



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: September 18, 1990

In reply refer to: M-90-44 through -47

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Administrator
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About 0009, on March 24, 1989, the U.S. tankship EXXON VALDEZ, loaded with about 1,263,000 barrels of crude oil, grounded on Bligh Reef in Prince William Sound, near Valdez, Alaska. At the time of the grounding, the vessel was under the navigational control of the third mate. There were no injuries, but about 258,000 barrels of cargo were spilled when eight cargo tanks ruptured, resulting in catastrophic damage to the environment. Damage to the vessel was estimated at \$25 million, the cost of the lost cargo was estimated at \$3.4 million, and the cost of the cleanup of the spilled oil during 1989 was about \$1.85 billion.¹

The Alaska Department of Environmental Conservation (ADEC) established an emergency response center in Valdez that was fully operational by the evening of the day of the spill. It planned to monitor, assess, and oversee the cleanup response from the response center. During the first day of the spill, ADEC was concerned that Alyeska had not deployed cleanup equipment to the scene as provided for in the Alyeska contingency plan. The State wanted to make sure that the Federal On-Scene Coordinator (OSC) would intervene early in the response process and take over the cleanup if the responsible parties did not do what was expected in a timely and effective manner.

The Alaska Regional Oil and Hazardous Substances Pollution Contingency Plan (RCP) addresses the use of oil dispersants in the State. It provides a decision matrix and a description of the biological effects of dispersants in the water but no guidance or information about the conditions under which the application of dispersants is effective. Wind and sea conditions and the length of time that the oil has been on the water when dispersants are applied alter their effectiveness. Such information about dispersant application should be included in the Alaska RCP and other contingency plans so that proper dispersant procedures are readily available. An OSC would then know when to use dispersants and would not waste time using them when

¹For more detailed information, read Marine Accident Report--"Grounding of the U.S. Tankship EXXON VALDEZ on Bligh Reef, Prince William Sound Near Valdez, Alaska, March 24, 1989" (NTSB/MAR-90/04).

they would not be effective. On the afternoon of the spill, a test was conducted using dispersants when the sea was calm. However, calm sea conditions are not conducive to the effective use of dispersants, which must mix with the oil in order to cause it to break into droplets and disperse into the water column. If the OSC had had guidelines in the RCP that described the wind and sea conditions necessary for effective use of dispersants, a test application would have been unnecessary.

The Alaska RCP and the Alyeska plans also mention in-situ burning of oil as an approved alternative to mechanical cleanup, but the plans provide no guidance about how to proceed with in-situ burning or about possible results of burning, such as smoke or oil and tar residue. The use of in-situ burning is at the discretion of the OSC, with guidance from the Regional Response Team (RRT). Thus, the OSC is in the difficult position of being able to authorize certain methods--dispersant use and in-situ burning--but only after consulting and seeking advice from the RRT. The RRT may provide some information and agree to the use of a particular method, but the final decision is the OSC's. At times, the OSC may not be able to contact the RRT, or the RRT may not provide clear guidance. Such problems may result in delays that could render the application of dispersants useless and in-situ burning ineffectual. The OSC could also make an incorrect decision because of the lack of sufficient guidance or information, but incorrect action probably would not be as harmful as a lack of action while awaiting a consensus from the RRT. In any case, the OSC's decisions will probably be second guessed during and after the cleanup because the results may not be acceptable to all parties. The cleanup party may think there was a delay in authorizing a certain procedure; the environmentalists may believe the physical environment was damaged or fish and wildlife were destroyed; fishermen may think their livelihood was threatened; the State may regard the impact on its environment, revenue, or tourism as negative; or the RRT may think its guidance was interpreted incorrectly. OSCs need more than advice from a committee. They need guidance in writing, before a spill occurs, from the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and the RCP about the use of dispersant chemicals and in-situ burning so that their decisions can be based on accepted procedures.

During the first 24 hours after the spill, Exxon applied to the RRT to conduct in-situ burning of the spilled oil. The RRT recommended approval if the OSC was satisfied that the burning could be done without degrading other cleanup efforts. In addition, the State had to issue a burn permit. "Approval to open burn" was issued by the ADEC on the same day, March 24, but the permit was not sent to Exxon until the next day. Even though the permit was not received until the next day, neither Alyeska nor Exxon was prepared to burn oil on the first day of the spill because neither one had a fire- or burn-proof boom on hand. The boom had to be shipped in from the North Slope and Seattle. Had the boom been immediately available and a burn permit issued earlier, this method of cleanup could have been used on heavy concentrations of oil before the wind and currents spread the oil so far that effective containment was not possible.

According to the NCP, dispersants and burning agents may be used only "to prevent or substantially reduce a hazard to human life." In the Alaska

RCP and Alyeska contingency plans, dispersants and burning of oil can also be used to minimize the effects of spilled oil on wildlife. This apparent conflict between the NCP, the Alaska RCP, and the Alyeska plans should be resolved. The NCP should also provide additional guidance to assist RRTs in developing dispersant use guidelines in their RCPs. Neither the Alyeska contingency plans, nor the Alaska RCP, nor the NCP have any guidelines or information about when dispersant use or in-situ burning are appropriate, under what conditions they are effective, or what equipment is needed for safe employment. The NCP should also include dispersant use and in-situ burning information guidelines in its plan for use by RRTs in developing RCP guidelines for use by OSCs.

Alyeska had to order equipment from its pipeline pump stations and from the North Slope of Alaska, and Exxon had to order equipment from all over the world to respond to the spill. The amount of equipment available in Valdez and the immediate areas was insufficient to initiate an effective cleanup response during the first day of the response activities. Alyeska had listed available oil spill cleanup equipment in its contingency plans, and ADEC approved these plans. Although oil spill prevention is paramount, sufficient first-response equipment is also needed to quickly and effectively limit the impact of a spill on the environment. Federal regulations 33 CFR 153 require the removal of spilled oil, but the NCP does not provide any equipment requirements or guidelines that a terminal, port authority, State, or other regulatory entity can use to establish the minimum level of equipment necessary for an appropriate response. Such guidelines for minimum equipment requirements should be developed by the Federal Government and published in the NCP. The RRTs could then use these guidelines to determine the amount and type of cleanup equipment that should be immediately available in a particular area so that the initial response can be effective and give the responsible party time to mobilize and deliver additional cleanup equipment.

Therefore, the National Transportation Safety Board recommends that the Environmental Protection Agency:

Develop guidance in the National Contingency Plan for Regional Response Teams and On-Scene Coordinators about dispersant use. (Class II, Priority Action) (M-90-44)

Develop guidance for Regional Response Teams and On-Scene Coordinators about in-situ burning of oil and include the guidance in the National Contingency Plan. (Class II, Priority Action) (M-90-45)

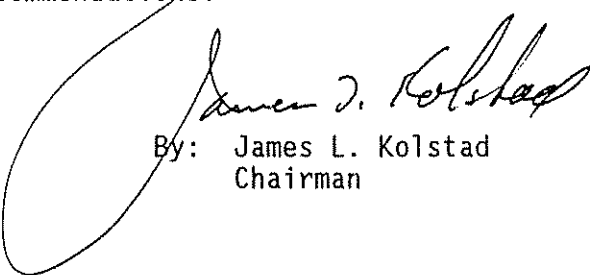
Develop procedures that would eliminate the need for the On-Scene Coordinator to obtain burn permits from a State after the Regional Response Team has agreed that the spilled oil can be burned in situ. (Class II, Priority Action) (M-90-46)

Develop guidance for Regional Response Teams that enables them to establish the minimum amount of cleanup

equipment that must be immediately available to initiate a cleanup response. (Class II, Priority Action) (M-90-47)

Also, the Safety Board issued Safety Recommendations M-90-26 through -31 to the Exxon Shipping Company and all companies operating in Prince William Sound; M-90-32 through -43 to the U.S. Coast Guard; M-90-48 and -49 to the Alaska Regional Response Team; M-90-50 through 52 to the State of Alaska; M-90-53 through -58 to the Alyeska Pipeline Service Company; and M-89-59 to the U.S. Geological Survey. The Safety Board also reiterated Safety Recommendation M-88-1 to the U.S. Coast Guard and Safety Recommendations I-89-1 through -12 to the Department of Transportation.

KOLSTAD, Chairman, COUGHLIN, Vice Chairman, and LAUBER and BURNETT, Members, concurred in these recommendations.



By: James L. Kolstad
Chairman