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Adequacy of Preparation and Response Related to Exxon Valdez Oil Spill

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Subcommittee on Coast Guard and Navigation
Committee on Merchant Marine and Fisheries
House of Representatives

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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to testify about how well industry and the government were prepared to respond to the Exxon Valdez oil spill and on the measures that can be taken to help prevent similar situations from occurring in the future. Today, I want to summarize the lessons we think can be learned from this spill and applied to coastal oil spills in other parts of the nation. My comments will focus on three main points:

-- First, the response to the Exxon Valdez oil spill was clearly inadequate. Based on what we have learned, it is not surprising that major problems were encountered because no one had realistically prepared to deal with a spill of this magnitude in Prince William Sound. Further, we may be similarly unprepared elsewhere in the nation. One important reason for this state of national unpreparedness is that there is no single designated leader or authority to ensure that preparations are adequate. We believe the federal government should perform this leadership role.

-- Second, even with a substantially greater commitment of resources to improve response capabilities, the nation's ability to deal with a spill of the Exxon Valdez magnitude is limited at best. Thus, the nation's priority for dealing with such spills should be to prevent them from occurring in the

first place. The experience at Valdez and elsewhere has shown that much needs to be done to improve our prevention measures.

-- Third, the nation's reaction to the Exxon Valdez and other recent spills seems to indicate a strong desire to reduce the risks associated with oil spills. While the many recommendations surfacing as a result of the recent incidents provide good options for changing the nation's level of protection, a leadership role is needed to determine the best course of action for improving prevention and response capabilities. Further, it will be necessary to consider various options to significantly increase funding if the nation's levels of protection are, in fact, to be raised.

IMPROVEMENTS NEEDED IN RESPONSE PREPARATIONS AND CAPABILITIES

The general consensus holds that the initial response to the Exxon Valdez spill was inadequate. Problems identified ranged from a shortage of equipment and skilled personnel to inadequate communications and organizational structures. We believe a number of conclusions can be reached from this experience related to the inadequacy of response preparations, the lack of a clear leadership role or authority for ensuring adequate preparations, the limited capabilities of response equipment under certain conditions, and

the funding and procurement restrictions the federal government may face in responding to a major spill.

Improvements Needed in Planning and Resource Readiness

The government and industry clearly were not prepared, from a planning, resource, or readiness perspective, to deal with a spill of the Exxon Valdez magnitude. While federal, state, and industry contingency plans exist for dealing with an oil spill in Prince William Sound, the primary plan for direct spill cleanup was prepared by the pipeline terminal operator--Alyeska. Alyeska officials said that, under their plan, the company had equipment and personnel assembled for what it considered would be the "most likely" spill--an estimated 42,000 to 84,000 gallons. This figure was less than 1 percent of the more than 10 million gallons that spilled from the Exxon Valdez. Alyeska's plan had included a scenario for how it would respond to a spill of about 8.4 million gallons. Its officials told us that this planned response was based on how Alyeska would use its existing equipment and personnel supplemented by outside resources. They also said this response would be inadequate to prevent environmental damages if such a very large spill were to occur. The 8.4-million-gallon scenario also indicated that using dispersants on the oil and burning it would be important in responding to a spill of this size and that long-term beach cleanup would be expected.

Along with having a response plan that was inadequate for a spill of the Exxon Valdez magnitude, field exercises had not been conducted, according to Alyeska and Coast Guard officials, to test the ability of resources and personnel to realistically respond to a major spill in Prince William Sound. According to an Alyeska official, Alyeska originally had a dedicated team of contractor personnel ready to respond to a spill. But in 1981, the team was disbanded and responsibility for responding to spills was assigned to Alyeska personnel as an additional duty. In addition, at the time of the Exxon Valdez incident, Alyeska's response barge was undergoing repairs and was not loaded with needed equipment. Given this preparation, it is not surprising that major problems have been identified with the initial response to the Exxon Valdez spill.

The Exxon Valdez and other recent spills have heightened concern about whether the nation is adequately prepared for major oil spills elsewhere. For example, in the Delaware Bay area, we found that preparations are based on what is considered a likely or typical spill--generally up to 250,000 gallons. In a recent 307,000-gallon spill in that area, the response contractors could not initially obtain enough equipment or personnel to effectively contain the spill, and the Coast Guard had no available alternatives. Ultimately, the Delaware National Guard was called to assist in the cleanup. Further, coordination, communication, and organization problems were apparent during the response.

On a broader scale, the American Petroleum Institute acknowledged in a June 1989 report that the oil industry lacks the equipment and personnel to deal with a spill of 9,000,000 gallons or more anywhere in the coastal United States. Because of the President's concern about the nation's ability to respond to major spills, the Coast Guard initiated a nationwide study of contingency plans.

As our country moves forward in planning for higher levels of response capability, two questions emerge. First, for what size spill should we be prepared to respond? And second, what criteria should be used to judge the adequacy of our response? These questions are important because, as I will explain later in my testimony, we seem to lack the ability to prevent major spills from causing environmental damage.

Leadership Authority Needs to Be Clarified

Improving our ability to respond to major oil spills will also require strengthening the federal leadership role in ensuring that preparations are adequate. That Alyeska had a spill response plan for Prince William Sound--albeit an inadequate one for the size of spill that occurred--appears atypical of the national situation. According to the Coast Guard, Alaska required Alyeska to have a plan for tankers transitting the area, but other states often leave such planning to be done by industry on a voluntary basis.

From the federal perspective, the Coast Guard believes it lacks clear authority to ensure adequate response preparations for coastal spills but has authority to ensure that the response itself is effective. Specifically, the Coast Guard does not believe it has clear authority to require private shippers or terminal operators, like Exxon or Alyeska, to have contingency plans for dealing with oil spills for vessels in transit. Further, if the shipper or terminal operator has such a plan, the Coast Guard does not believe it has clear authority to dictate the size of spill that the plan should address, to ensure that the resources called for in the plan are in place, or to ensure that the plans are tested for their effectiveness. On the other hand, once a coastal oil spill occurs, the Coast Guard asserts it has authority to (1) monitor the response or (2) assume partial or total control of the response by "federalizing" it. Thus, while the Coast Guard has played a major role in ensuring the effectiveness of a response, it believes it lacks clear authority to ensure that response preparations are adequate. Coast Guard officials believe this lack of clear authority is the most significant limiting factor in the contingency planning process.

Because, according to the Coast Guard, state involvement in ensuring adequate preparations varies, we believe the federal government should be the leader for ensuring that adequate plans and resources are in place to respond to major spills and that such resources are properly tested to ensure a smooth response. This

responsibility could be delegated to states that demonstrate an ability to effectively carry out this role.

Improvements Needed in Response Technology

Responses to the Exxon Valdez and other recent spills also indicate a need to improve technical capabilities for containing and recovering oil in varying environments. For example, according to Coast Guard officials, during the Exxon Valdez spill response, skimmers frequently broke down or were ineffective in dealing with oil that had become thick from weathering. At other times, high winds and seas prevented any recovery. Furthermore, the response techniques of dispersing or burning the oil, which Alyeska considered important in responding to a major spill, are controversial because of their potential environmental impact. Additionally, the effectiveness of these two techniques is highly dependent on the timeliness of their use and on weather and water conditions. A lesson learned in the recent Delaware River spill was that existing equipment normally used to contain and cleanup spills such as booms and skimmers could not effectively recover the type of oil that had been spilled. The only effective technique was to physically pick up the oil and place it in containers.

A consensus appears to be developing that considerable research and development is needed to improve spill response technology. In its June 1989, report, the American Petroleum Institute stated, "A realistic appraisal of U.S. and, in fact,

worldwide response to major spills will recognize that no effective containment of such a spill has been accomplished." In addition, the cover letter to a May 1989, Department of Transportation and Environmental Protection Agency report to the President stated, "Oil spill cleanup procedures and technologies are primitive." Coast Guard officials told us that with current technology, the best that can typically be expected after a major spill is to recover 10 to 15 percent of the oil. Notably, however, while concern exists that response technology has not changed much since the 1970s, federal funding for research and development has been cut back in recent years.

Greater Funding and Procurement Flexibility May Be Needed

Mr. Chairman, an important question emerging from the Exxon Valdez spill is whether the federal government would have the funds and flexibility to effectively respond to a spill of this magnitude. Had the Coast Guard been dissatisfied with industry's efforts and assumed responsibility for carrying out the response, it would have had to rely on the Clean Water Act "311(k)" fund to pay for the costs. Although this fund is authorized at $35 million, it had only $6.7 million available when the spill occurred--enough to finance less than one week of response operations. In addition, the Coast Guard said it could also face problems in getting reimbursed for its costs because of the low

liability limits established in federal legislation enacted in the 1970s for those causing spills. Furthermore, Coast Guard officials pointed out that Exxon was able to obtain needed resources from around the world more quickly and efficiently than the government could have, since the government's procedures for contracting and procurement are much more cumbersome than private industry's.

PRIORITY SHOULD BE GIVEN TO
PREVENTING SPILLS

The nation must keep in mind that a greater commitment to response alone, even if substantial, will probably not fully protect the environment. As I have said, the nation's ability to deal with major spills, from the perspective of both preparation and technology, is limited at best. In our view, priority should be given to preventing spills in the first place. However, the experience at Valdez and elsewhere shows that the nation's prevention measures need to be improved, partly because past decisions on what should be done were based on the availability of funds and partly because of the inconsistencies in the use of these measures in different locales.

Although preventing spills will require up-front costs, these expenditures could well be less in the long run and more effective than the cost of containing oil spills and mitigating their environmental impact. For example, federal agency costs associated with the Exxon Valdez spill could be about $120 million by the end

of fiscal year 1989. Exxon has recently stated that it has reserved $880 million for spill related costs through mid-September 1989. It is important to note, however, that these costs do not include future industry and government cleanup costs or long-term restoration costs, which could be significant. Nor do these costs reflect the environmental impact on the wildlife, shores, and livelihoods of the people in the area.

Methods for preventing oil spills include monitoring and directing ship movements and using harbor pilot or tug escort assistance. While these methods were used in Prince William Sound, their use had been limited.

The Coast Guard administers a Vessel Traffic Service System in Prince William Sound, and in four other areas of the nation's waterways, to guard against vessel groundings or collisions. While, according to the Coast Guard, this system is often considered analogous to the nation's air traffic control system, there are important differences. First, the Coast Guard advises ships of their position relative to other ships and navigational hazards, but according to the Coast Guard, generally does not direct their specific movements since the vessel's crew are considered in a better position to know what maneuvers are appropriate given existing weather and water conditions. Second, the current radar-based system is not as effective in identifying precise vessel locations as are other technologies, such as a radio navigation-based system. And third, according to the Coast Guard, while participation in the Prince William Sound system is

mandatory, participation in the system at two other locations is voluntary, meaning that the ships do not have to notify the Coast Guard of their movements.

When the Exxon Valdez ran aground, according to the Coast Guard, there was no radar monitoring of the ship when it left the shipping lanes because it had reportedly passed the limits of reliable radar coverage for the Vessel Traffic Service System. At the time of the incident, the system covered less than half of the vessel's transit from Valdez through Prince William Sound. Although consideration was given to providing system coverage throughout the sound when the Alaska pipeline was being built, this consideration was rejected in part as too costly according to the Coast Guard. The number of the vessel traffic systems in other parts of the country have also been cut back for budgetary reasons.

Tugs and harbor pilots can help lower the risks of accidents by assisting vessels and by potentially providing more knowledge of local water conditions and hazards. According to the Coast Guard, at the time of the incident, the use of tugs was limited to escorting tankers through the Valdez Narrows. Further, according to the Coast Guard, although Alaska initially required tankers to have a harbor pilot on board throughout Prince William Sound, the requirement was later scaled back because of the danger involved in having harbor pilots transfer between vessels in the frequently high seas at the sound's entrance.

Our reviews at other locations show differences in the use of harbor pilots and tug escorts, largely due to federal and state

requirements in local areas. For example, in Delaware and Pennsylvania, although harbor pilots remain on board vessels from when they enter the Delaware Bay until they are docked, the states have different licensing requirements. Further, the Coast Guard requires vessels transporting liquified petroleum gas in the bay to have tug escorts but does not require oil tankers to use tug escorts.

Limitations in other prevention mechanisms have come to light since the Exxon Valdez spill. At the National Transportation Safety Board hearings, allegations of improper conduct and inadequate training of certain members of the Exxon Valdez crew have raised questions about the effectiveness of Coast Guard licensing and of industry training procedures. Similarly, because allegations have arisen that equipment inadequacies contributed to recent spills elsewhere, questions have been raised about whether improvements are needed in ship design, such as the need for twin screws, bow thrusters, and double bottom construction. Also, the aging of the tanker fleet and the impact that crossing high seas has on vessels has heightened the concern over the need for frequent, thorough inspections.

While cutbacks or limitations on the preventative measures in Prince William Sound largely reflected funding or safety concerns, prevention measures prior to the spill seemed acceptable to the Coast Guard and others because nothing major had gone wrong in the 12 years since the pipeline began operations. For example, according to the Coast Guard, since the pipeline opened in 1977,

about 8,700 oil tankers have safely transitted the sound with only minor or manageable spills occurring. Now, since the Exxon Valdez spill, concerns have been raised that prevention systems should be expanded with some degree of redundancy built into them. Under this approach, had the tug escort continued, or had the harbor pilot stayed on board, or had the vessel-tracking system been capable of monitoring the ship beyond the site of the accident--had any or all of those things happened, this accident may have been prevented.

WHERE DO WE GO FROM HERE?

Mr. Chairman, the reaction to the Exxon Valdez and other recent spills seems to be that the nation must lower the risks of transporting oil by tankers by improving its prevention of and response to spills. Since the Exxon Valdez spill, the government and industry have done much to improve their prevention and response capabilities in Prince William Sound. The spill has also stimulated numerous assessments of the lessons learned with nationwide implications. The multitude of options for better preventing and responding to oil spills that are surfacing are a positive sign of the nation's desire to act boldly and quickly. However, as we decide on the best course of action, it will be important to avoid a scattershot approach that leaves us little better than we were before.

Spill Has Generated Many Recommendations for Improving Prevention and Response

The Exxon Valdez spill has generated many recommendations for improving prevention and response in Prince William Sound as well as throughout the nation. For example, under direction from the State of Alaska, Alyeska has taken several steps to ensure that equipment and personnel can respond quickly to spills. Alaska has also required escort vessels and harbor pilots to stay with tankers past the site of the grounding. The Coast Guard has told us they have made several procedural changes to strengthen the Vessel Traffic Service System's ability to monitor ship traffic.

From a nationwide perspective, the Department of Transportation and the Environmental Protection Agency's joint report to the President identified many nationwide efforts needed in prevention, contingency planning, readiness of response resources, roles and responsibilities of parties involved in a response, and research and development. Similarly, the American Petroleum Institute report included specific recommendations for improvements in prevention, response, and research and development. In addition, the Coast Guard recently completed a comprehensive evaluation of alternatives for preventing oil spills.

Many other activities are still under way that will add to possible nationwide actions. The Coast Guard has a number of navigation initiatives underway such as a nationwide study of the Vessel Traffic Service System, including the number of new

locations needed, the need to expand the scope of coverage at existing locations, and opportunities for using new technologies. Other recommendations on prevention are likely to stem from reports from National Transportation Safety Board and Coast Guard investigations of the causes of the Exxon Valdez accident.

On the response side, the Coast Guard's nationwide study of the spill response plans and readiness, coupled with the President's report, are being used by the Coast Guard to recommend a new national policy on preparedness for oil spills. Also, the State of Alaska has created a commission to investigate the Valdez incident which will, among other things, recommend changes by government and industry that may be needed in both prevention and response.

Finally, in addition to the various industry and government studies and actions, many hearings have been held by different committees of the Congress on various issues related to the Valdez spill and oil spills in general. Legislation has been introduced regarding contingency planning, oil pollution and liability compensation, mariner licensing requirements, as well as other issues.

Need for Focused Action and Greater Funding

Although the recommendations are positive signs, we should take care: unless we centralize or unify our approach, these

actions may not be as effective as we would like, or may be conflicting.

To this end, we believe it would be appropriate to establish a single entity or leader for recommending the specific actions that are likely to achieve a higher level of protection. This entity would sort through recommendations of current and forthcoming studies; establish priorities; and recommend to the Congress, the Administration, states, and others, the levels of prevention and response we should strive for and the steps necessary to achieve them.

There are alternatives for designating this single entity or leader role. For example, a federal agency, such as the Coast Guard, could fill this role. Another approach could be to establish a task force or commission comprised of representatives from organizations that play key roles in spill prevention and response. These could include industry, federal agencies, states, and other groups. Each approach has advantages and disadvantages. For example, a commission approach may be less timely than using a federal agency. On the other hand, the recommendations of a federal agency working alone could be influenced by its own priorities among its various missions. If a federal agency is selected as the single entity, we believe it would be important to develop a mechanism for participation by other key organizations.

As a strategy is developed for improving oil spill prevention and response capabilities, it may be advantageous to consider at the same time the risks associated with the water transportation of

other types of hazardous cargo. Over the past 20 years, there has been an average of 80 accidents a year involving the 950 tankers which transport other types of hazardous cargo such as liquified petroleum gas. An average of 6 of these each year resulted in the release of hazardous cargo into the water. While the number of accidents involving hazardous cargo tankers is small compared to the number of accidents involving oil tankers, the accident rate is proportionally about the same given the total number of tankers involved. We believe, therefore, that as an action plan is developed for increasing levels of prevention and response for oil spills, planners should also consider what should be done about transporting other hazardous cargos.

Clearly, achieving greater protection will require greater funding. We believe consideration should be given to establishing a fund, or modifying existing funds, to finance the improvements in the levels of both prevention and response, including any needed research and development. Several funding sources can be considered. Options that have already surfaced since the Exxon Valdez spill would include direct industry funding, user fees (a per barrel tax on oil), direct appropriations, or a combination of these three.

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In summary, Mr. Chairman, many options for better preventing and responding to spills are surfacing as a result of these recent incidents. As the nation decides on the best course of action, we believe it will be important to avoid a scattered, leaderless

approach. Therefore, we believe the Congress should designate a single entity to recommend the best course of action for improving prevention and response, and the mechanisms for providing the funds needed for these improvements. In addition, we believe the federal government should have the leadership role in ensuring that we are in fact establishing and maintaining the desired higher levels of protection. Such actions will do much to lower the risks of transporting oil and other hazardous cargo by sea.

This concludes my prepared remarks, Mr. Chairman. I will be pleased to answer any questions you or other members of the Subcommittee may have at this time.