

Jordan Bridge is a vital link between the cities of Portsmouth and Chesapeake used widely by motorists that work at the Norfolk Naval Shipyard, other Federal agencies located within the shipyard as well as within Portsmouth, and other industries and businesses in Portsmouth and Chesapeake. It appears that the need to extend bridge opening restrictions during peak rush hours far exceeds the need to maintain the Jordan Bridge at its present regulated schedule. The maritime industry will be given the opportunity, along with other navigational interests, to comment as to whether this proposed restriction is practical and feasible from their viewpoint. The Coast Guard believes these proposed restrictions will not unduly restrict vessel passage through the bridge, as vessel operators and the marine industry can plan transits around the proposed schedule.

Federalism Assessment

This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12812, and it has been determined that the proposed rule will not raise sufficient federalism implications to warrant the preparation of a Federalism Assessment.

Economic Assessment and Certification

These proposed regulations are not considered major under Executive Order 12291 on Federal Regulation nor significant under the Department of Transportation regulatory policies and procedures (44 FR 11034; February 26, 1979). The economic impact of the proposed regulation on commercial navigation or on any industries that depend on waterborne transportation should be minimal. Because the economic impact of this proposal is expected to be minimal, the Coast Guard certifies that, if adopted, it will not have a significant economic impact on a substantial number of small entities.

Environmental Impact

This rulemaking has been thoroughly reviewed by the Coast Guard and it has been determined to be categorically excluded from further environmental documentation in accordance with section 2.B.2.g. of Commandant Instruction M16475.1B. A Categorical Exclusion Determination statement has been prepared and placed in the rulemaking docket.

List of Subjects in 33 CFR Part 117

Bridges.

Regulations

In consideration of the foregoing, the Coast Guard proposes to amend part 117 of title 33 Code of Federal Regulations as follows:

PART 117—DRAWBRIDGE OPERATION REGULATIONS

1. The authority citation for part 117 continues to read as follows:

Authority: 33 U.S.C. 449; 49 CFR 1.46; 33 CFR 1.05.1(g).

2. Section 117.997(a) is revised to read as follows:

§ 117.997 Atlantic Intracoastal Waterway, Southern Branch of the Elizabeth River to the Albemarle and Chesapeake Canal.

(a) The draw of the Jordan (S337) bridge, mile 2.8, at Chesapeake shall open on signal, except that:

(1) From 6:30 a.m. to 7:30 a.m. and from 3:30 p.m. to 5 p.m., Monday through Friday, except Federal holidays, the draw will remain closed to all vessel traffic.

(2) The draw shall open on signal at all times for vessels in distress.

* * * * *

Dated: July 6, 1990.

P.A. Welling,

Rear Admiral, U.S. Coast Guard, Commander, Fifth Coast Guard District.

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Research and Special Programs Administration

49 CFR Part 192

[Docket No. PS-100; Notice 2]

RIN AB-49

Gas Detection and Monitoring in Compressor Station Buildings

AGENCY: Office of Pipeline Safety (OPS), RSPA, DOT.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: This notice proposes to require that gas compressor buildings with 50 percent or more of wall area enclosed be equipped with gas detection and alarm systems. The history of reported incidents at compressor stations indicates a potential for leaking gas to accumulate undetected inside certain compressor buildings. Gas detection and alarm systems are needed to warn personnel of the presence of any hazardous accumulation of gas in these buildings.

DATES: Interested parties are invited to submit comments by September 25, 1990.

Late filed comments will be considered so far as is practicable.

ADDRESSES: Send comments in duplicate to the Dockets Unit, Room 8417, Office of Pipeline Safety, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590. Identify the docket and notice numbers stated in the heading of this notice. All comments and docketed material will be available for inspection and copying in Room 8426 between 8:30 a.m. and 5 p.m. each business day.

FOR FURTHER INFORMATION CONTACT: L.M. Furrow, (202) 366-2392.

SUPPLEMENTARY INFORMATION:

Background

In 1982 a compressor engine in a compressor station operated by the Truckline Gas Company in Bonicord, Tennessee began leaking natural gas. The gas accumulated and exploded in the building that housed the compressor. Three workers in the building were killed, two others were injured, and the building was severely damaged.

The National Transportation Safety Board (NTSB) investigated the accident. In its report of the investigation, issued July 14, 1983, NTSB concluded that the building's adjustable vent louvers had been set in a position that caused leaking gas to accumulate in the building. NTSB also found that the building was not equipped with a gas detection and alarm system, although one had been scheduled for installation.

NTSB made the following Safety Recommendation to RSPA:

Amend 49 CFR 192.173, regarding compressor station building ventilation systems equipped with restrictive devices, to require the installation of gas detection equipment that will alert employees to hazardous gas accumulations and automatically open fully all restrictive devices when accumulations of gas are detected. (Class II, Priority Action) (P-83-20)

To help determine the need for Federal regulations governing gas detectors, alarms, and automatically-controlled vents in compressor buildings, OPS examined operators' reports of incidents related to gas leakage inside compressor buildings. Of those that involved fires or explosions and personal injuries, none other than the Bonicord accident and the recurrence of reported incidents involving compressor buildings indicate a significant potential for harm that could be lessened by rulemaking action.

Next OPS published an Advance Notice of Proposed Rulemaking (ANPRM) (53 FR 10906; April 4, 1988) on

ways, including NTSB's recommendation, to reduce the potential for injury to personnel caused by gas leakage inside compressor buildings. The ANPRM, which posed five regulatory alternatives and a series of questions, drew responses from 32 operators, 3 trade associations, and a State agency.

Responses to Questions

The questions in the ANPRM addressed the prevalence and cost of gas detection systems in compressor buildings and other matters concerning the proposed alternatives. The responses to many of the questions were remarkably similar.

Twenty-eight of the 32 operators responding said they have equipped some, but not all, of their compressor buildings with gas detection systems. In some cases, only compressor buildings installed or modified after a particular date have gas detection systems. Other operators install gas detection systems only in unattended, automated stations, in fully enclosed buildings, or in stations having compressors larger than a threshold size (e.g., 1000 hp). Only one operator stated that it does not install gas detection systems in any compressor buildings; that operator has attended stations handling odorized gas. Virtually all the operators who reported they install gas detection systems link them to alarms that actuate in the range of 15 to 30 percent of the lower explosive limit (LEL) of natural gas and then to emergency shutdown devices that actuate at 50 to 75 percent of LEL.

One question sought to determine the extent to which vents in compressor buildings have adjustable louvers that are controlled automatically by gas detection systems. Commenters reported that most enclosed buildings have louvered vents that are either fixed or left set in a fixed position, being moved only when tested operationally. In buildings with ventilation systems that operate automatically, vents in some systems are designed to open when gas is detected, while others close on fire detection. Whether they fail safe depends on the type of vent system and the type of fire suppression or protection system that is installed. The comments indicate, however, that it is not common practice to use gas detection systems to automatically control vent louvers.

OPS also sought information about the cost of installing both gas detection and alarm systems and automatic ventilation systems. A number of commenters provided estimates of costs for equipping single buildings or single stations. Those estimates ranged from \$3,000 per detection point to \$90,000 per

station. Unfortunately, it was not clear whether these estimates included only the gas detection and alarm systems or those systems plus the emergency-shutdown-system interface and other equipment that the operators use.

The American Gas Association (AGA) and the Interstate Natural Gas Association of America (INGAA) each estimated the cost of providing gas detection and alarm systems in compressor buildings throughout the gas industry. AGA estimated that 80 percent of compressor buildings are equipped with gas detection and alarm systems. It estimated further that installation of gas detection and alarm systems in the remaining 20 percent would cost in the range of \$6 to 12 million. INGAA stated that half the companies that responded to its inquiry install gas detection and alarm systems "in all buildings housing compressor units, except for semi-enclosed buildings (enclosed wall area less than 50 percent of the total wall area)." INGAA's remaining respondents limit the use of these systems to unattended and remotely controlled compressor stations. INGAA's estimate of the cost of installing gas detection and alarm systems in compressor buildings without them was at least \$6.8 million.

Comments on Alternatives

Alternative 1: Require operators to equip new and existing compressor buildings handling unodorized gas with continuously operating gas monitoring systems that will activate an alarm whenever a gas-in-air mixture above an established threshold is detected. The alarm would be capable of warning personnel of the presence of a potentially hazardous accumulation of gas prior to their entering the building.

More than 75 percent of the commenters supported requiring the installation of gas detection and alarm systems in compressor buildings to protect persons and property. In addition, about 90 percent of these respondents thought that an exception should not be provided for compressor buildings handling odorized gas, because of the need to warn persons of a hazardous accumulation of gas before they enter the building.

Alternative 2: Require operators to equip new and existing compressor buildings handling unodorized gas with restrictive ventilation devices that open automatically upon detection of a hazardous gas accumulation and fail safe.

This alternative would require installation of gas detection systems that trigger automatic opening of vent louvers upon detection of a hazardous accumulation of gas. The comments indicated that this type of vent system is

not a common practice. This approach would make it difficult, if not impossible, to install certain highly effective fire suppression systems (e.g., Halon, CO₂) since these systems operate best in enclosed environments. In addition, some commenters doubted ventilation would fully remove the gas released by a large leak in time to prevent an explosive mixture.

Alternative 3: Revise § 192.605, "Essentials of operating and maintenance plan," to include specific procedures for checking gas before entering such buildings.

The comments indicate that operators generally do not require personnel to check the atmosphere inside a compressor building before entering it. Several operators with fixed detection systems installed in buildings commented that portable hand-held gas detectors would not be as accurate in predicting gas accumulations as are the permanently installed systems.

Alternative 4: Revise § 192.605, "Essentials of operating and maintenance plan," to include requirements to maintain compressor building restrictive ventilation devices.

The comments indicate that operators generally perform periodic inspections and maintenance on ventilation systems that contain moving parts, but that fixed ridge vents and similar systems are generally not the subject of inspection and maintenance procedures. In addition, in most cases movable-vent systems are inspected or tested as an adjunct to the testing of gas detection or emergency shutdown systems, or they are observed routinely during normal station operations. Maintenance is performed on most of these systems as an as-needed basis.

Alternative 5: Do not revise the regulations.

Several operators, although a minority, advocated no further regulation. They believed OPS's justification of the need for a generally applicable regulation was insufficient. They also said each location should be evaluated separately and that a regulation would limit the operator's options.

Discussion

The Bonicord and other reported incidents show the potential for compressor station personnel to be harmed by hazardous accumulations of natural gas in enclosed compressor buildings. This potential may exist even in the presence of properly designed and functioning ventilation systems, including those that operate automatically upon detection of gas. Building ventilation can expel certain

amounts of gas before a hazard develops, usually small leaks. The comments indicate, however, that ventilation systems currently in use may allow hazardous accumulations of gas from large leaks. Also, in the event of a malfunction, exclusive reliance on automatic ventilation could leave personnel unprotected. Thus, some protection besides ventilation seems needed to minimize the threat to personnel.

Extra protection is needed whether a building handles odorized or unodorized gas. As stated above, most of the commenters were against any exception based on odorized gas.

OPS agrees with the large majority of commenters that gas detection and alarm systems provide the most effective means to reduce the potential for harm from gas leakage inside compressor buildings. The use of portable gas detectors or improved vent maintenance would not be as effective. Portable detectors may not be as accurate as fixed sensors, and they would be impractical to use routinely everywhere leaking gas could reasonably be expected to accumulate inside a building. The commenters indicate that vents that need maintenance are receiving it, and vent malfunctions are not a wide problem. Since gas may accumulate even when vents operate smoothly, little if any payoff could be expected from stricter vent maintenance requirements.

NTSB recommended that RSPA require compressor buildings with adjustable or movable vent louvers to be equipped with an automatic vent opening device in addition to a gas detection and alarm system. OPS expressed its reservation about this aspect of NTSB's recommendation in the ANPRM, and commenters supported OPS's view. Although such devices may be beneficial in some cases, fully open, rapid ventilation could hinder the use of the most efficient or effective fire suppression systems in compressor buildings. Thus, OPS is not proposing the installation of automatic vent opening devices as a generally applicable safety requirement.

Finally, OPS does not agree with those commenters who thought rulemaking is unnecessary. Although prudent operators already include gas detection and alarm systems in new compressor buildings and retrofit old buildings, this practice is not universal. Also, in view of this wide practice, OPS is not persuaded that a Federal requirement to install gas detection and alarm systems would hamper design flexibility. As to the alleged need to make installation decisions on a case-

by-case basis, OPS believes that variation in risk among buildings depends on the amount of enclosure. Excluding semi-enclosed buildings from the proposed requirement, as set forth below, should make case-by-case decisions unnecessary.

Proposal

OPS proposes to establish a new pipeline safety rule, § 192.736, "Compressor stations: Gas detection." This rule would require each compressor building with 50 percent or more of enclosed wall area to be equipped with a gas detection and alarm system to warn persons entering or in the building of any hazardous accumulation of gas inside the building.

The proposed rule would also require that the systems be maintained and that maintenance include testing. OPS solicits comments on whether the final rule should specify the minimum frequency of testing. If so, what would be an appropriate interval between tests? In the absence of a specified test interval, testing frequency would be under each operator's discretion. However, if new rules concerning pipeline operation and maintenance (O&M) manuals are adopted as proposed (Docket PS-113; 54 FR 46685; November 6, 1989), operators would have to include system maintenance procedures and test intervals in their O&M manuals. Inspection and maintenance procedures are subject to review for adequacy by OPS or State agency enforcement personnel (49 App. U.S.C. 1680).

OPS is further proposing that operators be allowed 2 years after publication of a final rule to complete their installations. This time would allow for planning and for procuring equipment, electrical contractors, and, where necessary, a power supply.

Impact Assessment

Gas detection and alarm systems were installed in a large majority of compressor buildings when the buildings were constructed. In addition, as was the case at Bonicord, some operators are retrofitting their compressor buildings with such systems. AGA estimated that 80 percent of compressor buildings are now equipped with gas detection and alarm systems, and that retrofitting the remaining 20 percent would cost between \$8 and \$12 million. INGAA's retrofitting estimate also fell in this range.

OPS believes that given the work already done or planned, this additional expenditure is warranted to minimize the remaining threat to personnel in or near buildings not yet retrofitted.

Preventing only one compressor station accident could result in savings equal to the costs of the proposed rule. OPS assumes the cost of requiring new compressor buildings to include gas detection and alarm systems would be minimal since industry practice is to install these systems in new buildings.

Therefore, this proposal is considered to be nonmajor under Executive Order 12291 (46 FR 13193; February 19, 1981) and is not considered significant under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979).

Because gas pipeline systems operated by small entities ordinarily do not contain compressor buildings affected by this proposal, I certify under section 605 of the Regulatory Flexibility Act (5 U.S.C. 605) that this proposal would not, if adopted as final, have a significant economic impact on a substantial number of small entities.

This action has been analyzed under the criteria of Executive Order 12612 (52 FR 41685; October 30, 1987) and found not to warrant preparation of a Federalism Assessment.

List of Subjects in 49 CFR Part 192

Alarms, Compressors, Gas detectors, Pipeline safety.

In consideration of the foregoing, OPS proposes to amend 49 CFR part 192 as follows:

1. The authority citation for part 192 would continue to read:

Authority: 49 App. U.S.C. 1672 and 1804; 49 CFR 1.53.

2. Section 192.736 would be added to read as follows:

§ 192.736 Compressor stations: Gas detection.

(a) Before (2 years following publication of final rule), each compressor building with 50 percent or more of its wall area enclosed must be continuously monitored for the presence of hazardous accumulations of gas with a fixed gas detection and alarm system. The system must warn persons of hazardous accumulations of gas before they enter and while they are inside the building.

(b) Each gas detection and alarm system required by this section must be maintained to function properly. The maintenance must include performance tests.

Issued in Washington, DC, on July 23, 1990.

George W. Tenley, Jr.,

Director, Office of Pipeline Safety.

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