DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 191 and 192

[Docket No. 106; Notice 2]

RIN 2137-AB63

Transportation of Hydrogen Sulfide by Pipeline

AGENCY: Research and Special Programs Administration (RSPA), U.S. Department of Transportation (DOT).

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This notice proposes regulations to control the concentration of hydrogen sulfide (H_2S in natural gas pipeline systems because high concentrations of H_2S are extremely toxic if released. The proposed rule would:

(a) Prohibit operators from transporting in a transmission line downstream of gas processing plants, sulfur recovery plants, or storage fields, natural gas containing more than 1 grain of hydrogen sulfide (H_2S) per 100 standard cubic feet (SCF) of natural gas;

(b) Require that the release of H_2S in excess of 20 grains per 100 SCF of natural gas into a transmission line be telephonically reported to DOT; and

(c) Require that onshore and offshore gathering lines carrying H_2S in excess of 31 grains per 100 SCF of natural gas have a contingency plan in case of the release of the gas into the atmosphere.

DATES: Interested parties are invited to submit comments by June 17, 1991.

ADDRESSES: Send comments in duplicate to the Dockets Unit, room 8417, 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: Cesar De Leon (202) 366–4583, regarding the subject matter of this document, or the Dockets Unit (202) 366–5046, for copies of this document or other material in the docket.

SUPPLEMENTARY INFORMATION:

Background

The RSPA issued an Advance Notice of Proposed Rulemaking (ANPRM) on June 7, 1989 (54 FR 24361) requesting information to assist RSPA to determine the need for regulations to control the concentration of hydrogen sulfide in natural gas pipeline systems. Hydrogen sulfide is a colorless, flammable gas which is poisonous if inhaled. It is considered to be hazardous to life and health at concentrations of 300 parts per million (ppm). At concentrations of 1,000 ppm in air it causes immediate unconsciousness and death. The Occupational Safety and Health Administration (OSHA) has established an upper concentration level of 10 ppm for prolonged (8 hours) work place exposure to H_2S.

Natural gas produced from some gas production wells has high concentrations of H_2S. For example, a gas production field that has some of the highest H_2S concentrations in the country is the Mary Ann Field in Mobile Bay in Alabama which produces natural gas averaging 7½ percent or 75,000 ppm of H_2S. Gas with high concentrations of H_2S, commonly called "sour gas", is "sweetened" by removing the H_2S from the natural gas in treatment plants before the natural gas is introduced into gas transmission pipelines.

At present, the federal gas pipeline safety regulations, 49 CFR part 192, do not specifically address the risk to the public of being exposed to the toxic effects of H_2S due to its presence in natural gas pipelines. The current regulations in 49 CFR part 192 address H_2S only with respect to its corrosive effects on pipelines, as follows:

- 49 CFR 192.125(d) requires that copper pipe that does not have an internal corrosion resistant lining may not be used to carry gas that has an average hydrogen sulfide content of more than 0.3 grains per 100 standard cubic feet of gas.
- 49 CFR 192.475 requires that corrosive gas may not be transported by pipeline unless the corrosive effect of the gas on the pipeline has been investigated and steps have been taken to minimize internal corrosion. In addition gas containing more than 0.1 grain of hydrogen sulfide per 100 standard cubic feet may not be stored in pipe-type or bottle-type holders.
- 49 CFR 195.418 requires that no operator may transport any hazardous liquid that would corrode the pipe or other pipeline components unless it has investigated the corrosive effect and taken steps to mitigate corrosion.

The ANPRM set forth many incidents that have occurred in California, Texas, and Canada in which H_2S had gotten past gas treatment plants and gotten into gas transmission and even into distribution systems.

The ANPRM also set forth state regulations in Texas, Michigan, and California addressing the occurrence of high concentrations of H_2S in pipelines, many of which would have been mitigated if appropriate Federal regulations had been in place. One incident occurred on December 28, 1988, when the Pacific Offshore Pipeline Company's (POPCO) Las Flores Canyon Treatment Plant was placed in service. Due to the failure of an automatic gas analyzer, gas was contaminated by 200 PPM of H_2S and entered the distribution system of Southern California Gas Company (SCG). After the analyzer was repaired following the interruption of gas flow, the gas flow was reinitiated. Further analysis indicated 16 PPM H_2S in the gas stream and the gas flow was again stopped.

Another incident involving H_2S entering the SCG system occurred on May 12, 1984, at the Wilmington, California, gas delivery plant. Following this incident, the California Public Utilities Commission (PUC) requested that all SCG locations that could receive contaminated gas be equipped with gas analyzers. As a result of these incidents in California, the California PUC has required that gas supply be monitored by automatic equipment at gas supply points.

On August 11, 1987, automatic H_2S monitoring equipment at the KG Gas Processors, Limited, near Winston, Texas, indicated that an excessive amount of H_2S was being delivered to Lone Star Gas Company. Gas company personnel found H_2S in concentrations of 1600 PPM and greater and purged the entire system. The excessive concentrations of H_2S were not detected because automatic shut-off equipment at KG had failed to operate in response to the automatic monitor and Lone Star's monitoring equipment had been removed for repair at that time. From its review of Lone Star's records NTSB found that since 1977, 11 incidents involving the release of excessive quantities of H_2S into its pipeline system had occurred.

As a result of a review of several incidents involving the release of excessive quantities of H_2S into pipeline systems, on May 10, 1988, by letter to the Administrator of RSPA, the National Transportation Safety Board (NTSB) recommended that RSPA:

(1) Establish, based on known toxicological data, a maximum allowable concentration of H_2S in natural gas pipeline systems, and amend 49 CFR part 192 to reflect this determination. (P–88–1; Class II, Priority Action)

(2) Revise 49 CFR part 191 to require that pipeline operators report all incidents in which concentrations of H_2S in excess of the maximum allowable concentration are introduced into pipeline systems that transport natural gas intended for domestic or commercial purposes. (P-88-2; Class III, Longer-Term Action)

(3) Require gas pipeline operators to install on their systems equipment capable of automatically detecting and shutting off the flow of gas when the maximum allowable concentrations of H_2S-contaminated gas are exceeded. (P-88-3; Class III, Longer-Term Action)

Because RSPA has no current regulations that require the monitoring of maximum H_2S concentration in gas pipeline systems, RSPA requested information in the ANPRM to appropriately assess the need for establishing such regulations.

Interested parties were invited to answer the following questions and submit relevant information including any accident experience (if applicable) associated with H_2S release(s):

(1) What factors should be considered in determining the need for a maximum allowable concentration of H_2S in natural gas pipeline systems? What should this concentration be?

(2) Describe events you know of in which H_2S has been released from, or into, a pipeline in dangerous amounts and what were the H_2S concentrations? What were the conseqences of such releases? What would be the burden associated with mandatory reporting of such events?

(3) If you are an operator receiving gas from a producer, do you have automatic H_2S detection and shut-off equipment? Do these devices operate reliably? For such operators that do not have this equipment, what costs and other burdens can be associated with requiring use of the equipment?

(4) Which pipelines transporting sour gas should be subject to an H_2S monitoring requirement? Should rural gas gathering lines be subjected to H_2S monitoring requirements, even though they are not now subject to any of the part 192 safety standards?

As a result of a review of the comments, RSPA believes that regulatory action is required to address the hazards from the accidental release of natural gas having excess quantities of H_2S. There are increasing numbers of natural gas production fields producing sour gas that could be released into transmission pipelines thereby creating a hazard to people that live along the pipeline, as well as possibly entering distribution systems. In addition, there are many gathering lines in onshore non-rural areas which are transporting highly toxic sour gas which put at risk the people living in close proximity to those pipelines. Offshore gathering lines carrying sour gas equally put workers at risk on offshore platforms. The inhalation by the workers to the sour gas from the offshore Mary Ann Field in Mobile Bay in Alabama could result in immediate death. Appropriate regulations established now should minimize the hazards from future releases of sour gas into transmission lines, as well as provide contingency plans for the accidental release of sour gas into the atmosphere from onshore and offshore gathering lines.

Discussion of Comments

The RSPA received 54 comments, principally from natural gas and hazardous liquid pipeline operators. There were also comments from two private citizens, two state regulatory agencies, the Minerals Management Service (MMS) of Department of the Interior, and five natural gas and hazardous liquid trade associations.

In addition to responding to the specific questions, there were many commenters that set forth general comments on the need to issue regulations to control the concentration of H_2S in natural gas pipeline systems. The following is a discussion of general comments received on the ANPRM.

General Comments

Two private citizens are opposed to the presence of H_2S in pipelines because of the possibility of its release. One commenter lives near a production well and associated gas gathering lines that transport natural gas with H_2S and addresses her comments to Question 4. The other commenter complains of the smell of H_2S and also comments that the H_2S in these wells has resulted in the death of dogs and cattle. She argues that there should be restrictions on how close to homes a company may install an H_2S pipeline.

La Clede Gas Company supported the issuance of regulations to establish a maximum concentration of H_2S in pipeline systems to provide safety of the natural gas consumer and protect the integrity of the system.

The MMS supports the recommendations made by the NTSB. The DOI supports a rule similar to that proposed by California General Order 58. Order 58 proposes that no gas supplied by any gas utility shall contain more than 0.75 grains of H_2S per 100 SCF of natural gas. (1 grain of H_2S per 100 SCF is equal to 15.9 ppm of H_2S. In addition, MMS supports the required installation of H_2S monitoring equipment in these pipelines for detection and shutoff flow of gas when the maximum allowable concentration of H_2S is exceeded.

H_2S monitoring equipment and gas purchase contracts use "grains per 100 SCF" as a standard unit of H_2S measurement in natural gas rather than "ppm of H_2S". Most state regulations regarding H_2S similarly use "grains per 100 SCF" as a standard unit of H_2S measurement in natural gas.

The Texas Railroad Commission, identified by most industry commenters as having adequate regulations addressing high concentrations of H_2S in gas pipelines, stated that RSPA should not extend regulations for H_2S to gathering lines in Texas because those lines were covered by the Texas Railroad Commission under Rule 36 entitled "Oil, Gas, or Geothermal Resource Operation in Hydrogen Sulfide Areas." The Commission also believed that regulations addressing H_2S should only be made applicable to pipeline operators that transport or transfer gas requiring H_2S treatment.

Most industry commenters were opposed to any regulations addressing H_2S in pipelines. Panhandle Eastern Corporation commented that such rulemaking is ill-advised and unwarranted because there exists sufficient requirements in 49 CFR part 192 to adequately address the issues raised. The American Gas Association (AGA) and United Gas Pipe Line Company, among others, thought that the producer of natural gas, rather than the transmission pipeline operator or distribution operator, should be responsible for monitoring the concentration of H_2S in the gas. The AGA, Interstate Natural Gas Association of America (INGAA), the American Petroleum Institute (API), and many operators stated their opposition to mandatory monitoring of H_2S concentrations with automatic shutdown capability. Many of these commenters argued that removal of H_2S or treatment to acceptable levels is the responsibility of the producer as specified in gas purchase contracts. They also mentioned the possibility of false closures which would interrupt service to customers unnecessarily if the monitoring equipment is located on the distribution system.

The Gas Processors Association (GPA), which represents about 170 corporate members which process about 90 percent of all natural gas in the country, opposes a maximum allowable concentration of H_2S in natural gas pipeline systems. The GPA argues that contracts that limit the concentration of

H_2S in natural gas delivered to transmission pipelines protect customers and problems are rare. The GPA further states that the responsibility of preventing H_2S gas from reaching domestic customers should rest in the hands of the distribution company not with the gas producer, gas processor, or gas transmission company. The GPA further points out that although pipeline upsets which cause H_2S to enter the transmission system are undesirable, they are unlikely to have a significant affect because of dilution due to co-mingling further downstream in the transmission system.

The Pacific Gas and Electric Company (PG&E) takes issue with the statement in the ANPRM that the California Public Utility Commission (PUC) requires that its previously determined upper limit of H_2S be monitored by automatic equipment on a daily basis at gas supply points. The PG&E understands that the California PUC required Southern California Gas Company to install automatic H_2S monitors and automatic shutoff devices at locations where H_2S contaminated gas could enter the gas system. The Southern California Gas Company recommended that the Department only require monitoring of H_2S levels at the custody transfer point where contaminated gas is received from the gas producer rather than throughout the operator's pipeline system.

Amoco Gas Company did not support NTSB's recommendation that RSPA establish a maximum allowable concentration of H_2S in natural gas pipelines for the following three reasons. First, the natural gas purchaser by contract dictates the maximum allowable concentration of H_2S. The pipeline operator and end user are aware of the end user's risk of exposure to H_2S and have taken their own precautions by contract. Second, having established a contract maximum and in accordance with 49 CFR 192.475(a), operators design their pipelines and components to handle the concentration specified by the contract. When a system is properly designed and operated, the probability of a leak is equal to or less than a line that does not transport H_2S contaminated gas. Third, a regulation limiting the amount of H_2S in pipeline systems would not have prevented any of the incidents reported by the NTSB in this notice because each of the incidents was the result of two or more independent equipment failures.

The Town of Bay Springs, Mississippi, commented that attention should be focused on producers and transmission pipelines so that there would be no need to have H_2S detection and automatic shut-off systems for local distribution companies. The Northern Illinois Gas Company commented that the present regulations have served their intended purposes appropriately and the concentration of H_2S in gas pipelines are engineering and business matters between the responsible operator and his supplier.

RSPA Comments

Arguments by some operators that regulations are not needed because they have contractual requirements that limit the amount H_2S in pipelines are not persuasive. If contractual responsibilities were the only control, a release of excessive quantities of H_2S into pipelines would only result in a violation of a contract. Public safety would be better served by a Federal regulation that sets a limit of H_2S in pipelines. A violation of such regulations could result in penalties. Furthermore, this requirement would not impose unreasonable burdens, since concentration levels of H_2S are routinely considered in the industry.

Further, the current requirements do not address the toxic effects of H_2S as alleged by many commenters. Sections 192.125, 192.475, and 192.418 are targeted at preventing corrosive effects of H_2S in pipelines.

With regard to the private citizens that appealed for restrictions on how close to homes a company may install an H_2S pipeline, the Natural Gas Pipeline Safety Act precludes establishing location or routing of pipelines by the regulations issued thereunder (49 app. U.S.C. 1671(4)). The location and route of a pipeline is handled better at the local level. From the description of the pipeline located near to their houses, it appears that the private citizens lived near gathering lines. Gathering lines are further discussed in Question No. 4.

Other general comments are addressed below in the RSPA comments to the public comments to the four questions set forth in the ANPRM.

The following sets forth the comments to each of the questions posed in the ANPRM:

Question 1: What factors should be considered in determining the need for a maximum allowable concentration of H_2S in natural gas pipeline systems? What should this concentration be?

Comments: A wide variety of comments were received regarding the factors that should be considered in determining the need for a maximum allowable concentration of H_2S in natural gas pipeline systems. Phillips Petroleum Company suggested the following factors:

a. Flow rate.
b. Operating pressure.
c. Operating temperature.
d. H_2S and H_2O concentration.
e. Presence of CO_2 and other contaminants.
f. Presence of hydrocarbon liquids.
g. Prevailing weather conditions.
h. Population density.
i. Material specifications.
j. Use of inhibitors.
k. Gathering vs. transmission functions.

Southern Natural Gas Pipeline Company suggested the following factors:

a. Potential for H_2S to be present in the system.
b. Detrimental effects H_2S on pipe and appurtenances.
c. Natural gas end use requirements.
d. Potential exposure to company employees.
e. Potential exposure to the public/property in proximity of that pipeline system.

The AGA suggested the following factors:

a. Whether the particular system will experience high concentrations of sour gas for a period of time to create a safety problem.
b. Identification of delivery points that have the ability to contain high concentrations of sour gas.
c. Degree of danger presented to the public and employees of gas companies because of the toxicity of sour gas.
d. Effect of the gas stream on materials used in the pipeline system.
e. Stress level at the pipeline's maximum allowable operating pressure.
f. Class location.
g. Other impurities.

The INGAA proposed the following factors:

a. Type and grade of pipe exposed to H_2S.
b. Other impurities in the gas stream (moisture and carbon dioxide).
c. Volume of gas containing H_2S vs. volume of gas in the transmission pipeline.
d. Existing standards such as NACE MR–01–75 and API RP 14E.
e. Availability and use of inhibitors.
f. Health effects on company employees, the public, and the consumer.
g. Potential detrimental effect on the pipeline system.
h. Population density along the pipeline route.
i. The stress level at the pipeline's MAOP.

j. Purpose of the pipeline (gathering, transmission, or distribution).

The Columbia Gas Distribution Companies stated that the factors can be focused on two major issues:

a. The safety of employees, customers, and the general public who have the potential of exposure to the gas stream under normal and emergency conditions.

b. Operating or maintenance difficulties in the pipeline system caused by undesirable constituents.

The Independent Petroleum Association of America (IPAA) stated that the main factor to be considered in determining the need for a maximum allowable concentration for H_2S in natural gas pipeline systems is the immediate destination of the gas. Additionally, the following factors should be considered:

a. Population density surrounding pipelines.

b. Leak history.

c. Design criteria.

d. Performance of proper maintenance.

e. Construction techniques.

f. Welding procedures.

g. Age of pipelines.

h. Type of internal corrosion mitigation currently on pipelines.

i. Maximum allowable operating pressure of the pipelines.

j. Distance of isolation valves on the pipelines.

k. Number of employees per mile of pipe to maintain the pipelines.

Many commenters expressed a view regarding the concentration of H_2S that should be allowed in natural gas pipeline systems. The range covered by most commenters was from 0.25 to 1 grain of H_2S per 100 SCF of the natural gas or between 4 and 16 ppm. The gas producers and transmission operators favored the upper limit or grain of H_2S per 100 SCF of natural gas while most distribution operators suggested the lower limit or 0.25 grain of H_2S per 100 SCF of natural gas. Mobil Pipe Line Company commented that the limits should be 0.25–0.30 grains of H_2S per 100 SCF of natural gas, limits that are under consideration for legislation in Michigan and California. Warren Petroleum Company commented that the maximum allowable concentration of H_2S carried through a pipeline must be unlimited but states that the company has a plan to comply with the Texas Railroad Commission Rule 36 requiring a contingency plan for pipelines carrying gas containing H_2S in concentrations of 100 ppm and greater.

Transcontinental Gas Pipeline Corporation (Transco) and INGAA commented that any rule change concerning the allowable limits of H_2S should provide for the "grandfathering" of existing gas purchase contracts.

RSPA Comments

The commenters presented many excellent suggestions on the factors that should be considered in determining the maximum allowable concentration of H_2S in natural gas pipeline systems. The suggested factors, as can be seen above, covered a wide spectrum of criteria. The RSPA has included factors proposed by some of the commenters that represent practically all of the factors proposed by commenters to this ANPRM. These factors should be of use to commenters in commenting on the proposals discussed below for establishing the maximum allowable concentration of H_2S in natural gas pipeline systems.

As a minimum, the range of limits for H_2S set forth by most of the commenters should not be exceeded in light of the toxic effects of natural gas containing H_2S that exceeds such limits. The RSPA believes that an upper limit of 1 grain of H_2S / 100 SCF of natural gas is appropriate because it is consistent with the limit set by OSHA and several states. Many commenters supported that limit to be the maximum concentration of H_2S in natural gas pipelines. One grain of H_2S / 100 SCF of natural gas is about 16 ppm of H_2S in natural gas, which is slightly in excess of the 10 ppm concentration permitted by OSHA for prolonged (8 hours) workplace exposure. In addition, such a limit would not affect existing gas purchase contracts because 1 grain of H_2S / 100 SCF of natural gas is the upper limit for gas contracts according to commenters.

Question 2: Describe events you know of in which H_2S has been released from, or into, a pipeline in dangerous amounts and what were the H_2S concentrations? What were the consequences of such releases? What would be the burden associated with mandatory reporting of such events?

Comments: Many companies reported events in which H_2S was released into a pipeline in dangerous amounts but most of the companies indicated that the H_2S was diluted further downstream. The AGA indicated that such releases do not appear to be significant, widespread, or a recurring problem. The AGA reported one instance in which the release was 2,000 ppm. The IPAA indicated several situations that may present a potential for a release of H_2S from a pipeline or into a pipeline, and then included procedures to prevent such releases. Tenneco indicated several instances where a treatment facility failed to reduce H_2S to the contract requirement level but the H_2S was diluted further downstream. The GPA also pointed out that while gas containing H_2S that exceeds the contract limits may enter the transmission line, the gas is unlikely to have a significant effect because of dilution due to co-mingling in the transmission system.

With regard to the question regarding the burden associated with mandatory reporting of such events, many industry commenters questioned how reporting of these incidents would increase public safety and what, if any, benefits could be derived from the reports. Most distribution system operators indicated little or no burden because most had never had excessive concentrations of H_2S in those systems. Many transmission operators also indicated little burden with reporting excessive amounts of H_2S in transmission pipelines. The AGA, Columbia Gas-Transmission, and Colorado Interstate observed that the burden would depend on the scope and depth of the reporting requirements. Columbia Gas-Distribution commented that it would be reasonable to report incidents using criteria similar to pipeline failure incidents where death or injury, extensive property damage, and media coverage are involved. Northern Indiana Public Service Company commented that the reporting burden would result in $484,000 of capital costs and $105,000 annual costs. Consumers Power stated that it believed that a reporting trigger of 300 ppm or over of H_2S would cause a relatively light reporting burden. There were several commenters, especially those operating closer to the source of gas, such as GPA and Equitable Resources, that indicated there would be a reporting burden.

RSPA Comments

The comments indicate that the releases of H_2S into pipeline systems has not been a widespread, significant, or recurring problem. Nonetheless, a release of an excessive amount of H_2S into a pipeline system may result in a hazardous situation if a leak in the line carrying the higher concentration of H_2S escapes from the line before the gas is burned. Such releases have occurred, and the gas with high concentrations of H_2S has been released into distribution systems. The gas was not diluted as indicated by some commenters. RSPA believes that a reporting requirement is also needed to determine if the release of excessive amounts of H_2S into transmission pipelines is a problem. The proposed reporting threshold for H_2S releases in this NPRM is set sufficiently high to gain information only where dangerous amounts of H_2S have been released into transmission pipelines.

The proposed threshold for reporting is 20 grains of H_2S / 100 SCF of natural gas, or over 300 ppm.

Question 3: If you are an operator receiving gas from a producer, do you have automatic H_2S detection and shut-off equipment? Do these devices work reliably? For such operators that do not have this equipment, what costs and other burdens can be associated with requiring use of the equipment?

Comments:

Practically all of the operators that received gas from a producer, such as Tenneco Gas, Corp., Midcon, Panhandle Eastern Corporation, Questar Pipeline Co., Transco, Texaco USA, Delhi Gas Pipeline Corp., and Northwest Pipeline Corp., had either monitoring or automatic shutoff H_2S detection equipment. Most of these operators indicated that the equipment operated reliably. Only two commenters, Tenneco and Columbia Gas-Transmission, indicated that the equipment was not reliable. Most operators that had equipment indicated a cost of $10,000 to $30,000 per installation. Two significant departures from this range were Northwest that indicated that a gas chromatograph analyzer would cost $14,000 to $45,000 per installation and Midcon indicated up to $45,000 per installation. IPAA and INGAA indicated that the annual operating and maintenance cost reported by their operators was about $1,500 per installation. However, Southern California Gas reported $3,000 in annual operating and maintenance costs; Questar indicated $1,000 in monthly operating costs; and Phillips Petroleum reported $2,000 in monthly operating and maintenace costs. PG&E reported unspecified low maintenance costs. Northern Indiana, a distribution company, stated that it would cost $484,000 to install equipment for their entire system and that it would cost $105,000 annually to operate and maintain the equipment.

RSPA Comments

RSPA believes that high concentrations of H_2S should be removed from the gas before it is delivered to the transmission pipeline to ensure public safety. Under the requirements proposed in this Notice, RSPA would limit the amount of H_2S in natural gas in transmission lines, thereby establishing a limit of H_2S where gas is delivered to the transmission operator. This will put the burden on the producer or the operator of the processing plant to provide gas that does not contain high concentrations of H_2S to the transmission pipeline. The limitation of the high concentration of H_2S is not aimed at the distribution system because this would allow transmission lines to transport gas with high concentrations of H_2S thereby creating a hazard to people living near a transmission pipeline.

RSPA has not specified the type of equipment necessary to meet this proposed requirement. The comments indicate that many operators receiving gas from a producer have automatic H_2S detection and shut-off equipment and that these devices work reliably. RSPA believes that the operator should make the decision on the type of equipment it will use in complying with this proposed requirement.

RSPA has used the cost figures of H_2S detection and shut-off equipment acquired in the comments to the ANPRM to assess the relative costs in having the industry comply with this proposed requirement.

Question 4: Which pipelines transporting sour gas should be subject to an H_2S monitoring requirement? Should rural gas gathering lines be subject to H_2S monitoring requirements, even though they are not now subject to any of the part 192 safety standards?

Comments: With regard to the question of which pipelines transporting sour gas should be subject to an H_2S monitoring requirement, very few commenters thought that such lines should not be monitored. However, Transco argued that although sour gas pipelines usually contain extremely corrosive gas (more than 300 ppm), these lines are designed and maintained to accommodate the corrosive effects of high concentration of H_2S. Therefore, monitoring would serve no useful purpose. Chevron Pipe Line Company commented similarly.

Washington Gas Light Company commented that monitoring of H_2S should occur at the point of origin or the closest point to the source and not require redundant monitoring at distribution systems. PG&E and United Gas Pipe Line Company commented similarly, stating that the monitoring should be required at the point of delivery when (1) the source gas has been processed for H_2S removal and (2) the source gas (before processing) contains unacceptably high levels of H_2S which the downstream pipeline system is not designed to handle. Mountain Fuel Supply Company believes that operators transporting sour gas that are presently under the jurisdiction of DOT should have the responsibility of insuring pipeline quality of gas, including H_2S monitoring. IPAA and Delhi Gas Pipeline Corporation suggested that only those pipelines with known H_2S gas that deliver into a distribution system downstream of a treating facility should be subject to an H_2S monitoring requirement. Texaco commented that any monitoring should be directed at gas distribution operators who supply gas for consumer use.

With regard to the question of whether rural gas gathering lines should be subject to H_2S monitoring, most commenters were opposed to the idea. Phillips Petroleum Company commented that gathering lines routinely transport volumes of very sour gas because this is a normal part of gas gathering operations and these lines should not be subject to H_2S monitoring equipment. The AGA commented that gathering lines in sour gas service are designed and maintained to accommodate the corrosive effects of high concentrations of H_2S and that these lines are adequately regulated by state regulations in states having sour gas production. The IPAA made the same arguments as AGA and further commented that monitoring equipment should be located at the point at which gas enters a transmission line or distribution system after which no further treatment of gas occurs. Conoco, Inc., while disagreeing with the noncompliance procedures, generally agrees with the technical requirements and limitations of a Bureau of Land Management proposal (54 FR 21075; May 16, 1989) for H_2S monitoring for Federal and Indian leases. The GPA stated that the regulation of H_2S in gathering lines is impractical as these pipelines are generally upstream of the gas processing facilities which remove the H_2S. If a maximum allowable concentration in gas gathering pipelines is established many sour gas fields may be forced to shut down. The IPAA had similar views as those set forth above. Several commenters stated that the contingency plan required by the Texas Railroad Commission for gathering lines having excessive amounts of H_2S is a good regulatory approach.

The MMS commented that the hazard of an accidental injection of H_2S in a pipeline system in populated areas is sufficient justification for requiring H_2S monitoring equipment on any pipeline where any connecting pipeline delivers gas that has been treated to remove H_2S prior to injection.

RSPA Comments

The RSPA agrees with most commenters that the monitoring should be conducted at the interface between the gathering line and a transmission line, immediately downstream of the point where the gas has been treated for

H_2S removal. The RSPA believes that this is the appropriate point to detect the possible failure of the treatment equipment for H_2S removal. If the monitoring is accomplished at this point, there will not be any need to monitor for H_2S farther downstream at the point of delivery to a distribution system as some commenters suggested. The RSPA also agrees with those commenters that argued that there was no need for monitoring equipment when the transmission pipelines are not receiving natural gas that may be subject to H_2S contamination. The proposed regulation states that no operator may transport in a transmission line natural gas containing more than 1 grain of H_2S per 100 SCF of natural gas (15.9 ppm of H_2S in natural gas). Therefore, if the transmission pipeline is not receiving gas that has been subject to H_2S contamination, monitoring equipment would not be required.

The RSPA also agrees with those commenters who stated that the regulation of H_2S in gathering lines is impractical as these pipelines are generally upstream of the gas processing facilities which remove the gas. However, some of the gathering lines are currently subject to part 192 regulations because the lines are offshore or are onshore gathering lines within the limits of any incorporated or unincorporated city, town, or village; or within a designated residential or commerical area, such as a subdivision, business, or shopping center, or community development. Persons in such non-rural areas having gathering lines with high concentrations of H_2S should also be afforded protection against the possible release of H_2S. Similarly, personnel on offshore platforms that have gathering lines should also be protected against the possible release of H_2S.

Consequently, while RSPA is proposing that these gathering lines be excepted from the limitation of H_2S that can be transported in transmission lines, the RSPA is proposing that pipeline operators develop a contingency plan in case of the release of H_2S into the atmosphere for gathering lines which transport H_2S in excess of 31 grains per 100 SCF of natural gas (about 500 ppm) in nonrural areas and on offshore platforms. The proposed contingency plan for onshore gathering lines is based on the contingency plan requirements in Rule 36 issued by the Texas Railroad Commission which requires different contingency plans at 100 ppm and 500 ppm, as well as emergency plan requirements in part 192. It should be noted that a state may adopt more stringent standards for gathering lines that are compatible with the federal standards. Therefore, the contingency plan of the Texas Railroad Commission and other state contingency plans would still apply, if they are more stringent and do not conflict with this proposed requirement. The proposed contingency plan for offshore gathering lines is based on emergency plan requirements in part 192 to the extent that such requirements are applicable on offshore platforms.

Paperwork Reduction Act

The proposed information collection requirement under §§ 192.27 and 192.637 (contingency plan) have been submitted to the Office of Management and Budget for approval under the Paperwork Reduction Act of 1980 (44 U.S.C. chapter 35). Persons desiring to comment on these information collection requirements should submit their comments to the Office of Regulatory Policy, Office of Management and Budget, 728 Jackson Place, NW., Washington, DC 20503, attention: Desk Officer, Research and Special Programs Administration [RSPA]. Persons submitting comments to OMB are also requested to submit a copy of their comments to RSPA as indicated above under **ADDRESSES.**

Impact Assessment

The proposed rules tracks many of the industry contractual requirements regarding the presence of H_2S in natural gas in transmission pipelines. The commenters indicated that current industry contracts limit the H_2S content to 0.25 to 1.0 grains of H_2S per 100 SCF of natural gas being provided to transmission operators from gas producers. The proposed rule would propose the upper limit of 1.0 grain of H_2S per 100 SCF of natural gas in transmission lines. Therefore, this proposed rule would have minimal economic impact. Comments are particularly solicited on this issue.

With regard to gathering lines in non-rural areas that carry significant amounts of H_2S in natural gas, the proposed rules would use the Texas Railroad Commission's Rule 36 as a model for developing a contingency plan in case of an accidental release of sour gas into the atmosphere. The states of Texas, Michigan, and California, which include 40 percent of the gathering lines in the country, already have similar requirements for all onshore gathering lines in those states so that the devlopment of contingency plan for onshore gathering lines would minimally affect pipeline operators in those states. Louisiana, which has about 28 percent of the gathering lines carrying natural gas containing H_2S in excess of 31 grains per 100 SCF of natural gas, so such a rule would have very limited impact of Louisiana. This proposed requirement would have an affect in the states of Oklahoma, New Mexico, Wyoming, and Alabama which have sour gas fields, but only for gathering lines that have H_2S in excess of 31 grains per 100 SCF of natural gas in non-rural areas. Because many of the pipeline operators in those states also have pipeline systems in Texas, the costs of developing similar contingency plans in those states would be minimal. Comments are particularly solicited on whether the development of contingency plans would have a minimal economic impact.

With regard to developing contingency plans for offshore gathering lines, the gathering lines off the coast of California and Alabama would be the most affected. A contingency plan for an offshore platform would be easy to develop because the area affected is well defined and only employees working on the platform would be affected. In addition, a contingency plan for one offshore platform could be adapted to other offshore platforms with minimum revisions. Consequently, the cost of development of contingency plans for offshore gathering lines would be minimal.

The proposed rule would require that the release of H_2S in excess of 20 grains per 100 SCF of natural gas into a transmission line be telephonically reported to DOT. RSPA believes that about 5 reports per year, would be received annually. Again the costs would be minimal.

Therefore, the NPRM is considered to be non-major under Executive Order 12291, and is not considered significant under DOT Regulatory Policies and Procedures (49 FR 11034; February 26, 1979). Since the proposed rule would require minimal compliance expense, it does not warrant preparation of a Draft Regulatory Evaluation. Also, based on the facts available concerning the impact of this proposal, I certify under section 605 of the Regulatory Flexibility Act that it 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 critieria of Executive Order 12612 (52 FR 41685) and found not to warrant preparation of a federalism Assessment.

List of Subjects

49 CFR Part 191

Incident, Hydrogen sulfide, pipeline safety.

49 CFR Part 192

Hydrogen sulfide, Pipe, Pipeline safety.

In consideration of the foregoing, RSPA proposes to amend 49 CFR parts 191 and 192 as follows:

Part 191—[AMENDED]

1. The authority citation for part 191 continues to read as follows:

Authority: 49 App. U.S.C. 1681(b) and 1808(b); §§ 191.23 and 191.25 also issued under 49 App. U.S.C. 1672(a); and 49 CFR 1.53.

2. The definition of "Incident" in § 191.3 would be revised to read as follows:

§ 191.3 Definitions.

* * * * *

Incident means any of the following events:

(1) An event that involves a release of gas from a pipeline or of liquefied natural gas or gas from an LNG facility and

(i) A death, or personal injury necessitating in-patient hospitalization; or

(ii) Estimated property damage, including costs of gas lost, of the operator or others, or both, of $50,000 or more.

(2) An event that results in an emergency shutdown of an LNG facility.

(3) An event where hydrogen sulfide in excess of 20 grains per 100 standard cubic feet of natural gas is released into a transmission pipeline.

(4) An event that is significant, in the judgment of the operator, even though it did not meet the criteria of paragraphs (1), (2), or (3) of this definition.

3. Paragraph (b) in § 191.5 would be revised to read as follows:

§ 191.5 Telephonic notice of certain incidents.

* * * * *

(b)(1) Each notice required by paragraph (a) of this section shall be made by telephone to 800-424-8802 (in Washington, DC, 202-366-2675) and shall include the following information.

(i) Names of operator and person making report and their telephone numbers.

(ii) The location of the incident.

(iii) The time of the incident.

(iv) The number of fatalities and personal injuries, if any.

(v) All other significant facts that are known by the operator that are relevant to the cause of the incident or extent of the damages.

(2) If the incident involves the release of hydrogen sulfide, each notice will include the following additional information. (If all information is not available, the missing information will be provided as soon as practicable thereafter).

(i) The amount of hydrogen sulfide that enter the transmission line and how far it spread.

(ii) The reason why the event occurred.

(iii) Corrective action taken.

4. Paragraph (c) in § 191.15 would be revised to read as follows:

§ 191.15 Transmission and gathering systems: Incident report.

* * * * *

(c) The incident report required by paragraph (a) of this section need not be submitted with respect to LNG facilities and an event set forth in paragraph (3) of the definition of "Incident" in § 191.3.

PART 192—[AMENDED]

1. The authority citation for part 192 continues to read as follows:

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

2. A new § 192.631 would be added to Subpart L to read as follows:

§ 192.631 Hydrogen sulfide in transmission pipelines.

Except as set forth in § 192.633, no operator may transport in a transmission line downstream of gas processing plants, sulfur recovery plants, or storage fields, natural gas containing more than 1 grain of hydrogen sulfide per 100 standard cubic feet of natural gas.

3. A new § 192.633 would be added to subpart L to read as follows:

§ 192.633 Contingency Plan for gathering lines carrying hydrogen sulfide.

(a) A gathering line need not meet the transmission pipeline requirements of § 192.631, but if the line is carrying more than 31 grains of hydrogen sulfide per 100 standard cubic feet of natural gas, the operator must have a contingency plan for the release of hydrogen sulfide into the atmosphere for onshore gathering lines in accordance with paragraph (b) of this section and for offshore gathering lines in accordance with paragraph (c) of this section.

(b) A contingency plan for onshore gathering lines must be written, and, at a minimum, must provide for the following:

(1) Applying the contingency plan to a radius of exposure of 500 ppm in accordance with the formula:

$X=[(0.4546)(H_2S \text{ concentration})(Q)]^{0.6258}$

where:

X=radius of exposure in feet

Q=maximum volume of gas determined to be available for escape from the gathering line in cubic feet per day at standard conditions of 14.65 psig and 60°F

H_2S concentration=decimal equivalent of the mole or volume fractions (percent) of hydrogen sulfide in the gaseous mixture

(2) A plat detailing the area of exposure which must include locations and name and telephone number of responsible persons of schools, churches, hospitals, businesses or other similar areas where the public might reasonably be expected.

(3) Coordinating with appropriate public officials in preparation of an emergency plan, which sets forth the steps required to protect the public in the event of an emergency.

(4) Establishing and maintaining adequate means of communication with appropriate fire, police, and other public officials.

(5) The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency.

(6) Provide for notification of the public of the hazardous and characteristics of hydrogen sulfide, the sources of hydrogen sulfide within the area of exposure, instructions for reporting a gas leak and steps to be taken in case of an emergency.

(7) Placing and maintaining a line market as close as practical over the pipeline at each crossing of a public road and railroad and wherever necessary to identify the location of the pipeline to reduce the possibility of damage or interference, with letters at least one inch high with one-quarter inch stroke on a background of sharply contrasting colors, containing the name and telephone number of the operator and the words "Caution" and "Poison Gas."

(c) A contingency plan for offshore gathering lines must be written, and, at a minimum, must provide for the following:

(1) Applying the contingency plan to each platform located offshore.

(2) Coordinating with appropriate public officials in preparation of an emergency plan, which sets forth the steps required to protect the personnel in the event of an emergency.

(3) Establishing and maintaining adequate means of communication with appropriate fire, police, Coast Guard, and other public officials.

(4) The availability of equipment, gas masks, tools, and materials as needed at the scene of an accident.

(5) Provide for notification of the personnel of the hazardous characteristics of hydrogen sulfide and steps to be taken in case of an emergency.

Issued in Washington, DC on March 13, 1991.

George W. Tenley, Jr.,

Associate Administrator for Pipeline Safety

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