DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Part 192

[Docket No. PS–118; Notice 2]

RIN 2137–AB97

Excess Flow Valve Installation on Service Lines

AGENCY: Research and Special Programs Administration, (RSPA), DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: Excavators frequently sever or damage gas service lines causing loss of life, injury, or property damage by fire and explosion. RSPA proposes to require the installation of excess flow valves (EFVs) on certain new and replaced gas service lines to improve safety and mitigate the consequences of service line incidents. EFVs shut off the flow of gas by closing automatically when a line is broken.

DATES: Interested persons are invited to submit written comments on this proposed rulemaking by June 21, 1993; however, late filed comments will be considered to the extent practicable. All persons must submit as part of their written comments all of the material that they consider relevant to any statement of fact made by them.

ADDRESSES: Send comments in duplicate to the Dockets Unit, room 8421, 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 other docketed material will be available for inspection and copying in room 8421 between the hours of 8:30 a.m. and 5 p.m. each working day.

FOR FURTHER INFORMATION CONTACT: Jack Willock, (202) 366–2392, regarding the subject matter of this notice, or the Dockets Unit, (202) 366–4453, regarding copies of this notice or other material in the docket that is referenced in this notice.

SUPPLEMENTARY INFORMATION:

Statutory Mandate

The Pipeline Safety Act of 1992, Public Law 102–508, enacted on October 24, 1992, requires RSPA to issue regulations on EFVs by April 24, 1994. The regulations must establish performance standards for EFVs and prescribe the circumstances, if any, where they must be installed in gas distribution systems.

The Problem

Despite efforts, such as damage prevention programs, to reduce the frequency of excavation-related service line incidents on natural gas distribution service lines, such incidents persist. During the period May 1984 to February 1991, 317 service line incidents, mostly excavation-related, that resulted in 47 fatalities and 192 injuries were reported to RSPA. (Incident history is more fully explained under Comment on Incident History on page 12.) RSPA has sought to determine an appropriate means to prevent or mitigate the consequences of these incidents. Use of EFVs has been proposed by the National Transportation Safety Board (NTSB) and others as a means of mitigation.

NTSB Recommendations

The NTSB has recommended EFVs as a means of reducing or preventing injury or death from incidents resulting from service line breaks or ruptures. Since 1971, the NTSB has issued seven recommendations regarding the use of EFVs in service flow lines. The first, Recommendation P–71–01, called for further study by RSPA

> To develop standards for the rapid shutdown of failed natural gas pipelines * * *

In its accident report (PAR–73–1) on a ruptured service line in Minnesota, NTSB noted that an EFV might have stopped the flow of gas after the service line was ruptured and avoided the loss of life and property. In Recommendation P–73–02, NTSB advised RSPA to undertake a study of fail-safe devices to stop gas flow from ruptured lines and to consider amending 49 CFR Part 192 to require the installation of such devices in gas distribution systems.

Following an accident involving explosions and loss of life and property in New York City on April 22, 1974 (PAR–76–2), the NTSB in Recommendation P–76–9A called for RSPA to

> Determine the availability, the practicability, and the state-of-the art in the manufacture of excess flow valves for use on low-pressure gas distribution systems, [and] based upon the results of these finds, amend 49 CFR 192 to incorporate the use of these valves in commercial buildings.

The NTSB, in its accident report on an explosion and fire in Virginia on October 24, 1979 (PAR–80–3), concluded that, if an excess flow valve had been installed in the service line, gas flow would have been shut off when the service line ruptured and the accident would have been prevented. The subsequent NTSB recommendation, P–80–55, called for RSPA to

> Expedite rulemaking to require the installation of excess flow valves on all newly installed or renewed high-pressure gas distribution system flow lines.

In its accident report on two explosions and fires that occurred at a Kentucky high school on October 9, 1980 (PAR–81–1), NTSB found that had an EFV been installed on the service line, the severity of the first explosion may have been lessened and the second explosion may have been avoided. NTSB conducted a special study to better define the potential uses of EFVS and in Recommendation P–81–9 called for RSPA to

> Initiate rulemaking to require the installation of excess flow valves on all newly installed or renewed high-pressure gas distribution service lines with priority given to service lines supplying schools, churches, and other places of public assembly.

Based on the study findings, in Recommendation P–81–35, the NTSB recommended that the Gas Research Institute (GRI)

> Plan and conduct a test and evaluation of existing excess flow valves to determine and document, on a comparable basis, their operating and design characteristics, such as reliability, service pipe size and length, operating pressure range, maximum service load, and susceptibility to contamination.

The NTSB in Recommendation P–81–36, further recommended that GRI

> Determine the conditions and locations * * * for which excess flow valves can be effective in preventing or minimizing the potential for various types of accidents resulting from leaks on high pressure service lines.

In Recommendation P–81–38, NTSB also recommended that RSPA initiate rulemaking to require installation of EFVs on new and renewed single-family, residential high pressure services.

In 1988 and 1989, NTSB investigated 5 accidents involving gas distribution systems in Kansas and Missouri that resulted in three fatalities and 10 injuries. (PAR–90–01) The NTSB said in an April 20, 1990 letter to the RSPA, that several of the accidents that involved gas leaking from service lines could have been prevented, or at a minimum, the consequences could have been substantially reduced had an excess flow valve been installed. In subsequent Recommendation P–90–12, NTSB recommended that RSPA

> Require the installation of excess flow valves on new and renewed single-family, residential high pressure service lines which have operating conditions compatible with the rated performance parameters of at least

one model of commercially available excess flow valve.

Studies

The first study on EFVs was performed for DOT in 1974 by Mechanics Research, Inc., in response to safety recommendations made by NTSB (P–71–01 and P–73–02). The study found that EFVs were available, and technically feasible, but that the installation of EFVs would not be cost beneficial.

During the period 1982–1985, the GRI, a private, not-for-profit organization of natural gas pipeline and distribution companies that conducts gas-related research and development programs on behalf of its members, issued two reports in response to NTSB recommendations P–76–9A, P–80–55, P–81–35 and P–81–36; "Assessment of Excess Flow Valves in Gas Distribution Service" (GRI–85/0150), and "Costs and Benefits of Excess Flow Valves in Gas Distribution Services" (GRI–86/0022).

Based on information received from a questionnaire distributed to gas distribution companies, GRI determined that 12.2 million services (operating at pressures at or above 10 psig) of the universe of 41.4 million services in operation in 1981 were potentially suitable for EFVs. The average cost of an EFV was reported as $18.25. Installation costs were $405 for paved areas and $240 for unpaved areas (in 1982 dollars). This included costs of excavating and exposing the service line for the sole purpose of installing an EFV. Both the valve study and the cost-benefit study concluded that the cost of installation of EFVs in service lines could not be justified by potential benefits.

GRI conducted laboratory tests to determine the operating characteristics of those EFVs commercially available at that time. GRI tested the devices for performance, and the effects of pressure surges, volume surges, temperature, service line length and diameter, and solid particle contamination. The GRI assessment report concluded that EFVs operate when distribution line pressure is 10 psig or greater, but did not specify the minimum operating pressure for those valves available at the time.

In 1991, GRI had its contractor, Risk and Industrial Safety Consultants, Inc. (RISC) update the prior study of costs and benefits. RISC once again found that the installation of EFVs where technically feasible would not be cost beneficial.

NTSB has disagreed both with GRI's conclusions regarding the use and installation of EFVs and with its cost-benefit analysis. NTSB has frequently stated that the GRI reports contain unsupported assumptions, excessive cost figures, use of biased data for performing some of the assessments, and improper use of data averaging in developing EFV cost and effectiveness conclusions.

The record of service line incidents and the NTSB recommendations, as well as its concern regarding the GRI studies, and differing views by gas distribution companies as to EFV performance reliability, led RSPA to gather additional information through and Advance Notice of Proposed Rulemaking (ANPRM). The ANPRM was intended to provide RSPA with a basis on which to determine if EFVs should be proposed as a means to reduce damage caused by service line ruptures.

To develop the proposal in this Notice, RSPA conducted a benefit-cost study using data (1) supplied by commenters in response to the ANPRM, and (2) from the RSPA incident file. Analysts at the Volpe National Transportation Systems Center analyzed the data and determined that the benefit-cost ratio for installing EFVs will range from 1.04 to 1.73, a continuously positive ratio. The major differences between the RSPA study and prior studies are in the benefits regarding property damage and the cost of fire and police services. The RSPA study gives benefit credit for mitigating nonreportable property damages when the damage is less than $5,000. The study also considers costs of fire and police services incurred in fighting fires and responding to explosions, which are direct consequences of incidents involving ruptured gas service lines. RSPA seeks additional information concerning whether use of EFVs would result in decreased use of such emergency crews, with resulting cost savings. The benefit-cost study is on file in the Docket.

The ANPRM

RSPA issued an ANPRM (55 FR 52188, December 20, 1990) inviting comments on the desirability of requiring the installation of EFVs on gas distribution service lines to reduce the damage from service line ruptures. The ANPRM reviewed the history of service line incidents and summarized the NTSB recommendations and GRI studies previously discussed. The ANPRM also contained a questionnaire to collect current operational data on the use of EFVs by natural gas distributors. The questionnaire subdivided the comments into three categories of operator: those utilities that have never used EFVs, 1a; those utilities that have used EFVs in the past but not longer use them, 1b; and those utilities currently using or installing EFVs, 1c. Those commenting but not included in the above categories (such as industry trade groups or manufacturers) were classified as "other" for discussion in this NPRM. RSPA has carefully evaluated the information obtained in response to the ANPRM and has determined that EFVs are a distinct means of reducing the consequences of pipeline incidents, and that installation of EFVs would improve pipeline safety. The information has enabled us, as Pub. L. 102–508 requires, to propose circumstances under which EFVs should be installed.

Comments provided by all categories of commenters are discussed below. To avoid repetition, similar comments made in more than one category are discussed in only one comment section.

Comments by 1a Commenters (Never Used EFVs)

One hundred-thirty nine operators in this category responded. Those commenters operate 22.4 million of the 55 million (46.3 million of which are residential lines) service lines in use at present. All opposed the required use of EFVs. Their comments are summarized below.

Comment on One-Call Programs: Fifty three commenters said greater use of one-call programs will reduce service line incidents to such a low level that EFVs will not be necessary. Several 1b and 1c commenters, several state public service commissions, and the American Gas Association (AGA) made similar statements. Some of these commenters cited a steady decline in incidents caused by outside parties damaging underground facilities as the use of one-call notification becomes more widespread. The AGA recommended stronger state laws that require all owners of underground facilities to join one-call systems with strict penalties for those excavators who fail to use the system. AGA also advocated vigorous enforcement of these laws.

Response: The one-call program is an important component of pipeline safety, intended to prevent excavation related incidents. The one-call program enables excavators to place a single call to determine whether buried facilities exist in the excavation vicinity, and enables the affected utility to mark its facilities to reduce the occurrence of excavation incidents. RSPA is encouraging States to require that excavators make such a call prior to digging, but RSPA is also aware that certain city and state agencies are unwilling to utilize the one-call system. RSPA agrees with AGA that state laws should be more effective in preventing

service line incidents. However, even with vigorously enforced one-call laws designed to prevent incidents, such incidents still occur and may result in death, injury, property damage, fire, or explosion. EFVs are intended to mitigate the consequences of these incidents, and as such represent a distinct element in protecting the public.

While RSPA data shows improving trends with respect to pipeline damage by outside parties, such damage still accounts for over 30 percent of reportable incidents. Reportable incidents under 49 CFR 191.3 involve a release of gas from a pipeline and loss of life, personal injury necessitating hospitalization, or at least $50,000 in estimated property damage. Moreover, according to an October 1990 Department of Transportation study entitled "An Examination of the Feasibility of Regulating Excavators" mandated by the Pipeline Safety Reauthorization Act of 1988 (Pub. L. 100–561, October 31, 1988), in over 50 percent of these incidents, the excavator had utilized a one-call notification system.

Comment on Incident History: Thirty eight gas company commenters said they did not see the need for EFVs because they had never experienced damaged or broken service line incidents that resulted in death or personal injury. Others stated that an EFV would not have prevented any of their incidents or reduced an incident's adverse consequences.

Response: The data on which RSPA is basing this rulemaking shows otherwise. To determine whether to propose EFVs as a means to improve pipeline safety, RSPA examined its incident data to see if it could identify incidents that would have benefitted from the presence of an EFV. For the period May 1984 to February 1991, RSPA has identified 177 service line incidents where EFVs potentially could have helped. These incidents involved a substantial or catastrophic break in a service line that was operating at 5 psig or greater, and where the nominal diameter of the pipe was 2 inches or less. (These incidents are included in the 317 incidents mentioned previously.) These incidents were reportable under § 191.3, and resulted in 33 deaths, 97 injuries and over $10 million in property damage. RSPA has carefully reviewed these 177 incidents and concludes that the closure of a properly operating EFV would have reduced the consequences of each incident.

In addition to these 177 incidents, RSPA identified two incidents where EFVs were installed and served to mitigate the consequences of each incident. Data on these incidents are displayed in the RSPA benefit-cost analysis included in the Docket.

Furthermore, EFVs could be beneficial in incidents involving a severed line, but resulting in property damage less than $50,000. The benefit-cost analysis includes an estimate of the number of incidents per year that do not meet RSPA's current reporting requirements of $50,000 property damage. The number and cost of these nonreportable incidents were estimated based on RSPA database information prior to June 1984 when the minimum property damage necessary for reporting was $5,000.

An operator cannot assume that it will not experience service line incidents resulting in death, personal injury, or substantial property damage because it does not have a history of such incidents. EFVs are designed to mitigate damage resulting from catastrophic service line damage beyond the control of the operator. Furthermore, EFVs may also be of benefit in those incidents that involve property damage less than that required by RSPA incident reporting requirements. According to RSPA's analysis, more than one-third of the fatalities and more than one-quarter of the injuries associated with gas leaks occurred with two of the 69 companies or utilities involved in accidents during this period. RSPA requests comments about the effect that inclusion of these cases may have on this analysis.

Comment on Cost and Reliability of EFVs: Thirty 1a commenters, the Georgia Public Service Commission, the North Carolina Utilities Commission, the Wyoming Public Service Commission and several 1b commenters stated that EFVs are unreliable, too expensive to install, and not cost effective. The District of Columbia Public Service Commission and the Kentucky Public Service Commission supported the installation of EFVs, but were concerned about EFV reliability. The California Public Utilities Commission believes that EFV usage should be analyzed on a state-by-state basis and that EFVs should be installed according to state-specific findings regarding applicability and reliability. California further stated that California utilities are laboratory testing the performance of all the EFVs on the market and are exploring conditions under which EFVs may be beneficial. The Colorado Public Utilities Commission did not respond to the ANPRM, but sent information regarding their review of EFV usage and the public hearing they held December 20, 1990. Colorado is sponsoring experimental installation of EFVs through its utilities to determine EFV reliability.

Response: RSPA has relied on the data submitted by those utilities that install EFVs on a regular basis. Because EFVs appear reliable when properly sized and installed according to the capacity of the line and the requirements of the homeowner, this NPRM proposes sizing and installation criteria.

A benefit-cost study accompanying this document supports this proposed rulemaking. The costs associated with EFVs included materials, labor, and false closures. The benefits included lives saved, injuries prevented, property loss avoided, and emergency response services unused. The study concluded that because the benefit-to-cost ratio is greater than 1.00, the installation of EFVs on all new or replaced single-family residential natural gas services of 2 inch diameter or less operating at 10 psig or above would be cost beneficial.

It should be noted that catastrophic service line breaks are not limited to one region of the country; rather, excavator line breaks occur in all climates and regions of the country. RSPA received comments from three of the four utilities that are participating in the California study. We also received a copy of the June 26, 1991 report by the California utilities documenting the results of laboratory tests. This information along with other responses to the ANPRM indicated that EFVs have been tested and used successfully throughout the country. We received no data indicating major variations in EFV operation on the basis of geographic location. Therefore, on the basis of our data and the benefit-cost results, we propose to require EFV installation on distribution systems throughout the United States and Puerto Rico under conditions discussed below.

Comment on Use of Plastic Pipe: Commenters in categories 1a and 1b stated that breaks in polyethylene lines occur where the line is struck, not in the house or at the meter set where the threat to life and property is more pronounced. Consequently, these commenters argued that installing polyethylene pipe would negate the need for using EFVs.

Response: RSPA agrees that plastic pipe tends to rupture where the line is struck, and that the threat to homes and surroundings may be reduced; however, the danger to the excavator is increased if gas fills a trench where a worker is located. Thus, the danger point is moved, not eliminated. In one incident in the RSPA file, a worker in a trench cut both a gas service line and an electric line. The gas flashed, but the

EFV immediately shut off. The result was a slightly injured worker. RSPA assumes that the injury would have been more severe if no EFV had been installed and the flow of gas had continued to feed the fire.

Comment on Additional Pressure Drop Due to EFVs: Seven utilities said that EFVs would introduce a pressure drop in the service line, charging the distribution system design parameters, and necessitating costly changes to the system itself.

Response: None of the 16 operators who currently install EFVs reported problems of this nature. But, in order to accommodate the effects of additional pressure drop due to the EFV, and to enhance the likelihood that EFV's will operate properly in long lines, RSPA proposes to raise the threshold requirement for EFV installation from 5 psig as was described in the ANPRM to 10 psig. The additional 5 psig should be sufficient to operate the service and the EFV.

The proposed rule does not require operators to change their system design parameters. The proposed rule merely establishes a minimum service line pressure of 10 psig before an EFV would be required to be installed.

Comment on Alternative Sources of Protection: Six utilities stated that the effort and money spent on EFVs for new and replaced lines will not address the old lines. These commenters said that time and money would be better spent implementing protection of old, as well as new, service lines. Commenters in all categories suggested alternative efforts to protect all lines such as one-call programs, leak surveys, cathodic protection, employee training, maintenance programs, regulation of customer-owned service lines, renewal of old lines, protection for outside meter sets, and public education.

Response: The suggested alternative sources of protection suggested by commenters have merit, and several are regulatory requirements currently applicable to all service lines. Again, it is important to note that these requirements, which are designed to prevent service line incidents, complement, rather than supplant the mitigation benefits of EFVs. Gradually through service line replacements, the whole residential system could be safeguarded by the installation of EFVs.

Comment on Testing EFVs: Two commenters stated that if EFVs are required, they will be the only safety device mandated to be installed on pipelines which are not required to be tested periodically.

Response: As discussed below, RSPA is proposing that a utility test EFVs upon installation and during regular maintenance when the service meter set is removed.

Comments by 1b Commenters (Have Used EFVs in the Past but No Longer Use Them)

A total of 16 operators, operating 5.6 million, or 10 percent, of the 55 million service lines currently installed, responded that they had installed EFVs in the past but no longer install them. The questionnaire focused on operators' more recent experience in installing EFVs by requesting data on installation from 1980–1984 and 1985 to the present. Most of the operators who responded had installed only a few EFVs as a test or on a trial basis prior to 1980. However, one operator reported installing about 15,000 EFVs prior to 1980, three reported installing 600 EFVs between 1980–1984, and two operators reported installing 65 EFVs since 1985.

All of the operators responding in the 1b category said that installation of EFVs in service lines should not be mandatory. However, most indicated that EFV installation could be beneficial by reducing the hazard of escaping gas to repair personnel after a failure and reducing the potential for a fire from the accumulation and migration of such gas.

Comment on Inadvertent Closing and Failure to Reset: Numerous operators in this category and category 1a, and several state commissions said EFVs were unreliable because they often inadvertently closed, and frequently failed to reset, necessitating excavation of the service line and removal of the EFV before service could be restored to the customer.

Commenters frequently mentioned that contaminants such as oil, line dust, dirt, scale, weld slag, and other debris either caused inadvertent closing, or prevented an EFV from closing.

Another frequently cited cause for inadvertent closing was cold weather. One operator said that EFVs freeze on rural lines in cold weather. Two other commenters noted the potential hazard to the customer through loss of heat if the EFV closes during the winter. These commenters explained that in extremely cold weather gas volume to the customer increases and pressure in the main decreases, causing the EFV to activate, and resulting in a shutoff of gas flow to the customer. Interruption of a customer's gas service and ensuing loss of heat could cause problems inside the residence if service reinstatement is delayed.

Response: Operators documented an improper closing rate of 4.6 percent for valves installed between 1980–1984 and of 10 percent for valves installed after 1984. These closing rates are based on limited data. However, RSPA finds this high rate of improper closing unacceptable. Operators indicated that improper closing was due to improper installation of the EFV for the operating conditions of the distribution system, such as very low service line pressure in the winter, and to incorrect operating procedures, such as opening the service line valve too quickly.

Therefore, to reduce the frequency of improper closing, the proposed regulations (1) prescribe performance criteria for the installation of new EFVs; and, (2) limit the installation to those service lines whose pressure is not intended to drop below 10 psig.

Furthermore, an EFV's inadvertent closing can result from the presence of contaminants in the gas stream. Manufacturers do not recommend EFV installation in locations where oil, condensate or hydrates may contaminate the line, and cause the EFV to malfunction. Therefore, to reduce this problem, the performance criteria proposed in this NPRM provide that EFV installation is not required in those situations in which the operator is able to demonstrate, based on prior experience, that contaminants exist in the gas stream that will cause a malfunction of the EFV. In this regard, RSPA seeks information on those areas where contaminants may preclude the installation of EFVs.

A discussion of the resetting of EFVs is included below under Comment on Bypass.

Currently, most operators using EFVs are in localities that have very cold winters. However, these users do not report that cold weather has caused valves to close prematurely. One operator stated that its service lines are usually installed at depths below the frost line. RSPA believes that the problem of EFV freeze up on service lines in cold weather can be solved by proper installation of the service line.

RSPA requests data on how often EFVs must be excavated and replaced rather than being reset by "backpressuring." If possible, commenters should estimate the percentage of cases of false closures in which the EFV must be replaced. Based on any experience under procedures similar to the proposed procedures, would the proposal lessen the number that must be excavated and replaced? By how much?

Comment on Increased Load: Several commenters stated that, if a customer adds load (such as several larger gas consuming devices), without informing the utility company, the overall load at a given pressure may reach the EFV

capacity, causing it to close. AGA also made this comment.

Response: Operators responding to the questionnaire did not document any incidents of closing due to additional gas load. However, a utility could resolve the situation by informing a customer of the consequences of adding additional load to its system without informing the utility.

In most cases, EFV capacity will be greater than meter capacity. If the customer adds enough load that the volumes increase to the capacity of the meter, the customer will call the utility because the available gas will be insufficient. In these cases, the utility can make a proper judgment as to EFV volume requirements. In unusual cases, the EFV would need to be replaced.

Comment on Bypass: Operators in the 1a, 1b, and 1c categories along with several state public service commissions noted potential problems with EFVs equipped with a bypass feature. Those commenters stated that EFVs may lead to unauthorized and potentially hazardous repairs by an excavator. For example, an excavator could sever a service line and activate the EFV, complete work (because the EFV reduces the flow of gas after activation), make an unauthorized repair, allow service to be restored through the bypass, and cover the line. Under this example, the utility would not be aware of the damage. Furthermore, an EFV with an automatic reset or bypass feature would allow gas to bypass the closing mechanism, and possibly find a source of ignition in a customer's residence.

Response: RSPA is aware that an excavator may make an unsanctioned repair to a service line after damaging it. In fact, the most severe incident RSPA studied resulted in eight deaths and occurred after an unsanctioned repair to a service line. To preclude this problem, this rulemaking proposes to not allow installation of EFVs with the automatic reset or bypass feature, thus preventing gas bypass when the EFV closes. Accordingly, EFVs should have a positive effect on excavation practices because the excavator will need to call the utility to restore service if a line is severed and the EFV closes. The utility would remove the meter set and backpressure the line after making the appropriate repairs.

Disallowing bypass will also prevent the potential hazard to the customer. Should an excavator not notify the utility about the damage, the customer will be without gas service, and will have to notify the company to restore service. The only inconvenience would be loss of service until the utility can make the repair; the danger of migrating gas will not exist.

The benefit-cost study considered the cost savings associated with installing EFVs that have a bypass or reset feature. Because the benefit-cost study did not contain information on EFVs without this feature, RSPA seeks comment on all costs associated with manually excavating and resetting EFVs that do not have a bypass or reset feature.

Comment on Standards for EFVs: One commenter said that no federal requirements or industry standards exist that define minimum performance requirements for EFVs. This commenter indicated that all other components of gas distribution systems have federal standards and industry standards that clearly define performance requirements. In this commenter's company, an in-house EFV testing program revealed a considerable failure rate when EFVs from two manufacturers were tested against the manufacturers' published specifications for shutoff rate and bypass flow rate. This commenter rejected and returned to the manufacturers a significant number of EFVs. The commenter stated that even after the rigorous testing program, 10 to 20 percent of the installed EFVs have failed in service and have been removed.

Response: RSPA is concerned about the lack of industry standards and performance standards for EFVs. Because of this concern, the development of standards for EFV performance is an essential part of this rulemaking. Accordingly, to improve EFV reliability, RSPA is proposing that EFVs satisfy certain performance criteria as discussed at greater length below.

Comment on Small Leaks: Some commenters indicated EFVs would not activate and close if the service line leak were small.

Response: RSPA agrees with this comment. EFVs are intended to shut off the flow of gas only on large releases of gas such as when a service line is severed as a result of excavator damage.

Comment on Hazards of EFV Closing and Resetting: Two category 1b commenters discussed the possibility of an EFV on the service line closing, cutting the flow of gas to the customer's appliances, and extinguishing the pilot lights on the appliances. The Texas Gas Association also made this comment. A category 1a commenter cited an instance where three pilots (one furnace and two water heaters) failed to close when a distribution line serving 200 residences was depressured. These conditions are similar to the condition of an EFV with a bypass closing and resetting automatically. These commenters noted the potential hazard if an EFV closed and upon resetting, allowed raw gas to vent into a customer's home.

Response: As noted previously, the proposed rulemaking prohibits the installation of EFVs with a bypass feature. Without a bypass feature, gas service to the customer would be shut off entirely and the customer would need to call the utility to restore service.

Comments by 1c Commenters (Currently Using and/or Installing EFVs)

Twenty-two operators responded that they currently use or install EFVs. These commenters operate 4.7 million, or 8.5 percent, of the 55 million existing service lines and have installed 230,000 EFVs. They operate in northern and southern states and service pressures under which they install EFVs vary from 10 psig to 720 psig. No 1c operator recommended the mandatory installation of EFVs. Their comments, if not previously discussed, are summarized below.

Comment on Minimum Pressure to Install EFVs: The two operators that install the most EFVs, East Ohio Gas Company and Bay State Gas Company, reported that they do not use EFVs in service lines where the pressure on the service inlet drops below 10 psig at any time during the year, because they believe that EFV operation below 10 psig is not reliable. These operators install EFVs for residential customers, where the gas is clean (free of oil and solid materials such as sand or welding slag) and where only one meter is used.

Response: RSPA agrees that EFVs should only be used under conditions where the valve will perform satisfactorily. Bay State and East Ohio's experiences with EFVs are credible indications of conditions under which EFVs will perform reliably. The proposed regulations reflect these operators' experience and recommendations.

Comment on Service Line Length: At least two commenters do not install EFVs on long service lines. Because they believe an EFV would not engage if a break occurs a long distance downstream of the valve, one operator limited installations to service lines shorter than 50 feet, another to 300 feet.

Response: Commenters may be correct in asserting that an EFV would not engage in some lines if a break occurs a long distance downstream from the EFV. We believe that most line breaks would be near the main where most excavation occurs. However, because of the wide disparity in service line length where the two commenters use EFVs, RSPA solicits data on what distance a

break downstream of the EFV would result in the EFV not functioning properly.

An alternative would be to require installation of two or more EFVs spaced appropriately throughout the line so that the entire line would be protected. RSPA seeks information on this possible solution to the long service line issue.

Comment on Use of EFVs in Commercial Applications: Some operators stated that EFVs are well suited for gas flows at single family residential homes, but are inappropriate for multifamily apartment buildings, small commercial customers or industrial gas users. The Ohio Gas Association also commented that EFVs should not be installed on commercial and industrial service lines.

Response: Pub. L. 102–508 requires RSPA in prescribing circumstances for EFV use, to consider the types of customers to which the distribution system supplies natural gas, including hospitals, schools, and commercial enterprises. This NPRM proposes the installation of EFVs on single family residential service lines. Single family residential service lines, unlike commercial applications with fluctuating loads, do not fluctuate sufficiently to make EFV use inappropriate. RSPA is not aware of any EFV that has been designed for, and proven reliable in, applications such as hospitals, schools and commercial enterprises. RSPA seeks public comment on the availability of EFVs for commercial applications.

Comments by Other Commenters (Non-utilities)

RSPA received several comments from organizations other than gas utilities, which RSPA has grouped under the "other" category. Other commenters included the NTSB, several states, the Gas Safety Action Council (GASAC), several manufacturers of EFVs, and several industry representatives.

Comment by NTSB Regarding Effectiveness of Specific EFVs: NTSB commented that RSPA should consider that EFVs reduce incidents due to subsidence, earthquakes, extensive corrosion, vehicular damage, and separation from the main at compression couplings and service tees.

Response: We agree that EFVs will reduce the adverse effects of incidents caused by many of these events. In fact, the RSPA database used in making the benefit-cost study contains several incidents that were caused by subsidence, extensive corrosion, and vehicular damage. However, we disagree that EFVs would engage due to a separation of the main and service line since EFVs are installed on the service line downstream from the main. Also, RSPA believes that in most cases a small leak due to corrosion would not cause an EFV to engage.

Comment by NTSB About Use of Data: The NTSB stated that operators responding to the ANPRM should provide data concerning the effectiveness of each EFV type and manufacturer. Such data should be used to write operational criteria to assure acceptable EFVs.

Response: In the ANPRM, RSPA did not solicit information on EFV manufacturer or size. Instead, we sought to determine if EFVs work, if they are cost effective, and under what circumstances they should be installed. RSPA agrees that operational criteria are needed; therefore, RSPA is proposing standards for EFV construction and operation applicable to all EFVs installed in gas service lines after the effective date of the final rule.

Comment by NTSB on Requirement To Install EFVs: The NTSB recommend that RSPA require EFV installation whenever a segment of service line is uncovered near a gas main. However, AGA commented that the ANPRM proposal to require EFV installation if the service tee is exposed would require the operator to install an EFV on all service lines regardless of whether the operator intends to install or renew the service. AGA said that this requirement would cost an additional $1,000 per EFV if the operator did not intend to renew the service line. The Ohio Gas Association said that retrofitting should not be required.

Response: RSPA proposes to require EFV installation only when a new service line is installed or when an existing service line is replaced. Although the ANPRM suggested installation of an EFV "when the service line connection to the main distribution line is uncovered," the language has been changed because it could be interpreted erroneously to require EFV installation even though the service line is not being replaced.

Comment by NTSB on Cost of Installing EFVs: NTSB stated that the cost of installing EFVs in new and replaced gas service lines is not significant.

Response: All costs associated with this rulemaking are considered, especially the cost of implementation. Based on the responses we received concerning costs, RSPA agrees that the costs to install and maintain EFVs are low.

As analyzed in the benefit-cost study for this NPRM, the data on costs received from the responses to the questionnaire indicate that installing an EFV costs $28. Included in this figure are the cost of the EFV ($23), the cost of the extra labor for installation, and the cost of materials used in installing the EFV. If this proposed rule goes into effect, the total installation cost is expected to decline to $20.

Comment by GASAC on Cost of Incidents: GASAC supplied RSPA with a binder containing several hundred articles from newspapers throughout the United States relating to accidents, fires and explosions attributed by the press to gas pipeline leaks. GASAC provided this information because it believes the cost and frequency of incidents have been severely understated in other benefit-cost studies. GASAC supports NTSB's recommendations to require the installation of EFVs on high-pressure, single-family residential service lines. GASAC further stated that, according to its research, only one out of seven natural gas incidents is reported at the federal level. GASAC believes that the low level of reporting conveys an inaccurate picture of the extent of natural gas incidents and results in an underestimation of the costs associated with incidents.

Response: RSPA appreciates GASAC's work and effort in gathering this information. The information was presented to RSPA for use in preparation of the benefit-cost study. Based on GASAC's study, costs involving firefighting and evacuation were included in the RSPA benefit-cost study.

Many incidents occur that are not reported. RSPA requires reports for incidents that occur on those gas pipelines that it regulates. By definition (see § 192.3) a service line transports gas from a common source of supply to a customer meter or to a customer's piping, whichever is further downstream, or to the connection to a customer's piping if there is no customer meter. Therefore, gas leaks and incidents that occur downstream from the meter in the customer-owned portion of the line or within a home are not required to be reported to RSPA. Furthermore, the reporting regulations at 49 CFR 191.3 require a report only if gas is released from a pipeline and death, personal injury requiring hospitalization, or property damage of $50,000 is sustained. Incidents not meeting the reporting requirements of 49 CFR 191.3 are not required to be reported to RSPA. Accordingly, RSPA has relied on its reportable incident data to prepare the benefit-cost study. However, RSPA also incorporated its estimate of the number and cost of

incidents per year that do not meet reporting criteria. (See the benefit-cost study included in the Docket.)

Comment by GASAC on Incident Where Line Was Marked by One-Call Program Participant: GASAC described an incident where three residents were killed and five workers were injured when an experienced worker struck a gas service line to a nursing home in Greendale, Wisconsin. The line had been marked by a one-call program participant.

Response: GASAC's point that lines are struck even after being marked is well made. We are proposing the installation of EFVs on service lines because we are aware that one-call programs are not foolproof. However, RSPA is not proposing to require the installation of EFVs on multi-family dwellings since RSPA is not aware of an EFV capable of serving varying multi-family or commercial loads.

Comment by AGA on Incident Frequency: AGA stated that statistics taken from RSPA's incident data show there is no difference in the number of incidents per service between companies that use EFVs and those that do not use EFVs. AGA's statement is based on their evaluation of RSPA's data on 99 of the largest distribution companies.

Response: RSPA believes that service lines with EFVs currently installed are but a small fraction of the services operated by the companies installing them, so EFVs likely have a minor impact on any company-wide incident frequency rate. However, RSPA seeks specific information on the number of incidents and the damages incurred on service lines where EFVs have been installed. In the incident file from May 1984 to February 1991, we only discovered two incidents where EFVs were installed. The two incidents were mentioned under Comment on Incident History and are discussed in the benefit-cost analysis.

Comment by AGA on Pipe Breaks: AGA doubted whether a pipe break inside a home would cause enough pressure drop to cause an EFV to close since the regulator and meter would not allow enough gas flow to trip the EFV.

Response: Under the proposed rules, the operator has the flexibility to install an EFV that best fills its needs. If the EFV capacity is greater than regulator and meter capacity, the EFV would not close falsely due to the addition of new gas appliances or due to a gas line break within the home because the meter or regulator, not the EFV, would limit the volume of gas available to the home. If EFV capacity is less than regulator and meter capacity, the EFV could close due to additional load or from a break within the house.

Comment by AGA on Public Safety Costs of Incidents: AGA suggested that it is inappropriate to consider public safety agency costs (fire, police and ambulance as suggested by GASAC) when preparing a benefit-cost analysis.

Response: All appropriate costs should be considered when implementing a regulatory requirement. Since a community incurs public safety costs when a gas line incident occurs, it is appropriate to consider these costs. However, RSPA will consider comments which differentiate fixed emergency response costs from costs directly attributable to gas leaks. Public safety costs which would have been incurred regardless of whether an accident occurred will not be included in the benefit-cost analysis.

Comment by AGA on Trial Period for Testing EFVs: AGA supported a study to track the performance of EFVs for a one to two year period and suggested that rulemaking be deferred until the data from that study could be analyzed.

Response: In addition to data received from those 22 operators currently using EFVs, RSPA received comments that the following operators are currently field testing EFVs: Bay State Gas Company (a currently user who is also testing 200 low pressure EFVs), Greeley Gas Company, KPL Gas Service Company, Peoples Natural Gas Company, Public Service Company of Colorado, South Jersey Gas Company, Virginia Natural Gas Company and Washington Gas Light Company. Four California utilities are conducting laboratory testing of EFVs: Pacific Gas and Electric Company, San Diego Gas and Electric Company, Southern California Gas Company and Southwest Gas Corporation. Additionally, the National Association of Regulatory Utility Commissioners (NARUC) has conducted a study.

RSPA is pleased with the continuing work by these organizations to supplement our incident file data and our ANPRM response data. We intend to monitor the progress of these testing programs and to utilize the information developed as it becomes available; however, we believe that there is already sufficient information on which to base the proposals in this rulemaking. The preliminary findings from the studies should be available prior to a final rulemaking. RSPA will consider the results of these studies prior to issuance of a final regulation and will consider any significant reliability problems identified in these studies.

Comment by AGA on Availability of EFVs: AGA questioned if adequate production capacity is available to manufacture 600,000 to 1,000,000 EFVs annually.

Response: Based on our data, RSPA believes approximately 900,000 service lines are installed or replaced each year. No party responding to the ANPRM advised RSPA of a shortage of materials to manufacture EFVs. If EFVs prove to be in short supply, RSPA will allow operators additional time to comply with the new regulations.

Comment by AGA on Performance Standards for EFVs: AGA stated that no performance standards exist for EFVs except for manufacturers' specifications and suggested that RSPA should encourage the development of consensus standards such as those currently written for other gas products by the American National Standards Institute (ANSI).

Response: Based on the available data, it does not appear that manufacturers' specifications are satisfactory for ensuring the safety and performance of EFVs. Accordingly, as part of this rulemaking, RSPA has developed and proposes performance standards for the manufacture, testing, installation and operation of EFVs. We solicit comments regarding these proposed standards.

Also, we are aware that the American Society of Mechanical Engineers B31.8 Committee is considering whether to accept the assignment of developing standards for EFVs. We will monitor the Committee's development in this area.

Comment by American Public Gas Association on Voluntary Installation of EFVs: The American Public Gas Association suggested that RSPA encourage operators, on a voluntary basis, to install EFVs on new or replacement services as another option to the three proposed in the ANPRM.

Response: RSPA believes recent developments regarding EFVs such as the NTSB findings and the ANPRM have already had the effect on operators that the Association recommended. At least 22 operators are currently using EFVs on a regular or trial basis and 6 others are testing the device, either in the laboratory or in service. These operators will be able to contribute their findings when responding to this proposed rulemaking.

Comment by New England Gas Association on Erosion of EFV Springs: The New England Gas Association (NEGA) suggested that rust, sand and grit in a system may erode the EFV's spring mechanism and lead to false closure. NEGA suggested further study to investigate this matter.

Response: The proposed rules would not require that EFVs be installed in areas where operators can demonstrate

that contaminants in the gas stream (e.g. rust, sand, grit or hydrocarbons) will affect the performance of the EFV.

Comment from Manufacturers: RSPA received comments from three manufacturers of EFVs: R.W. Lyall & Company, Inc., Metal Goods Manufacturing Company, and UMAC Incorporated. The manufacturers described the EFVs that are available for sale and presented tabular or graphical statistics denoting the operating characteristics of their valves. No manufacturer recommended EFV installation in all circumstances. One pointed out that the gas company should have discretion to identify excessive contamination or low pressure when operating problems might occur and not be required to install EFVs in those circumstances.

Response: RSPA thanks the manufacturers for their brochures and comments regarding the availability, operating characteristics, and history of their valves, especially for the discussion regarding the appropriate applications for their products. The manufacturers' data, along with other sources, was used in preparing the proposed regulations and EFV performance standards.

RSPA does not propose to require utilities to install EFVs in applications where the valve will not work or has not been successfully used such as in contaminated gas or low pressure systems. The proposed rules provide guidelines specifying conditions under which EFVs will be required.

Advisory Committee Reviews

Section 4(b) of the Natural Gas Pipeline Safety Act of 1968, as amended (49 App. U.S.C. 1673(b)) requires RSPA to submit any proposed safety standard established under the statute to a 15-member committee for consideration.

RSPA presented the status of EFV rulemaking to the Technical Pipelines Safety Standards Committee on two occasions: February 20, 1991 and September 10, 1991. On neither occasion did RSPA request a vote regarding EFV installation; however, after discussion on September 10, 1991, the Committee recommended that RSPA work with a number of local natural gas distribution system operators to have them voluntarily install EFVs, evaluate them, and report the results.

The Committee also recommended that RSPA take the lead in coordinating with other interested and informed parties such as Congressional Staff, NTSB, NARUC, National Association of Pipeline Safety Representatives (NAPSR), GRI, EFV manufacturers, Industry Associations and standard writing associations to develop standards for EFV design, manufacture, quality control, testing, and certification. The Committee recommended that this action be completed prior to issuance of any Federal Regulations. As previously discussed, since these meetings, Pub. L. 102–508 was passed, which requires the Department to prescribe circumstances where EFVs must be installed and to establish performance standards for the EFVs.

Nevertheless, we have addressed the Committee's recommendations. After studying the responses from those companies currently using and/or installing EFVs on service lines, RSPA has determined that the following 22 companies have already installed over 230,000 EFVs on gas service lines during the last 10 years: Bay State Gas Company, Boston Gas Company, The Brooklyn Union Gas Company, the City of Clarence, Missouri, Commonwealth Gas Company, Colonial Gas Company, Connecticut Natural Gas Corporation, The East Ohio Gas Company, the City of Elberton, Georgia, Great Plains Natural Gas Company, Long Island Lighting Company, KPL Gas Service, Michigan Gas Utilities, New Jersey Natural Gas Company, Niagara Mohawk Power Corporation, The Peoples Natural Gas Company, South Jersey Gas Company, UGI Corporation, an unidentified utility, Virginia Natural Gas, Washington Gas Light Company, and Wisconsin Gas Company. The climatic conditions and applications under which these utilities install EFVs differ widely which leads us to conclude that EFVs work under many varied operating conditions and applications.

Furthermore, the following utilities are testing EFVs by installing them in service lines or by examining EFV performance through laboratory testing: Greeley Gas Company, Pacific Gas and Electric, Public Service Company of Colorado, San Diego Gas Company, Southern California Gas and Electric and Southwest Gas Company. NARUC has also prepared a study of EFVs on behalf of the regulatory commissioners.

In a letter dated August 1, 1991 to the Chairman of the American Society of Mechanical Engineers (ASME) B16 Committee on Standardization of Valves, Flanges, Fittings and Gaskets, the AGA requested that the Committee undertake the establishment of a national standard for EFVs. The letter stated that such a standard would protect the safety of the public and allay the concerns of gas utilities and EFV manufacturers. ASME has since referred the matter to its B31.8 committee. RSPA supports the development of a universally prepared and accepted design, construction and operational safety standard. However, committee action could be a long process that might delay this rulemaking for several years, and exceed the statutorily mandated deadline. Therefore, based on all the information that RSPA has received, RSPA is proposing performance standards for EFVs as part of this rulemaking.

Discussion

The 317 incidents RSPA examined that occurred between May 1984 and February 1991 show the personal harm and property damage that can result from a service line incident. Because these incidents and the resulting damage persist despite the success of one-call damage prevention programs and other measures aimed at preventing pipeline incidents, RSPA feels that reliance on preventative measures is not enough, and that additional protection is needed. RSPA seeks to minimize the personal and property damage resulting from an incident by adopting rules requiring the installation of EFVs in service lines to shut off gas leaks when a service line is severely damaged. By shutting off a gas leak, an EFV can mitigate an incident's consequences, such as death, injury, fire and explosion, property damage and loss of gas.

RSPA has looked at the issue of installation of EFVs for nearly 20 years. Anecdotal data during this time suggested that EFVs are not reliable. Commenters to the ANPRM questionnaire have reinforced the doubts about the reliability of EFVs. In particular, commenters expressed concern that the valves would not work when they were supposed to or that they would interfere with normal operation of the service line.

RSPA shares these concerns. As previously mentioned, operators documented an improper closing rate of 4.6 percent for valves installed between 1980–1984 and of 10 percent of valves installed after 1984. Although the two operators, Bay State Gas Company and East Ohio Gas Company, that have the most experience in installing EFVs do not report reliability problems, RSPA wants to ensure that an EFV performs reliably.

In this proposed rulemaking to require the installation of EFVs on nearly all new and replaced single customer residential service lines, RSPA proposes to improve EFV reliability by requiring that EFVs satisfy certain proposed performance criteria. The proposed criteria include that each EFV pass a testing program that assures the

EFV meets the manufacturer's published specifications for flow rate within a reasonable tolerance of 10 percent with the testing at the lowest pressure allowed (10 psig) for all the types of gas that may be used in the operator's distribution system. The types of gas might be natural gas or a natural gas/propane mixture, each of which affect the performance of an EFV differently. In addition, EFVs will not be required if the operator is able to demonstrate that contaminants in the gas will cause the valve to malfunction. EFVs will have to meet the current applicable performance rules for the selection and qualification of materials in Subpart B and design of pipeline components in Subpart D of Part 192.

The ANPRM proposed a low pressure threshold of 5 psig for the required installation of EFVs. (EFVs would be required on service lines operating at not less than 5 psig.) Due to comments received in response to the ANPRM, we raised the minimum pressure threshold requirement from 5 psig to 10 psig. The RSPA benefit-cost study results, described later, should not be affected by the pressure change since only 8 of 177 incidents (5 percent), in the study were in the 5 to 10 psig pressure range. Commenters, particularly the two distribution operators with the largest inventory of installed EFVs, believe EFVs operate more reliably at minimum pressures of 10 psig rather than 5 psig.

To increase an EFV's reliability, this rulemaking also proposes that an operator demonstrate that a valve will operate after installation, by a preoperational test of the valve to show that it will close when there is an excess flow in the service line. Furthermore, this test will have to be repeated whenever the customer's meter is removed.

Commenters have been concerned that EFVs be correctly sized so that they will operate properly if the service line is severed. If the maximum flow rate through a service line is close to the maximum flow through the EFV, the EFV will not close because it cannot experience an excess flow. To assure that the valve will close, the maximum flow rate through the service line must be higher than the manufacturer's specified flow rate for which the valve will close. Therefore, the proposed rule requires that the maximum flow through piping, fittings, and other valves in each newly installed or replaced service line in which an EFV is installed must exceed the manufacturer's published flow rating for that excess flow valve by at least 50 percent.

Commenters emphasized that standards do not exist for EFVs, and that operators must trust a manufacturer's specifications regarding EFV construction and operation. Because utility operators should be able to rely on the EFVs they install to perform according to specifications, RSPA believes that detailed standards should be developed by the technical experts in the gas and valve industry who are most competent to develop them. RSPA applauds the effort spearheaded by the AGA to initiate this development. More exacting specifications may ultimately be developed should the ASME B31.8 Committee undertake preparation of standards for EFVs.

The performance standards proposed in this NPRM concerning EFV construction and operation requirements will assure an adequate level of safety. RSPA proposes to require EFVs to be made from suitable materials to withstand the operating and environmental conditions that a service line must endure. The quality control procedures during the manufacturing process should improve an EFV's capability to close according to specifications, which should drastically reduce false closures.

The most significant departure in the proposed rule from the existing EFV design and installation procedures is the elimination of a bypass. Most, if not all installed EFVs, have been designed with a bypass to allow a small amount of gas to travel downstream of the valve after it has falsely closed so it will reset automatically without requiring an operator to excavate and reset the EFV manually. The hazards involved with this procedure are discussed in the comment section. RSPA believes safety to the customer and the public will be increased significantly by requiring the positive action of a service call by the utility operator to the customer's premises whenever an EFV closes.

Another new proposal is that service lines containing EFVs be identified so that an operator's personnel can determine by sight if an EFV is installed and its approximate location relative to the gas main. This proposed requirement is modelled after a state rule in Massachusetts. Unlike other components on a customer's service line, the EFV is buried with no visible indication of its existence. RSPA's purpose in proposing this identification requirement is to make sure an operator's representative responding to a customer's call concerning a gas outage will be aware that the service line contains an EFV so that the representative can take this into account in determining the cause of the outage. For instance, the gas outage may be caused by an EFV which has experienced a false closure. The representative can more quickly analyze the reasons for the outage and restore service to the customer faster if it is known that the service line contains an EFV.

RSPA is not aware of another device that would serve as an effective alternative option to the installation of EFVs. Measures such as one-call programs, leak surveys and employee training serve to reduce the frequency of line breaks. EFVs will complement these pipeline safety measures by reducing the consequences of service line breaks.

Proposal

RSPA proposes to establish a new pipeline safety rule, § 192.381, "Service lines: Excess flow valve requirements." In so doing, RSPA is adopting the NTSB recommendation to "Require the installation of excess flow valves on new and renewed single-family, residential high pressure service lines which have operating conditions compatible with the rated performance parameters of at least one model of commercially available excess flow valve."

This proposed rule would require gas distribution operators to install an EFV on each new or replaced single customer residential gas service line if the inlet pressure to the service line is 10 psig or more. The EFV would have to be installed as close as practical to the main distribution line in order to ensure that the valve protect the maximum length of service line, and for ease in locating the EFV. To ensure that an EFV performs reliably and effectively, the EFV would have to be sized so that it would close automatically if the service line downstream is severed or if the customer meter, regulator or valve is sheared off. This proposal would not require the installation of an EFV where the operator can demonstrate that contaminants in the gas stream will cause the valve to malfunction. For safety purposes, the proposed rule also would not allow a bypass of gas for equalization of pressures on both sides of the EFV.

Furthermore, the proposed regulations would require an operator at initial installation to assure that the manufacturer's flow rating is verified. Upon original installation and each time the meter set is repaired, removed or replaced the operator would be required to determine if the EFV closes automatically. If not, the EFV would be deemed defective and would need to be replaced.

In addition to the proposed new requirements for EFVs, RSPA proposes to change the headings on existing §§ 192.363 and 192.365 to show that the existing rules pertain to all service line valves including excess flow valves.

Rulemaking Analyses

Impact Assessment

Each year, about 300,000 new high pressure service lines are installed and 600,000 existing high pressure service lines are replaced. At a cost of $20 per EFV, the estimated annual impact of requiring EFV installation as proposed herein would be $18 million. Aggregate annual savings of $19–31 million would result from reduced deaths, injuries, fires, explosions and evacuations.

The proposed rule is not major since it will not result in an annual effect on the economy of $100 million or more and will not cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions. Nor would the proposed rule cause significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

In considering this proposed rule and in view of the interest shown by the gas utility operators and Congress, RSPA prepared a Regulatory Impact Evaluation to accompany this proposed rule which is also on file in the Docket. The benefit analysis considers (1) the consequences of not installing EFVs as derived mainly from data in RSPA incident files, (2) the expected reduction in consequences due to the installation of EFVs, and (3) the calculation of discounted value of benefits. The consequences considered include deaths, injuries, property damage, the cost of fighting fires and responding to explosions, and the cost of evacuations.

The cost analysis considers (1) the cost of the valve and the labor to install it, (2) the cost to replace those EFVs that fail to operate properly, and (3) the discounted value of the costs. The study did not include costs to verify flow by testing or to label the service line as these costs were expected to be insignificant.

The ratio of benefit to cost is continuously positive and varies from 1.04 to 1.73 depending on the performance of the valves after installation.

The benefit-cost study did not consider costs associated with performance standards. However, RSPA has concluded that any potential increased cost due to performance standards would be offset by the elimination of the bypass feature and increased production efficiency due to higher demand. Nevertheless, RSPA would be interested in comments on projected costs.

DOT Regulatory Policies and Procedures

The regulation is considered significant under Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979) because it involves a substantial change in regulations affecting gas pipelines and because it concerns a matter of substantial interest to the public and Congress.

Regulatory Flexibility Act

Because the cost of an EFV for a service line will be only $20, and the projected service life of an EFV is 50 years, the cost of compliance with this rule will not be significant. However, we seek information concerning the projected 50-year service life of an EFV.

Accordingly, based on the facts available concerning the impact of the 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. However, we seek such impact information in response to this proposed rulemaking. RSPA criteria for small companies or entities are those which are independently owned and operated and with less then $1,000,000 in revenues.

E.O. 12612

We have analyzed this proposed rule under the criteria of Executive Order 12612 (52 FR 41685; October 30, 1987) and we find that it does not warrant preparation of a Federalism Assessment.

List of Subjects in 49 CFR Part 192

Pipeline Safety, Reporting and recordkeeping requirements.

In consideration of the following, RSPA proposes to amend 49 CFR Part 192 as follows:

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. Part 192 is amended by revising the headings of §§ 192.363 and 192.365 to read as follows:

§ 192.363 Service lines: Service line valve requirements.

* * * * *

§ 192.365 Service lines: Location of service line valves.

* * * * *

3. Part 192 is amended by adding § 192.381 to read as follows:

§ 192.381 Service lines: Excess flow valve requirements.

(a) In addition to the requirements of §§ 192.363 and 192.365, and except for paragraph (h) of this section, each newly installed or replaced single residence service line that operates at a pressure not less than 10 psig must be equipped with an excess flow valve.

(b) The excess flow valve required by paragraph (a) must—

(1) Be installed as close to the main or transmission line as practicable;

(2) Meet the applicable requirements of Subparts B and D of this part;

(3) Be designed to prevent equalization of pressures across the valve after the valve is closed;

(4) Upon original installation and each time the customer's meter is removed or replaced, be tested to determine if it closes automatically;

(5) Close automatically if the service line is severed or if the customer's meter, regulator or service valve is sheared off; and;

(6) Be sized to close within 10 percent of the rated flow specified by the manufacturer.

(c) The operator must assure that the rated flow in paragraph (b)(6) of this section is verified by testing at a pressure of 10 psig for the gas or gases to be transported in the service line.

(d) If, after the effective date of this regulation, an excess flow valve does not close automatically in accordance with paragraph (b)(4) or paragraph (b)(5) of this section, it must be replaced with an excess flow valve meeting the requirements of paragraph (b).

(e) Each excess flow valve installed after the effective date of this regulation must be manufactured in accordance with written specifications that assure that the valve meets the manufacturer's published pressure and flow rate criteria.

(f) The maximum flow through piping, fittings, and other valves in each newly installed or replaced service line in which an excess flow valve is installed must exceed the manufacturer's published flow rating for that excess flow valve by at least 50 percent.

(g) Each service line with an excess flow valve must be physically marked or labeled in the field. The mark or label

must be placed on the service riser pipe or meter assembly and be readily visible to gas company employees.

(h) Installation of an excess flow valve is not required on a service line where the operator can demonstrate, based on prior experience with contaminants in the gas stream, that these contaminants will cause a malfunction of the excess flow valve.

Issued in Washington, DC, on April 16, 1993.

George W. Tenley, Jr.,

Associate Administrator for Pipeline Safety.

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