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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: May 7, 1980

Forwarded to:

Admiral John B. Hayes
Commandant
United States Coast Guard
Washington, D.C. 20593

SAFETY RECOMMENDATION(S)

P-80-31 through -33

About 3:35 a.m., e.d.t., on October 6, 1979, an explosion caused by liquefied natural gas (LNG) vapors destroyed a transformer building at the reception facility of the Columbia LNG Corporation, Cove Point, Maryland. Odorless liquefied natural gas leaked through an inadequately tightened LNG pump seal, vaporized, passed through approximately 210 ft of underground electrical conduit and entered the substation building. One person was killed, and one person was seriously injured. Damage to the facility was estimated at about $3 million. 1/

The fire hydrants and deluge water spray system were inoperable after the explosion because the water main that supplied the system was broken at a flange above ground inside the substation. The safety and fire technician discharged about 2,000 lbs of dry chemicals from the firetruck in an unsuccessful attempt to extinguish the fire. Locations of valves to isolate the fire main break were not known by personnel onsite, and they were required to wait for the arrival of the Solomon Volunteer Rescue Squad and Fire Department (SVRSFD) to extinguish the fire.

The United States Coast Guard (USCG) and the Materials Transportation Bureau (MTB) are responsible for promulgating and enforcing safety regulations for LNG and LNG import/export facilities. The USCG is responsible for facility siting as it relates to vessel traffic; fire prevention/protection equipment, system, and methods for use for the entire facility; security of the facility; and all matters pertaining to the facility from the vessel to the last manifold or valve before the LNG storage tank. The MTB is responsible for the facility site, selection, and all other matters pertaining to a marine LNG facility, except fire protection and security, beyond the last manifold or valve before the LNG storage tank. At the time of the accident, no Federal regulations existed for LNG reception facilities. The Safety Board is aware that both agencies are in the process of promulgating regulations.

1/ For more detailed information read "Pipeline Accident Report--Columbia LNG Corporation, Explosion and Fire, Cove Point, Maryland, October 6, 1979" (NTSB-PAR-80-2).

Although the facility had been operating since March 1978, no fire or emergency drills have been held at the onshore portion of the facility. Two fire drills were conducted by the USCG at the offshore portion of the facility.

The first few moments following an accident are critical in limiting the effect of the accident. Without prompt corrective emergency response, a relatively minor casualty or accident may cascade into a catastrophe. Even excellent response by outside agencies, similar to that provided by the SVRSFD, may not be timely enough. Therefore, it is incumbent upon the facility's employees to be adequately trained to respond to such emergencies. As a minimum, employees should be thoroughly familiar with emergency response plans and firefighting.

The Safety Board is concerned that other LNG reception facilities with similar design could experience the same problems as Cove Point. Therefore, the National Transportation Safety Board recommends that the United States Coast Guard:

> Promulgate regulations requiring periodic fire and emergency drills at LNG reception facilities. These drills should provide realistic training exercises. (Class II, Priority Action) (P-80-31)
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> Promulgate regulations which establish criteria to ensure the adequate physical protection of fire water mains and the installation of sufficient isolation valves to prevent the system from becoming compromised because of a break in any single part of the fire water system. (Class II, Priority Action) (P-80-32)
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> Promulgate regulations requiring the posting of a diagram or other means to illustrate the location of all firefighting equipment and systems including the fire water main and its isolation valves at key locations throughout LNG reception facilities. (Class II, Priority Action) (P-80-33)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, and GOLDMAN, Members, concurred in these recommendations. BURSLEY, Member, did not participate.

By: James B. King
Chairman