of S. 411) relating to the confidentiality of information obtained by the Secretary containing or relating to a trade secret referred to in 18 U.S.C. 1905, provide a broader protection for such information than the Freedom of Information Act (FOIA)?

Answer. The only effect of the referred to provision is to classify trade secret information obtained by the Secretary as "confidential" for purposes of 18 U.S.C. 1905. Section 1905, in part, makes it a Federal crime for an officer or employee of the U.S. or of any department or agency thereof to publish, divulge, disclose, or make known in any manner or to any extent not provided for by law any information coming to him in the course of his employment or official duties, which information concerns or relates to trade secrets.

Section 1905 has been construed to not prevent disclosure of information authorized to be disclosed under other laws including the Freedom of Information Act (*M. A. Schapiro and Co. v. Securities and Exchange Commission*, D.C. D.C. 1972, 339 F. Supp. 467). It has also been held that section 1905 is not specifically specific to come within the FOIA exemption pertaining to matters that are specifically exempted from disclosure by statute. (*Neal-Cooper Grain Co. v. Kissinger*, D.C. D.C. 1974, 385 F. Supp. 769).

Based on the above, we conclude that the "Trade Secret" provision contained in Titles I and II of S. 411 does not provide a broader protection for trade secrets than the FOIA.

MEMORANDUM OF AGREEMENT BETWEEN DEPARTMENT OF TRANSPORTATION AND NATIONAL TRANSPORTATION SAFETY BOARD

APPENDIX F—OFFICE OF PIPELINE SAFETY

1. Purpose:

The purpose of this appendix is to establish the relationship between the Office of Pipeline Safety and the National Transportation Safety Board within the framework of the DOT-NTSB for the notification of pipeline failures, investigation of accidents, providing services, and program coordination.

2. Background:

OPS is responsible for establishing and enforcing Federal safety regulations, including investigation of accidents, for the transportation of gas and liquid hazardous materials by pipelines. These responsibilities are carried out in response to five Acts. These are: (1) the Natural Gas Pipeline Safety Act of 1968, as amended; (2) the Transportation of Explosives Act; (3) the Mineral Leasing Act, as amended; (4) the Deepwater Port Act of 1974; and, (5) the Transportation Safety Act of 1974. NTSB, by the Independent Safety Board Act of 1974, has responsibility for investigating and determining the probable cause(s) of any pipeline accident in which there is a fatality, substantial property damage (estimated \$100,000) or any other accident which occurs which, in the judgment of the Board, is catastrophic. This agreement then is established to minimize duplication in efforts and maximize exchange of information as both parties execute their respective investigatory responsibilities.

3. Notification of pipeline failures:

A representative of the Office of Pipeline Safety (OPS) will immediately notify, by telephone, the National Transportation Safety Board (NTSB) of the occurrence of each pipeline accident which involves one or more fatalities or which causes substantial property damage estimated to be more than \$100,000.

If in the initial notification, the information regarding the accident is incomplete, OPS will provide follow-up information as appropriate.

4. Investigation of accidents:

(a) NTSB and OPS will coordinate and notify the other agency of accidents which it will investigate.

(b) When one agency is investigating an accident and the other agency decides to investigate the same accident for its own purposes, the two agencies may jointly participate in the investigation.

(c) In a joint investigation, OPS and NTSB will coordinate their investigative activities so as to avoid a duplication of effort and in accordance with the interest and expertise of the agency representatives.

(d) Each agency will be responsible for dealing with the operator, State, local officials, and the press within its own area of responsibility.

5. Services:

a. *Investigative.*—The assistance of OPS Personnel and any agents under contract to OPS may be requested by the NTSB in any investigation. When OPS assistance is required, NTSB will notify OPS as soon as practicable after receipt of initial notification of a pipeline accident and specify the assistance required. All data developed by OPS or its contractors in response to requests for assistance from NTSB will be provided to NTSB and NTSB will be considered the office of record for public release of such data.

b. *Furnishing of studies and technical investigations reports.*—The OPS will furnish to NTSB two copies of published studies and technical investigations concerning pipeline operations, design, maintenance, personnel training, and such other studies as are directly concerned with safety in pipeline transportation and accident prevention. Likewise NTSB will furnish OPS with two copies of all such studies and technical investigations.

c. *Furnishing and processing pipeline safety data.*—Each party of this agreement will furnish pipeline safety data to the other party upon request.

d. *Furnishing of accident investigation and hearing reports.*—OPS will furnish NTSB with two copies of on-site or field investigation reports of those accidents of such significance as to prompt the completion of a report. NTSB will furnish OPS with two copies of accident reports at least 5 days in advance of the release of that report.

6. Program coordination:

Each party of this agreement is invited to participate in or observe the hearings conducted by the other party. Whether the other party will participate or observe will be determined by the inviting party. Copies of the proceedings and subsequent reports will be furnished the invited party.

Question 49. What are some past experiences that would have been avoided if the Secretary's pre-operational safety role over pipeline facilities had been clear, as it is proposed to be made under S. 411 (see "intended for use" amendment to pipeline facility definition and the "pre-construction approval authority")?

Answer. If DOT's pre-operational safety role over pipeline facilities has been clear as proposed to be made under S. 411, several past difficulties enforcing the DOT safety standards would have been avoided. Since wording of the NGPSA and inter-

pretation of the Transportation of Explosives Act applicability extends DOT safety jurisdiction over pipelines being in the transportation of hazardous gas or liquid, the extent of DOT authority over pipelines being constructed, but not yet in operation, is not clear.

In trying to determine the adequacy of girth welds of the Alyeska crude oil pipeline in the Valdez terminal in 1977, DOT was hesitant to require that Alyeska stop the flow of oil while a determination was made of the adequacy of those welds since that pipeline system was not yet fully in operation. Instead, DOT relied on the power vested in the Department of the Interior right-of-way agreement to force that issue.

In 1976, on the same Alyeska crude oil pipeline system, the adequacy of the girth welds on the main pipeline was also a source of DOT concern, and similarly DOT was faced with inadequate authority to require compliance since the pipeline was not yet operational. A similar problem arose in 1976 when a major pipeline in the mid-western U.S. had conducted inadequate X-rays of the girth welds and DOT needed to have the matter rectified. In both these instances, the gas operator complied with DOT requests.

The pre-operational safety authority over pipeline facilities sought by DOT would assure that design and construction standards that do not meet DOT requirements are corrected before the pipeline goes into operation and expose life and property to possible hazardous conditions.

Question 50. It is noted that DOT did an extensive cost-benefit analysis of its LNG proposed rulemaking. Does the existing waiver procedure under the Natural Gas provide flexibility enough to permit granting a waiver if compliance with a standard is shown not to be cost-beneficial? Describe a waiver situation to explain your response.

Answer. The NGPSA provides for waiver of a Federal gas pipeline safety standard if DOT determines that a waiver of compliance with such a standard is not inconsistent with gas pipeline safety. Issuance of waiver have been based on: (1) Reasons why it is inappropriate to comply with the current standard, and (2) how the alternate approach is not inconsistent with pipeline safety.

To this date, cost-benefit considerations have not been a predominate factor or reason for waiving compliance with Federal pipeline safety standards. However, the waiver procedures do not preclude increasing attention being given to cost-benefit considerations. For example, waivers granted to Alyeska in 1977 were, to a large extent, based on the significant cost to comply with applicable welding standards since portions of the pipeline which was already buried would have had to be excavated before strict compliance with such standards could be achieved.

Question 51. Does the Secretary's jurisdiction under the Natural Gas Pipeline Safety Act reach processing plants? An example would be the proposed plant for processing Prudoe Bay Gas before it enters the proposed pipeline. Could the proposed "Hazardous Liquid Pipeline Safety Act of 1979" (Title II of S. 411) be used to regulate the safety of refineries?

Fully explain your responses to the above questions.

Answer. The Secretary's jurisdiction under the NGPSA, even as it is amended by S. 411, does not reach processing plants, such as the plant that would process Prudhoe Bay gas. The extent of DOT authority under the NGPSA essentially begins as set forth in the definition of "gathering line" in Part 192, that is, a pipeline transporting gas from a current "production facility." The term "production facility" is used in the definition of "gathering line" as a beginning point for gathering lines, in order to differentiate between gas in production and gas in transportation. This differentiation is necessary because the Federal safety standards in Part 192 apply only to the transportation of gas. The standards do not apply to processes of production, such as processing plants, or pipelines used to produce gas before the gas is introduced into transportation. While the NGPSA does address the treatment of gas, to be covered by the Act such treatment must take place in the course of the transportation of gas.

Title II of S. 411 was not intended to extend to the safety regulation of refineries. Like the NGPSA, Title II covers the transportation of hazardous liquid and the treatment of hazardous liquid in the course of transportation.

The knowledge and expertise necessary to address safety problem in refineries is dissimilar to that necessary for addressing safety problems in pipeline transportation. It should be noted however, the OSHA has extensive occupational safety related requirements for refineries which go a long way to assuring the safe operation of such refineries.

Question 52. If a portion of an existing pipeline facility is replaced or extended, is the entire facility classified as a new facility for purpose of safety regulation? If so, why? If not, please cite the law or regulation that prevents such interpretation.

Answer. If a portion of an existing pipeline facility is replaced or extended, the entire facility is not classified as a new facility for purpose of safety regulation. 49 CFR 192.13 requires that pipeline facilities meet the design and construction requirements applicable to new facilities only to the extent that an existing facility is replaced, relocated or otherwise changed. The NGPSA also restricts the applicability of this statute to "... apply to the design, installation, inspection, testing, construction, extension, operation, replacement, and maintenance of pipeline facilities. Standards affecting the design, installation, construction, initial inspection, and initial testing shall not be applicable to pipeline facilities in existence on the date such standards are adopted."

Question 53. S. 411 proposes, in accord with the Administration's position, the abolishment of the Technical Pipeline Standards Safety Committee. However, in an earlier version of the bill, an amendment to the TPSSC provision would have broadened the membership standard to permit persons "knowledgeable" in the safety regulation of the transportation of gas to be Committee members. It is assumed that such an amendment was offered to improve the TPSSC. What prompted DOT to offer such an amendment? Since its inception, give the number of times the Committee has met each year. What has been the average annual cost for the TPSSC operation?

Answer. DOT's earlier amendment to broaden the membership standard for TPSSC to permit persons "knowledgeable" in the safety regulation of the transportation of gas was meant to provide DOT the flexibility of nominating persons involved in environmental and public interest groups to that Committee. At present, persons participating in that Committee must be "... experienced in the safety regulation of the transportation of gas ... or technically qualified by training and experience in one or more fields of engineering applied to the transportation of gas." Because of that limiting language, it has been difficult to nominate public members to the Committee, except those persons who have a previous or current association with some aspect of the pipeline industry. While there are persons sufficiently knowledgeable and interested, although not necessarily experienced, in the safety regulation of pipelines, the existing standard for membership prohibits their membership on the Committee.

We have found, that although only four members of the Committee officially represent the industry, Committee decisions are generally biased in favor of lessening the restrictions on industry imposed by safety regulations. We would view strong presentation of public interests as an appropriate counter-balance to that apparent bias.

Since its inception, the number of times the Committee has met has varied. While the regulations were being developed in 1968-70, the Committee met nine times. Between 1971 and 1976, the TPSSC met less than once a year but since 1976, the Committee has been meeting an average of twice a year. The average annual cost for the TPSSC operation is \$25,000.

Question 54. Does the safety jurisdiction of the Secretary under the Natural Gas Pipeline Safety Act reach the transportation of synthetic natural gas (SNG)? If so, has the Secretary fully exercised that jurisdiction? Fully explain any non-exercise of SNG jurisdiction. If no SNG jurisdiction is claimed, explain why not.

Answer. The safety jurisdiction of DOT under the Natural Gas Pipeline Safety Act reaches the transportation of natural gas, flammable gas which is toxic or corrosive. While the sources of natural and synthetic natural gas differ, the properties of these two commodities are not distinguishable in the form they are transported. For this reason, the pipeline transportation of synthetic natural gas is covered by the NGPSA.

Synthetic natural gas being produced in SNG plants is currently introduced into the gas stream of existing gas pipeline systems, and to that extent, the pipeline transportation of synthetic natural gas is being regulated by DOT.

Question 55. In Title II of S. 411 the definition of State matches the definition of State under the Natural Gas Pipeline Safety Act. Is this appropriate given the major LPG facility owned by Hess Oil Company in the Virgin Islands. If so, why? Are there any other existing or proposed gas or liquid facilities that may justify a broader definition of State under either Title II of S. 411 or the NGPSA?

Answer. While there are certain U.S. territories that fall outside the NGPSA definition of "State", DOT felt it was pertinent to repeat that definition in Title II of S. 411 because: (1) There are a minimal number of pipeline facilities in those territories not covered; (2) we are not aware of any pipeline safety problem on those

few facilities that warrants extending DOT jurisdiction; and (3) we are mindful of the difficulties that would be encountered in administering a pipeline safety program in widely scattered island territories as distant from each other as American Samoa is to the Virgin Islands.

An instance that may justify a broader definition of "State" relates to possible future pipeline facilities located offshore around Puerto Rico and other island territories. The OCS Land Act which currently governs the applicability of DOT offshore pipeline regulations does not extend to the offshore lands of Puerto Rico and island territories. With the ever-increasing world-wide oil exploration, future oil exploration may occur in those areas.

Question 56. Has the authority under Section 3(b) of the NGPSA to address hazardous pipeline facilities ever been exercised? If so, please give some detail on the reason for such exercise of authority.

Answer. Yes, twice during this calendar year. The most recent example of such exercise was on April 2, 1979, when the MTB considered it prudent to order the City of Tompkinsville, Kentucky, to take six distinct actions to mitigate the hazardous condition which existed in the city owned and operated gas distribution system.

On January 19, 1979, the City of Grand Coteau, Louisiana, was ordered to take five immediate actions to permit operation of the City owned system through the severest part of the winter season. This operator is now being monitored by the MTB Regional office in Houston to assure long term correction.

Generally speaking, making the operators aware of the provisions of Section 3(b) of the NGPSA has sufficient impact upon them to make application of that authority necessary only on an exception basis. An example of this occurred in Scottsville, Kentucky, where excessive gas leakage on the old distribution system prompted shutdown of the system on January 19, 1969, and a subsequent replacement of that system without formal exercise of Section 3(b) of the NGPSA.

Question 57. S. 411 would make persons "who willfully injure or destroy, or attempt to injure and destroy interstate pipeline facilities" subject to criminal sanctions. Is it necessary to specifically address "conspiracy to injure or destroy" in the applicable S. 411 provision to apply criminal sanctions to conspirators?

Answer. No. The U.S. Criminal Code in Title 18 U.S.C. already contains a general conspiracy provision that makes conspiracy to violate any Federal law a crime.

Question 58. S. 411 would make persons subject to criminal sanctions for willfully violating a provision of the law or regulations issued under the law. Does this differ from willfully and knowingly violating . . . ?

Answer. Because the proposed criminal sanction can only be imposed for a willful violation, knowledge that the act is a violation of law or regulation is necessarily implied. Therefore, the addition of "knowingly" to the criminal penalty provision is unnecessary. You will note the difference for civil penalties where a penalty can be imposed by showing that a person committed an act which was in violation of law or regulation. Proof that the person knew the committed act was in violation is unnecessary.

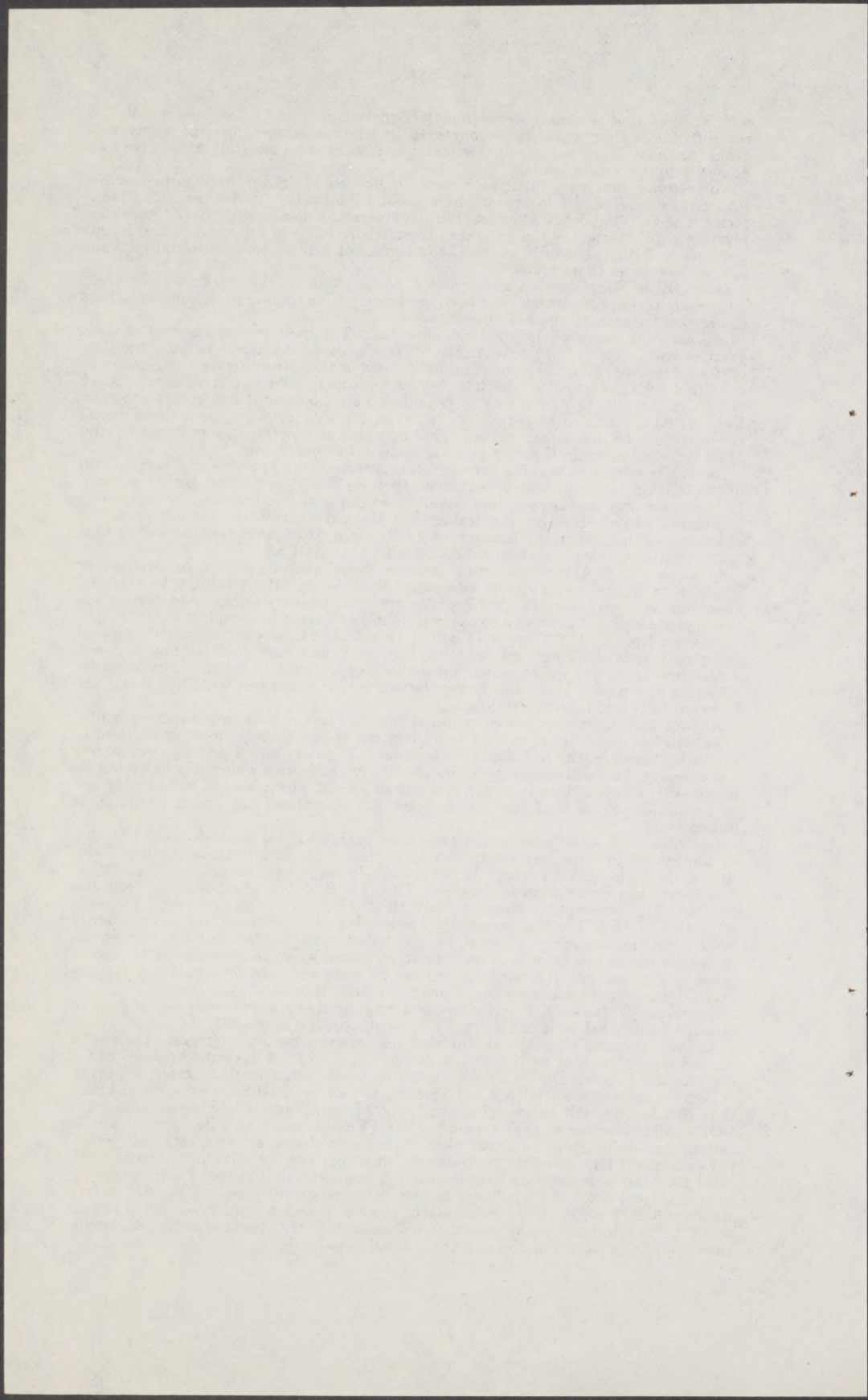
Question 59. S. 411's preemption provisions prohibit State agencies from adopting or continuing in force any safety standards applicable to interstate pipeline facilities. Is the term "State agency" broad enough to cover local or municipal agencies?

Answer. The preemption language in Title I of S. 411 is exact wording from the NGPSA. The preemption language in Title II of S. 411 is patterned very closely after the NGPSA. Express preemption provisions of this nature have consistently been construed to apply to local or municipal agencies because the burden on interstate commerce from laws or ordinances issued by such agencies can be just as great or greater than the burdens imposed by state-wide law or regulation. However, DOT would not oppose an amendment to clarify this issue.

Question 60. Does DOT envision requiring final (detailed) design plans for a pipeline facility before it could grant a "preconstruction approval?"

Answer. Because of DOT's intent that its "preconstruction approval" process be carried out concurrent with and in a manner that will not disrupt or delay FERC's certification process, DOT would not require, final design plans to grant approval.

Because an applicant is required (under sec. 7 of the NGPSA) to certify to FERC that the facility will be designed, constructed, and operated in accordance with DOT's safety standards, DOT considers, like FERC in reaching a decision on certification, that documentation to establish preliminary design criteria, establish principal equipment requirements, and identify principal site sensitive problems is sufficient to reach a decision on preconstruction approval. If it is found after granting such approval that the applicant is not complying with applicable DOT safety standards, DOT could use its enforcement powers to seek compliance. This of course would be in addition to any remedies available to FERC because such noncompliance would also be a violation of FERC's certification.



PIPELINE SAFETY ACT OF 1979

WEDNESDAY, APRIL 25, 1979

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D.C.

The committee met at 9:40 a.m. in room 1114, Dirksen Senate Office Building, Hon. Wendell H. Ford, presiding.

OPENING STATEMENT BY SENATOR FORD

Senator FORD. Good morning, ladies and gentlemen.

On behalf of the Committee on Commerce, Science, and Transportation, I would like to welcome today's witnesses and the public to 2 days of hearings on the reauthorization for the natural gas pipeline safety program and S. 411, the Pipeline Safety Act of 1979.

The Natural Gas Pipeline Safety Act has been in place for over a decade. During that time, the Nation's energy needs have grown, and we have seen the introduction of large liquefied natural gas import terminals to our coasts. We depend on pipelines to transport natural gas, liquefied petroleum gas, anhydrous ammonia, and other hazardous liquids. These pipelines crisscross the United States, an unseen but vital transportation system.

This committee has oversight responsibility for all modes of transportation safety. We look after the Federal Aviation Administration (FAA), the National Transportation Safety Board (NTSB), the National Highway Traffic Safety Administration (NHTSA)—I sure got a close look at that one recently—and many others. Each of these modes has their own special safety problems.

Pipelines are the safest mode of transportation, perhaps because there is less room for human error. Yet, if the frequency of pipeline accidents is small, the potential for loss of life and damage to property is severe. These pipelines transport highly flammable materials within feet of homes, sidewalks, and roads. Just because they are out of sight, we cannot afford to put them out of mind. They pose tremendous risks.

The Natural Gas Pipeline Safety Act was enacted over a decade ago to make sure that pipeline facilities met minimum safety standards. This committee hit upon the idea of State-certified programs to enforce these standards because clearly the Federal Government could not field enough inspectors to monitor the many thousands of miles of pipeline. That program has done some things well, and others not so well.

Because of the modest resources which have been devoted to carrying out the purposes of this act and early administration's

having placed a low priority on pipeline safety, the program lacked the vigor to accomplish the goals set forth by the Congress.

The National Transportation Safety Board, the Office of Technology Assessment, and the General Accounting Office all chorus the necessity for improvement to carry out the intent of the original 1968 act and also to expand the program to meet new needs. DOT has responded with an internal reorganization and the legislation before us today, the Pipeline Safety Act of 1979.

This Congress has been looking hard at both of these proposed remedies. During the last 8 months we have held 4 days of oversight hearings. I can't say we've heard testimony from A to Z, but we've come close. I believe we heard from Admiral Benkert of the American Institute of Merchant Shipping, and from Mr. Zuehlke on behalf of Sun Co.

These hearings will focus on the natural gas pipeline safety program, looking at such questions as:

How has DOT's internal reorganization affected success of the program?

Does DOT have sufficient funding?

Is the present level of enforcement adequate?

Are the Federal officials communicating successfully with the States?

What progress has been made on rulemakings which have been in process over the past few years?

How has the Department used the Technical Advisory Committee?

The second focus of these hearings is S. 411. On February 8, Secretary of Transportation Adams presented this committee with the administration proposal to amend the Natural Gas Pipeline Safety Act to meet the challenge of new pipeline problems and to set up a program parallel to the natural gas program for hazardous liquids transported by pipeline.

Though the committee has heard many of the views of today's witnesses on the general subject of pipeline safety, this hearing will give those same groups the opportunity to express their views on the specific provisions of S. 411. I understand that we have a wide range of viewpoints represented here today, and without further ado, I would like to hear from the witnesses.

[The bill and agency comments follow:]

To improve the protections afforded the public against risks associated with the transportation of hazardous commodities by pipeline.

FEBRUARY 9 (legislative day, JANUARY 15), 1979

Mr. CANNON (by request) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

To improve the protections afforded the public against risks associated with the transportation of hazardous commodities by pipeline.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 *That this Act may be cited as the "Pipeline Safety Act of*
4 *1979".*

TITLE I—NATURAL GAS

SHORT TITLE

7 SEC. 101. This title may be cited as the "Natural Gas
8 Pipeline Safety Act Amendments of 1979".

I—E●

1 “(4) ‘Pipeline facilities’ includes, without limitation, new
2 and existing pipe, rights-of-way, and any equipment, facility,
3 or building used or intended for use in the transportation of
4 gas or the treatment of gas during the course of transporta-
5 tion, but rights-of-way as used in this Act does not authorize
6 the Secretary to prescribe the location or routing of any pipe-
7 line facility;”.

8 (c) Section 2(8) and 2(9) are amended by striking out
9 “Federal Power Commission” and inserting in lieu thereof
10 “Federal Energy Regulatory Commission”.

11

STANDARDS

12 SEC. 105. (a) Section 3 is amended to read as follows:

13 “REGULATIONS GOVERNING TRANSPORTATION OF GAS

14

AND PIPELINE FACILITIES

15 “SEC. 3. (a) GENERAL.—The Secretary shall issue, in
16 accordance with the provisions of section 553 of title 5,
17 United States Code, including an opportunity for informal
18 oral presentation, Federal safety standards for the transpor-
19 tation of gas and pipeline facilities. The standards shall apply
20 to each person who engages in the transportation of gas or
21 who owns or operates pipeline facilities. The standards shall
22 be practicable and designed to meet the need for safe trans-
23 portation of gas and may govern any safety aspect of that
24 transportation and of pipeline facilities which the Secretary
25 considers necessary or appropriate.

1 “(b) CRITERIA.—In prescribing standards under this
2 section, the Secretary shall consider—

3 “(1) relevant available pipeline data;

4 “(2) whether the standards are appropriate for the
5 particular type of pipeline transportation or facility;

6 “(3) the reasonableness of any proposed stand-
7 ards; and

8 “(4) the extent to which the standards will con-
9 tribute to public safety.

10 “(c) PRECONSTRUCTION APPROVAL.—In prescribing
11 standards under this section, the Secretary may require, in
12 his discretion, that any construction associated with a new or
13 existing pipeline facility not begin until he approves that con-
14 struction, and then only to the extent that the construction is
15 in accordance with the applicable standards prescribed under
16 this section and such other terms and conditions as the Sec-
17 retary determines are appropriate to assure that the facility
18 will be constructed and operated in compliance with those
19 standards.

20 “(d) EXISTING FACILITIES.—Except as provided under
21 section 10(b) of this Act, any standard issued under this sec-
22 tion affecting the design, installation, construction, initial in-
23 spection, and initial testing shall not be applicable to pipeline
24 facilities in existence on the date it is adopted.

1 “(e) PREEMPTION.—Any State agency may adopt addi-
2 tional or more stringent safety standards for intrastate pipe-
3 line transportation if those standards are compatible with the
4 Federal standards issued under this Act. No State agency
5 may adopt or continue in force any safety standards applica-
6 ble to interstate transmission facilities.

7 “(f) WAIVERS.—Upon application by any person en-
8 gaged in the transportation of gas or the operation of pipeline
9 facilities, the Secretary may, by order, after notice and op-
10 portunity for hearing and under such terms and conditions
11 and to such extent as he deems appropriate, waive in whole
12 or in part compliance with any standard established under
13 this Act, if he determines that waiver of compliance with
14 such standard is not inconsistent with gas pipeline safety. The
15 Secretary shall state his reasons for any such waiver. A
16 State agency, with respect to which there is in effect a certi-
17 fication pursuant to section 5(a) or an agreement pursuant to
18 section 5(b), may waive compliance with a safety standard in
19 the same manner and under the same conditions as the Sec-
20 retary, provided such State agency gives the Secretary writ-
21 ten notice at least sixty days prior to the effective date of the
22 waiver. If, before the effective date of a waiver to be granted
23 by a State agency, the Secretary objects in writing to the
24 granting of the waiver, any State agency action granting the
25 waiver will be stayed. After notifying such State agency of

1 his objection, the Secretary shall afford such agency a prompt
2 opportunity to present its request for waiver, with opportuni-
3 ty for hearing, and the Secretary shall determine finally
4 whether the requested waiver may be granted.

5 “(g) COOPERATION AND CONSULTATION.—(1) When-
6 ever the establishment of a standard or action upon applica-
7 tion for waiver under the provisions of this Act would affect
8 continuity of any gas services, the Secretary shall consult
9 with and advise the Federal Energy Regulatory Commission
10 or State commission having jurisdiction over the affected
11 pipeline facility before establishing the standard or acting on
12 the waiver application and shall defer the effective date until
13 the Federal Energy Regulatory Commission or any such
14 commission has had reasonable opportunity to grant the au-
15 thorizations it deems necessary.

16 “(2) in any proceedings under section 7 of the Natural
17 Gas Act (15 U.S.C. 717f) for authority to establish, con-
18 struct, operate, or extend a gas pipeline which is or will be
19 subject to Federal or other applicable safety standards, any
20 applicant shall certify that it will design, install, inspect, test,
21 construct, operate, replace, and maintain the pipeline facili-
22 ties in accordance with Federal and other applicable safety
23 standards and plans for maintenance and inspection. Such
24 certification shall be binding and conclusive upon the Federal
25 Energy Regulatory Commission unless the relevant enforce-

1 ment agency has timely advised the Commission in writing
2 that the applicant has violated safety standards established
3 pursuant to this Act.

4 “(3) Upon request, the Secretary shall furnish to the
5 Federal Energy Regulatory Commission any information he
6 has concerning the safety of any materials, operations, de-
7 vices, or processes relating to the transportation of gas or the
8 operation of pipeline facilities.

9 “(4) The Secretary is authorized to advise, assist, and
10 cooperate with other Federal departments and agencies and
11 State and other interested public and private agencies and
12 persons, in the planning and developing of (1) Federal safety
13 standards, and (2) methods for inspecting and testing to de-
14 termine compliance with Federal safety standards.

15 “(5) The Secretary is authorized to consult with, and
16 make recommendations to, other Federal departments and
17 agencies, State and local governments, and other public and
18 private agencies or persons, for the purpose of developing
19 and encouraging activities, including the enactment of legis-
20 lation, to assist in the implementation of this Act and to im-
21 prove State and local pipeline safety programs.”.

22 (b) The Act is amended by striking out sections 7
23 and 13.

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1 (5) by amending clause 5(ii) to read as follows:
2 "all accidents or incidents reported during the preced-
3 ing twelve months by each such person involving per-
4 sonal injury requiring hospitalization, fatality, property
5 damage exceeding \$5,000 (whether or not sustained by
6 a person subject to the safety jurisdiction of the State
7 agency) and any other accident which the State agency
8 considers significant."

9 (b) Section 5(b) is amended by striking out paragraphs
10 (3) and (4).

11 (c) Section 5 is further amended by striking out subsec-
12 tion (f); redesignating subsections (c), (d), and (e) as (d), (e),
13 and (f), respectively; and adding a new subsection (c) to read
14 as follows: "(c) The Secretary is authorized to conduct what-
15 ever monitoring may be necessary of any State program es-
16 tablished by certification or agreement under this section to
17 assure that such programs are being carried out in compli-
18 ance with such certification or agreement. State agencies
19 shall cooperate fully in a system of Federal monitoring of
20 their programs."

21 **ENFORCEMENT POWERS**

22 **SEC. 108.** (a) The Act is amended by redesignating sec-
23 tion 8 as section 7; by striking out sections 9 and 10; and by
24 adding new sections 8, 9, and 10 to read as follows:

"PENALTIES

1
2 "SEC. 8. (a) ASSESSMENT OF CIVIL PENALTIES.—Any
3 person who is determined by the Secretary of Transportation
4 to have violated any provisions of this Act or any regulation
5 or order issued thereunder including any order issued under
6 sections 9 or 10(b) of this Act, shall be liable to the United
7 States for a civil penalty of not more than \$1,000 for each
8 violation for each day that violation persists, except that the
9 maximum civil penalty shall not exceed \$200,000 for any
10 related series of violations. The amount of the penalty shall
11 be assessed by the Secretary by written notice. In determin-
12 ing the amount of the penalty, the Secretary shall consider
13 the nature, circumstances, and gravity of the violation and,
14 with respect to the person found to have committed the viola-
15 tion, the degree of culpability, any history of prior violations,
16 the effect on ability to continue to do business, any good faith
17 in attempting to achieve compliance, and such other matters
18 as the Secretary believes justice may require.

19 "(b) COLLECTION OF CIVIL PENALTIES.—Except as
20 provided by subsection (c), a civil penalty assessed under sub-
21 section (a) may be recovered in an action brought by the
22 Attorney General on behalf of the United States in the ap-
23 propriate district court of the United States or, prior to refer-
24 ral to the Attorney General, it may be compromised by the
25 Secretary. The amount of the penalty, when finally deter-

1 mined (or agreed upon in compromise), may be deducted from
2 all sums owed by the United States to the person charged.
3 All penalties collected under this subsection shall be deposit-
4 ed in the Treasury of the United States as miscellaneous
5 receipts.

6 “(c) When a civil penalty of not more than \$1,500 has
7 been assessed under subsection (a), the matter may be re-
8 ferred for collection of the penalty directly to the Federal
9 magistrate of the jurisdiction wherein the person liable may
10 be found, for institution of collection procedures under super-
11 vision of the district court, if the court has issued an order
12 delegating such authority under section 636(b) of title 28,
13 United States Code.

14 “(d) CRIMINAL PENALTIES.—

15 “(1) Any person who willfully violates a provision
16 of this Act or a regulation or order issued thereunder
17 including any order issued under sections 9 or 10(b) of
18 this Act shall, upon conviction, be subject, for each of-
19 fense, to a fine of not more than \$25,000, imprison-
20 ment for a term not to exceed five years, or both.

21 “(2) Any person who willfully injures or destroys,
22 or attempts to injure or destroy, any interstate trans-
23 mission facility shall, upon conviction, be subject, for
24 each offense, to a fine of not more than \$15,000,

1 imprisonment for a term not to exceed fifteen years,
2 or both.

3 "COMPLIANCE ORDERS

4 "SEC. 9. The Secretary may issue orders directing com-
5 pliance with this Act or any regulation issued thereunder.
6 The district courts of the United States shall have jurisdic-
7 tion, upon petition by the Attorney General, to enforce such
8 orders by appropriate means.

9 "SPECIFIC RELIEF

10 "SEC. 10. (a) GENERAL.—(1) The Attorney General, at
11 the request of the Secretary, may bring an action in an ap-
12 propriate district court of the United States for equitable
13 relief to redress or restrain a violation by any person of a
14 provision of this Act or a regulation issued thereunder. Such
15 district courts shall have jurisdiction to determine such ac-
16 tions and may grant such relief as is necessary or appropri-
17 ate, including mandatory or prohibitive injunctive relief,
18 interim equitable relief, and punitive damages.

19 "(2) In any proceeding for criminal contempt for viola-
20 tion of a mandatory or prohibitive injunction issued under this
21 subsection, which violation also constitutes a violation of this
22 Act, trial shall be by the court or, upon demand of the ac-
23 cused, by a jury. Such trial shall be conducted in accordance
24 with the practice and procedure applicable in the case of pro-

1 proceedings subject to the provisions of rule 42(b) of the Federal
2 Rules of Criminal Procedure.

3 “(b) HAZARDOUS PIPELINE FACILITIES.—(1) If the
4 Secretary finds, after reasonable notice and an opportunity
5 for hearing, that any pipeline facility is hazardous to life or
6 property, he shall, by order, require the person operating the
7 facility to take necessary corrective action. Such corrective
8 action may include suspended or restricted use of the facility,
9 physical inspection, testing, repair, replacement, or other
10 action, as appropriate. The district courts of the United
11 States shall have jurisdiction, upon petition by the Attorney
12 General, to enforce orders issued under this subsection by
13 appropriate means.

14 “(2) The Secretary may waive the requirements for
15 notice and hearing under this subsection and provide for ex-
16 peditious issuance of an order under this subsection in any
17 case in which he determines that the failure to do so would
18 result in the likelihood of serious harm to life or property.”.

19 (b) Section 6 is amended by striking out the existing
20 heading and inserting in lieu thereof “JUDICIAL REVIEW OF
21 STANDARDS AND ORDERS” and by inserting the words
22 “standard or” immediately before the word “order”
23 wherever it appears in subsections (a), (b), and (c).

24

ADMINISTRATION

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SEC. 109. Section 12 is amended to read as follows:

1 "POWERS AND DUTIES OF THE SECRETARY

2 "SEC. 12. (a) GENERAL.—The Secretary is authorized,
3 to the extent necessary to carry out his responsibilities under
4 this Act, to conduct investigations, make reports, issue sub-
5 penas, conduct hearings, require the production of relevant
6 documents, records, and property, take depositions, and con-
7 duct, directly or indirectly, research, testing, development,
8 demonstration, and training activities.

9 "(b) RECORDS.—Each person who engages in the
10 transportation of gas or who owns or operates pipeline facili-
11 ties shall establish and maintain such records, make such re-
12 ports, and provide such information as the Secretary may
13 reasonably require, and shall submit such reports and shall
14 make such records and information available as the Secretary
15 may request, to enable him to determine whether such person
16 has acted or is acting in compliance with this Act and the
17 standards or orders issued under this Act.

18 "(c) INSPECTION.—Officers, employees, or agents au-
19 thorized by the Secretary, upon presenting appropriate cre-
20 dentials to the person in charge, are authorized to enter
21 upon, inspect, and examine, at reasonable times and in a rea-
22 sonable manner, the records and properties of persons to the
23 extent such records and properties are relevant to determin-
24 ing whether such persons have acted or are acting in compli-

1 ance with this Act and the standards or orders issued under
2 this Act.

3 “(d) PUBLIC AVAILABILITY OF ACCIDENT RE-
4 PORTS.—Accident reports made by any officer, employee, or
5 agent of the Department of Transportation shall be available
6 for use in any civil, criminal, or other judicial proceeding
7 arising out of such accident. Any such officer, employee, or
8 agent may be required to testify in such proceedings as to the
9 facts developed in such investigations. Any such report shall
10 be made available to the public in a manner which need not
11 identify individuals. All reports on research projects, demon-
12 stration projects, and other related activities shall be public
13 information.

14 “(e) PROTECTION OF TRADE SECRETS.—All informa-
15 tion reported to or otherwise obtained by the Secretary or his
16 representative pursuant to subsection (a), (b), or (c) which
17 information contains or relates to a trade secret referred to in
18 section 1905 of title 18 of the United States Code shall be
19 considered confidential for the purpose of that section, except
20 that such information may be disclosed to other officers or
21 employees concerned with carrying out this Act or when rel-
22 evant in any proceeding under this Act. Nothing in this sec-
23 tion shall authorize the withholding of information by the
24 Secretary or any officer, employee, or agent under his control,
25 from the duly authorized committees of the Congress.”.

1 APPROPRIATIONS AUTHORIZATION

2 SEC. 110. Section 15 is amended by redesignating it as
3 section 14 to read as follows:

4 "APPROPRIATIONS AUTHORIZED

5 "SEC. 14. (a) There are authorized to be appropriated
6 \$4,206,000 for the fiscal year ending September 30, 1980,
7 and such sums as may be necessary for the fiscal year ending
8 September 30, 1981, for the purpose of carrying out the pro-
9 visions of this Act and the Hazardous Liquid Pipeline Safety
10 Act of 1979, except that the funds appropriated pursuant to
11 this subsection shall not be used for Federal grants-in-aid.

12 "(b) There are authorized to be appropriated
13 \$2,820,000 for the fiscal year ending September 30, 1980,
14 and such sums as may be necessary for the fiscal year ending
15 September 30, 1981, for the purpose of carrying out the Fed-
16 eral grants-in-aid provisions of section 5(d) of this Act."

17 CLERICAL AND CONFORMING AMENDMENTS

18 SEC. 111. (a) Section 14 is amended by redesignating it
19 as section 13; by striking out "March 17" and inserting in
20 lieu thereof "June 15"; and by striking out "3(e)" in para-
21 graph a(13) and inserting in lieu thereof "3(f)".

22 (b) Sections 16 and 17 are amended by redesignating
23 them as sections 15 and 16, respectively.

24 (c) Section 16(f), as redesignated, is amended by striking
25 out "minimum".

1 (d) The Mineral Leasing Act of 1920, as amended (30
2 U.S.C. 185) is amended by striking out sections 28(w)(3) and
3 28(w)(4).

4 TITLE II—LIQUID PIPELINE SAFETY

5 SHORT TITLE

6 SEC. 201. This title may be cited as the "Hazardous
7 Liquid Pipeline Safety Act of 1979".

8 DECLARATION OF POLICY

9 SEC. 202. It is declared to be the policy of Congress in
10 this title to improve the ability of the Secretary of Transpor-
11 tation to protect the Nation adequately against the risks to
12 life and property which are inherent in the transportation of
13 hazardous liquids by pipeline in or affecting interstate or
14 foreign commerce.

15 DEFINITIONS

16 SEC. 203. As used in this title—

17 (1) "person" means any individual, firm, joint
18 venture, partnership, corporation, association, State,
19 municipality, cooperative association, or joint stock as-
20 sociation, and includes any trustee, receiver, assignee,
21 or personal representative thereof;

22 (2) "hazardous liquid" means a substance or ma-
23 terial which is in liquid form (excluding liquefied natu-
24 ral gas) when transported by pipeline facilities and
25 which, as determined by the Secretary, may pose an

1 unreasonable risk to life or property when transported
2 by pipeline facilities. For the purpose of this title "haz-
3 arduous liquid" includes but is not limited to, petroleum,
4 petroleum products, and any other liquid that is flam-
5 mable, corrosive, or toxic;

6 (3) "transportation of hazardous liquids" means
7 the movement of hazardous liquid by pipeline or its
8 storage in or affecting interstate or foreign commerce;

9 (4) "pipeline facilities" includes, without limita-
10 tion, new and existing pipe, rights-of-way, and any
11 equipment, facility, or building used or intended for use
12 in the transportation of hazardous liquids or the treat-
13 ment of hazardous liquids during the course of trans-
14 portation, but rights-of-way as used in this title does
15 not authorize the Secretary to prescribe the location or
16 the routing of any pipeline facility;

17 (5) "interstate pipeline facilities" include pipeline
18 facilities that, either on their own or by connection
19 with other pipeline facilities, are used to move hazard-
20 ous liquids in interstate or foreign commerce;

21 (6) "intrastate pipeline facilities" means pipeline
22 facilities which are not interstate pipeline facilities;

23 (7) "interstate or foreign commerce" means com-
24 merce between any point in a State and any point out-

1 side thereof, or between points within the same State
2 but through any place outside thereof;

3 (8) "State" includes each of the several States,
4 the District of Columbia, and the Commonwealth of
5 Puerto Rico; and

6 (9) "Secretary" means the Secretary of Trans-
7 portation.

8 REGULATIONS GOVERNING TRANSPORTATION OF
9 HAZARDOUS LIQUIDS AND PIPELINE FACILITIES

10 SEC. 204. (a) GENERAL.—The Secretary shall issue, in
11 accordance with the provisions of section 553 of title 5,
12 United States Code, including an opportunity for informal
13 oral presentation, Federal safety standards for the transpor-
14 tation of hazardous liquids and pipeline facilities. The stand-
15 ards shall apply to each person who engages in the transpor-
16 tation of hazardous liquids or who owns or operates pipeline
17 facilities. The standards shall be practicable and designed to
18 meet the need for safe transportation of hazardous liquids and
19 may govern any safety aspect of that transportation which
20 the Secretary considers necessary or appropriate.

21 (b) CRITERIA.—In prescribing standards under this sec-
22 tion, the Secretary shall consider—

23 (1) relevant available pipeline data;

24 (2) whether the standards are appropriate for the
25 particular type of pipeline transportation or facility;

1 (3) the reasonableness of any proposed standards;
2 and

3 (4) the extent to which the standards will contrib-
4 ute to public safety.

5 (c) PRECONSTRUCTION APPROVAL.—In prescribing
6 standards under this section, the Secretary may require, in
7 his discretion, that any construction associated with a new or
8 existing pipeline facility not begin until he approves that con-
9 struction, and then only to the extent that the construction is
10 in accordance with the applicable standards prescribed under
11 this section and such other terms and conditions as the Sec-
12 retary determines are appropriate to assure that the facility
13 will be constructed and operated in compliance with those
14 standards.

15 (d) EXISTING FACILITIES.—Except as provided under
16 section 210(b) of this title, any standard issued under this
17 section affecting the design, installation, construction, initial
18 inspection, and initial testing shall not be applicable to pipe-
19 line facilities in existence on the date it is adopted.

20 (e) PREEMPTION.—Any State agency may adopt addi-
21 tional or more stringent safety standards for intrastate pipe-
22 line facilities and the transportation of hazardous liquids asso-
23 ciated with those facilities, if those standards are compatible
24 with the Federal standards issued under this title. No State
25 agency may adopt or continue in force any safety standards

1 applicable to interstate pipeline facilities or the transportation
2 of hazardous liquids associated with those facilities.

3 (f) WAIVERS.—Upon application by any person engaged
4 in the transportation of hazardous liquids or the operation of
5 pipeline facilities, the Secretary may, by order, after notice
6 and opportunity for hearing and under such terms and condi-
7 tions and to such extent as he deems appropriate, waive in
8 whole or in part compliance with any standard established
9 under this title, if he determines that a waiver of compliance
10 with such standard is not inconsistent with pipeline safety.
11 The Secretary shall state his reasons for any such waiver. A
12 State agency, with respect to which there is in effect a certi-
13 fication pursuant to section 205(a) or an agreement pursuant
14 to section 205(b), may waive compliance with a safety stand-
15 ard in the same manner and under the same conditions as the
16 Secretary, provided such State agency gives the Secretary
17 written notice at least sixty days prior to the effective date of
18 the waiver. If, before the effective date of a waiver to be
19 granted by a State agency, the Secretary objects in writing
20 to the granting of the waiver, any State agency action grant-
21 ing the waiver will be stayed. After notifying such State
22 agency of his objection, the Secretary shall afford such
23 agency a prompt opportunity to present its request for
24 waiver, with opportunity for hearing, and the Secretary shall

1 determine finally whether the requested waiver may be
2 granted.

3 (g) COOPERATION AND CONSULTATION.—(1) The Sec-
4 retary is authorized to advise, assist, and cooperate with
5 other Federal agencies and State and other interested public
6 and private agencies and persons, in the planning and devel-
7 oping of (1) Federal safety standards, and (2) methods for
8 inspecting and testing to determine compliance with Federal
9 safety standards.

10 (2) The Secretary is authorized to consult with, and
11 make recommendations to, other Federal agencies, State and
12 local governments, and other public and private agencies or
13 persons, for the purpose of developing and encouraging activ-
14 ities, including the enactment of legislation, to assist in the
15 implementation of this title and to improve State and local
16 pipeline safety programs.

17 STATE CERTIFICATIONS AND AGREEMENTS

18 SEC. 205. (a) Except for section 210(b) and except as
19 otherwise provided in this section, the authority of the Secre-
20 tary under this title to prescribe safety standards and enforce
21 compliance with those standards shall not apply to intrastate
22 pipeline facilities or the transportation of hazardous liquids
23 associated with those facilities, when the safety standards
24 and practices applicable to same are regulated by a State

1 agency which submits to the Secretary an annual certifica-
2 tion that such State agency—

3 (1) has regulatory jurisdiction over the safety
4 standards and practices of intrastate pipeline facilities
5 and the transportation of hazardous liquids associated
6 with those facilities;

7 (2) has adopted, as of the date of the certification,
8 each Federal safety standard established under this
9 title which is applicable to intrastate pipeline facilities
10 and the transportation of hazardous liquids associated
11 with those facilities or, with respect to each such Fed-
12 eral safety standard established within one hundred
13 and twenty days before the date of certification, is
14 taking steps pursuant to State law to adopt such
15 standard;

16 (3) is enforcing each such standard;

17 (4) is encouraging and promoting programs de-
18 signed to prevent damage to pipeline facilities as a
19 consequence of demolition, excavation, tunneling, or
20 construction activity;

21 (5) has the authority to require record mainte-
22 nance, reporting, and inspection substantially the same
23 as are provided under section 212 and the filing for ap-
24 proval of plans of inspection and maintenance described
25 in section 211 and that the law of the State makes

1 provision for the enforcement of the safety standards of
2 such State agency by way of injunctive and monetary
3 sanctions substantially the same as are provided under
4 sections 208(a) and 210(b). Each annual certification
5 shall include a report, in such form as the Secretary
6 may by regulation provide, showing (i) name and ad-
7 dress of each person subject to the safety jurisdiction of
8 the State agency; (ii) all accidents or incidents reported
9 during the preceding twelve months by each such
10 person involving personal injury requiring hospitaliza-
11 tion, fatality, or property damage exceeding \$10,000
12 (whether or not sustained by a person subject to the
13 safety jurisdiction of the State agency), together with a
14 summary of the State agency's investigation as to the
15 cause and circumstances surrounding such accident or
16 incident; (iii) the record maintenance, reporting, and in-
17 spection practiced by the State agency to enforce com-
18 pliance with such Federal safety standards, including a
19 detail of the number of inspections made of pipeline
20 facilities by the State agency during the preceding
21 twelve months; and (iv) such other information as the
22 Secretary may require. The report included with the
23 first annual certification need not show information un-
24 available at that time.

1 (b) With respect to any intrastate pipeline facilities or
2 transportation of hazardous liquids associated with those
3 facilities for which the Secretary does not receive an annual
4 certification under subsection (a), the Secretary may, by
5 agreement with a State agency authorize such agency to
6 assume responsibility for, and carry out on behalf of the Sec-
7 retary as it relates to those facilities or associated transporta-
8 tion, the necessary actions to—

9 (1) establish an adequate program for record
10 maintenance, reporting, and inspection designed to
11 assist compliance with Federal safety standards; and

12 (2) establish procedures for approval of plans and
13 inspection and maintenance substantially the same as
14 are required under section 211.

15 Any agreement executed pursuant to this subsection shall re-
16 quire the State agency promptly to notify the Secretary of
17 any violation or probable violation of a Federal safety stand-
18 ard which it discovers as a result of its program.

19 (c) A certification which is in effect under subsection (a)
20 shall not apply with respect to any new or amended Federal
21 safety standard established for intrastate pipeline facilities or
22 transportation of hazardous liquids associated with those
23 facilities pursuant to this title after the date of such certifica-
24 tion. The provisions of this title shall apply to any such new
25 or amended Federal safety standard until the State agency

1 has adopted such standard and has submitted an appropriate
2 certification in accordance with provisions of subsection (a).

3 (d) If after receipt of annual certification under subsec-
4 tion (a), the Secretary determines that the State agency is
5 not satisfactorily enforcing compliance with Federal safety
6 standards, he may, on reasonable notice and after opportu-
7 nity for hearing, reject the certification or take such other
8 action as he deems appropriate to achieve adequate enforce-
9 ment including the assertion of Federal jurisdiction. When
10 such notice is given by the Secretary, the burden of proof
11 shall be upon the State agency to show that it is satisfac-
12 torily enforcing compliance with Federal safety standards.

13 (e) Any agreement under subsection (b) may be termi-
14 nated by the Secretary if, after notice and opportunity for a
15 hearing, he finds that the State agency has failed to comply
16 with any provision of such agreement. Such finding and ter-
17 mination shall be published in the Federal Register and shall
18 become effective no sooner than fifteen days after the date of
19 publication.

20 (f) The Secretary is authorized to conduct whatever
21 monitoring may be necessary of any State program estab-
22 lished by certification or agreement under this section to
23 assure that such programs are being carried out in compli-
24 ance with such certification or agreement. State agencies

1 shall cooperate fully in a system of Federal monitoring of
2 their programs.

3 JUDICIAL REVIEW OF STANDARDS AND ORDERS

4 SEC. 206. (a) Any person who is or will be adversely
5 affected or aggrieved by any standard or order issued under
6 this title may at any time prior to the sixtieth day after such
7 standard or order is issued file a petition for a judicial review
8 with the United States Court of Appeals for the District of
9 Columbia or for the circuit wherein such petitioner is located
10 or has his principal place of business. A copy of the petition
11 shall be forthwith transmitted by the clerk of the court to the
12 Secretary or other officer designated by him for that purpose.

13 (b) Upon the filing of the petition referred to in subsec-
14 tion (a), the court shall have jurisdiction to review the stand-
15 ard or order in accordance with chapter 7 of title 5 of the
16 United States Code and to grant appropriate relief as pro-
17 vided in such chapter.

18 (c) The judgment of the court affirming or setting aside,
19 in whole or in part, any such standard or order of the Secre-
20 tary shall be final, subject to review by the Supreme Court of
21 the United States upon certiorari or certification as provided
22 in section 1254 of title 28 of the United States Code.

23 (d) Any action instituted under this section shall survive,
24 notwithstanding any change in the person occupying the
25 office of the Secretary or any vacancy in such office.

1 (e) The remedies provided for in this section shall be in
2 addition to and not in substitution for any other remedies
3 provided by law.

4 COMPLIANCE

5 SEC. 207. (a) Each person who engages in the transpor-
6 tation of hazardous liquids or who owns or operates pipeline
7 facilities shall—

8 (1) at all times after the date an applicable safety
9 standard established under this title takes effect comply
10 with the requirements of such standard;

11 (2) file and comply with a plan of inspection and
12 maintenance required by section 211; and

13 (3) permit access to or copying of records, and
14 make reports or provide information, and permit entry
15 or inspection, as required under section 212.

16 (b) Nothing in this title shall affect the common law or
17 statutory liability of any person.

18 PENALTIES

19 SEC. 208. (a) ASSESSMENT OF CIVIL PENALTIES.—
20 Any person who is determined by the Secretary to have vio-
21 lated any provisions of this title or any regulation or order
22 issued thereunder including any order issued under sections
23 209 or 210(b) of this title, shall be liable to the United States
24 for a civil penalty of not more than \$1,000 for each violation
25 for each day the violation continues, except that the maxi-

1 mum civil penalty shall not exceed \$200,000 for any related
2 series of violations. The amount of the penalty shall be as-
3 sessed by the Secretary by written notice. In determining the
4 amount of the penalty, the Secretary shall consider the
5 nature, circumstances, and gravity of the violation and with
6 respect to the person found to have committed the violation,
7 the degree of culpability, any history of prior violations, the
8 effect on ability to continue to do business, any good faith in
9 attempting to achieve compliance, and such other matters as
10 the Secretary believes justice may require.

11 (b) COLLECTION OF CIVIL PENALTIES.—Except as
12 provided by subsection (c), a civil penalty assessed under sub-
13 section (a) may be recovered in an action brought by the
14 Attorney General on behalf of the United States in the ap-
15 propriate district court of the United States or, prior to refer-
16 ral to the Attorney General, it may be compromised by the
17 Secretary. The amount of the penalty, when finally deter-
18 mined (or agreed upon in compromise), may be deducted from
19 all sums owed by the United States to the person charged.
20 All penalties collected under this Subsection shall be depos-
21 ited in the Treasury of the United States as miscellaneous
22 receipts.

23 (c) When a civil penalty of not more than \$1,500 has
24 been assessed under subsection (a), the matter may be re-
25 ferred for collection of the penalty directly to the Federal

1 magistrate of the jurisdiction wherein the person liable may
2 be found, for institution of collection procedures under super-
3 vision of the district court, if the court has issued an order
4 delegating such authority under section 636(b) of title 28,
5 United States Code.

6 (d) CRIMINAL PENALTIES.—

7 (1) Any person who willfully violates a provision
8 of this title or a regulation or order issued thereunder
9 including any order issued under sections 209 or
10 210(b) of this title, shall, upon conviction be subject,
11 for each offense, to a fine of not more than \$25,000,
12 imprisonment for a term not to exceed five years, or
13 both.

14 (2) Any person who willfully injures or destroys,
15 or attempts to injure or destroy any interstate pipeline
16 facility, shall, upon conviction, be subject for each of-
17 fense, to a fine of not more than \$15,000 or imprison-
18 ment for a term not to exceed fifteen years, or both.

19 COMPLIANCE ORDERS

20 SEC. 209. The Secretary may issue orders directing
21 compliance with this title or any regulation issued there-
22 under. The district courts of the United States shall have
23 jurisdiction, upon petition by the Attorney General, to en-
24 force such orders by appropriate means.

SPECIFIC RELIEF

1
2 SEC. 210. (a) GENERAL.—(1) The Attorney General, at
3 the request of the Secretary, may bring an action in an ap-
4 propriate district court of the United States for equitable
5 relief to redress or restrain a violation by any person of a
6 provision of this title or a regulation issued thereunder. Such
7 district courts shall have jurisdiction to determine such
8 actions and may grant such relief as is necessary or appropri-
9 ate, including mandatory or prohibitive injunctive relief,
10 interim equitable relief, and punitive damages.

11 (2) In any proceeding for criminal contempt for violation
12 of a mandatory or prohibitive injunction issued under this
13 subsection, which violation also constitutes a violation of this
14 Act, trial shall be by the court or, upon demand of the ac-
15 cused, by a jury. Such trial shall be conducted in accordance
16 with the practice and procedure applicable in the case of pro-
17 ceedings subject to the provisions of rule 42(b) of the Federal
18 Rules of Criminal Procedure.

19 (b) HAZARDOUS PIPELINE FACILITIES.—(1) If the
20 Secretary finds after reasonable notice and an opportunity for
21 hearing, that any pipeline facility is hazardous to life or prop-
22 erty, he shall, by order, require the person operating the fa-
23 cility to take necessary corrective action. Such corrective
24 action may include suspended or restricted use of the facility,
25 physical inspection, testing, repair, replacement, or other

1 action, as appropriate. The district courts of the United
2 States shall have jurisdiction, upon petition by the Attorney
3 General, to enforce orders issued under this subsection by
4 appropriate means.

5 (2) The Secretary may waive the requirements for
6 notice and hearing under this subsection and provide for ex-
7 peditious issuance of an order under this subsection in any
8 case in which he determines that the failure to do so would
9 result in the likelihood of serious harm to life or property.

10 INSPECTION AND MAINTENANCE

11 SEC. 211. (a) Each person who engages in the transpor-
12 tation of hazardous liquids or who owns or operates pipeline
13 facilities shall file with the Secretary or, where a certification
14 or an agreement pursuant to section 205 of this title is in
15 effect, with the State agency, a plan for inspection and main-
16 tenance of each facility used in that transportation and owned
17 or operated by that person, and any changes in that plan, in
18 accordance with regulations prescribed by the Secretary or
19 appropriate State agency. A plan required by this subsection
20 shall be practicable and designed to meet the need for pipe-
21 line safety.

22 (b) If the Secretary or appropriate State agency finds
23 that a plan filed under this section is inadequate to achieve
24 safe operation of pipeline facilities, the Secretary or appropri-
25 ate State agency shall, after notice and opportunity for a

1 hearing, require the plan to be revised. In determining the
2 adequacy of a plan filed under this section, the Secretary or
3 appropriate State agency shall consider—

- 4 (1) relevant available pipeline safety data;
- 5 (2) whether the plan is appropriate for the partic-
6 ular type of pipeline transportation;
- 7 (3) the reasonableness of the plan; and
- 8 (4) the extent to which such plan will contribute
9 to public safety.

10 POWERS AND DUTIES OF THE SECRETARY

11 SEC. 212. (a) GENERAL.—The Secretary is authorized,
12 to the extent necessary to carry out his responsibilities under
13 this title, to conduct investigations, make reports, issue sub-
14 penas, conduct hearings, require the production of relevant
15 documents, records, and property, take depositions, and con-
16 duct, directly or indirectly, research, testing, development,
17 demonstration, and training activities.

18 (b) RECORDS.—Each person who engages in the trans-
19 portation of hazardous liquids or who owns or operates pipe-
20 line facilities shall establish and maintain such records, make
21 such reports, and provide such information as the Secretary
22 may reasonably require, and shall submit such reports and
23 shall make such records and information available as the Sec-
24 retary may request, to enable him to determine whether such

1 person has acted or is acting in compliance with this title and
2 the standards or orders issued under this title.

3 (c) INSPECTION.—Officers, employees, or agents au-
4 thorized by the Secretary, upon presenting appropriate cre-
5 dentials to the person in charge, are authorized to enter
6 upon, inspect, and examine, at reasonable times and in a rea-
7 sonable manner, the records and properties of persons to the
8 extent such records and properties are relevant to determin-
9 ing whether such persons have acted or are acting in compli-
10 ance with this title and the standards or orders issued under
11 this title.

12 (d) PUBLIC AVAILABILITY OF ACCIDENT REPORTS.—
13 Hazardous liquid pipeline accident reports made by any offi-
14 cer, employee, or agent of the Department of Transportation
15 shall be available for use in any civil, criminal, or other judi-
16 cial proceeding arising out of such accident. Any such officer,
17 employee, or agent may be required to testify in such pro-
18 ceedings as to the facts developed in accident investigations.
19 Any hazardous liquid pipeline accident report shall be made
20 available to the public in a manner which need not identify
21 individuals. All reports on research projects, demonstration
22 projects, and other related activities shall be public
23 information.

24 (e) PROTECTION OF TRADE SECRETS.—All information
25 reported to or otherwise obtained by the Secretary or his

1 representative pursuant to subsections (a), (b), or (c), which
2 information contains or relates to a trade secret referred to in
3 section 1905 of title 18 of the United States Code shall be
4 considered confidential for the purpose of that section, except
5 that such information may be disclosed to other officers or
6 employees concerned with carrying out this title or when rel-
7 evant in any proceeding under this title. Nothing in this sec-
8 tion shall authorize the withholding of information by the
9 Secretary or any officer, employee, or agent under his con-
10 trol, from the duly authorized committees of the Congress.

11 ANNUAL REPORT

12 SEC. 213. (a) The Secretary shall prepare and submit to
13 the President for transmittal to the Congress on June 15 of
14 each year a comprehensive report on the administration of
15 this title for the preceding calendar year. Such report shall
16 include—

17 (1) a thorough compilation of the leak repairs, ac-
18 cidents, and casualties occurring in such year with a
19 statement of cause whenever investigated and deter-
20 mined by the National Transportation Safety Board;

21 (2) a list of Federal hazardous liquid pipeline
22 safety standards established or in effect in such year
23 with identification of standards newly established
24 during such year;

1 (3) a summary of the reasons for each waiver
2 granted under section 204(f) during such year;

3 (4) an evaluation of the degree of observance of
4 applicable safety standards for the transportation of
5 hazardous liquids and pipeline facilities including a list
6 of enforcement actions, and compromises of alleged
7 violations by location and company name;

8 (5) a summary of outstanding problems confront-
9 ing the administration of this title in order of priority;

10 (6) an analysis and evaluation of research activi-
11 ties, including the policy implications thereof, com-
12 pleted as a result of Government and private sponsor-
13 ship and technological progress for safety achieved
14 during such year;

15 (7) a list, with a brief statement of the issues, of
16 completed or pending judicial actions under the title;

17 (8) the extent to which technical information was
18 disseminated to the scientific community and con-
19 sumer-oriented information was made available to the
20 public;

21 (9) a compilation of—

22 (A) certifications filed by State agencies
23 under section 205(a) which were in effect during
24 the preceding calendar year, and

1 (B) certifications filed under section 205(a)
2 which were rejected by the Secretary during the
3 preceding calendar year, together with a summary
4 of the reasons for such rejection; and
5 (10) a compilation of—

6 (A) agreements entered into with State agen-
7 cies under section 205(b) which were in effect
8 during the preceding calendar year, and

9 (B) agreements entered into under section
10 205(b) which were terminated by the Secretary
11 during the preceding calendar year, together with
12 a summary of the reasons for each such
13 termination.

14 (b) The report required by subsection (a) shall contain
15 such recommendations for additional legislation as the Secre-
16 tary deems necessary to promote cooperation among the sev-
17 eral States in the improvement of hazardous liquid pipeline
18 safety programs.

19 (c) The Secretary is authorized to submit one annual
20 report in satisfaction of the report requirements of this sec-
21 tion and of section 13 under the Natural Gas Pipeline Safety
22 Act of 1968, as amended.

23 CITIZENS CIVIL ACTION

24 SEC. 214. (a) Except as provided in subsection (b), any
25 person may commence a civil action for mandatory or prohib-

1 itive injunctive relief, including interim equitable relief,
2 against any other person (including any State, municipality,
3 or other governmental entity to the extent permitted by the
4 eleventh amendment to the Constitution, and the United
5 States) who is alleged to be in violation of this title or of any
6 order or regulation issued under this title. The district courts
7 of the United States shall have jurisdiction over actions
8 brought under this section, without regard to the amount in
9 controversy or the citizenship of the parties.

10 (b) No civil action may be commenced under subsection
11 (a) with respect to any alleged violation of this title or any
12 order or regulation issued under this title—

13 (1) prior to the expiration of sixty days after the
14 plaintiff has given notice of such alleged violation to
15 the Secretary (or to the applicable State agency in the
16 case of a State which has been certified under section
17 205(a) and in which the violation is alleged to have
18 occurred), and to any person who is alleged to have
19 committed such violation; or

20 (2) if the Secretary (or such State agency) has
21 commenced and is diligently pursuing administrative
22 proceedings or the Attorney General of the United
23 States (or the chief law enforcement officer of such
24 State) has commenced and is diligently pursuing judi-
25 cial proceedings with respect to such alleged violation.

1 Notice under this subsection shall be given in such manner as
2 the Secretary shall prescribe by regulation.

3 (c) In any action under subsection (a), the Secretary
4 (with the concurrence of the Attorney General) or the Attor-
5 ney General may intervene as a matter of right.

6 (d) Nothing in this section shall restrict any right which
7 any person (or class of persons) may have under any statute
8 or at common law to seek enforcement of this title or any
9 order or regulation under this title or to seek any other relief.

10 (e) In any action under this section the court may, in the
11 interest of justice, award the costs of suit, including reason-
12 able attorney's fees and reasonable expert witnesses fees, to
13 a prevailing plaintiff. Such court may, in the interest of jus-
14 tice, award such costs to a prevailing defendant whenever
15 such action is unreasonable, frivolous, or meritless. For pur-
16 poses of this subsection, a reasonable attorney's fee is a fee
17 (1) which is based upon (A) the actual time expended by an
18 attorney in providing advice and other legal services in con-
19 nection with representing a person in an action brought
20 under this section, and (B) such reasonable expenses as may
21 be incurred by the attorney in the provision of such services,
22 and (2) which is computed at the rate prevailing for the pro-
23 vision of similar services with respect to actions brought in
24 the court which is awarding such fee.

1 (f) For purposes of this section, a violation of any safety
2 standard or practice of any State shall be deemed to be a
3 violation of this title or of any order or regulation under this
4 title only to the extent that such standard or practice is not
5 more stringent than the comparable Federal safety standard.

6 CONFORMING AMENDMENTS

7 SEC. 215. (a) Section 112(c) of the Hazardous Materials
8 Transportation Act (49 U.S.C. 1811(c)) is amended by strik-
9 ing out "chapter 39 of title 18, United States Code" and
10 inserting in lieu thereof "the Hazardous Liquid Pipeline
11 Safety Act of 1979 (49 U.S.C. et seq.)".

12 (b) Sections 831 through 835 of chapter 39 of title 18,
13 United States Code are repealed.

14 EFFECTIVE DATE

15 SEC. 216. The provisions of this title shall take effect on
16 the date of enactment.

17 SAVINGS PROVISIONS

18 SEC. 217. (a) All orders, determinations, rules, regula-
19 tions, permits, contracts, certificates, licenses, and privileges
20 which have been issued, made, granted, or allowed to become
21 effective under the provisions of chapter 39 of title 18,
22 United States Code repealed by this title and which are in
23 effect at the time this title takes effect, shall continue in
24 effect as though issued, made, granted, or allowed to become
25 effective under the authority of this title, according to their

1 terms until modified, terminated, superseded, set aside, or
2 repealed by the Secretary, by any court of competent juris-
3 diction, or by operation of law.

4 (b) Suits, actions, or other proceedings pending upon the
5 date of enactment of this title shall not be affected by the
6 provisions of this title and shall be completed as if this title
7 had not been enacted, unless the Secretary makes a determi-
8 nation that the public safety otherwise require.

NATIONAL TRANSPORTATION SAFETY BOARD,
Washington, D.C., March 16, 1979.

Hon. HOWARD W. CANNON,
Chairman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reference to your letter of February 23 addressed to Elwood T. Driver and your letter of February 26, 1979 addressed to James B. King inviting comments on S. 411, a bill "To improve the protections afforded the public against risks associated with the transportation of hazardous commodities by pipeline." Amendments to the Natural Gas Pipeline Safety Act of 1968 have been proposed for the past three years in the Congress and the Safety Board has testified about the need to revise this Act.

The Safety Board supports the safety objectives advanced by S. 411. Also, the bill provides new administrative tools which should improve significantly the Secretary's ability to achieve improvements in pipeline safety. The separate but equal treatment proposed for gas and liquid pipelines in Titles 1 and 2 of the bill will provide latitude necessary for the development of regulations to meet the differing safety needs of each class of pipeline. We favor the broadened civil powers provided for the administration of the Act and also agree with the criminal sanctions provided for willful violations of the Act and for acts of sabotage against pipeline facilities.

We offer the following suggested changes which we believe could improve the effectiveness of the bill:

A. TITLE I

1. Section 104 of the bill should revise Section 2(3) of the 1968 Act by striking the text following the words "interstate or foreign commerce" on line 3 of subsection (3). This would eliminate the 1968 Act jurisdictional exemption for rural gathering lines. Although the Secretary of Transportation has authority to regulate these pipelines under the Hazardous Materials Transportation Act of 1974, it would seem reasonable to include rural gathering pipelines within the intent of the Natural Gas Pipeline Safety Act. The entire network of pipelines that transport hazardous materials would be thus included in one body of legislation.

2. The third sentence of Section 105(a) should be revised to read, "The standards shall be practicable and designed to *minimize the risks associated with the transportation of gas* * * *" This wording more explicitly states that the purpose of the standards is to reduce the likelihood of an unreasonable risk to life or property during identified or expected pipeline operations.

3. The first sentence of Section 105(c) should be revised to read, "In prescribing standards under this section, the Secretary may require that *any pipeline facility construction which poses an unreasonable risk to life or property* not begin * * *" We believe that this wording expresses better the intent of the Department of Transportation to obtain approval authority for unique installations where appropriate safety analyses have not been performed or where historical records indicate that an operator requires close supervision to assure compliance with applicable safety standards. This wording would also provide assurance to existing operations that the proposed requirement is not intended to place a burdensome approval requirement upon all new construction.

4. The end of the first sentence of Section 105(f) should be revised to read, "* * * with such standard *will pose no unreasonable risk to life or property.*" and the fourth sentence of this subsection should be revised to read, "* * * the Secretary *specifies* in writing *the reasons* for not granting the waiver, * * *" This wording would require that the Secretary or a State agency deny any waiver request unless it can be shown that the action proposed would not present an unreasonable risk to life or property. Additionally, the proposed change would prohibit the Secretary from delaying action by a State agency to grant a waiver without specifying his reasons for not granting the waiver.

5. The third sentence of the proposed new Section 8(a) in Section 108 of the bill should be revised to read, "In determining the amount of the penalty, *the nature, circumstances, and the degree of risk posed to life or property by the violation* * * * to achieve compliance *shall be considered.*" This wording would require the Secretary to give weight to the risks posed to life or property when establishing the amount of any penalty and defines better the concern the Secretary should have when determining the type of action to take against an operator.

6. The first sentence of the proposed new Section 10(b)(1) in Section 108 of the bill should be revised to read, "* * * , that any pipeline facility *poses an unreasonable*

risk to life or property, * * * All pipeline facilities included under the 1968 Act are hazardous as each possesses a potential for harm. The proposed change reflects more appropriately the concern which the Secretary should have—that is, a condition with a probability of resulting in an accident that will cause injury to persons or property which would be unacceptable to a knowledgeable person.

7. Section 10(b)(2) as proposed in Section 108 of the bill should be revised to read, "The Secretary may * * * would result in an unreasonable risk to life or property." This change would express better those conditions with which the Secretary should be concerned as related in comment 6 above. As proposed, all pipeline facilities under the Act would be included since all possess a likelihood of serious harm to life or property, even though some may have a likelihood approaching zero. We believe that the intent of this section is to provide for rapid action by the Secretary for conditions of a serious nature rather than be applied to all conditions, including those that comply with the safety regulations.

8. We suggest that Section 12(a) as proposed in Section 109 of the bill be amended by adding a second sentence to read, "The authority conveyed by this Section shall not be construed to authorize the Secretary to determine the probable cause of a pipeline accident." We do not believe that Section 12(a) provides authority for the Secretary to determine the probable cause of accidents as worded, but suggest the change to make clear that no authority is intended which would duplicate the Safety Board's responsibilities.

B. TITLE II—LIQUID PIPELINE SAFETY

Many sections of Title I parallel sections in Title II. In recognition of this fact, our comments to sections in Title I which parallel sections of Title II apply to both Titles.

Board Member Francis McAdams testified on March 1, 1979, before the Energy and Power Subcommittee of the House Interstate and Foreign Commerce Committee concerning H.R. 51, which also proposes to amend the 1968 Act. A copy of his testimony is attached for your information.

We trust that the above comments will be of assistance to your Committee. Our staff will be pleased to answer any questions you may have concerning the above comments.

Sincerely,

JAMES B. KING, *Chairman.*

Enclosure.

STATEMENT OF FRANCIS H. McADAMS, MEMBER, NATIONAL TRANSPORTATION SAFETY BOARD

Good morning, Mr. Chairman and Members of the Subcommittee. Before I begin my statement, I would like to introduce the Members of the staff with me today. On my right is Henry M. Shephard, Chief of the Board's Pipeline Accident Division and on my left is Charles H. Batten of our Bureau of Plans and Programs.

I appreciate the opportunity to appear today on behalf of the Safety Board and convey our views about the amendments proposed to the Natural Gas Pipeline Safety Act of 1968 by H.R. 51. Your Committee's continued concern and actions to improve the safety of all pipelines are commendable. We support the safety objectives reflected in the bill.

The Board endorses the removal of criminal sanctions against operators of liquefied petroleum pipelines as the means to enforce compliance with safety regulations. We favor the substitution of civil penalties permitted by the Natural Gas Pipeline Safety Act as their use has proven more effective to obtain more timely compliance from operators of natural gas pipelines. We believe that civil penalties should be permitted, not just for liquefied petroleum pipelines, but for all liquid pipelines such as pipelines transporting gasoline, crude oil, and anhydrous ammonia.

We concur with the retention of criminal penalties for persons who willfully injure or destroy a pipeline facility. These penalties could serve as a deterrent to acts of sabotage and vandalism similar to the incidents which occurred on the Alyeska Pipeline during 1978.

The Safety Board has made recommendations to the Department of Transportation concerning the need to strengthen the safety requirements for pipelines which transport highly volatile liquids such as liquefied petroleum gases and anhydrous ammonia. Our efforts to obtain improved safety requirements for these liquids began with the investigation of a propane gas explosion in Franklin County, Missouri on December 9, 1970, and has continued to the most recent accident at Donnellson, Iowa on August 4, 1978. I am pleased to report to this Committee that the

Department of Transportation has now issued three notices of proposed rulemaking and one advanced notice of proposed rulemaking, all directed at making more stringent the safety requirements for these pipelines. We are hopeful that final action on these proposals will soon reduce substantially the risks posed by the transportation of highly volatile liquids. As a result of the public hearing the Board held on the Donnellson, Iowa pipeline accident, we received a commitment from the Department of Transportation that sufficient resources would be made available to complete, at an early date, work on the recently proposed regulations. The representatives of the Department of Transportation also stated that all pertinent, outstanding Safety Board recommendations would be reconsidered for future action. We are quite pleased by the steps now being taken by the DOT to reduce the risks posed by the highly volatile liquid pipelines. We have no doubt that both the interest shown by this Committee and the intensified activity of the Safety Board have played a major role in the Department's increased activity to respond to this longstanding need.

While we view the proposed bill favorably, there are some areas in which we believe changes could be made to improve its effectiveness. For example, neither the Natural Gas Pipeline Safety Act of 1968 nor the amendments proposed by H.R. 51 provide jurisdiction over gathering pipelines in rural areas. Safety jurisdiction over these pipelines is presently provided by the Hazardous Materials Transportation Act of 1974. Section 105 of the 1974 Act authorizes the Secretary of Transportation to issue regulations for the safe transportation of hazardous materials by pipeline. Section 112 of the 1974 Act states that this regulatory authority does not apply to pipelines subject to the Natural Gas Pipeline Safety Act of 1968, thus rural gathering pipelines are included under the 1974 Act. We believe that it would be reasonable to include rural gathering pipelines within the intent of the Natural Gas Pipeline Safety Act of 1968 as amended so that the entire network of pipelines which transport hazardous materials would be included in one body of legislation.

In another area, we believe that performance criteria against which the effectiveness of damage prevention programs can be evaluated should be established to provide recognition of effective voluntary systems. Your Committee has correctly identified the key factor for acceptance of any damage prevention program—that is, the program's performance. However, Section 102(a) of H.R. 51 proposes, in subsection (d)(3), that the requirements for filing pipeline system information listed in subsection (d)(1) need not be performed if: (1) the pipeline facility operator participates in a public safety program established under State or local law and (2) that the program is determined by the Secretary to be adequate for assuring protection against excavation-type damages to pipeline facilities.

I wish to point out that there are presently many voluntary safety programs operating throughout this Country which accomplish the objectives sought by this Committee, but are not recognized by H.R. 51. The Board's October 12, 1978 Special Study, "Safe Service Life for Liquid Petroleum Pipelines", pointed out that there are currently 106 "one-call" underground damage prevention notification systems operating in 40 States and that additional systems are planned.

In the Michigan system alone, over one million calls have been handled, I am submitting a copy of the American Public Works Association directory for these "one-call" systems for your review. The Board's special study found that many of these systems operate statewide and based upon a survey of "one-call" systems conducted in 1977, the Board concluded that a markedly downward trend in measured damages occurred in areas covered by 88 per cent of the "one-call" systems. We believe that the success of these mostly voluntary systems in the reduction of excavation, blasting, demolition, and other earth-moving damages to pipelines, in addition to reduction of damages to other utilities, should be recognized by the amendments proposed to the Natural Gas Pipeline Safety Act. If this was done, then any program which meets these criteria, whether established by law or voluntarily, would not be required to meet the filing requirements proposed in subsection (d)(1).

Based upon discussions with the Department of Transportation, we now understand that they agree with this concept and are presently developing performance criteria for evaluating the effectiveness of damage prevention programs. We understand they will propose to exempt pipeline operators from portions of the present requirements for marking the location of natural gas pipelines, if their damage prevention program meets the criteria established. This exemption would apply to all damage prevention programs, whether mandated or voluntary. Additionally, this concept is endorsed by the majority of States and other organizations concerned about preventing damage to underground facilities. To accomplish this change which we support, the proposed subsection (d)(3) could be amended by striking the

words following "public safety program" on line 22, page 6 of the bill, through and including "(B)" which identifies the second major subsection under the proposed subsection (d)(3). This would then make subsection (d)(3) a single paragraph.

Section 107 of the H.R. 51 requires the Secretary to establish minimum training requirements for pipeline inspectors, the minimum number of inspectors which must be maintained by each State, and continuing education requirements for inspectors. We believe that a more effective method to assure that the States carry out quality pipeline safety programs would be to require that the Secretary establish minimum performance standards for evaluating the safety programs established by the States. This concept would provide: (1) Guidance to the States about the criteria against which their programs would be evaluated, (2) a uniform basis for judging the adequacy of any State's pipeline safety program, and (3) maximum latitude for the States to develop innovative programs and obtain maximum safety for the pipelines within their boundaries. We have some reservation about the establishment of specific minimum training and educational requirements for State inspectors by a Federal agency. This method was used to assure an adequate performance level for State track inspectors by the Federal Railroad Administration. This action resulted in most States refusing to participate in the program since the States felt that the standards established were excessive and provided no latitude for employing persons who collectively possessed the qualifications to perform the required inspections. We believe that the establishment of pipeline safety program criteria will better accomplish the objective sought by the Committee.

In Title II of the H.R. 51, we believe that a risk analysis should be required for the type LNG facility proposed to be constructed for each potential site. This analysis should be required as a part of the application for construction approval, as proposed in Section 202 of the bill. The Board's May 25, 1972 Special Study, "A Systematic Approach to Pipeline Safety", discusses the advantages of performing risk and other safety analyses in the design of pipeline facilities—especially innovative or complex facilities. The analysis techniques advocated by this Study provide for the optimum degree of risk elimination or control within the constraints of operational effectiveness, time, and costs. These analyses allow the design engineer to identify risks that must be controlled to achieve the desired safety performance during the early design stages. This would allow alternative designs to be incorporated or action be taken to control, to an acceptable level, the risks identified. Each LNG facility incorporates new technology which safety effect should be thoroughly evaluated using the best available safety analysis technology prior to being placed into operation. While we recognize that safety analysis techniques have been used in the development of most of the present LNG facilities, we believe that these safety analyses should be required for all new facilities to assist the Secretary in reviewing construction applications.

Title II uses the word "risk" when referring to an action that may pose a threat to persons or property. This language is preferred to the use of the words "hazard" or "hazardous" since technical writings provide a better explanation of the word "risk" and also is consistent with the language of Public Law 93-633, the Transportation Safety Act of 1974. We suggest that Title I of the bill be revised by substituting the word "risk" for the word "hazard" and by substituting the words "an unacceptable risk" for the word "hazardous."

Mr. Chairman, this concludes my remarks. Should you or the Committee Members have any questions, I or the staff will be pleased to try and answer them.

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C., March 26, 1979.

HON. HOWARD W. CANNON,
Chairman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: By letter of February 23, 1979, you requested that we report on S. 411, 96th Congress, which, if enacted, would be cited as the "Pipeline Safety Act of 1979." In general, we believe S. 411 is a good bill. We approve of its provisions to strengthen and clarify the Department of Transportation's present authority in the safety regulation of natural gas pipeline transportation and to provide major new and comprehensive authority in the safety regulation of hazardous liquid pipeline transportation.

The patterning of Title II after the Natural Gas Pipeline Safety Act, with the amendments in Title I, is a logical step in establishing a comprehensive and effective Federal pipeline safety program. The provisions that we consider particularly important and that we believe should be incorporated into any resulting legislation

are listed in Addendum I. Addendum II lists a few additional changes to these titles that you may wish to consider.

Although we are in basic agreement with S. 411 as it relates to pipeline transportation, we recommend that the Committee add a new Title III which could be entitled the "Large Hazardous Commodities Storage Facility Safety Act of 1979". We believe that large storage facilities should be covered in a separate title because of the risks to the public associated with having large quantities of hazardous materials in one place. Because these risks are much greater than those posed by pipelines, large storage facilities should be required to meet a higher standard of liability for damages and financial responsibility for payment of claims related to these damages.

We believe that the Federal government should regulate every facility, whether or not connected to pipelines, which stores large quantities of hazardous commodities at one location, in or affecting interstate commerce. There are large facilities storing hazardous liquids (as defined in Title II) which are not associated with pipelines. For instance, the Petrolane LPG import terminal in Los Angeles, which has a storage capacity of 600,000 barrels, is not connected to a pipeline. The LPG is transported from the terminal in trucks and railroad tank cars. The bulk storage of other hazardous commodities, such as chlorine, hydrogen cyanide, and vinyl chloride, would also not be covered by S. 411 because these hazardous commodities are not transported by pipeline.

Our proposed Title III, in its definition of hazardous commodity, would extend the Secretary's regulatory authority to include large storage facilities in or affecting interstate or foreign commerce for any liquid, solid, or compressed gas for any hazardous commodity regulated under the Hazardous Materials Transportation Act of 1975. The Secretary would be required to regulate certain commodities (listed in the definitions below), but would be given discretion to include other commodities in his regulations.

Title III should prohibit the siting of any new large hazardous commodity storage facility, or the expansion of an existing large storage facility in or near a densely populated area. The Secretary of Transportation should also be authorized to require any existing, large hazardous commodity storage facility to incorporate any standards applicable to new facilities where he determines that former standards are not adequate.

Coverage should be limited to large storage facilities in order to exclude from regulation the use of small quantities by businesses and other consumers, such as residential and farm LPG users. With these small uses excluded, the Secretary should not be authorized to waive compliance with any part of Title III. Federal, state, and local storage facilities should be required by law to maintain the same safety standards as private facilities.

The structure of Title III should be modeled on Titles I and II. Many of the sections in Titles I and II (such as the promulgation of regulations, the state certification and agreement program, compliance, and penalties) should be included in Title III. The following additional provisions should be incorporated:

1. *Remote siting for storage facilities should be required.*—The bill should prohibit the siting of any new, large hazardous commodity storage facility or the expansion, including additions to storage capacity or the expanded use, of an existing, large storage facility in or near densely populated areas. The Secretary should prescribe the definition of 'near' and 'densely populated area'.

2. The "preconstruction approval" subsection in Titles I and II should be included, except that it should read, "the Secretary *shall* require that any construction associated with a new or existing *large hazardous commodity storage facility* not begin until he approves that construction * * *"

In the preconstruction approval process, we recommend that: Compulsory adjudicatory hearings be held in the locality concerned; only one regulatory agency consider all safety aspects of a large hazardous commodity storage facility, including transportation, storage, and processing; and joint hearings be held where more than one agency has responsibility.

Public participation has proven to be a highly effective means of raising important safety problems and focusing high-level government attention on them. The Secretary should announce in the Federal Register and in newspapers in the locality involved that the Department has held discussions on a possible large hazardous commodity storage facility site within 10 days after the first time such a discussion occurs.

3. The Secretary should evaluate each existing, large hazardous commodity storage facility. The Secretary should be authorized to require such a facility to incorpo-

rate any design, construction, operations, or maintenance standards applicable to new facilities where he determines that former standards are not adequate.

We have shown in our Liquefied Energy Gases Safety Report (EMD-78-28) that dikes built to existing standards are not capable of containing a large, fast spill from a storage tank. The consequences of such a spill in an urban area could be catastrophic.

4. The Secretary should require that reports of any storage facility occurrence (see definition of occurrence) be available to the public in Washington, D.C. and at an appropriate office near the site of the storage facility occurrence.

5. The bill should require that the owners and operators of a large hazardous commodity storage facility, including affiliates, be strictly liable without regard to fault for damages, including cleanup costs, sustained by any person or entity, public or private, as a result of an explosion, fire, or discharge. If a facility is so dangerous that the owners are unwilling to assume this liability, then it is too dangerous for the public. Proposed definitions of these terms are listed below.

6. Congress should establish a minimum dollar level of financial responsibility that both the owners and operators of large hazardous commodity storage facilities should separately maintain. We believe the \$100,000,000 required in H.R. 11586 of the 95th Congress was too small. The civil penalty for noncompliance should be substantial.

7. The following definitions should be used for Title III:

"Hazardous commodities", for the purpose of this Act, includes LNG, LPG, ethane, anhydrous ammonia, chlorine, and such other hazardous materials designated pursuant to section 104 of the Hazardous Materials Transportation Act of 1975, as the Secretary, in his discretion, determines necessary to protect the public.

"Hazardous commodity storage facility" means any storage tank, cavern, equipment, or building on a large storage facility site used in or affecting interstate or foreign commerce of hazardous commodities.

"Large" means storage capacity of at least 10,000 barrels or 56,000 cubic feet, or a through-put capacity of at least 25,000 barrels per month.

"Occurrence" means any attempt by unauthorized persons to enter company premises, any vital machinery break-down, any overpressuring of storage tanks or caverns, or any unintended escape of material, such as leaks or venting.

"Owner" means any person holding title to, or, in the absence of title, any other indicia of ownership of a large hazardous commodity storage facility, but does not include a person who, without participating in the management or operation of such facility, holds indicia of ownership primarily to protect his security interest in the facility.

"Operator" means any person, except the owner, responsible for the operation of a large hazardous commodity storage facility by agreement with the owner.

"Affiliate" includes, with respect to an owner or operator of a large hazardous commodity storage facility—(1) Any subsidiary corporations and successive subsidiary corporations of the owner or operator; (2) any parent corporation and successive parent corporations of the owner or operator; and (3) any parent consortium or similar combination and successive parent consortia or similar combinations of the owner or operator.

If the Committee does not adopt our suggested Title III, we believe the provisions should be incorporated into Titles I and II.

If I can be of any further service during the Committee's consideration of this legislation, please let me know.

Sincerely yours,

ELMER B. STAATS.

Enclosures—2.

ADDENDUM I

PROVISIONS OF S. 411 THAT WE RECOMMEND BE INCORPORATED INTO ANY RESULTING LEGISLATION

1. Clarification of existing authority:

- a. The insertion of "(including liquefied natural gas)" on page 2, lines 21-23.
- b. The insertion of "intended for use" in the definition of "pipeline facility" on page 3, line 3 and on page 18, line 11.
- c. The insertion of "by order" (page 5, line 9) and "and under the same conditions" (page 5, line 19) to clarify the right of judicial review and the authority of certified state agencies.

d. The insertion of "(whether or not sustained by a person subject to the safety jurisdiction of the State agency)" (page 9, lines 5-7 and page 24, lines 12-13).
 e. The "Specific Relief" authority on page 12, lines 14-18 and on page 31, lines 6-10.

f. The judicial review of standards on page 13, lines 19-23.

2. Authority for the Secretary to require preconstruction approval for any construction associated with a new or existing pipeline facility (page 4, lines 10-19 and page 20, lines 5-14).

3. Abolition of the Technical Pipeline Safety Standards Committee (page 8, lines 1-3).

4. Extension of coverage of the damage prevention programs to demolition, tunneling, and construction activities (page 8, lines 14-16 and page 23, lines 17-20).

5. Increased enforcement powers regarding:

a. the collection of smaller penalties (up to \$1,500) directly through Federal Magistrates (page 11, lines 6-13 and page 29, line 23 through page 30, line 5); and

b. the introduction of criminal penalties for willful violations of the Act or regulations or orders issued thereunder or for the willful injury or destruction (or attempted injury or destruction) of any interstate transmission or pipeline facility (page 11, line 14 through page 12, line 2 and page 30, lines 6-18).

6. Authority for the Secretary to issue compliance orders (page 12, lines 3-8 and page 30, lines 19-24).

7. Authority for the Secretary to order hazardous pipeline facilities to take corrective action (page 13, lines 3-18 and page 31, line 19 through page 32, line 9).

8. Giving the Secretary subpoena power and the authority to require the production of relevant property (e.g. pieces of pipeline involved in an incident) (page 14, lines 2-8 and page 33, lines 11-17).

9. Eliminating the requirements imposed by the Mineral Leasing Act of 1920, as amended (page 17, lines 1-3).

In addition, Title II gives the Department of Transportation new or clarified authority for hazardous liquid pipelines. We believe the following authority should be provided in any resulting legislation:

1. The authority to regulate the safety of all hazardous liquids by pipeline in or affecting interstate or foreign commerce (page 17, lines 8-14).

2. The safety regulation of all hazardous liquid pipeline storage facilities in or affecting interstate or foreign commerce. Our proposed Title III would authorize further regulation of "large" storage facilities (page 18, lines 6-8).

3. Establishment of a state certifications and agreements program for hazardous liquids pipelines (page 22, line 17 through page 27, line 2).

4. Civil penalty authority for the violation of any provision of Title II or any regulation or order issued thereunder (page 28, line 19 to page 29, line 10).

ADDENDUM II

RECOMMENDED CHANGES AND CLARIFICATIONS FOR TITLE I AND II

1. Sec. 104 (page 2, line 21 through page 3, line 10). "Consider striking the current exemption in the Natural Gas Pipeline Safety Act of 1968, as amended (Sec. 2(3)) regarding rural gas gathering lines. Under the exemption the Secretary has no authority to survey potential hazards of these lines to determine whether regulation is needed."

2. Sec. 107(a)(2) (page 8, lines 14-16) and Sec. 205(a)(4) (page 23, lines 17-20). "As part of the state certification program, the state agency must certify that it encourages and promotes programs designed to prevent damage to pipeline facilities. Titles I and II should require the Secretary to specify minimum standards for these programs. He should define the characteristics of an 'acceptable' program, spell out the requirements for 'encouraging and promoting' these programs, and set time limits for establishing them."

3. Sec. 107(a)(5) (page 9, lines 1-8) and Sec. 205(a)(5) (page 23, line 21 through page 24, line 24).

We recommend that:

a. Title II require \$5,000 as the minimum property damage for reporting an accident or incident. Title I uses \$5,000.

b. Title I require a "summary of the state agency's investigation as to cause and circumstances surrounding such accident or incident." This language is in the Natural Gas Pipeline Safety Act and in Title II.

c. Title II include "and any other accident which the state agency considers significant." This language is in Title I.

4. Sec. 107(c) (page 9, lines 11-12). "It may not be wise to strike Section 5(f) at this time. Its provisions should perhaps be left in force at least through calendar year 1980, so that the Secretary may continue to require state agencies to meet their obligations under the section's paragraphs (3) and (4). They oblige the state to maintain hiring levels of pipeline inspectors funded through the program, or repay the funds. Unless such obligations were included in the grant agreements with the states, the Secretary may have no authority to enforce the obligations or recover the funds."

5. Sec. 111(a) (page 16, line 21). "Reference should be 'a(3),' rather than 'a(13).'"

6. Sec. 203(2) (page 17, line 22 through page 18, line 5). "The definition of 'hazardous liquid' in Title II 'includes, but is not limited to, petroleum, petroleum products, and any other liquid that is flammable, corrosive, or toxic.' We believe this last category is too broad; it could bring under regulation commodities that are not hazardous. For example, hot salt water is corrosive, but it does not pose a hazard to the public."

7. See 204(g) (page 22, lines 3-16). "Consider including in Sec. 204(g) provisions similar to those contained in proposed Sec. 3(g) (1), (2), and (3) (page 6, line 5 through page 7, line 8)."

Senator FORD. The first witness this morning is J. Dexter Peach, Director, Energy and Minerals Division, General Accounting Office; and Dr. David Rosenbaum, Comptroller General consultant. And we have one extra, if you want to identify that one.

And I would like the witnesses to summarize their testimony and when they do we will incorporate their testimony into the record in full.

STATEMENT OF J. DEXTER PEACH, DIRECTOR, ENERGY AND MINERALS DIVISION, GENERAL ACCOUNTING OFFICE; ACCOMPANIED BY DR. DAVID ROSENBAUM, COMPTROLLER GENERAL CONSULTANT; AND CARL SPECTER

Mr. PEACH. Thank you, Mr. Chairman.

I am J. Dexter Peach, Director of Energy and Minerals Division. Immediately to my left is Dr. David Rosenbaum, and to his left is Carl Specter, an analyst who worked on our study of liquefied energy gases safety.

I did have an opportunity to appear before this committee some time earlier to discuss in general the findings of the study that we released last July on liquefied energy gas safety. This morning I will summarize our major findings in that study, and then move very quickly on to provisions of S. 411 related to LEG safety programs, to some of our recommendations for changes in S. 411, and to some of the actions that have been taken already by Federal agencies under their existing rulemaking procedures, in response to recommendations in our report.

Our July 1978 report documented that many large LEG storage facilities are a serious hazard to the surrounding area. The facilities are built to the same standards as ordinary buildings, and tanks at three of the five sites we evaluated had earthquake safety margins less than 25 percent. It is virtually certain that the level of natural phenomena that LEG facilities are required to withstand will be exceeded at a large number of facilities in the next 50 years, with the possibility that one or more of them will fail.

Tank failures might also be caused by acts of sabotage.

We found that security procedures and physical barriers at LEG facilities are generally not adequate to deter even an untrained saboteur. Most of the storage tanks are highly vulnerable to sabo-

tage which could lead to complete catastrophic failure of the tank walls.

National Fire Protection Association standards require that each large LEG tank, or group of tanks, be surrounded by a dike which can hold at least the volume of the largest tank. However, most of these dikes are only designed to contain LEG spilled from relatively slow leaks. They cannot contain the surge of liquid from a massive rupture or collapse of a tank wall or from the sudden appearance of a hole at the bottom of the wall. At five of six sites we examined, where the dikes were built to NFPA safety criteria, more than 50 percent of the fluid could escape.

Our calculations assumed an immediate, total spill of a full tank, with the fluid moving toward the nearest dike wall. Such an LNG spill occurred in Cleveland in 1944. A similar, much larger LPG spill occurred in the country of Qatar in 1977.

If spilled in an urban area, LEG could spread across a city in sewers, subways, or other underground conduits, or if a massive burning cloud is blown along by a strong wind, a city could be faced with a very large number of ignitions and explosions across a wide area.

LEG trucking to and from storage facilities through densely populated areas also is very dangerous. These trucks move routinely through large cities and on elevated highways. The 40 cubic meters of LNG from one truck, vaporized and mixed with air in flammable proportions, are enough to fill 110 miles of a 6-foot diameter sewer line, or 15 miles of a 16-foot diameter subway system. LEG trucks are highly vulnerable to sabotage.

LPG railcars, which are also vulnerable to accidents and sabotage, travel through densely populated areas, even cities which prohibit LPG storage.

We found that double-hulled LNG ships are probably the least vulnerable part of the LNG transportation and storage system. LPG ships with single hulls are much more vulnerable both to collisions and to sabotage.

A major LNG accident could cause damage of such severity that injured parties could not be fully compensated under existing arrangements. Present corporate structure and legal limits on liability offer nearly total protection to the corporations which reap the profits.

The mixture of Federal, State, local and National Fire Protection Association codes for LNG and LPG reflect neither the relative dangers from the fuels nor much consistency among themselves. Most of the regulations are based on an uncritical acceptance of National Fire Protection Association standards.

Many large LEG facilities have not been subjected to Federal regulation at all, partly because of a failure of cognizant agencies to fully assert their authority. The Federal Power Commission system for approving LNG projects was clearly inadequate to protect the public.

I will not take the time to summarize other conclusions which, though important, are not so relevant to this hearing.

We find, Mr. Chairman, that S. 411 addresses a number of safety concerns that we raised in our report. We approve of its provisions to strengthen and clarify the Department of Transportation's pres-

ent authority in the safety regulation of natural gas pipeline transportation and to provide major new and comprehensive authority in the safety regulation of hazardous liquid pipeline transportation. The patterning of title II after the Natural Gas Pipeline Safety Act, with the amendments in Title I, is a logical step in establishing a comprehensive and effective Federal pipeline safety program.

Although we are in basic agreement with S. 411 as it relates to pipeline transportation, we recommend that the committee add a new title III which could be entitled the "Large Hazardous Commodities Storage Facility Safety Act of 1979." We believe that large storage facilities should be covered in a separate title because of the great risks to the public associated with having large quantities of hazardous materials in one place.

We believe that the Federal Government should regulate every facility, in or affecting interstate or foreign commerce, which stores large quantities of hazardous commodities at one location, whether or not connected to pipelines. There are large facilities storing hazardous liquids which are not associated with pipelines.

For instance, the Petrolane LPG import terminal in Los Angeles, which has a storage capacity of 600,000 barrels, is not connected to a pipeline. The LPG is transported from the terminal in trucks and railroad tank cars. The bulk storage of other hazardous commodities, such as chlorine, hydrogen cyanide, and vinyl chloride, would also not be covered by S. 411 because these hazardous commodities are not transported by pipeline.

Our proposed title III, in its definition of hazardous commodity, would extend the Secretary's regulatory authority to include large storage facilities in or affecting interstate or foreign commerce for any liquid, solid, or compressed gas which is regulated under the Hazardous Materials Transportation Act of 1975. The Secretary would be required to regulate LNG, LPG, ethane, anhydrous ammonia, and chlorine, but would be given discretion to include other commodities in his regulations.

Title III should prohibit the siting of any new large hazardous commodity storage facility, or the expansion of an existing large storage facility, in or near a densely populated area. The Secretary of Transportation should be authorized to require any existing, large hazardous commodity storage facility to incorporate any standards applicable to new facilities where he determines that former standards are not adequate.

Coverage should be limited to large storage facilities in order to exclude from regulation the use of small quantities by businesses and other consumers, such as residential and farm LPG users. Federal, State and local storage facilities should be required by law to maintain the same safety standards as private facilities.

We have made detailed recommendations in our bill comments, but I would like to emphasize here the three provisions that we consider most important:

First, remote siting for storage facilities should be required. The bill should prohibit the siting of any new, large hazardous commodity storage facility or the expansion, including additions to storage capacity or the expanded use, of an existing, large storage facility in or near densely populated areas. The Secretary should prescribe the definition of "near" and "densely populated area."

Second, the Secretary should evaluate each existing, large hazardous commodity storage facility. The Secretary should be authorized to require such a facility to incorporate any design, construction, operations, or maintenance standards applicable to new facilities where he determines that former standards are not adequate.

Third, the bill should require that the owners and operators of a large hazardous commodity storage facility, including affiliates, be strictly liable without regard to fault for damages, including cleanup costs, sustained by any person or entity, public or private, as a result of an explosion, fire or discharge. If a facility is so dangerous that the owners are unwilling to assume this liability, then it is too dangerous for the public.

If the committee does not adopt our suggested title III, we believe the provisions should be incorporated into title I and II.

Let me turn now to the impact our report has had on the Federal regulation of LEG. In addition to proposing the bill that the committee is now considering, the administration has acted, through the responsible Federal agencies, on many of our recommendations.

For example, FERC's assessments of proposed LNG terminals now include the trucking that would be associated with a terminal. DOT has taken action, or plans to take action, on many of our recommendations.

DOT's notice of proposed rulemaking on LNG facilities includes many requirements that reflect our analysis of the hazards. The proposed rules would establish a set of comprehensive Federal safety standards governing siting, design, and construction of new LNG facilities and—equally important—parts of existing facilities that are replaced, relocated, or significantly altered.

The new standards would require: Use of greater land area to protect nearby populations against the heat radiating from a fire at the facility site;

Use of greater land area or an ignition system to protect surrounding populations against the hazards of a gas cloud traveling downwind from an LNG spill;

More detailed geological investigation of a proposed site, based on Nuclear Regulatory Commission standards;

Stronger design of storage tanks, dikes, and other critical components to guard against the effects of earthquakes, flooding, and high winds. Facilities would be prohibited in active seismic areas;

Better design of impoundment systems—diked areas—to contain a major spill of LNG;

More stringent storage tank design and testing to minimize the possibility of a catastrophic failure;

New construction procedures, qualification of construction personnel, and testing control systems.

We take special note of the fact that the proposed rules would require that the impounding system have a configuration or design which, to the maximum extent possible, will prevent liquid from escaping impoundment under the worst predictable spill conditions. Imposed loading and surging flow characteristics must be based on a sudden total spill release of the full contents of an LNG tank.

Our study identified the possibility that LEG or LEG vapors could accumulate under a tank elevated on piles and thus cause an

explosion that could rupture the tank bottom. A proposed rule would prohibit the construction of any storage tank with a capacity of more than 15,000 barrels with an underlying airspace where vapors could accumulate. DOT also plans to address this safety concern in future rulemaking on LPG facilities. DOT has said it will be studying the matter further to determine more precisely the nature and extent of damage that might occur to existing elevated tanks.

While DOT reacted positively and constructively to many of our recommendations on LEG facilities, we are especially concerned about the DOT response to two major recommendations. The first would require that all new, large LEG storage facilities be built in remote areas, and would preclude the expansion of existing facilities in other than remote areas. DOT's proposed rules merely set minimum distances between an LNG facility and certain other buildings or activities.

We believe remote siting is the primary factor in safety. Because of the inevitable uncertainties inherent in large-scale use of new technologies and the vulnerability of the facilities to natural phenomena and sabotage, the public can be best protected by placing these facilities away from densely populated areas. It is because of the potential hazards to densely populated areas that we have urged the inclusion of a remote siting requirement in S. 411.

The other major recommendation would prohibit LEG truck and LPG railcar movements through densely populated areas and any areas that have features that increase the vulnerability to a major LEG spill, unless delivery is otherwise impossible.

In its substantive reply to our report, sent to the Senate Appropriations Committee, DOT cites section 49, Code of Federal Regulations, part 397.9(a) which prohibits truck movement of hazardous materials through densely populated areas, unless no other practicable highway route is available. They note that truck routes in such areas, and the use of vehicular tunnels in particular, are usually regulated locally. They also point out that diverting materials to other modes of transportation may involve greater risks or exposures.

DOT has initiated research to develop criteria for use in conjunction with existing highway design, population, geographic, and other factors in the designation of routes for hazardous materials highway carriers. The result will form the basis for advising State and local governments on criteria for route designation, as well as for deciding whether Federal regulation is necessary.

We found that the interpretation of "practicable highway route" has been such that LEG trucks routinely roll through our large cities. The result is that the possibility of a catastrophe continues to exist unnecessarily. Local communities have no power to regulate truck routes on interstate highways passing through them.

DOT also does not believe that the prohibition of LPG railroad cars through densely populated areas is a practicable requirement.

Since the Secretary of Transportation has not acted to prohibit the movement of LEG by trucks and railcars through densely populated areas, the committee may also wish to address this issue in LEG legislation.

In summary, while DOT has agreed to take some steps to upgrade safety and security in some areas, action is not planned on a number of other recommendations that we believe are necessary for adequate protection of the public.

This concludes my statement, but we will be happy to respond to any questions you or the committee may have.

Senator FORD. Thank you, Mr. Peach. You recommend establishing a new title III to cover large storage facilities not covered in S. 411. Does DOT have authority to regulate these facilities under the Hazardous Materials Transportation Act?

Mr. PEACH. I would like Dr. Rosenbaum to answer the question.

Senator FORD. He has enough paper there to answer anything.

Dr. ROSENBAUM. This is a document which we have sent up to you, which is a summary of the response to our report.

Senator FORD. It is awful hard to read it and not go to sleep.

Dr. ROSENBAUM. It is hard to make such a thing exciting, a summary of responses.

Senator FORD. I understand.

Dr. ROSENBAUM. We recommend, in our recommendations, about the location of new facilities, and also——

Senator FORD. My question was: Does DOT have the authority to regulate these facilities under the Hazardous Materials Transportation Act?

Dr. ROSENBAUM. DOT's response was—the jurisdiction derives from the Natural Gas Pipeline Safety Act of 1968, which limits general regulation authority over design, construction and testing new facilities, "and it is questionable whether the Department has statutory authority to modification of existing facilities."

That is a quote from their response to us.

Senator FORD. You are saying what they are saying. What do you think?

Dr. ROSENBAUM. I think it is unclear, sir. But I am not a lawyer.

Senator FORD. I am not, either. That makes us even.

Mr. PEACH. I guess I would add that it may be unclear enough that you possibly could interpret it in either direction, depending upon the type of legal point of view you have.

I am not a lawyer, either. I think it may be possible to defend the point of view that the situation is not clear enough for them to think they really have authority. We are suggesting that maybe legislation ought to make it clear.

Senator FORD. What are they now not doing that they would do if we passed the legislation?

Mr. PEACH. Well, I think that in the case of these large facilities, in the type of legislation that we are talking about, there would be some specific provisions about the area in which you would site facilities, remote area siting for a large storage facility. Then we would adopt some of the same provisions in the bill, approval arrangements that should be made, seeing that the facility is constructed to meet certain standards that are established.

In addition, there is the question of going back and looking at existing facilities and seeing if any changes need to be made to adequately protect public health and safety.

There are facilities now existing which are located in what I would term urban or densely populated areas, that store above ground considerable amounts of both LNG and LPG.

Senator FORD. You testified that you are not satisfied with DOT's proposed regulations relating to the vapor exclusion zones for LNG facilities.

Do you think the exclusion zones are too small?

Dr. ROSENBAUM. It is not the exclusion zones. For a spill contained in the dikes they are probably all right. It is very difficult to figure out exactly what will happen in such an accident. I think our major problem is that other kinds of things may happen, which means—

Senator FORD. What "other kinds of things"?

Dr. ROSENBAUM. The spill may not be contained. There are many kinds of feasible spills, including one that could be caused by relatively small holes at the bottom of tanks, which will not be contained in many large facilities located now in urban areas. If that happens, it is a whole new ballgame.

The exclusion zones are really not relevant to that problem.

Mr. PEACH. I would add to that that we think there are probably uncertainties in any kind of large technology, and it seems to us that one of the safest measures is to deal with the initial siting.

Actually, it seems that many of the newer facilities that are being built out in areas which have less population density. Probably it is more of a problem in existing facilities.

Senator FORD. We already have construction underway, ready to go. Should we grandfather those in?

Mr. PEACH. Our suggestion is that the Secretary should be given responsibility for looking at those facilities on a site-by-site basis, and decide if there is any residual action necessary here to protect public health and safety. It is pretty hard to consider sites well underway or already existing and make a generalization as to whether they present a problem or not.

Looking at them on more of a site-specific basis is the only way to really find out.

Senator FORD. You are talking about siting. How do you define "remoteness" if your suggestion is adopted by Congress?

Mr. PEACH. I look at it probably from a population density basis. We do not try to define a specific figure, but defining on the basis of population density per square mile.

Dr. ROSENBAUM. The report, in a fairly arbitrary way, took 12 miles. But I think it depends on the particular circumstances. As a rule of thumb it may be relevant to think of the recent Louisville & Nashville train derailment in Florida on April 8, 1979, in which the entire population was evacuated for 80 square miles. That was a relatively small amount of material. Nothing comparable to what is stored in a large facility.

Senator FORD. Can people overreact to something like that and go beyond what is reasonable?

Dr. ROSENBAUM. You can overreact to anything.

Senator FORD. I understand that.

Mr. PEACH. I think that is true, and I think one of the things we are having a difficult time coping with in society is this question of risks.

Senator FORD. Really, you are telling me you do not know what is right or wrong.

Mr. PEACH. That is right. I feel it ought to be looked at in terms of locating in remote and nondensely populated areas, and the responsibility should be placed in the Secretary.

Senator FORD. Can you define for me the worst accident? What is the worst possible accident you can have?

Dr. ROSENBAUM. I would not care to—we did sort of look into the problem. Much of it was left out of the report.

Senator FORD. You ought to have some sort of idea.

Dr. ROSENBAUM. I have a very good idea, but I would not like to say it in public.

Senator FORD. You do not want to tell us?

Dr. ROSENBAUM. I really do not want to discuss the worst one because it involves human manipulations. We purposely left some things out of the report that were too sensitive to put in.

Senator FORD. You did?

Dr. ROSENBAUM. There is a less dramatic accident which is spoken about in the report. In Qatar a very large propane tank, built by Shell International with the same technology, collapsed. It is safe to say that in such an accident more than half of the material will vault over the dike walls. A more accurate estimate might be 70 percent in some circumstances. Even that might be somewhat less than the reality.

In such circumstances things like vapor exclusion are irrelevant. If this type of accident happened in a large town, the consequences are literally incalculable. But it would certainly be an understatement to call them catastrophic.

Mr. PEACH. I might add, Senator, we had a discussion in our report of the Cleveland accident which occurred in 1944. This is the only major LNG accident we have had in this country, but it also virtually stopped the storage of LNG for some 20 years.

And in that particular case in which less than 6,300 cubic meters of LNG were spilled, much of it remained on the site. This was in a metropolitan area. It got into the sewers, the underground conduit systems.

There was a good deal of loss of life and considerable more loss of property. And the National Fire Protection Association newsletter of November 1944 said: "The fact that the wind was blowing away from the congested part of the area is believed to have been a major factor in prevention of and even more devastating conflagration which could have destroyed a very large part of the east side."

Now, the facilities we are talking about today often are storing anywhere from 60,000 cubic meters up to 100,000 cubic meters, sometimes with two or three tanks side by side of various size, in a major metropolitan area. So you are talking about storing a considerably more material than involved in the Cleveland accident.

Senator FORD. Now, DOT has recognized your recommendations for diking, and now you are saying that those diking standards are inadequate.

Mr. PEACH. I think the standards and direction DOT is heading are adequate, in terms of diking. You are talking about developing new diking standards which are supposed to contain the worst

possible spill circumstances, and then having a larger area around a tank than now exists.

In one measure, that is a response to our recommendation. We still feel however—and this is somewhat of a judgment call—that the surest way to offer protection—there are not going to be all that many large facilities built—would be to provide restrictions so that they will not be located in a metropolitan area.

Dr. ROSENBAUM. I think the real, deepest issue here is the sort of thing that we saw on Three Mile Island. When you have a very large facility with nuclear power technology, which has been running for 25 years, there are always going to be—

Senator FORD. We read about 54 similar accidents withheld from the public, and you talk about things you want to talk to me about, but will not put in your report.

Dr. ROSENBAUM. There are always things that people did not think of. That is inevitable in any such situation.

The question is, when that happens, how bad the results will be. It happens in everything. The question is whether learning by experience from such incidents is tolerable.

Senator FORD. DOT stated that it is premature to consider new liability legislation, until the Inter-Agency Task Force, headed by the Department of Justice, completes its study of the issues.

Are you familiar with the task force?

Mr. PEACH. I am not familiar in detail with what the task force is doing. I know that it exists.

Senator FORD. Would you care to venture an opinion on its usefulness?

Mr. PEACH. I guess I would say I would have to wait and see their conclusions, and we would then test them against the findings that we had in our report.

We felt that the study that we were conducting was a reasonable, comprehensive study in the area of LNG safety, and it pretty well documented the need for liability considerations.

Senator FORD. On the subject of liability, when an accident occurs, those who are the owners or the managers or the industry involved are excluded from the area. The "Feds" go in and make their findings and determinations.

In the case of an accident do you think the companies ought to be excluded from the area for any testing so they might have some ability to draw their own conclusions? Could we have the testing by the company or the industry monitored by the Federal Government here?

Maybe I am talking about a new procedure, but something where the companies have an opportunity to participate if an accident occurs. Right now they cannot even get in there to look at it with their expertise. Then all they can do is defend themselves on what others have found. They cannot defend themselves on what they have had an opportunity to look at themselves.

The industry is put in a very vulnerable position because they are excluded from the area.

Mr. PEACH. No. I admit that I have not studied your particular point in any detail. But my observation would be that it is certainly reasonable that the industry that is involved have access to all

the kinds of information available, and be able to make their own assessment.

If we are talking about a major kind of circumstance that occurs, I would still think that you would want the Federal agency that is monitoring the industry, to be in charge of the investigation. But I think the industry could still have access to all of the information, so that it could be in a position to independently come to its conclusions, too.

Senator FORD. That means industry would have access rather than just having access to the material of the Government agency with the responsibility for the investigation. That would mean they would have equal access to make their findings and tests.

You do not think there is anything wrong with that?

Mr. PEACH. No; one caveat that occurs to me is, if the Federal agency involved would feel that there was criminal negligence of a type involved, there may be a question as to how available they ought to make that evidence if they feel they are going to have to move in the direction of a criminal prosecution.

Senator FORD. I just see an area of fairness. It is really hard to defend yourself when you do not know what you are defending yourself against.

The safety records of pipelines, for instance, is almost flawless. The companies do an excellent job.

We may have an accident tomorrow. Lord, I hope we do not. If there is criminal and negligent conduct, we ought to take care of those situations.

Mr. PEACH. That is a reasonable point of view.

Senator FORD. How are you going to prevent movement through populated areas by rail and trucks?

Mr. PEACH. Well, to begin, we go back to our recommendation. We did not, admittedly, make a detailed study, location by location, as to exactly how this was to be done.

We recognized the problems that occur if an accident happened in a metropolitan area, and we looked at present routing procedures, and we felt the regulations were lacking. And, we concluded the safest answer would be not having LEG moving through these areas if there were other practical ways to move it.

There are cities right now that do not allow the storage of LPG within the boundaries of the city. But they have it moving through their streets, because they cannot regulate truck routes on an interstate highway. They do not feel it is safe to have it stored there, yet it is moving through it.

Senator FORD. Well, Mr. Peach, I will not belabor this point—but in my State, Highway 60 starts in West Virginia and goes all the way through Kentucky, for several hundred miles. That road goes through every courthouse from West Virginia to Missouri.

Trains go along that highway. They used to go at 4 o'clock in the morning on their milk run, through every county from Missouri to West Virginia.

Those towns have enlarged, and now the rail and highway systems go through those populated areas. To eliminate that situation, you can do only one or two things, in my opinion: Change the railroads, and the highways, or just stop them from transporting. You might go by barge. I do not know how good that would be.

But you are getting into a massive transportation situation as it relates to cost. We have a lot of railroads on the verge of bankruptcy. I do not know how we can go about this unless we just eliminate the transportation.

Dr. ROSENBAUM. Senator, we are talking particularly about some obvious examples, which we did look at, and which clearly were not necessary. We said clearly that if you could not deliver the material, then you would have to go through the cities.

For example, trucks roll routinely through cities like downtown Boston, where it is quite possible to go around the city on a beltway. It is a matter of minor inconvenience and some very small cost.

We are not so much talking about county seats, but places like Los Angeles, New York, and Boston, where it is not a matter of thousands, but millions of people.

Senator FORD. Well, Jefferson County, Ky., is no small place, and it all runs right through there.

Dr. ROSENBAUM. In any one given spot there might be an accident, but there would not be the same population density.

Senator FORD. I can see putting them on the beltway and bypassing or something, but you are still running through the residential areas.

Dr. ROSENBAUM. You do the best you can.

Senator FORD. I understand the hazard and problem if something happens, but I also understand the problem about how you are going to get it done.

Dr. ROSENBAUM. We only suggest that they eliminate them where there is another route. It is clearly said in our report that these routes should only be eliminated where you can deliver the material anyway. We do not suggest stopping delivering the material.

Senator FORD. The value of life in one place is just as important as another place. So you cannot say the value of a life is more important in Boston, Mass., than it is in small communities.

Dr. ROSENBAUM. Just more lives at stake.

Mr. PEACH. You were talking a little earlier about a worst-case type of accident. Our report pointed out, for example, with respect to trucks, going through a larger city like Boston, if the truck ran off the elevated highway, there is the possibility of the material getting into subways and sewers, which could lead to a lot more damage.

And while we have not had that type of situation occur, there have been accidents you can examine where large trucks have run off elevated highways.

Senator FORD. Does not the community have the ability to exclude vehicles?

Dr. ROSENBAUM. Because it is an interstate highway—they would like to do so, but they have no power to do so.

Even cities like, for example, New York City which prohibit, except for one facility that was grandfathered in, the storage of LPG, they cannot stop LPG from running through the State on interstate transportation.

Senator FORD. What do they generate electricity with in New York City?

Dr. ROSENBAUM. Some nuclear, some coal, I suppose.

Mr. PEACH. Nuclear, coal, and also some oil and natural gas, in terms of peaking facilities; but primarily nuclear and coal.

Senator FORD. Do they have liquefied natural gas supplies stored in New York?

Dr. ROSENBAUM. Brooklyn Union Gas has an import facility for LPG, in which they take LPG and store it and liquefy it and use it. That was there when this rule was put in, and it was allowed to stay.

Senator FORD. So it was grandfathered?

Dr. ROSENBAUM. You cannot even have a propane cylinder for your home in New York. Nevertheless, they cannot stop the traffic through New York City.

Senator FORD. Gentlemen, there might be some other questions that we can think of before the next few days are over. If we send them to you, would you respond as quickly as possible?

Mr. PEACH. We would be happy to be helpful in any way we could.

Senator FORD. The next witness is Jerome McGrath, president of Interstate Natural Gas Association of America.

Mr. McGrath, you can identify those gentlemen with you, and if you want to summarize your statement, the total statement will be included in the record.

STATEMENT OF JEROME McGRATH, PRESIDENT, INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA; ACCOMPANIED BY J. W. BLEDSOE, VICE PRESIDENT, TRANSMISSION, SOUTHERN NATURAL GAS CO.; AND MARTIN ENGLER, SENIOR VICE PRESIDENT, EL PASO LNG CO.

Mr. McGRATH. Thank you, Senator Ford.

I am Jerome J. McGrath, president of the Interstate Natural Gas Association of America—INGAA. I appear here today on behalf of INGAA to submit the views of our membership with respect to certain proposed amendments to the Natural Gas Pipeline Safety Act of 1968 which are of interest to our industry. These amendments are set forth in title I of S. 411.

Accompanying me today are Mr. J. W. Bledsoe, vice president, transmission, Southern Natural Gas Co., and chairman of INGAA's pipeline safety subcommittee; and Mr. Martin Engler, senior vice president, El Paso LNG Co., representing INGAA's LNG committee.

On March 15, 1979, INGAA submitted written comments with respect to S. 411 in response to an invitation from the chairman. A copy of those comments is appended to this statement, for the convenience of the committee, as appendix A. My remarks today will incorporate the substance of the criticisms and the suggestions that were set forth at length in our letter of March 15. In the interest of brevity, the comments in this statement will be of a summary nature, with appropriate reference to the more detailed discussion set forth in appendix A.

In addition, we will also address an additional problem with the proposed legislation which has since come to our attention. In that regard, attached to my statements as appendix B are several pro-

posed amendments to S. 411 which would accomplish the changes we are recommending.

INGAA is a national nonprofit trade association representing virtually all of the major interstate natural gas pipeline companies operating in this country. Approximately 90 percent of the natural gas transported and sold annually in interstate commerce flows through pipelines and related facilities owned and operated by INGAA member companies.

Title I of S. 411 contains proposed amendments to the Natural Gas Pipeline Safety Act of 1968—NGPSA—which would affect the interests and activities of our members in two important areas; namely: One, the interstate transportation of natural gas; and, two, the importation, storage, and regasification of liquefied natural gas—LNG. Aside from the fact that we do not believe additional legislation is needed, there are four subject areas within these proposed amendments which are of particular concern to our membership.

The first problem area pertains to the “preconstruction approval” requirement which is proposed in section 105(a) of the bill, at page 4. That provision would authorize the Secretary of Transportation on a discretionary basis to delay construction associated with any new—and certain existing—pipeline facilities until it had received his approval.

Such approvals would be predicated upon the applicant’s compliance with applicable standards and such other terms and conditions as the Secretary determines are appropriate to assure that the facility will be constructed and operated in compliance with those standards. Under the proposed definitions set forth at section 104, the term “pipeline facility” would include facilities related to the importation, storage, and regasification of LNG.

For the reasons discussed more fully in my letter of March 15, we do not believe that a “preconstruction approval” requirement is either necessary or desirable. Experience under the existing provisions of the NGPSA has demonstrated the combination of, one, performance standards prescribed by the Department of Transportation, and two, the certificate review and approval procedures employed by the Federal Energy Regulatory Commission, and three, the applicant’s statutory avowal to comply with all applicable safety standards and programs is such as to adequately address the public safety consideration which attends the construction, operation, and maintenance of natural gas pipeline facilities, as defined by the bill. Hence, there is no necessity for the proposed “preconstruction approval” requirement.

Moreover, we believe that enactment of such a requirement on even a discretionary basis would inevitably result in delays in the functioning of the existing review and approval process, which is already complex and time-consuming. We recognize that in prior testimony before this committee policy-level personnel of the DOT have testified that such discretion would be exercised in limited situations on a selective and discerning basis, and we accept such representations as having been made in good faith.

However, their current statements of administrative intent are not necessarily binding upon the actions and exercise of discretion of their successors. Furthermore, experience demonstrates that the

addition of another layer of regulatory approval is likely to result in the delay of construction of pipeline facilities affected thereby, with resultant increases in cost and potential obstacles to the assurance of adequate gas service to the consumer. These are consequences that should be avoided wherever possible.

In that regard, we were greatly encouraged by the Executive order issued by the President on April 6, 1979, which directs the establishment of a critical energy facility program. That order recognizes that timely final decisions by administrative agencies possessing approval authority over critical energy facility projects is crucial to the advancement of our national interests. We believe that enactment of the "preconstruction approval" requirement proposed at section 105(a) of the bill would be counterproductive to the objectives of the program as it pertains to the natural gas industry, given the delay that would accompany implementation of such a requirement.

Undoubtedly, a number of the pipeline construction projects that would be subject to such a requirement are of such a nature as to probably qualify for designation as a "critical energy facility." Thus, for that reason, and the reasons discussed above and in appendix A, we recommend that the "preconstruction approval" requirement provision be deleted from S. 411.

The second problem area pertains to the elimination of the technical pipeline safety standards committee—technical committee—which is proposed at section 106 of the bill. The technical committee provides the Secretary with convenient access to a diverse cross-section of expertise which is not readily obtainable from any other source; and it is certainly not obtainable at the modicum of cost provided for in the NGPSA.

Moreover, the existing practice under the NGPSA of having the Secretary submit all proposed standards and amendments to such standards to the technical committee following the receipt of public comment, and just prior to taking final action thereon, has proven to be efficient and effective, and it should be continued, in order to assure comprehensive analysis and effective regulations.

We do not question the fact that the DOT has gained expertise since its inception. It definitely has. However, we do question that it will ever have the practical broad background and experience that knowledgeable industry, public, and regulatory experts can provide to it on an ongoing basis through the structure of the technical committee. The DOT is currently deeply involved in developing final LNG regulations, and will become even more involved in the administration of such regulations in the future following promulgation. The expertise that can be made available to the DOT through the technical committee to assist it in this regard is substantial.

Moreover, although the work of the technical committee can to some extent be augmented through the process of public hearings and conferences, it must be recognized that this would be a long and costly process, and it could not substitute for the ability of the technical committee to rapidly respond to complex questions when posed.

Thus, we see no benefit to be derived by the DOT from the proposed elimination of the technical committee, and believe it

would be unfortunate for all concerned. Rather, the Secretary should use it more often to his continued advantage. Accordingly, we believe that S. 411 should be amended to assure continuation of the technical committee and its present role.

A third problem area pertains to the criminal-penalties provision set forth at section 108(a) of the bill. At page 11, lines 15 and 21, provision is made for the imposition of criminal sanctions where a person "willfully" violates any provision of the act, or a regulation or order issued thereunder. We believe the DOT intends that such sanctions should apply only where the offending party knowingly engaged in the conduct in question with the intent that such conduct would produce the result in question.

However, the use of the single word "willfully" is not as clear in this regard as is to be desired in addressing the conduct which will warrant the imposition of criminal sanctions.

Accordingly, we believe the words "knowingly and" should be inserted before the word "willfully" in each instance. Such an approach would also be consistent with the language in other statutory measures such as, for example, the Natural Gas Policy Act of 1978, Public Law 95-621, section 504(c).

A final problem area exists in the provisions of section 109 of the bill which would empower the Secretary to require the production of property and to conduct testing thereon, directly or indirectly. These are being proposed as additions to the existing powers of the Secretary under section 12(a) of the NGPSA. Our concern with these provisions arises with respect to the prospect of the Secretary requiring the production and/or testing of property in the context of the aftermath of an accident involving interstate natural gas pipeline facilities, and prior to an investigation and a determination by the affected pipeline or its representatives as to the cause or reasons therefor.

We recognize that the DOT has a valid interest in ascertaining the cause of an accident involving interstate pipeline facilities, incident to the discharge of its responsibilities under the NGPSA. However, we believe that interest can be sufficiently served without authorizing the DOT to dictate the circumstances and conditions under which the facilities involved are to be examined, analyzed, and tested in an effort to ascertain the cause.

Moreover, we believe that the legitimate interests of other affected parties in the determination of cause must be protected and served, particularly in the event there is subsequent litigation. These additional parties include: one, the owner/operator of the pipeline facilities which are involved; two, parties sustaining personal injury and/or property damage; and three, third parties who may have supplied materials or services used in the construction, operation, and maintenance of the facilities in question.

Vis-a-vis the DOT, we believe the interests of these parties must be accorded greater weight in resolving the question of who shall have primary responsibility for directing the determination of cause.

More specifically, the owner/operator of the affected facilities and the suppliers of materials and services have a paramount interest in the determination of cause, given their exposure to the prospect of civil liability for damages. In addition, the owner/

operator has a substantial interest in assuring that such determination will be as accurate and complete as possible in order that it may act to prevent similar occurrences in the future. The parties sustaining injuries or property damage also have a substantial interest in the determination of cause, given their desire to seek compensation for the loss they may have sustained as a consequence of the incident.

While the DOT, in the discharge of its statutory functions has a substantial interest in the determination of cause, that interest is not of such a nature as to require that it be authorized to assume control over the manner and means by which the determination of cause shall be accomplished. Its needs can be satisfied by providing it with: one, observer status at the time the determination-of-cause activities are conducted; and two, access to the results of that determination.

Accordingly, we believe that the portion of section 109 of the bill which contains proposed revisions to section 12(a) of the NGPSA should be modified to provide that the Secretary may, at his election, designate a representative to attend and observe all activities associated with the determination of cause of an accident involving natural gas pipeline facilities subject to the jurisdiction of the DOT, upon advance notice to the owner/operator, but that the Secretary shall not be authorized to require the production of such property for testing, or direct or control the conduct of any tests for causal determination with respect thereto, without the prior consent of the owner/operator. As previously indicated, we believe the DOT should be entitled to request and receive a copy of such reports as may be prepared as a consequence of the causal determination activities. INGAA would be pleased to work with the committee staff to formulate an appropriate amendment to section 109.

In other words, Senator, we believe it should be a joint effort between the Department of Transportation and the operator, and not just DOT taking over and leaving the operators unable to protect themselves.

Senator FORD. This alludes to my question previously about fairness?

Mr. McGRATH. Yes, sir.

Senator FORD. I have had this in my mind to talk with you about it. perhaps we will get into it a little bit later.

Mr. McGRATH. We would be pleased, Senator, to work with the staff of your committee to formulate and prepare an amendment to section 109, which would accomplish the results we were discussing.

I thank you for the opportunity to submit our views, and would be pleased to answer any questions you might have.

[The appendices follow:]

APPENDIX A

INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA,
Washington, D.C., March 15, 1979.

Hon. HOWARD W. CANNON,
Chairman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This letter is in response to your correspondence of February 23, 1979, inviting the Interstate Natural Gas Association of America (INGAA) to

submit written comments and suggestions relative to S. 411. We appreciate the opportunity to submit the views of our membership in advance of the Committee's consideration of this proposed legislation. However, before commenting upon the specific provisions of the bill, we believe it is incumbent upon us to first address the threshold question of whether any additional legislation pertaining to the transportation and safety of natural gas (including LNG) is necessary at this point in time. It is our view that the answer to that question is an emphatic "no."

Our position in this regard is predicated upon two basic considerations. First, we do not believe that the subjects of natural gas pipeline safety and LNG safety and siting require the enactment of additional enabling legislation, or the creation of additional regulatory review and approval procedures. The Secretary of Transportation currently possesses the requisite authority and means to regulate such matters under existing statutes and regulatory arrangements. The solution to any alleged deficiencies in the implementation of that authority is to be found in further and appropriate exercise of that authority by the Secretary, not in the enactment of additional legislation which is unnecessary, costly and duplicative in nature.

Second, we do not believe that the experience of the Department of Transportation or the natural gas industry under the Natural Gas Pipeline Safety Act of 1968 (NGPSA) supports the suggestion that prescriptive legislation is necessary with respect to the specific criteria the Secretary shall utilize in promulgating federal safety standards, related data collection and reporting requirements. To the contrary, the past ten years of experience confirm the wisdom of the broad statutory mandate approach to the subject reflected in the NGPSA. Absent a concrete demonstration that that approach has proven to be deficient, there is no need for additional legislation of a prescriptive nature. Moreover, such a demonstration should be predicated upon a factual study or analysis, not contention or conjecture; and, it should include a detailed cost-benefit analysis of the effects of the prescriptive legislation in question.

Turning now to the subject of your letter, there are three features of Title I of S. 411 which are of particular concern to our membership. Setting aside for discussion purposes the question of whether any legislation is necessary at this time, we believe revisions in the following areas would be necessary if the bill is to receive serious consideration by the Committee.

The first problem area pertains to the "pre-construction approval" provision set forth at Section 105(a) of the bill. That provision would give the Secretary authority to delay any construction associated with new or existing pipeline facilities until his approval is received. This pre-construction approval approach would be based on applicable standards "and such other terms and conditions as the Secretary determines are appropriate to assure that the facility will be constructed and operated in compliance with those standards." We do not think such authority is either necessary or desirable. The interstate gas transmission industry has been successfully building and operating pipelines and related facilities for at least a decade under the NGPSA's performance standards without pre-construction approval from the Secretary. These facilities are designed, constructed, tested, inspected, operated and maintained under current regulations. Furthermore, such activities have been subject to the receipt of prior authorization from the Federal Energy Regulatory Commission (FERC) (and its predecessor the Federal Power Commission), under Section 7 of the Natural Gas Act, which is conditioned upon the operator's attestation and avowal that the facilities will be designed, constructed and operated in accordance with the safety standards prescribed by the Secretary of Transportation. The essence of this interagency regulatory scheme is set out in Section 105(g)(2) of S. 411 and in Section 7 of the existing NGPSA. Once the DOT establishes the safety standards with which an operator of a pipeline facility must comply, both the FERC and the pipeline are bound to conform to those standards in the construction and operation of pipeline facilities. With the impressive safety record that the industry has compiled, we are convinced that the present method of building and operating pipeline facilities under performance-type standards is a far more acceptable method than pre-construction approval. If pre-construction approval in DOT is added on to the existing approval system we feel that delay is inevitable; just as it has been through implementation of the National Environmental Policy Act. In addition to the disruptive effects of delay on responsible corporate planning, delays cost money and can inhibit assuring adequate supplies of gas to the consumer.

The foregoing criticism is equally applicable to the subjects of safety and siting as they pertain to base load LNG import projects and facilities as a brief discussion of the existing review and approval process will demonstrate.

Pursuant to the provisions of the Department of Energy Organization Act of 1977, the Economic Regulatory Administration (ERA) and the FERC each discharge cer-

tain functions and responsibilities pertaining to the review and approval of proposed base load LNG import projects. Under the terms of delegation of authority orders issued by the Secretary of Energy in October, 1978, the ERA is charged with determining whether a proposed project is consonant with the public interest in terms of (i) the security of the supply arrangement and the perceived effect, if any, on the nation's balance of payments, and (ii) consistency of the project with such public policy as may exist applicable to the importation of natural gas. In turn, the FERC is responsible for discharging those functions under Section 3 of the Natural Gas Act (NGA), which have not been delegated to or exercised by ERA, and all functions under Sections 4, 5 and 7 of the NGA as the same pertain to a given project. Incident to the exercise of its Section 7 certificating authority, and in conjunction with its determination as to whether a proposed project is consonant with the public interest, the FERC considers among other factors the subjects of siting and safety.

More specifically, in determining whether or not a proposed base load project is to be certificated, the FERC considers and rules upon questions pertaining to the need for, adequacy and cost of the facilities in question. In addition, the Commission considers and rules upon the question of site selection. Its review includes a complex and extensive multi-disciplinary analysis of environmental, engineering, economic, operational and safety considerations. Public safety is considered and provided for in the design and location of the facilities. Environmental protection, deep water access, proximity to existing pipelines, and favorable meteorological, topographic and seismic conditions are only some of the many physical, political and socio-economic considerations that bear upon the final site selection decision. However, as previously noted, under the NGPSA, an applicant is required to certify, under oath, that it "will design, install, inspect, test, construct, operate, replace, and maintain" the facilities in question in accordance with Federal and other applicable safety standards and plans for maintenance and inspection; and, the FERC's certificate is, in effect, conditioned upon such compliance. The decisions of the Commission are rendered on a case-by-case basis, thereby enabling the FERC to tailor the conditions of its approval to the particular circumstances of an individual project, in order to provide for the public interest.

We recognize that the "pre-construction approval" provision set forth at Section 105(a) does not automatically require the approval of the Secretary as to each proposed new LNG facility; rather, the imposition of such a requirement is subject to his exercise of discretion. However, as previously stated, we believe enactment of the approval requirement in question would only burden and complicate an already complex and time-consuming approval process with additional costs and delays.

The combination of (i) the approval process employed by the FERC, and (ii) the applicant's statutory avowal to comply with all applicable safety standards and programs, is such as to adequately address the safety consideration which attends such projects. Moreover, given the important role of base load LNG imports in satisfying a portion of the future energy goals and requirements of this nation, such increases in costs and delays clearly would not be in the public interest. Hence, we are opposed to the "pre-construction approval" provision of S. 411.

The second problem area pertains to the elimination of the Technical Pipeline Safety Standards Committee, as proposed at Section 106 of the bill. The practice under the NGPSA of having the Secretary submit all proposed standards and amendments to such standards to the Technical Committee following the receipt of public comment and just prior to taking final action thereon has worked well, and it would be continued in order to assure comprehensive analysis and effective regulations. The Committee provides a cross-section of ready expertise unobtainable from any other source. Committee members have been experienced technicians in accordance with the requirements of Section 4 of the NGPSA, and they have provided a much needed public service. As a consequence, we believe the proposed elimination of the Committee would be extremely unfortunate.

We do not question the fact that the Department has gained expertise since its inception. It definitely has. However, we do question that it will ever have the practical, broad background and experience that knowledgeable industry, public and regulatory experts can provide on an ongoing basis. The Department is now deeply involved in developing final LNG regulations and will become even more involved in the administration of such regulations in the future. The expertise that can be made available to the Department through the Technical Committee in this regard is substantial. Moreover, though we are aware that the Technical Committee's work can to some extent be augmented through the process of public hearings and conferences, it must be recognized that this is a long and costly process, and cannot take the place of the Technical Committee's ability to rapidly respond to questions

when posed. We see no benefit to be derived by the Department from the demise of the Technical Committee. Rather, they should use it more often to their continued advantage. Thus, we believe that any additional legislation in this area should provide for continuation of the Committee and its present role.

The final problem area pertains to the criminal penalties provision set forth at Section 108(a) of the bill. At page 11, lines 15 and 21, provision is made for the imposition of criminal sanctions where a person "willfully" violates any provision of the Act or regulation or order issued thereunder. We believe the Administration intends that such sanctions should apply only where the offending party knowingly engaged in the conduct in question with the intent that such conduct produce the result in question. However, the use of the single word "willfully" is not as clear in this regard as is to be desired in addressing that conduct which will warrant the imposition of criminal sanctions. Accordingly, we believe the words "knowingly and" should be inserted before the word "willfully" in each instance. Such an approach would also be consistent with the language in other statutory measures as e.g., the Natural Gas Policy Act of 1978.

We trust the aforesaid comments and suggestions will be of assistance to you and the Committee as you consider these important matters. If there is anything further we can provide please do not hesitate to let me know.

Very truly yours,

JEROME J. McGRATH, *President*.

APPENDIX B TO STATEMENT OF JEROME J. McGRATH, PRESIDENT, INTERSTATE
NATURAL GAS ASSOCIATION OF AMERICA

In accordance with the Statement to which this is appended, the Interstate Natural Gas Association of America recommends the following specific changes to S. 411:

1. Sec. 105 (Pre-construction Approval): "Delete proposed Subsec. 3(c), which appears at page 4, lines 10-19; and, redesignate Subsecs. 3(d) through 3(g) as 3(c) through 3(f)."
2. Sec. 106 (Advisory Committee): "Delete proposed Sec. 106, which appears at page 8; and, redesignate Secs. 107 through 111 as Secs. through 110."
3. Sec. 108(a): "Insert the words 'knowingly and' before the word 'willfully' as it appears in proposed Sec. 8(d) on page 11 at lines 15 and 21."

Senator FORD. Mr. McGrath, I am in agreement with your statement on the Technical Advisory Committee. I think that they have been valuable. But we need, in this day and age, to substantiate our position.

Give me examples of where the Technical Pipeline Committee has made substantial contributions to DOT regulations. Can you do that?

Mr. McGRATH. Well, Senator, whenever regulations are proposed by DOT, they are submitted to the Technical Pipeline Safety Standards Committee in advance of their adoption. And if you have ever seen the transcripts of those sessions, there is a great deal of give-and-take in those meetings between experts—covering corrosion, covering metallurgy—with the Government, the public, from the States, State commissions. And it is a broad mix of interests there that contribute substantially to a determination that the standards that are issued are reasonable and practical and will do the job intended.

Now, we can cite numerous instances of participation by the committee over the last 10 years where standards have evolved, and we would be glad to submit chapter and verse on that. They are quite numerous.

To the best of my knowledge, certainly every major action by the Office of Pipeline Safety Operations, in terms of establishing standards, has been passed by the committee prior to their final adoption.

Now, that is not to say that the Secretary is required to accept the committee's findings, under the act as it now stands. The Secretary can decline to do that, but he must state his reasons for not doing that. And it is a pretty good check valve on all concerned, I think, and it has worked.

Senator FORD. Well, I feel it has been beneficial.

If the Secretary disagrees with them he must give his reasons. You say that is a pretty good check and balance on both sides.

Mr. McGRATH. On both sides.

Senator FORD. Mr. McGrath, do you think there is a need for DOT to coordinate more closely with FERC?

Mr. McGRATH. Yes, there is always that need. We think that they have established a pretty good relationship. There was a time there, 4 or 5 years ago, when it was not as good as it should be. But we believe that there is relatively good coordination now. We would like to see that continue.

Senator FORD. Is there anything they can do to accomplish better coordination between FERC and DOT?

Mr. McGRATH. Senator, to the best of my knowledge, the setup that they have now, they do have, for example, on the Technical Committee, a representative from FERC. There is a liaison between FERC and the Office of Pipeline Safety, which is in continuing contact.

Perhaps Mr. Bledsoe, who is Chairman of our Pipeline Safety Committee, could respond.

Senator FORD. Should we set out specific areas for each, so that there would not be any gray areas left? Possibly the worst thing that can happen to an agency is this confusion.

Should we outline that by statutes? I have a very, very uneasy feeling about the manager's statement, legislative history, things of that nature. Agencies will carry it out, but I am not sure it stands up too well in court.

Mr. BLEDSOE. Well, Senator, I think that definitely there should be a clear-cut line of authority, particularly as it relates to pipeline safety. Obviously, it is difficult to write a cookbook or specific language in the legislation.

However, if all safety matters relative to pipelines could be under the jurisdiction of DOT, then that certainly would be beneficial. I think if it is clearly stated in the legislation, to that effect, that surely will cover the matter.

Senator FORD. What would be then left to FERC? Siting and other things?

Mr. BLEDSOE. FERC would be left to the siting, as far as LNG facilities, to environmental matters, to the gas supply matters, to the regulatory matters which normally fall under FERC and the various agencies under FERC.

Mr. McGRATH. If I could just respond a little more specifically, using the existing scheme, which actually gets fortified in S. 411 in section 105(a)—excuse me—105(g) under "Cooperation and Consultation: The Department of Transportation, the Office of Pipeline Safety, establishes safety standards, whether it be an LNG facility or a pipeline facility, or natural gas pipeline facility. And an applicant for a certificate of public convenience and necessity, to the FERC, must certify under oath that his project, his facility, will be

constructed and operated in accordance with the safety standards established by the Department of Transportation. That is specifically set forth in the Commission's regulations."

Under the bill, as I made reference to, and in the Act, under the Safety Act itself today, once certification is made to the Federal Energy Regulatory Commission that the project will be constructed and operated in accordance with those Federal safety standards, that certification is binding on FERC, and FERC would have no authority to go in and redo the whole thing, from a safety point of view.

And the safety standards, as adopted by the DOT, are very comprehensive, and we think that system is the one that should apply. DOT should not have the—there should not be second-guessing the Office of Pipeline Safety as to whether a particular safety regulation is good or bad, certainly in terms of establishing the regulation in the first instance.

FERC has the opportunity to participate in the formulation of those standards, as I mentioned earlier. They do have representation in the Technical Committee, and, presumably, if they had any concerns about the adequacy of a given standard, they would have been expressed or voiced at that time, and whatever changes were deemed to be appropriate would have been made.

But once those standards are established and they are certified to be complied with, then we do not think FERC should have authority to redo the thing in its own proceeding.

Senator FORD. I asked the GAO witnesses this question, and you made a statement about it in your opening remarks, DOT currently has the authority, to require the production of property, the investigation of vessels, trucks, trains, and airplanes.

Why should they not have the same authority with respect to pipelines? I am asking you to come back now and to defend, apparently, your philosophy and mine both. But DOT now operates with this authority in other areas.

Why are pipelines not included? If not pipelines, should we go back and think about the others?

Mr. McGRATH. Well, Senator, we are not saying that DOT should not be involved in any accident investigation or to have access to the property, the pipe, whatever it is, that there might be an exclusion or whatever.

All we are saying is that the retention of a specific property—say it is a piece of pipe—should not be given up by the owner/operator before testing and investigations have been completed, because if you lose control over that particular piece of evidence, so to speak, it puts the operator and the manufacturers of equipment at a disadvantage to defend themselves at any later date.

But we feel that it ought to be a cooperative effort between the Department and the industry to jointly move forward in any investigation that might take place, that they would have full access to look at the pipe and participate in the analysis.

Mr. Bledsoe and Mr. Engler and I were talking about this a little bit earlier, and one of the problems, for example, is the question of the independent consultants, to analyze why a particular facility failed. These outfits that would analyze this thing, they say, "We will study the pipe. We will look at it, and we will give you our

results. But we will not testify. We do not come in and corroborate or not corroborate what happened in a particular place or with a particular piece of equipment."

And the companies feel that, if they are in a lawsuit, they should have the right to be able to go to an expert and get his own independent judgment on what happened and be able to use his testimony in a lawsuit if they go to court on a damage suit, for example, and if the property is subpoenaed away from them by the Secretary, they lose that control. We think that could have some very adverse impact on the industry.

We are not saying they should not be there. We want them there, but we do not want to lose control of the investigation.

Senator FORD. As an alternative to preconstruction approval, two of INGAA's members—I believe, Western LNG and Tenneco—have suggested that DOT, rather than applicants, certify compliance with DOT's standards to FERC.

Now, is that what I understood you to say a few moments ago?

Mr. McGRATH. Well, no. I am saying that an applicant, under the existing regulations and under S. 411—if you look at the section I referred to—DOT will have safety standards established and applicable to given facilities.

The certification that we are saying would be made, and what is made now, is that the applicant would certify to the Department of Energy, Federal Energy Regulatory Commission that its project would be constructed and operated in compliance with the existing standards, as adopted and put into effect by DOT, and that certification would be binding, not only on the applicant, but on FERC, and that FERC then would not go in and redo the whole thing.

Senator FORD. Certification would not be by DOT, but by the applicant, saying that he would comply with all DOT regulations. Then the scrutiny of that construction and operation would be based on the compliance with DOT regulations?

Mr. McGRATH. Yes.

Senator FORD. I guess you are typical. Do you have minority views?

Mr. McGRATH. Do you mean Western LNG?

Senator FORD. Yes.

Mr. McGRATH. Well, Western LNG is not a member of INGAA. I do not know that we are in much disagreement with them. Tenneco is a member.

It could be a certification from DOT. But we feel that the certification under oath and the statutory avowal to the Commission eliminates that further step that has to be taken. It is working now. We feel that it can continue to work.

Senator FORD. The Department of Transportation's authority sets the performance standards, not the technology of the specific systems?

Mr. McGRATH. Yes.

Senator FORD. I think DOT wants to get in at an early date to make sure that the systems that an applicant wants to use comply with the performance standards.

I think maybe we can work out some arena where each side can be satisfied.

Mr. McGRATH. Well, I would hope so.

Senator FORD. It is awfully hard to do.

Mr. McGRATH. Yes, but I am sure we would be glad to work with—

Senator FORD. It is almost like getting two brothers to agree. The only thing they agree on is when somebody jumps on them.

We appreciate your being here today. We will certainly take your testimony under serious consideration. We appreciate your joining us today.

Mr. McGRATH. We appreciate being here.

Senator FORD. The next witness will be Paul Doran, president, Texas Eastern Products Pipeline Co., testifying on behalf of the Association of Oil Pipelines and the American Petroleum Institute.

STATEMENT OF PAUL G. DORAN, PRESIDENT, TEXAS EASTERN PRODUCTS PIPELINE CO.; ACCOMPANIED BY JAMES BROWN, UNION OIL CO.; AND PATRICK H. CORCORAN, EXECUTIVE DIRECTOR, ASSOCIATION OF OIL PIPELINES

Mr. DORAN. Good morning, Mr. Chairman. I am Paul Doran, president of Texas Eastern Products Pipeline Co. Accompanying me are James S. Brown, of Union Oil Co., and Patrick H. Corcoran, executive director of the Association of Oil Pipe Lines.

I am appearing before you today on behalf of the American Petroleum Institute, API, and the Association of Oil Pipe Lines, AOPL, which together represent virtually all U.S. companies that transport liquid petroleum and its products by pipeline. In addition, API represents a majority of the Nation's gatherers of natural gas and liquid petroleum. Therefore, our views and concerns relate to both liquid petroleum pipelines, addressed in title II, and natural gas and petroleum-gathering lines, addressed in titles I and II.

As is indicated in our written submission, we believe there are major problems with S. 411, and they are highlighted as follows:

One, the definitions of "hazardous liquid," "transportation of hazardous liquids," and "pipeline facilities" are too imprecise and all-encompassing.

Two, this bill, in its present form, would impose substantial inflationary costs on the public through duplicative governmental redtape.

Three, we emphasize that at a time when it is more critical than ever to move energy efficiently from its source to the consumer, the preconstruction approval provisions would only create delays and procedural hurdles with no corresponding benefit to the public.

Four, in addition to the trunk lines and distribution lines, S. 411 would apply to production facility flow lines and gathering lines, most of which operate at low pressure and are often measured in feet rather than miles.

Five, and finally, by terminating the Technical Pipeline Safety Standards Committee, the bill would eliminate an important means of securing valuable input from all sections of the economy into the regulatory process—input that is sorely needed.

Having said that, the industry has also stated before this committee last fall that the concept of civil penalties may be appropriate. Further, some form of Federal involvement with the States concerning liquid lines may also be appropriate. Indeed, with some

strict limitations and enumerated exceptions it is possible that acceptable definitions could be fashioned.

It is always a concern when two distinct industries and their distinctive products are considered in the same act. However with the proper guidance to the administering agency and respect for these distinctions by that agency, such an act may be workable.

I would now like to discuss several of our concerns in somewhat greater detail.

First, definitions: The bill introduces a new term in liquid petroleum pipeline transportation. Section 203(2) defines "hazardous liquid" as "a substance or material which is in liquid form (excluding liquefied natural gas) * * * which, as determined by the Secretary, may pose an unreasonable risk to life or property when transported by pipeline facilities * * * ." The definition includes "petroleum, petroleum products, and any other liquid that is flammable, corrosive, or toxic."

The introduction of this extraordinarily broad term introduces uncertainty as to the intended scope of authority of the DOT and unfairly and unproductively implies that pipeline transportation of liquid petroleum and its products is in some way particularly dangerous. This is not true, as the safety record indicates.

It is all the more confusing and inappropriate in light of DOT's own use of the more specific term "highly volatile liquids," which includes liquefied petroleum gas and anhydrous ammonia, in its recent rulemaking proposals.

Moreover, the definitions for "transportation of hazardous liquids" and "pipeline facilities" could be interpreted to include storage and inplant piping systems used in production, refining, and marketing functions of the petroleum and natural gas industries. However, these are areas in which DOT has neither expertise nor any legitimate role.

Again, the definition of transportation of hazardous liquids in or affecting interstate or foreign commerce is so broad as to include almost any conceivable activity.

The second problem is preconstruction approval—and this to us is a very big problem. S. 411 would give the Secretary of Transportation authority to grant or withhold preconstruction approval not only for all U.S. liquid petroleum pipelines, but also for all oilfield production facilities, such as gathering lines, wastewater lines, water injection lines, and fuel lines. This would cause delays in service and higher costs for those pipelines selected for review, despite DOT's stated intention to minimize such delays. The concept of allowing the Secretary discretionary power to arbitrarily select lines for preconstruction review, without specific guidelines for such action, would interfere with the pipeline companies' ability to plan efficiently and provide the best possible service for shippers and consumers.

Presumably, the criteria which the Secretary would use to determine whether a pipeline should be granted a preconstruction approval are the same design and construction requirements which now exist as regulations in 49 CFR Parts 192 and 195.

The only justification for including such a provision in S. 411, therefore, would be the industry's failure to comply with current

regulations. Since this is not the case, there is no reason for this arbitrary extension of the Secretary's powers.

Another concern is in the provision for inspection and maintenance. The requirement to forward pipeline inspection and maintenance plans to the Secretary or to an authorized state agency will automatically require the addition of competent reviewers to the agency's staff. This will not only be costly, it will also provide little likelihood of improvements in pipeline safety. The pipeline companies will also incur higher costs for preparing and handling additional reports and updating information.

Moreover, present DOT regulations already require written operation and maintenance plans for pipeline systems. These plans are ordinarily inspected by DOT personnel at the same time they inspect other records of the carrier. This has proved an efficient and economical way to review such plans. If necessary, a particular plan could be forwarded to the Secretary, upon request, for further evaluation. However, this would not require special legislation.

Finally, there are the powers and duties of the Secretary. S. 411 grants the Secretary the power to issue subpoenas and gives the Secretary entry rights, at his discretion, without warrant. We believe the power granted is far too sweeping to meet the legitimate needs of the agency in inspecting pipelines. In all cases, we believe inspection procedures should be consistent with this Nation's due process laws and rights of pipeline owners.

To the extent that section 212(a) authorizes the DOT to dictate the circumstances and conditions under which facilities involved in an accident are to be examined, analyzed, and tested in an effort to ascertain the cause, we concur in the objections made by INGAA to section 109 of title I.

Mr. Chairman, I would like to close by emphasizing my earlier statement that the industry does concur in some aspects of this legislative proposal. We believe civil penalties may be appropriate in the context of liquid pipeline safety, and that under certain circumstances Federal involvement with the States regarding intrastate lines may be desirable.

This concludes our remarks this morning. We will be pleased to answer any questions that you and the staff may have. Thank you very much.

[The statement follows:]

STATEMENT OF PAUL G. DORAN

Good morning, Mr. Chairman. I am Paul Doran, President of Texas Eastern Products Pipeline Company. Accompanying me are James S. Brown of Union Oil Company and Patrick H. Corcoran, Executive Director of the Association of Oil Pipelines.

I am appearing before you, today, on behalf of the American Petroleum Institute (API) and the Association of Oil Pipe Lines (AOPL), which together represent virtually all U.S. companies that transport liquid petroleum and its products by pipeline. In addition, API represents a majority of the nation's gatherers of natural gas and liquid petroleum. Therefore, our views and concerns relate to both liquid petroleum pipelines, addressed in Title II, and natural gas and petroleum gathering line, addressed in Titles I and II.

After careful review, we believe S. 411 should be withdrawn in its entirety for the following reasons:

First: The bill is a solution looking for a problem. The proponents of S. 411 have not been able to demonstrate any need for this bill. Under existing law the liquid petroleum pipeline industry has established a safety record unparelled among U.S.

transportation modes. The sweeping kind of legislation that Title II of S. 411 represents is, therefore, totally unwarranted.

Second: Addressing both natural gas and liquid petroleum pipelines in the same bill, albeit under separate titles, encourages continued confusion over the distinct differences which exist in the design, construction and operation of these types of pipelines.

Third: S. 411 would impose substantial inflationary costs on the public through duplicative government red tape.

Fourth: At a time when it is more critical than ever to move energy efficiently from its source to the consumer, S. 411 would only create delays and procedural hurdles with no corresponding benefit to the public.

Fifth: In addition to trunk lines and distribution lines, S. 411 would apply to production facility flow lines and gathering lines, most of which operate at low pressure and are often measured in feet rather than miles.

And finally: By terminating the Technical Pipeline Safety Standards Committee the bill would eliminate a valuable means of securing technical and public sector input into the regulatory process—input that is sorely needed.

I would now like to discuss each of these points in somewhat greater detail.

First: There is no need for S. 411. Under existing law, the nation's liquid pipeline systems and gathering lines have established a safety record that is *prima facie* evidence that additional legislation is not needed. The liquid petroleum pipeline industry is responsible for shipping approximately one quarter of the entire nation's intercity freight (all commodities). Yet, during the period January 1, 1968 through December 31, 1977, according to statistics reported by the DOT, liquid petroleum pipelines caused an average of 5.5 deaths per year—by far the best safety record of any mode of transportation.

I have attached the 1977 report of the National Transportation Safety Board which graphically illustrates the relative safety of liquid petroleum pipelines. The industry's practices, which make this outstanding record possible, were explained in the attachment to Mr. Dean B. Taylor's statement on liquefied energy gases before the Senate Commerce Committee, December 13, 1978.

In light of these industries' unparalleled safety record, generating more and more measures to regulate them can only serve to create additional bureaucratic expense and increase the costs of energy to the consumer. It may even serve to displace pipeline transportation in favor of other modes known to be less safe for the citizens of this nation.

Nonetheless, the apparent intent of the U.S. Department of Transportation and other proponents of S. 411 is to establish statutory authority to formulate a new set of regulations for liquid petroleum pipelines which would closely resemble the present regulations for natural gas pipelines.

In referring to the Department of Transportation, we would also like to point out that comments in Secretary Adams' transmittal letter to S. 411 relative to coverage of liquid petroleum pipelines under the Transportation of Explosives Act (TOEA) are, in our opinion, misleading. The TOEA of 1909 (18 USC 831-835) was amended in 1921 (41 Stat. 1445) to confer jurisdiction on the ICC to regulate pipelines for safety purposes. Over the next 20 years, the ICC reviewed the industry's safety practices several times. Each time, it determined that the safety standards were adequate and that no additional safety regulation was needed.

An amendment to the TOEA inadvertently excluded pipelines during 1960-1965. In 1965, however, the industry supported amendments to the TOEA to reaffirm federal government jurisdiction over liquid petroleum pipeline safety. At that time, Congress reviewed liquid petroleum pipeline safety again, and again it concluded that there was no need for additional regulation.

During the ensuing twelve years, the Department of Transportation has modified liquid petroleum pipeline regulations many times. In that period, the volume of petroleum shipped by pipeline increased dramatically but petroleum pipeline accidents steadily decreased.

Recently, the DOT has proposed a number of new regulations, related particularly to pipeline transportation of "highly volatile liquids," which include liquefied petroleum gas and anhydrous ammonia. A copy of these proposals, and industry responses to each, is attached to this statement for your review.

We are not aware of any challenges to the Department's authority to promulgate pipeline safety regulations under the TOEA. Therefore, the creation of sweeping new legislation under the guise of a "cleanup" of legislative authority for liquid petroleum pipelines is simply not warranted.

The second reason we believe S. 411 should be withdrawn is that there are numerable differences between liquid petroleum and natural gas pipelines which argue against their being regulated with the same umbrella legislation.

The differences in design, construction and operation of liquid petroleum and natural gas pipelines are great. It is true that the chemical composition of natural gas and liquid petroleum and its products is similar in that they are all of the hydrocarbon family. However, their physical properties are quite different, including flammability ranges, ignition temperatures and specific gravity. Gases are also more highly compressible than liquids and require facilities which can withstand the latent energy of natural gas.

The design parameters and construction of pipelines for natural gas are, therefore, different than for liquid petroleum pipelines. For example, the prime movers in each kind of pipeline system are drastically different in design and piping configuration. Gas pipelines and liquid lines both use reciprocating and centrifugal-type equipment. But they are not interchangeable, since the physical characteristics, such as compressibility, require distinct facilities. Because of its compressibility, gas also favors high pressure lines, with the result that suction pressure at the inlet of compressors is much higher than in liquid pumps. This means that gas pipelines can be operated at a higher average stress level than liquid lines.

At the pipeline end, the distribution patterns also differ. Gas is delivered to residences, schools, businesses or industrial plants through a multitude of small line distribution systems. Liquid fuels are delivered to large storage facilities for ultimate delivery to the consumer, usually by truck, rail or barge.

Because of the design variations I have described, operations of the two types of lines are different. For the most part, different skills are needed by operating personnel because of the dissimilar physical properties. The operation of liquid pipeline facilities is quite complex. It calls for sequential handling of multiple products or grades of crude oil. It also requires segregation in tankage or switching to different lines for delivery at marine, truck or rail loading facilities. By contrast, operation of natural gas facilities remains fairly constant on a day to day basis except for pressure variations which may occur as line operations change.

Congress, the Department of Transportation and the industry have traditionally recognized these differences by maintaining separate laws, regulations and technical codes for each type of pipeline system. We strongly recommend that this practice continue so that the special requirements of each type of pipeline system may be appropriately addressed.

Our third reason for opposing S. 411 is that it imposes costs which are wasteful and inflationary.

We believe that S. 411 runs directly counter to President Carter's announced desire to curb needless legislation and regulation and to combat inflation. If S. 411 were to become law, the costs to the country in increased administrative burdens to industry and government would be enormous.

In his transmittal letter to S. 411, Secretary Adams barely mentions the costs which the bill represents, and, then, he simply states his opinion that they would be insignificant. We believe that the Department of Transportation has an obligation to present an accurate evaluation of the potential costs of this legislation.

Ironically, the Department did state that the \$400,000 estimated annual costs (1975 figures) to satisfy the reporting requirements of the Mineral Leasing Act for 5,500 miles of federally controlled pipelines " * * * are not commensurate with the safety benefits desired * * *". If proportionate costs were applied to the 1,750,000 miles of privately owned natural gas and liquid petroleum pipelines, the annual cost to the consumer would be \$117,000,000, not including costs to the taxpayer for large increase in staff to implement S. 411. Yet, Mr. Adams' transmittal letter does not address these cost impacts.

The fourth reason for withdrawing S. 411 is that it will cause delays in providing energy to U.S. consumers.

The Department of Transportation has optimistically suggested that imposition of S. 411 and its pre-construction approval requirement would not create delays in pipeline construction. But the need for governmental agency approvals has always delayed project completions. It is wishful thinking to suggest it will be otherwise. We should at least have learned something from the years of delay in building the Trans-Alaska pipeline and the recent cancellation of the Sohio Pipeline (from California to Texas) precisely because of delays in getting some 700 approvals.

¹ Congressional Record, Feb. 9, 1979, p. S1438. We believe that it is incumbent upon the proponents of this legislation to demonstrate why added restrictions on the safest mode of transportation in the United States justify wasteful costs to the nation.

The nation needs energy for its continued well-being and security. An efficient transportation system—the key to which is pipelines—is critical for its timely delivery. The kinds of delays which S. 411 would create are as unwise as they are unnecessary. In short, this is simply not the time to increase the difficulties involved in moving energy from its source to its ultimate consumer.

Turning now to some of the specific provisions of S. 411, we believe there are several which are arbitrary, unnecessary, and duplicative extensions of Department of Transportation authority. I would like to cite a few of the major problems.

First, definitions. The bill introduces a new term in liquid petroleum pipeline transportation. Section 203(2) defines "hazardous liquid" as "a substance or material which is in liquid form (excluding liquefied natural gas) * * * which, as determined by the Secretary, may pose an unreasonable risk to life or property when transported by pipeline facilities * * *." The definition includes "petroleum, petroleum products, and any other liquid that is flammable, corrosive, or toxic."

The introduction of this term serves no purpose other than to imply that pipeline transportation of liquid petroleum and its products is in some way particularly dangerous. This is not true, as the safety record indicates. The introduction of this term, therefore, creates an unwarranted and distorted impression of dangers inherent in this transportation mode.

The introduction of this new term is all the more confusing and inappropriate in light of DOT's own use of the term "highly volatile liquids," which includes liquefied petroleum gas and anhydrous ammonia, in its recent rulemaking proposals.

Moreover, the definitions for "pipeline facilities" could be interpreted to include storage and in-plant piping systems used in production, refining, and marketing functions of the petroleum and natural gas industries. However, these are areas in which DOT has neither expertise nor any legitimate role.

The second problem is pre-construction approval. S. 411 would give the Secretary of Transportation authority to grant or withhold pre-construction approval not only for all U.S. liquid petroleum pipelines, but also for all oilfield production facilities, such as gathering lines, wastewater lines, water injection lines and fuel lines. This would cause delays in service and higher costs for those pipelines selected for review, despite DOT's stated intention to minimize such delays. The concept of allowing the Secretary discretionary power to arbitrarily select lines for pre-construction review, without specific guidelines for such action, would interfere with the pipeline companies' ability to plan efficiently and provide the best possible service for shippers and consumers.

Presumably, the criteria which the Secretary would use to determine whether a pipeline should be granted a pre-construction approval are the same design and construction requirements which now exist as regulations (in 49 CFR Parts 192 and 195). The only justification for including such a provision in S. 411, therefore, would be the industry's failure to comply with current regulations. Since this is not the case, there is no reason for this arbitrary extension of the Secretary's powers.

The third problem lies in the area of extension of DOT jurisdiction to regulate liquid petroleum intrastate pipelines. There is no evidence to suggest that the states have been deficient or that there is a problem that they have not addressed. Moreover, federal-state arrangements, such as those set forth in section 205, have the potential to be an administrative burden due to multiplicity of agencies (each with jurisdiction), duplication of inspectors, reports, etc., and the probability of jurisdictional disputes.

We also believe that the degree of jurisdiction asserted by section 205 over intrastate pipelines raises serious constitutional questions under the Commerce Clause of the Constitution (Art. I, § 8, cl. 3).

The fourth problem is the judicial review of standards. The applicable scope of judicial review under the proposed legislation is unclear. Section 204 provides that regulations will be issued pursuant to the "informal" rulemaking procedures of section 553 of the Administrative Procedure Act (5 U.S.C. §§ 551-559, 701-706). Section 206(b) provides only that a reviewing court "shall have jurisdiction * * * in accordance with chapter 7 of title 5. * * *." Section 706 of the Administrative Procedure Act contains two standards of review: the "arbitrary and capricious" standard and the arguably more stringent "substantial evidence" standard. Uncertainty as to the applicable standard of judicial review would not further the Congressional objective of improving safety of liquid pipelines—even if there were, in fact, a need to improve their safety record.

The fifth problem is in the provision for inspection and maintenance. The requirement to forward pipeline inspection and maintenance plans to the Secretary or to an authorized state agency will automatically require the addition of competent reviewers to the agency's staff. This will not only be costly, it will also provide little

likelihood of improvements in pipeline safety. The pipeline companies will also incur higher costs for preparing and handling additional reports and updating information.

Moreover, present DOT regulations already require written operation and maintenance plans for pipeline systems. These plans are ordinarily inspected by DOT personnel at the same time they inspect other records of the carrier. This has proved an efficient and economical way to review such plans. If necessary, a particular plan could be forwarded to the Secretary, upon request, for further evaluation. However, this would not require special legislation.

Finally, there are the powers and duties of the Secretary. S. 411 grants the Secretary the power to issue subpoenas and gives the Secretary entry rights, at his discretion, without warrant. We believe the power granted is far too sweeping to meet the legitimate needs of the agency in inspecting pipelines. In all cases, we believe inspection procedures should be consistent with this nation's due process laws and rights of pipeline owners.

Mr. Chairman, this concludes my remarks. We would be pleased to answer any questions you or other members of the Committee may have at this time.

Thank you.

Senator FORD. Thank you very much, Mr. Doran. We do have some questions.

You testified that S. 411 would impose—and you used such words as “wasteful” and “inflationary costs.” Can you be a little more specific on what additional expenses will be required as a result of this bill?

Mr. DORAN. Mr. Chairman, we can say that the all-encompassing scope of S. 411, by virtue of the definitions as they are now in the proposed legislation, will cause substantial additional costs, and we believe unnecessarily so, through preconstruction approvals. The operations and maintenance requirements are also important.

But even greater than that is the impact that it will have on producing facilities in rural areas, which have traditionally been exempt from DOT regulations. This is an area we think will have the greatest impact on cost, unnecessary costs to the public and to the Government.

Senator FORD. Mr. Doran, you criticized section 205 about State-Federal arrangements, yet this section parallels section 5 of the Natural Gas Pipeline Safety Act, which the States have praised as a model for State-Federal cooperation.

Specifically, what problems do you foresee as a result of 205?

Mr. DORAN. Mr. Chairman, this is an area we are reappraising, and in view of the favorable experience the natural gas transmission industry has had—and we will be pleased to give you the benefits of our reappraisal.

Senator FORD. That would be fine. We appreciate that.

DOT has stated that the primary purpose of title II is to provide the Department of Transportation adequate enforcing regulations—which, as you pointed out, they have already developed under existing authority. By stating that S. 411 is not needed, you are suggesting criminal penalties, which are the sole enforcement, are adequate.

How many of your members, might I ask, have been prosecuted as a result of violation of DOT's standards?

Mr. DORAN. I daresay that is a problem, and we have filed a statement that suggests S. 411 be withdrawn in its entirety.

We have this morning presented our position with respect to a number of areas we have under consideration and, hopefully, that

we could move forward on, providing a number of the problems we outlined could be satisfied.

We have testified here before that we do think that civil penalties are appropriate. We have no argument there.

Senator FORD. Mr. Doran, DOT has stated that the purpose of preconstruction approval is to assure compliance with its design standards before a facility is built. What alternative would you suggest to assure such compliance?

Mr. DORAN. We are, by statute, required to comply with the regulations promulgated on this industry, and we believe to have preconstruction approval would suggest that the industry is not complying with the regulations and standards that currently exist under the Department of Transportation. We have not found any evidence of that being true.

The Department of Transportation has the right of inspection, and they do inspect; and to determine that the industry is meeting the standards set forth by the regulations. These are performance standards. The system appears to work very well.

Preconstruction suggests that the industry is not complying with those standards, and that is not true.

Senator FORD. An ounce of prevention is worth a pound of cure.

I do not want anything implied that you all are not complying with the law.

If you want to construct a building, you send it in and the plans are approved for fire standards, other standards. It meets sewage treatment standards, all those things. If that is submitted for approval and sent back, it is much better to find any problems on paper than it is in bricks and mortar.

I am not sure that your certifying that you will comply with your construction is as good as having someone else do it. For instance, with all the rules and regulations, if you would get preconstruction approval, then when somebody comes in and says, "You are wrong," you just hand them a paper which says, "We have been approved, and we are complying with the approval of the agency."

That may be all wrong. It seems as if it is much easier to change there if there is a question than after you get into construction.

Mr. DORAN. I think we have several problems in that area, Mr. Chairman.

Senator FORD. I think the main problem that you and your people have in their minds, is the implication that you are not complying with the rules and regulations. I think that inference ought to be removed, you know. That is not the position we are getting in.

Mr. DORAN. Not at all, sir.

The preconstruction approval, besides the time that it takes, and notwithstanding the fact that the Department of Transportation has stated they would be very judicious, it will require, it seems to me, that every facility or every company operating a pipeline system would have to keep the Secretary apprised of their intention to construct, in order to give the Secretary an opportunity to determine which system he would review, and a preconstruction approval, rather than performance standards, as a basis for regulating this industry. It would reduce the technological opportuni-

ties we have to advance this industry, in terms of safety and economics.

If we have performance standards, we can build facilities meeting those standards, plan them, move on ahead. It is a far better program.

Senator FORD. I would like you to read title I and title II. Look at them completely again, and see if we cannot reach something acceptable here.

DOT has stated that the definition of hazardous liquids is intended to apply only to hazardous materials, as the Hazardous Materials Transportation Act does. Does this satisfy your concern with the definition?

Mr. DORAN. That, in part, helps the definition—that is helpful, yes, it is.

I think the other definitions needing to be addressed are the facilities to be covered and the definition of facilities.

Senator FORD. Just in short.

Mr. DORAN. It is too all-encompassing. We look at it now as covering production, manufacturing and marketing as well as transportation.

Senator FORD. One other thing: There is a lot of restatement of present law in this piece of legislation. If you would look at your written statement, it is my understanding that what you are objecting to here is something that is just restated in this law.

You say: "There are the powers and duties of the Secretary. S. 411 grants the Secretary the power to issue subpoenas and gives the Secretary entry rights, at his discretion, without warrant."

I thought that this is just basically a restatement of the law or regulations.

Mr. DORAN. It is my understanding, Mr. Chairman, that the Secretary has the power to inspect and to review records upon notice, and that is essentially the difference: at his discretion, versus upon notice. Now, I remain to be corrected if I am wrong.

Senator FORD. You thought he had the authority, and you are under the gun?

Mr. DORAN. Yes, sir. It is my understanding he has the right to inspection, certainly. We understand that. But it is my understanding he has that right upon notice.

Senator FORD. Is there a length of time?

Mr. DORAN. No, I am not aware that there is.

Senator FORD. Sir?

Mr. DORAN. No, I am not aware that there is. Traditionally, we receive a call from one of the division offices saying, "All right, we understand that you are doing such and such," or "We are going to be in your vicinity and would like to do this." We will arrange to accommodate them.

Senator FORD. There is just a little bit of difference in upon notice rather than surprise?

Mr. DORAN. Yes, sir.

Senator FORD. Mr. Doran, I appreciate your coming today, and your testimony has been very fine. We appreciate the gentlemen that have accompanied you.

And if you send me that list that we asked for earlier, about the imposition of costs, I would appreciate it very much.

The next witness is Ms. Hope Robertson, Washington representative, Environmental Policy Center.

Good morning.

**STATEMENT OF HOPE ROBERTSON, WASHINGTON
REPRESENTATIVE, ENVIRONMENTAL POLICY CENTER**

Ms. ROBERTSON. Good morning.

Senator FORD. We are delighted to have you with us.

Ms. ROBERTSON. Mr. Chairman and members of the committee, I would like to thank you for the opportunity to present the views of the Environmental Policy Center on the pipeline safety bill, S. 411. The Environmental Policy Center (EPC) is a nonprofit, public interest lobbying organization specializing in energy and water resources issues.

As you know, we have been active on the subject of liquified natural gas legislation for several years. Our concerns focus on four major areas: what should U.S. policy be with regard to LNG; what should our pricing policy be for LNG; how can safety hazards of liquified gases be minimized; and finally, how should liability for damages from accidents be dealt with. I would like to comment on each of these areas and then make specific recommendations about the legislation before this committee.

Thank you very much. I really appreciate the opportunity to present the views of the Environmental Policy Center. What I would like to do is make some broad comments about the legislation in general, and then make some specific recommendations about the bill.

One of the first issues which should be addressed is what U.S. policy should be with regard to the importation of liquefied natural gas. The role of LNG in our current energy supply picture is minor. There will soon be four major LNG import facilities operating in the United States. These facilities will supply approximately 2 percent of our natural gas and represent a fraction of 1 percent of the total U.S. energy supply.

Earlier estimates by the gas industry indicated that LNG might displace as much as 10 percent of our oil imports by 1985. But it now looks doubtful that LNG will play that large a role in our energy picture. Two major projects were turned down last year, which leaves only the Point Conception, Calif., project as a potential new import facility. The current trend in the administration's nonpolicy toward LNG seems to indicate they are not encouraging further LNG projects. But looking at past actions by DOE, there is no reason to believe this policy will not be reversed. As a result, it is important for Congress to address the broad question of whether we should be importing LNG now or in the future.

The U.S. energy policies should be encouraging investments in those energy projects which provide the maximum long-term benefits at the lowest cost and which reduce our dependence on non-renewable resources. The construction of both the export and import LNG facilities requires sizable investments. For example, recent estimates for the Point Conception LNG facility are that the import terminal would cost approximately \$589 million, 1977 dollars, \$87 million for the pipeline and \$930 million for the construction of six LNG tankers—\$155 million per tanker—bringing the

investment within the United States for the project to \$1.606 billion. As a result of this enormous investment we would receive only 197 billion cubic feet per year of LNG.

Senator FORD. Let me ask you a question: Would you be willing to spend that kind of money to convert coal to oil and natural gas?

Ms. ROBERTSON. No.

Senator FORD. You are getting into a lot of energy problems.

Ms. ROBERTSON. But I just think that the whole subject of whether we should or should not be building these facilities should be raised, and this legislation does not address that. And I wish it would, because I think—

Senator FORD. The Energy Committee will address it, will address the whole matter.

Ms. ROBERTSON. One should look at what our priorities are before we encourage investments, and I think Congress is the one who should do this.

When one considers that the United States turned down an opportunity to buy two billion cubic feet per day—almost four times the amount of gas—from Mexico in 1977, requiring an investment in the U.S. of \$180 million for a pipeline from the Mexican border northward, it raises some interesting questions with regard to what our energy priorities should be.

In light of the announcements of large gas fields in western Canada, large quantities of both oil and gas in Mexico and a glut of natural gas in the United States, which may continue for many years, encouraging any more LNG imports is questionable.

Congress must take the initiative to force DOE to come to grips with whether or not we should be promoting LNG use. Our current nonpolicy leaves a great deal to be desired. Unless Congress establishes some broad policy guidelines which DOE must adhere to when reviewing projects, there is no assurance that a comprehensive approach will be taken which evaluates LNG in the context of other energy supply alternatives. This is particularly important with respect to the price of LNG to the consumer versus other sources of energy.

Congress should also push for a thorough evaluation of current pricing policy for LNG. Is it fair to allow rolled-in pricing of LNG, particularly in light of the current plentiful supplies of natural gas from other sources? If LNG is going to compete with other energy sources, then it should be placed on an equal footing with other energy sources, which means it should be priced incrementally.

Under the present policy, where we deal with proposals for LNG projects on a case-by-case basis, there is no lid on the price of LNG. I urge Congress to pass legislation which addresses these broader policy problems as they are basic to the entire issue. The current bill before this committee avoids all of these broader questions.

I would now like to make some specific comments about the bill. A frequently voiced criticism of the current handling of LNG within the Federal Government is the splintered jurisdiction over the control of LNG and other liquefied gases. It is difficult to determine who is responsible for what. S. 411 does not eliminate any of the confusion over the administration of the various programs but rather contributes to the overlapping responsibilities of several agencies.

As far as I can determine from conversations with people within the administration, the DOT is responsible for setting minimum safety standards for pipelines and associated facilities. FERC looks at the specific details of a proposed project and can impose safety standards more stringent than DOT's. However, in an indirect fashion DOT can also require actions on a specific project which may exceed their minimum standards. It becomes confusing for the public or industry to know what standards are going to be required and when.

Where does the real expertise on safety questions lie? Within DOT or within DOE? Why should both agencies have responsibility on this issue? S. 411 does not clarify this, but rather gives DOT an even larger role in the preconstruction review process. Basically, the bill fails to remedy the jurisdictional squabbles between the 15-odd agencies involved in siting, construction, and operation of liquefied energy gas facilities. I trust that the committee will deal with this problem during the markup of the bill.

Senator FORD. Have you ever tried to get anything through the Federal Government?

Ms. ROBERTSON. I realize they do not operate extraordinarily quickly. Streamlining the process would certainly help. This does not mean I am opposed to having preconstruction review, if, in fact I strongly support it. After listening to industry's comments today its quite obvious they are strongly opposed to this policy. But there must be something behind the industry's opposition, other than the fact that they are already in compliance with regulations. If they are in compliance, preconstruction compliance, they should not be worried.

Senator FORD. I am not going to take their side on anything. I am going to try to be nonpartisan here.

But if we can expedite something through the Federal Government, please tell me how. The reason people do not want to go before another agency, why they do not want the Government to get their little hot hands on something, is that it just sits out there and costs them millions of dollars. Inflation goes up, and costs go up, and it is just another delay.

I am not sure, but I think I am on your side on preconstruction review so that all the problems might be eliminated before you get to construction.

I did not mean to interrupt your statement, but if you have got an idea, you can box that and sell it pretty good.

Ms. ROBERTSON. I think one of the things that should be done is to eliminate some of the overlapping jurisdictions. Perhaps the entire safety issue should be handled by the Department of Transportation, and keep FERC out of it completely.

I do not feel qualified—after talking to various people in both FERC and the Department of Transportation—to say which one really does have the expertise. But certainly, to pass legislation that does not clarify, this situation, is not terribly responsible. But I do think the idea of preconstruction review is very important. These facilities are hazardous to the surrounding population and property, and it seems to me it is important that we review these facilities before they are built.

I do not think every single facility should be reviewed, if it is going to cause massive delay, but all of the larger, import/export LNG facilities should be reviewed before they are built.

In light of the grave safety risks presented by liquefied energy gas facilities, the public should have a legal right to participate in the development of any safety standards and other important decisions. S. 411 does not guarantee that public comments on proposed regulations and other actions will be taken into consideration other than a brief reference for the opportunity for informal oral statements. I would like to see language added to the bill which will insure public input into the process.

Senator FORD. It does not exclude them, either.

Ms. ROBERTSON. The only provision in the bill now relating to this gives the opportunity for informal presentation of their views.

If you look at the House bill, the way they provide for public involvement is an opportunity for a hearing on the record, which is, in my mind, something that I feel far more comfortable with.

The language in section 3 (a) and (b) is entirely too vague with regard to safety standards. Looking at the four criteria to be considered by the Secretary when prescribing safety standards, I cannot say that I have a great feeling of relief that adequate safety standards are going to be prescribed. I have been a strong advocate of not locking a Secretary into certain policies, but the language in this section provides so much flexibility that it is meaningless.

The first criteria is the considerations of "relevant available pipeline data." What happens if new information is needed to accurately assess the safety risks of a proposed facility? Is the Secretary prohibited from using it because he can only consider available information? If terms such as "relevant" are going to be used, a concise definition better be included in the bill.

The second criteria is even more meaningless. I trust the Secretary is not going to be issuing safety standards which are not appropriate for liquefied gas facilities. Is this language included because someone has so little trust in DOT that they expect safety standards on airplanes rather than LNG or LPG facilities to be issued?

The third criteria "reasonableness," will be a field day for lawyers. If the administration wants to be left wide open to lawsuits from industry, they couldn't think of a better way to guarantee it.

The fourth criteria is "the extent to which the standard contributes to public safety," not whether it should or not, just whether it does. I presume the intent of this language is to insure positive contributions to public safety, but it's difficult to tell from the current language.

In summary, the language in this section is so vague and meaningless as to be an embarrassment to the administration, which drafted the bill. It should be deleted completely, and language similar to that in H.R. 51 giving specific requirements for the Secretary to consider such as the seismic conditions of the area or the surrounding populations and land uses. I trust the committee will completely redraft the language in both titles of the bill which pertain to criteria for promulgating safety standards.

Frankly, if I were a lawyer, this legislation would give me an opportunity to have a field day with the administration due to the vague criteria spelled out in it.

Senator FORD. Are you a lawyer?

Ms. ROBERTSON. No, I am not.

Senator FORD. We are almost unanimous today.

Ms. ROBERTSON. One other thing I would like to say, relates to remote siting. Although I think it is important that these facilities are not located near densely populated areas, I would have to say—that I would be opposed to siting liquid natural gas, for example, or other major facilities in areas that I felt were pristine, because there are very few pristine coastal areas left in the United States. I trust that by encouraging remote siting we do not force these facilities into areas which otherwise should not be developed. I hope there will be clear report language on this issue.

The bill establishes what facilities will be covered by new standards and which ones will not. However, it is not clear reading the language of the bill, what really does qualify as an existing facility. If a facility has filed an application but not started construction, would it be subject to the requirements of the act? What about if the facility had begun some very preliminary construction? In order to avoid confusion and lawsuits at a later date, it would be best if a concise definition of "existing facility" were included.

Should the committee decide to clarify this language, I would like to offer several suggestions of directions you should not take. Facilities which have not begun actual construction before the passage of this act should be subject to the new regulations. All LNG facilities have been on notice for several years, that the Department of Transportation intended to revamp their safety requirements. It seems ridiculous to pass a law intended to increase the safety of these facilities and then turn around and exempt facilities currently under consideration. The House bill, unfortunately, has language to this effect which hopefully will be deleted before final passage.

Second, the safety risks posed by liquefied gases is not limited to just the pipelines and the facilities. Tankers bringing these materials into harbors also pose a major safety threat. In addition, because of the difficulty of finding appropriate sites on land, it would be worthwhile to begin serious investigations of offshore siting. It may be many years before the technology is available to allow this, but the Federal Government should be developing some policies on this idea. The legislation should address both of these issues.

In addition, because of the problem of finding onshore sites for these facilities, serious consideration should be given to offshore siting for these facilities. Although I realize that technology is not available to allow this, I think it would be important to include this consideration in the bill. Perhaps the Federal Government should be developing policies in dealing with offshore siting. I hope the legislation will address both of these issues.

Although the bill makes some attempts to insure that these hazardous materials are handled in a safe manner, there is no mechanism at all to deal with a possible accident. Hopefully, an accident will not occur. But as everyone is all too conscious of, due

to the recent Three Mile Island accident, the smug conviction that an accident won't happen should not go unchallenged.

The entire issue of liability is skirted very carefully by the bill. There is no question that the subject of liability for damages is a very difficult one, but it cannot be ignored. As everyone knows, the status quo would be totally inadequate to deal with the financial repercussions of a major LNG or LPG accident.

At testimony before this committee, the Secretary of Transportation stated that a major accident at the Everett, Mass., terminal could, according to their calculations, result in \$50 billion in damages. Who would pay for that? If these facilities are as safe as the industry claims, then they should have no qualms about assuming unlimited liability. This would certainly place an incentive on the companies to operate facilities handling these hazardous materials, as safely as possible.

It is important that legislation establish clear liability for accidents and eliminate the chance of parent companies avoiding liability for accidents. If they are willing to accept the profit made by operations of their subsidiaries, then they should also be responsible for damages incurred by those activities. As it currently stands, parent companies can hide behind a maze of small subsidiaries and not have their assets attached. I trust this committee adds a strong section dealing with liability for accident damages.

The final point I would like to make deals with preemption of State laws. Despite the fact that I strongly support the Federal Government taking the initiative to set national standards on the siting, construction, and operation and transportation of liquefied gases and hazardous liquids, I am strongly opposed to preemption of a State's ability to impose more stringent standards than those of the Federal Government. The language of S. 411 clearly preempts State laws for both intra- and interstate gases.

Because of the safety risks from these materials, I believe every State has the right to protect its citizens and their property from potential harm from an accident. To my knowledge, liquefied gases used in interstate commerce will not behave differently in the event of an accident than the same materials used in intrastate commerce. The only difference may be that the throughput of interstate facilities may be larger, which is all the more reason to allow States to enforce stronger controls on interstate facilities if they feel it is necessary.

I urge the committee to respect the rights of States to impose more stringent standards on facilities regardless of whether the gas is to be used in the intrastate or interstate markets.

I hope this committee will seriously consider the recommendations I have made today. Although I recognize that some of the issues discussed fall outside the jurisdiction of this committee, it is incumbent upon you and other Members of Congress to thoroughly address the entire range of problems associated with liquefied gases and other hazardous materials.

I urge this committee to clarify and strengthen the language of this bill as well as recommend action by other committees on the issues outside your jurisdiction.

I have already submitted specific recommendations to this committee as requested. If I can be of any further assistance, please

feel free to call me. Thank you very much for your interest in our views.

Senator FORD. Hope, would you excuse me for a minute? We have a vote, and I want to exercise that right this morning. I will be back just as soon as I possibly can. I do have two or three questions.

[Brief recess.]

Senator FORD. I hope we can maybe wind it up before another vote.

Do you have any suggestions for resolving the jurisdictional questions between DOT and FERC over LNG safety? You alluded to that as ambiguous.

Ms. ROBERTSON. Well, first, I think FERC should have responsibility for setting up guidelines of how these facilities should be sited, as far as safety standards, diking requirements, construction requirements. It appears to me that the Department of Transportation has had more experience with that type of responsibility than FERC has.

At the very least, I think you should give one, clear responsibility for the final say on what safety requirements are required, and require coordination between the two. Perhaps you should give the entire standard-setting for individual projects, in a broad generic sense, to one agency.

Senator FORD. What is "broad generic sense"?

Ms. ROBERTSON. Well, looking at the regulations, for example—

Senator FORD. Looking at what?

Ms. ROBERTSON. The regulations. They apply, as far as I understand, to all pipelines or all pipeline-related facilities. But I believe FERC can come in and set forth specific standards on a particular project, in more detailed requirements, for the reasons I have alluded to earlier.

If there were special site conditions that merit it, they can exceed whatever the broader minimum standards are. The broad standards may be very specific, as far as, what type of construction materials have to be used, et cetera. But FERC can exceed that.

Senator FORD. Let me ask you this: The Department of Transportation has stated that provisions regarding preemption, existing facilities, and criteria for setting standards, which are repeated in this bill from the existing act were not changed, because the meanings are clear from 10 years of interpretation, and their implementation has been satisfactory.

Does this partially satisfy your concern?

Ms. ROBERTSON. Not at all. I do not happen to like the existing act. I do not think it is specific enough.

Senator FORD. It has been wrong for 10 years?

Ms. ROBERTSON. Only in the sense that it fails to address changing technology. We have not been dealing with enormous LNG import facilities for the past 10 years.

I guess I am particularly concerned about these liquefied natural gas facilities. I do not think there are specific enough requirements, as set out in S. 411, as how these should be sited.

Senator FORD. What kind of bill did the House have before this started?

Ms. ROBERTSON. Well, last year the House bill was fairly similar to what they have introduced this year, and it's quite different from your bill. They really do set out very strict requirements for siting. There are different sets of requirements for what the Secretary must consider in siting, construction, operation standards. I think it is far more specific and would result in better decisionmaking in terms of setting up standards for siting, construction, and operation of these facilities. I prefer it over the language in S. 411.

Senator FORD. The National Association of Regulatory Utility Commissioners has praised the Natural Gas Pipeline Safety Act, which contains the same preemption provision as S. 411, as a model of State-Federal coordination.

Does this satisfy any of your concerns?

Ms. ROBERTSON. I am sorry. Who endorsed this? I missed that.

Senator FORD. The National Association of Regulatory Utility Commissioners. They praised it as a model of State-Federal coordination.

Ms. ROBERTSON. Well, let me just say that I have worked quite closely with quite a few States such as California, Massachusetts, Maryland, et cetera, and they all have been very opposed to the language that was in the House bill, which preempted their ability to impose more stringent standards.

I support the States' views on preemption. If they want to impose more stringent standards on these facilities, they should have the right to do so. And the fact that the National Association of Utility Commissioners has said it is OK seems to go against what the State governments—

Senator FORD. These commissioners come in two categories, and they all represent States. They are either elected or appointed. And they ought to be relaying the sentiments of their States.

Ms. ROBERTSON. Well, one would think so. But as you know, that does not necessarily happen in the Federal Government, and it does not always happen in State government.

Senator FORD. Better change the criteria.

Now, S. 411, the Department of Transportation has come up with specific regulations. What do you think of the regulations?

Ms. ROBERTSON. What do I think of the regulations?

Senator FORD. LNG regulations.

Ms. ROBERTSON. I have not had time to sit down and carefully review those regulations, due to other work responsibilities, and as a result I do not feel qualified to comment on them at this time.

Senator FORD. Did I understand you to say that if the ground had been broken and everything was going, under present regulation, that those facilities should not be altered or halted?

Ms. ROBERTSON. If actual construction of facilities has begun and this act were passed and new standards, new regulations, were promulgated as a result of it, I do not think it is particularly fair to require the industry to suddenly comply with new construction standards. It might throw off their entire schedule.

However, I do think it is fair to require them to comply with operations standards, for example. The question, of course, is what is actual construction. That opens up a whole Pandora's box.

But I think that the definition of "existing facilities" in the current bill is so vague that there really is no assurance one way or another.

Senator FORD. Apparently you like the House bill pretty well. Would you suggest that we use the same language in the Senate bill as in the House bill?

Ms. ROBERTSON. Well, as stated in my testimony, I do not agree with the definition of "existing facilities" currently in the House bill. I will be happy to submit the same amendment to you that I have submitted to Members of the House with regard to how I would like to see the various categories defined.

Senator FORD. They do not accept your amendment?

Ms. ROBERTSON. They have not had a markup yet in the full Commerce Committee. The subcommittee has.

Senator FORD. That is about all I have. I am sorry to keep you waiting, but I had no control over it. You have been mighty nice and I appreciate it very much.

Ms. ROBERTSON. Thank you, Mr. Chairman.

Senator FORD. The next witness is Paul Rodgers, administrative director and general counsel, National Association of Regulatory Utility Commissioners.

If you have a summary of your testimony, we would be glad to take that, and be assured that your full statement will be entered in the record.

STATEMENT OF PAUL RODGERS, ADMINISTRATIVE DIRECTOR AND GENERAL COUNSEL, NATIONAL ASSOCIATION OF REGU- LATORY UTILITY COMMISSIONERS

Mr. RODGERS. Thank you, Mr. Chairman.

We realize the hour is late this morning. Since we have filed a statement, we will summarize our remarks briefly.

We certainly are indebted to you, Senator Ford, for already summarizing the position of NARUC.

With respect to the Natural Gas Pipeline Safety Act of 1968, we think it has been one of the most effective programs that we have ever had experience with in working with the Federal Government. Of course, there is always room for improving and adding to the key points in this legislation. We want to underscore that we believe it is very important to preserve the Technical Pipeline Safety Standards Committee, I believe this position coincides with your thinking.

We have read the justification which appeared in the Congressional Record about the shortcomings of the committee from the standpoint of DOT, but we wish to point out it is DOT that selects the entire membership. If they are not satisfied with their selection then they should do a better job in the future.

But we think it is important to have an input from the industry, from consumers, and from State regulators, in order to assess the practicality of these standards. We believe it is working out very well, and it has been very successful.

Now, as a followup to what the preceding witness said, we would like to maintain the states ability to adopt more stringent standards. We have taken that position over the years with respect to interstate facilities.

Now, under the existing Natural Gas Pipeline Safety Act and under this bill before us, the States clearly have the authority to adopt more stringent standards with respect to distribution systems and other systems under State economic regulation. We think it would certainly strengthen the national safety picture if the States could adopt more stringent standards over interstate facilities, and also with respect to liquid pipelines.

There could be a caveat providing that the State standards would not create an undue burden on interstate commerce for the States to play a larger role. The States standard could be cut down if it went too far and became a real burden. As a historical example, there was a fight between the New York Commission and DOT several years ago regarding odorization requirements. DOT gave in to the New York PSC, which avoided conflict. So we would like for the committee to consider that as well.

With respect to part I, we feel that the funding provisions are a bit thin for fiscal year 1980. It authorizes \$2,820,000; we feel that the authorization should be at least \$3.5 million in order to reflect the cost increase due to the rate of inflation.

Financial aid from the Federal Government has been very meager under this program for its entire existence. But I think that one of the benefits of the program is that it requires the matching of State funds; at least 50 percent of State funds must be put into the program. I think this has been a very good investment for the Federal Government. It is certainly one of the most cost effective programs that the Government has going.

For that reason we think the grant-in-aid program should also be applied to the liquid pipeline program under title II. We think that a modest program of grants-in-aid for title II pipeline safety would be very beneficial and money well spent, judging by the experience we have had with the Natural Gas Pipeline Safety Act.

We have attached, as an appendix to our statement, a list of State commissions which now regulate intrastate liquid pipelines. We are not in a position to go around giving away State jurisdiction. However, if the Congress intends to bring intrastate pipelines into State jurisdiction, then we think that should be done in analogous procedures, as proposed in title II.

Also, we think that with respect to the interstate system, liquid pipeline systems being brought under the jurisdiction of DOT pursuant to this legislation, is certainly a positive step forward.

Now, there is one addition that could be strengthened, and that is to permit the States to act as agents for DOT and assisting in enforcement of interstate facilities safety standards. We now have this provision in the gas pipeline safety field, where it is successful. We also think that the program makes a lot of sense in the use of personnel.

I believe, Senator Ford, this pretty much covers the highlights of our testimony, of course, which is much more extensive in the statement submitted for the record.

Senator FORD. I do have two or three questions that I would like to ask.

In your testimony you said that a grant aid program should be established under title II to help pay for State programs.

Mr. RODGERS. Yes, sir.

Senator FORD. But as you pointed out, 21 States already have liquid pipeline programs. The Department of Transportation thinks that these states will participate in the Federal program even without Federal funding, rather than give up their authority over intrastate pipelines to DOT.

How would you respond to the Department's argument?

Mr. RODGERS. Well, I would think that States would certainly recognize the role, and would participate. I also think, however, that the State programs would be stronger with some Federal money. As you can see, we are only talking about \$3 million a year for gas pipeline safety.

I think that kind of money, although very small, would certainly help. I think the States would certainly do what they could to protect the public safety.

Nevertheless, I think a grant-in-aid program would certainly help. We are not talking about big money.

Senator FORD. You State also that the authorization request for the grant-in-aid program is insufficient.

Mr. RODGERS. For gas pipeline safety, yes. We think it should be increased by about 8 percent, the current estimated rate of inflation for fiscal 1980, according to a recent White House prediction.

Senator FORD. You think this could jeopardize existing State programs? The States make up the difference?

Mr. RODGERS. Well, the States have to make up the difference. But \$2.8 million is what we got last time, and I think with inflation what it is today, it should at least reflect the increase brought about by inflation.

Senator FORD. Well, you know, most States have a surplus. The Federal Government has a deficit. I can assure you that the majority of States have surpluses, and 8 percent of a State's funds would not probably damage them too much.

Mr. RODGERS. No, sir. I think we could live with it. But we are talking about a very modest program.

Senator FORD. We swallow a camel and choke on a gnat sometimes. I hope you stop that and reverse that.

Mr. RODGERS. I am talking about a gnat here.

Senator FORD. I understand. But we are choking on that gnat.

But I am talking about most of the States generally have a surplus. We send \$87 billion back to the States now, and the expenditures of funds is going to be a focal point with the States with a surplus and the Federal Government in deficit. There is going to be some argument.

You raised a question, and I want to raise a flag for you.

Mr. RODGERS. Now, one thing, even though I realize Congress is in a very economizing mood—

Senator FORD. The country is.

Mr. RODGERS. Congress reflects the country.

Senator FORD. I hope so.

Mr. RODGERS. Even though this is a rather lean time financially, we would like to see the grant-in-aid program put into title II for liquid pipe safety, even though the authorization might be low, so that the mechanism would be in place for that funding later on.

Senator FORD. You are talking about the authority when we do get the money?

Mr. RODGERS. Yes, sir. What we are talking about is putting a legislative grant aid program for liquid pipeline safety under title II, even though the authorization would be low, because that would give Congress the opportunity to later on utilize that vehicle, if it felt that some input of Federal money would strengthen the program.

Senator FORD. Mr. Rodgers, you endorsed the technical pipeline safety standards committee.

Mr. RODGERS. Yes, sir.

Senator FORD. Can you cite examples of where DOT's regulations have been improved by the existence of this committee?

Mr. RODGERS. Well, we filed detailed testimony last year, and we can give you a copy of that, in which we went through the minutes. It is a subjective-type of exercise, but I think—having the DOT people—all of this should be cost effective, having the DOT people, having a group of experts. I think the give and take, you know, is bound to be beneficial, instead of DOT just sitting behind closed doors and coming up with these regulations.

So I think the regulations are more practical. And of course, this committee is strictly an advisory committee. It has no mandatory role whatsoever.

Senator FORD. If the Secretary does not accept the recommendations from the advisory committee, he must set out the reasons for each of those areas in which he disagrees?

Mr. RODGERS. Yes. I think that is reasonable.

Senator FORD. Well, it still has some authority. If he disagrees with them, he is put on the line as to why he disagrees and why he does not accept their recommendation. I think that is correct.

Mr. RODGERS. Well, that is correct. I think that is a very fair requirement, sir.

Senator FORD. You suggested that the States take over the responsibility from the Federal Government in this area and supervise and have the ability for surveillance of how liquid pipelines work.

You are saying that the States would do the work for the Department of Transportation, because you would be on site and have the expertise there. That would eliminate their hiring and doing all that good stuff?

Mr. RODGERS. It would be a supplement of what you have in the natural gas pipeline safety field over the distribution companies and interstate transmission. State people are already out there in the field. The Office of Pipeline Safety designated these State people as their agents to assist them in enforcing safety standards for interstate transmission facilities. So if State people out in the field find a defect in a section of an interstate transmission facility under DOT jurisdiction, those State personnel could perform as agents of DOT in order to report that violation to DOT.

Now, it seems to me that the Federal responsibility is still in place. There is still a Federal program, but they can use State people. We think that agency relationship should be carried over in the case of liquid pipelines.

Senator FORD. I do not see anything wrong with that.

Mr. RODGERS. I do not, either.

Senator FORD. We agree on that. We do not see anything wrong. Other people may disagree.

Mr. RODGERS. That just shows they are wrong and we are right!

Senator FORD. Well, we can prove that. Some day somebody is going to make us prove it.

I appreciate your testimony today. I think we also have a copy of your news release.

Mr. RODGERS. Sir, we would also like to insert a statement into the record which commends certain key figures in the Office of Pipeline Safety for the good job they have done in administering the program. It is a resolution adopted in our national convention last November.

Senator FORD. It will be inserted in the record.

Mr. RODGERS. Thank you very much.

Senator FORD. Thank you, and we appreciate your efforts to help us.

[The statement follows:]

STATEMENT OF THE NATIONAL ASSOCIATION OF REGULATORY UTILITY
COMMISSIONERS

Mr. Chairman and members of the committee, my name is Paul Rodgers. I am Administrative Director and General Counsel for the National Association of Regulatory Utility Commissioners, commonly known as the "NARUC." I am accompanied today by Margo L. James, NARUC Director of Congressional Relations.

The NARUC is a quasi-governmental, nonprofit organization. Our members include regulatory bodies of the fifty States, the District of Columbia, Puerto Rico, and the Virgin Islands. The mission of the NARUC is to improve the quality and effectiveness of public regulation for the benefit of the American public.

The members of the NARUC appreciate your invitation to make their views known on the gas pipeline safety program administered by the Department of Transportation (DOT) and on S. 411, a bill proposing the "Pipeline Safety Act of 1979".

We welcome this opportunity to comment on the outstanding record of successful State participation under the Natural Gas Pipeline Safety Act of 1968, as amended (Act). This Act, as you well know, establishes a Federal program to improve natural gas pipeline safety. In achieving this important public goal, heavy reliance is placed on State participation.

Mr. Chairman, I had the great privilege to appear before this Committee in February of last year to comment on the Department of Transportation's success in meeting the congressional expectations that led to passage of this Act and on S. 1895, a bill proposing to amend the Natural Gas Pipeline Safety Act of 1968 to authorize appropriations for fiscal 1979. (1978 Report of the General Counsel on Congressional Legislation, 90th NARUC Annual Convention, pp. 160-162.) I am happy to say that the opinions I expressed at that time remain valid.

The NARUC still considers the Act, and the program established by its authority, to be a model for Federal-State cooperation. The success of this program, we believe, can be pointed to with pride as a shining example of what can be accomplished when jurisdictional disputes are set aside.

The Federal gas pipeline safety effort is not a partnership with participating States in name only. State personnel are not merely directed by Federal officials but are included in the planning stages, consulted regularly, and listened to.

The Act gives State governments the ability to voluntarily assume the responsibility for enforcing the gas pipeline safety standards. To assist the State agencies in fulfilling these responsibilities, Section 5(c) of the Act authorizes a grants-in-aid program to provide up to 50 percent of the program costs incurred by the States.

During 1978 all but one of the States,¹ the District of Columbia, and Puerto Rico were involved in enforcing natural gas pipeline safety standards under the Act, 48 by certification and 4 by agreement.² This represents an increase of two State agencies participating by certification from 1977 to 1978. (State participation in this

¹ The Alaska Public Service Commission withdrew from the program as of January 1, 1978.

² Delaware, Massachusetts, Nebraska, and New Jersey participated by agreement. Florida has two agencies (Fire Marshal and Public Service Commission) participating by certification.

program can be either by agreement or certification. Certification represents a more comprehensive and involved commitment of the State agency.)

Because of our membership's sustained and serious involvement in this program, we follow with great interest the various congressional proposals introduced which could affect it. S. 411, a Carter Administration bill, contains measures of great importance to the State regulatory commissions: Title I amending the Natural Gas Pipeline Safety Act of 1968, as amended, and Title II proposing new law for the safety regulation of hazardous liquid pipeline transportation.

The NARUC heartily endorses the basic thrust of this legislation, but would like to make specific comments on sections which we feel could be improved in order to strengthen and maintain the State commission role in these programs. (Specific NARUC recommendations, including suggested language, for amendment of the bill are set out in Appendix A.)

Title I proposes the "Natural Gas Pipeline Safety Act Amendments of 1979". According to the Department of Transportation, Title I is designed to clarify and update existing provisions of the Act, to authorize appropriations for fiscal 1980 and 1981, and to provide needed improvements in the Department's ability to assure that gas pipeline facilities are constructed and operated in a manner that minimizes the risks to life and property.

These goals are laudable, it is true, but the Department has also discarded certain language and institutions which we believe have withstood the test of time.

First, while we are pleased that Section 105 of the bill preserves the right of State agencies to adopt additional or more stringent safety standards for intrastate pipelines, we see no purpose in omitting the clarifying word "minimum" when referring to the Federal standards. Such omission may lead to confusion in the future between the relationship of the Federal and State safety standards. We thus respectfully recommend that the phrase "Federal minimum standards" be kept in any rewrite of Section 3, in order to preserve the clearly understood relationship between the Federal and State standards.

Mr. Chairman, we note with dismay that Section 106 of the bill would do away with the Technical Pipeline Safety Standards Committee established by Section 4 of the Act. I find this proposal hard to understand, since the committee has been one of the most effective and responsible advisory committees existing under Federal law.

In this testimony I merely want to "hit the highlights" of the benefits obtained through the convening of this committee. However, a very detailed account of its accomplishments can be found in testimony we delivered in 1977 before the Senate Committee on Governmental Affairs, Subcommittee on Reports, Accounting and Management (1977 Report of the General Counsel on Congressional Legislation, 89th NARUC Annual Convention, pp. 179-185).

The creation of the Technical Pipeline Safety Standards Committee was an integral part of the Natural Gas Pipeline Safety Act of 1968. The success of the gas pipeline safety effort to date, however, in no way justifies the elimination of this committee. In NARUC's estimation, the committee is symbolic of, and will continue to assist in the development of, the program's Federal-State partnership. It provides a forum where experts from both sides can head off program disruptions, resolve existing or potential conflicts, and bring their practical knowledge to bear on otherwise theoretical discussions.

Yet DOT would do away with this committee, with the only reason centering around DOT's concern that the committee permits certain industry representatives to have an advantage in shaping DOT regulations! Mr. Chairman, while it is true that industry representatives serve on the committee, they comprise only 4 of the 15 members, and are chosen after consultation with industry representatives. Of the other 11 members, 5 are selected from State, local and Federal agencies and 6 from the general public. Two of the five government representatives are State commissioners selected after consultation with the NARUC. The legislation very clearly requires that the members chosen shall be experienced in safety regulation of gas transportation and pipeline facilities or technically qualified by training and experience in related engineering fields.

I submit to you that Federal regulators derive great benefit from outside expertise. Federal agency decisions cannot be made, nor regulations written, in a vacuum. The regulatory process requires input from those in the trenches, those with the responsibility to implement the regulations, and those with the experience to head off potential problems, clarify confusing instructions, and eliminate bureaucratic tie-ups. We hope that the members of your Committee can agree with our assessment, Mr. Chairman, and retain this advisory committee as an integral part of the Act.

The members of the NARUC are also quite concerned about Section 108(b) of S. 411, which would amend Section 6—Judicial Review to authorize Federal court review of standards as well as orders issued under the Act. Since gas pipeline standards promulgated by States are not excepted by Section 108(b), it would appear that Federal courts would have jurisdiction over these standards as well. This would lead to a very undesirable result from the State regulatory perspective, since we believe State safety standards, which under the Act can apply only to intrastate pipeline facilities, should be subject to review in State, not Federal, courts. We thus suggest that the jurisdictional language be amended to read “standard or order issued by the Secretary under this chapter” (amendments underlined), if the Committee decides to retain this amendment of Section 6.

Our final comment on Title I concerns the level of funding to be authorized in Section 110 for Federal grants-in-aid to the States. While DOT asks for “such sums as may be necessary” for fiscal 1981, only \$2,820,000 is requested for fiscal 1980—the same amount appropriated for fiscal 1979. We do not believe this amount will be sufficient to adequately fund this program, Mr. Chairman, since it does not take into account increased costs due to inflation. We thus believe that the authorization and appropriation for fiscal 1980 should be \$3.05 million, in order to reflect the projected rate of inflation (recently estimated at 8 percent) during this period.

We recently testified before the House Appropriations Subcommittee on Transportation concerning this very same issue, Mr. Chairman. (NARUC Bulletin No. 15-1979, pp. 20-26, 9.) During this testimony we pointed out that under the Act if a State agency does not assume safety responsibility for gas facilities within its State, the Federal government automatically retains the responsibility, and must bear 100 percent of the costs, for enforcement. Consequently, without State participation in fiscal 1980, it would require at least twice the funds appropriated under the grants-in-aid program to achieve an equivalent National enforcement program. In our opinion the \$3.05 million figure we request is a very good Federal investment.

In fiscal 1979, 47 State agencies will receive Federal financial assistance in the amount of \$2,913,720 to carry out their responsibilities under the Act. A State-by-State breakdown of these grants is provided in Appendix B. The dollar amount requested for fiscal 1980 by DOT is thus a reduction, by \$93,720, of the amount it distributed in 1979, Mr. Chairman. Since State expenditures are expected to rise in fiscal 1980, this reduction in authorization does not make sense.

State participation is not a free ride, Mr. Chairman. It requires a hard and fast, dollar and cent commitment to gas pipeline safety. While final figures are not yet available, expenditures for the 47 State agencies in the grant program in 1978 rose to an estimated \$6.7 million. When the estimates for the six agencies not participating in the grant program are added in, the approximate State expenditure rises to \$7.13 million. This extra money will be put to good use by the States, Mr. Chairman.

Title II of S. 411 proposes the “Hazardous Liquid Pipeline Safety Act of 1979”, which would establish a safety program very similar to that for natural gas pipelines. The NARUC has advocated the establishment of such a program since 1972 (Appendix C). The safety considerations associated with the transportation of hazardous liquids by pipeline would, we believe, lend themselves well to this type of Federal-State cooperative program. We are pleased that this proposal is now being given legislative consideration.

To provide a little background on what the States are doing, Mr. Chairman, I would like to cite you some figures. In 1977, the last year for which data is available, 21 States and Puerto Rico were involved in the regulation of petroleum pipeline companies, one of the industries which would be affected by this legislation. A list of these States and the number of regulated companies per State is found at Appendix D.

Although we strongly support the establishment of this type of program for hazardous liquids, Mr. Chairman, as you might expect we do have some suggestions for improvement to Title II. We believe the changes we recommend will help insure an active commitment by the States in this proposed program.

Our first recommendation or amendment concerns language in Section 204, Regulations Governing Transportation of Hazardous Liquids and Pipeline Facilities. For the same reasons we set out in our discussion of Title I, possible confusion regarding the relationship of the Federal and State safety standards, we recommend that “minimum” be included in the language referring to Federal standards. This will ensure that the States are free to adopt standards over and above those established by DOT, in order to respond effectively to local needs and conditions.

We notice with some concern that Title II completely omits any Federal grant-in-aid program to assist the States in carrying out hazardous liquid safety activities. In our opinion, this is a very serious omission. If States are to be asked to get involved

in a Federal program, and to help carry out Federal responsibilities, we believe some of the funding for this State effort should come from the Federal government. Indeed, the DOT section-by-section analysis acknowledges that the States can "effectively assist the Department in carrying out its hazardous liquid pipeline safety responsibilities".³ We have set out in Appendix A language to establish such a grant program as well as language to authorize appropriations for it.

Lastly, in Section 206, Judicial Review of Standards and Orders, we would recommend it be amended to make perfectly clear that the only Federal court jurisdiction this section authorizes would be over standards and orders issued by DOT, not those issued by the States. The reasons are outlined in our discussion of Title I.

CONCLUSION

I appreciate this opportunity to discuss with the Committee these very important safety programs. We look forward to continuation of the solid working relationship between the States and DOT in the gas pipeline safety area, and also to the development of such a relationship in the hazardous liquids transportation area as well.

Thank you for your attention.

APPENDIX

NARUC PROPOSED AMENDMENTS TO S. 411, A BILL PROPOSING THE "PIPELINE SAFETY ACT OF 1979"

1. Amend Section 105, Standards, by inserting "minimum" immediately after the word "Federal" on p. 3, line 18 and on p. 5, line 4.
2. Strike Section 106, Advisory Committee.
3. Amend Section 108(b), Enforcement Powers, p. 13, line 21 by inserting the following immediately before the word "and": ", by inserting the words 'by the Secretary' immediately before the word 'under' in subsection (a)'.
4. Amend Section 110, Appropriations Authorization, p. 16, line 13, by inserting "3,050,000" in lieu of "2,820,000".
5. Strike Section 111(c).
6. Amend Section 204, Regulations Governing Transportation of Hazardous Liquids and Pipeline Facilities, by inserting "minimum" immediately after the word "Federal" on p. 19, line 13 and on p. 20, line 24.
7. Amend Section 205, State Certifications and Agreements, by inserting a new subsection (g) to read as follows:
 "(g)(1) Except as otherwise provided in this section, if an application is submitted not later than September 30 in any calendar year, the Secretary shall pay out of funds appropriated or otherwise made available up to 50 per centum of the cost of the personnel, equipment, and activities of a State agency reasonably required, during the following calendar year to carry out a safety program under a certification under subsection (a) or an agreement under subsection (b) of this section; or to act as agent of the Secretary with respect to interstate pipeline facilities. The Secretary may, after notice and consultation with a State agency, withhold all or any part of the funds for a particular State agency if he determines that such State agency (A) is not satisfactorily carrying out a safety program under a certification under subsection (a) or an agreement under subsection (b) of this section, or (B) is not satisfactorily acting as agent of the Secretary with respect to interstate pipeline facilities. No such payment may be made unless the State agency making application under this subsection gives assurances satisfactory to the Secretary that the State agency will provide the remaining cost of such a safety program and that the aggregate expenditures of funds of the State, exclusive of Federal grants, for hazardous liquids safety programs will be maintained at a level which does not fall below the average level of such expenditures for the last two fiscal years preceding the date of enactment of this section.
 "(2) Funds authorized to be appropriated by section 218 of this title shall be allocated among the several States for payments to aid in the conduct of hazardous liquids safety programs in accordance with paragraph (1) of this subsection.
 "(3) Payments under this section may be made in installments, in advance or by way of reimbursement, with necessary adjustments on account of overpayments and underpayments.
 "(4) The Secretary may, by regulation, provide for the form and manner of filing of applications under this section, and for such reporting and fiscal procedures as he deems necessary to assure the proper accounting for Federal funds."

³ Congressional Record—Senate, February 9, 1979, p. S1438, § 205.

8. Amend Section 206, Judicial Review of Standards and Orders, p. 27, line 5 by inserting "by the Secretary" immediately before the word "under".

9. Amend Section 214, Citizens Civil Action, p. 40, line 5 by inserting "minimum" immediately before the word "safety".

10. Add a new Section 218 to read as follows:

"APPROPRIATIONS AUTHORIZATION

"SEC. 218. There are authorized to be appropriated such funds as may be necessary for the fiscal years ending September 30, 1980, and September 30, 1981, for the purpose of carrying out the Federal grants-in-aid provisions of section 205(g) of this title."

APPENDIX B

ESTIMATED ALLOCATION FOR FISCAL YEARS 1979 AND 1980 FEDERAL FINANCIAL ASSISTANCE FUNDS FOR
NATURAL GAS PIPELINE SAFETY PROGRAMS¹

State ²	1979	1980
Alabama	\$173,695	168,000
Arizona	23,745	23,000
Arkansas	67,825	66,000
California	130,030	126,000
Colorado	35,914	35,000
Connecticut	38,650	37,000
Delaware	6,543	6,000
Florida (fire marshal)	39,533	38,000
Georgia	79,250	77,000
Hawaii	12,500	12,000
Idaho	12,872	12,000
Illinois	117,075	113,000
Indiana	58,742	57,000
Iowa	35,022	34,000
Kansas	42,150	41,000
Kentucky	118,519	115,000
Louisiana	140,385	136,000
Maine	12,431	12,000
Maryland	17,992	17,000
Massachusetts	43,618	42,000
Michigan	126,230	122,000
Minnesota	44,690	43,000
Mississippi	69,279	67,000
Missouri	53,646	52,000
Montana	20,458	20,000
Nebraska	45,071	44,000
Nevada	19,582	19,000
New Hampshire	8,201	8,000
New Jersey	79,702	77,000
New York	359,685	348,000
North Carolina	77,570	75,000
North Dakota	9,225	9,000
Ohio	72,589	70,000
Oregon	54,675	53,000
Pennsylvania	100,771	98,000
Rhode Island	64,794	63,000
South Dakota	20,582	20,000
Tennessee	109,379	106,000
Utah	22,303	22,000
Vermont	16,893	16,000
Virginia	41,200	40,000
Washington	35,863	35,000
West Virginia	76,900	74,000

ESTIMATED ALLOCATION FOR FISCAL YEARS 1979 AND 1980 FEDERAL FINANCIAL ASSISTANCE FUNDS FOR
NATURAL GAS PIPELINE SAFETY PROGRAMS¹—Continued

State ²	1979	1980
Wisconsin	61,145	59,000
Wyoming	54,712	53,000
District of Columbia.....	40,250	39,000
Puerto Rico.....	21,834	21,000
Total	³ 2,913,720	2,820,000

¹ Fiscal year 1980 budget justification of the Department of Transportation hearings before the Subcommittee on Department of Transportation and Related Agencies, Committee on Appropriations, U.S. House of Representatives, 96th Congress, 1st session, p. 554.

² State agencies in the program but not applying for Federal grants-in-aid include Florida Public Service Commission, New Mexico, Oklahoma, South Carolina, and Texas.

³ Includes \$93,720 of fiscal year 1978 carryover.

APPENDIX C

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS,
Washington, D.C., October 19, 1972.

HON. WARREN G. MAGNUSON,
*Chairman, Committee on Commerce,
U.S. Senate, Washington, D.C.*

DEAR SENATOR MAGNUSON: Section 5 of the above Act, approved August 22, 1972, directs the Secretary of Transportation to consult with the cooperating State agencies and the National Association of Regulatory Utility Commissioners (NARUC) in preparing a report on Federal-State cooperation under the program established by the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C.A., Sec. 1671, et seq.). The report is to be submitted to the President for transmittal to the Congress on March 17, 1973.

Section 6 of Public Law 92-401 permits the Secretary of Transportation to transfer the liquid pipeline safety function from the Federal Railroad Administration to the Office of Pipeline Safety within the Department of Transportation. This will result in having interstate gas and liquid pipeline safety regulated by the same organizational unit of the Department.

Although the Department's statutory authority¹ is presently limited to safety regulation of interstate liquid pipelines, we believe it would be very helpful to the Congress to obtain current information on State interest and action in the safety regulation of liquid pipelines and on the desirability of a Federal-State cooperative liquid pipeline safety program comparable to the one covering gas pipeline safety.²

Obviously, State participation in the national liquid pipeline safety program would significantly strengthen it and would permit the Congress to maintain such an intensified program for far less than what it would otherwise cost for the Federal Government to assume the entire financial burden.

Federal staffing problems in the enforcement field are chronic and of longstanding duration. Accordingly, the public interest clearly requires that the Federal staff be supplemented by all available State inspectors as an integral part of a national liquid pipeline safety program.

Accordingly, we respectfully urge you to request the Secretary of Transportation to broaden the scope of the study directed by Section 5 of Public Law 92-401 to include both liquid and gas pipeline safety regulation.

With warm personal regards and best wishes, I am

Sincerely yours,

FRANCIS RIORDAN, *President.*

¹ 18 U.S.C., secs. 831-835, as amended by 49 U.S.C., sec. 1655(f)(3)(A), and Public Law 92-401, sec. 6.

² The Secretary of Transportation is presently authorized to "make such studies" and "obtain such information" as are needed to assist him in administering the liquid pipeline safety program. 18 U.S.C., sec. 835(b).

APPENDIX D

Petroleum pipeline companies under State jurisdiction¹

Alaska	16	Montana.....	10
Arkansas.....	(²)	New Hampshire	1
California.....	(²)	New Jersey.....	3
Colorado.....	3	New York.....	13
Connecticut.....	1	North Dakota.....	2
Delaware.....	1	Ohio.....	6
Idaho.....	1	Pennsylvania.....	7
Illinois.....	20	Puerto Rico.....	1
Iowa.....	10	Virginia.....	1
Kansas.....	14	Washington.....	1
Kentucky.....	2	Wyoming.....	2
Louisiana.....	16		

¹ 1977 Annual Report on Utility and Carrier Regulation, National Association of Regulatory Utility Commissioners, pp. 389-390.

² Data not available.

RESOLUTION RECOGNIZING ROLE OF CERTAIN MEMBERS OF THE OFFICE OF PIPELINE SAFETY OPERATIONS IN FOSTERING FEDERAL-STATE COOPERATION

Whereas, The Natural Gas Pipeline Safety Act of 1968 provides for an important State role in the over-all program for Federal regulation of gas pipeline safety; and

Whereas, Due to encouragement and guidance by men of vision in the Office of Pipeline Safety Operations, United States Department of Transportation, State participation is an acknowledged and integral part of Federal pipeline safety programs; and

Whereas, The success of this Federal-State cooperative effort rests in large measure on William C. Jennings, the First Director of the Office of Pipeline Safety Operations, who used his vast experience and good judgment to devise a highly successful prototype for Federal-State regulatory relations; on Walter Kurylo, former Chief of the State Programs Division, Office of Pipeline Safety Operations, who commenced, through hard work and dedication, the process of implementing the Federal-State safety program; and on James G. Abbee, as Chief, State Programs Division, Office of Pipeline Safety Operations, who, through persuasive leadership, optimism, and development of a new atmosphere of teamwork and cooperation, has encouraged an unprecedented 100 percent voluntary State participation in the gas pipeline safety program; now, therefore, be it

Resolved, That the National Association of Regulatory Utility Commissioners, assembled in its Ninetieth Annual Convention in Las Vegas, Nevada, hereby expresses deep appreciation for the work of William C. Jennings, Walter Kurylo [posthumously], and James G. Abbee, whose combined efforts have developed and promoted an outstanding model of Federal-State regulatory cooperation and have fostered increased understanding and improved relations between the Federal and State regulators; and be it further

Resolved, That the Association submit duly attested copies of this Resolution to the Members of the Committee on Interstate and Foreign Commerce, United States House of Representatives; the Members of the Committee on Commerce, Science, and Transportation, United States Senate; the Honorable Brock Adams, Secretary of Transportation; Mr. William C. Jennings; Mrs. Walter Kurylo; and Mr. James G. Abbee.

Sponsored by the Wyoming Public Service Commission.

Adopted November 16, 1978.

Reported NARUC Bulletin No. 50-1978, pp. 25-26.

Senator FORD. The final witness is Keith McKinney, president, Western LNG Terminal Associates, Los Angeles, Calif.

STATEMENT OF KEITH C. MCKINNEY, PRESIDENT, WESTERN LNG TERMINAL ASSOCIATES; ACCOMPANIED BY KENNETH DORKING, VICE PRESIDENT AND GENERAL MANAGER, PACIFIC GAS & ELECTRIC CO., LNG SUBSIDIARIES

Mr. MCKINNEY. Thank you very much, Mr. Chairman.

In addition to my appearance here today, on my left is Mr. Kenneth Dorking, who is vice president and general manager of the LNG subsidiaries of Pacific Gas & Electric Co. of San Francisco, which is one of the parents of the partnership that I represent. The other partner is—comes from a subsidiary of Pacific Lighting Corp. of Los Angeles, who's chief subsidiary is the Southern California Gas Co.

P.G. & E. and Southern California Gas Co. between them provide natural gas to nearly 22 million people, approximately 15 percent of our Nation's gas consumers.

I appeared before this committee last December to address the current regulatory climate and give our suggestions as to what effective legislation in the LNG area should achieve. One of our foremost concerns was and is that such legislation should avoid adding to the present complexities and inefficiencies of the system.

Congress is becoming increasingly aware of the delays which all major energy projects encounter and has passed legislation to expedite the trans-Alaskan oil pipeline, the Alaska highway pipeline project and is currently considering legislation to affect overall regulatory reform. President Carter has recently issued an Executive order directing his Office of Management and Budget to compile a list of crucial energy projects and take steps to see they are approved in a timely manner. We expect our LNG projects will be included in that list.

As I stated in December, we have applications pending before both the Economic Regulatory Administration and the Federal Energy Regulatory Commission which would result in the importation of LNG from Indonesia and south Alaska. These two projects are expected to provide approximately 20 percent of California's gas supply well into the next century.

Back in 1974, we first applied to construct a facility to receive Indonesian LNG at Oxnard, Calif. After numerous proceedings at the State and Federal level were conducted to determine need and the appropriateness of the terminal location, the State of California enacted LNG siting legislation which contained a population density limit designed to maximize public safety. The legislation effectively precluded the construction of the terminal at Oxnard.

We then applied at the State and Federal levels in 1977 for approval of a qualifying terminal at Little Cojo Bay, 4 miles east of Point Conception, and drew up new plans for a facility at that remote location. The California Public Utilities Commission has approved the project and the Little Cojo Bay terminal site, with, however, 41 site-specific design and construction conditions.

On the Federal level, ERA has approved importing Indonesian LNG but has deferred the siting question pending a FERC administrative law judge's recommendation. In a final EIS the FERC staff included 64 mitigating measures to make the Little Cojo Bay site safe if it was approved by the Federal Government. We are hopeful, and in fact believe, that our quest for necessary State and Federal permit approvals will end this year.

Accompanying my prepared testimony today I have attached an exhibit which briefly sketches where we have been in gaining approval of our Indonesian LNG project. Our south Alaskan LNG project has negotiated a similar, and sometimes congruous, obstacle course.

[The information follows:]

Indonesian LNG Project-- Summary of Major Events
1972- 1975

	1972	1973	1974	1975
JAN.			INDONESIAN GOVERNMENT REFUSES TO APPROVE PACINDONESIA CONTRACT.	PACINDONESIA AND PERTAMINA AGREE TO LNG PRICING FORMULA CHANGES.
FEB.			PACINDONESIA SUPPLEMENTAL APPLICATION FILED WITH FPC.	
MAR.				REVISED LNG CONTRACT APPROVED BY INDONESIAN GOVERNMENT.
APR.				AMENDMENTS FILED WITH FPC ON LNG CONTRACT CHANGES AND OXNARD TERMINAL SITE.
MAY				FPC CONSOLIDATES WESTERN LNG AND PACINDONESIA APPLICATIONS.
JUN.	SUMMER DISCOVERY OF NATURAL GAS IN ARUN FIELD PUBLICLY ANNOUNCED.			
JUL.				
AUG.				
SEP.	LETTER OF INTENT SIGNED BY PACINDONESIA AND PERTAMINA FOR PURCHASE OF LNG.	CONTRACT SIGNED BY PACINDONESIA AND PERTAMINA TO PURCHASE LNG.	WESTERN LNG FILED APPLICATION WITH FPC FOR TERMINAL FACILITIES AT LOS ANGELES, OXNARD AND POINT CONCEPTION.	
OCT.				
NOV.		PACINDONESIA APPLICATION TO IMPORT LNG FILED WITH FPC.		
DEC.		JAPAN SIGNS LNG CONTRACT WITH PERTAMINA.		FPC HEARINGS BEGIN ON INDONESIAN PROJECT.
	1972	1973	1974	1975

Indonesian LNG Project-- Summary of Major Events

1976-1979

1976	1977	1978	1979	
SOCAL SIGNS MEMORANDUM OF UNDERSTANDING WITH PACIFIC GAS AND ELECTRIC COMPANY ON PROJECT.	INITIAL STATE LNG LEGISLATION INTRODUCED IN CALIFORNIA ASSEMBLY.	PETITIONS FOR REHEARING OF ERA DECISION FILED.	SCJNG FILED FOR CONSOLIDATION OF HEARINGS.	JAN.
	FPC HEARINGS CONCLUDE ON PAC-INDONESIA PROJECT.	ERA GRANTS REHEARING ON CERTAIN CERTAIN ISSUES.	FERC EVIDENTIARY HEARINGS COMPLETED, BRIEFING SCHEDULE ESTABLISHED.	FEB.
	CALIFORNIA ASSEMBLY SUBCOMMITTEE ON ENERGY BEGINS HEARINGS ON LNG LEGISLATION.	NEGOTIATIONS BEGIN WITH PERTAMINA ON A REVISED PRICING PROVISION.	TEMPORARY INJUNCTION ISSUED LIMITING NATIVE AMERICAN SITE ACCESS FOR STRICTLY RELIGIOUS PURPOSES.	MAR.
	PERTAMINA AGREES TO EXTEND LNG CONTRACT FOR THIRD TIME, TO OCTOBER 6, 1977.	DRAFT FEDERAL EIS ON LITTLE COJO BAY SITE ISSUED.	FERC UNANIMOUSLY DENIES SCJNG CONSOLIDATION MOTION AND REINSTATES BRIEFING SCHEDULE.	APR.
DRAFT FEDERAL ENVIRONMENTAL IMPACT STATEMENT ISSUED.	OXNARD PLANNING COMMISSION CERTIFIES THE STATE EIR IS ADEQUATE.	ERA AND FERC RESOLVE JURISDICTIONAL ISSUES.		MAY
		INDIANS ANNOUNCE RELIGIOUS SIGNIFICANCE OF SITE.		JUN.
CALIFORNIA ASSEMBLY SUBCOMMITTEE ON ENERGY BEGINS HEARINGS ON STATE'S ROLE IN SITING LNG RECEIVING TERMINALS.	FPC ADMINISTRATIVE LAW JUDGE RECOMMENDS APPROVAL OF INDONESIAN PROJECT AND OXNARD AS SITE.	RENEGOTIATED LNG PRICING PROVISION SUBMITTED TO ERA.		JUL.
		CPUC UNANIMOUSLY APPROVES TERMINAL SITE.		
	JAPAN RECEIVES FIRST SHIPMENTS OF INDONESIAN LNG FROM BADAK FACILITY.	PETITIONS FOR REHEARING OF CPUC DECISION FILED.		AUG.
	GOVERNOR BROWN SIGNS THE CALIFORNIA LNG TERMINAL SITING ACT OF 1977.	JAPAN RECEIVES FIRST SHIPMENTS OF INDONESIAN LNG FROM ARUN FACILITY.		SEP.
	DEPARTMENT OF ENERGY (DOE) CREATED.	APPLICANTS' MOTION FOR EXPEDITING PROCEDURES FILED WITH ERA AND FERC REQUESTING DECISION ON SITE LOCATION BY DECEMBER 31, 1978.		OCT.
	"KICK-OUT" DATE ON LNG CONTRACT WITH PERTAMINA PASSES. PERTAMINA FREE TO CANCEL.	ERA ISSUES OPINION NUMBER TWO, APPROVING REVISED CONTRACT PRICING PROVISION.		
	WESTERN LNG FILES APPLICATION WITH CPUC FOR INITIAL LNG RECEIVING TERMINAL AT COJO BAY NEAR POINT CONCEPTION.	FERC STAFF RELEASES FEIS.		
	ERA OF DOE BEGINS ORAL HEARINGS ON INDONESIAN LNG PROJECT.	CPUC DENIES PETITIONS FOR REHEARING.		NOV.
	CPUC BEGINS HEARINGS ON APPLICATION FOR TERMINAL.	OPPONENTS FILE WITH CALIFORNIA SUPREME COURT SEEKING REVERSAL OF CPUC SITING DECISION.		
	WESTERN LNG FILES AMENDMENT WITH ERA TO CONSTRUCT LNG RECEIVING TERMINAL AT COJO BAY SITE.	SCJNG FILES APPLICATION WITH FERC FOR DEER CANYON RECEIVING TERMINAL.		
OIL TANKER SANSINEKA EXPLODES IN LOS ANGELES HARBOR	ERA ISSUES OPINION NUMBER ONE, CONDITIONALLY APPROVING LNG FROM INDONESIA. PRICING PROVISION DISAPPROVED.	HEARINGS BEGIN AT FERC ON FEIS.		DEC.
FINAL FEDERAL EIS ISSUED.				
1976	1977	1978	1979	

Mr. McKINNEY. Your committee is now considering S. 411, which, with some minor modifications to title I, the only title I will address in my testimony, can assure that the safety of the public will be stringently protected while at the same time assuring that crucial energy projects such as ours can be completed without further delay.

My first suggestion is to modify the definition of existing facility. Our greatest concern is that S. 411 should not be a vehicle to hinder completion of energy projects that are well advanced in the regulatory process. As introduced, section 105(a), section 3(d) of the bill, recognizes that it would be impractical and unfair to apply new design and construction standards to LNG facilities that already are built and operating.

This same protection should be extended to facilities which, while not actually constructed, are so far along in the Government approval process that newly promulgated standards or approval procedures could lead to serious delays. Any delay definitely will increase our projects' costs and might even kill the projects entirely.

The costs of our projects are increasing about \$1 million for each day of delay. However, a greater concern is that additional delay could lead Indonesia to cancel its gas supply contract with us and thereby bring about the demise of this crucial energy project. Indonesia has had that right since October 1977, and both the CPUC and DOE have recognized our vulnerability to contract cancellation.

I might add, we have similar exposure with our producers in south Alaska.

We do recognize the need to construct a safe facility. This need is also recognized by the CPUC and the DOE. We are and will continue to be, subject to existing Department of Transportation safety regulations, as well as comprehensive CPUC and DOE conditions, for the design, construction and operation of LNG facilities. The fact that the terminal will be in a remote location, as mandated by the State of California, further safeguards the public.

Consequently, we suggest adding language to section 3(d) which clearly states that standards issued under this section will not apply to facilities for which an application was filed and is well into the regulatory process prior to adoption of such standards.

My second thought would be that DOT should be given clear authority to promulgate exclusive safety standards for the design and construction of new LNG facilities.

As I stated in December, DOT encompasses those Federal agencies, the Office of Pipeline Safety and the U.S. Coast Guard, whose combined authorities cover all safety aspects for LNG facilities. Therefore, not only should DOT be charged with setting safety standards with respect to new LNG facilities not currently well along in the regulatory process, but legislation should also clarify its functions by providing that such safety standards rest exclusively with DOT. This would be similar to their existing authorities for gaseous pipelines.

Industrywide, generally applicable performance standards would be the most efficient in terms of both regulatory time and cost. Acceptance by FERC staff and State regulatory bodies of DOT

standards for new LNG facilities would greatly improve the efficiency of the hearing process while still fully protecting the public interest in safety.

We, thus, urge your consideration that such standards be the sole performance safety standards for new LNG facilities yet to file applications.

My third point would be to permit DOT to certify compliance with its standards.

Of equal importance, in our view, is that section 3(c) be modified to eliminate the possibility that the DOT would be authorized to establish a licensing and permitting procedure that duplicates that of DOE. As introduced, S. 411 gives DOT a preconstruction approval authority for LNG facilities. Any formal DOT approval authority would seem to overlap the authority for formal administrative proceedings granted DOE, which is the Federal policymaking agency charged with the final approval and certification authority for LNG projects. Questions about public safety can be adequately addressed by DOT during the DOE review rather than during a duplicative DOT review.

Rather than benefiting the public, a new DOT review actually could be detrimental. The only likely result of such a review is more administrative delay. As I noted before, these delays would increase project costs and likely would scuttle the projects entirely.

In place of the provisions requiring a DOT preconstruction approval, with its implicit additional regulatory proceedings, we therefore, suggest language which requires DOT to assure compliance with applicable standards. Such a provision reserves the role of DOT in assuring the safety of LNG facilities. And, it would be congruent with the intent of Secretary of Transportation Adams, who in early February told this committee that the so-called preconstruction authority envisioned in S. 411 would "focus exclusively on whether a facility meets our generally applicable safety standards."

Another, lesser point is to certify due process for determination of hazardous pipelines. Another area of concern is the section 10(b)(1), which gives DOT authority to order corrective action on a pipeline it determines to be hazardous. We believe that any hearing conducted involving a so-called hazardous facility should be conducted "on the record." This would assure that DOT actions relating to a specific project are accorded due process procedures traditionally available to case-specific regulatory decisions.

We also believe the term "hazardous" is ambiguous. Any pipeline facility could be considered hazardous. The test should be whether that facility presents any unreasonable risk of injury. Under such a standard, DOT would weigh the practicalities of ordering any corrective actions.

Five, reinstate the Technical Safety Standards Committee. Finally, we support elimination of section 106, which would terminate the Technical Safety Standards Committee. That technical advisory committee has served DOT and the public well. The technical committee is composed of people with diverse backgrounds, from both government and industry. That committee provides DOT with feedback and expertise and contributes to the development of standards that are technically feasible, reasonable, and practical—

something which is invaluable at a time when reasonableness and cost effectiveness of agency rules are under such close public scrutiny. Last year it cost taxpayers less than \$20,000 to run this technical committee. We support continuance of the committee. We think it is a low-cost way to get a great deal of expertise.

So in conclusion, I would like to commend you for holding these hearings and thank you for this opportunity to express our views, and certainly we will answer any questions that you may have.

Senator FORD. Thank you, Mr. McKinney.

As an alternative to preconstruction approval, you suggest that DOT certify compliance with its standards. Would you elaborate on this some, how this certification would work, and how DOT would coordinate with DOE?

Mr. McKINNEY. Yes; I would like to. And in listening to some of the testimony this morning by others, I think it may be that we are focusing a little too heavily on the certification in the DOE process.

It seems to me that all that certification really amounts to, whether done by the applicant or by the agency, is certifying that they will in fact comply with existing law and regulations.

So as to the form of that particular certification, which is a precertification of intent, it might be better, from an enforcement standpoint, to have the applicant do that. But DOT's representations to sister agencies should be recognized, I think, by DOE, and accepted as sufficient that in fact those regulations will be followed.

It seems to me that, more importantly, we should provide for a proper enforcement of the regulations. At the time an application is made for a facility, or even at the time the facility itself is certified, the design is not necessarily in the stage that would let it be fully certified that each and every thing is in fact in total compliance. Some detail may not be there.

As to the facility going through the final design process and into the construction process, and from the time of the operations process, I would suggest that a procedure be followed, something along the lines presently used by the Coast Guard.

In title 46 of the Code of Federal Regulations, subchapter D, "Tank Vessels," under part 31, "Inspections and Certification," subpart 3110, and more particularly, subpart 3110-5, "Inspection of New Tank Vessels," here the Coast Guard has adopted a procedure where specified plans and specs for a new vessel are submitted to the Coast Guard and they are reviewed. They are either approved or rejected, sent back for compliance, during that design process.

By the time that process is completed—and this is an ongoing process—compliance is assured in the design. Then, in addition, during construction, upon completion of these vessels, there is inspection by Coast Guard officers to determine that it in fact has been built in accordance with the plans and specifications that have been approved.

And at that time, a certificate of inspection is issued to the vessel to certify that it is in fact in compliance.

Now, this is somewhat similar to the operation of pipeline safety standards under OPSO as they work today, and here I am only familiar with the California process. But the California Public

Utilities Commission has qualified as the agent of the State, and has been delegated Federal responsibilities under OPSO, under the National Gas Pipeline Safety Act, and here it has formulated its General Order 112(c), which incorporates all the Federal safety standards; and in the case of intrastate, has added some of its own.

And here they provide for the submittal of certain plans to the State for review prior to construction, and they also inspect the work for compliance on an ongoing basis.

In the currently pending draft regulations which CPUC has prepared under the LNG Siting Act of 1977, which are presently before the commission for decision and adoption, they have set forth a similar approach for LNG facilities in part C of those proposed safety regulations.

So I think the key is providing for enforcement, either through Federal involvement, as in the case of the Coast Guard, or in delegation to a qualified State agency.

Senator FORD. Mr. McKinney, in February, DOT issued a proposed regulation for LNG facilities under the authority of the Natural Gas Pipeline Safety Act as it now stands. Do you suggest that we exempt your projects from these regulations?

Mr. McKINNEY. Yes. The existing project that has been before the Department of Energy since 1974, we would ask that that not be submitted to new regulations, on the basis that the safety review has been extremely detailed and the conditions have been extremely detailed. And it is simply that to adopt different regulations—not necessarily more stringent, but different—could cause significant delay, we believe, in having to repeat a part of the regulatory process.

Senator FORD. The only reason you're asking for it is because it would delay the construction of your facility?

Mr. McKINNEY. That is correct.

Senator FORD. At earlier hearings, industry representatives said that newly built facilities exceed DOT's minimum safety standards. Now, if this is true of Western's proposal why are you concerned about them applying to you, other than delay?

Mr. McKINNEY. It is only the question of delay, although we have, with the present proposed rulemaking, some concerns. The Materials Transportation Bureau held an informal meeting yesterday, and there was also one going on today. But the one yesterday dealt with some areas of specific concern to us in the exclusionary areas on seismic. We believe those rules, as they now sit—which are somewhat arbitrarily fixed—would in fact preclude LNG facilities on the west coast of the United States, although, oddly enough, it may be that under certain interpretations perhaps one of the few sites that could qualify would be the Little Cojo site. That concern was shared by the USGS agency representative who was there.

So there are problems in that sense with the proposed rules. We firmly, though, believe those will be straightened up. It is just a question of delay, in the long run.

Senator FORD. If FERC and the States are precluded from addressing safety issues, would there be a need for an adjudicatory proceeding before DOT on safety matters?

Mr. McKINNEY. I see no reason for that. If compliance with regulations is in accordance with the existing law, an existing law

is in force. It seems to me that does not require an adjudicatory process.

Violation of those regulations, of course, would be a different matter.

Senator FORD. Mr. McKinney, I do not believe I have any further questions. There may be some that come to mind. If we do, I hope you would respond to the written request for answers to certain questions that might develop as we review the testimony here.

Mr. McKINNEY. We would be very pleased to do that, sir.

Senator FORD. I thank you very much, and your colleague.

And this concludes our hearing for today. We will be back again in the morning.

[Whereupon, at 12:25 p.m., the hearing was adjourned.]

PIPELINE SAFETY ACT OF 1979

THURSDAY, APRIL 26, 1979

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D.C.

The committee met at 9:45 a.m., in room 1202, Dirksen Senate Office Building, Hon. Wendell H. Ford presiding.

Senator FORD. Good morning, ladies and gentlemen.

Since I am now 10 minutes late, I will waive my opening statement.

This morning, our first witness is George H. Lawrence, president, American Gas Association, Arlington, Va.

Will you proceed, Mr. Lawrence, and acknowledge those who are with you and we will proceed.

STATEMENT OF GEORGE H. LAWRENCE, PRESIDENT, AMERICAN GAS ASSOCIATION, ARLINGTON, VA.; ACCOMPANIED BY MAX M. LEVY, VICE PRESIDENT, COLUMBIA LNG CORP.; AND JAMES WAGNER, ASSISTANT VICE PRESIDENT, BOSTON GAS CO.

Mr. LAWRENCE. Thank you, Mr. Chairman. And consistent with your timesaving techniques, we will summarize very briefly the comprehensive statement and attachments, which we would ask be incorporated and made a part of the record.

Senator FORD. We will do so.

Mr. LAWRENCE. I am accompanied today by Mr. Max Levy, vice president of Columbia LNG Corp.

On my left is Mr. Jim Wagner of Boston Gas Co. of Boston, Mass., who is assistant vice president for engineering and operations.

AGA welcomes this opportunity to comment on S. 411. Because AGA members are primarily involved in the transportation of natural gas as opposed to liquids, most of my testimony is directed toward title I of S. 411, titled the "Natural Gas Pipeline Safety Act Amendments of 1979." This title of the bill amends the NGPSA in regard to the safety of natural gas pipeline and LNG facilities.

At the outset, AGA believes no further enabling legislation on the subjects of natural gas pipeline safety and LNG is necessary. This is because of two reasons: First, the natural gas pipeline and distribution system is one of the safest transportation systems on Earth. According to the Department of Transportation, of all transportation-related deaths that occurred in 1976, less than 0.6 percent were natural gas pipeline-related.

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In light of this exemplary record, AGA believes that the existing legal and regulatory structure on natural gas pipeline safety does not need to be amended further.

The second reason is that the Secretary has much broader authority under the NGPSA than he has chosen to exercise. He could currently use this existing authority to promulgate additional rules and regulations, if they were found to be necessary.

For example, the Secretary can require persons engaged in the transportation of gas to establish and maintain such records, and make such reports as the Secretary may reasonably require (49 U.S.C. section 1681(a)).

The Secretary or his agents may enter and inspect pipeline facilities (49 U.S.C. section 1681(b)), order the removal of hazards from pipeline facilities (49 U.S.C. section 1672(b)), and punish violations of the NGPSA, or the extensive regulations promulgated thereunder, by civil penalties (49 U.S.C. section 1678).

Even private citizens can sue under the NGPSA to enjoin violations of the act, if the Federal Government is remiss in so doing (49 U.S.C. section 1686). AGA believes that the NGPSA is a strong and effective statute that has worked very well to insure high standards of pipeline safety.

Given the safety of the natural gas pipeline industry and the NGPSA's broad delegation of authority to the Secretary of Transportation, AGA maintains that title I of S. 411 is unnecessary.

Although AGA believes title I of S. 411 is unnecessary, AGA nevertheless wishes to comment on several specific provisions of this bill. Following is a brief summary of AGA's major comments and recommendations on S. 411:

PRECONSTRUCTION APPROVAL

AGA believes the Secretary already has this authority under the NGPSA, wherein all new facilities must be designed, constructed, and tested in accordance with the regulations adopted by the Secretary under 49 CFR part 192. The preconstruction authority granted by S. 411 at section 105 is vague and seems to greatly exceed even the Secretary's own stated needs. Preconstruction approval is economically and practically impossible because the design phase and construction phase are not distinct steps. In fact, design changes are frequently made during construction. Section 105 will add another layer of regulatory overlay and delay to an already long and burdensome approval process for pipeline and LNG facilities.

ABOLITION OF THE TECHNICAL PIPELINE SAFETY STANDARDS COMMITTEE

AGA strongly opposes section 106 of S. 411, which abolishes the TPSSC. The TPSSC is an invaluable source of expert input on pipeline safety regulation from the State and Federal Government, the public, and the natural gas industry. No division of the DOT has the breadth of expertise possessed by the TPSSC.

The TPSSC has been very effective in advising DOT on proposed rules and provides a unique, collegial atmosphere in which proposed regulations can be debated and modified to effect the purposes of the NGPSA.

Therefore, the TPSSC should be retained.

GRANDFATHERING OF EXISTING FACILITIES

S. 411 provides that facilities in existence on the date a new standard is issued under section 105 would be exempt from the new standard.

In the case of pipeline and LNG facilities, AGA believes the definition of "in existence" should include not only those facilities in place, but also those facilities for which extensive design and engineering planning has been completed or for which applications for approval have been filed at the State or Federal level by the date of enactment of S. 411.

DISCOVERY POWERS

The broad discovery powers sought by the Secretary in section 109 would enable him to secure and test pipeline segments involved in accidents. The company owning the pipe might consequently lose the opportunity to conduct its own tests and thereby develop a defense to allegations of negligence or malfeasance.

This is especially troublesome since DOT's testing might destroy the segments of pipe it obtains through section 109. AGA recommends that this grant of authority should be modified to allow the owner of a pipeline involved in an accident to retain the affected pipe segments or other equipment involved in the accident to conduct the necessary tests, with DOT authorized to assign qualified staff to monitor the testing procedures and report back the results.

CONSIDERATION OF HAZARDOUS LIQUIDS IN LEGISLATION SEPARATE FROM THE NGPSA

AGA supports the division of S. 411 into two titles, with natural gas and LNG in title I, and various hazardous liquids treated in title II.

The hazardous liquids covered by title II are significantly different from natural gas and LNG in physical properties and safety problems, and should not be covered under the NGPSA for this reason.

Mr. Chairman, we have expanded on these points in some detail in the prepared testimony. But for purposes of brevity, we conclude with this oral summary and welcome your questions.

[The balance of the statement follows:]

PRECONSTRUCTION AUTHORITY

Section 105 gives the Secretary of Transportation broad discretion to require that construction not begin on a new or existing pipeline facility until he approves that construction. A.G.A. has several concerns with this grant of authority under Section 105.

First, A.G.A. contends that the Secretary already has preconstruction approval authority under the NGPSA, wherein all new facilities must be designed, constructed, and tested in accordance with the regulations adopted by the Secretary under 49 C.F.R., Part 192. The provisions of the NGPSA found at 49 U.S.C. Section 1673 clearly enable the Secretary to establish standards for the design phase of pipeline facility development. A.G.A. suggests that if the Secretary feels there is a need for more preconstruction regulation, he should use his existing authority to promulgate additional regulations on design matters.

Second, S. 411 does not clearly define what preconstruction approval means. The language of Section 102, "Declaration of Purpose," clearly states that this bill is

authorizing "preconstruction design approval." It is impossible to tell whether a construction plan or design plan or both would have to be approved under the authority of Section 105 language, which refers only to "preconstruction approval."

Third, the natural gas industry has been successfully building and operating pipelines for over a decade under the standards of the NGPSA and the regulations promulgated thereunder. In 1976, only .17 percent of transportation-related fatalities were related to pipeline transportation, and of the total 82 pipeline related deaths in 1976 (see attachment 1), only approximately one-third were caused by pipelines carrying natural gas. This amounts to only 0.06 percent of all transportation-related deaths in 1976. In addition, LNG facilities have been built and safely operated under existing law without any LNG-related fatalities in the U.S. since the birth of the modern LNG industry in 1964. The natural gas pipeline and LNG industries have compiled an exemplary safety record, and A.G.A. believes that the concerns of the Secretary over the "location, construction (including extension and replacement), and operation of certain major pipeline facilities" expressed in his February 8 testimony before this Committee are unwarranted. Therefore, the Secretary's preconstruction review of pipeline and LNG facilities, as provided for in Section 105, is not justified or needed.

A.G.A.'s fourth concern with the preconstruction review under Section 105 is that the legislative language gives the Secretary much broader authority than he seems to want or need. This judgment is made based on his explanation of the preconstruction section in his February 8 testimony, and his letter of transmittal to Vice President Mondale that accompanied this bill to the Senate. As currently drafted, this section enables the Secretary to review potentially every pipeline installation, extension, or repair function of interstate or intrastate natural gas pipeline or local distribution companies. However, in both documents mentioned above, the Secretary stated that he has not exercised preconstruction review in the past, and that he anticipates using his power only in a few instances in the future. Furthermore, the Secretary has stated that he will follow "guidelines" for the exercise of preconstruction review established through the rulemaking process. If this is the Secretary's intent, then these limitations should be expressly stated within Section 105.

If an applicant were required to prepare finalized engineering designs and construction drawings for approval prior to beginning construction, then the additional work that would be required—above that required in the preliminary stages of project approval under existing law—would add a minimum of two years to the time required to complete a large LNG project and at least a year to a major pipeline project. The additional cost would amount to approximately six percent of the total project cost. For example, a \$500 million baseload LNG facility would cost about \$30 million more. Few, if any, private companies would be likely to risk capital to this extent on design engineering prior to the receipt of a construction permit.

Design frequently must be modified to accommodate problems encountered during construction. Therefore, it is impossible in a practical sense to have a complete preconstruction design approval. If the Secretary intends to have approval authority over design changes during the construction process, then the contractor on the job site would have to wait while each change goes through the DOT approval process. Inasmuch as design changes during construction are fairly commonplace, the potential for more project delay is open-ended. Even the most sophisticated methods of project-time and cost control could prove ineffective. The inevitable result would be higher costs to the consumer with less energy delivered for that cost.

A.G.A. is also concerned that no matter how narrowly Section 105 is applied, it adds to the substantial level of approvals currently required for major pipeline and LNG projects. Even under existing law, the sheer number of approvals, permits, certificates, and licenses required for pipeline and LNG siting, construction, and operation, creates substantial and expensive delays in the completion of these projects. As part of its December 12 testimony on baseload LNG projects before this Committee, A.G.A. submitted a list of the over 100 permits that had to be obtained for the LNG import terminal at Cove Point, Maryland. (See attachment 2) The FERC and DOT now govern pipeline safety under a scheme where DOT sets pipeline safety standards, and FERC approval of a pipeline facility under Section 7 of the Natural Gas Act is contingent upon the operator's attestation and avowal that the facilities will be designed, constructed, and operated in accordance with DOT safety standards. Adding the Secretary's preconstruction approval to this process will result in inevitable delays that are entirely unnecessary.

The consumer is the ultimate victim of such regulatory delays because of delays in providing energy to the ultimate end-user, and to the industrial/commercial sectors that provide goods and services to the consumer. Furthermore, the cost of the regulatory burden is ultimately expressed in higher energy costs that are passed

along directly in the cost of gas. Indirectly, this added expense is also expressed in the increased cost of manufactured goods because of the use of gas in various phases of the manufacturing process.

In section 105 (g) (2), "Cooperation and Consultation", the requirement that an applicant certify that he will design, install, inspect, test, construct, operate, replace, and maintain his facility in accordance with federal standards is totally appropriate. However, with such certifications in hand, why should the Secretary of Transportation require preconstruction design approval? If the applicant were not to comply with all encompassing federal standards, he would be subject to penalty, and rightfully so. Therefore, the requirement for preconstruction approval seems to be unnecessary.

A.G.A. notes that S. 411 makes no effort to reconcile the existing role of FERC in approving LNG and interstate pipeline projects with that of DOT as proposed here. Without a specific legislative mandate, and based on past experience with the conflicting roles of federal regulatory agencies, A.G.A. anticipates that a duplicative and more time-consuming approval process will evolve whereby FERC awaits DOT certification of the project, then asks the project sponsors for the same information that was provided to DOT and begins its own proceedings. Without a legislative mandate and, specifically, amendment to the Natural Gas Act, A.G.A. anticipates that FERC would not feel any compelling need to be bound by DOT's approval and could impose additional safety-related conditions on the project sponsor. This is precisely the sort of federal regulatory overlap and duplication that continues to add to the cost of energy and delay the development of needed energy-supply projects. For this and the other reasons already cited, A.G.A. must oppose the preconstruction approval authority given to the Secretary by Section 105.

If the Committee decides that the preconstruction authority of Section 105 is necessary, then A.G.A. proposes that the concept be studied by the Department of Transportation for one year before legislation is passed to confer such authority. The study should consider three questions in the context of a cost-benefit analysis: first, whether the safety and environmental aspects of natural gas pipeline and LNG facilities warrant giving the Secretary extra preconstruction approval authority; second, how broad such authority should be; and third, how the exercise of such authority can best be coordinated with the other steps in the extensive approval process for natural gas pipeline and LNG facilities.

ELIMINATION OF THE TECHNICAL PIPELINE SAFETY STANDARDS COMMITTEE

Section 106 of S. 411 would amend the NGPSA by striking out section 4 (49 U.S.C. Section 1673). This deletion would eliminate the Technical Pipeline Safety Standards Committee (TPSSC). A.G.A. does not believe it would be in the interest of public safety to terminate the role of the Technical Committee in promulgating new standards and amending existing standards.

The TPSSC is a diverse group which must, pursuant to Section 4(a) of the Act, consist of five members from Federal and State agencies, two of whom shall be State commissioners; four members from the natural gas industry, three of whom shall be currently engaged in active operation of natural gas pipelines; and six members selected from the general public. It therefore provides a broad forum of interests and technical expertise which may be used to evaluate the effects and benefits of proposed rules. The current membership of the TPSSC is appended to my testimony as Attachment 3. This list demonstrates two facts: first, that gas industry representatives are outnumbered, 4-11, by members of the public and State and Federal Government representatives when the Committee is at full strength; second, that the Secretary, and particularly, the Materials Transportation Bureau, has allowed the membership of the TPSSC to decrease by attrition to the point that it has six vacancies: one for the pipeline industry, three for State and Federal agencies, and two for the public.

MTB has also been remiss in that it has consulted the TPSSC only infrequently. Since the Technical Committee can meet only at the call of the MTB, it seems that the MTB may be creating a cycle wherein the Technical Committee is allowed to slowly fade away, the excuse being that it rarely meets. A.G.A. does not know of any reason for these MTB actions, but it is true that the TPSSC has strongly and nearly unanimously criticized several of MTB's proposed rulemakings in the last few years.

The benefits of TPSSC activities clearly outweigh the costs of maintaining the Committee. First, with regard to cost, it is estimated that total out-of-pocket cost for the Committee during calendar year 1978 was less than \$20,000. The year 1978 was fairly typical in that two two-day meetings were held in Washington, D.C. It was atypical from the standpoint of attendance because there were a number of unfilled

vacancies on the Committee. Had all vacancies been filled, the estimated cost would still have been less than \$30,000. Attachment 4 shows the estimated costs and lists the known factors and assumptions in preparing the estimate.

The estimated \$20,000 cost represents approximately 0.4 percent of the total pipeline safety appropriations for fiscal year 1978. Attachment 5 presents the source of the data on pipeline safety appropriations.

With regard to benefits, the Committee is composed of members who are very well qualified and who represent widely diverse interests. The Materials Transportation Bureau can and does contract with firms which have high degrees of expertise in particular technologies, but it is unlikely that any of these firms can offer the broad perspective obtainable from the Committee. Attachment 3 presents a brief summary of the membership and professional status of the members of the Committee.

A very unique and important feature of the Committee is the forging of ideas which occurs when the members examine proposed pipeline safety rules from their various viewpoints during the face-to-face discussions of the Committee. This process is carried out in the presence and with full participation of the Materials Transportation Bureau Staff. It is this forging of ideas which contributes most significantly to development of regulations which are technically feasible, reasonable and practicable. Furthermore, TPSSC meetings are open to the general public, and the public is invited to participate by making comments during the meetings regarding matters under discussion.

Currently the TPSSC is performing a very valuable function for MTB. Executive Order 12044 requires Executive departments to review their regulations to determine whether they are achieving their policy goals. The Technical Committee is systematically providing this review. It reviewed 49 C.F.R. Part 192, Subpart I (Corrosion Control) during the January 17 and 18, 1978, meeting and Subparts E (Welding) and M (Maintenance) during its December 5 and 6, 1978 meeting. It is scheduled to review Subparts A (General) and D (Design of Pipeline Components) at the next meeting. As a result of these reviews, several changes have been made which permit flexibility in conducting the required periodic cathodic protection inspections. The addition of this flexibility permits the objectives of the regulations to be obtained at less cost. Attachment 6 is a copy of a notice of final rules which acknowledges the role of the Technical Committee in proposing the changes.

Until recently the Materials Transportation Bureau has submitted to the Committee a summary of all the comments received on Notices of Proposed Rulemaking and the proposed rule as it has been revised as a result of the comments. Recently, however, MTB submitted a proposed rule to the Committee, "Joining of Plastic Pipe", before the end of the comment period. This reduces the value of the Committee because it deprives it of the opportunity to review the public comments and wording as it is proposed in light of those comments. Attachment 7 presents suggested revisions to Section 4(b) of the Natural Gas Pipeline Safety Act of 1968 to assure effective use of the Committee.

Finally, A.G.A. emphasizes that the TPSSC has no bias toward industry. In a number of instances, the TPSSC has voted against easing pipeline safety requirements. Attachment 8 summarizes Technical Committee action on several agenda items at past TPSSC meetings. On the first page of the attachment, there is described an example of the Technical Committee's refusing to approve an exemption for certain pipelines from a regulation requiring hydrostatic testing.

The Technical Committee recommendations are not binding; yet A.G.A. has found that they have historically proven to be of great value to the Department of Transportation. The Committee has provided the Secretary with carefully considered technical advice, while maintaining an objective posture and keeping in mind the ultimate goal of maximum safety. A.G.A. must therefore strongly object to the elimination of the Technical Committee by Section 106. Section 106 should be deleted from S. 411, since it would remove the source of some of the best available expert advice on pipeline standards available to the Secretary.

"GRANDFATHERING" FOR EXISTING FACILITIES

Section 105(d) provides that new standards under S. 411 shall not be applicable to facilities which are in existence on the date the bill is adopted. If the term "in existence" can be assumed to mean a facility under construction or already constructed, then the definition is too limiting. There are major projects which have been going through the approval process for years, and such a definition of "existing facilities" would specifically penalize them. It is suggested that "existing facilities" should include not only those in place, but also those that have undergone substantial design and engineering planning; and, especially in the case of LNG facilities,

those for which applications for federal or state approval have been filed prior to the date on which this bill is enacted. The House has adopted a similar approach for LNG facilities in H.R. 51 with a time deadline for grandfathering based on when the application was filed.

SECRETARY'S AUTHORITY TO COMPEL PRODUCTION OF PROPERTY

Section 109 would empower the Secretary to require pipeline operators to surrender items of property to him. Presumably, the MTB could take custody of materials involved in a facility failure, make whatever tests deemed by them to be necessary and sufficient, conclude what the causes for the failure were, and prescribe corrective action. Such a scenario would create potential problems for the industry: the pipeline operator would lose custody of the means to exonerate himself from any allegation of negligence or malfeasance express or implied. Moreover, the facility operator's own technical staff—experienced in the type of investigatory work under discussion here—would not be able to provide to him the information he needs to take proper corrective action. Instead, the operator would be forced to rely on the expertise of the Secretary's staff, with no means of cross-checking the conclusions. Indeed, it is quite possible that the material specimens could be destroyed in testing by the DOT, thereby precluding any further testing, without the causes for the failure ever being satisfactorily determined.

A.G.A. suggests that alternative legislative language be drafted that would permit the owner of the facility to retain custody of the materials involved in the accident in order to conduct the necessary tests; the DOT could assign qualified staff to monitor the testing procedures and report back to the DOT. Another alternative would be for the owner of the facility on which there has been a failure to proceed in his normal manner of investigation, but also to provide necessary sample specimens to the DOT, while retaining custody of the bulk of the materials involved in the failure. In this way, the DOT and the owner of the facility could carry out their respective investigations in concert and in parallel, providing meaningful checks on the testing methods and conclusions of each other.

SEPARATE LEGISLATIVE TREATMENT OF LPG AND OTHER HAZARDOUS LIQUIDS

A.G.A. strongly supports the division of S. 411 into two titles, with LPG and hazardous liquids (other than LNG) treated in essentially a separate piece of legislation. Unlike some legislative proposals, S. 411 does not make the NGPSA applicable to LPG. Instead, Title II of S. 411, "Liquid Pipeline Safety," creates a new proposed Act entitled the "Hazardous Liquid Pipeline Safety Act of 1979."

This approach is consistent with the need to tailor laws and regulations to specifically meet the safety requirements of natural gas and various other substances and avoiding regulatory overlap and confusion. These substances require different legislative and regulatory treatment, and they receive such treatment in S. 411. A.G.A. supports the existing division of S. 411 into two essentially independent pieces of legislation and urges this Committee to retain this division intact.

CONCLUSION

A.G.A. appreciates this opportunity to comment on S. 411. These comments have addressed our major concerns with the legislation. Any further opportunity for A.G.A. to provide input to the Committee on this legislation and related matters would be welcome. At this point, I would be pleased to answer any questions you may have.

Senator FORD. Thank you, Mr. Lawrence, for your comprehensive statement and positive positions, I think, in your statement that you have taken.

You do not often in these days find somebody who takes a positive position. "Yes" or "No" is awfully nice to hear these days, so I compliment you on those positions you have taken.

In your testimony, you suggested that: "Guidelines be set out in statutes to guide the Secretary in his review of facilities."

In your opinion, what do you think would be appropriate guidelines for the Secretary's preconstruction review?

Mr. LAWRENCE. I guess our biggest concern, Mr. Chairman—before I ask Mr. Wagner or Mr. Levy to expand on this—is to ascertain that we do not go to a situation where we have delay.

Also, we are concerned about the possible situation where facilities that should qualify—as under the broader category of having been in existence—that the guidelines would be sufficiently specific to permit, where we have completed the design planning or where we have made specific filings for approval, that the Secretary would consider regulations that would permit that broader exercise of discretionary authority to consider such facilities as having qualified as actually been in existence at that time.

Mr. Wagner, would you care to expand on that?

Mr. WAGNER. In addressing these guidelines, Mr. Chairman, I think our position really comes back to the point that: Is it really necessary for the preconstruction review?

We do feel that it is redundant. The Department now has the right to review. The safety record of the industry has been well-defined. We do feel that with the safety record—which is really unquestionable, that preconstruction approval is not necessary.

Mr. LEVY. I would like to address that, if I may, Senator.

Senator FORD. You certainly may.

Mr. LEVY. At Cove Point, we had 41,700 different pieces of paper—

Senator FORD. How much?

Mr. LEVY [continuing]. 41,700 different pieces of paper. They included drawings, specifications, and of course, drawings through revisions.

And these drawings and specifications emanated over a period of about 3½ years.

Now if each time the drawing had to be approved by the Secretary, I fear that we would not be able to construct the facility. We would be standing around waiting for some drawing to be approved, when we had the material on hand and ready for construction.

I think it would be terribly cumbersome.

Furthermore, DOT has the right, and has done an audit of our facility. We would much prefer to have the company responsible for following the regulations, and allow DOT to audit as they see fit, either during construction or after construction is completed.

Senator FORD. Mr. Levy, I think you told us about a seagull permit in December when you were here. Now, I understand that two hawks have already taken up residence.

Does nature work better than the Government?

Mr. LEVY. Yes. The two ospreys are building a nest on top of one of our cranes. In fact, they are building where it would interfere with the machinery.

So we built a little aluminum support for their nest, and they have driven all the seagulls away from the area.

Senator FORD. That may be good.

Mr. Lawrence, in Western LNG Associates' testimony, they suggested that better compliance with the existing DOT standards could be achieved by having DOT engineers onsite during the construction of LNG facilities.

I believe they pointed out that many design modifications are made as the building goes along, and I think that is a statement you made a few moments ago.

They cited the Coast Guard monitoring of shipbuilding as a successful example of such a program. Would you or your associates like to give us your views on that proposal?

Mr. LAWRENCE. Basically, and again, I think Mr. Levy can add some firsthand experience regarding the construction of the Cove Point LNG terminal—but basically, we would concur with what the Western LNG terminal people are saying because it does represent a vehicle whereby DOT could ascertain that there is, in fact, compliance. We oppose anything that would require a facility to go back and start the whole regulatory process underway, for whatever reason, and especially where a particular project has been underway for some 7 years now.

Mr. LEVY. I would have no problem with the DOT inspector on site, as long as his role was that of an auditor, and not an approver before work went forward.

I would see no problem, and in fact, probably would welcome such an inspector.

Mr. LAWRENCE. I think that could have a synergistic role, and their on-the-spot presence could provide better understanding of the actual facilities that would be in operation for 20 or so years.

Senator FORD. Well, Mr. Lawrence, to go back to our Technical Advisory Committee a little bit. DOT originally proposed broadening the standards of membership for the technical committee so that persons who were knowledgeable, but not necessarily experienced in pipeline engineering, would be eligible to be placed on the committee.

The stated purpose was to allow more non-industry-related experts to be members.

What is your reaction to that proposal?

Mr. LAWRENCE. I guess I would view that with a little concern. I think, actually, this was the focus of a very serious debate when originally conceived, and the issue was discussed, when it went through the legislative process in 1967 and 1968. Actually, I think there is probably less actual industry representation on the Technical Standards Committee than we would prefer, or we think the public interest would justify.

But I think that the main point is that we would not really try to live or die on the numbers, Senator.

I think, basically, the philosophy of the then Director of the Office of Pipeline Safety—Mr. Will Jennings, who is in the audience today—was a very good one in which I think he set out to make this original Technical Standards Committee—one of the functions that people on it would bring to it some specific contribution that they did have technical knowledge, and that they were capable of understanding the debate of their peers. And they would make a contribution even though many of their philosophies of safety regulation, and their ideologies, were different, quite different.

So I think, again, as long as there is balance between public and private sectors and that the philosophy would be to bring people to that committee that did have some expertise, capable of making a contribution, and understanding the dialog of their peers on that committee, then I think it would work in the future.

Senator FORD. Mr. Lawrence, I believe you stated that the provision authorizing DOT to require the production of property might cause the industry problems.

Are you aware of any similar problems in the marine or truck, rail modes of transportation, where DOT already has this authority?

Mr. LAWRENCE. I personally am not. Maybe my colleagues are.

Our main concern would go to a fear that a company involved in the incident—which would have a high degree of responsibility to ascertain what happened, so the correction can be made in the future—that we must be careful not to abdicate our role in those corrective steps by just saying, OK, here's this piece of pipe. Turn it over to somebody, and they walk off with it.

Then what is ultimately conducted in the way of tests, we would have no involvement in.

That, I think we view that as an abdication of our responsibility. And again, one of our concerns is that we would welcome any joint participation by DOT in conducting tests, in monitoring of tests, and certainly, I think that could be expanded to include any suggested tests. We could do it side by side or together.

But I think we would feel remiss if we let the actual physical properties involved out of our possession, until we felt that we had conducted our own tests and adhered to our responsibilities.

Senator FORD. You do not know what you are defending yourself against if you do not have the ability at least to make your own test, use your own experts, and have at least some on-the-spot, timely ability.

You are the one who is going to be in the position of defending yourself. If you do not have the ability to have that information early on, and to have the ability to have your tests made and other items, I think it makes you very vulnerable.

Mr. LAWRENCE. That is exactly right. We are both concerned about that, from the standpoint of defending ourselves, and from the standpoint of actually ascertaining what happened so that corrective steps could be taken.

Senator FORD. The Department of Transportation has stated that the pre-construction approval provisions are intended merely to clarify their existing authority, not to create a new permitting process or to cause additional delays and expense, or to apply to any but major facilities.

What alternate means to clarify DOT's preconstruction authority would you suggest? Just eliminate it?

Mr. LAWRENCE. As far as this legislation is concerned, that section of it, Senator, yes.

I think if there is ultimately deemed to be a clarification, it is our feeling that DOT could do it under the existing Natural Gas Pipeline Safety Act, and come forth with additional regulations in that regard.

Again, I would be glad to——

Senator FORD. Mr. Lawrence, is some improvement needed in the coordination of FERC and DOT?

Mr. LAWRENCE. Yes. And I think, again, I will ask Mr. Levy to expand on this because I think some of that can go to some first-

hand knowledge with regard to very extensive approval processes he has experienced.

Mr. LEVY. Well, first of all, I read in one publication that FERC and DOT are entering into a memorandum of understanding that would allow FERC to place more stringent requirements on facilities that are presently—than perhaps DOT would have in their regulations.

We do have a problem of joint jurisdiction over facilities that are approved by FERC and DOT. We have been able to live under it so far.

There are a couple of—one, in particular—requirements by FERC at Cove Point that we followed that were not requirements of DOT. But we go through an essentially preconstruction approval at FERC, not to the degree that I believe is envisioned in this bill that you are considering today. And certainly, that is on the public record and is available to anyone who wants to look at it, including DOT.

Mr. LAWRENCE. Perhaps I could add very briefly to that. It is our feeling that DOT should have the pipeline safety jurisdiction, and we think the law makes this provision clear that they do.

Our biggest concern is that clearly, FERC and its predecessor agency, the Federal Power Commission, also had the certificating authority, which would include many aspects, the economic feasibility and so forth.

In expanding some of their concerns on economic feasibility where they might attempt to second guess on safety, that we think might take FERC out of its area of expertise and add to unnecessary regulatory delay.

Senator FORD. There is a draft memo of understanding in the works, as you related, Mr. Levy. But completion is not immediately in sight.

We have been encouraging them to get it together. It is almost as hard to get together as it is to get two committee chairmen to give up their jurisdiction.

I guess this is my final question. You will find out that I do not understand everything. But I am trying to.

Gas and oil pipeline systems are totally different and separate. Does it make sense to have parallel statutes for safety regulation of two types of systems?

Mr. LAWRENCE. Yes. We think there should be the distinction. Again, I think I will let my colleagues expand on that.

Mr. WAGNER. If I could, Senator, I would like to get a little bit more closer to exactly what you mean.

Pipeline systems across the United States are separate, the oil and the gas pipeline systems.

Senator FORD. What I am trying to get at is: Is it appropriate for DOT to have the same authority for all?

Mr. LAWRENCE. Yes. I do not think we are arguing that point at all. The Department should have the safety authority for the various modes of energy transportation.

Perhaps I misunderstood your question. I thought there was a sufficient distinction in the physical properties and the regulatory process, et cetera, that it would make sense that there would be

specific separate statutes, whether by actual bill numbers or whether by title.

Senator FORD. Do you think this legislation recognizes that adequately?

Mr. LAWRENCE. As to the separation?

Senator FORD. Yes.

Mr. LAWRENCE. To separate title, yes.

Senator FORD. For laymen, describe the relative dangers of these fuels: oil, gas, and so forth.

What kind of danger, what degree of danger? Where are we as it relates to the various fuels?

Mr. LAWRENCE. Well, again, I will turn to my engineering colleagues to expand on this.

But in all candor, Senator, we must acknowledge the fact that natural gas, or supplements, LNG, or whatever, once gasified, is normally transported under a much higher pressure than is used in liquid pipelines.

And I think for these reasons, all these points are taken very carefully into account in the engineering criteria that goes into the design and construction.

I think once there is a rupture in a—there may be different types of dangers to the public, as compared with liquid or natural gas, but I—my main concern, the distinction I would make would be the substantially higher pressure under which natural gas pipelines, or at least the long-distance transmissions are under, as compared with liquid pipelines, and that has to be taken into account.

Senator FORD. And it is being taken into account?

Mr. LAWRENCE. In the design process at every step?

Senator FORD. What we get down to, then, is basically we have two different types of fuels, but each one are taken into consideration.

Mr. LAWRENCE. Yes. And I think this continues on into the—I think the ultimate engineering advantage of transportation in the gaseous vapor phase is that it goes all the way from the wellhead to the point of destination, and you do have a continuous delivery system.

You do not have to go to the pipeline, store it, then by trucking to a point of consumption. And I think all that enters into the safety process, too.

Senator FORD. Mr. Lawrence, I do not have any further questions to ask of you or your associates this morning. But in putting the minutes of the hearing together for the record, if we arrive at something we would like to have an answer for, I hope you would respond to some questions in writing to the committee as soon as you can.

Mr. LAWRENCE. Indeed, we will, Senator.

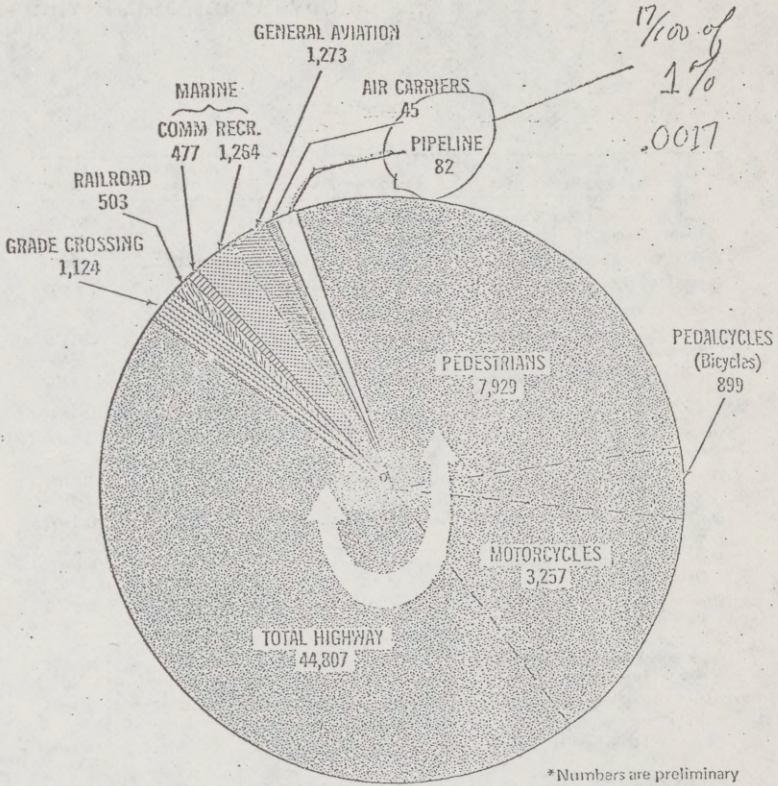
Senator FORD. I appreciate all three of you. I am delighted to have had you here this morning. I apologize for the inconvenience.

[The attachments referred to follow:]

TRANSPORTATION FATALITIES*

49,575 IN 1976

Attachment 1



*Numbers are preliminary estimates.

NATIONAL TRANSPORTATION SAFETY BOARD
Washington, D.C. 20594

Cove Point, Md., Permits

Terminal

Regulatory Agency	Description of Action	Application Date	Permit Date
Board of County Commissioners of Calvert County, Md.	Rezoning 317.722 acres from A1 to I1.	—	8/11/70
Federal Power Commission.	Opinion No. 622 CP71-68.	9/21/70	6/28/72
Federal Power Commission.	Opinion No. 622A CP71-289.	6/ 4/71	10/ 5/72
Federal Power Commission.	Amended—Tunnel plan	12/ 8/72	3/30/73
Calvert County Department of Inspection and Permits.	Site grading for office building	6/ 9/72	6/14/72
Calvert County Health Department	Deep-drilled well and sewage-disposal system.	6/19/72	7/13/72
	Completion certificate.		11/15/72
Calvert County Department of Inspection and Permits.	Construction of office and maintenance building.	6/22/72	7/21/72
Department of the Army, Baltimore District, Corps of Engineers.	Construction of pier.	4/ 7/71	9/ 1/72
State of Maryland, Department of Natural Resources.	Water quality certification.		8/31/72
State of Maryland, Department of Natural Resources.	Wetlands license.	12/ 4/72	12/18/72
Department of the Army, Baltimore District, Corps of Engineers.	Construct unloading terminal and tunnel and dredge in Chesapeake Bay.	12/ 4/72	12/29/72
State of Maryland, Department of Natural Resources	Appropriate and use ground water for sanitary facilities.	10/21/72	11/28/72
State of Maryland, State Highway Administration.	Construction of two entrances. Extension.	11/20/72	3/12/73
Calvert Soil Conservation District.	Erosion and sediment control measures	4/ 5/73	7/ 5/73
Calvert County Department of Inspections and Permits	Site grade and preparation for construction; LNG terminal process area.	4/ 5/73	5/18/73

Regulatory Agency	Description of Action	Application Date	Permit Date
Calvert County Department of Inspections and Permits	Construction of cofferdam	8/14/73	8/15/73
State of Maryland Fire Marshal	Approval of office and warehouse		8/31/73
State of Maryland, Department of Forests and Parks	Burning debris		9/17/73
State of Maryland, Department of Natural Resources	Small pond permit		10/ 1/73
Calvert County Department of Inspections and Permits	Site grading in lowland area.	10/12/73	10/12/73
Calvert County Department of Inspections and Permits	Construction of LNG storage tanks.	10/15/73	10/24/73
State of Maryland Comptroller of the Treasury	Sales and use tax direct payment permit.		1/ 2/74
Calvert County Health Department	Construction of deep drilled well and sewage disposal system.	10/25/73	1/29/74
	Completion certificate.		2/24/75
Calvert County Health Department	Construction of deep drilled well and sewage disposal system.	10/25/73	1/29/74
	Completion certificate		1/ 7/75
State of Maryland, Water Resources Administration	Appropriate and use water for sanitary facilities, cooling water, testing and fire protection		1/31/74
Federal Communications Commission	Radio license.		4/15/74
State of Maryland Fire Marshal	Approval of fire protection plan.		5/30/74
Department of Transportation, U.S. Coast Guard	Private aids to navigation (five lighted survey towers)	7/ 5/74	7/18/74
State of Maryland Fire Marshal	Approval of use of tunnel by personnel		8/26/74
Calvert County Department of Inspections and Permits	Construction of two firewater storage tanks	9/18/74	9/20/74
Calvert County Department of Inspections and Permits	Construction of 12 buildings for use with receiving terminal	10/21/74	10/23/74
State of Maryland Environmental Health Administration	Construction of emergency vent heater	7/11/75	9/16/75

Regulatory Agency	Description of Action	Application Date	Permit Date
State of Maryland Environmental Health Administration	Construction of LNG vaporizer	7/11/75	9/16/75
State of Maryland Environmental Health Administration	Construction of emergency purge nitrogen vaporizer	7/11/75	9/17/75
State of Maryland Environmental Health Administration	Construction of firewater tank heater	7/11/75	9/17/75
State of Maryland Environmental Health Administration	Construction of gas turbine fuel gas heater	7/11/75	9/17/75
State of Maryland Environmental Health Administration	Construction of boil-off gas reheater	7/11/75	9/17/75
State of Maryland Environmental Health Administration	Construction of gas turbine generator	7/11/75	9/17/75
Calvert County Department of Electrical Inspections	Electrical permit for onshore ventilation building		9/ 5/75
Calvert County Department of Inspections and Permits	Construction of seven offshore buildings	1/23/76	2/ 3/76
State of Maryland Fire Marshal	Review of electrical area classifications		6/ 4/76
Calvert County Fire and Rescue Commission	Inspection of fire apparatus		8/ 3/76
Calvert County Department of Inspections and Permits	Site grade for warehouse		8/11/76
Calvert County Department of Inspections and Permits	Construction of warehouse		8/11/76
Calvert County Department of Inspections and Permits	Construction of sign at terminal entrance	8/27/76	8/31/76
United States Department of the Interior	Seagull depredation permit.		11/ 9/76
United States Coast Guard	Approval of survival capsules.		6/17/76
State of Maryland, Department of Licensing and Regulation	License and regulation certificate for offshore elevator.		1/ 7/77
United States Coast Guard.	Certificate of Inspection for <i>Miss Methane</i> .		9/30/76
United States Coast Guard.	License of vessel under 20 tons for <i>Miss Methane</i> .		1/31/77
State of Maryland, Water Resources Administration	Oil operations permit	3/ 3/77	5/ 5/77

Pipeline

Regulatory Agency	Description of Action	Application Date	Permit Date
Maryland Board of Public Works— Department of Natural Resources.	Wetland license.	4/ 1/74	9/19/74 4/25/75
Maryland Department of Natural Resources.	Construction in a waterway.	4/ 1/74	4/23/75
Corps of Engineers.	Construction of five 36-inch pipeline submarine cross- ings.	4/10/74	4/15/75
	Amended.	3/ 7/75	12/31/75
Maryland Department of Natural Resources.	Water Quality Certification five pipeline crossings.		8/22/74
	Revised.		9/10/74
Virginia Marine Resources Commis- sion	Dredge and backfill a trench for pipeline crossing of Potomac River	3/ 7/75	8/27/74
	Revised.		3/25/75
Virginia State Water Control Board	Dredge and backfill a trench for pipeline crossing Potomac River.	7/15/74	9/26/74
	Amended.	3/ 7/75	4/ 3/75
Virginia Department of Taxation	Sales and use tax direct pay- ment permit.		3/ 1/75
Federal Power Commission	Amended route. Change construction dates.		4/10/75 8/ 1/75
Commonwealth of Virginia Depart- ment of Highways and Transporta- tion (Fairfax County)	Permit for temporary entrance to right-of-way #754738.		August 1975
Commonwealth of Virginia Depart- ment of Highways and Transporta- tion (Fairfax County)	Permit for temporary entrance to right-of-way #754826.		August 1975
Commonwealth of Virginia, Depart- ment of Highways and Transporta- tion (Fairfax County).	Permit for temporary entrance to right-of-way #754513.		July 1976
Commonwealth of Virginia Depart- ment of Highways and Transporta- tion (Fairfax County).	Permit for temporary entrance to right-of-way #754950.		October 1975
Commonwealth of Virginia Depart- ment of Highways and Transporta- tion (Fairfax County).	Permit for temporary entrance to right-of-way #755740.	11/ 7/75	11/19/75
Commonwealth of Virginia Depart- ment of Highways and Transporta- tion (Fairfax County)	Permit for temporary entrance to right-of-way #755739	11/ 7/75	11/19/75

Regulatory Agency	Description of Action	Application Date	Permit Date
Commonwealth of Virginia Department of Highways and Transportation (Fairfax County)	Permit for temporary entrance to right-of-way #75511		October 1975
Commonwealth of Virginia Department of Highways and Transportation (Fairfax County)	Permit for temporary entrance to right-of-way #755008		September 1975
Commonwealth of Virginia Department of Highways and Transportation (Fairfax County)	Permit for temporary entrance to right-of-way #755734	10/31/75	December 1975
Commonwealth of Virginia Department of Highways and Transportation (Loudoun County)	Permit for temporary entrance to right-of-way #756041	12/ 9/75	12/17/75
Commonwealth of Virginia Department of Highways and Transportation (Loudoun County)	Permit for temporary entrance to right-of-way #756040	12/ 9/75	12/17/75
Board of County Commissioners of Charles County, Md.	Grading permit, pipeline right-of-way.	10/21/74	10/24/74
Washington Suburban Sanitary Commission-Prince Georges County	Sediment Control Permit, pipeline right-of-way.		7/16/74 9/16/74
State of Maryland-Maryland Forest Service, Department of Natural Resources	Roadside tree permit (Calvert, Charles & Prince Georges Counties)	7/14/75	7/22/75
Department of Inspections and Permits, Calvert County, Md.	Zoning approval, pipeline right-of-way	6/17/75	6/18/75 6/23/75
Department of Inspections and Permits, Calvert County, Md.	Grading permit, pipeline right-of-way	6/ 7/74	10/11/74 6/13/75
Department of Inspections and Permits, Calvert County, Md.	Grading permit, access road to right-of-way Cove Point	7/24/74	7/24/75
Department of Inspections and Permits, Calvert County, Md.	Use and occupancy permit	2/17/75	2/18/75
Department of Public Works, Prince Georges County, Md.	Construction within public right-of-way (three road crossings)	6/10/75	8/ 4/75
Department of Transportation, State of Maryland (Calvert County)	Pipeline road crossing #5-C10943-75		May 1975
Department of Transportation, State of Maryland (Calvert County)	Pipeline road crossing #5-C-10880-75		April 1975
Department of Transportation, State of Maryland (Calvert County)	Road crossing (cable) #50C-11046-75		August 1975
Department of Transportation, State of Maryland (Charles County)	Pipeline road crossing #5-CH-10881-75		July 1975

Regulatory Agency	Description of Action	Application Date	Permit Date
Department of Transportation, State of Maryland (Charles County)	Pipeline road crossing #5-CH-10942-75		May 1975
Washington Suburban Sanitary Commission (Prince Georges County, Md.)	Pipeline road crossing #17090, 3-pg. 208-75		May 1975
Washington Suburban Sanitary Commission (Prince Georges County, Md.)	Pipeline road crossing #17094, 3-pg. 282-75		June 1975
Washington Suburban Sanitary Commission (Prince Georges County, Md.)	Pipeline road crossing #17089		May 1975
United States of America, U.S. Navy Railroad (Maryland)	Pipeline railroad crossing #NF(R)26225		7/21/75
Calvert Soil Conservation District	Sediment and erosion control for Calvert County, Md.	6/ 7/74	3/12/75
Charles Soil Conservation District	Sediment and erosion control for Charles County, Md.	9/25/74	10/24/74
County of Fairfax, Va.	Sediment and erosion control for Fairfax County	11/ 7/74	2/13/75 8/22/75 9/ 5/75
County of Fairfax, Va.	Occupancy permit	September 1975	September 1975
County of Fairfax, Va.	Site plan waiver for pipeline construction		3/ 3/75 9/10/75
Department of Environmental Management, Fairfax County, Va.	Pipeline road crossing #10430		2/17/76
Zoning Administrator, Loudoun County, Va.	Zoning permit for measuring station at Loudoun	4/ 8/76	4/ 8/76
Department of Engineering and Inspections, Loudoun County, Va.	Building permit for instrument and transducer buildings at Loudoun	4/14/76	6/ 1/76
Department of Engineering and Inspections, Loudoun County, Va.	Electrical permit for instrument and transducer buildings at Loudoun	7/ 8/76	7/ 8/76
Health Department, Loudoun County, Va.	Permit to install sewage disposal system and water well	4/14/76	5/24/76
Maryland Board of Public Works	Wetlands license		9/19/74
Fairfax Planning Commission	Construction approval for modified route per settlement agreement		2/13/75
Fairfax County Board of Supervisors	Final approval given modified route		3/ 3/75

Regulatory Agency	Description of Action	Application Date	Permit Date
Fairfax Board of Zoning	Zoning approval given modified route		3/10/75
Charles County	Pipeline construction report filed		5/15/75
Calvert County	Pipeline construction report filed		6/30/75
Fairfax County	Sediment and erosion control plan approved		8/22/75
State of Maryland	License to cross Calvert Cliffs State Park		9/29/75
Prince Georges County	Special ordinance authorizing pipeline construction		11/24/75
Loudoun County	Sediment and erosion control plan filed-permit not required		1/23/76
Loudoun County Planning Commission	Pipeline route approved		1/26/76
Maryland Department of Natural Resources	Surface water appropriation for hydrostatic test	3/29/76	
Maryland Department of Natural Resources	Permit for discharge of test water	3/29/76	

Attachment 3

CURRENT MEMBERSHIP OF THE TECHNICAL PIPELINE
SAFETY STANDARDS COMMITTEE

<u>Members from Industry</u>	<u>Members from Federal and State Government</u>	<u>Members from the Public</u>
Joseph M. Devereaux, Philadelphia Gas Works	Frances J. Riordan, Public Utilities Commissioner--N.H.	Charles Maxwell, Consultant (former member of Michigan Public Service Commission)
Andrew J. Shoup, Consultant	Bruce W. Christ, National Bureau of Standards	Frederic A. Lang, Professional Engineer
Burton Mast, Consultant	(Three Vacancies)	B. M. Laulhere, President Hood Corporation
(One Vacancy)		Charles H. Tupper, International Brother- hood of Electrical Workers
		(Two Vacancies)

ATTACHMENT 4

Estimated cost for Technical Pipeline Safety Standards Committee for calendar year 1978

Per diem:

January meeting (10 members).....	\$4,000
December meeting (8 members).....	3,200
December meeting (1 member).....	300
Officers meetings (2 members).....	1,200

Subtotal.....	8,700
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Travel expense:

January meeting (10 members).....	2,000
December meeting (8 members).....	1,600
Officers meetings (2 members).....	800

Subtotal.....	4,400
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Food and lodging:

January meeting (10 members).....	1,000
December meeting (8 members).....	800
Officers meetings (2 members).....	200

Subtotal.....	2,000
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Miscellaneous expenses.....	2,000
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Total.....	17,100
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*Basis for estimated cost for Technical Pipeline Safety Standards Committee for calendar year 1978**Known*

Meetings January 17 and 18 and December 5 and 6 in Washington, D.C. attendance by 10 members in January and 9 members in December.

Per diem is \$100/day. Travel costs are based on air coach fare. Maximum allowance for food and lodging is \$50/day.

Federal employees do not receive per diem.

One member who attended the December meeting is from Washington, D.C. and does not receive travel time or expenses.

Assumed

One day travel and one day preparation for each meeting.

Two additional one day meetings in Washington, D.C. for Chairman and Secretary.

Travel to Washington, D.C. occurs the day prior to a meeting and from Washington, D.C. occurs the final day of the meeting.

Average travel costs of \$200 per trip.

Miscellaneous expenses covers taxis and other small reimbursables.

ATTACHMENT 5.—PIPELINE SAFETY APPROPRIATION HISTORY

(In thousands of dollars)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
S. & E. ¹	NA	NA	NA	NA	530	892	850	1,202	1,386	2,097	3,784
T.P.R. & D. ²	0	135	100	205	178	270	585	400	775	375	350
Grants ³	0	0	500	750	875	1,175	1,158	1,650	2,250	2,400	2,820
Total.....	NA	NA	NA	NA	1,583	2,337	2,593	3,252	4,411	4,872	6,954

¹ S. & E.—Operations funds.² T.P.R. & D.—Research and development funds.³ Grants—Federal grants to State pipeline safety programs.

Funding for pipeline safety training (from S. & E. funds)

[In thousands of dollars]

1976.....	58.2	1978.....	86.7
1977.....	73.0	1979.....	101.0

ATTACHMENT 7.—SUGGESTED REVISION TO THE NATURAL GAS PIPELINE SAFETY ACT OF 1968

Revise the first sentence of Section 4(b) to read as follows:

(b) The Secretary shall submit to the Committee all proposed standards and amendments to such standards, including any revisions as a result of the public comment and a summary of the public comment, and afford such Committee a reasonable opportunity, not to exceed 90 days, unless extended by the Secretary to prepare a report on the technical feasibility, reasonableness and practicability of each such proposal.

Senator FORD. The next witness this morning is the Honorable James Palmer, Administrator, Research and Special Programs Administration, Department of Transportation.

As I understand it, Mr. Palmer, you have Lee Santman and Larry Nelson with you; is that correct?

STATEMENT OF JAMES PALMER, ADMINISTRATOR, RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION, DEPARTMENT OF TRANSPORTATION; ACCOMPANIED BY LEE SANTMAN, DIRECTOR, MATERIALS TRANSPORTATION BUREAU; JAMES THOMAS, CHIEF, SOUTHERN REGION PIPELINE SAFETY OFFICE; AND LARRY NELSON

Mr. PALMER. Yes, sir, with me at the table, in addition to several other persons in the audience.

On my left is Mr. Santman, who is the Director of the Materials Transportation Bureau; and additionally may I request that Mr. James Thomas, Chief of the Southern Region Pipeline Safety Office, join us because of his indepth experience in the area of pipeline safety.

Senator FORD. Mighty fine, Mr. Palmer.

If you want to summarize your statement, it will be fine and it will then be included in the record.

Mr. PALMER. I certainly appreciate this opportunity to discuss with your subcommittee the Department of Transportation's pipeline safety programs, and in particular to express our strong support for Senate bill 411.

In addition to authorizing appropriations for DOT's pipeline programs for fiscal years 1980 and 1981, S. 411 provides DOT with the needed ability to more effectively and efficiently carry out those programs.

As you know, Secretary Adams in testimony before Senator Cannon on February 8 of this year detailed the more important pipeline safety activities undertaken by the Department in the last year.

These included a reorganization of the Materials Transportation Bureau for better management of the pipeline programs, increased staffing to almost 90 percent of authorized positions, achieving the long-awaited permanent appointments for the directors of MTB and the Office of Pipeline Safety, the large and sustained effort on our comprehensive LNG rulemaking proposal, and concerted rule-making action aimed at reducing the risks associated with the

pipeline transportation of highly volatile liquids. Rather than repeat the Secretary's testimony, I merely echo his belief in the importance of these activities to the public safety.

No less important is the continued improvement in the cooperative Federal-State relationship on pipeline safety. The pipeline safety program in the United States is dependent in large part upon the representatives of State offices who carry out compliance and enforcement responsibilities.

Without the contribution from State representatives, the national program, as defined by the National Gas Pipeline Safety Act of 1968, would be in relatively poor shape. When it is considered that State agencies inspect over 3,000 gas operators annually and accrue more than 15,000 individual inspections, it can be seen that they are the bulk of the enforcement effort.

Their performance has been satisfactory in every respect. This is not to say that there is not room for improvement, because in every participatory program consisting of a network of geographically dispersed units, there is always room for improvement.

We at the Federal level are working on specific aspects of the monitoring program. We are particularly interested in having State representatives move forward on their own volition on gas pipeline safety issues.

Because of the peculiarities of local and State geographical, demographical, and political considerations, this approach is in many respects the only sensible way to achieve greater pipeline safety.

Over the last year, there has also been substantial progress in the Department's pipeline safety enforcement activities. One major reason for this progress is that RSPA is now providing two staff attorneys nearly full time to evaluate and prosecute enforcement cases which are investigated by MTB's pipeline safety enforcement division through its five regional offices.

In addition, a joint effort between the attorneys and the regional staff was initiated in 1978 to coordinate the development of higher quality cases. This has reduced the risk of faulty evidence becoming the basis of an enforcement action.

Another major change in our enforcement program has been the granting of informal conferences to the operator where he requests an opportunity to present a more thorough defense than what can be accomplished by written correspondence. Some indirect benefits to the program are already apparent even though the informal conference system is still in its infancy. These include:

Improved operator awareness of the pipeline safety program with the expectation that regulations will be enforced;

Operator assurance that they are being treated fairly and with due process of law; and

Enhanced negotiating posture of MTB through discovery of weaknesses in the case permits us to dismiss inappropriate allegations and rely on sound evidence.

Notwithstanding the advances we have made in our compliance efforts, there is still much room for improvements. My comments on S. 411 will address this issue.

The overall goal of the DOT's pipeline safety program, expressed in the most general terms, is to maintain and, where reasonable,

enhance the public safety in the transportation of hazardous commodities by pipeline.

DOT sees a continued growth in such transportation. Associated with that growth will surely be an increased risk to the public safety. A policy devoted to the status quo in public safety is not commensurate with this increasing risk.

In exercising its pipeline safety regulatory authority, MTB must and does strive for the highest levels of safety while simultaneously considering the many important issues involved with cost versus benefit, energy, and other impacts of the economy, the environment, and the Nation in general.

Our identification of major pipeline safety programs is designed to focus MTB's management attention and channel MTB's energies and resources to those areas that deserve priority treatment in terms of overall safety goals in pipeline transportation. Priorities among these major safety program areas are determined by weighing two fundamental considerations:

The current likelihood, frequency, and magnitude of accidents occurring in the subject areas; and

The potential a regulatory action has for application to a similar problem in other program areas.

For the subcommittee's information, I have attached to my prepared statement a complete current ordering among the major safety programs for pipeline transportation that have been identified for MTB action. This listing will give you some idea of the hefty schedule of activities that MTB's pipeline staff envisions for itself.

I would like to now turn my attention to Senate bill 411. Again I will not take the subcommittee's time by repeating the detailed discussion on S. 411's provisions that was contained in the Secretary's February 8 testimony. Rather, I will speak to the need for this legislation.

Based on the good Federal-State relationship, the cooperative interplay between DOT and industry, and the active regulatory, enforcement, and R. & D. programs, it is reasonable to conclude that DOT is experiencing a basic success in its pipeline safety programs.

However, notwithstanding this basic success under existing law, a decade of experience with the Federal Government's pipeline safety responsibilities has shown the need for improved pipeline safety legislation.

The Natural Gas Pipeline Safety Act of 1968 and the Transportation of Explosives Act in the Federal criminal code are the primary authorities for the Department's current gas and hazardous liquid pipeline safety programs.

We believe, after a decade of experience, that these underlying authorities do not provide all the tools necessary for a comprehensive and effective Federal pipeline safety program.

It is for this reason that we support Senate bill 411, which will substantially improve the ability of the Department to progress toward the goal of a fully effective and comprehensive pipeline safety program.

The bill contains two titles. Title I amends the Natural Gas Pipeline Safety Act in a manner that would permit a more effective

tive realization of the original purposes of the Act. Title II proposes new and comprehensive legislation for the safety regulation of hazardous liquid pipeline transportation.

Title I has two major purposes. First, it clarifies the Department's safety role during the preconstruction and construction phases of a gas pipeline facility.

To date, it has not been the practice of the Department to pass on whether preoperational facility safety standards issued under the NGPSA have been complied with before a facility becomes operational.

In recent years, however, the environmental and safety concerns associated with the location, construction—including extension and replacement—and operation of pipeline facilities, especially those used or intended for use in the import and export of LNG, have led the Department to conclude that it should be active in assuring the safety of a pipeline facility before it becomes operational.

To effectively carry out such a role, the Department believes that the NGPSA should expressly provide the necessary authority. Title I would do just that by giving the Secretary preconstruction approval authority for major gas pipeline facilities and by making clear that the Secretary may use his enforcement powers to achieve compliance with applicable standards before a facility goes into operation.

And second, title I would provide the Secretary with better enforcement powers. These would include subpoena authority, compliance order authority, availability of criminal sanctions, and authorization to seek collection of relatively small civil penalties in Federal magistrate courts.

Taken together, these new tools will provide the boost to the Department's pipeline safety enforcement program that is needed if that program is to be fully effective.

Other than the authorization provision, the remaining amendments in title I of S. 411 are primarily housekeeping in nature and are desirable because of the greater clarity and conciseness that they would bring to the NGPSA if enacted.

As I previously stated, title II of our bill proposes new legislation as authority for the Department's hazardous liquid pipeline safety program. The Department currently regulates liquid pipeline transportation under the Transportation of Explosives Act—the Explosives Act.

Unlike the NGPSA for gas pipelines, the Explosives Act was not written with pipeline safety in mind, and in fact does not even use the word "pipeline" in its provisions, and applies to pipelines only because of its general applicability to hazardous materials transportation. We believe that necessary and appropriate improvement of the Secretary's liquid pipeline safety programs requires the enactment of legislation specifically pertaining to such programs.

Notwithstanding the deficiencies of the Explosives Act, I would say that the safety record of liquid pipelines has been good—at least on the interstate lines for which we have data.

Pipelines admittedly do not compare with highway transportation, for example, as a national safety problem. Nevertheless, at the time when patterns of energy use are changing and evolving, it

is essential that we have the most effective safety program possible.

Like title I of S. 411, title II was prepared after reviewing our experience during the last decade. We reexamined the patchwork of existing legislative mandates as to what we should and should not be doing.

We decided to seek clear, express, safety authority over storage facilities of hazardous liquids and over intrastate liquid pipelines. Our authority in these areas today is somewhat between nonexistent and highly ambiguous. This is a deficiency in today's law, and we are not satisfied with where that leaves us, while we are being called upon to insure that the public is adequately protected.

A look at liquid pipelines' safety record shows both notable pluses and minuses.

In 1977, 179,600 miles of interstate pipeline transported upwards of 532,000 ton-miles of liquid petroleum products. In terms of national fatality and injury rates, interstate transportation by liquid pipelines is a relatively safe endeavor.

We know that during the last 8 years—1971-78—interstate liquid pipelines have experienced an average of 5 deaths and 10 injuries each year. This is an admirable safety record, particularly when compared to other modes.

However, we do become concerned when we look further at the statistics and find that highly volatile liquids—HVL—in pipelines such as LPG have been involved in only 10 percent of the accidents but account for 66 percent of the fatalities, 50 percent of the injuries, and 30 percent of the property damage overall.

We have no authoritative source of such data on intrastate liquid pipelines. We estimate there are between 70,000 and 80,000 miles of intrastate hazardous liquid pipelines that are currently not subject to Federal safety standards.

Most operate at high pressures and share numerous other operating characteristics with interstate pipelines. Also, we believe they are in general about the same age, and have been built to the same basic industry standards as the interstate lines.

Thus, it is reasonable to expect that the same pipeline safety problems to which the federal regulations for interstate liquid pipelines are directed also occur on intrastate pipelines.

The largest proportion of the interstate liquid pipelines are in the Southwest and West, particularly in Louisiana, Texas, Oklahoma, and California, but none of these States exercise safety jurisdiction over the lines. This absence of State regulation is surprising since, unlike interstate lines which tend to be in open country, a large number of intrastate pipelines pass through population areas.

As an example, many intrastate lines exist in Los Angeles County and downtown Los Angeles. With the growing tendency of States and local governments to assert safety regulatory authority over all sorts of hazardous material transportation activities, this may well change in the near future.

I would like to inform the subcommittee of a few serious accidents which have occurred on these lines.

In 1976, a pipeline transporting gasoline in Los Angeles was struck by trenching equipment and ruptured. The vapors and

liquid were ignited. An ensuing fireball killed 9 people, injured 14 others, and destroyed several commercial buildings.

A crude oil line cracked at Abilene in 1974. Six workmen were overcome and killed by hydrogen sulfide fumes. They were attempting to repair a leaking weld where a repaired sleeve for corrosion leaks had been installed.

In a 1972 accident at Hearne, Tex., vapors sprayed from a ruptured 8-inch crude oil line. The vapors ignited and fire killed 1 person, injured 2 others, and destroyed a house.

Title II of S. 411 would provide for uniform Federal standards for these and all intrastate liquid pipelines and allow the individual States the option of taking on the task of monitoring compliance with these standards.

The General Accounting Office has on at least two occasions recommended that DOT regulate the safety and all hazardous materials pipelines which are not currently regulated. In a comprehensive report issued July 31, 1978, titled "Liquefied Energy Gases Safety," EMD-78-28, GAO recommended that DOT "extend its regulations to cover intrastate LPG and naptha pipelines, including connecting import terminals and storage complexes affecting intrastate commerce."

A similar recommendation was included in an earlier report, "Pipeline Safety—Need for a Stronger Federal Effort," issued April 26, 1978, CED-78-99. In this report, GAO noted that several serious accidents have occurred in recent years involving intrastate liquid pipelines and gas gathering lines in rural areas, and recommended that DOT "issue safety regulations covering all gas and hazardous liquid pipelines which pose potential hazards to the public safety."

While time does not permit a listing of the National Transportation Safety Board recommendations calling for new or more stringent standards for liquid pipelines, I will be happy to submit them for the record.

During the past decade, there has been tremendous growth in both the chemical and petroleum industries. There has been a corresponding growth in the quantity of shipments and, thus, in the exposure of the public to risks.

As the Nation's pipeline systems become older, they become more susceptible to fatigue and failure. Proper maintenance and operation become more critical. It is important that the Federal Government have adequate enforcement tools to insure compliance with safety standards on existing pipelines and on those under construction. Under the Explosives Act, liquid pipelines are subject to only criminal sanctions for violations of Federal safety standards.

Under the Explosives Act, all State and local efforts to impose safety requirements on interstate liquid pipelines have been preempted and not a single Federal enforcement action has gotten any further than referral to a U.S. attorney.

In developing title II, we believed the need for better enforcement tools to be of primary importance. Therefore we proposed to have civil penalties available to cover liquid pipelines.

We also asked for authority to issue compliance orders when monetary penalties may not be appropriate or fully effective in achieving compliance. Largely because of their vulnerability to

malevolent attacks, we asked for criminal sanctions for the willful or attempted destruction of interstate pipelines or related facilities.

We believe the proposed legislation will let us do our job better. It will give us tools to promulgate and enforce regulations without inefficiency. The scheme of title II is a logical one and will help us apply our energies and resources more effectively.

[The attachment follows:]

PRIORITY PROGRAM AREA: NATURAL GAS PIPELINE SAFETY

Transportation and safety profile

In 1977, 935,000 miles of pipelines transported in excess of 14 trillion cubic feet of gas—natural and synthetic gas, propane, and other petroleum gases—in the United States. Despite the extent of the gas pipeline system, fatalities resulting from gas-related accidents averaged only 36 annually over the last eight years.

Although the fatality rate has remained relatively constant, the accident rate has steadily increased over eight years as gas pipeline transportation has grown. This trend will almost certainly continue—pipeline mileage is expected to reach 972,000 by 1980—and the potential for deaths, injuries, and property damage resulting from pipeline accidents will continue to be considerable.

Rulemaking schedule

The Rulemaking schedule to help achieve MTB's regulatory development goal is as follows:

Plastic pipe safety

Docket PS-54: Rules of joining procedures, personnel training, or field tests to ensure the integrity of plastic pipe joints (Part 192).—Final Rule, March 1979.

Pipeline welding/other safety concerns

Project 181-8: Proposed rule for revising requirements for retention of radiographic films (Part 192).—NPRM, November 1979.

Project 210-9: Locate longitudinal weld seams in liquid pipe in upper half of pipe.—NPRM, October 1979.

Project 218-10: Operators would be required to participate in a program to prevent excavation damage to underground gas and liquid pipelines.—NPRM, May 1979.

Project 141-6: Proposed rule for revising the allowable temperature heat treatment of hard spots to reflect improved steel technology (Part 192).—NPRM, July 1979.

Project 203-8: Proposed rules for qualifying the use of certain pipeline components other than pipe (Part 192).—NPRM, October 1979.

Docket PS-48: Final rule on construction requirements for offsetting of longitudinal weld seams (Part 195).—Final Rule, December 1978.

Project 211-9: Proposed rule to require operators to have procedures to protect facilities affected by blasting (Part 192).—NPRM, November 1979.

Project 213-9: Proposed rule to require operators to identify a pipeline by pressure monitors or other means before performing hot taps (Part 192).—NPRM, September 1979.

Project 188-8: Gather information regarding requirement for procedures and instrumentation for use in monitoring gas odorants (Part 192).—NPRM, January 1979.

Project 180-8: Proposed rule to amend leak survey practices (Part 192).—NPRM, August 1979.

Project 215-9: Gather information regarding adequacy of existing standards with regard to safety problems concerning interior piping (Part 192).—ANPRM, December 1979.

Project 214-9: Proposed rule to require monitoring equipment for systems served by a simple district pressure regulating station (Part 192).—NPRM, May 1979.

Research and development

MTB has the following research efforts planned:

Development of fracture mechanics standards for pipeline girth welds. This study will provide an alternative method for assuring weld integrity.

Failure testing and analysis. This research effort provides specialized analysis to alternative causes of pipeline component failures.

Offshore pipeline technology. This study is designed to assess special requirements of pipelines constructed offshore; results to be used in development of offshore pipeline regulations.

Factors affecting the safety of arctic pipelines. The research will develop means to identify and solve special problems peculiar to pipelines built in arctic environments; results to be used in development of arctic pipeline regulations.

Training and education

MTB will continue to train Federal, State, and industry personnel at courses offered by the Transportation Safety Institute—Safety Evaluation of Gas Pipeline Systems, Gas Pipeline Failure Investigation, Evaluation of Gas Pipeline Corrosion Control Systems, and Joining of Pipeline Materials. In addition, two-day industry seminars, conducted in cooperation with State agencies and directed toward the small industry operators, provide an overview of the safety requirements for gas pipeline systems.

Mr. PALMER. With that, I will end my formal remarks, Senator. Senator FORD. Thank you very much, Mr. Palmer.

I am going to break our questions down into two sections: One for authorization, and the other one is the bill. I want to talk about authorization first, if that is all right with you. Then I will go to the bill questions.

Mr. PALMER. Yes, sir.

Senator FORD. How many persons are employed in the natural gas pipeline safety program?

Mr. PALMER. The current level is 14 individuals in gas pipeline enforcement. These are people who are out in the regions: Two eastern, four in the southern, three in the central, four in the southwest, and one in the western region.

Senator FORD. How many vacancies do you have?

Mr. PALMER. I am sorry?

Senator FORD. How many vacancies do you have?

Mr. PALMER. We currently have two vacancies in that area.

Senator FORD. You just authorized 16 employees?

Mr. PALMER. That is correct.

Senator FORD. How many did you have?

Mr. PALMER. In the field—that is in the field—16 authorizations in the field.

Senator FORD. How many employed in the program?

Mr. PALMER. The grand total authorization in pipeline safety, including those in Washington, would be 63.

Senator FORD. 63?

Mr. PALMER. Yes, sir.

Senator FORD. I will get my Yellow Creek arithmetic to work out, so that means you have got 49 in Washington, 14 in the field?

Mr. PALMER. That is correct.

Senator FORD. How many of those are filled?

Mr. PALMER. Of those in the area of regulation, we have authorized 14, and 12 are filled—the professionals only, unless you want the clerical as well.

Senator FORD. Well, you have 16 total employees, is that correct, here in Washington and in the field?

Mr. PALMER. The grand total is 63.

Senator FORD. Does that include clerical?

Mr. PALMER. Yes, sir.

Senator FORD. Of that 63, you have 14 in the field?

Mr. PALMER. Yes.

Senator FORD. All right. That leaves 49.

Mr. PALMER. Right.

Senator FORD. Is that professional and clerical?

Mr. PALMER. That is correct.

Senator FORD. Now let me ask you this: How many of the 49 are filled?

Mr. PALMER. Of the 49—well, I will have to—may I do my own arithmetic?

Senator FORD. As long as I understand it.

Mr. PALMER. Let us go back to square one and say that we have 63 authorized positions, 49 of those are filled at the present time.

Senator FORD. 49 are filled of the 63?

Mr. PALMER. Of the 63.

Senator FORD. So that leaves 14?

Mr. PALMER. Yes, sir.

Senator FORD. And that includes the field force?

Mr. PALMER. That is correct.

Senator FORD. The states do most of the field work, do they not?

Mr. PALMER. That is correct.

Senator FORD. What do the 14 do?

Mr. PALMER. The 14 generally handle the large interstate areas, and they are engaged in doing inspection, investigation, for about half of their time; monitoring the State programs, about one-fourth of their time; and training and education of small operators comprise the rest of their responsibilities.

Senator FORD. Mr. Palmer, will S. 411 require new personnel?

Mr. PALMER. It is our estimate that assumption of the liquid authority would require us an additional \$250,000, and with that perhaps four to five additional people to regulate the liquid aspects of S. 411.

We would see in the preconstruction area, at least initially, no increased requirement.

Senator FORD. Of this group—not including your clerical personnel—what percentage of professional staff devote their time to policy development? And what percentage to enforcement activities?

Mr. PALMER. The basic division of responsibility is development of regulation, rather than policy, so that most of their professionals in the Washington area devote their time to the writing of regulations, the holding of hearings, and dissemination of information, and turning that into regulations.

The policies derive, I think, from the laws, and we have guidance from the Secretary's office, and we carry out that policy within the MTB.

Senator FORD. What percentage of the natural gas pipeline safety funds are devoted to education and training of State inspectors?

Mr. PALMER. I do not have a breakdown that includes that kind of setup. We have—

Senator FORD. Well, then, just briefly describe the training and education efforts.

Mr. PALMER. The Department and the Administration runs the Transportation Safety Institute in Oklahoma City. Here, through the support programs, we provide training on an annual basis for several hundred people in the area of safety and inspection at the State level.

Generally this is handled in part through the State grant support program, and in part through support from the Administration to the Transportation Safety Institute.

Currently we can identify, in the gas area, our training support for that training institute about \$100,000 per year.

Senator FORD. That trains about 100 people?

Mr. PALMER. It trains—this past year, I think we had about 250 people, the last calendar year, 1978, pass through the program at the Transportation Safety Institute, in the area of pipeline safety and enforcement inspection.

Senator FORD. These new people are re-educated?

Mr. PALMER. Well, I am sure there is some re-education. There is continuing education.

There is also, for many new people coming on line, the first time through, they will get their training there as well.

Senator FORD. In last year's reauthorization hearing, I believe your office testified that the Alaska project was such a drain on your personnel resources that you had difficulty in carrying out your normal operational responsibilities. That is in the record.

The Alaska natural gas project is still active. Will that drain on resources still handicap your normal activities?

Mr. PALMER. We have, as you know, been appropriated positions for the Alaska Natural Gas Pipeline Office. We currently have two professionals employed in that office carrying on the work of preliminary safety standards, testing, conducting the necessary research for low-temperature pipes.

At the present time with our appropriation for this year, this does not constitute a drain on our resources for the lower 48.

Senator FORD. How many employees are authorized for the Alaska Pipeline?

Mr. PALMER. The level of authorization was seven, of which we have two onboard at the present time.

Senator FORD. How long have you had the authorization of seven?

Mr. PALMER. Since—during this current year.

Senator FORD. Just last October?

Mr. PALMER. Yes, sir.

Senator FORD. You have only been able to bring two onboard?

Mr. PALMER. We do not intend to bring on the other individuals until the completion of the reorganization plan and the hiring of the Federal inspector, so that those positions might be turned over to the Federal inspector to carry out the DOT responsibilities in the Alaska Natural Gas Pipeline.

There is no particular work for them to do in the Alaska area until the Federal inspector defines the policies and the procedures and we have the necessary rules and regulations in place. We are carrying out what we feel are the anticipatory programs, mechanics for low-temperature pipes, girth well inspection programs, and burst tests at the high pressures that this pipeline will run.

Until the final plan is developed, that is about as far as we can go, in terms of having our work satisfying that pipeline construction.

Senator FORD. Well, would you briefly describe then the status of major rulemaking now in progress in the Office of Pipeline Safety Operations?

Mr. PALMER. Yes, sir.

We have several rulemaking processes going on right now. The first of these is the LNG area. We have completed the comprehensive ANPRM on LNG and, just this past February issued the notice of proposed rulemaking on the siting, design, and construction of liquid natural gas facilities. On that notice we have benefited by both written and oral public testimony. We are analyzing that testimony. We have also conducted an economic impact study relative to implementation of the proposals that we have made.

It is our intent to issue a notice of proposed rulemaking on the operation and maintenance of LNG facilities in July of this year. A final rule on those matters is expected to be completed by December of this year.

Senator FORD. I may be off base a little bit, but when do you expect a final LNG proposed rule?

Mr. PALMER. The LNG rule, the final rule is—our target date is December 1979.

There are two different ones. December is the operation and maintenance rules—as Mr. Santman informs me—and the siting rule, the final rule is September of this year.

We have split the advanced notice of proposed rulemaking into two separate rulemakings. This was done for our own convenience given the thousands of pages of comments received on the advanced notice.

Senator FORD. Last year in testimony your office indicated that the Department of Transportation would be expanding the Department's one-call emergency systems. Would you tell us the progress of these efforts?

Mr. PALMER. Yes, sir. The Secretary in October of 1978 issued his approval of the final set of recommendations out of his Hazardous Materials Task Force.

The second recommendation was that the Coast Guard implement a national one-call system through its national response center. This has been implemented. One call number is available for all hazardous material incidences, and in fact it was the first call received, and help was sent, in the latest train accident that occurred in Florida. So it is up and operating.

It must be expanded somewhat, because we do not yet have all the support people in place, but it is functioning.

Senator FORD. You know, companies do an awful good job of safety themselves, in spite of the Federal Government, sometimes.

You take the first call of the accident in Florida, which was a train accident carrying hazardous materials. Are you to a point where you have any kind of criteria, or limit, or rule, as it relates to the number of cars that can be pulled with hazardous materials included in the car itself or the train itself?

Mr. PALMER. We have no rules relative to the length of trains and the mix, through the Federal Rail Administration. We have just been through a rather lengthy study carried out by the Association of American Railroads in which they have analyzed all of the Federal Rail Administration data on accidents, derailments, and

the like, the placing of cars in the train—the head cars being—the first carrying hazardous material, or what have you. And the information supported by our own analysis of this data gives no clear indication that one makeup of train is more prone to having an accident through a derailment than any other or whether the number of cars in the train has a direct influence on how it behaves in the derailment.

We do know that speed is a factor. And we have acted in the past to control the speed, particularly on the L&N, while they put their track maintenance crews out to get the bad track cleaned up, or to at least keep the percentage level of bad track down.

So our preliminary studies have been directed—and we have taken the entire Federal Rail Administration data base and worked through that—to find some clear indicator that if we did something it would assist us in proposing regulations that have made sense, to assist us in coping with the derailment problem.

There is no single indicator that we have discovered at this point from that data base that would lead us to have that kind of regulation be effective in assisting in the avoidance of derailment.

Senator FORD. You said the number of cars in a train would influence the severity, I guess, of the accident. The lower the number, the less severe; and the higher the number—

Mr. PALMER. The length of the train, up through 100 or 110 cars' length, seems not to have a severe impact as to the nature of a derailment.

Now it is also quite clear that the more tank cars carrying various kinds of hazardous materials, the more of those you have on the train, the greater the severity potential.

Senator FORD. The more toxic chemicals you have on a train, if you have an accident, sure. I can understand that.

Mr. PALMER. Yes, sir, that is correct.

Senator FORD. But you said up to 110 cars does not make any difference. Anything over 110 would create more problems?

Mr. PALMER. That seems—

Senator FORD. That seems to be the breaking point?

Mr. PALMER. Yes, sir.

Senator FORD. You referred in your statement to the effort between attorneys and regional offices to coordinate the development of higher quality cases.

What does this mean?

Mr. PALMER. We have, over the past—

Senator FORD. Better chances of successful prosecution?

Mr. PALMER. That is the hope, yes, sir.

What we have done is to attempt to—well, in fact we have assigned two attorneys almost full time to examining the evidence gathered from regular inspections or inspections following an accident or leak to determine whether there is a sound basis for alleging a violation of rules governing pipeline safety. If such a basis is established we may find it appropriate to assess a penalty for that violation.

Senator FORD. It is at your discretion?

Mr. PALMER. That is correct.

All the evidence is analyzed to determine whether or not we are in a position to assess a penalty. If we do assess a penalty and are

unable to collect it administratively, we are permitted by the NGPSA to refer the case to the Department of Justice for institution of district court action to achieve collection.

We feel that the assignment of these two attorneys has done several things. First of all, it has cleared out a backlog of old cases. They have aged. We have determined that we cannot in any way get a judgment against the companies because of age and quality of the material that is in the file.

So we have essentially indicated to these people that we will not be attempting to collect any fines as a consequence of these past alleged violations.

We have also looked at some of the more current cases and have taken much more vigorous action in pursuing fines, taking these to court. Our collection record is much better.

Our incidence of success in pursuing these cases is much higher. We feel we will be current with the situation within a year and from then on be timely with our enforcement actions on behalf of safety.

Senator FORD. How do you decide which of the enforcement procedures to use? It could be civil, criminal. How do you decide which?

Mr. PALMER. Well, in the case of a liquid pipeline, we have only one choice. And that is criminal.

And I must say to you, in all candor, that no criminal action has ever been instituted given the burden of proof that must be met by the Department to achieve a criminal conviction.

In the case of gas pipelines, where we have civil penalties, the level of the penalty depends on our analysis of the severity of the situation and the record of the pipeline company as to its compliance with our safety regulations. If they are generally working with us to keep their pipelines in good order, the fine obviously would be less.

If they are multiple offenders on a continuing basis, we will try to raise the fine to the maximum.

Senator FORD. You said that you were trying to work out a procedure where you would go to magistrates' courts.

Mr. PALMER. Yes, sir.

Senator FORD. What do you mean by magistrate court?

There are a lot of them around the country, small courts. Magistrates come in different shapes, forms, and sizes.

Mr. PALMER. Well, basically, in the Federal system, in the magistrate court, we would propose that essentially it is a small claim of up to \$1,500 on a fine, and that rather than take the time of going through a Federal district court, that we would go to one of the local magistrate courts to pursue these small claims.

Senator FORD. You are talking about the Federal magistrates now?

Mr. PALMER. That is correct.

Senator FORD. It has nothing to do with the local or State system whatsoever?

Mr. PALMER. The State may pursue its penalties in whichever mode it wishes. We must go through the Federal system.

Senator FORD. You said, "magistrate court". I want the record to be sure that you would go to the Federal magistrate court. If you

go to some of my magistrate courts, you would never get home. You look like an outsider with a lot of money.

Mr. PALMER. I would have a different shirt on.

Senator FORD. What percentage of the natural gas pipeline safety program dollars have been devoted to regulations dealing with LNG, excluding enforcement activities?

Mr. PALMER. May I ask Mr. Santman to answer that one in detail.

Mr. SANTMAN. Our efforts in this field have been a modest amount of research money, backing up the Coast Guard and working with AGA. The total amount over the years has probably been—of our contribution—about \$100,000.

Senator FORD. Annually?

Mr. SANTMAN. No. Total is \$100,000 devoted exclusively to LNG-type projects.

The second area of our expenditures has been in our own resources, our own rulemaking activities. And we have had approximately—adding other people's time together—we have been devoting about 2, 2½ person-years over the last 3 years at a price, I would guess, of about \$50,000 per person.

The third expenditures devoted to LNG has been in the area of economic impact analysis. And our costs there have been again in the neighborhood of \$60,000 to \$80,000.

So, I would say that over the last 3-year period we have devoted about roughly \$300,000 exclusively to working the LNG projects.

We have been able to take advantage of an awful lot of work done by others—of course, the NFPA, who developed the original set of LNG standards. We have borrowed heavily upon research performed by the American Gas Association and research performed by our companion agency, the Coast Guard, in vapor examination and release of LNG.

Senator FORD. In your statement you say that the industry has been very cooperative. You lean on them heavily for advice and counsel, is that correct?

Mr. PALMER. Yes, that is correct.

Senator FORD. You mentioned master meters a while ago, trailer parks, shopping centers, and so forth. The Department of Transportation now has authority, I believe, to regulate master meters, several of which have been the sites of serious accidents.

Do you think the Federal Government is the appropriate level of government to regulate master meters?

Mr. PALMER. Well, if I had my choice, that would certainly be a State responsibility, under our regulations. It would be better to fold it into a State inspection plan than into a Federal Government plan.

However, the States really do not wish to take on this added responsibility, which is a fairly large responsibility.

Senator FORD. Well, that leads me to another question then.

Do you recognize the need for improvements in State programs?

Mr. PALMER. Yes, sir.

Senator FORD. But the Department of Transportation has requested the same level of funding for these programs in fiscal year 1980 as for fiscal year 1979. Can we really expect the States to

improve their programs without providing funds for that improvement?

Mr. PALMER. Well, in our current State grant program, in the area of gas pipeline, we fund the States in the grant program to about 50 percent of the total expenditure in the State. At the present time our State participation is really quite excellent. We within the Department felt that our level was about the correct level, that we are getting the kind of inspections that we really do need for the States; our cooperation level is high. And if we err, it is on the side of not perhaps recognizing the course of inflation in the program.

Senator FORD. So you are saying to me that you should have requested additional funds?

Mr. PALMER. Or that our current relationships with the States are really quite good. States are putting in—perhaps because a great many of them are engaged in budget surpluses—perhaps they have a little more ability to do some of this.

So, in any event, our goal, of course, is to maintain the viability of the State program—we think we are doing that—and still stay within the requirements of the tight budget for the Federal Government.

Senator FORD. Last December, during the hearings I held, we heard testimony from two small municipal systems, both from my State, West Liberty and Ferguson, which suggest that such systems present real dangers to citizens. They are not isolated just to Kentucky. We had the ability to bring those two in, which substantiated some other information.

How widespread do you feel these problems are?

Mr. PALMER. It is our judgment that in the southwest and the southeast, where we have a great many municipal systems—that many of them, or most of them, are old. They present serious problems. And I think that this is an area where we must pay more attention.

If the Senator would permit, Mr. Thomas has firsthand experience in these areas, and I think it might be useful to hear from him just exactly what the situation is and how we are working with it.

Senator FORD. We would be delighted to hear from him.

Mr. THOMAS. Senator, in our region alone we probably have over 400 municipal operators, most of which will be under—

Senator FORD. Now, which region?

Mr. THOMAS. This would be the southern region.

Senator FORD. The Atlanta region, which would be No. 4?

Mr. THOMAS. Region 4, DOT region.

Most of these municipal gas systems are under state jurisdiction. However, in the Commonwealth and in Georgia we do have the direct authority over municipal operators. We found that we do have a significant problem with the smaller the size of the system. Usually, it represents a lack of expertise in operation and a lack of preventive money going back into the system.

In many cases, of course, the gas system is supporting other utilities: water, streets. This has not been a good situation. Therefore, we have had to spend a lot of time trying to find a way, not only to be a regulator, but to try and help. In other words, we

recognized early in the game that if you do not have anything, you cannot force somebody to turn around a system overnight.

So we have tried, through working with the funding agencies of the Economic Development Administration and HUD, we have tried to come up with a program where we can feed systems that have shown goodwill and truly need to be rebuilt. We have tried to find a mechanism to where we can channel their needs into positive action on the funding side.

We are now working on a trial program in Kentucky, and if this proves to be a representative, well-operated program in terms of getting good participation on the funding side, plus the local, State and local, people that would be working with this, if everybody could work together and we can get some good-faith systems rebuilt, I think we will have identified a need throughout the country.

The real problem is that gas systems compete for water and sewer grant funds. And the mechanisms are there for those type of utilities, but it has been a problem to get the gas operator's needs met, especially when they are small.

I can go into as much detail as you would like on this particular area, Senator.

Senator FORD. Well, I do not know. Most of the money that would be available for this would be the imminent danger. That would be the Secretary's discretionary funds? Or is there money set aside for imminent danger?

Mr. THOMAS. In the HUD funding we would have to show imminent threat.

Senator FORD. Imminent threat?

Mr. THOMAS. Yes. We have done this. In fact, when the city of Ferguson—we were able to work that.

On the EDA side it is more of an economic impact that has to be shown. I think the mayor of West Liberty has pointed this out in her endeavor.

Senator FORD. Let us just take Ferguson, for instance. Hopefully they were able to secure, enough funds to eliminate the imminent threat. This meant a new system for a small community, a small amount of money compared to everything else.

What procedures will be required now for Ferguson? These good people, honest people, may lack the expertise and bookkeeping that is necessary to develop a reserve for maintenance, repair, and replacement. What procedures will be required to make sure that the facilities do not deteriorate again?

Once we eliminate the imminent threat and provide funds, what mechanism is there not to let it deteriorate again?

Mr. THOMAS. At this point we have volunteered to HUD and EDA that we would, along with the Kentucky Energy Commission—the former Kentucky Public Service Commission—we would be their technical representatives over a period of time. We would come in and insure that they are operating the systems safely, that they are using the proper design, construction, operation, maintenance techniques. It is voluntary now. There is no mechanism.

However, under the Kentucky program, once it is implemented, we may have a formal arrangement worked out with EDA and HUD.

Ferguson was able to go directly to HUD and not use this pilot-type program, because being a municipality, they are eligible for the funding.

The problem is with the small private companies, because there is no mechanism set for them.

Senator FORD. How many dollars are in the pilot program?

Mr. THOMAS. Of the noncommitted funds that EDA and HUD would have—which I do not have a handle on that—the money that is going into the program right now, \$60,000 that has been reported, is for the administration of the program.

What this will do will insure that the applications are processed and the best available funding package will be located. That will come from available funds—Federal, State—wherever they can be mustered.

Senator FORD. Well, if you say it is an economic problem for EDA, and you have to decide which area—if it is imminent threat, it will go to HUD. But you do not have any idea how many dollars would be available in HUD or EDA or—

Mr. THOMAS. Sir, these funds compete with water and sewer funds.

Senator FORD. I understand that.

How many dollars do they have that we compete for?

Mr. THOMAS. EDA has told me that they would have approximately \$2 million in non—whatever the term is—that have not been applied for.

Senator FORD. This would be discretionary funds?

Mr. THOMAS. I think it is their title IX.

Senator FORD. Title IX money.

Well, if you had \$2 million and you have small communities similar to Ferguson, you could take care of 10 communities a year?

Mr. THOMAS. Yes, sir, that is correct.

Senator FORD. How many do you think you have in your region alone, now? Just give me a ballpark figure. Left or right field, it does not make any difference.

Mr. THOMAS. We have identified approximately 25 systems in Kentucky.

Senator FORD. In Kentucky alone?

Mr. THOMAS. In Kentucky alone.

Senator FORD. Are we the only State that has accelerated this pilot program?

Mr. THOMAS. Yes, sir. We were able to get the right set of ingredients to work at it in Kentucky first.

Senator FORD. Let me ask you this: You say you have the ability in Kentucky and Georgia to do some work—overseeing, supervising—what is the nomenclature for your ability in those two States?

Mr. THOMAS. It would be inspection. We would make a formal inspection, and we would make inspection on a necessary frequency to insure proper spending of Federal funds.

Senator FORD. After funds have been allocated, the contracts are awarded and completed?

Mr. THOMAS. Yes, sir. They have done this in Livermore, Ky. We built systems, and we have gone in and worked—

Senator FORD. That is where you would go right down the sidewalk and light a cigarette from flames coming out of the curb. There was not any danger; it was just on fire.

The system is complete in Livermore now?

Mr. THOMAS. Yes.

Senator FORD. It is in place?

How many times have you been there to Livermore now to inspect it, to be sure that the mayor is doing the proper thing and the city council is doing the proper thing, as it relates to the system?

Mr. THOMAS. During the initial rebuilding year, we were in approximately three times.

Senator FORD. With a State looking at it more often, I suspect.

Mr. THOMAS. The State fire marshal has. The State commission has not. Only at our request would they do that.

Senator FORD. But the fire marshal has been there looking at it?

Mr. THOMAS. Yes, sir; we work quite closely with them in Kentucky when we have identified a hazardous situation.

Senator FORD. Well, we may have some other problems similar to this, now, with the flooding. That could create some real problems and some imminent threat.

I believe Senator Heflin made the statement that the flooding streets in the various communities of Alabama are bubbling with gas.

So, it could be that we are sitting on a big problem. We have got a distribution system situation that could give us a lot of problems to the whole pipeline system.

But at least we have got a pilot program going. We have seen some of the ways in which it can be resolved, and, hopefully, we can lend a helping hand.

I do not think I have any further questions as it relates to authorization. Let us hurriedly get into some questions on the bill.

What is the price tag on title II of S. 411 to the Department?

Mr. PALMER. The estimate that we have made for title II is: We feel it would require an annual budget increase of \$125,000 to perform the review and approvals, and a one-time expenditure of about \$250,000 for the safety concerns associated with the underground storage of LPG, plus ongoing responsibility for four to five professionals.

Senator FORD. What would be the price tag to industry?

Mr. PALMER. Industry, if it is operating in a safe mode, is already regulated by DOT, and there should be only a modest impact on them. They are already reporting all of their leaks, ruptures, and other problems, through the regulations we have in place, in the liquid areas, so that those that are in good condition should have only minor impact. Those who are not operating in good condition, they would be subject to civil penalties, to reporting requirements, and to increasing the safety of their operations.

Senator FORD. Well, several members of the industry have objected to the preconstruction approval section, saying they do not have detailed design drawings until after FERC has granted approval.

Would you consider sort of a preliminary plan that FERC receives to be sufficient for the review which the Department of Transportation envisions?

Mr. PALMER. Yes. We would generally, as we currently do, try to have a FERC certificate condition with the DOT safety requirements, that these will be the total safety requirements for the issuance of any license.

We would then propose, in our preconstruction authority, to review the preliminary drawings, to act upon those simultaneously through the FERC hearings, so that we would not be in a position of delaying those hearings in any way at all.

Senator FORD. What if you and FERC disagree?

Mr. PALMER. Well, if we have the preconstruction safety authority, then FERC will defer to our safety requirements.

Senator FORD. They would be issued simultaneously?

Mr. PALMER. That is correct. We would view it as a two-phased approach. After we do the conditioning of the FERC certification, with the safety requirements through the preliminary plan review, we would then, I think, as Mr. Lawrence suggested, work with the construction on site and presume to review with them any modification to their plans and at the end, as we currently do, certify as to whether that facility meets our safety requirements and is therefore able to transmit—

Senator FORD. Would there be any difference in procedure after legislation than there is now? Would there be any additional forms, documents, time-related?

Mr. PALMER. There would certainly be documentation that we would send over to FERC and to the conditioning of certification. We already have in place regulations which require most of the forms to be filled out at the present time.

It is our judgment that our process in the initial, preliminary period is about a 4- to 5-month time period. This could occur simultaneously with the FERC licensing proceeding.

So we really do not see that there is a heavy time constraint through the DOT process, and anything we do in the preconstruction program would come through the written regulation route. Such regulations would be developed under the procedures required by the Administrative Procedures Act.

This would then indicate to the potential builders just exactly what the situation is. We envision it really as getting in at the time of plant construction so that we have some ability to insure that the facilities will be built to the DOT standards, rather than after the fact coming in and making the same inspection.

Senator FORD. Are you placing into the record that you are not requiring any additional paper? You will not delay the permitting and other things as a result of your preconstruction approval?

Mr. PALMER. It is our judgment that if we were to get with FERC at the outset of licensing procedures—they have formal hearings which they hold—that if we are included in the—as a condition on their license—that this would not add to the time to go through the licensing procedure.

The forms that we would have obviously will change from time to time as we both learn more and find other things that impact us.

But by and large, we have requirements already in place through regulation on the form that must be filled out to meet the safety requirements of DOT.

Senator FORD. Mr. Palmer, how high is 50,000 pieces of paper?

Mr. PALMER. I cannot answer that, Senator.

Senator FORD. Well, down home they call that a bunch.

Mr. PALMER. I agree with that.

Senator FORD. You agree with a bunch?

Mr. PALMER. Yes, sir.

Senator FORD. If Mr. Levy's testimony is correct, almost 50,000 pieces of paper were required, and you are going to add some more onto that.

How much weight of this paperwork can industry stand?

Mr. PALMER. Well, I am not certain if the 50,000 pieces are those that industry requires of itself to construct a plant.

Senator FORD. You say industry puts some restrictions on itself?

Mr. PALMER. If they are going to construct a plant, it seems to me you have to have a drawing for every piece.

Senator FORD. They are doing a job, now, in their own area.

Are you saying the requirement—they will have to have a design?

As I understand Mr. Levy, there was in excess of 40,000. I just put 50,000 as a figure, you know, when you want to make it sound bigger.

His testimony indicates that the Government probably required him to fill out that many pieces of paper. And you are going to require him to add onto it.

He may be glad he is through.

Mr. PALMER. Well, my discussions with Mr. Levy, he indicated that his Cove Point plant complies with the requirement of DOT's, notice of proposed rulemaking for LNG plants in virtually every category. I would presume, then, if that is the case, DOT preconstruction approval would not add materially to the work that he has already done.

Senator FORD. One of the major issues identified at our December hearing was a need for improved coordination between DOT and FERC. But S. 411, in my opinion, well, it actually does not address this issue.

What has been done to improve the coordination?

Mr. PALMER. Well, I can speak only for myself. I have been over to FERC to meet with the Commissioner, in order to hasten our memorandum of agreement process. We had within DOT, I think, about 18 months ago, made a proposal to FERC. They have countered with their own proposal last July.

We found that their proposal was to add—at their wish—additional safety requirements beyond those that DOT might impose. It is our opinion that in the construction and operation of pipelines, that we do indeed have adequate safety requirements.

So they do not need to be added upon through FERC. And they have a problem with inadequate safety. We are the appropriate agency to do that.

We have now come back and held a meeting with them to see if we cannot get this thing moving at a more rapid pace, and we did have a good meeting with the Commissioner. And it is our expectation that we will have what we hope to be the last consideration of the memorandum of understanding within about a month, and that this will find favor in FERC very quickly.

Senator FORD. You think that you will get it done this year?

Mr. PALMER. That is certainly my hope.

Senator FORD. If DOT requires the production of property in an accident investigation, how can operators protect themselves from claims of liability based on defects in their property?

Mr. PALMER. Yes. I think what, as the AGA folks stated, our process, we would envision the opportunity to join with them.

Senator FORD. You would join with them?

Mr. PALMER. Yes, because we have no desire to eliminate their ability to find out exactly what happened. Our problem in the past has been that we have been unable to gain access to property involved in an accident in order to carry out our responsibilities, which are to determine how the failure occurred, whether it was a weakening of a pipe section, whether corrosive materials are going through, what is the nature of it, because if ruptures occur at one place on a pipe, where is the next logical place it will occur?

If an accident results through excavation of some kind, like a contractor nicking the pipe with a backhoe, that is one thing.

If, on the other hand, it is a flaw in the pipe itself, we have an overriding responsibility to make some kind of judgment about the integrity of that pipeline and similar pipelines for continued operation. Making this judgment may at times require access to certain property owned by the pipeline operator.

We have not always been able to get it. This has left us without the ability to determine what the cause was, and to make the necessary safety actions to correct it for the future.

So that is our whole purpose. So we have no desire to keep the companies from having materials, in fact, only if we had access to it.

Senator FORD. You are saying to me that you would be willing to monitor what the companies do, as long as you have access to the information?

Mr. PALMER. As long as we have our own expert present and we can cooperate in the test, we have no problem with that.

Senator FORD. As an alternative to the provision authorizing DOT to require the production of property, several witnesses suggested that DOT be authorized to monitor testing performed by the facility owner. You have said that you have no objection, as long as you have your expert there to observe and coordinate and cooperate with the industry.

Mr. PALMER. With also the ability to cause certain tests that might be important to us, to take place. I think it has to be more than just monitoring. It has to be the ability to compel certain kinds of testing that may otherwise not be conducted.

And maybe these would not occur. But if they are needed to carry out our safety responsibilities, we would certainly like not to be in a position of watching it go by and not being able to use it.

Senator FORD. Get a piece of it?

Mr. PALMER. Yes, sir.

Senator FORD. The spokesman for Western LNG has suggested that, rather than requiring the preconstruction approval, MTB shall monitor the design and construction of facilities in the same manner that the Coast Guard, I believe, monitors vessels' design and construction.

What is your response to that?

Mr. PALMER. I am not totally familiar with the Coast Guard's approach on that. I can say that our position would be essentially one of looking at the plans as they come forward. To the best of my knowledge, I think that the Coast Guard gets into the preconstruction requirements, that is, they really get in some depth, looking at the drawings for the integrity of the vessel.

Ours would probably be a higher level of aggregation, in the sense that preliminary plans would be sufficient for us, and then major changes to these—review those as the project goes along. So we probably do not want the great detail that the Coast Guard has, in my shallow understanding of what they do.

Senator FORD. I have only one other question, and I will get back to that. I do not know how this fits.

I reorganized the State government, while I was Governor of Kentucky. We whittled 70-some agencies down to 9 different areas. One of the biggest complaints I found was the inability to have engineering—health department facilities, construction arena, the fire marshal's office, so forth. In an on-spot investigation, we found that two or three engineers from different agencies of the State government would wind up on the same project.

We put them all together and found out that each of those individuals had the same expertise so you could send one engineer out to do the job that we had had three assigned to previously. That relieved two to do additional work.

We also coordinated and put into the same agency, all building permits. If the State government is bad, the Federal Government is 10 times as bad. I can understand the jurisdictional feelings of various agencies. And, gosh, you are not all as bad as the Senate committees, you know. But somewhere you have to give up or relax on being so rigid in order to give industry a shot. If they want to move and do things, as long as they provide the necessary information, as long as they comply with all the rules of the game, as long as they are safe, then we should not jockey them from one agency to another, from pillar to post, from hill to hill.

I would be very hopeful that we do not get into this position in this legislation, of getting into a jurisdictional fight. Congress developed statutes that leave rulemaking to the agencies. We do not draw very good lines, so we get into another grey area.

I do not want anything done that would eliminate the safety of construction. I do not want anything eliminated that would prevent us from having inspections to see that they are safe. But I certainly want to find some way that industry can fill out 1 form, and that takes care of it, instead of filling out 10 forms for 10 different things in the same manner.

So I would hope that we could work closely together, in a friendly fashion, and not let the fur get up on our neck every time somebody wants to change a word or dot an "i" or cross a "t".

When you start shuffling papers between agencies, it becomes then a battle between word merchants. Those word merchants want this word changed because they interpreted that word to mean that they have more authority than the agency they are dealing with, and then it goes back and forth.

So I would hope the memorandum of understanding between DOT and FERC will come along very quickly, and that you are saying to me that: "We are not imposing any additional problems." I have not made up my mind about that, by the way, and am a long way from it. You are not imposing any additional forms, or any additional delays as a result of what is proposed in S. 411.

So with that little statement, I hope you understand what I am saying. They say when the law is on your side, argue the law; when the facts are on your side, argue the facts. Since I am not a lawyer, I do not argue law, and I do not argue facts. I just kick and scream.

I want to get back to the question I was talking about a few minutes ago, imminent threat. Has the authority under section 3(b) of the NGPSA to address the gas pipeline facilities ever been exercised?

Mr. PALMER. Yes, sir. You heard Mr. Thomas speak to you of two instances just this year in Kentucky. So I think, as we get our tools up and understand better the ability to function, we will exercise these, and have done so.

Senator FORD. Is the Thompkinsville and Scottsville area two where you have exercised your authority under 3(b)?

Mr. THOMAS. Thompkinsville was, Senator, and Grand Coteau, La.

Senator FORD. So Scottsville was not involved in that? It was earlier? Several years old?

Mr. THOMAS. Yes. That is one that was rebuilt, received grants, and they have had problems making sure they have operated correctly.

Senator FORD. You have problems?

Mr. THOMAS. Well, this brought to mind why we need to have an understanding with the funding groups, so that we can stay on top of construction. We were not in place at that time. Our office was formed in 1975.

Senator FORD. That was what, like 1973, when Scottsville—

Mr. THOMAS. I believe it was earlier than that.

Senator FORD. 1972?

Mr. THOMAS. Right around the turn of the decade.

Mr. SANTMAN. 1969, sir.

Senator FORD. What was the funding?

Mr. SANTMAN. It was shut down in 1969. I believe the funding came along probably in 1970 or 1971.

Senator FORD. It seems like to me I was there when it was funded, and I did not get there until 1971.

I am getting older and my memory is not as good as it used to be.

Gentlemen, I thank you. It has been a pleasure having you this morning.

Mr. Palmer, I want to thank you for what I think you have been doing. At least I get the impression that you are improving DOT's performance in the pipeline area and hazardous materials in general, and I think the statement has been made that you are better than most.

I do not know how good that is, but if that is a left-handed compliment, or "damning with faint praise," you can take it any way you want to and hang it on your wall.

Mr. PALMER. I will try to keep that in mind, whether or not we can keep the amount of paper down.

Senator FORD. You keep the paper down and you will get along with me all right.

Thank you all very much.

[Whereupon, at 11:20 a.m., the hearing was adjourned.]

25. I have been thinking of you very much lately, and wondering how you are getting on. I hope you are well and happy. I have been very busy lately, but I have managed to find some time to write to you. I have been thinking of you very much lately, and wondering how you are getting on. I hope you are well and happy. I have been very busy lately, but I have managed to find some time to write to you.

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

THE SECRETARY OF TRANSPORTATION,
Washington, D.C., April 13, 1979.

HON. HOWARD W. CANNON,
Chairman, Committee on Commerce, Science, and Transportation,
U.S. Senate, Washington, D.C.

DEAR HOWARD: During your February 8 hearing on Liquefied Gases, you asked about the Department's efforts to determine financial responsibility and liability coverage of LNG facility operators. In my response regarding the range of insurance coverage maintained by the large import facilities, I mentioned that Elba Island carries \$100 million and Cove Point \$190.4 million, while we had no information on the coverage of Distrigas of Massachusetts Corporation in Everett.

Since the hearing I have received information from Mr. Donald Oakley, President of Distrigas, that their present liability coverage is \$122 million. Mr. Oakley also informs me that the company has in the past made this information available to government agencies studying LNG.

I am pleased to be able to provide this additional information regarding liability coverage and want to correct the possible impression that Distrigas has been uncooperative with the Department.

Sincerely,

BROCK ADAMS.

DISTRIGAS OF MASSACHUSETTS CORP.,
Boston, Mass., May 7, 1979.

Re: S-411, The Pipeline Safety Act of 1979.

HON. HOWARD W. CANNON,
Chairman, U.S. Committee on Commerce,
Washington, D.C.

DEAR SENATOR CANNON: On 8 February 1979, Secretary Brock Adams appeared before your Committee and testified regarding proposed liquefied natural gas legislation. In the course of his testimony, he stated that damage to the area surrounding our terminal at Everett, Massachusetts could possibly be in the range of \$50 billion in the event of a spill or accident. To our knowledge there has never been a study made on our facility by any responsible agency or contractor which would support this incredible figure. Further, it is our understanding that this number was not based on any calculation done by the Department of Transportation. Yet on 25 April 1979, in testimony submitted to your Committee on S-411 by the Environmental Policy Center, the \$50 billion figure was cited and described as being derived from calculations by the DOT.

We believe that your Committee understands that the figure has no factual basis and that you will not use it in your promulgation of LNG legislation. However, because of the possibility of its being misused by those who do not understand that it is in error and without fact, we request that it not be included as a part of your record on S-411. I am sure you appreciate our concern in this matter and understand the potential for general misunderstanding by the public if such a number should appear in a Senate Committee report.

Thank you very much for your consideration.

Sincerely,

DEERT V. MEGHREBLIAN, *President.*

Report of the Government and industry study of anhydrous ammonia

Government:

	Contributed funds
U.S. Coast Guard	\$341,000
Department of Energy	100,000
Federal Railway Administration	40,000
Directorate United Kingdom Health and Safety.....	20,000

Industry:

U.S. Nitrogen Industry	576,500
European Nitrogen Industry	190,000
Total	1,267,500

Objectives

The joint government and industry program has been established to study the effects of the accidental spillage of anhydrous ammonia on water and land. From tests we are conducting, we will attempt to ascertain the safety of anhydrous ammonia spillage. Since there has never been an anhydrous ammonia accident from a stationary storage tank, these tests will provide answers to questions of safety. This data, specifically, will be used to assist industry and government to:

1. Assess the hazard ammonia poses to the public;
2. Determine the need for additional storage safeguards; and
3. To permit the proper siting of future anhydrous ammonia storage.

Research to be conducted

The ammonia spill study will include:

QUANTITY, LOCATION, AND NUMBER OF TESTS

"Model" ¹ of the 30,000 gallon refrigerated barge—1,500 gallons of spilled refrigerated NH_3 (NH_3 is anhydrous ammonia): water—5.

"Model" of 10,000 gallon pressurized over the road truck—1,500 gallons of spilled pressurized NH_3 : Land—5.

"Model" of 32,000 gallon pressurized railroad car—spill 32,000 gallons of pressurized NH_3 : Land—3.

Ammonia regulations

To the best of our knowledge, there has never been a failure (rupture) of a 30,000 ton refrigerated fertilizer tank. Also, there has never been a fertilizer tank car rupture that caused a railroad accident. This safety record speaks for itself.

Federal and State, Occupational Safety and Health Administration regulations govern the storage and handling of NH_3 , and Federal and State agencies regulate the transport of NH_3 by barge, truck and rail.

Fertilizer contributes 30-40 percent of the nation's food and fiber. Additionally, agricultural exports will account for about \$30 billion this year.

These regulations would be just one more tax to the American farmer at a time when inflation is rampant. This translates to a needless and avoidable cost increase for food to the consumer.

SUMMARY OF LEGISLATIVE AND REGULATORY RESPONSES TO GAO'S REPORT ON LIQUEFIED ENERGY GASES SAFETY

INTRODUCTION

On July 31, 1978, GAO issued a report entitled "Liquefied Energy Gases Safety". This document is a summary of the relevant provisions of two bills (S. 411 and H.R. 51) and the responses of the Federal agencies to relevant recommendations in the report. GAO has commented only on Federal agency responses that we feel insufficiently address the recommendations.

The organization of this summary follows that of the report, and the chapter headings refer to chapters in the report.

This summary was originally prepared as part of an internal evaluation of the impact of the "Liquefied Energy Gases Safety" report.

DEPARTMENT OF TRANSPORTATION

CHAPTER 3. NATURAL FORCES

Recommendation

GAO did not make a recommendation regarding the ability of LEG storage facilities to withstand natural forces; however, this topic is extensively discussed in chapter 3 and in special issue 5 in chapter 16.

¹ Indicates that refrigerated and pressurized data will be utilized to model large storage spills (refrigerated and pressurized storage).

MTB notice of proposed rulemaking

(c) In the case of LNG facilities listed in paragraph (a) of Part 193.111, the critical components set forth below must be designed and built to withstand the most critical maximum horizontal and vertical response spectra (with respect to the natural period of the structure) determined to have occurred at the site as a result of an earthquake or determined to have the following probability of not being exceeded at the site in 50 years, whichever is larger, considering motion amplification and symmetric and asymmetric reaction forces resulting from hydrodynamic pressure and motion of contained liquid in interaction with the component structure:

Probability of response spectra not being exceeded

Critical component:	Percent
Storage tanks and their impounding systems.....	99.5
Transfer piping: Shutdown control systems; other flammable fluid containers	90.0

Part 193.113 Flooding

(a) Each operator shall determine the effects of flooding on an LNG facility site based on the worst occurrence in a 100-year period. The determination must take into account:

- (1) Volume and velocity of the floodwater;
- (2) Tsunamis;
- (3) Potential failure of dams;
- (4) Predictable land developments which would affect runoff accumulation of water; and
- (5) Tidal action.

Part 193.117 Wind forces

(a) All critical components must be designed to withstand wind forces in accordance with the UBC.

(b) In addition to the requirements of paragraph (a) of this section, each operator shall determine the probability of occurrence of tornadoes in the area in which the LNG facility is located. If tornadoes are determined to have at least a 0.5 percent probability of occurring within a 50-year period, storage tanks and dikes must be designed to withstand loading from sustained wind speeds of not less than 250 miles per hour, plus stress or impact which could result from the failure and collapse of all connected transfer piping and other appurtenance unless the connected transfer piping and appurtenances also are designed to withstand a wind speed of 250 miles per hour.

GAO comment

Although they are improvements over present standards, the proposed rules for resistance to natural phenomena are not adequate. We believe that large LEG facilities not built in remote areas should be required to withstand the same natural phenomena as would a nuclear plant on the same site. There is no evidence that the public would be in greater danger from such a nuclear plant.

DEPARTMENT OF ENERGY

CHAPTER 4. CRACK LENGTH

Recommendation

We recommend that the Secretary of Energy institute a testing program to accurately determine the critical crack lengths for the various types of tanks used to store and transport LNG and LPG. The critical crack lengths should be determined for real types of tanks under real types of static and dynamic stresses, including those that might be caused by sabotage.

DOE response

It is appreciated that the role of crack length in tank failure is not well understood. This recommendation will be carefully considered as the DOE research evolves.

GAO comment

We believe the testing program we recommended is critical and should have already been implemented. Future consideration of the possibility of implementing it is not an adequate response.

DEPARTMENT OF TRANSPORTATION

CHAPTER 5. LNG FACILITY DIKING

Recommendation

GAO did not make a recommendation regarding the ability of LEG storage facility dikes to withstand massive spills; however this topic is extensively discussed in chapter 5 and in special issue 4 in chapter 16.

*MTB notice of proposed rulemaking**Subpart E—Impoundment Design and Capacity**Part 193.401 Scope*

This subpart prescribes requirements for the design and construction of new impounding systems or any portion of an existing impounding system that is replaced, relocated, or significantly altered.

Part 193.405 General design characteristics

(a) An impounding system must have a configuration or design which, to the maximum extent possible, will prevent liquid from escaping impoundment under the worst predictable spill condition by leakage, splash from collapse of a structure or part thereof, momentum and low surface friction, foaming, failure of pressurized piping, and accidental pumping.

(b) The basic form of an impounding system may be excavation, a natural geological formation, manufactured diking, such as berms or walls, or any combination thereof.

Part 193.407 Classes of impounding systems

(a) For the purpose of this part, impounding systems are classified as follows:

Class 1.—A system which surrounds the component served with the inner surface of the dike constructed against the outer surface of the component.

Class 2.—A system which surrounds the component or area served with the dike located a distance away from the component or at the periphery of the area.

Class 3.—A system which conducts a spill by dikes and floors to a remote impounding space which does not surround the component or area served.

(b) For spills from LNG storage tanks, imposed loading and surging flow characteristics must be based on a sudden total release of the full contents of the tank. For other spills, imposed loading and surging flow characteristics from the volume to be impounded must be based on the impounding capacities and conditions of discharge set forth in this subpart.

(c) If an LNG storage tank is located within a horizontal distance of 6,100 meters (20,000 feet) from the nearest point of the nearest runway of any airport, a Class 1 impounding system must be used which is designed to withstand collision by, or explosion of, the heaviest aircraft which can take off or land at the airport.

Part 193.439 Impoundment capacity, LNG storage tanks

Each impounding system serving an LNG storage tank must have a minimum volumetric liquid impoundment capacity as follows:

<i>Number of tanks in system</i>	<i>Class or type of system</i>	<i>System capacity in percent of LNG tanks, maximum liquid capacity</i>
1	Class 1 and covered systems	110 percent
1	Class 2 and 3	150 percent
More than 1	Class 2 and 3	100 percent of all tanks or 150 percent of largest tank, whichever is greater.

Part 193.615 Cargo transfer area

(b) Transfer system shutoff valves must be power and manually operable at the valve and power operable at a remote location at least 50 feet from the valve.

Part 193.511 Penetrations

(a) All penetrations in an LNG storage tank must be located on the top of the tank.

GAO comment

The proposed rules for Impoundment Design and Capacity seem adequate for new systems, but they are not a substitute for locating large facilities in remote areas. We believe that existing dikes should be upgraded to the same standards

COAST GUARD

CHAPTER 6. SHIP DESIGN

Recommendation

We recommend that the Commandant, U.S. Coast Guard:

(a) Require calculations on collision resistance for all vessels carrying hazardous cargoes.

DOT response

At the present time, the energy conserving mechanisms occurring during a collision are not fully understood. With existing state-of-the-art techniques, a computer model of a collision can be generated; however, a number of assumptions must be made to complete the model. These assumptions may contain errors which would be compounded during every iteration of the model making any result questionable. The Coast Guard feels that the information resulting from implementing this recommendation could be misleading and complying with it would be ill-advised.

GAO comment

The Coast Guard's suggestion is that they continue to require no calculations of collision resistance. We do not believe safety judgements can be adequately made on this basis.

Recommendation

(b) Require an analytic and accurate determination of tank stresses be made on all types of LEG carriers to provide a better understanding of fatigue life and tank bursting and buckling pressures.

DOT response

The Coast Guard feels that the present methods of tank design review are acceptable and that additional analysis of existing designs would provide no tangible increase of safety to the public.

GAO comment

We believe that it is not possible to adequately determine the safety of tank designs without an analytic and accurate determination of tank stresses.

Recommendation

(c) Require a double-hull for all LEG carriers.

DOT response

The Coast Guard feels no design requirement can protect an LEG cargo containment system from a high energy impact. Segregation of cargo containment system from the outer hull is intended to prevent injury to and possible release during "minor" impacts only. The Coast Guard believes that this recommendation would not tangibly enhance LEG vessel safety.

GAO comment

While no design requirement can absolutely protect a cargo containment system, double hulls provide much more resistance than single hulls. Coast Guard port rules for LEG carriers are drawn up to try to outlaw high energy impacts. Thus, the extra resistance provided by double hulls is important in the sort of collisions most likely to occur.

Recommendation

(d) Conduct a study of the different ways a tank might be ruptured by pressure. This could lead to development of protection systems, such as pressure switches that

would automatically shut off relevant equipment in case of high differential pressures, in addition to existing safety relief valves.

DOT response

The scenario leading to this recommendation is highly improbable. Therefore, a study of alternate means of cargo tank overpressure protection would be of very low priority, although it may be warranted.

GAO comment

The study we suggested is relatively easy and inexpensive. We believe it should be done.

Recommendation

(e) Require precision position fixing equipment, bridge control of main engine, and collision avoidance systems as a means of improving the maneuverability of gas carriers, many of which already have this kind of equipment.

DOT response

With the exception of bridge control, these recommendations are being implemented. The desirability of bridge control should be investigated prior to unilateral action by the Coast Guard. International standards for collision avoidance systems are being developed at IMCO.

Recommendation

(f) Require that cargo containment systems be able to contain the cargo during and after a specified fire, and that insulation in critical places be able to withstand high temperatures; the Coast Guard should sponsor research if necessary to meet this goal.

DOT response

The Coast Guard feels that the existing requirements for tank insulation are acceptable and that a study into the effects of external fires on tank insulation systems is not warranted.

GAO comment

As pointed out in our report (page 6-12), an external fire might cause complete thermal decomposition of the insulation protecting the cargo tanks. The resultant high temperatures on the cargo tanks could cause their failure. The Coast Guard comment does not dispute this. We believe our recommendation should be implemented.

CHAPTER 6. CREW TRAINING

Recommendation

We recommend that the Commandant, U.S. Coast Guard:

(a) Expand the Coast Guard's proposed tankerman requirements to include a wider scope of training for all personnel involved in cargo handling, and enforce the expanded requirements.

DOT response

Draft of revised Tankerman requirements has been expanded to include the new IMCO standards of training and Qualification, the provisions of the Port Safety and Tank Vessel Safety Act of 1978 and to reflect the concern of the GAO LEG Report. Target Date: July, 1979.

Recommendation

(b) Include in the Coast Guard's training requirements for LEG marine terminals and ships the 8 criteria we list in the Training Criteria section.

DOT response

(1-6) Draft of Revised Tankerman requirements includes provisions for 60 hours of formal training prior to issuance of Tankerman-Liquefied Gas Endorsement. This endorsement will be renewed every five years and a refresher course will be required prior to renewal. In addition, the individual must have served under authority of endorsement during the three years preceding renewal, attended an 8-hour approved firefighting course. The wording of the Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, is consistent with these requirements:

(7-8) Training in teamwork between ships and shore personnel has not been provided for as neither is a static population. The concept is best met by pre-transfer meeting of persons in charge.

Target Date: July, 1979, for Tankerman, upon ratification of convention on Standards of Training, Certification and Watchkeeping for Seafarers.

Recommendation

(c) Continue to require that the deck officer and engineer in charge of cargo operations aboard U.S. flag LNG ships be non-watchstanding, and work through IMCO for similar requirement for foreign flag LNG ships.

DOT response

Coast Guard will continue to monitor and evaluate the need for non-watchstanding crew members on LNG vessels. It is anticipated that the requirement for a non-watchkeeping deck and engineer officer will be adopted at next Standard of Training and Watchkeeping meeting in January of 1979.

Target Date: Ongoing.

Recommendation

(d) Assure that licensed officers are in compliance with codes which limit their working hours (46 USC 235 and 46 USC 673).

DOT response

Coast Guard is developing a regulatory change addressing the problem of excessive hours of work with its resultant fatigue factor.

Target Date: July, 1980.

Recommendation

(e) Assure that employees and advisers who write and those who enforce training regulations have a thorough understanding of LEG ship operations and LEG properties.

DOT response

An individual can only use prior training to obtain an endorsement if the school has been approved by the Commandant, U.S. Coast Guard. The Coast Guard will continue to monitor and evaluate product schools, curricular and training personnel and will withdraw approval as necessary.

Target Date: July, 1980.

Recommendation

(f) Assure that any LEG safety analyses of a particular port be based on studies of that specific port and the type and nationality of ships used.

DOT response

Various permit procedures for LEG facilities result in the development of a safety analysis of the proposed facility and the port area. The analyses are reviewed at the MSO/COTP and District levels. This practice will continue.

Target Date: Ongoing.

Recommendation

(g) Continue the Coast Guard's efforts to bring about the adoption of new IMCO training standards for ship personnel.

DOT response

The Coast Guard is continuing to actively participate in ongoing work programs of the IMCO Subcommittee on Standards of Training and Watchkeeping and will continue to encourage all nations to work for early ratification of the treaty.

Target Date: Ongoing.

DEPARTMENT OF STATE

CHAPTER 6. CREW TRAINING

Recommendation

We recommend that the Secretary of State: Give strong support to the Coast Guard's efforts to bring about the adoption of new IMCO training standards for ship personnel.

State's response

President Carter, in his message to the Congress of March 17, 1977, on tanker safety and pollution prevention, stressed the importance of high training and per-

formance standards for seamen, thereby limiting disasters and problems caused by human error.

The Department of State in conjunction with the Coast Guard was instrumental in moving forward to June 1978 the International Conference on the Training and Certification of Seafarers sponsored by IMCO and the International Labour Organization (ILO). On July 5, 1978, the final act of that conference, the "International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978", was signed by our representative to the conference, Rear Admiral William M. Benkert of the Coast Guard. We anticipate receiving copies of the Convention certified by IMCO authorities.

DEPARTMENT OF TRANSPORTATION

CHAPTER 6. TERMINAL PERSONNEL

Recommendation

We recommend that the Secretary of Transportation through the Office of Pipeline Safety Operations:

(a) Require and enforce for LEG terminal personnel the same 8 training requirements we have recommended for LEG ship personnel, possibly including the licensing of supervisory personnel.

DOT response

In current rulemaking to strengthen LNG facility standards, the MTB is proposing training standards and examining possible additional and alternative means for ensuring professional competency in the operation of LNG facilities.

Target Date: NPRM—March, 1979.

Training standards are likewise being considered in the development of proposed regulations governing the highway transport of all flammable cryogenic cargoes, such as LNG.

Target Date: NPRM—November, 1978.

Licensing of supervisory personnel, which could require additional statutory authority, is not contemplated in either rulemaking. Initial improvements in training requirements are aimed at the management planning and organizational levels of LEG facility and truck operations.

The issue of training for port facility personnel was addressed in two Coast Guard—ANPRM's issued in April and August of 1978. The first ANPRM dealt with waterfront facilities, the second with LNG facilities. GAO recommendations will be considered along with public comments in the development of Coast Guard Port Facility Personnel Training Regulations.

Target Date: December, 1979.

Recommendation

(b) Consult with the U.S. Coast Guard about the means both agencies could employ to familiarize terminal and ship personnel with each other's LEG operations.

DOT response

Consultation in progress, under the Memorandum of Understanding on LNG between the two agencies. The largest risk involving both ship and terminal personnel arises during transfer operations. Compliance with MTB's proposed requirements for safely transferring LNG between a vessel and terminal, including both design features and operating procedures, will necessarily require that terminal operators consult closely with ship personnel. These provisions will be adjusted to complement the Coast Guard's existing requirements for LNG vessel operations and its emerging waterfront facilities requirements.

COAST GUARD

CHAPTER 6. PORT OPERATIONS

Recommendation

We recommend that the Commandant, U.S. Coast Guard:

(a) Issue a policy document for LPG, similar to CG-478 for LNG. The document should clearly reflect the differences between LPG and LNG in density, vaporization rate, detonability, and burning characteristics. The policy should be mandatory except where differences in port conditions clearly make flexibility desirable.

DOT Response

Coast Guard has initiated a project to revise the existing CG-478 to include LPG and to take into consideration the recommendations made by GAO.

Target Date: June, 1979.

Recommendation

(b) Vigorously exercise the Coast Guard's authority, pursuant to 33 CFR Parts 125 to 127, to improve security at LEG facilities adjacent to navigable waters. In particular, it should enforce subsection 126.15(a) and require owners and operators of waterfront LEG facilities to have guards in such numbers and of such qualifications as to assure adequate surveillance and to prevent unlawful entrance.

DOT response

33 CFR Parts 125, 126 and 127 deal respectively with Port Security Cards, waterfront facilities and security zones. Security zones have been supplemented by safety zones under 33 CFR 165. Coast Guard Captains of the Port will be reminded that the provisions in 33 CFR Parts 125 and 126 can be used to enhance waterfront facility security.

Target Date: Ongoing.

GAO comment

We believe that subsection CFR Part 126.15(a) should be enforced. A reminder that it can be enforced is not sufficient to ensure safety.

Recommendation

(c) Make the guidance in CG-478 mandatory, except where differences in port conditions clearly make flexibility desirable.

DOT response

CG 478 is a statement of policy. It provides for discretionary implementation by the COTP in accordance with the geographic features, patterns of harbor traffic, nature of cargoes and prevailing weather in a given port. Therefore, an implementation document would be needed for each port. The Coast Guard believes directives for individual ports are unnecessary.

Recommendation

(d) Establish a formal, mandatory training and qualifications program for officers and enlisted personnel involved in LEG ship operations.

DOT response

Coast Guard has recently established a Hazardous Chemicals Course at RTC, Yorktown. It is in the process of being expanded. Additionally, we have included LEG ship operations in conjunction with field trips to Cove Point, Maryland, for our MSBIC trainees.

Target Date: June 1979 (for Hazardous Chemicals course expansion).

GAO comment

It is advisable to make such training mandatory for officers and enlisted personnel involved in LEG ship operations.

Recommendation

(e) Require an examination of the operating condition of ship control equipment such as steering engines, propulsion machinery, and electronic devices as part of its inspection of LEG ships before they enter a U.S. port.

DOT response

All foreign flag LEG ships entering U.S. ports must have CG LOC. Additionally, all ports have developed operation/emergency contingency plans for control of LEG ships. These plans provide for pre-entry checks of all navigational equipment.

Target Date: Ongoing.

GAO comment

The DOT response does not address our recommendation. We strongly recommend that pre-entry checks include an examination of the operating condition of the ship control equipment as well as the navigation equipment.

Recommendation

(f) Issue specific requirements that spell out which faults are sufficiently serious to prevent a ship's entry into a U.S. port.

DOT response

Specific requirements that spell out faults sufficient to prevent a ship's entry implies static conditions and omniscience on the part of Headquarters personnel. The Coast Guard prefers to provide the OCMI/COTP who is on scene with policy guidelines and let him exercise his judgment on a case by case basis giving full consideration to safety of the port, the crew, the environment and the ship. No further action is considered necessary.

Recommendation

(g) Require the preparation of contingency plans and the pre-positioning of equipment to partially offload an LEG ship that has gone aground in inland waters.

DOT response

Current contingency plans address the possibility of the grounding of LEG vessels. Various means of lightening a vessel are available, depending on the individual situation and are discussed in the contingency plans. All contingency plans are under review. Pre-positioning of equipment is not considered a best solution.

GAO comment

Since highly specialized equipment is needed to offload LEG, particularly LNG, we do not see how this can be done in a timely manner without pre-positioned equipment.

Recommendation

(h) Require the preparation of specific plans for coping with a major LEG spill, both when the vapor ignites at the ship and when it does not.

DOT response

Coast Guard presently requires MSO/COTP's to prepare and continually update contingency plans. These plans address the release of LEG and other hazardous materials and must provide adequate plans for emergencies.

Target Date: Ongoing.

GAO comment

The plans we reviewed called largely for notifying local authorities. We do not consider such notification to be an "adequate plan for an emergency".

Recommendation

(i) Require that surprise operational readiness inspections be conducted, including simulating serious problems, to evaluate the LEG personnel and resources assigned to COTP's.

DOT response

Readiness inspections are conducted at all operating units. These inspections do not usually require simulation of emergency conditions but stress training familiarization with assigned tasks.

Target Date: Ongoing.

GAO comment

Routine inspections are not a substitute for surprise inspections simulating serious problems. Such surprise inspections are routinely used in the military services.

Recommendation

(j) Review local port regulations to assess their adequacy.

DOT response

Because each port in the U.S. has widely differing characteristics, the Coast Guard has delegated the authority and responsibility to issue orders based on local knowledge to the COTP. Review without detailed knowledge of the port area would be meaningless. No review action is planned.

Recommendation

(k) Arrange with the Federal Aviation Administration and the Department of Defense to prohibit landing and taking off planes from flying low over LEG tankers and storage tanks.

DOT response

This recommendation is based on the configuration of Logan Airport in Boston. The COTP in Boston has discussed the possibility of air traffic control in the vicinity

of LEG facilities with the appropriate authorities. COTP's in other areas are permitted to make similar arrangements as the need exists.

The airport traffic control has had a "tall mast" program for several years. It exists to provide air traffic controllers with an awareness of ships transiting the Boston ship channel so that action may be taken to assure required obstacle protection for landing aircraft at Boston. Information is derived through use of existing radar, closed-circuit television, and verbal communications with Boston Harbor authorities. The LEG tankers have been included in the "tall mast" program and adjustments to the flow of traffic are made to preclude arriving and departing aircraft from overflying those ships.

Recommendation

(l) Require pressure-activated switches on LEG ships entering U.S. waters that automatically shut off relevant equipment in case there is too high a differential pressure between the cargo tanks and the atmosphere, or between the cargo holds and the atmosphere.

DOT response

Other means of preventing over-pressure meet the intent of the recommendation and are required by existing regulations. To implement the GAO recommendation would exceed international requirements.

GAO comment

We do not believe that current regulations meet the intent of our recommendation. Pressure activated switches are necessary for safety. We should try to include this requirement in international agreements. Meanwhile, we should require such switches in our own waters.

Recommendation

(m) Improve control of ships carrying hazardous cargo in U.S. coastal waters and harbors through selective implementation of Vessel Traffic Services, and use both Notices to Mariners and local security broadcasts when LEG ships are in transit.

DOT response

Notices to Mariners and Security Broadcasts are used when LEG ships are in transit. There are six VTS systems in operation, the NY system is scheduled to be completed early 1979 and VTS are being developed for portions of the Gulf Intra Coastal Waterway.

Target Date: Ongoing.

DOT/FEDERAL AVIATION ADMINISTRATION

CHAPTER 6. AIRPORT LANDINGS

Recommendation

We recommend that the Administrator, Federal Aviation Administration:

(a) Halt landing approaches to Runway 4-R of Logan International Airport in Boston during the time an LEG ship is in transit in the ship channel beneath the flight path. (Following our recommendation, the Federal Aviation Administration plans to prohibit aircraft from flying directly over large LEG vessels to land on Runway 4-R.)

DOT response

(Covered in Previous Recommendation to the Coast Guard.)

INTERSTATE COMMERCE COMMISSION

CHAPTER 7. CERTIFICATION OF TRUCKS

Recommendation

We recommend that the Interstate Commerce Commission:

(a) Not allow LEG to be carried under a certificate for petroleum products. ICC should require a special certificate for LNG and a separate special certificate for LPG. This would limit LEG transportation to fewer carriers with more experience.

ICC response

I firmly believe that safety regulation should emanate from the designated safety authority in the Department of Transportation. To the extent carriers subject to ICC economic regulation lack safety fitness, the DOT safety officials should bring

the matter to our attention so that we might assist them, through our licensing and revocation power, in enforcing their safety requirements.

As to the first recommendation, please note that LEG can also be transported under chemicals authority. It is not clear why GAO's recommendation extends only to the former type carrier. In any event, the present regulations applicable to hazardous materials provide thorough coverage of the subject and, if actively implemented, will fully serve GAO's objectives. The regulations in 49 CFR 177.800, administered by DOT pertaining to the transportation of hazardous materials by private, contract, and common carriers, among other things, impose upon the carrier a duty to make the prescribed regulations effective and to thoroughly instruct employees in their implementation. Training received in the transportation of chemicals and petroleum is transferable to the handling of LEG. The experience a driver gains in handling any hazardous material is cumulative. The fact that a driver is not employed solely in the transportation of LEG does not mean that the driver is less qualified.

GAO questions (Page 7-24) our examination of data showing that most petroleum product transportation is not regulated by the ICC. GAO's assertions are undocumented. The ICC data emerged from a study reflecting a valid, representative sample of the traffic.

GAO comment

The ICC comments are the same as they made to our draft report in January, 1978. They do not meet our objections to current procedures and are answered on pages 7-23 and 7-24 of the LEGS report. We believe the ICC should implement our recommendations.

Recommendation

(b) Not allow trucking companies which are licensed to carry LNG to lease trucks and drivers of other companies which have not demonstrated their competence to the ICC.

ICC response

In regard to the second recommendation, present leasing requirements do not open the door for unsafe practices. The fact that equipment may be leased does not mean it is unsuitable. Carriers still have to comply with the Department of Transportation's hazardous materials regulations. When leased equipment or owner-operators are employed, the carrier is required by 49 CFR 1057(e) to make certain that the driver is familiar with DOT safety regulations and is capable of complying with them. The leasing carrier is held responsible for the control and use of leased equipment under 49 CFR 1057.4(a)(4). There is no lessening of compliance responsibility under a lease.

GAO comment

We believe that LNG truck drivers are likely to be better trained and supervised if they are employed by companies certified by the ICC specifically to carry LNG.

DEPARTMENT OF TRANSPORTATION

CHAPTER 7. ROUTING

Recommendation

We recommend that the Secretary of Transportation: Prohibit trucking of LEG through densely populated areas and any areas that have features which are very vulnerable to a major LEG spill (e.g., sewer systems, tunnel openings, subways) unless delivery is otherwise impossible. DOT should also give particular attention to restricting travel on routes with highway configurations which make tank rupture accidents likely (e.g., evaluated roadways, overpasses, high-speed traffic, roadside abutments).

DOT response

Truck movement of hazardous materials through densely populated areas is prohibited by 49 CFR 397.9(a), unless no other practicable highway route is available. Truck routes in such areas, and the use of vehicular tunnels in particular, are usually regulated locally. Any consideration of further restricting highway routes must take into account the potential for diverting materials to other modes of transportation where risk or exposure may be greater.

Target Date: Ongoing.

Recognizing that there is no generally accepted method or guideline available to local jurisdiction, the Department has initiated research to develop criteria for use

in conjunction with existing highway design, population, geographic, and other factors in the designation of routes for hazardous materials highway carriers. The result will form the basis for advising State and Local governments on criteria for route designation, as well as for deciding whether additional Federal regulation is necessary.

Target Date: 1980.

The MTB has also undertaken a comprehensive, comparative risk analysis of LNG tank truck operations and routes associated with the Everett, Massachusetts, LNG facility, as well as possible rail and barge alternatives.

Target Date: Final report—February 1979.

GAO comment

The interpretation of "practicable highway route" has been such that LEG trucks routinely roll through our largest cities. The result is that the possibility of a catastrophe continues to exist unnecessarily. Localities have no power to regulate truck routes on interstate highway passing through them. Urgent action is needed on our recommendation by Congress if not by the Department of Transportation.

CHAPTER 7. TRUCK DESIGN/EQUIPMENT

Recommendation

We recommend that the Secretary of Transportation:

(a) Require that the relatively vulnerable front end of LEG trailers be protected with heavier steel, and cushioning material or shock absorbing equipment. Similarly protecting the entire tank should be considered.

DOT response

MTB has initiated a research project to reexamine existing technology and to seek new approaches for controlling pressurized liquefied flammable gas releases. The project will include identification of design changes and other corrective measures aimed at reducing the hazards of transporting compressed, liquefied flammable gases. Such broader research efforts may well lead to alternatives that will prove preferable to simply overbuilding or adding more shock absorbent material to tank trucks. Regulatory Development—NPRM/FR if needed.

Target Date: Final study report due October, 1980.

Recommendation

(b) Require that the cabinet housing the control valves of LEG trucks and the valves themselves be kept locked.

DOT response

DOT does not agree. If the driver carries the key to a locked cabinet, he could be forced by a saboteur to produce it. Yet the driver needs access to the tank controls in order to manually relieve the gas pressure in an LNG tank if necessary. Also, on rare occasions, the rupture disc may function during transportation, making it necessary for the driver to insert a replacement disc. These devices are commonly installed in the flanges of vent stacks located within cabinets at the rear of LNG trailers.

GAO comment

This reasoning would lead one to conclude that it is foolish to lock your front door and carry the key because a criminal could force you to produce it. Locking the cabinet housing the control valves and the valves themselves will cost almost nothing in terms of money or inconvenience and may prevent mischief which could lead to many deaths and injuries and major property damage.

Recommendation

(c) Forbid LNG trucks to carry hoses. The hoses should remain attached to the storage facilities.

DOT response

Since a determined intruder could utilize almost any type of hose to channel LNG, we have not considered such a restriction to be necessary. Nevertheless, MTB will consider the matter further during formulation of new standards for the highway transportation of LNG.

Target Date: NPRM—November, 1978.

Recommendation

(d) Require LEG hoses to have positive coupling devices which would override a required check valve in the exit line. The check valve would prevent the outflow of the fluid into anything other than the special coupling hoses.

DOT response

DOT does not agree. This recommendation has limited benefits since the addition of such devices would not stop a determined intruder. However, we will give further consideration to the development of caps that can be locked on the end of discharge openings as a deterrent to vandalism.

Target Date: Fiscal year 1981.

GAO comment

Positive coupling devices would cost little in terms of cost or inconvenience. They would significantly increase safety. It makes little sense to reject all cheap and effective safety measures because there is no certainty they would "stop a determined intruder." They might in fact prevent many determined intruders from causing widespread destruction.

Recommendation

(e) Require LPG trailer tanks to be insulated to help prevent explosions.

DOT response

Current research is reexamining existing technology and seeking new approaches for controlling pressurized liquefied flammable gas releases from cargo tanks. One aspect of the project will be the determination of design and other corrective measures specifically aimed at reducing the hazards of transporting LPG and other liquefied flammable gases. This approach to the overall problem may well lead to alternatives that will prove preferable to insulation from both a performance and a cost perspective. Regulatory Development—NPRM/FR is needed.

Target Date: Final Report due October, 1980.

Recommendation

(f) Require all LPG trailers to have an easily visible sign on each side indicating that the LPG may not be odorized.

DOT response

DOT agrees. A rulemaking will be forthcoming proposing that the presence of unodorized gas in a motor vehicle cargo tank be indicated by specified markings on tank vehicles and entries on shipping papers.

Target Date: NPRM 1979.

CHAPTER 7. EMERGENCY

Recommendation

We recommend that the Secretary of Transportation.

(a) Develop emergency procedures, teams, and equipment to deal with LEG trailer rollovers and spills. Equipment should include empty trailers and portable pumps suitable for transferring LEG from a ruptured vessel. Different equipment will be needed for LNG and LPG.

DOT response

We agree with the recommendation that we develop emergency procedures. A training session on LEG is under development for addition to the existing NFPA-developed course for emergency services personnel. Two courses on LNG are being developed at the Transportation Safety Institute in Oklahoma City: (1) the nature of LNG and the hazards it presents, and (2) provisions of the MTB standards for LNG.

However, the hazardous materials industry can more effectively provide trained emergency response teams and appropriate equipment for responding to transportation incidents involving their hazardous products than can the government.

The LEG industry should be encouraged to develop specialized teams with technical expertise and emergency training and to maintain a list of available transfer tanks by regions.

Target Date: February 1979.

GAO comment

The Government cannot delegate its responsibility for public health and safety to private industry. There is no assurance that the hazardous materials industry will develop such teams and equipment. They have not done so up to now.

Recommendation

- (b) Require that all LEG trucks have a radio communications system.

DOT response

Although a radio network can be of assistance in case of mechanical breakdown, it would not deter or prevent sabotage. A saboteur could destroy the radios, and even if the company knew something had happened to one of its vehicles, it is probable that the sabotage effort would already have taken place before aid could arrive at the scene or locate the vehicle. However, there are other non-voice communications-type devices, which may have application in a sabotage/terrorist scenario which could be considered. These will be incorporated in future analyses of the vulnerability of LEG facilities and transport systems to terrorism and sabotage.

Target Date: Contract study in fiscal year 1981.

GAO comment

If a "company knew something had happened to one of its vehicles" the police could intercept it before it was driven into a densely populated area (assuming our recommendation that it not be driven through such areas is adopted). Through the radio communications system it could also warn other such trucks. A similar system is presently used for nuclear materials. Perhaps it could also be used for LEG.

CHAPTER 7. PERSONNEL

Recommendation

We recommend that the Secretary of Transportation:

- (a) Require LEG truck drivers to receive more extensive instruction on the properties of LEG, proper handling of LEG trucks, proper transfer procedures, and appropriate damage and fire control.

DOT response

DOT agrees. A rulemaking proposal is being developed to strengthen the driver training requirements for drivers of trucks transporting certain hazardous materials including LEG.

Target Date: NPRM—November 1978.

Recommendation

- (b) Require that all long-distance LEG truck shipments be made with two drivers.

DOT response

DOT does not agree. The cost of implementing this recommendation is estimated to be in excess of \$200 million annually. A comparably valued benefit could not be derived.

To assure that vehicles transporting LEG are properly attended during transportation, MTB will consider extending the attendance requirements for motor vehicles containing Class A or Class B explosives to motor vehicles transporting LEG.

Target Date: 1980.

GAO comment

If two drivers were required for all long-distance LEG truck shipments, one could remain with the trailer at all times in the event of an accident or maintenance problem. Otherwise the truck may have to be left unattended—particularly if there is no radio communications system.

We do know the basis for the \$200 million annual cost. Two drivers are required on all nuclear shipments. This also raises their cost.

CHAPTER 8. RAILCAR PLACARDS AND LABELS

Recommendation

We recommend that the Secretary of Transportation:

- (a) Require a large increase in the size of the placards saying "Flammable Gas" so that they can be more easily read from a considerable distance in the jumble and possible fire of a train wreck.

DOT response

DOT does not agree, the lettering and color combinations and the distinctive shape of present placards are believed sufficient to communicate the presence of a hazard.

Available alternative means of communication include the car type itself (tank car), product stenciling requirements, and the shipping documents which must be carried on each train identifying each hazardous material and its location.

GAO comment

The Federal Railroad Administration, part of DOT, in their comments on this suggestion in our draft report said: "there is no practical size placard that can be read safely in an accident," and that the placard is for other purposes. We stand by our original recommendation. A much larger placard will help a great deal in quickly and clearly identifying derailed LPG cars. In the Waverly train derailment, for example, three firemen had to crawl under the derailed cars to find out what they carried. This was extremely dangerous.

Recommendation

(b) Require that all LPG cars be prominently labeled "Insulated" or "Non-Insulated" until thermal protection is required on all of them. This information will be of great help to firemen confronted with a train wreck involving LPG cars and may save many lives.

DOT response

DOT does not agree. The presence of the word "Insulated" on a tank car may give firemen a false sense of security. Insulation can be damaged in an accident and provide no thermal protection. It was never intended that the thermal retrofit requirements would be utilized by emergency service personnel in making judgments on how to deal with LP gas emergencies.

GAO comment

Firemen should be properly instructed so that they will not have a "false sense of security". The idea that such vital information should be withheld from firemen because DOT believes they cannot properly use it shows an unwarrantedly low regard for the intelligence of firemen whose own lives are at stake.

CHAPTER 8. MATERIAL STANDARDS

Recommendation

We recommend that the Secretary of Transportation: Consider requiring tougher steel in tank cars, or additional puncture protection for the sides of tank cars.

DOT response

The use of tougher steel for pressurized liquids, such as LPG, may be technically feasible although not necessarily cost effective in terms of the accident damage that might be prevented. Safety benefits from using tougher steels would be effective incrementally, rather than immediately, as existing cars (which have a 40-year life) are replaced.

The National Bureau of Standards is studying for the Federal Railroad Administration different steels that might be used in rail tank car construction. Actual conditions of rail operations are being examined through accident and impact analysis, and a cost-benefit analysis is being prepared.

Target Date: June 1980.

Limited puncture protection for the shells of tank cars is provided by the thermal protection and jackets if installed as required for tank cars under the retrofit program established by HM-144. MTB research on the subject of controlling the hazards from flammable gas releases can be expected to suggest new or improved approaches to the thermal protection problem and possible related improvements in puncture resistance.

Target Date: Final report due October 1980.

CHAPTER 8. INSPECTION

Recommendation

We recommend that the Secretary of Transportation:

(a) Take immediate action to inspect hazardous materials tank cars and remove from service those that are obviously not being maintained properly.

DOT response

DOT does not agree. Regular testing and inspections of tank cars are already required, and carriers are required to inspect tank cars for leakage and proper operation before accepting them for transportation. DOT statistics do not suggest

that improper tank car maintenance has been a significant contributor to hazardous materials incidents involving substantial injury or property damage.

GAO comment

See comment following recommendation below.

Recommendation

(b) Require more frequent inspection and testing of all safety-related features of LEG tank trucks and railcars.

DOT response

DOT does not agree. Related information and statistics do not support a belief that the existing schedule of required inspections for tank cars and tank trucks is inadequate or that requiring more frequent inspections would produce clear benefits.

Each tank car is inspected before each trip and may be inspected several times during the transportation cycle. Over 100,000 hydrostatic tests of fusion welded tank car tanks have been conducted with no failures of the tanks noted.

GOA comment

The testing and inspection of tank cars already required is done by operators. It is very expensive for them to remove a car from service. Some operators, therefore, may have a tendency to keep dangerous cars in service. See the LEGS report (page 8-11) for pictures of rusted propane cars ready for loading. As pointed out in the report, hydrostatic pressure tests of tank cars every 10 years are not adequate to ensure that the cars are safe in an accident.

CHAPTER 8. ROUTING

Recommendation

We recommend that the Secretary of Transportation: Prohibit the travel of LPG railroad cars to or through densely populated areas unless it is impossible to deliver it without going through densely populated areas.

DOT response

DOT does not believe this is a practicable requirement. Consideration of a generally applicable requirement such as suggested by this recommendation could only be predicated on a rather detailed risk analysis and assessment of the entire rail network used to transport LPG. LPG shipment now move over the shortest routes and over some of the best track in the country, important safety considerations. Routes which might be available away from densely populated areas may be considerably more circuitous than those available to highway carriers, and may involve use of poor track. The industry rail hazardous materials system safety analysis now nearing completion under the joint sponsorship of the Manufacturing Chemists Association and the Association of American Railroads should be a valuable contribution to the cumulative knowledge base required for making route selection judgments.

GAO comment

Continued transportation of LEG through our biggest cities may lead to an unnecessary catastrophe. Many LEG railcar accidents are discussed in Chapter 8 of the report. We strongly recommend that LEG transportation through densely populated areas be prohibited unless it is otherwise impossible to deliver it.

CHAPTER 8. EMERGENCY

Recommendation

We recommend that the Secretary of Transportation:

(a) Require that the Bills of Lading on any train containing hazardous materials have detailed instructions on fire fighting and other emergency measures which should be taken in the event of a wreck. The telephone numbers of 24-hour emergency response centers, such as the Manufacturing Chemist Association "Chem-trec", should also be shown. If the train is to go through any densely populated areas, the instructions should explicitly address the dangers peculiar to such areas.

DOT response

DOT disagrees with these recommendations as stated. DOT agrees that the inclusion of telephone number for 24-hour response center would be helpful and encourages the use of the CHEMTREC number. However, DOT is reviewing the Federal

role and considering an expansion of the USCG National Response Center for providing technical assistance. Therefore, any mandated requirements for printing a particular number should be deferred.

Regarding the inclusion of detailed firefighting and other response instruction, DOT believes the desired results could be more effectively achieved by use of a hazardous materials numbering system keyed to standard response actions. The MTB intends to move ahead toward determining the appropriate numbering scheme and will follow with an approach for using the numbers on shipping documents keyed to a response action guide. The DOT encourages the growing practice of shippers attaching response instructions for specific materials to the shipping papers.

The recommendation for specific emergency instructions related to transportation route suggests that this information would not be otherwise known to the responding organizations. Actually, community emergency response agencies are in the best position for knowing local factors. The MTB contracted with the National Fire Protection Association for an emergency services training program to provide guidelines for communities to use in developing action plans suited to their particular needs and capabilities. Planning the emergency response action program before a transportation incident occurs provides a greater assurance that effective and coordinated action will be taken immediately.

Recommendation

(b) Establish Railroad Disaster Control Response teams, capable of quickly responding to railroad hazardous materials accidents with the knowledge and equipment necessary to prevent disasters.

DOT response

DOT does not agree that this should be a Government function. The most practical method for Federal participation in the mitigation of the consequences of hazardous materials accidents is the development and dissemination of emergency procedures information and training. The NFPA-developed emergency services course, provides information about advance planning and training, so that effective and coordinated action can be taken immediately by local response agencies.

The Secretary of Transportation has approved a recommendation made by a Departmental hazardous materials task force for greater utilization of the Coast Guard's National Response Center working in cooperation with the Manufacturing Chemists Association's CHEMTREC.

We encourage the hazardous material industry to take an aggressive role in responding to transportation incidents involving hazardous products. Certain segments of the hazardous materials industry have established mutual aid programs, with two particular examples being the Chlorine Institute's CHLOREP program and the Pesticide Safety Team Network.

GAO response

The hazardous material industry's record in responding to disasters has not been exemplary. See the Waverly LPG explosion discussion in our report for example. The Government cannot abrogate its responsibility for the health and safety of our citizens.

Recommendation

(c) Investigate methods of quickly determining the structural integrity of damaged tank cars and methods of emergency transfer of material.

DOT response

Currently, specifically-qualified tank car experts are relied upon for assessment of overall accident configurations and visual inspection of tank cars. However, DOT is investigating better methods of determining the integrity of tank cars involved in accidents.

The methods employed to transfer hazardous materials from tank cars are presently considered adequate recognizing that transfers should not be attempted except when absolutely necessary since such operations always involve increased risks.

DEPARTMENT OF TRANSPORTATION

CHAPTER 9. FACILITY SECURITY

Recommendation

We recommend that the Secretary of Transportation:

(a) Enforce the requirement, stated in 33 CFR Part 126.15(a), that guards provided by the owner or operator of an LEG facility be in such numbers and of such qualifications as to assure adequate surveillance and to prevent unlawful entrance.

DOT response

DOT disagrees. Possible determined group activity by saboteurs and terrorists with explosives and military weaponry cannot be neutralized through strict enforcement of 33 CFR 126.15(a). Even a large security force for a particularly facility could be overwhelmed, or security could be breached from remote locations. Accordingly, it appears that regulations and their associated cost, consistent with the intent of Chapter 9 conditions, would not produce a commensurate safety benefit.

Current rulemaking on LNG facility safety can provide a basis for a more workable framework for the establishment of appropriate security measures.

Target Date: NPRM—March 1979. FR—December 1979.

GAO comment

DOT's argument is that since any reasonable security arrangements can be overcome a sufficient attacking force, enforcing 33 CFR 126.15(a) is not worthwhile. The same reasoning would lead one to remove security arrangements from banks, nuclear plants, and Congress.

Recommendation

(b) That every truck and train car is carefully checked for weapons and explosives before it enters the facility.

DOT response

DOT disagrees. Even if a "careful check" is not meant to require a search of the interior of the tank, a search of the outside and undercarriage of a truck or rail car would not be effective in light of the potential for concealment and resulting lost time and costliness. For trucks, driver control and identification coupled with operational procedures would be a more realistic and suitable security measure.

GAO comment

The check we call for can be routinely carried out and will considerably increase security.

Recommendation

(c) That every driver and passenger in a vehicle is positively identified before they enter the facility. Picture badges should be issued to all frequent visitors.

DOT response

DOT agrees. MTB will include a proposal in its current rulemaking to require the identification of persons entering an LNG facility, including the issuance of picture badges to frequent visitors. Alternate measures for control of unauthorized entry at unattended facilities will be necessary.

Target Date: NPRM—March 1979. FR—December 1979.

GAO comment

MTB should include LPG facilities in its rulemaking.

Recommendation

(d) Surveillance of site boundaries and key components on a 24-hour basis.

DOT response

DOT agrees. Provisions are included in MTB's current rulemaking on LNG facilities, for continuous monitoring within the facility for the presence of unauthorized personnel and malfunctioning critical components.

Target Date: NPRM—March 1979. FR—December 1979.

GAO comment

The rules should include LPG facilities.

Recommendation

(e) That devices be installed which can immediately detect unauthorized entry. These should include completely lighted fences, intrusion alarm systems which can detect if the fence is damaged or crossed, and low light television cameras which can see any area of the boundary.

DOT response

DOT agrees. MTB's proposed regulations would require similar intrusion devices for facilities having 250,000 bbl storage capacity or more. Again, however, flexibility

must be provided for small unattended plants and designs which are intrinsically less hazardous.

Target Date: NPRM—March 1979. FR—December 1979.

Recommendation

(f) Battery powered redundant communications through which security personnel at any point on the facility can communicate to each other and to local law enforcement officials.

DOT response

DOT agrees. MTB's proposed regulations in Part 193.1123 of 49 CFR include similar provisions for communications between security personnel and law enforcement officials.

Target Date: NPRM—March 1979. FR—December 1979.

Recommendation

(g) Employee screening and training procedures. The training should include threat awareness, recognition of hazardous devices, special safety precautions, and preventive actions that can be taken.

DOT response

A comparable provision covering most of these concerns is in Part 193.1123 of MTB proposed regulations, which covers security procedures and personnel capabilities for maintaining security. Employee screening is not covered in the current rulemaking but requires additional study.

Target Date: NPRM—March 1979. FR—December 1979. Contract study in fiscal year 1981.

Recommendation

(h) A written security plan which details appropriate procedures for all of the above and is routinely promulgated to all employees.

DOT response

Under Part 193.1123 of MTB's proposed regulations on LNG facility standards, each operator must prepare and follow written procedures to provide security for each LNG facility. The security plan will address all areas for which security procedures are prescribed.

Target Date: NPRM—March 1979. FR—December 1979.

GAO comment

The regulations should also cover LPG facilities.

CONGRESS

CHAPTER 9. SABOTAGE

Recommendation

We recommend that Congress: Enact legislation requiring that facility guards carry weapons and be authorized to use them if necessary to prevent sabotage. This recommendation is similar to one that GAO made in 1977 for commercial nuclear fuel facilities.

FERC response

GAO recommends that Congress consider enacting legislation regarding security measures at LNG facilities (page 9-29) and methods of securing liability and compensation (chapter 11). Given the complexity of these issues from a number of standpoints and the strong conflicting opinions held by many experts in this area, the FERC believes that these issues require further substantial analysis. In this regard, we note the approach recently taken by the House of Representatives in adopting S. 1895 and inserting in lieu thereof the text of H.R. 11622, as passed by the House. Among other things, S. 1895, as passed by the House, would require the Secretary of Transportation (Transportation) to assess the risks connected with the storage and transportation of LEG and to study the methods of assuring financial responsibility for those engaged in such activities. Transportation would then be required to report to Congress on its findings and to recommend appropriate legislative or administrative action.

GAO comment

We do not consider FERC's response to the point.

DOT bill (S. 411)—for LNG and LPG

(2) Any person who willfully injures or destroys, or attempts to injure or destroy any interstate transmission facility, shall upon conviction, be subject for each offense, to a fine of not more than \$15,000 or imprisonment for a term not to exceed 15 years or both.

Dingell-Markey bill (H.R. 51)

Willful Destruction of Interstate Pipeline Transmission or LNG Facilities

Sec. 301. Section 12 (as added by section 204 of this Act) is amended by inserting "(a)" after "Sec. 12." and by adding at the end thereof the following new subsection:

"(b) Any person who willfully injures or destroys, or attempts to injure or destroy—

"(1) any pipeline facility for the interstate transmission of gas, liquefied petroleum gas, or petroleum, including any facility or equipment covered under this Act under section 2(b) or (d) used in the interstate transmission of gas or liquefied petroleum gas, or

"(2) any liquefied gas facility to which section 6 applies, shall be fined not more than \$15,000 or imprisoned not more than fifteen years, or both."

CHAPTER 9. FACILITY DESIGN AND EQUIPMENT

Recommendation

We recommend that the Secretary of Transportation:

(a) Identify all the specific design vulnerabilities to sabotage at each facility and determine the amount of hardening of key components that is needed to reduce facility vulnerability to sabotage and to control forceful entry.

DOT response

The MTB's proposed LNG regulation, in 49 CFR 193.1123, would require that possible damage effects to critical components be described in advance and addressed by written procedures. Instructions regarding a breach of security and other emergencies would have to be included. Accordingly, identification of facility vulnerabilities and responsive courses of action, which would include "hardening" of key components would be a prerequisite. Consideration of possible design vulnerabilities due to sabotage is covered under this section.

Target Date: NPRM—December 1978. FR—August 1979.

Contract study of overall sabotage.

Target Date: Fiscal year 1981.

MTB NOTICE OF PROPOSED RULEMAKING

Part 193.123 Separation of components

Each LNG facility site must be large enough to provide for minimum separations between critical components and between components and the site boundary to—

(a) Permit movement of personnel, maintenance equipment, and emergency equipment within and around the facility;

(b) Minimize spill and collapse hazards to persons and property on and off the site, unless protection comparable to separation is provided; and

(c) Comply with distances between the critical components specified in Sections 213 through 216 of NFPA 59A.

Recommendation

(b) Require that emergency generators be located away from hazardous areas, with a fuel supply that is well protected from fire and explosions.

DOT response

DOT agrees. This is generally covered by Section 193.123(b) of MTB's proposed regulations, which can be made more specific for component separation. The recommendation is reasonable and will be included in the above referenced NPRM.

Target Date: NPRM—December 1978. FR—August 1979.

Part 193.927 Sources of power

(a) Electrical control systems, means of communication, lighting, and fire fighting systems must have at least two sources of power which function so that failure of one source does not affect capability of the other source.

(b) Where auxiliary generators are used as a second source of electrical power—

- (1) They must be located apart or protected from critical components so that they are not unusable during a controllable emergency; and
- (2) Fuel supply must be protected from hazards.

Recommendation

(c) Require that automatic shut-off or isolation valves be placed along pipelines which run from piers to storage tanks.

DOT response

DOT agrees. Subpart G of MTB's current rulemaking on LNG facility standards prescribes requirements for the design and installation of transfer systems in new LNG facilities and existing facilities which are modified. Sections 193.605 and 193.607 specifically require that each transfer system be equipped with an automatic redundant shutdown control system and a means to control backflow.

Target Date: NPRM—December 1978. FR—August 1979.

GAO comment

The rule should include LPG facilities.

Part 193.605 Shutdown control system

Each transfer system must be equipped with a shutdown control system. The control system must automatically actuate the shutdown of appropriate valves and pumping equipment and provide pressure relief as necessary for trapped fluids when any of the following occurs:

- (a) Transfer piping failure;
- (b) Liquid in the receiving vessel reaches design maximum liquid level;
- (c) Pressure outside the limits of the maximum and minimum allowable operating pressure;
- (d) Temperature outside the range determined under Part 193.205;
- (e) Gas concentrations in the atmosphere exceeding 25 percent of the lower flammable limit; or
- (f) A sudden flow change, pressure loss, or other condition indicating an accidental spill or potential spill.

Part 193.607 Backflow

(a) Each transfer system must operate with a means to—

- (1) Prevent backflow of liquid from a receiving container, tank car, or tank truck from causing a hazardous condition; and
- (2) Maintain one-way flow where necessary for the integrity of safe operation of the LNG facility.

(b) The means provided under paragraph (a)(1) of this section must be located as close as practical to the point of connection of the transfer system and the receiving container, tank car, or tank truck.

Recommendation

(d) Examine the total handling and storage system at each facility to see if an external pipeline breach in conjunction with the misuse or disabling of appropriate system components could cause a major spill outside the containment area. DOT should require whatever modifications are needed to make this possible.

DOT response

DOT essentially agrees with the recommendation as applied to new facilities. The MTB-proposed requirement in Section 193.403 fully addresses this point. However, jurisdiction over LNG facilities derives from the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. 1971 et seq.), which limits general regulatory authority over design, construction, and testing to new facilities, and it is questionable whether the Department has statutory authority to require the modification of existing facilities.

Target Date: NPRM—December 1978. FR—August 1979.

GAO comment

Congress should consider extending DOT's authority to include existing facilities.

Part 193.403 Impoundment required

(a) An impounding system must be provided for the following components and areas to contain a potential spill of LNG or other flammable liquid:

- (1) Storage tanks;
- (2) Transfer piping in excess of 4 inches in diameter; and
- (3) Cargo transfer systems.

(b) Grading and drainage or an impounding system must be provided to insure that accidental spills or leaks from the following components and areas do not endanger critical components or adjoining property or enter navigable waterways:

- (1) Liquefaction and other process equipment;
 - (2) Vaporization equipment;
 - (3) Transfer piping four inches or less in diameter;
 - (4) Parking areas for tank cars or tank trucks; and
 - (5) Areas for loading, unloading, or storing portable containers and dewar vessels.
- (c) Impounding systems must be designed and constructed in accordance with this subpart except that impounding systems intended for containment of flammable liquids other than LNG must conform to NFPA 30.

Recommendation

(e) Determine whether LEG or LEG vapor accumulating under a tank elevated on piles could cause an explosion that could rupture the tank bottom.

DOT response

DOT agrees to address this matter. Preliminary findings indicate that any pressure rise that might be generated should vapor collect under a tank and be ignited would be low and not likely to rupture the tank bottom. Nevertheless, MTB's current rulemaking on LNG facility standards proposes to prohibit the construction of any storage tanks with a capacity of more than 15,000 bbls with an underlying airspace where vapors could accumulate (Part 193.535). This safety concern will also be addressed in future rulemaking actions on LPG facilities. Meanwhile, DOT will be studying the matter further to determine more precisely the nature and extent of damage that might occur to existing elevated tanks.

Target Date: NPRM—December 1978. FR—August 1979. Study in fiscal year 1981.

(d) The bottom of a storage tank with a capacity of more than 15,000 barrels or its foundation may not be installed over an air space.

CHAPTER 9. NEARBY FACILITIES

Recommendation

We recommend that the Secretary of Transportation:

(a) Prohibit the transmission of LEG through pipelines whose integrity is threatened by nearby offsite industrial activity.

DOT response

DOT's proposed LNG regulations would require that effects of present and predictable adjacent activities be determined (Sec. 193.105), and prohibit the location of an LNG facility where failure of a critical component could be expected as a result of these activities (Sec. 193.121). Under current liquid pipeline regulations, Sec. 195.402 (b) and (c), a carrier may not operate a liquid pipeline unless it is protected against outside activities that may endanger the pipeline. Under Sec. 195.110, a carrier must design its liquid pipeline against anticipated external loads, such as those caused by vibrations from an adjacent industrial activity.

Target Date: NPRM—December 1978. FR—August 1979.

MTB NOTICE OF PROPOSED RULEMAKING

Part 193.121 Adjacent activities

(a) Each operator shall determine the present and reasonably foreseeable activities adjacent to an LNG facility site that could adversely affect the operation of the LNG facility or the safety of persons or property located off the site if damage to the facility occurs.

(b) An LNG facility must not be located where present or projected offsite activities would be reasonably expected to—

- (1) Adversely affect the operation of control systems;
- (2) Cause failure of critical components; or
- (3) Cause the LNG facility not to meet the requirements of this part.

Recommendation

(b) Examine all facilities near LEG storage sites to see the consequences of simultaneous failures at several sites from a single cause and whether failures at one facility could cause failures at others.

DOT response

In strengthening the LNG facility standards, MTB is proposing that consideration of the nature of adjacent industrial facilities be a factor in selecting siting for all

new facilities. An examination of existing facilities is a reasonable suggestion in light of potential risks that may be present. However, any determination of action to follow that examination must take into consideration the potential health and welfare if facilities are shut down. It would appear from a review of the safety record of existing facilities that extensive retrofit would not be justifiable. However, limited site specific modifications may be reasonable and is a proper topic for future MTB consideration following final resolution of the current rulemaking to strengthen overall LNG facility standards.

Target Date: NPRM—December 1978. FR—August 1979. Study in 1981; consider regulatory development in late 1979.

GAO comments

- (1) The rules should include LPG facilities.
- (2) Present large LEG facilities in densely populated areas may present a serious danger of a catastrophe and need to be examined on a site-by-site basis. Safety records of existing facilities are not such as to allay this concern.

CHAPTER 9. TRUCKS AND TRAINS

Recommendation

We recommended that the Secretary of Transportation:

- (a) Require that loaded LEG trucks and loaded, stationary railroad cars not be left unattended outside the plant area.

DOT response

DOT agrees in part. This proposal appears reasonable and economically acceptable for LEG trucks in transit consistent with the present attendance requirements for the transportation of Classes A and B explosives by highway. For railroad cars, however, the proposal appears to be highly impracticable from the standpoint of the resources that would be necessary for its accomplishment. This report encompasses LEG materials; however, DOT would have to consider not only LEG, but also other flammable gases, such as ethylene, and apply identical requirements. Involved would be more than 10,000 railroad cars and full-time attendance of an individual car or group of cars would probably make the transportation of such gases by rail economically unfeasible.

Target Date: 1980.

GAO comment

At least they should be attended while in densely populated areas.

Recommendation

- (b) Determine what security procedures are necessary to prevent LEG trucks from being sabotaged or hijacked and used for destruction. Particular attention should be paid to unavoidable movements of LEG through densely populated areas.

DOT response

DOT agrees to conduct a study. Determining appropriate measures for preventing terrorism depends on a thorough evaluation of the various possible methods of sabotage, hijacking, and destructive use. A comprehensive examination to enumerate all such possibilities would be the appropriate first step to the development of alternate means of preventing or reducing the likelihood of sabotage, hijacking, or destruction. This information should then be evaluated on a cost benefit basis to determine the probability of failure of potential system failure, and the cost of the system.

Meanwhile, some clearly cost beneficial steps can be taken to reduce the risks, such as prohibiting unattended vehicles in transit, use of driver-initiated engine breakdown controls, manual reset wheel locks, the installation of tire pressure release devices, gas tank water injectors, "on only" visual audible alarms, and automatic emergency signal transmitters.

Target Date: Fiscal year 1981.

CHAPTER 9. SHIPS

Recommendation

We recommended that the Secretary of Transportation:

- (a) Systematically determine the critical vulnerabilities to sabotage of ships carrying hazardous materials in U.S. ports and require appropriate preventive and mitigating measures.

DOT response

While it would be possible to list the large numbers of areas where vessels are vulnerable to sabotage, the cost of implementing appropriate preventive measures would be cost prohibitive. No action is planned.

GAO comment

We did not suggest determining all vulnerabilities to sabotage, only critical vulnerabilities. The cost of preventive or mitigative measures for some of them might be little or nothing. DOT will never find out if it doesn't look at the problem. Meanwhile, it is assuring the public that there is no danger in bringing very large ships carrying LEG into the harbors of major cities.

Recommendation

- (b) Implement effective port surveillance during LEG carrier operations.

DOT response

Coast Guard will undertake action to increase our waterside surveillance of LEG carrier operations as necessary.

Target Date: Ongoing.

Recommendation

- (c) Be prepared to take appropriate action in the event of a suspected attack including a ship bottom and pier search by qualified explosive ordnance disposal experts.

DOT response

Emergency plans are in existence to meet with planned terrorist attacks. The Coast Guard utilizes U.S. Navy Divers, Commercial Divers as well as Coast Guard Divers to conduct underwater searches.

Target Date: Ongoing.

Recommendation

- (d) Develop contingency plans and emergency procedures for individual ports in the event of a ship hijacking.

DOT response

Contingency and emergency plans are in existence at this time.

Target Date: Ongoing.

GAO comment

To the best of our knowledge these contingency and emergency plans are cursory and do not deal specifically at all with ship hijacking.

DEPARTMENT OF ENERGY

CHAPTER 9. SECURITY RESEARCH

Recommendation

We recommend that the Secretary of Energy: Establish a comprehensive program to determine the vulnerability of LEG tanks to sabotage. This program should include the effect of:

1. External explosives, including shaped charges.
2. Internal explosives.
3. Firearms and light anti-tank weapons.
4. Introduction of other chemicals.

DOT response

The Department of Transportation, through the U.S. Coast Guard, has responsibility for establishing security standards for LNG terminals and, through the Office of Pipeline Safety Regulation, has regulatory responsibility for establishing tank standards. We have worked, and will continue to work, with and assist the Department of Transportation on problems related to the vulnerability of liquefied fuels facilities to such events as are listed above. We will carefully determine what activities DOE should undertake vis-a-vis activities in DOT.

GAO comment

We do not consider DOE's response to substantively address our recommendation.

CONGRESS

CHAPTER 11. STRICT LIABILITY

Recommendation

We recommend that the Congress:

(a) Enact legislation which requires that strict liability be applied in all accidents involving LNG and LPG.

FINANCIAL RESPONSIBILITY AND THE HAZARDOUS MATERIALS COMPENSATION FUND (HMCF)

(b) Enact legislation creating a more adequate liability insurance system for non-nuclear hazardous material operations that would:

(1) Require corporations transporting, storing or using significant quantities of flammable hazardous materials to carry the maximum liability insurance available from the private sector and contribute a fixed sum per Btu to a Federal Hazardous Materials Compensation Fund (HMCF).

(2) Provide that the United States be subrogated to the rights of injured persons compensated by the Fund, to allow the Attorney General of the United States to sue the companies or persons responsible for an LEG accident to recover whatever monies the Fund has paid out.

(3) Allow injured parties in a hazardous materials accident to sue individually, or as a class when permitted by the jurisdiction's rules of civil procedure, for all damages beyond those covered by insurance and the Fund, all of the companies in the corporate chain.

Dingell-Markey bill (H.R. 51)

"Financial Responsibility for Certain LNG Activities; Studies

"Sec. 7. (a) Not later than 9 months after the date of the enactment of this section, the Secretary shall—

"(1) conduct a study of—

"(A) the risks associated with the production, transmission, and storage of LNG;

"(B) the risks associated with the production, transmission, and storage of liquefied petroleum gas;

"(C) the methods of assuring adequate financial responsibility for those engaged in any such activity; and

"(2) prepare and transmit to each House of the Congress a report on the results of such study, together with the recommendations of the Secretary for such legislative or administrative action as he considers appropriate.

GAO comment

These studies of risks should specifically *not* include a numerical estimate of the total risk, because such a numerical estimate is impossible to calculate accurately. Forced numerical calculations of such risks, commonly found in environmental impact statements, are usually highly inaccurate and tend to distract from discussions of consequences.

(c) Amend the 1851 Act (46 U.S.C. 183) which limits the liability of owners and bareboat charterers of ships and barges by substantially raising the statutory limit for vessels carrying hazardous materials.

DOE/FEDERAL ENERGY REGULATORY COMMISSION

CHAPTER 11. COMPENSATION

Recommendations

We recommend that the Secretary of Energy and the Federal Energy Regulatory Commission take steps to:

(a) Ensure that adequate compensation for offsite damage is available before permitting LNG projects to proceed.

(b) Use their authority to require that importers and LNG tanker companies maintain agent for the receipt of legal documents in all States in which they operate.

(c) Consider their possible authority to require the parent corporations of LNG tanker companies, which apply to transport imported natural gas, to assume joint liability with the applicant for damages resulting from accidents they cause.

DOE response

These recommendations to strengthen liability provisions in the event of an LNG accident have some merit. DOE has the authority to condition its approval of LNG imports on any reasonable terms, including the requirement that applicants establish that they are adequately insured or financially capable of making adequate compensation for damage resulting from the LNG project. The suggestion that LNG tanker companies maintain agents for the receipt of legal documents in all states in which they operate may not be necessary because in most jurisdictions an appropriate State official is deemed to be an agent for service of process by operation of law if a company conducts substantial business activities within the state. With respect to requiring the parent corporation of LNG tanker companies to assume joint liability with the applicant for damages, DOE could if appropriate, establish this as a condition for the granting of authority to import.

FERC response

The FERC could, in appropriate circumstances, attach a liability insurance condition to an authorization pursuant to Section 7 of the Natural Gas Act. However, as noted in the Report, it would be only one of a number of possibly competing concerns evaluated in order to assure that the requested authorization is in the "public convenience and necessity." The need for the imposition of a liability insurance condition has never been demonstrated in a Section 7 proceeding before the FERC, and the FERC's exercise of its power to attach conditions to Section 7 certificates must be soundly supported by the record before it. *California Oil Co., Western Division v. FPC*, 315 F. 2d 652 9th Cir. 1963). Furthermore, the authority to impose conditions on certificates must conform to the objectives of the FERC's regulatory powers and the requirements of due process. *Pure Oil Co. v. FPC*, 292 F. 2d 350 (7th Cir. 1962).

Further, insurance liability responsibility and strict liability traditionally have been imposed by the Federal Government only as a result of specific statutory requirements. As noted in the Report, the Nuclear Regulatory Commission requires liability insurance for non-federally owned nuclear plants and provides for Federal Government guarantee of losses in excess of insurance coverage pursuant to the Atomic Energy Act. (42 U.S.C. Part 2210.) The Secretary of Transportation is authorized to provide insurance for international flights that cannot obtain adequate coverage from commercial sources. (49 U.S.C. Part 1531.) The Trans-Alaska Oil Pipeline Act (Act) (43 U.S.C. Part 1653) provides for strict liability, subject to statutory limits, for damages affecting land and marine environments. With respect to the latter category, the Act establishes an insurance fund to meet additional oil spill damage claims.

Accordingly, while the FERC agrees, in principle, that operators of LNG facilities should be reasonably liable for offsite damage, it is not clear that the general provisions of Section 7 of the Natural Gas Act are sufficient authority to ensure compensation for all types of offsite damage. Absent specific legislation requiring liability insurance as a condition for all LNG certificates, the problems of jurisdiction, litigation, and recovery detailed in the Report and noted in this letter will not diminish. Such legislation should provide a statutory framework for the determination of financial liability on a case-by-case basis. In this manner, each situation may be judged on its individual merits, with due consideration given to the amount of insurance which may be available in the private market and to the effects of the cost of such insurance upon the financial feasibility of the project and the rates approved for the project.

In the absence of appropriate delegations of authority from the Secretary of Energy, the FERC will not comment on the latter two recommendations which relate to the Secretary's authority over imports pursuant to Section 3 of the Natural Gas Act. (See the discussions on pages 1 and 2, *supra*.) We are pleased, however, to have the opportunity to comment on the first point.

CONGRESS

CHAPTER 12. SAFETY RESEARCH

Recommendation

We recommend that the Congress provide to the organizations directly responsible for LEG safety (OPSO, FERC, ERA, NHTSA, OHMO, Coast Guard, etc.) adequate budgets and personnel to make informed technical judgments and do research on safety procedures and equipment to be used under their jurisdiction. Adequate funding should eliminate the need for agencies to share costs of hazard studies with private industry.

DEPARTMENT OF ENERGY AND DEPARTMENT OF TRANSPORTATION

CHAPTER 12. SAFETY RESEARCH

Recommendation

We recommend to the Secretary of Energy and the Secretary of Transportation that:

(a) The primary goals of Federal research of hazardous materials be to: (1) clarify the hazards, risks, and consequences of their use, so that appropriate regulations can protect the public; (2) aid in assuring that the plans and practices of operating facilities are adequate to satisfy the regulations; and (3) investigate techniques to reduce the risk of their storage and transportation.

(b) An immediate, significant research program be focused on the interaction of spills of hazardous substances with man-made structures such as buildings, subways, sewers, and ships.

(c) An immediate program be started to investigate the possibility of preventing or mitigating the effects of sabotage on the storage and transportation of hazardous materials in populated areas.

DOT response

DOT generally agrees with the GAO statement of what should be the primary goals of Federal research on hazardous materials.

In the area of highway transport of flammable liquids and flammable gases, DOT research and development initiatives have recently completed analyses of vehicle handling and control problems caused by cargo shift and of integrity and performance of cargo tanks when tipped or rolled from a static position. New initiatives include:

Development of a computer model on effects of cargo shifting;

Development of methods to reduce leakage through manhole covers and vents in overturn situations;

Investigation of cargo tank performances when dynamically rolled;

Development of new techniques for controlling compressed liquefied flammable gases released from cargo tanks;

Development of a national tank truck data base to assist in value-impact analyses of cargo tank operations; and

A comparative risk assessment of air vs. surface shipment of cryogenic liquids and explosives.

Target Date: Ongoing.

We expect some of these studies to lead to new operating practices and modified or new design criteria.

In the area of fixed LEG facility research and development, DOT has called upon the Department of Energy in its LNG research program to place emphasis on (1) large scale testing to obtain timely "hazard information"; (2) development of simplified formulae and procedures suitable for regulatory application; and (3) development of means for controlling or mitigating hazards.

DOT has also suggested to DOE that parallel research on LPG is needed.

In the area of preventing or mitigating the effects of sabotage on the storage and transportation of hazardous materials in populated areas, DOT acknowledges the necessity of developing a coordinated and systematic approach to the overall sabotage/terrorism problem and will begin to develop a recommended course of action in this area.

Target Date: Fiscal year 1981.

DOE response

It is our intention to work in conjunction with DOT and other agencies to assure, through continual exchange of information, that DOE research will be responsive to their needs. The information developed from our research will be the type needed to answer questions such as those given in the recommendation above. Further, as the DOE research program evolves, it will incorporate both the problems that are now perceived and those which may be discovered in the course of the research.

DEPARTMENT OF ENERGY

CHAPTER 12. SAFETY RESEARCH

Recommendation

We recommend that the Secretary of Energy replace immediately the department's present LEG safety research plans with a less costly, two-year effort focused on the sort of studies of detonation, fire characteristics, flame propagation, vapor

dispersion, crack propagation, and interaction with man-made structures that we have outlined in this and other chapters. The research programs should also seek to determine the best remedial measures for dealing with fires from LEG spills.

DOE response

The objectives and approach for liquefied fuels safety and environmental control research are currently being evaluated. In this evaluation, inputs from all sources are being considered. Research will be conducted to provide information important to the users.

We do feel that the 2-year program recommended by GAO seriously understates the time and resources actually needed. It appears that GAO assumes that field test facilities are in existence and that contractor work can begin immediately. This apparently does not consider the time required to solicit bids, negotiate contracts, or to analyze the experimental work.

GAO comment

We took these factors into account in our estimate of the time needed. See our comments on pages 13-31 and 13-32 of the LEGS Report.

DOE Memorandum (Signed by William Mott, Acting Director of the Environmental Control Technology Division on February 22, 1979, in Response to Two Questions by GAO on the DOE LNG Research Program)

Question 1. What is the history of the fiscal year 1979 LNG budget request?

Answer 1:

	<i>Millions</i>
DOE to OMB	\$5.2
OMB to Congress	2.2
House authorizations	8.2
House appropriations	8.2
Senate authorizations	8.2
Senate appropriations	2.2
Conference	2.2
Final	2.2

Question 2. What is the DOE present policy in regards to \$50 million, 5-year program for LNG?

Answer 2. The DOE report entitled "An Approach to LNG Safety and Environmental Control Research" provided an assessment of research needs and outlined an approach to fill the identified knowledge gaps. The document was not intended to be the DOE plan for LNG safety studies and, accordingly, was never adopted as such.

During the process of developing an official DOE plan for LNG safety studies, it was decided internally, and suggested by Congress, that the program be expanded to include additional materials, such as LPG, hydrogen and ammonia. Plans for the Liquefied Gaseous Fuels Safety and Environmental Control Program are being developed at this time. It is expected that a generic plan will be available within a month, or two. Specific details regarding the commodities to be considered will be published as appendices to the "generic" plan as they become available. At the present time, it is expected that the LNG appendix will be available in late fiscal year 1979 or early fiscal year 1980.

In the meantime, we are progressing with some safety studies (those obvious items which must be accomplished) and additional assessments. The attached "fact" sheet describes the overall program and lists key milestones.

DIVISION OF ENVIRONMENTAL CONTROL TECHNOLOGY

FACTSHEET: LIQUEFIED GASEOUS FUELS SAFETY AND ENVIRONMENTAL CONTROL ASSESSMENT PROGRAM

Objectives

Identify the safety and environmental control issues associated with producing, storing, and transporting liquefied gaseous fuels. (e.g., LNG, LPG, hydrogen, ammonia, and alcohols) and evaluate the adequacy of current and planned environmental control processes, systems, and programs.

Assess alternate environmental control processes, systems, and programs that may be required to develop recommended solutions to identified issues.

Key issue

An adequate experimental base is not available for guiding imminent regulatory decisions on safety and siting for liquefied gaseous fuels facilities.

Key technical issue

Ability to predict "scale effects" of large releases of these materials is not substantiated.

Background

Fiscal year 1976—Developed concepts for LNG safety and environmental control assessment program.

Fiscal year 1977—Initiated LNG assessment; conducted LNG workshop; and initiated hydrogen assessment.

Fiscal year 1978—Completed LNG assessment; initiated studies to fill knowledge gaps indicated by LNG assessment; program expanded to include other fuels, such as, LPG, hydrogen; initiated instrumentation field tests; and initiated LNG peak shaving plant safety analysis.

Plans

Fiscal year 1979—Review specific LNG plans; formalize program plan; prepare program progress report; participate in joint, preliminary ammonia studies; complete instrumentation field tests; complete tanker fire hazard study; and modify existing test site to accommodate 40 cubic meter LNG spill test.

Fiscal year 1980—Initiate 40 cubic meter LNG field tests; initiate ammonia assessment; complete hydrogen assessment and prepare research plan; complete LPG assessment and prepare research plan; complete LNG peak shaving plant safety analysis; and complete LPG marine terminal safety analysis.

Fiscal year 1981—Publish results of 40 cubic meter LNG scale effects experiments; initiate alcohol(s) assessment; continue LNG, LPG, and hydrogen studies as indicated by assessments; and complete ammonia assessment and prepare research plan.

CHAPTER 13. LEG DETONATION RESEARCH

Recommendation

We recommend to the Secretary of Energy that his department focus its LEG detonation research to answer critical questions on LNG cloud detonation as quickly as possible and to provide important information on the initiation of detonation in LPG clouds. The physics associated with these questions is so complex that to obtain a complete, quantitative understanding of the phenomena both detailed theoretical modeling and extensive laboratory and field experiments are necessary. But complete, quantitative understanding is not needed for the policy decisions about LEG use that have to be made. For near-term results on detonatability (obtainable over the next 1 to 2 years), we recommend that emphasis be placed on relatively large-scale (350 cubic meters) field experiments supplemented by wind tunnel investigations. Continuation of some of the laboratory experiments and approximate theoretical modeling currently being pursued, however, can be useful to help plan the field experiments and interpret their results.

We believe that such a program could be conducted within two years and would involve less than a fifth of the \$50 million DOE is planning to spend on LNG research. A suggested program devised by us is presented below, including rough cost estimates. DOE has questioned whether the program can be carried out at these cost levels. We have reviewed our estimates carefully and believe that, with prudent use of public funds, the estimates are valid.

The ultimate scope and extent of the experiments described will depend upon what is learned as each part of the work is completed. If, for example, it is found from early experiments that differential boiloff of the liquid does not occur under field conditions with LNG spills, then detonation experiments might be limited to three fuels: methane, methane with 35% ethane, and pure propane (for LPG applications). Should the converse prove to be the case, then testing of a larger range of fuel mixtures with various initiation sources might be necessary, substantially expanding the test matrix.

The first four research tasks described and the preliminary two-phase cloud experiments would provide answers to critical questions on LEG vapor cloud detonation within about one year, provided the work is well coordinated and conducted in parallel where possible. The estimated cost for these tasks is \$1.5 million.

In one additional year, at an estimated cost of \$3 million, 350 cubic meter field tests could provide increased confidence in the answers obtained during the first

year. They would also provide information on downwind combustible vapor cloud travel and possibly fireball radiation. (If an initial set of explosively dispersed LEG experiments were conducted, add roughly \$800,000 to the second year's cost.)

Differential boiloff of LNG constituents

Perform field experiments spilling LNG on unconfined areas of salt water and measuring spatial and temporal concentrations of methane, ethane, and propane in the vapor above the evaporating liquid. Perform similar experiments for spills on soil.

This work, some of which has begun at the Naval Weapons Center, China Lake, California, with 6 cubic meter spills, will provide a check of MIT laboratory work to determine if a strong fractionation process also occurs under field conditions. Tests should be run in the size range to 1 to 35 cubic meters (1 truckload) to provide as wide a range as can be obtained relatively rapidly and inexpensively. If enrichment in ethane or propane is found, the large vapor cloud field tests should also be instrumented to give measurements of differential boiloff over an experimental range of 3 orders of magnitude.

We estimate that these differential boiloff tests would require about \$300,000 and eight months time. Conducted early, the output could have a substantial influence on the type and scope of further detonation experiments.

Detonation initiation sources

Survey, compile, and physically describe all current and foreseeable sources of rapid energy release which might be located up to about 5 km from LEG marine terminals and major storage areas. Determine through analysis and screening experiments which of these energy sources are potentially capable of detonating methane, propane, and perhaps ethane-air mixtures. Select those potential initiation sources believed most likely to produce a detonation in LEG vapor clouds for use in cloud detonation experiments.

These potential initiation sources should include electrical discharge sources (including lightning), high pressure gas containers, highly flammable stored gases and stored oxygen, machinery capable of exploding, condensed explosives, etc. The study should evaluate the effects of confining structures such as large metal and concrete pipes open to the atmosphere (storm drains), and underground conduits and shafts into which gas might flow. Whether ethane is considered should depend on the findings of this work and that of the preceding experiment.

About six months and \$100,000 are required for this effort.

Wind tunnel vapor plume tests

Conduct vapor dispersion experiments in a meteorological wind tunnel to define the existence and distribution of detonatable hydrocarbon concentrations in the dispersing LEG vapor cloud.

If the LNG boiloff tests show that little fractional distillation occurs, these experiments need to simulate only methane and propane clouds. If fractional distillation does occur, the tests should also include releases that simulate the fractional distillation found in the experiment on boiloff, using downstream sensors that can distinguish the different gases. The results would determine whether high concentrations of heavier hydrocarbons persist in sizeable regions of the cloud as it disperses downwind, in time to provide inputs to the field detonation experiments discussed below. They would also provide a measure of the possibly detonatable fraction of the cloud as a function of time after spill, whether or not strong species separation persists. Finally, the results would be useful for planning and evaluating the large-scale field tests discussed below.

We estimate that the wind tunnel experiments can be conducted in eight months for \$200,000 with useful data produced as early as four months from the beginning of testing.

Detonation initiation and propagation experiments using plastic bags

Perform experiments to determine if the sources selected in the ignition source study produce detonation in a range of methane/ethane mixtures contained in large plastic bags, and in mixtures of air with methane, 65% methane/35% ethane, and propane.

These experiments should include a range of ethane-air mixtures only if the boiloff and wind tunnel investigations show that LNG boiloff produced hydrocarbon fractionation that persisted while the fractions were mixed with air to detonatable concentrations. Although some of these bag experiments, using high explosive initiators, have already been carried out by investigators at China Lake, Albuquerque, and in Great Britain, more are required using other types of initiators that might

be present near LEG releases, including multiple stage processes such as propagation from a pipe to a bag, and from a bag of ethane to one of methane. Both stoichiometric and off-stoichiometric mixtures should be included in the investigation. If carried out in rectilinear bags, the experiment will provide a measure of the lateral dimensions required to propagate a detonation in a geometry similar to that of the cloud from a spill. Bags of dimensions up to 3 or more meters on a side and 30 meters long should be used. The experiments should also investigate propagation in inhomogeneous fuel/air mixtures by use of partitioned or multiple bags, with adjacent compartments filled with mixtures having different fuel/air ratios.

In addition to direct-initiation experiments, a number of tests should be conducted to determine if transition from deflagration to detonation (or to a near-detonation that produces destructive overpressures) can occur when the mixture is ignited with a weak source. The effects of turbulence, dust, and partial confinement should be included. The linear dimensions of the bags required for the tests might be three or more times greater than those for the direct-initiation experiments.

The cost of these "bag" experiments is difficult to estimate accurately because of uncertainties in the number and sizes of tests ultimately required. However, if 100 separate tests are assumed, about \$750,000 and 8 to 12 months would be required.

These bag experiments, together with the wind tunnel tests, will be the culmination of the first year's effort and should provide initial answers to the basic detonation questions. An assessment should be made of the results at this juncture and a decision made as to whether large spill detonation tests are essential to provide answers with higher confidence. If deemed so, the following experimental program should be undertaken (for which planning would have been completed during the first year).

Large vapor cloud field experiments

Conduct a set of experiments in which about 350 cubic meters of LNG and about 150 cubic meters of propane are spilled on water and soil, and attempt to detonate them with appropriately chosen initiators.

These experiments would integrate all the phenomena tested separately in the earlier experiments. Detonation would not be attempted in the first tests for water or for soil spills, but measurements would be made to describe the spatial and temporal concentrations and hydrocarbon composition. These first tests would serve to check the differential boiloff and wind-tunnel experiments, thereby increasing confidence in the description of dispersing vapor clouds. They would also help determine the maximum distance at which a non-detonated cloud initiate fires.

Attempts would be made to detonate the cloud in subsequent tests using initiators selected from the first year's work. Since the tests would be expensive and since a large number of detonation attempts are needed for high confidence, perhaps 10 to 20 initiators would be activated simultaneously in each test cloud. With careful initiator spacing and monitoring, one could establish which initiators produced detonation and whether a given detonation propagated through several pockets of the combustible mixture. Repeat tests would be performed to provide an adequate statistical base.

The results of these experiments should provide high-confidence answers to the question of LNG and LPG vapor cloud detonatability as well as a measure of the extent and pattern of possible blast damage should detonation occur. In addition, such tests could provide valuable data on fireball and flame radiation.

Since the cost of these tests will be substantial, careful planning will be required to establish the minimum acceptable spill sizes; results should be analyzed after each test to minimize the number of tests required. We estimate that a program of twelve tests would cost about \$3 million. If detailed test planning is accomplished during the first-year effort described above, most if not all of the twelve-test program could be completed in the second year.

Two-phase cloud detonation

Perform experiments in plastic bags to determine whether a cloud formed by a spray of LNG or LPG droplets in air is more or less easily detonated than gas/air mixtures of the same fuels at ambient temperature.

These experiments would be conducted in a manner similar to those on detonations using plastic bags, so that a direct comparison could be made with those results. They would serve to establish whether the cloud produced by an exploding container of the cryogenic liquids has the potential for posing a special explosive hazard. Performed as part of the plastic bag experiments discussed above, a few tests should cost an additional \$100,000 and take about one or two additional months. Should these tests indicate that a special hazard might exist, tests with the fuel explosively dispersed should be considered. An initial set of 10 such tests, using

the techniques applied to the Fuel-Air-Explosive (FAE) weapon development and about one to two cubic meters of liquid fuel, would cost about \$800,000 and take about nine months to one year to perform.

DOE comment

There is no question that detonation is an important matter to be resolved. However, it is questionable if this can be done in the time frame and the funding level estimated by GAO. The specific tasks needed in area of detonation will be given careful consideration in the evolution of our research.

DEPARTMENT OF TRANSPORTATION

CHAPTER 14. ANALYSIS OF LPG STORAGE AND DISTRIBUTION SYSTEM

Recommendation

We recommend that Secretary of Transportation develop a computer program able to analyze the capability of the national LPG storage and distribution system. Such a program should be able to determine the rate at which LPG can be delivered—as LPG or as synthetic natural gas—from any point to any other point and the cost to increase this capability by any desired amount.

DOT Response

DOT agrees. DOE and DOT are conducting a joint study to determine if the nation's transportation system is adequate to accommodate the future energy needs of the United States. The Joint DOT-DOE study team will look at important aspects of the movement of coal, crude oil and petroleum products, nuclear fuel and natural gas transportation, including liquefied natural gas.

Target Date: Ongoing.

DOT will use the assistance of a computer model to compare the present capacity of the national transportation system with future needs and identify potential bottle-necks. The computer model will include a sub-model of LPG transportation consisting of stand-alone simulating programs receiving inputs relating to costs, process, other economic modal split factors, physical constraints, government policies, and projections from other parts.

Target Date: initiate work in early fiscal year 1979

CONGRESS

CHAPTER 16. FACILITY SITING

Recommendation

We recommend that the Congress: Enact legislation which prohibits, excepted in remote areas, the construction of new—or the expansion in size or use of existing—facilities for the storage of highly dangerous materials (including LEG) unless the storage tanks are inground with the highest level of fluid below ground level, or built to standards similar to those demanded for licensed nuclear installations in remote areas.

DEPARTMENT OF TRANSPORTATION

CHAPTER 16. INCIDENT REPORTS

Recommendation

We recommend that the Secretary of Transportation:

(a) Require companies handling hazardous materials to file routine operation summaries annually and to report any unusual occurrences within 48 hours to the Department of Transportation in a manner analogous to the reports required by the Nuclear Regulatory Commission. Reportable occurrences should include any venting or leakage of hazardous material; any overpressuring of tanks; any transportation breakdown; any vital machinery breakdown; and any attempt by unauthorized persons to enter company premises. These reports should be available to the public in Washington, D.C. and at an appropriate office near the site of the unusual occurrence.

DOT response

DOT believes this recommendation should be deferred pending improvement of analytical capability. The MTB's existing data collection systems are based on reports of pipeline leaks or failures and hazardous materials transportation incidents involving release of material. The hazardous materials incident reporting

requirements do cover unusual occurrences in transportation of radioactive materials or etiologic agents involving suspected contamination. Neither system includes data on routine industry operations nor unusual occurrences such as machinery breakdown or unauthorized entries. The MTB recognizes that the reporting requirements must be carefully developed to meet specific, known regulatory program requirements. Imposing new reporting requirements on companies handling any of the entire range of hazardous materials may be necessary, but data pertaining to certain materials which pose more serious risks may be useful. Hasty action which could result in costly and non-productive reporting should be avoided.

GAO Comment

DOT needs this information for the same reason NRC does: to spot trends in incidents and to pick out and correct weak points before tragedy can occur. No one company can do it alone.

Recommendation

(b) Form a central analysis group which would have the staff and resources to discover patterns in the data reported by companies handling hazardous materials. It makes no sense to require companies to go through the expense and trouble to submit annual operations reports and unusual occurrence reports if they are not going to be analyzed in sufficient depth so that serious malfunctions can be prevented. The Accident Analysis Branch in OHMO does not operate in this fashion. (See Chapter 17.)

DOT response

DOT agrees. MTB has formed, and is in the process of staffing, a central analysis group for the purposes stated in this recommendation. This centralized function will provide analysis and input to both the hazardous materials and pipeline safety processes. The staff will of necessity be highly trained analysts and engineers who will work closely with the Bureau's regulatory and enforcement functions in order to assure that statistical, cost benefit, and related economic analysis is programmed into the regulatory development cycle.

Target Date: Complete staffing mid-fiscal year 1979.

This MTB analytical capability will be supported by overall Research and Special Programs Administration data planning and coordination. The RSPA was recently assigned lead agency responsibility for implementing new initiatives in the management of transportation data and information. As the network of transportation information sources systems is better coordinated, the quality of transportation decision data should improve and be more useable by the analysis staff.

MTB NOTICE OF PROPOSED RULEMAKING

Part 193.10 Reporting

Leaks and spills of LNG must be reported in accordance with the requirements of Part 191 of this Chapter.

DOT bill (S. 411) LNG (property damage exceeding \$10,000 for LPG)

(5) by amending clause 5(ii) to read as follows: "all accidents or incidents reported during the preceding twelve months by each such person involving personal injury requiring hospitalization, fatality, property damage exceeding \$5,000 (whether or not sustained by a person subject to the safety jurisdiction of the State agency) and any other accident which the State agency considers significant."

Dingell-Markey bill (H.R. 51)

"(e)(1) The Secretary shall, by regulation, require that any person owning or operating pipeline facilities shall report, at such time and in such manner as the Secretary shall require, any pipeline leak of which such person knew or reasonably should have known. Any such report shall include—

"(A) the specific location of the pipeline leak;

"(B) a description of the pipeline facilities at which the pipeline leak occurred, including any information described in subsection (d)(1)(A) which the Secretary may require under such regulation;

"(C) a description of any personal injury or property damage resulting from such pipeline leak; and

"(D) a description of the steps taken to prevent the leak or leaks of a similar type from continuing or recurring.

"(3) For the purposes of this subsection, the term 'pipeline leak' means any condition resulting in the escape of material from pipeline facilities during pipeline transportation, or during treatment of such material during the course of pipeline

transportation, which is not caused by operation, inspection, or adjustment procedures which were properly carried out. Such term does not include any condition which does not pose a threat to public health or safety, property, or the environment, as determined in accordance with regulations prescribed by the Secretary."

"(7) Not later than 3 years after the date of the enactment of this subsection, the Secretary shall, by rule, establish and thereafter maintain a program, for use in an electronic data-processing system, which processes and maintains—

"(A) information obtained under the preceding provisions of this subsection;

"(B) information on pipeline leaks reported under subsection (e);

"(C) information on accidents and incidents reported under section 5; and

"(D) such other information as the Secretary determines appropriate which is obtained by the Secretary under any other provision of law; for the purpose of identifying hazardous equipment, materials, and techniques involved in the construction or operation of pipeline facilities."

Recommendation

(c) Require OPSO to issue detailed standards for operating procedures and for operator qualification and training at LEG facilities. It should periodically review the operation of LEG facilities to see that they are meeting those standards.

DOT response

Requirements for operating procedures and the qualifications and training of personnel are included in current rulemaking action to make more stringent the standards for LNG facilities. Compliance with these procedures and training requirements will be monitored through the MTB and related State inspection programs.

Target Date: NPRM—March 1979. FR—December 1979.

GAO comment

The requirements should cover LPG facilities as well.

CHAPTER 16. MTB REGULATION OF LPG PIPELINE FACILITIES

Recommendation

We recommend that the Secretary of Transportation: Require OPSO to extend its regulations to cover intrastate LPG and naphtha pipelines, including connecting import terminals and storage complexes, affecting interstate commerce. GAO made this recommendation in its earlier report on pipeline safety, "Pipeline Safety—Need for a Stronger Federal Effort" (CED-78-99).

DOT response

DOT agrees with the need to extend the regulations. The present pipeline regulations which are applicable to the interstate pipeline transportation of hazardous liquids such as LPG and naphtha were issued under the authority of the Transportation of Explosives Act (18 U.S.C. 831 et seq.). The authority to extend those regulations to intrastate pipelines, as well as import terminals and storage complexes affecting interstate commerce is not clearly established, and DOT finds the authority less than adequate to properly support such an extension of its current regulatory program.

The MTB is moving to strengthen its LNG regulatory program (e.g., standards, staff technical capability, monitoring and inspection capability). This enhancement of the LNG program will provide a valuable foundation for strengthening the LPG program. Additionally, the possible passage of definitive LPG legislation such as that included in pending H.R. 11622 (S. 1895), introduced by Messrs. Dingell and Markey, would provide a sound legislative basis for broader LPG regulation, and provide for the utilization of existing natural gas pipeline safety enforcement authorities, as well as a shared Federal/State responsibility for program execution.

In the absence of such additional legislative authority, DOT will employ all available statutory authority in addressing LPG and naphtha operations as a follow-on to its current LNG efforts.

Target Date: Consider regulatory development in 1980 rulemaking schedule.

DOT bill (S. 411)

SEC. 202. It is declared to be the policy of Congress in this title to improve the ability of the Secretary of Transportation to protect the Nation adequately against the risks to life and property which are inherent in the transportation of hazardous liquids by pipeline in or affecting interstate or foreign commerce.

(2) "Hazardous liquid" means a substance or material which is in liquid form (excluding liquefied natural gas) when transported by pipeline facilities and which,

as determined by the Secretary, may pose an unreasonable risk to life or property when transported by pipeline facilities. For the purpose of this title "hazardous liquid" includes but is not limited to, petroleum, petroleum products, and any other liquid that is flammable, corrosive, or toxic;

Dingell-Markey bill (H.R. 51)

Coverage of Pipeline Transportation of Liquefied Petroleum Gas

SEC. 104. (a) Section 2(3) is amended—

(e) Section 2 is amended by inserting "(a)" after "Sec. 2." and by adding at the end thereof the following new subsection:

"(b) Any storage facility, or category of storage facilities, physically connected to any pipeline facility, or facilities, used for the transmission or distribution of liquefied petroleum gas shall be included by the Secretary, by regulation, within the meaning of subsection (a)(5) if—

"(1) the Secretary finds that such inclusion would further the purpose of this Act; and

"(2) such facility has a storage capacity of 30,000 gallons or more, or is used in connection with one or more other storage facilities at the same site which have, in the aggregate, a storage capacity of 30,000 gallons or more."

CHAPTER 16. LNG TRUCK DESIGN

Recommendation

We recommend that the Secretary of Transportation: Require OHMO to promulgate standards for LNG vehicle design.

DOT response

DOT agrees. A notice of proposed rulemaking is scheduled to be published by MTB during November 1978, proposing a complete revision of the Department's regulations pertaining to the transportation of cryogenic liquids. The notice will include specifications for the design and construction of cargo tanks for the transportation of LNG, as well as other liquefied flammable and non-flammable gases. That notice will also address existing and possible new operational requirements for both the containment of the cargo and the truck to which the tank is attached.

Target Date: NPRM—November 1978.

CHAPTER 17. TRUCK DESIGN

Recommendation

We recommend that the Secretary of Transportation: Develop standards for hazardous material trailer manufacturers which would complete the standards for shippers and enforce both with the same inspection and compliance apparatus.

DOT response

Standards for design and fabrication of hazardous materials trailers, other than LNG trailers, have been in effect for many years. They are found in 49 CFR Part 178. Proposed specifications for LNG trailers will be published during November 1978. It was not until enactment of the Hazardous Materials Transportation Act of 1974 that the Department of Transportation was provided authority to impose penalties on manufacturers for noncompliance with MTB regulations for packagings.

Target Date: NPRM—November 1978.

CHAPTER 17. INCIDENT REPORTS

Recommendation

We recommended that the Secretary of Transportation: Impose harsh penalties on companies that fail to report hazardous materials releases.

DOT response

DOT agrees with the need to enforce the incident reporting requirements. The current laws under which the Department regulates LEG safety provide the authority to impose such penalties. Earlier this year organizational changes and resource reallocation within the MTB were directed at improving the coverage and effectiveness of its enforcement and compliance activities. Those changes are now producing marked improvements in both the number and quality of enforcement actions. The

attention of this enhanced enforcement capability is being brought to bear on incident reporting violations.

Target Date: Ongoing.

DOT bill (S. 411)—for LNG and LPG

Penalties

SEC. 8. (a) Assessment of Civil Penalties.—Any person who is determined by the Secretary of Transportation to have violated any provisions of this Act or any regulation or order issued thereunder including any order issued under sections 9 or 10(b) of this Act, shall be liable to the United States for a civil penalty of not more than \$1,000 for each violation for each day that the violation persists, except that the maximum civil penalty shall not exceed \$200,000 for any related series of violations. The amount of the penalty shall be assessed by the Secretary by written notice. In determining the amount of the penalty, the Secretary shall consider the nature, circumstances, and gravity of the violation and, with respect to the person found to have committed the violation, the degree of culpability, any history of prior violations, the effect on ability to continue to do business, any good faith in attempting to achieve compliance, and such other matters as the Secretary believes justice may require.

CONGRESS

CHAPTER 17. DRIVER COMPLAINTS

Recommendation

We recommend that the Congress enact legislation to protect drivers from discharge or discrimination on account of information or complaints they provide DOT. Drivers are now largely excluded from protection under the Occupational Safety and Health Act of 1970 (29 U.S.C. 660(c)).

CHAPTER 18. ENERGY HEALTH AND SAFETY REGULATORY AGENCY

Recommendation

We recommend that Congress consider creating an Energy Health and Safety Regulatory Agency (EHRSA) which could include the Nuclear Regulatory Commission; the pipeline safety aspects of transporting fuel on land, now handled by the department of Transportation; the safety aspects of importing energy, now handled in the Department of Energy; and all safety responsibilities carried out in the past by the Federal Power Commission. For reasons discussed in Chapters 7, 8, 16, and 17, additional consideration should be given to including the safety regulation of liquefied energy gases transported by truck and train. (The Nuclear Regulatory Commission already has responsibility for the safe transportation of nuclear materials.) The Department of Transportation would continue to be responsible for all other safety regulation of motor carriers and railroads except those transporting nuclear materials and liquefied energy gases. The Environmental Protection Agency should retain the responsibility for setting air and water quality standards, including those impacting energy development and use, and waste disposal.

The new agency could be completely independent of the Department of Energy (DOE), or included in DOE with strong statutory provisions to ensure its independence.

The recommendations in Chapters 7, 8, 16, and 17 should be carried out by the Secretary of Transportation and the Interstate Commerce Commission, if liquefied energy gases transportation safety is not included in an Energy Health and Safety Regulatory Agency, or if the agency is not formed.

DOT covering letter

(a) The recommendation to Congress for inclusion of safety aspects of transporting energy fuels in a new Energy Health and Safety Regulatory Agency to be established in the Department of Energy (DOE). We oppose this recommendation. These safety functions are now carried out in the DOT as part of an overall safety program devoted to the transportation of hazardous materials in general, including transportation by marine vessel. The risks posed by energy fuels are, in many cases, not dissimilar from other hazardous materials regulated by DOT which move in volume in interstate and foreign commerce. To separate and transfer the fuel aspects of the hazardous materials programs where there are many benefits of a consolidated hazardous materials program in terms of regulatory and enforcement

action and R&D, would be inimical to an efficient, comprehensive and well-coordinated national safety program.

DOE response

We do not support this recommendation calling for the creation of an Energy Health Safety Regulatory Agency. DOE strongly supports energy safety in the transport and handling of hazardous materials, such as LPG and LNG. Nevertheless, we believe it is premature to create a new Federal Agency before a thorough study of further protection to the public safety. Indeed it would serve to exacerbate jurisdictional conflicts which would hamper the regulation and implementation of appropriate safety measures.

FERC response

The Commission supports the continuation and, where necessary, the expansion of statutory authority to address safety issues applicable to natural gas pipeline transportation and related facilities. Under current authority, the OPSO within DOT has primary responsibility for establishing minimum safety standards for pipeline facilities. The FERC, however, does address safety issues that are specific to individual applications and may impose, if necessary, safety requirements more stringent than those required by DOT standards. This procedure ensures compliance with Federal standards, while affording the FERC the flexibility to coordinate and address more expeditiously all relevant issues (including safety) within a single regulatory proceeding on a specific project.

The creation of a Safety Agency would sever safety issues from the existing regulatory programs of the FERC. The result would be to eliminate our flexibility to address specific safety issues, which are appropriately a part of the regulatory approval process. We believe that elimination of site-specific safety analysis and reliance only on general safety standards for particular facilities would lessen, rather than improve, procedures for assuring LNG safety. To the extent that the creation of a Safety Agency would diminish the FERC's conditioning authority under Section 7 of the Natural Gas Act, we would oppose the recommendation.

CHAPTER 18. FACILITY CERTIFICATION

Recommendations

We also recommend that the Congress:

(a) Enact legislation to require all large LNG and LPG facilities to get certificates of public convenience and necessity from the Federal Energy Regulatory Commission.

(b) Enact legislation that allows the Department of Energy to require certificated sites to serve new customers—as long as the expanded use can be accomplished safely and economically.

FERC response

The FERC's authority to order expansion of certificated facilities to service additional needs is limited. There is authority under Section 7(a) of the Natural Gas Act to order an extension of facilities or establishment of connections. The authority is limited to instances where the facilities or the new connections are needed to support additional sales of gas to persons or municipalities engaged in local distribution. The last proviso of Section 7(a) prohibits the exercise of any authority by the FERC which would impair the ability of the existing natural gas company to render adequate service to its existing customers.

It does not appear, therefore, that legislative authority now exists to accomplish what the Report requests, and new legislation, including an amendment to Section 7(a) of the Natural Gas Act, would be necessary. The FERC supports, in principle, legislation that would provide the FERC with flexibility to require the expansion of existing LNG terminals or existing pipeline systems where gas exchange or transportation arrangements could reduce environmental impacts, construction or operation costs, or conserve other resources.

DOE/FERC

CHAPTER 18. FACILITY HEARINGS

Recommendations

Note.—The following recommendations are intended only if an Energy Health and Safety Regulatory Agency is not formed, or until it is formed. The suggestions should be carried out by EHSRA if it comes in existence.

We recommend that the Department of Energy and the Federal Energy Regulatory Commission:

(a) Hold most formal hearings for LNG facilities near the site of the proposed facility, rather than in Washington, D.C.

(b) Announce in the Federal Register that they have held discussions on a possible LNG site, the first time such a discussion occurs, so that other interested parties can also talk to them early in the process. Such a notice should also be placed in newspapers in the locality involved.

(c) Consider the public risks from the trucks and ships which make or take deliveries at LNG storage sites in considering applications for such sites.

DOE response (for this and the next recommendation)

In regard to the GAO recommendation that hearings for LNG facilities be held near the site rather than in Washington, D.C., it should be noted that we have held a number of hearings on applications for LNG facilities near the proposed site and will continue to do so consistent with available resources.

It is the practice of ERA to publish in the Federal Register the fact of receipt of application for LNG import and the specific site which is proposed. The notice also sets out a procedure for interested parties to become a participant in the proceedings. Moreover, DOE has given notice and intends to continue giving notice of its intention to prepare environmental impact statements and to encourage public participation by way of comment in the process of developing impact statements as required by NEPA. Furthermore, notice is always given of meetings or hearings in contested cases.

The recommendation that DOE consider the public risks from trucks and ships which make or take deliveries at LNG storage sites implies that risks are ignored by the Department. This is incorrect. Risk and consequence analyses have been and will continue to be performed.

In connection with the GAO recommendations for a study of the feasibility of using only nonurban sites to receive all LNG imports and developing a gas exchange program, our present review of applications for LNG facilities includes extensive analysis and evaluations of feasible alternative sites, including nonurban sites. Also emphasis is placed on the feasibility of expanding existing sites. We believe our present procedures result in the selection of safe sites. With respect to developing an enforceable gas exchange program, we believe that additional legislation would be necessary.

FERC response to parts 1 and 2

The Report incorrectly suggests that the staff discusses matters freely with a potential applicant before an application is filed but insulates itself completely from all outside discussion after an application is filed. These discussions with potential applicants generally highlight those matters which will need to be completely discussed and documented in the application. The filing of complete applications facilitates staff review and ultimately enhances the quality of the decisionmaking process. The formal consideration of an application by the FERC staff does not commence until a written application is filed and verified in compliance with the requirements of the Natural Gas Act and the implementing regulations. After an application is filed, the staff may initiate contacts to obtain data and discuss issues raised by the proposal with anyone who is not a party to the proceeding. Moreover, subject to the requirements of the FERC's ex parte regulations, the staff may discuss the project with the parties in a technical conference or request additional data from them. Requests and responses are public documents and are served on all parties to the proceeding. Thus, the staff does request and receive all necessary information, but in a manner which avoids prejudice and impropriety.

Although we believe that the Commission's current practice allows the full exposure of public views in a timely manner, the staff will hereafter give notice of any meetings held with potential applicants for LNG facilities. Staff will place minutes of such meetings in the Commission's files for public inspection. By these procedures, we believe that any person or group with an interest in the proposal will be advised at an early stage in the review process and will have an early opportunity to present views to the Commission on the proposal.

The FERC is concerned that due regard be given to the convenience of the parties or their representatives in fixing the time and place for hearings. This concern is reflected in the FERC's Rules of Practice and Procedure, which allow the Commission, its Secretary, or the presiding officer to order local hearings. Indeed, local hearings have been held on a number of applications for LNG facilities. For example, local hearings were held on the Everett, Massachusetts project (Docket Nos. CP73-135, et al.), the Staten Island project (Docket Nos. CP73-47, et al.), and the

Raccoon Island project (Docket Nos. CP73-258, et al.). Subject to the constraints of resources, the FERC will continue to hold local hearings, when appropriate, since such hearings can aid the development of a full and complete record for FERC decisions.

FERC response to part 3

The GAO recommends (pages 18-25) that the FERC consider the public risks from ships and trucks that make or take deliveries at LNG storage sites, when evaluating applications for such sites. We agree on the need for a full analysis of risk. To the extent that the GAO implies that we do not do such analysis, it is incorrect.

Over the past four or five years, the FPC and the FERC have performed risk and consequence analyses for all facets of LNG importation facilities and associated marine shipping. These analyses have been presented in expert testimony in evidentiary hearings. Such analyses continue to incorporate the expanding knowledge about risk analysis.

During the last 9 months, the FERC environmental staff has increased its efforts to analyze the potential hazards associated with truck transportation of LNG, plant terminal sabotage, and the potential for LNG spills over dikes, either from spigot flow or from instantaneous storage tank releases. The latter possibility is discussed in the GAO report (chapter 5) and will receive appropriate staff investigation. Preliminary staff research indicates general agreement with the GAO's spigot flow theory; however, the FERC staff questions the amount of LNG overflow over dikes caused by massive instantaneous tank releases that the GAO report predicts.

The scope and intensity of the staff's analyses of LNG truck transportation have also increased. The staff is reviewing the scope of federal authority to regulate the safety aspects of LNG trucking, and is conducting an analysis of past LNG truck accidents. The staff is working with DOT on the risk analysis of LNG trucking being conducted by the Office of Pipeline Safety Regulation (OPSR). Initial interrogatories have also been sent to those applicants before the FERC whose proposed operations would involve LNG truck transportation.

In short, the FERC has been and will continue to consider transportation risks related to LNG facilities using information and methodology that is being constantly refined and improved. We concur with the GAO on the value of this risk analysis, but believe that we are already acting in accord with their recommendation.

CHAPTER 18. LNG IMPORTS THROUGH NONURBAN SITES

Recommendation

We recommend that the Department of Energy and the Federal Energy Regulatory Commission: Require a staff study of the feasibility of using only nonurban sites to receive all LNG imports and developing a gas exchange program using existing pipelines to ensure appropriate distribution of gas supplies.

DOE response

See response to previous recommendation.

FERC response

In fulfilling our responsibilities under NEPA, the FERC has considered the feasibility of gas exchange programs as part of alternative site analyses. However, the FERC's ability to require gas exchange programs or the expansion of facilities may be constrained under Section 7 of the Natural Gas Act. (FERC authority under Section 7 of the Natural Gas Act. (FERC authority under Section 7 is more fully discussed in its comments on pages 145 and 146.)

DOT/DOE/FERC

CHAPTER 19. SITING

Recommendation

We recommend that the Secretaries of Transportation and Energy and the Federal Energy Regulatory Commission take whatever steps are necessary to ensure that:

(a) All new, large LEG storage facilities are built in remote areas.

(b) No existing, large LEG storage facilities in other than remote areas are expanded in size or in use.

DOE response

DOE recognizes the need for the strongly supports high standards for safety. We realize that remote siting is a factor for consideration when evaluating the construction or expansion of an LNG facility. However, remote siting should not be consid-

ered as the primary or dominant factor for safety consideration. A number of factors are considered in our analyses of applications for site locations including environmental impact, public safety, nonurban sitings and alternative sitings. We believe this procedure for site determination is all encompassing and provides maximum safety considerations. We will continue to exert maximum efforts for public safety in our site selection criteria.

GAO response

We believe remote siting is the primary factor in safety. The inevitable uncertainties inherent in the large-scale use of new technologies and the vulnerability of the facilities to sabotage make remote siting the most important safety factor.

FERC response

The FERC currently analyzes alternative sites with respect to applications requesting FERC approval to construct LNG import terminals. Such examinations are primarily based on the safety and environmental criteria required by the National Environmental Policy Act of 1969 (NEPA). Nonurban sites are included in these siting studies, with major emphasis given to the feasibility of expanding existing LNG terminals or proposed but approved terminals. We anticipate that our present procedures for determining the safest and most environmentally acceptable site will be used in the future.

The GAO also recommends to the FERC and the Congress that regulations or legislation be enacted that would restrict new LNG storage facilities to remote areas and prohibit expansion of existing facilities in urban areas. Severe conflicts are common between the safety advantages of remote sites, and environmental and economic considerations. If a general policy of remote siting were adopted, the FERC could not ignore other relevant environmental and economic factors in reaching a final decision in the context of a particular proceeding. Therefore, it is inappropriate to determine that remote sites always provide the best balance of pertinent considerations. We believe that siting analysis and balancing should be done on a case-specific basis.

The FERC recognizes the potential safety benefits of remote siting, but it should not be a foregone conclusion, as the Report implies, that LNG facilities need be located in isolated areas remote from humans in order to operate with a high degree of safety. On the contrary, past analyses by the FERC and others have shown that LNG facilities can be operated safely in areas that might not be considered remote. The FERC will continue as it has in the past, to reevaluate, refine and update its analyses of the safety issue.

DOT bill (S. 411)

(4) "Pipeline facilities" includes, without limitation, new and existing pipe, rights-of-way and any equipment, facility, or building used or intended for use in the transportation of gas or the treatment of gas during the course of transportation, but rights-of-way as used in this Act does not authorize the Secretary to prescribe the location or routing of any pipeline facility."

(c) Pre-Construction Approval. In prescribing standards under this section, the Secretary may require, in his discretion, that any construction associated with a new or existing pipeline facility not begin until he approves that construction, and then only to the extent that the construction is in accordance with the applicable standards prescribed under this section and such other terms and conditions as the Secretary determines are appropriate to assure that the facility will be constructed and operated in compliance with those standards.

Dingell-Markey bill (H.R. 51)

"Standards for LNG Facilities"

"SEC. 6. (a)(1) After the date standards first take effect under this section, no new LNG facility may be constructed unless the Secretary approves such construction, and then only to the extent that such construction is in accordance with the applicable standards prescribed under subsection (b) and such other terms and conditions as the Secretary determines are appropriate to assure that the facility will be constructed and operated in compliance with standards under subsection (b).

"(b) Not later than 180 days after the date of the enactment of this section, the Secretary shall establish—

"(1) minimum standards for determining the location of any new LNG facility which is to be stationary,

"(2) minimum standards for the construction of any new LNG facility, and

"(3) minimum standards for the operation of any new LNG facility.

Any standard under this section shall be in addition to, and in lieu of, standards under section 3 which are not inconsistent with such standard.

"(d) In prescribing standards under subsections (b) and (c), the Secretary shall take into consideration—

"(1) with respect to standards relating to the location of any stationary new LNG facility—

"(C) the existing and projected population and demographic characteristics associated with each location considered;

"(G) the cost of constructing and operating such LNG facility at each such location, including the costs to the United States and to State and local governments which are associated with such construction and operation; and

"(H) the need to encourage remote siting;

Recommendation

If, despite our recommendation, new, large LEG storage facilities are built in other than remote areas, or existing ones are expanded in size or use, we recommend that:

(a) All storage tanks be in the ground with the highest level of fluid below ground level, or

(b) All storage tanks be built and operated to standards similar to those applied to the construction and operation of nuclear plants.

DOE response

While DOE has not yet adopted such a measure, we are presently studying the feasibility and merits of underground storage facilities as well as other alternatives for processing, transporting, and storing of liquefied gases. Emphasis will be placed on safety and design standards so as to protect the public from hazards associated with all present and future liquefied fuels facilities.

FERC response

Even the GAO recognizes that dangers to human populations may be acceptable even for sites in non-remote areas, and therefore recommends (pages 20-22 and 16-43) that LNG storage facilities built in urban areas use underground storage tanks and meet design standards as strict as those for nuclear facilities. However, the advantages of underground storage in achieving the required safety is not as clear as the GAO implies.

The GAO bases its recommendation for inground storage tanks on the limited historical use of such tanks in Japan. It mentions the "beliefs" and "feelings" (page 19-5) of Japanese engineering personnel to support its unqualified acceptance of inground storage tanks. Our information about Japanese experience indicates that there is not a consensus within Japan on the desirability of underground storage tanks.

In a proceeding presently before the FERC, underground tanks are being analyzed by the staff, the State of California, and the applicant. It would be inappropriate to discuss the merits of that proceeding; but, it is clear that the need for inground storage tanks in the United States is still subject to debate.

Because of the uncertainties and the site-specific design considerations that will probably affect future decisions on such tanks, it would be premature to establish such a general requirement at this time. This is especially important because other design options, such as high-walled dikes, and mitigating measures, such as fire radiation and vapor dispersion exclusion distances around storage tanks, are available as safety measures for LNG storage facilities.

Recommendation

We recommend that the Secretary of Energy evaluate each existing, large LEG storage facility and recommend to the President and the Congress the actions necessary to protect the public from the hazards associated with them.

DOE response

With regard to the safety of liquefied fuels storage facilities, we have and will continue to evaluate the safety aspects of existing liquefied fuels storage facilities coming under DOE's jurisdiction for the purpose of ascertaining actions necessary for public protection from potential hazards. Legislation would be necessary to include those facilities which are not presently subject to Federal jurisdiction. If such legislation is enacted, the Congress should designate either DOE or DOT with the investigative responsibility.

DOT bill (S. 411)—for LNG and LPG

Preliminary remarks by Senator Cannon on introducing the bill and its purpose.

Third, clarify that safety standards applicable only to new pipeline facilities (e.g., those relating to design and construction) can be made applicable to existing facilities that are considered hazardous to life and property

Definition

(d) Existing Facilities. Except as provided under section 10(b) of this Act, any standard issued under this section affecting the design, installation, construction, initial inspection, and initial testing shall not be applicable to pipeline facilities in existence on the date it is adopted.

Secretary's power to override

(b) Hazardous Pipeline Facilities. (1) If the Secretary finds after reasonable notice and an opportunity for hearing, that any pipeline facility is hazardous to life or property, he shall, by order, require the person operating the facility to take necessary corrective action. Such corrective action may include suspended or restricted use of the facility, physical inspection, testing, repair, replacement, or other action as appropriate. The district courts of the United States shall have jurisdiction upon petition by the Attorney General, to enforce orders issued under this subsection by appropriate means.

(2) The Secretary may waive the requirements for the notice and hearing under this subsection and provide for expeditious issuance of an order under this subsection in any case in which he determines that the failure to do so would result in the likelihood of serious harm to life and property. (b) Section 6 is amended by striking out the existing heading and inserting in lieu thereof "JUDICIAL REVIEW OF STANDARDS AND ORDERS" and by inserting the words "standard or" immediately before the word "order" wherever it appears in subsections (a), (b) and (c).

*Dingell-Markey bill (H.R. 51)**Hazardous Pipeline Facilities*

SEC. 101. (a) Section 8 is amended by redesignating subsection (b) as subsection (c) and by inserting after subsection (a) the following new subsection:

"(b)(1) If the Secretary finds, after reasonable notice and an opportunity for hearing, that any pipeline facility is hazardous to life or property, he shall, by order, require the person operating the facility to take necessary corrective action. Such corrective action may include physical inspection, testing, replacement, or other action, as appropriate.

"(2) The Secretary may find a pipeline facility to be hazardous under paragraph (1)—

"(A) if under the facts and circumstances he determines the particular facility is hazardous to life or property, or

"(B) if the pipeline facility or a component thereof has been or is proposed to be constructed or operated with any equipment, material, or technique which he determines is hazardous to life or property, unless the operator involved demonstrates to the satisfaction of the Secretary that under the particular facts and circumstances involved such equipment, material, or technique is not hazardous to life or property.

"(4) The Secretary may waive any requirements for hearing and a period of reasonable notice and provide for expeditious issuance of an order under this subsection in any case in which he determines that the failure to do so would result in the likelihood of serious harm to life or property.

*CHAPTER 19. WAIVER OF FEDERAL REGULATIONS**Recommendation*

GOA did not make a recommendation on the waiver of Federal regulations for LEG storage facilities.

DOT bill (S 411)—for LNG and LPG

(f) Waivers. Upon application by any person engaged in the transportation of gas or the operation of pipeline facilities, the Secretary may, by order, after notice and opportunity for hearing and under such terms and conditions and to such extent as he deems appropriate, waive in whole or in part compliance with any standard established under this Act, if he determines that waiver of compliance with such standard is not inconsistent with gas pipeline safety. The Secretary shall state his reason for any such waiver. A state agency, with respect to which there is in effect

a certification pursuant to section 5(a) or an agreement pursuant to section 5(b), may waive compliance with a safety standard in the same manner and under the same conditions as the Secretary, provided such State agency gives the Secretary written notice at least sixty days prior to the effective date of the waiver. If, before the effective date of a waiver to be granted by a State agency, the Secretary objects in writing to the granting of the waiver, any State agency action granting the waiver will be stayed. After notifying such State agency of his objection, the Secretary shall afford such agency a prompt opportunity to present its waiver, with opportunity for hearing, and the Secretary shall determine finally whether the requested waiver may be granted.

GOA comment

We believe that the Secretary should not be given such broad power to waive compliance with *any* standard. More limited waiver power might be appropriate.



