Committee for committee acceptance of staff action.

6. After the [~~council~~] **National Council of State Boards of Nursing, Incorporated Administration of Examination** committee has reported its decision to the Missouri State Board of Nursing, the candidate will be notified of the decision.

(2) Repeat Examination.

(B) A candidate who does not achieve the passing designation who wishes to review and/or challenge the [~~n~~] National [e] Council [~~l~~] Licensure examination must send a written letter of request to the Missouri State Board of Nursing office by the later of—

(3) Passing Score.

(A) The standard score of three hundred fifty (350) in each subject of the State Board Test Pool Examination for registered nurses shall be the Missouri passing score beginning with series 949 through series 282. Candidates writing the licensing examination prior to the date series 949 was given shall have no grade below sixty-five percent (65%) and shall have attained an average score of seventy percent (70%). Beginning July 1982, the standardized scoring system to be used with the [~~n~~] National [e] Council [~~l~~] Licensure examination for registered nurses will have a passing score of sixteen hundred (1600). Beginning with February 1989, to be eligible for licensure, a candidate must achieve a pass designation on the [~~n~~] National [e] Council [~~l~~] Licensure examination for registered nurses.

(B) For the period March 1, 1954 through February 28, 1958, seventy percent (70%) was required for passing the practical nurse examination. For the period March 1, 1958 to December 31, 1958, the standard score of three hundred (300) was the minimum passing score for the practical nurse examination. As of January 1, 1959, the standard score of three hundred fifty (350) shall be the minimum passing score in Missouri for the State Board of Nursing Test Pool Licensing Examination or the [~~n~~] National [e] Council [~~l~~] Licensure examinationfor practical nurses. Beginning October 1988, to be eligible for licensure, a candidate must achieve a pass designation on the [~~n~~] National [e] Council [~~l~~] Licensure examinationfor practical nurses.

(4) Interstate Licensure by Endorsement in Missouri—Registered Professional Nurses and Licensed Practical Nurses.

(A)7. An individual licensed as a practical nurse by equivalency in another state or on the basis of attending an accredited program of professional nursing must submit a copy of any and all nursing transcripts and all other educational information on which original licensure was based to the Board of Nursing office for evaluation as an equivalent candidate. If current mimimum requirements are met, the individual must write and attain a passing score on the National Council Licensure Examination if s/he has not already done so for licensure in another state.

(8) Intercountry Licensure by Examination in Missouri—Registered Professional Nurse and Practical Nurse.

(C) The board of nursing will cooperate with the [~~United States~~] Immigration Service by advising [~~it~~] **them** of the status of the applicant for nursing licensure.

REVISED STATE AGENCY AND PRIVATE ENTITY COSTS: Since changes made in the Proposed Rule do not alter the cost estimates by more than ten percent, revised cost estimates are not necessary.

Title 4—DEPARTMENT OF ECONOMIC DEVELOPMENT

Division 240—Public Service Commission
Chapter 40—Gas Utilities

ORDER OF RULEMAKING

By the authority contained in sections 386.250, 386.310 and 393.140, RSMo (1986), the Public Service Commission adopts rules as follows:

4 CSR 240-40.020 is adopted.
4 CSR 240-40.030 is adopted.

Notices of Proposed Rulemaking containing the texts of these Proposed Rules were published in the *Missouri Register* on June 1, 1989 (14 MoReg 676—714). The rules, with changes, are reprinted here and will be effective December 15, 1989. All written comments received during the thirty-two day comment period, together with sworn comments made during the hearings on August 16 and 17, 1989, have been given consideration.

SUMMARY OF GENERAL NATURE AND EXTENT OF COMMENTS: Written comments were filed by the City of Springfield (Springfield), Kansas Power & Light Company (KPL), CORRPRO, the City of Kennett (Kennett), United Cities Gas Company (United), St. Joseph Light & Power Company(St. Joseph), UtiliCorp United Inc. (MoPub), the City of Granby (Granby), Office of Public Counsel (PC), Missouri One-Call, Inc. (One-Call), City of Fulton (Fulton), Associated Natural Gas (ANG), Union Electric Company (UE) and Laclede Gas Company (Laclede). Written comments were also filed by the Missouri Gas Utilities Technical Committee (MGUTC), an association representing a number of private and public gas operators. Sworn testimony at the hearing was made by W. Ron Ellis, PSC Pipeline Safety Program Manager, and Robert C. Jaudes, Executive Vice-President, Operations and Marketing, Laclede Gas Company, St. Louis, Missouri. The rule was supported by the Commission's staff, and, to a limited extent, by the Office of Public Counsel. **ANG** feels the proposed rules would contribute very little to safety, would be a significant burden to the operators, and would add costs to its customers and cause some customers to switch to an alternate fuel that is not regulated and not as safe. ANG has achieved a good safety record under the present rules, which, when followed, are adequate. Most problems experienced in Missouri have been caused by improper installation of customer-owned facilities over which utilities have no control. Missouri has had no rules or regulations governing the piping systems downstream of the gas company meter and, therefore, maintenance of most of these systems would be a heavy burden to put on the utility due to the variety of materials and installation procedures which may have been used for these facilities. For these reasons, problems with customer-owned facilities would be better addressed through adoption of a state plumbing code and a more effective odorant program. The existing pipeline safety regulations should be left intact. **Fulton** concurs with the comments submitted on behalf of the MGUTC.

Granby said the rules will increase the costs of operation, which is unconstitutional and unenforceable against Granby or any other municipal system. The "Hancock Amendment" prohibits the commission from ordering increases in expenditures such as these rules require, unless there is a state appropriation made and disbursed to pay Granby for any increased costs. Preliminary estimates of the cost to Granby for replacement of certain gas lines in accordance with the proposal approximates three hundred fifty thousand dollars ($350,000). This does not include any of the ongoing costs that would be imposed by these rule changes. Granby believes its system is safe and concurs with the comments submitted by United. **Laclede** said the proposed rule will drastically increase the scope, nature and cost of gas safety. The sixty (60)-day time frame mandated by the commission to respond to this rule is not adequate, especially since the commission failed to explain the meaning of, and reasons for, the various changes. Some proposed rules appear to be constructive, worthwhile and without significant offsetting disadvantages. Others, however, appear to offer little, if any, safety improvements but will produce large cost increases. Laclede considers gas safety to be one of its fundamental objectives and has been systematically replacing bare, unprotected steel mains and services since the early 1950s. Several of the most costly proposed changes appear to be totally unfounded from the standpoint of correcting

any demonstratively hazardous situations. Additionally, a number of the proposed rules concerning customer-owned facilities attempt to extend the commission's jurisdiction to areas where its authority is dubious and unprecedented, and where effective regulation is doubtful. Laclede's engineers estimate that the proposed rules will result in additional capital expenditures of up to thirty million dollars ($30,000,000) per year for the foreseeable future. This is more than Laclede's total past level of construction costs for all purposes. Laclede estimates it will experience an annual operating cost increase of eight million dollars ($8,000,000) to ten million dollars ($10,000,000), not including the added annual cost of servicing the continually increasing plant investment, which would soon far exceed the operating cost increases.

Laclede urges the commission to give this matter its careful consideration to achieve a balance between safety, customer service and costs. Laclede opposes these proposals, as they do not achieve such a balance. PC states that the proposed rules have been promulgated in response to a series of incidents involving natural gas occurring during the last several months. There is no doubt that the proposed rules are within the commission's jurisdiction. As a result of action by the commission, all bare steel service lines in the state have been surveyed, plus many have been replaced. The commission's prompt action in promulgating emergency rules and its continuing efforts to achieve a permanent solution to the gas safety problem have resulted in safer provision of natural gas. While agreeing that safety is paramount, PC also believes that the most cost-effective way of achieving safety should be chosen. Simply spending money on one possible solution to a problem is not always the most effective way of solving it, and is rarely the most economical way. The proposed rules are silent as to who should bear the costs associated with the rule. PC supports the commission's effort to ensure the safest practical natural gas system in this state and recognizes that prompt action is essential. However, PC cautions against the adoption of a replacement program costing hundreds of millions of dollars without careful study of the effectiveness of this program or a complete and careful study of any alternatives. **Springfield** strongly objects to the idea that customer installed gas lines should be the responsibility of the city. These lines are installed under the authority of City and County Building Regulation Officials, and the city wants this aspect of the proposed rule changed to delete utility responsibility of lines downstream of gas meters. The proposed rules are somewhat vague; they need clarification and additional comments and definitions. There is confusion on whether or not they are meant to be retroactive nor has the Utility explanations for specific portions of the rules.

St. Joseph and **MoPub** say there are several instances where the proposal is unclear in purporting to establish standards, or the standard of conduct an operator must meet.

UE states its gas operations are marked by a constant and comprehensive emphasis on system reliability and customer safety. UE understands the motivation behind the proposed rules, but firmly believes the proposed rules are an overreaction to the controversy. Rather than burden all operators with costly and time-consuming regulations, UE says the commission should develop comprehensive safety programs for operators based on demonstrated deficiencies. The proposed rules cover activities previously carried out by UE and other gas suppliers as a matter of policy, good practice, prudence, and the desire to avoid civil liability. The benefits of the new rule, and the additional records required, is doubtful at best. Testifying to supplement company comments filed on July 3, 1989, Mr. Jaudes said that Laclede's observance of the proposed rule would add from thirty million dollars ($30,000,000) to fifty-five million dollars ($55,000,000) in capital costs per year and $8 to $10 million in operating expense. Regarding cast iron replacement, the witness said Laclede has already replaced one million five hundred thousand feet (1,500,000') of it, noting that only high pressure lines are at risk. Laclede hasn't installed bare steel service lines since 1953, and has long been engaged in a replacement program. He reported no fatalities in twenty-five (25) years owing to bare steel or cast iron failures. The proposed regulations are too restrictive and complex, covering company operations from "A to Z." Laclede recommends a rule which seeks a better balance of cost, safety and customer service and also recommends an ad hoc committee to study the problem, mixing industry and regulatory representatives. The witness disputes estimates that all steel lines will corrode, noting that Laclede has some good fifty (50)-year old lines, even though 14 to 15 million feet of bare steel has been replaced. Only in areas of "active corrosion" should lines be replaced. Criticizing the twenty-five percent (25%) sectorization rule, the witness says it penalizes Laclede inasmuch as they have replaced more than twenty-five percent (25%) in all sectors. The proposed rule requires completion in too short a time frame. Laclede has virtually eliminated areas of active corrosion in bare steel service lines, and has twenty-seven thousand (27,000) such lines. The company criticized the rule for eliminating brass valves, and suggested that company-by-company leak surveys, incident histories, and replacement records should guide replacement, not one rule for all companies. Laclede, the witness said, is being penalized for problems in another operator's system. Laclede opposes adopting any D.O.T. proposed training regulations and advises against a training program which details the exact nature of gas operator safety training.

Laclede opposes the "angle of repose" requirements for cast iron replacement, saying it is too strict. The company criticizes the "over pressure protection rule" as well, maintaining it shouldn't apply to Laclede's system.

AGENCY FINDINGS: The commission finds that **ANG's** comment that most problems experienced in Missouri have been caused by improper installation of customer-owned facilities over which the utilities have no control, is an excellent expression of exactly why the commission is proposing these changes. Of the seven accidents involving natural gas explosions, ignitions and fires which occurred in the past heating season, three of the incidents involved leaks in customer-owned piping. **ANG** notes that customer piping systems downstream of the gas operator meters involve a variety of materials and installation procedures. By proposing rules and regulations governing the piping systems downstream of the meters, the commission hopes to rectify any unsafe conditions produced by individual variances in installation procedures and materials by different natural gas customers. The commission believes that the different companies and municipal gas systems are the most advantageously situated entities with regard to manpower and expertise to monitor and control customers' piping downstream from the meter. The city of Granby has alleged that the new proposed regulations would result in an unconstitutional and unenforceable increase in the cost of operation of its municipal gas system under Article X, Section 21 of the Missouri Constitution, otherwise known as the "Hancock Amendment." Granby contends that unless there is a state appropriation made and dispersed to pay Granby for the increased costs, which Granby preliminarily estimates to be in the neighborhood of $350,000, these rules would not be enforceable against Granby. The commission acknowledges Article X, Section 21 of the Missouri Constitution but finds that it is not applicable to safety regulations enforced against a municipal gas system. Article X, Section 21 of the Missouri Constitution reads as follows: "The State is hereby prohibited from reducing the state finance portion of the cost of any existing activity or service required of counties and other political subdivisions. A new activity or service or an increase in the level of any activity or service beyond that required by existing law shall not be required by the general assembly or any state agency of counties or other political subdivisions, unless a state appropriation is made and dispersed to pay the county or other political subdivision for any increased cost." The commission finds that the provision of section 386.310, RSMo (1986) giving the commission the authority to

adopt and enforce gas safety rules over municipal gas safety systems was in existence at the time of the adoption of Article X, Section 21. The commission further finds that although the existence of municipal gas systems are authorized by the general assembly, the construction and operations of such systems by municipalities are not required by law. Therefore, new regulations which control the conditions of service of such municipal gas systems do not fall under the Hancock Amendment even though they may involve increased costs to the municipal gas system.

Laclede commented that the sixty (60)-day time frame mandated by the commission to respond to the proposed rules is not adequate since the commission failed to explain the meaning of and reasons for the various changes. The commission finds that the sixty (60)-day response time is in excess of the thirty (30)-day minimum required by law under section 536.021.2(5), RSMo (1986) and that the explanation of the proposed rules was sufficient under 536.021.2(1), RSMo (1986). Laclede maintains that several of the more costly proposed changes are unfounded from the standpoint of correcting any demonstratively hazardous situations. Mr. Walter Ellis in his testimony before the commission in hearings on August 17, stated that, in addition to other proposed changes, some of the proposed rules were designed to remove inconsistencies and ambiguities in the current rules, to incorporate a number of changes desired by staff as well as changes and improvements suggested by gas operators. (Transcript page 4). The commission finds that it is not necessary to wait until the occurrence of an incident to enact changes in the rules which it feels are necessary to the public safety. The commission has made findings regarding specific rules elsewhere in these comments. Laclede also maintains that the commission's proposed rules concerning customer-owned facilities is an attempt to extend the commission's jurisdiction to areas where its authority is dubious and unprecedented. The commission finds that nothing in the proposed rules attempts to extend its jurisdiction beyond that authorized under section 386.310.1, RSMo (1986). The commission also makes findings regarding allegations of exceeding its jurisdiction elsewhere in the comments. Laclede estimates that the proposed rules will result in additional capital expenditures of up to thirty million dollars ($30,000,000) per year and increase operating costs by eight million dollars ($8,000,000) to ten million dollars ($10,000,000) per year. The commission acknowledges that such amounts are formidable but notes that they are estimates subject to close scrutiny.

The Public Counsel notes that the proposed rules are silent as to who should bear the costs associated with them. The commission notes this concern and, as stated in its response to Laclede's general comments above, intends to closely scrutinize costs associated with compliance with these rules. The commission finds that, regarding Public Counsel's request for careful study of alternatives, the number of natural gas incidents in the last heating season indicates a need for expedited action on the part of the commission that does not allow time for an extended and lengthy study.

The complaints of **St. Joseph** and **MoPub** concerning unclear standards in the proposed rules have been hopefully cleared up by the hearing testimony of Mr. Ellis and findings contained here and further on concerning the individual rules. **Springfield**, and others in individual comments to specific rules shown **infra**, commented on the applicability of retroactive needs definition. The commission finds merit in these comments, and has made such designation in 4 CSR 240-40.030(1)(G)4., as shown **infra**. **Springfield**, UE and Mr. Robert C. Jaudes, testifying at the August 17th hearing on behalf of Laclede, all commented that they felt the proposed rules were penalizing some operators for problems which other operators were experiencing. UE specifically states that the commission should develop comprehensive safety programs for operators based on demonstrated deficiencies. The commission notes the preliminary summary and analysis of the results of its emergency leak survey on customer-owned unprotected service lines, submitted as exhibit 4, in general supports the proposition that the different operators varied widely in the number of leaks detected and the locations of those leaks. The commission notes that it is precisely this kind of variability in safety success which these proposed rules attempt to eliminate. The need for a more stringent gas safety program is supported by exhibit 4, the gas leak survey referenced above. Those operators experiencing the greatest proportionate number of leaks included municipal gas systems as well as investor-owned gas systems. Many of these leaks were located on customer-owned service lines upstream from the meter which the operators are required to survey and maintain under the existing regulations. Over fifty percent (50%) of all leaks found in the emergency survey, whether upstream or downstream of the meter set, were classified as hazardous or potentially hazardous. Over eight hundred (800) hazardous or potentially hazardous leaks which could have caused explosions or fires existed downstream of the meters but have gone undetected prior to the emergency leak survey. The results of the emergency leak survey indicated a much higher number of leaks than the usual results contained in the annual Department of Transportation report, due possibly to the fact that in the course of a normal year only twenty percent (20%) to thirty-three percent (33%) of the total number of service lines in an operator's system are surveyed. The commission further points out that many of these proposed regulations have been designed to implement recommendations directed to the commission by the Missouri House of Representatives Committee on Energy and Environment, particularly those rules dealing with leak detection surveys, training standards, inspections, monitoring and repair of customer-owned service lines by gas service operators, more frequent inspections of unprotected bare steel pipe, leak inspections at the time of service restart and establishment of an organized replacement program for customer-owned bare steel service lines. Representatives from many of the commentators on these rules participated in the hearings resulting in these recommendations, including KPL Gas Service, Laclede Gas, Union Electric, Missouri Public Service, Associated Natural Gas, Missouri Association of Municipal Utilities and City Utilities of Springfield. The commission also points out in response that recent legislation puts emphasis on restricting the ability of an agency to make statements of general applicability outside of the rulemaking procedure, making it exceedingly difficult if not impossible to enforce safety measures on an operator-by-operator safety history criteria. The commission further notes that in the hearing of August 17, 1989, the commission offered to hold open the record of the rulemaking proceedings to receive copies of any studies done to measure and monitor the process of corrosion of noncathodically protected steel facilities underground. (Transcript page 123). No such studies were forthcoming. Walter R. Ellis, the assistant manager-engineering of the commission's natural gas department, testified at the hearing that the purpose of the proposed rule is to ensure the safe distribution of natural gas to Missouri's residents by establishing permanent statewide gas safety regulations which either meet or exceed current federal and state requirements. Ellis said the proposed rule achieves this end by 1) incorporating final DOT rules, 2) removing ambiguities and inconsistencies in current federal rules, 3) changing rules per staff's and operator suggestions, 4) making certain pipeline safety rules more stringent, and 5) responding to a series of gas explosions which occurred in the past year. Regarding specific rules, the witness explained, and offered twenty-five (25) pages of safety justification for, the following proposed rules, all of which propose requirements more stringent than existing federal minimum requirements. 4 CSR 240-40.020(4)(A), (1)(B)4., 6. and 13., (1)(J), (2)(B), (4)(DD), (4)(EE)8., (4)(EE)9., (4)(EE)10., (4)(V)1., (8)(B), (8)(C)1., (8)(G)1., (9)(E)1., (9)(E), (9)(I)5., (9)(F), (9)(I)1., (9)(I)4., (9)(V)1., (10)(I), (10)(J), (12)(S), (11)(B)1.A., (11)(B)5., (11)(D)3., (12)(C), (12)(D), (12)(I)2., (12)(I)3., (12)(K),

(12)(P)6., (13)(E)2.B., (13)(L)3., (13)(M), (13)(N)3., (13)(Z), (14)(B), (14)(C)3., (15)(C), (15)(D), (15)(E). Concluding, witness Ellis also stated that owing to logistical and geographical factors, and the number of gas operators and their differing systems, the commission should consider adding a variance provision to the proposed rules. As shown **infra**, the commission has provided a new section to this rule permitting waivers on a showing that gas safety will not be compromised.

AGENCY FINDINGS, BY RULE, RESPECTING MERITS OF OPPOSING COMMENTS AND TESTIMONY:

Rule 4 CSR 240-40.020(4)—Requires operators to report incidents within two (2) hours of discovery. **Laclede** says the two (2)-hour notification limit is unrealistic. An operator may not know the cause of the incident, or if natural gas is involved, in two hours. This requirement may distract limited personnel from important emergency actions. Laclede recommends the proposal not be adopted.

MGUTC states that the two (2)-hour notification limit is an undue burden. Internal procedures and notification take time. Notification of operator service personnel and their investigations may take over two (2) hours.

ANG comments that two (2) hours is impractical and would impair the company's ability to deal with an emergency. Time is needed to react internally to an emergency. The current Code language should be retained.

St. Joseph and MoPub maintain that in some instances, a two hour notification limitation is not sufficient. The vital goal is to make sure the operator personnel respond promptly. The commission should consider a longer time period and should add to (4)(A); "by the operator" after the word "discovery", so the time starts after the **operator** finds out.

In proposed (4)(B), "Additional information (6)(B) & (9)(B)" is vague. The operator is required to start a supplemental report when "additional relevant information is obtained" This is unclear. Staff and the operator may disagree on what is "relevant" and be exposed to a violation after-the-fact. **United** comments as does St. Joseph and MoPub, adding that in proposed (4)(B) the required forms must be promulgated with the rule since the form defines the provision of the rule (RSMo, 536.010(4)). Changes to these forms must be made by a rule amendment. **Springfield** says that the two (2)-hour notification limit is not adequate to assess an emergency situation. The current Code language should be retained. The commission finds that the proposed two (2)-hour limit may detract from emergency response efforts and that the time frame should start upon "discovery by the operator." As a result, the commission therefore changes the rule, (shown **infra**), to reflect same. The commission also finds that requiring an operator to start a supplemental report on receipt of "additional rel information" is not, contrary to the comment, unclear. The term is defined by CFR 191.9(b) and 192.15(b), which gas operators currently follow. Regarding the use of the forms required by (4)(B), the commission finds that these forms do not have to be published as a rule. They are Federal Department of Transportation forms, are available at both the commission's and secretary of state's offices, and are incorporated into the rule by reference. 4 CSR 240-40.020(4) [191.6]—requires use of required form. 4 CSR 240-40.020(6)[191.9]—requires use of required form. 4 CSR 240-40.020(7)[192.11]—requires use of required form. 4 CSR 240-40.020(9) [191.15]—requires use of required form. 4 CSR 240-40.020(10) [191.17]—requires use of required form. United criticizes these proposals since they require the use of forms incorporated by reference. United feels that all required forms must be promulgated as a rule.

The commission finds that all forms referenced above are proper subjects for incorporation by reference. They are available from the Federal Department of Transportation, the commission's office, and the secretary of state's office. To incorporate these forms as rules would necessitate a new rulemaking with each change in the form, a wasteful and costly undertaking.

4 CSR 240-40.020(12) [191.23]—Adopts DOT rule requiring operators to report safety related condition. United observes that the proposed (A)(1), "localized pitting leakage **might** result" is very subjective and open to interpretation as to the time frame when a leak might occur. In addition, the rule requires a report whenever there is an "emergency", but emergency is not well defined; nor is "natural disaster" well defined. The listing of items in (12) may be either conjunctive or disjunctive. United also indicates that proposed (B)(4) allows an exception to an exception where reports are required. This is a poor location for requirements and could easily be overlooked. The commission finds that the terms "emergency", "where leakage might result", and "natural disaster" are presently used in CFR 191.23 and are adequately defined therein, as are the listing of items in (12) of the proposed rule. The commission also finds that subsection (B)(4), which permits exceptions to certain rule application, is placed in the correct part of the rule.

4 CSR 240-40.020(13)(C)—Operators to file statements of costs to observe proposed rules.

Laclede maintains that filing the additional costs to comply with the proposed rule does not enhance safety. It is difficult to obtain a separation of only "gas safety" costs. Laclede does not object if the reporting could be based on reasonable time estimates and allocations. **MGUTC** says there are no baseline costs with which to compare to after the new rules are implemented. Operator costs are kept on a calendar year, not a fiscal year, and reporting on a fiscal year would present an additional burden. **ANG** states there are no baseline costs with which to compare to, and no gas safety cost separation. ANG operating costs are based on the calendar year and not fiscal year, therefore, accounting would be burdensome. **United** comments that new record-keeping will be required to track the additional cost of the new rules. The operator has no baseline costs. It would be hard to segregate gas safety costs from other costs. The requirement is presumably due to 536.200 RSMo, which requires the filing of a fiscal note. This statute requires only **first** year costs and should only apply to political subdivisions and not private investor-owned corporation. **Springfield** avers it is not practical for an operator to calculate costs year after year; nor is the information pertinent to gas safety. If the regulations are needed for safety, then they should not be based on cost.

UE sees no justification or benefit for this type of annual cost filing report. It is almost impossible to comply, since operators do not break down gas safety costs vs. other costs. Accounting procedures to accurately track these costs would be burdensome. **KPL** notes that the purpose seems to be to comply with the Missouri law regarding economic impact. RSMO 536.205 does not apply to private parties after the first year. **Kennett** said that the time required to track costs does not add to safety and only increases costs.

St. Joseph & MoPub made substantially the same criticism. The commission finds that section 536.205 RSMo does not, on its face, require the commission to estimate costs of compliance by requiring either cities or private entities to maintain a record of such costs. As a result, as shown **infra**, the commission finds that 4 CSR 240-40.020(13)(C) is unnecessary, and hereby deletes same from this Order of Rulemaking.

4 CSR 240-40.030(1)(B) [192.3] Definitions

Laclede says the definition of "feeder line" is vague and ambiguous. In urban areas the term could encompass the entire distribution system. The company proposes the following: "Pipeline in Class 1 or 2 location, which operates above one hundred (100) psig and is used in the transportation of gas from a source of supply to one or more distribution centers (cities, towns, communities, etc.), or to one or more large-volume customers, or from one distribution center to another distribution center, or a pipeline installed to interconnect sources of supply." Laclede recommends the adopting of this modified definition.

MGUTC states that the definitions for "fuel line", "yard line", and "service line" are confusing and need clearer definition in reference to one another. "Yard line", as it applies to commercial and industrial complexes, needs to be reconsidered due to the changing of facilties, the significant amounts of pipe involvedand the problem of operator

access. "Sealed or unvented" is too broad and could include frozen soil, which would be all areas in winter conditions. **ANG** concurs in MGUTC's comments, adding that there is a conflict between "reading" and "sustained reading;" they suggest that "sustained" be removed from the definition of "reading."

St. Joseph and MoPub also concur with MGUTC. "Fuel line" and "yard line" are overlapping. It is not clear how much commercial and industrial piping is "yard line." "Large volume customer" in the "feeder line" definition is vague. A large volume in one system may not be in another. The definition should be more specific. "Building" is not clear since "occupied" is not defined. **United** and **Springfield** concur in the comments by St. Joseph and MoPub. The commission agrees that the term "feeder line" is illy defined. As a result, as shown **infra**, the definition is hereby changed. By so doing, the gas operator's concerns regarding the definition of "large volume" users will be largely satisfied. The commission finds the definitions of "fuel line", "service line" and "yard line" are sufficiently clear as originally proposed. Regarding "sealed or unvented", the commission finds this reference should be removed from the rule, as shown **infra**. The term "sustained" should be kept to modify the following term, "reading." The commission rejects the suggestion that "building" or "occupied building" is vague. The meaning is apparent and has enjoyed wide and common use.

4 CSR 240-40.030(1)(J) Filing Requirements, Safety Plans and Procedures. **United** says that the rule is not clear as to what plans, procedures, and programs are "required", or where they are "required." The "required" items should be specifically listed or referenced to identify them. There is no indication as to who "designated commission personnel" are. United also suggests adding to the last subsection in (J) so that it reads, "after change is made **effective**." The commission finds that this subsection should be reworded to specify that the plans, procedures and programs required by this rule are those required to be filed. This change is effected, **infra**. 4 CSR 240-40.030(1)(K) Filing of Implementation Costs. **Laclede, MGUTC, ANG, United, Springfield, UE, KPL, Kennett,** and **St. Joseph and MoPub**, makes the same comments here as they did **supra**, for 4 CSR 240-40.020(13)(C). The commission incorporates by reference its findings made under 4 CSR 240-40.020(13)(C), **supra**. As a result, the commission finds that 4 CSR 240-40.030(1)(K) is unnecessary, and hereby deletes same from this Order of Rulemaking, as shown **infra**.

4 CSR 240-40.030(2)(B) [192.53] New Pipeline Construction: Steel, Polyethylene.

Laclede maintains this unreasonably restricts and discourages the development and use of new materials. The language of proposed (2)(B)4. is specific whereas the heading and other paragraphs are in performance language. Such language excludes the use of presently available materials without showing they are unsafe. If similar language had been used in the past, polyethylene would never have been developed and, per Mr. Jaudes' comments at hearing, copper would have been in wide use. This restriction should not be adopted. Evidence to support banning of any specific material should be presented and evaluated. **MGUTC** states the limitation to steel and polyethylene restricts innovation. Some operators use brass flexible connectors downstream of the meter as a standard practice. The limitation should be reconsidered. **ANG** concurs in MGUTC's comment, noting the rule should provide for the use of other approved materials. **United** says the restriction to "polyethylene" prohibits the use of other plastics that may be developed. "After the effective date of this rule" needs to be added to beginning of proposed (2)(B)4. to make the rule prospective. The term "polyethylene" is used in this section whereas "plastic" is used in (2)(D) [192.59] and elsewhere.

Springfield notes that the proposed rule eliminates the current use of items such as Kerotest insulating fittings, made of fiberglass materials, and other materials utilized in fittings, i.e. valve seats, valve balls and rubber in compression fittings. "Materials" should be defined to preserve a distinction between materials used in pipe or in fittings. An allowance should be made for the use of new materials. The commission finds while steel and polyethylene are the best and most prevalent of piping materials in current use, the rule as proposed, as noted, may unduly restrict the use of newer or better materials. The commission will change the rule, as seen **infra**, to provide that other piping or fitting materials may be used on approval by the commission. As found **supra**, the commission notes that the requirements within these design and construction sections (2) through (8), are not retroactive unless so stated. The commission also finds that even without the change seen **infra**, paragraph (2)(B)4. of this rule does not eliminate use of currently qualified valve and fitting materials; these items are excepted in (2)(B)4.B.

4 CSR 240-40.030(2)(E) [192.63] Marking Requirements, Pipeline Construction.

United says that the marking of "each length of pipe" or "other component" will be difficult for short pipe sections and unmarked components. This would impose marking requirements on the operator that do not exist for the manufacturer. The commission finds that the marking requirements which have prompted United's comment are now contained in CFR 192.63(a). United and other gas operators have therefore been subject to this requirement since the promulgation of the federal rule and problems of applying same have not come to the commission's attention.

4 CSR 240-40.30(3)(K) [192.125] Design Standards, Copper Pipe.

ANG maintains that since there are no companies using copper for mains or services, except for repairs, the rule should be eliminated. **United** says that copper is not allowed in new construction; nor is there a need for copper design specifications for new installations. The new rule should apply only to existing copper, since it is unknown if existing installations comply. The design specifications should be limited to future replacement of existing copper. The commission finds merit in these comments. The rule will be changed, **infra**, by retitling the subsection and, therefore, limiting its application.

4 CSR 240-40.030(4)(D) [192.145] Valve Specifications.

Laclede notes that the proposed rule specifies manufacturer testing and precludes reliance upon nationally recognized specifications and standards. This would require special valves for use in Missouri and could restrict the sources of acceptable valves and increase their cost. Laclede is not aware of any problem this will correct and urges the commission to reject the rule. **MGUTC** says that if unique Missouri valve criteria are developed, manufacturers will apply unique costs or withdraw from the Missouri market. Readily available valves of approved quality should be permitted. **ANG** concurs in MGUTC's comment, as does United, who also points out that operators have no control over manufacturer procedures. **Springfield** says that manufacturers should not be required to make a special valve for Missouri and urges the commission to make sure currently accepted valves meet the proposed criteria.

The commission has considered these comments and finds they are without merit. The rule as proposed is identical to CFR Amendment 192-62, Docket No. PS-95, made a final rule on March 8, 1989. The requirements are not unique to Missouri, or to any other state.

4 CSR 240-40.030(4)(V) [192.181] Requirements for Installation and Maintenance of Distribution Line Valves.

Laclede opposes the relight provision. The requirement that customers whose gas has been shut off be relit in eight (8) hours cannot be justified as a safety measure. Relight time is a customer convenience consideration and will depend on manpower availability rather than shutdown zone considerations. The time required to shut down and vent gas should be the sole consideration. **MGUTC** says the criterion of an eight (8)-hour relight is an indefinite way of establishing zone size.

Relight time is a service, not a safety, criterion and depends on available manpower, population density and occupant presence. ANG agrees with MGUTC, adding that the rule requires a utility to work within a time rather than a safety frame. The rule would require a valve upstream and downstream of regulator stations serving more than one customer. ANG agrees this is needed for urban areas, but would be burdensome for services off feeder or transmission lines in rural areas. ANG duggests the phrase, "with inlet piping of two (2) inch or larger", be inserted after "each regulator station." Also, the downstream valve is not needed for single feed areas. **St. Joseph and MoPub** object to the proposal in that it does not specify how far away the valves need to be, only "sufficient to permit the operation", an indefinite standard. The proposed term "readily accessible" is vague and conclusionary and should be replaced with an objective standard. **United** found the eight (8)-hour relight time imprecise; instead, it should be at the operator's discretion. Relighting is done after the service interruption and has nothing to do with the prevention of incidents. The proposal requires a valve upstream and downstream at a distance "sufficient to permit the operation" which is an indefinite statement. Nor is there an indication whether the rule is applied prospectively or retrospectively. Retroactive application would cost one thousand dollars ($1000) per station and sufficient construction time must be allowed. **Springfield** commented that the limits of emergency zones should be based on the time needed to shut them down, not the time to relight them. The issue is related to customer service, not safety, and operators can best formulate their own specific policy. The proposal would also require leak surveying or two (2) bar holes for each relight, a feature the city feels is counterproductive.

The commission finds that the proposed eight (8)-hour relight is a safety, not a customer convenience, measure. The zones should be small enough to encourage operators to, in an emergency, shut the areas off. If not, operators may be reluctant to cut the supply of gas to a large area. The phrases "sufficient to permit" and "readily accessible" are performance oriented, and purposefully so, to permit each operator flexibility in compliance. The commission agrees that downstream valves on some regulator stations may be unnecessary. As shown **infra**, the rule has been changed accordingly. Unless this or any other design or construction requirement so states, the application of the requirement is not retroactive. Inasmuch as bar hole leak tests are required by 4 CSR 240-40.030(14)(B), the commission will address the comment noted above in that section.

4 CSR 240-40.030(4)(DD) [192.197] Requirements for Service Regulators and Overpressure Protection.

United criticizes this proposal because a) the type of device to indicate a regulator failure is not identified; b) the time implementation is not given; and c) the reason for this device was not given. **Kennett** finds fault in the rule because it puts undesirable limitations on service regulator characteristics. These characteristics include: reduction to household pressures; restricts pipe to less than two (2)-inch connections; no provision for external control lines on regulators for any customers.

Springfield commented on the failure to specify the type of device required to indicate regulator failure and whether the regulation is retroactive or prospective. **UE** found the proposal defective in that it did not clearly describe the type of warning device required, noting that the exact configuration of a station must be considered to select a warning device.

KPL suggests adding a new subsection (1)(E) as follows: "A service regulator with no internal relief may be used where the maximum actual operating pressure of the distribution system does not exceed two (2) psig." KPL noted further that with the change in the maximum actual operating pressure from sixty (60) psig to fourteen-inch (14") w.c., an additional requirement is needed to allow the use of regulators with no internal relief on distribution systems which do not exceed two (2) psig. KPL reports using service regulators with no relief on its two (2) psig and less systems for many years with no compromise in safety. The commission agrees that the characteristics stated in (4)(DD)1.A.—F. may unnecessarily limit service regulator types. As shown **infra**, a change is made to meet this criticism. This rule is not retroactive. The commission also finds that overpressure protection should be provided on system service regulators, given that two (2) psig may not be safe for household use. The type of device is discretionary with the operator; a low-volume audible relief device, currently available, would be appropriate. Neither the current nor proposed rules require periodic inspection of service regulators; as a result, the failure of a service regulator could go undetected. By enacting this rule, the commission ensures that operators will discover such failures at those installations where the overpressure protection device is a monitor regulator.

4 CSR 240-40.030(4)(EE) [192.199] Design Requirements for Valves, Pressure Relief and Limiting Devices.

Laclede comments that paragraphs 8., 9. and 10. have "regardless of installation date" language in each, which makes the regulation retroactive. Paragraph 9. mandates overpressure protection at all regulator stations, a provision which ignores Laclede's uniquely designed multi-feed, low-pressure system where one regulator failure will not result in over-pressuring the system since other regulators feeding the system would shut down. Laclede's system has operated for decades without exceeding the MAOP. There is no evidence that current overpressure protection and security are not adequate and the requirement is inconsistent with (4)(CC). (4)(EE) deals with how overpressure protection can be accomplished and should not override other sections which specify when protection is necessary. It will cost fifteen million dollars ($15,000,000) to twenty-two million dollars ($22,000,000) to comply. **MGUTC** says the rule seems to require additional locks on regulator stations in locked fences or buildings, an unnecessary requirement. ANG concurs with MGUTC. **United** objects, since the regulation is retroactive, requiring retrofit of older stations. Nor is it clear what "designed to prevent unauthorized access to or operation of isolation valves" means. United also finds paragraph 10, which requires a "device that indicates a failure of the operating regulator" to be ambiguous. **Springfield** objects to the rule's apparent retroactivity and to the failure to specify the type of device required. The city avers it has had no problems in this area and believes that the rule needs more justification.

The commission finds that safety considerations are of the utmost importance in design and placement requirements of pressure relief and pressure limiting devices. Thus, the application of this rule for paragraphs 8., 9. and 10. is retroactive. However, operators will have twelve (12) months to comply. These requirements are inconsistent with (4)(CC). The commission finds no ambiguity in the phrase "designed to prevent unauthorized access" and believes gas operators will apply a normal definition to the phrase. Nor does the commission find that the rule requires additional locks on a regulator station already provided with locks; however, the rule has been changed to eliminate this possible application. The rule has also been changed in response to comments regarding the number of overpressure devices required. As shown **infra**, the rule now requires such devices "for" stations, instead of "at" same. The commission believes that a device which indicates failure of an operating regulator should insure prompt detection by the operator, but leaves the type of device to the operator's discretion. Audible relief devices, SCADA systems, and telemetered pressure alarms are, in the commission's view, acceptable systems.

4 CSR 240-40.030(8) [192.351 and 192.352] Requires Operator to Install, Own and Operate Service Lines from Main to Customer's Building Wall.

UE comments that shifting installation, ownership and maintenance responsibility of service and yard lines up to the customer building wall infringes on both customer and company rights. The proposed rule reduces the operator's flexibility to locate the meter and service entrance per customer needs and increases the company's potential liability since the operator may be liable for leaks not

detected on customer-owned lines. UE notes that owing to the questionable location of customer-owned lines, surveys conducted could be unreliable and the commenter objects to being responsible for the repair and replacement of customer-owned lines installed many years ago. UE says it is unfair for its customers to share the cost of replacement or repair of facilities installed by other customers.

Laclede doubts the legality of extending commission authority to all customer-owned piping downstream of the meter, noting that Laclede does not have customer-owned service lines, and the standard practice is to locate meters at building walls. Requiring all meters to be at the building wall or the company to assume ownership of the piping downstream will adversely affect commercial and industrial customers who do not want their meter at the building. Such large installations should be exempted. Laclede objects to the July 1, 1989, effective date, suggesting it should be modified and coincide with actual effective date of proposed rules. **MGUTC** objects to the proposed effective date as well, stating their objection to operator ownership and liability for lines downstream of meter. They suggest that commercial and industrial premises should be excluded from the rule.

ANG concurs with MGUTC, adding that operator ownership would cause additional right-of-way and construction expense. The rule should only apply to residential customers and operators should be allowed to amend tariffs to recover the added costs. **United** also objects to the July 1, 1989, effective date, and finds problems with ingress and egress for customer-owned services and yard lines. The operator has no present right to enter a customer's property to service a customer line and a trespass would result. Even with owner permission, costs of replacing prepared lawns would be significant and operators would have to obtain easements for customer-owned line access, at an unknown expense. Customers may refuse to allow an operator access to replace customer-owned lines. If so, would the operator have to condemn an easement? Could the operator terminate service if access was not granted? Present tariffs make no provision to cover the situation. If the customer's title is in dispute, an easement may not be obtainable, or may be obtained only after a costly abstract search. United questions the commission's authority to order an operator to replace customer-owned lines when the customer does not want it replaced or when no problems are found. United also questions the responsibility of the operator for maintenance of lines required to be replaced, noting this is a separate question from the authority of the commission to order such replacements. United asks: Can the commission lawfully order an operator to "take over" the property of someone else without that person's permission, or assume maintenance responsibility over property which does not belong to the operator and is not under commission jurisdiction? The rule makes a utility liable for piping that they did not install or control, with no consideration of the legal authority required.

The City of Springfield agrees that operators should install, own, operate, and maintain gas service lines only to the nearest building in residential areas. This requirement would be difficult to comply with and still meet the needs of the commercial and industrial customers. **Fulton** agrees to maintain service lines installed or replaced with cathodically protected coated steel, plastic, or copper, but feels all customers should be treated equally. The rule should therefore be modified to require replacement of any bare steel services with plastic before Fulton would be required to assume maintenance responsibilities. **St. Joseph and MoPub** concur in United's comment, agreeing that the effective date of July 1, 1989, should be changed. Inasmuch as St. Joseph and MoPub's tariffs allow customer-owned services and yard lines, the proposed rule would void these tariffs. Missouri law provides that tariffs also bind utilities and cannot be changed unless voluntarily by operator (343.140, RSMo) or if the commission issues a complaint (393.270, RSMo), neither of which is contemplated by these proceedings. As a result, the legality of this rulemaking is in doubt. The commission should treat commercial and industrial-owned lines differently. The customers, and not the operator, should be responsible for commercial and industrial service lines. The commission finds that company objections to the legality of this rule are misplaced. To promote gas safety, the commission has broad powers, powers which expressly and inherently include the right, and the obligation, to ensure the safe delivery of this explosive and dangerous substance. Natural gas is just as explosive upstream or downstream of a customer's meter; the commission's study of gas leaks, admitted as exhibit 4 in this rulemaking, demonstrates the necessity of applying these requirements to "customer-owned piping" as outlined **supra**. Section 386.310.1, RSMo (1986) specifically gives the commission the power, "by rules or regulations, or otherwise, to require every person, corporation, municipal gas system and public utility to maintain and operate its line, plant, system, equipment, apparatus, tracks and premises in such manner as to promote and safeguard the health and safety of its employees, passengers, customers, and the public, and to this end to prescribe, among other things, the installation, use, maintenance and operation of appropriate safety and other devices or appliances, to establish uniform or other standards of equipment, **and to require the performance of any other act which the health or safety of its employees, passengers, customers or the public may demand,"** (Emphasis added).

In addition to the strong language of this statutory authority, the commission points out that the House of Representatives Standing Committee on Energy and Environment recommended specifically that the commission mandate inspections, monitoring and repair of service/yard lines by gas service systems up to the point of entry to a dwelling or structure. This same committee recommended changes to the commission's authority under section 386.310 which were later passed as House Bill 938. As the legislative changes contained in this bill did not include specific authority to mandate inspections, monitoring and repair of customer-owned service lines, the implication is clear that the General Assembly believes that the Public Service Commission has the authority to carry out this recommendation without additional legislation. The commission notes that several of the commenters to this rule provided testimony before this house committee including Laclede, Union Electric, City of Springfield, Missouri Public Service and Associated Natural Gas. For these reasons, the commission must put the obligation for the maintenance and installation of service and yard lines on the only entity in a position to insure proper installation and maintainence of these lines, the operator. Tariff provisions which provide for customer-owned facilities are local in nature, unique to particular systems, and have no ascendancy over a safety rulemaking with statewide application. Also, the commission notes that tariffs may not be changed except by order of the commission. As a rulemaking clearly constitutes a commission order and is a statement of general applicability applying to all operators under the circumstances which the rule addresses, the commission finds that inconsistent tariffs would violate such commission orders. The commission notes that operators are free to change such tariffs. If they choose not to, in the commission's opinion, they will be in violation of the rule. The commission agrees that the effective date of this section should be changed from July 1, 1989, to the effective date of the rule. This, as well as other changes generated by the comments, is shown **infra**. Regarding operator concerns as to ownership of service lines, the possibility of trespass to leak test or maintain said lines, and related concerns, the commission finds that under Part 192 of the Federal Pipeline Code, these lines are jurisdictional, and operators are currently responsible for their operation and maintenance. The commission finds it inappropriate to change the rule so as to require replacement of bare steel service lines before an operator assumes a maintenance responsibility. To do so would frustrate the aim of

achieving safety concerns with pipe still in the ground. The commission concurs with those commenters who urge an exemption for commercial, industrial, or military complexes. However, many such users are served by one (1) meter at or near the structure, as are residential customers. These should not be exempted. The commission therefore finds that exempting commercial, industrial and military complexes should depend on individual circumstances attending each user. To achieve same, a variance procedure has been appended, see **infra**. Concluding, the commission finds that the definition of "yard line" does not include gas lines to pools, gas lights, grills and similar appurtenances.

4 CSR 240-40.030(8)(C) [192.353] Requires Protection of Customer Meters/Regulators from Vehicles.

St. Joseph and MoPub find the phrase "anticipated vehicular traffic" too vague in that it implies an unspecified period of time. It could be a week, month, year or a decade. They object as well because it appears to apply to a meter set adjacent to a driveway. "Vehicular" is itself an imprecise term, since an earthmover or lawnmower could qualify.

United concurs with St. Joseph and MoPub, adding that the rule lends itself to vagaries in enforcement, since after any incident, a regulator may charge that the operator should have anticipated the vehicular traffic. They recommend the rule be withdrawn. The commission finds that neither "vehicular" nor "anticipated vehicular traffic" is sufficiently vague or uncertain to merit withdrawing the rule. These terms are similar to language contained in CFR 192.199(g), which currently applies to operators. The commission finds that "anticipated vehicular traffic" describes conditions to consider at the time of installation, and is similar to current requirements in CFR 192.199(g). Moreover, CFR 192.353 presently requires that the meter and regulator be protected from damage, including that likely to be associated with residential driveways. This rule, incorporating performance language, presents no greater or lesser risk of vagaries of enforcement than any other proposed rule.

4 CSR 240-40.030(8)(G) [192.361] Requires Installation of Unencased Plastic Service Lines Eighteen Inches (18") Deep.

Laclede comments that its normal practice is to install unencased plastic with at least eighteen inches (18") of cover, when practical. However, certain rock and soil conditions can make installations impractical. Laclede reports being unaware of any incident where significant personal or property loss has been caused by a shallow plastic service line. Nor is there any evidence that this additional depth requirement would reduce the number of "dig-ins", since most "dig-ins" occur where individuals fail to call for locations before digging, rather than due to the depth of the pipe. Laclede estimates the additional annual cost to comply with this proposed rule to be between two hundred fifteen thousand dollars ($215,000) to four hundred thirty thousand dollars ($430,000). **MGUTC** comments that the existing twelve-inch (12") depth requirement is adequate, as does **ANG**. **United** contends that some operator's trenching equipment cannot attain the eighteen-inch (18") depth on rough ground. Adoption of this rule would therefore require replacement of existing trenching equipment. The commission finds that eighteen inches (18") of cover is now required for covering excavations on or adjacent to public property and that the additional six inches (6") of cover in residential excavations will add a needed margin of safety at a minimum expense. Operators whose trenching equipment cannot attain an eighteen-inch (18") depth on rough ground if need be, would resort to using the equipment they use in excavating on or near streets and public ways.

4 CSR 240-40.030(9)(C) [192.453] Operators to Establish and Carry Out Cathodic Protection Procedures.

CORRPRO comments that in this rule, the word "must" has been changed to "shall" while in the remainder of the proposed rules the word "must" has remained as in present federal regulations. The change from "must" to "shall" should be considered for the remainder of the rules. The commission finds no merit in CORRPRO's comment. There is no significant difference, in context, between the two terms.

4 CSR 240-40.030(9)(E) [192.457(b)(3)] Requires Additional Evaluation of Unprotected Pipelines.

CORRPRO suggests that the last sentence of proposed (9)(E)C. be changed to read: "The operator shall determine the areas of active corrosion by a statistical prediction model using electrochemical tests, by electrical survey, or where electrical survey is impractical," **United** comments that operators should be exempt from this requirement if their system is in a replacement program. As stated, this rule would require an operator to investigate corrosion when they are already aware of a problem. While the commission finds merit in the changes suggested by CORRPRO, the commission does not believe a wording change is necessary to permit statistical modeling. As proposed, the rule permits same. The commission agrees that piping under a replacement program, to the extent provided **infra**, should be exempt. This is also mentioned in the commission's response to comments under rule 4 CSR 240-40.030(9)(I) [192.465] following. The commission also finds merit in the suggestion that effectively coated steel mains less than one hundred feet (100') be exempt from this requirement, a change effected **infra**.

4 CSR 240-40.030(9)(F) [192.459] Requires Additional Evaluation of Corroding, Exposed and Unprotected Pipelines.

Laclede objects to this rule since it would require operators to make unspecified additional excavation to determine the extent of "the corrosion." This requires extensive excavations to find the extent of minor, non-hazardous corrosion each time a main is exposed for routine work. Laclede has in place a system for reporting the condition of exposed mains, producing information that has been collected, filed and posted on maps for twenty (20) years. More than one million seven hundred thousand feet (1,700,000') of bare steel main has been replaced based on this data system. The commission has demonstrated no need for additional costly excavations to augment Laclede's data bank. Municipalities would object to additional street cuts and the estimated cost of the proposed additional requirement may be as much as one million four hundred thousand dollars ($1,400,000) a year. Laclede suggests the proposed rule be modified to read: "It shall investigate by record review, or by excavation, to determine the extent of active corrosion." **MGUTC** objects to the phrase, "to investigate by excavation." It is indefinite and needs clarification. MGUTC suggests that the requirement to investigate by record review and excavation would more reasonably be done by record review only. This section also seems to conflict with 4 CSR 240-40.030(15). **ANG** concurs in MGUTC's comments. **St. Joseph and MoPub** question the rationale for using "inspect" instead of the original "examine." They find the term "generally pitted" is vague, as well as the proposal to "investigate by excavation." The requirement to investigate by record review and excavation would more reasonably be done by record review only.

United comments are the same as St. Joseph and MoPub, but add that the rule may force operators to replace existing low pressure systems, which would be costly. Operators should be exempted from this rule if a system replacement program is in effect.

Springfield said the term "excavation" should be defined more precisely. If not, this particular section of the code could be interpreted to mean digging up and inspecting all of the pipe to determine the extent of the corrosion. The city also notes that if a bare steel gas main is in a replacement program, it is pointless to expose the line to examine the extent of corrosion. In addition, the rule should allow use of record review or excavation. The commission finds merit in some of the comments set out above. Specifically, the commission agrees that as worded, the rule might result in excessive or unnecessary excavation. As shown, **infra**, this will be addressed by adding the phrase "requiring remedial action" to the affected section. The commission also finds that "generally pitted"

is ambiguous and, as shown infra, amends the rule accordingly. Regarding operator suggestions that the rule should allow use of either record review or excavation, the commission finds that record review alone will not reveal corrosion. The term "excavation" needs no further explanation; nor does the rule have application during actual replacement of pipelines. Regarding the use of "inspection" versus "examined", the former, as used in 240-40.030(9)(V) requires record keeping, while "examined" does not. Finding further, the commission notes that the phrase "investigate by excavation" refers to an already exposed pipe, and requires excavation to uncover pipe located adjacent, either up or downstream, of said exposed pipe. To discover corrosion in locations adjacent to exposed pipe, the commission finds that excavation is required. Reviewing records or data banks alone will not suffice. Therefore, the word "or" will not be substituted for "and", as suggested by ANG.

By changing, and limiting, this requirement to areas requiring "prompt remedial action", the commission eliminates the suggested conflicts between this requirement and the long-term replacement programs referred in 4 CSR 240-40.030(15). As a result, exempting piping in such programs is not appropriate.

4 CSR 240-40.030(9)(G) [192.461] Requires Insulating Coating for External Corrosion Control.

United notes that while the word "protective" has been changed to "insulating" in one place in this subsection, the word "protective" is used in several places, including the title. The commenter finds this confusing. The commission agrees with United Cities. The word "insulating", as shown below, has been changed to "protective."

4 CSR 240-40.030(9)(I) [192.465] Cathodic Protection Monitoring.

Laclede says that for isolated metallic fittings the ten (10) year monitoring requirement cannot be reasonably implemented. Since the advent of plastic pipe, these metallic fittings, with anodes attached, have been installed in large numbers. Cathodic protection test stations have not been installed and there is no practical way to locate these fittings, or monitor the anodes. It would be inefficient to install test stations requiring monitoring every ten (10) years; they would be undergoing leak surveys more frequently. Laclede is unaware of any corrosion or leak problem with properly coated and anoded fittings and opposes the adoption of this proposed rule. **MGUTC** states the need to correct a cathodic protection problem in six (6) months is not reasonable, pointing out that problems which require extensive work should be allowed more time. **ANG** concurs with MGUTC, adding that the timing of corrective measures should be determined by individual operator's procedures. **United** concurs with MGUTC and points out that ordering and obtaining parts may take longer than six (6) months. This time-period should be eliminated or extended to eighteen (18) months and proposed 5. should exempt systems under a replacement program. **The City of Springfield** sees no need to double the rate of cathodic protection checks on short pipe segments less than one hundred feet (100') in length. The current frequency of checks has never caused a problem on the city's facilities and they see no evidence of it ever becoming a problem. The six (6)-month time period in paragraph 4 would not allow for adequate testing to determine what method or methods would be the most reliable in protecting the facilities. Paragraph 5 requires a leak detection survey at intervals not exceeding three (3) years, a subject also covered under leak surveying of bare steel pipe, where the rule requires that unprotected piping be leak surveyed once each year. This is ambiguous and should be clarified. **KPL** proposes that the last sentence in 1. be revised to read: "Effective with installations made after January 1, 1990, each short section of metallic pipe " KPL also notes that the locations of existing facilities proposed to be included in the ten (10)-year monitoring are not now shown on company maps. To do so would require an exhaustive search of all pipeline records, as each location would have to be shown on a map. KPL objects to requiring a test station at each location, and to the ten (10)-year monitoring requirement.

CORRPRO suggests changing the second to the last sentence in paragraph 5. to read: "The operators shall determine the areas of active corrosion by a statistical prediction model using electrochemical tests, by electrical survey, or where electrical survey is impractical." The commission finds the increased frequency for monitoring short main sections and isolated services appropriate to reduce the length of deficiency. The commission recognizes the difficulty of monitoring isolated fittings and short main sections without test stations, but this requirement is the same as now required by the federal code. As a result, the commission cannot, as suggested by operator comments, either delete the section or delay its implementation. To do so would be less stringent than existing federal minimum standards. By permitting a ten (10) year interval between some inspections, this observed difficulty is obviated. The commission finds the requirement to conduct five (5) year inspections of short coated steel pipe segments installed before 1971 was unintentional, owing to a change in 4 CSR 240-40.030(9)(E)—[192.457]. This oversight has been addressed in 4 CSR 240-40.030(9)(E), supra. The commission agrees that correcting some cathodic protection deficencies may require more than the six (6) months originally proposed; the same finding obtains regarding the proposal that corrective action(s) be initiated within thirty (30) days. Both proposals are too restrictive. Instead, the rule has been revised (see following) to provide for additional time if needed for good cause shown, on application to, and approval by, designated commission personnel. Regarding operator proposals to exempt pipelines in a replacement program from the three (3)-year reevaluation, current minimum federal standards so require. The commission cannot adopt less stringent standards. There is no conflict between the three (3) year reevaluation interval for unprotected pipelines and the requirements for annual leak surveys. Finally, the commission finds that the rule does not need to be revised to permit statistical modeling; as worded, the requirement permits same.

4 CSR 240-40.030(9)(P) [192.479] Requires Atmospheric Corrosion Protection for Certain Above-Ground Pipelines.

Laclede objects to this proposal, noting it would unnecessarily increase their annual operating costs by some two million dollars ($2,000,000). Laclede says it has shown that a corrosive atmosphere does not exist in the past and can continue to do so. The company is unaware of any system incident resulting from deterioration caused by atmospheric corrosion of above-ground piping. The proposed change in paragraph 1. requires corrosion protection even where corrosion cannot exist. Combined with the broadened definition in paragraph 3. of atmospheric corrosion, the company would be required to unnecessarily accelerate its already effective program of painting its facilities and meter stations, resulting in the estimated cost stated above. Since no improvement in customer safety would result, Laclede recommends that the proposed revision be deleted. **MGUTC** finds the definition of atmospheric corrosion inadequate and desires specification of applicable facilities and acceptable coatings. **St. Joseph and MoPub** concur with MGUTC.

Springfield concurs with MGUTC noting that paint seems to be eliminated as an acceptable coating. The commission finds that paint has not been eliminated as a coating material; in this respect, the proposed rule is the same as the existing federal rule. For inside piping, the commission agrees that an exemption would be appropriate in the absence of a corrosive atmosphere, a change effected infra. "Atmospheric corrosion" is capably defined, per present operator standards, in (P)2. and 3.

4 CSR 240-40.030(9)(R) [192.483] Cathodic Protection Requirements.

KPL repeats its critique found in (9)(I). It is not cost effective to locate, install test stations, and monitor previously installed short segments. Monitoring should be a prospective requirement. The commission

finds that subsection (9)(I) already requires cathodically protected piping to be monitored; the language added to this proposal is to emphasize the requirement, not to make additional requirements.

4 CSR 240-40.030(9)(V) [192.491] Operators to Maintain Maps of Cathodically Protected Facilities and Pipelines.

Laclede says that paragraph 1 of this rule would impose the additional and unnecessary requirement that operators maintain certain information on maps. Laclede feels this information is more efficiently maintained on non-map records. The company's present system which is continuously updated, consists of a combination of maps, cards, field notes, a computer data system, and has proven quite adequate. By using its present system, Laclede has complied with all applicable codes and regulations and there is no need to reposition the information from the company's record to a map. To do so would require several years of massive drafting effort at an estimated initial expense of between six hundred thousand dollars ($600,000) and one million dollars ($1,000,000), with one hundred thousand dollars ($100,000) per year thereafter to maintain the system. Since the additional costs add nothing to safety, Laclede recommends this requirement be withdrawn.

MGUTC says the requirement for a map showing all anodes is unreasonable since anodes deplete over time and are replaced. Adequate records can be kept through sketches and written descriptions as well as maps. ANG agrees with MGUTC. United expresses concern with how fast operators are expected to produce the required maps, also noting that it is impractical to map existing anodes inasmuch as no placement records were kept. Mapping is unreasonable since adequate facilities records can be kept through sketches and written descriptions. The proposed rule should be withdrawn.

Springfield comments that the rule would be time consuming, would include leak repairs, individual service installations and individual anodes. If a gas company has these records available in the form of other drawings, work orders, etc., the city feels it is not necessary to also have maps. KPL proposes that the last sentence in Paragraph (V)1 be revised to read as follows: "(1) Each operator shall develop and maintain maps showing, at a minimum, the location of cathodically protected mains and transmission lines and all cathodic protection facilities such as: rectifiers, test points, electrical isolating devices, and interference bonds. Although KPL uses maps to indicate areas of piping protected by anodes, including all anode installations thereon would be cumbersome and confusing, especially since anodes are continually being added or replaced. Anode location is presently available in other records, and KPL sees no additional benefits by this requirement.

Kennett states that because they do not remove anodes, but only install them, they would eventually have a map showing anodes everywhere, one which would be inaccurate because of the old ones that were inoperative or had deteriorated away. Even if the map was accurate, the city feels it would be valueless, since they use cathodic protection test points to determine the quality of the cathodic protection on the pipeline not the number of location of anodes. The commission agrees that maps which show the actual location of individual galvanic anodes may not be necessary to achieve system safety. In this respect, as shown below, the rule has been changed. However, to promote safety, the commission finds that maps showing cathodically protected piping are required to ensure the proper and thorough evaluation of cathodic protection zones and areas. To provide operators time to comply, this section has been changed to show a compliance deadline of one (1) year from the rule's effective date.

4 CSR 240-40.030(10)(B)(4) [192.503(d)] Pipeline Test and Operation Requirements.

ANG suggests that the word "connection" be used instead of "joint." "Joint" is not clear and has other meanings, while "connection" would mean any type of connection (weld, joint, compression, etc.). The commission agrees with ANG's comment. As shown below, the word "connection" has replaced "joint."

4 CSR 240-40.030(10)(I) [192.517(e)] Requires Pressure Test Records of Certain Service and Plastic Gas Lines.

United comments that the proposed rule would require greatly expanded record keeping. A better method would be to accept the employees' verification that test was appropriate instead of documenting each item.

Granby objects as well, saying that small municipals do not have the personnel or funds to do this. The commission concurs, in part, with these comments. Requiring the same testing records for mains and service lines may be too restrictive and lead to unnecessary expense. The commission finds the proposed rule, as shown infra, should be changed to reflect these concerns.

4 CSR 240-40.030(10)(J) [192.519] Operator to Test Customer-Owned Lines when Establishing Service.

Laclede says that compliance with this proposed rule is not practical. Also, Laclede presently conducts adequate gas-safe inspections, the authority for which rests with local officials. Local building codes differ greatly, and asking Laclede to enforce local codes would increase costs without increasing safety and delay the customer. Laclede estimates eight hundred thousand dollars ($800,000) to one million dollars ($1,000,000) annual expense and advises against adopting the rule. Many customer convenience practices would have to be scrapped such as the "leave-on" policy for name transfers. MGUTC objects to the phrase "establishes service", saying it is unclear. The first time service is established or every time? The nature of the test, they say, is not defined. Inspection can best be done by local inspectors who are more familiar with their unique codes. ANG concurs with MGUTC, adding that the rule fails to specify if the test can be by check of the meter test hand or a more elaborate method. Also, proposed (10)(J)1.B. refers to fuel lines operating in excess of "two (2) psig;" this should be raised to "ten (10) psig" because operators serve customers at two (2), five (5) and ten (10) psig which would require piping disconnection for the test. ANG also suggests adding the phrase "if more stringent than the Natural Gas Fuel Code" to proposed (10)(J)1.D. St. Joseph and MoPub state that if the rule as proposed is adopted, operators would have to adopt industry standards, then turn them into tariff provisions in order to legally enforce them. Since the standards must meet or exceed the NFPA or BOCA codes, numerous pages would be added to current tariffs. The BOCA code is eighteen (18) pages plus it "incorporates by reference" numerous documents and NFPA is two hundred (200) pages. Operators would have to train personnel and devote additional manhours and costs to do the inspections. Liability exposure would be increased because Missouri law places a duty on an operator, when inspecting, to do it properly. The operators currently have a "liability shield" since utilities are not responsible or obligated to do an inspection. This would increase the costs of liability insurance. A detailed inspection would take several hours to cover all two hundred (200) pages of NFPA, plus a detailed report would be needed to identify existing conditions for possible future liability reasons. These inspections would be more appropriate for local inspectors who are familiar with their unique codes. United's comment, in part, was to the same effect as MGUTC and St. Joseph and MoPUB. In addition, they find the term "accessible" vague; does it mean not enclosed within walls and visible?

Springfield also feels that "establish service" needs to be defined. The city now uses city and county inspectors; they could not comply with the proposed rule without considerable additional work. Specifically, they ask the commission to eliminate lighting pilot lights for customers. UE says that a "spot test" of the meter is adequate as the test. Most municipal codes require a pressure test by the installer to obtain an occupancy permit, and UE does not initiate service without the permit. But does UE have to retest? The company suggests a rule change to cover this, adding that "inspection" of "accessible" piping is too general although UE would exercise discretion as to the required detail. KPL objects to being made responsible for local code enforcement, which should be the local inspector's

responsibility. KPL has and will continue to test fuel lines at intended delivery pressure and make visual inspections of exposed fuel piping and appliance installations to find and eliminate unsafe conditions. KPL proposes the following changes: (a) "[(J)1.] At the time an operator physically turns on the flow of gas to a customer:" (b) "[(J)1.B.] The first time natural gas is introduced into a customer's fuel line intended to operate at a pressure exceeding two (2) psig, the fuel line must be tested for leakage at one and one-half (1 1/2) times the intended delivery pressure. Thereafter, the requirement of (1)A. shall apply." (c) "[(J)1.C.] In the absence of local applicable codes, the operator shall perform an inspection to determine that the customer's appliances are safe to operate." (d) [(J)1.D.] Delete. The commission agrees that the term "establish service" may be vague. The rule is revised, shown below. The commission also finds that testing fuel lines to one and one-half (1-1/2) times pressure is not of value, a change found **infra**. Finding further, the commission agrees that requiring operators to adopt and enforce NFPA and BOCA codes is unnecessary, another change effected below. Recognizing that the NFPA and BOCA codes contain procedures and standards which operators should follow, the commission finds that the operations and maintenance plans under 4 CSR 240-40.030(12)(C) [192.605] should provide for same. The commission finds that a "spot test" conducted on the meter is an adequate pressure test of the fuel piping system, provided it is accompanied by a visual, on-premise, inspection. As for the phrase "inspection of the accessible customer gas piping and equipment", the commission envisions only the customary operator visual inspection of fuel piping and appurtenances, one normally conducted prior to initiating service. Finally, the commission notes that this requirement does not obligate operators to conduct local code inspections, only to verify that inspections have been performed.

4 CSR 240-40.030(11)(B) [192.553] Requires Use of, and Parameters for, Leak Detection Instruments.

Laclede comments that although they presently comply with the proposed leak survey requirements of this rule, they object to the proposed change which eliminates the operator's existing ability to uprate an in-service pipeline. As proposed, the rule requires an operator to shut down the pipeline, disconnect the main and services, and conduct the testing procedures. This, to the detriment of customer convenience. The company says that since current uprating procedures are safe and effective in increasing the MAOP, the circumstances do not warrant the proposed rule.

MGUTC states that the proposal to divide "test pressure" by factors described in proposed (12)(M)1.B. is unreasonable, inasmuch as it would limit the MAOP to a fraction of the available pressure in the area. **ANG** makes the same comments as MGUTC.

Springfield opposes the rule as well, saying it would eliminate the ability to uprate pipelines to their full potential by restricting to sixty-seven percent (67%) of the test pressure. The city urges the commission to reconsider. **KPL** proposes use of the following wording: "[(11)(B)5.] Establishment of a new maximum allowable operating pressure. (12)(M) and (N) [Section 192.619 and Section 192.621] must be reviewed when establishing a new MAOP. The pressure to which the pipeline is raised during the uprating procedure is the "test pressure" that must be divided by the appropriate factors in (12)(M)1.B. [Section 192.619(a)(2)], except for those components previously tested at a pressure of at least (one and one-half) 1.5 times the new MAOP." KPL states their proposed wording recognizes pressure tests made on pipelines that exceed MAOP test requirements, which is particularly important for plastic. The commission finds that the comments criticizing this rule because it "changes" the existing federal rule are without merit. The proposed rule does not change the federal rule. It does incorporate an interpretation by federal officials of the rule, one issued in July, 1974. Subsequent enforcement of the rule, and its interpretation, has not increased the incidence of shutting down pipelines to uprate. Most uprating situations do not require, and will not require, a pipeline shutdown. The commission agrees that as worded, this proposal fails to allow previous pressure testing (since 1965) to be used in establishing a new MAOP. To respond to this comment, and cure this defect, the rule has been changed (see **infra**), to so permit.

240-40.030(11)(D) [192.557] Stress Requirements for Steel, Plastic, Cast and Ductile Iron Pipelines.

The company comments and the commission findings in 4 CSR 240-40.030(11)(B), **supra**, apply equally to this proposed rule, and are incorporated herein by reference.

240-40.030(12)(C) [192.605] Criteria for Operators' Maintenance and Operation Plans.

Laclede comments that the proposed rule was an "initial proposal" by DOT at the Technical Pipeline Safety Standards Committee meeting on September 13-14, 1988. The company says the requirements are similar to Part 195.402 for hazardous liquid pipelines, which are not applicable to gas distribution operations. As a result, the provisions for "abnormal operations" are clearly inapplicable and the DOT proposal is to be significantly revised in the agency's next notice. Should the Public Service Commission adopt one version and DOT another, it will create an interpretative nightmare. Laclede recommends waiting until this rule is finalized by DOT. **MGUTC** comments to the same effect as Laclede, adding that clarification of the terms "normal" and "abnormal" operations is needed. **ANG** makes the same comments as MGUTC.

United criticizes the rule for lack of a compliance deadline, other than the effective date of rule. One (1) year to develop the plans should be allowed. In proposed (12)(C)2.L., the requirement to do a vegetation survey every time while on the premises is not justifiable, adding more than seventy-five thousand dollars ($75,000) per year in costs. The revision should wait for the final resolution of the DOT rule. **Springfield** also urges the commission to wait until the DOT final rule is issued.

KPL suggests deleting the phrase "for each pipeline" from the first sentence in proposed (12)(C)1. KPL has general standards for all facilities and believes a manual should not be required for each pipeline system. To do so requires increased work and cost without safety benefits. Since the wording is similar to Part 195.402 and the DOT proposal, which is being revised, KPL urges the commission to postpone consideration of this rule until the DOT proposal is finalized. The commission finds that although this requirement stems from an initial rulemaking proposal by DOT, it incorporates requirements to broaden operation and maintenance plan requirements, an end which the commission considers crucial to gas safety. The commission and its staff will review any finalized DOT rule and, if necessary, amend this requirement accordingly. The phrase "abnormal operations" is not, in the commission's view, inappropriate for the transportation of natural gas. It is written in performance language to allow flexibility to operators vis-a-vis their own system. The commission agrees that a compliance period should be provided, and does so **infra**. The rule does not require a separate manual for "each" pipeline. Instead, it requires separate manuals for each operator, as necessary. To clarify this, the rule has been changed, as shown **infra**. Nor does this rule require a "vegetation survey;" instead, it requires personnel to observe the vegetation when on customer premises doing routine work. This requires no extra time or record keeping.

4 CSR 240-40.030(12)(D) [192.606] Safety Training for Operator Personnel.

Laclede comments that this completely new rule is the same as initially proposed by DOT at the September, 1988, meeting of the Technical Pipeline Safety Standards Committee. The company suggests waiting until DOT's rule is made final to avoid confusion and conflict. **MGUTC** also notes that the rule coincides with a recently written DOT standard, which has not been issued and reportedly has been revised. Testing small operator employees would be burdensome where they have no employees to develop specific tests.

ANG comments to the same effect as MGUTC.

St. Joseph and MoPub object to the latitude given to devise the proposed test, asking who ultimately decides that the test is valid. The provision could involve a great deal of time and money. They state, too, that to "verify" that supervisors have a "thorough knowledge" is vague and should be made more specific. **United** comments to the same effect as St. Joseph and MoPub while **Springfield** recommends waiting until the DOT final rule is issued. **Granby** objects in that the rule would be burdensome on small operators with no personnel to develop these tests specific to their systems. **KPL**, after noting the DOT rulemaking, states that the DOT proposal is undergoing substantial revisions and suggests this rule should be delayed until the DOT final rule can be evaluated The commission finds that notwithstanding operator admonitions to wait until the finalization of this DOT rule, the commission cannot, and should not, wait for the attenuated federal rulemaking process to conclude. To do so may conduce too an extremely long wait, too long to satisfy the requirement of gas safety in Missouri. The commission will review any finalized DOT regulations and, if necessary, change this rule to reflect same. The terms "thorough knowledge" and "verify" are not, in the commission's view, too imprecise. Both are couched in performance language to permit operators flexibility in devising programs unique to their systems. The commission agrees that sufficient time should be provided for operator compliance, as commented. To achieve same, the rule has been changed (see below) to permit eighteen (18) months for compliance.

4 CSR 240-40.030(12)(I) [192.614] Requires Operators to Notify Public and Excavators Re: Damage Prevention to Underground Piping.

MGUTC objects to providing an excavator notice "as often as necessary." This is unreasonable and cannot be measured. Proposed (12)(I)3.A.-H. requires analysis of conditions that are difficult to access and the initial visit during pipeline location may not yield the needed information, especially when some requests are located months in advance of the actual excavation. **ANG** comments to the same effect as MGUTC. **St. Joseph and MoPub** state that requiring operators to pay "particular attention" to excavations in close proximity to cast iron mains is vague. This should be defined to specify the proper operator response, and "close proximity." (12)(I)2.B. requires operators to give notice to "the public in the vicinity of the pipeline." How, ask the commenters, does the operator determine who to notify and what "vicinity" means? And what method(s) of notification to the public is acceptable? Also, asking operators to notify excavators "as often as necessary" is vague and should be either excluded or better defined. Also, what does "actual notification" mean as used in (12)(I)2.E.? And "pay particular attention to" as used again in (12)(I)4.? These terms should be more specific. **United** concurs with St. Joseph and MoPub, adding that while the operator can perform certain duties by participating in "one-call", it does not relieve the operator of responsibility. To United, this implies that "one-call" participation produces no benefit. Also, proposed (12)(I)1. refers to pipelines listed in proposed (12)(I)3., but no pipelines are listed there.

Springfield says the phrase "as often as necessary" could subject an operator to penalties if a notice was not sent immediately prior to an incident, adding that "an analysis" to provide a need for inspection is very subjective. **UE**, combining its comment on 4 CSR 240-40.030(13)(Z) [192.755], objects that the operator is required to notify potential excavators, to assess and inspect excavations, and to replace cast iron, if necessary. By so doing, the liability burden shifts from the excavator to the operator. Also, excavators will broaden their excavations, force the operator to replace its mains, and thus be relieved of the requirement to backfill his own excavation. A minor water/sewer excavation could become a costly project for the operator to take the main out of service and replace it. UE doubts if this costly shift of work and liability was considered in the drafting of this rule and recommends that (13)(Z) be reconsidered.

Granby objects, noting that small operators do not have the personnel available to provide continual inspection of excavations. **One-call** comments that the rule implies a duplication of efforts is required of the participant operator and by One-Call. "One-call" provides a valuable service using a quick, toll-free call for the excavators which records the conversations. One-Call maintains a contractor list and makes annual mailings. One-Call suggests changing the rule to: "Participation by the operator in a one-call system which performs those duties described in Paragraph (12)(I)2. shall constitute compliance with this rule with the exception of those duties described in subparagraph G. thereof. Participation by the operator in a one-call system does not relieve the operator of responsibility for compliance with paragraph (12)(I)2.G. of this subsection." The commission finds that operator concerns regarding a "duplication of efforts" between One-Call and this requirement are misplaced. If participation in the One-Call system accomplishes the objectives in (12)(I), the operator is in compliance. The wording "participation (in One-Call) does not relieve the operator", does not impose a double requirement, it merely affirms that operators, not a one-call system, are responsible for compliance. The commission finds that if an evaluation and analysis is not possible at the time of the initial pipeline location, subsequent visits are necessary and critical to perform a proper evaluation. This is an extremely important safety consideration particularly when cast iron piping is involved. The terms "particular attention" and "close proximity", are in performance language, to permit operator flexibility in enforcement. To further define them would hamper, not assist, gas safety efforts. The terms "vicinity" and "actual notification" are currently used in CFR 192.614(b)(2) and, as performance terms, have caused no difficulties for operators. As for "actual notification" to excavators, this is best achieved by using registered or certified mail. In the event excavators require notification more often than once yearly, subsequent notification may be by first class mail, a point not addressed in the proposed rule but which, by the changes below, the commission now approves. As for operator concerns that this requirement will somehow "shift" the liability burden from excavators to operators, or relieve excavators of the requirement to backfill their own excavations, the commission finds that a proper analysis before and during the excavation will allow the operators to determine cost allocation regarding operator comments pertaining to the commission's, and their own, authority to impose or carry out this rule, see the commission's finding made under rule 4 CSR 240.030(8), [192.351 and 192.352] **supra**, which is hereby incorporated by reference.

4 CSR 240-40.030(12)(J) [192.615(b)(2)]

MGUTC comments that the rule is unclear on frequency of reviews. The commission agrees with MGUTC's comment. This requirement, as shown **infra**, has been changed to specify, in (J)2.B., "an annual review."

4 CSR 240-40.030(12)(K) Requires Operators to Have Public Education Program Re: Gas Safety. **United** objects to the rule inasmuch as there is no definition of what an "excavation-related" activity is. Also, to say the program must be "as comprehensive as necessary" is a conclusion and not a standard. The operator must provide for "notification" to the intended groups, but notification of what? The content of the notification should be specified. Since operators will be required to send notices to customers a total of eleven (11) times, the requirement should be evaluated for the effectiveness of such continual notices. Continual cigarette pack notices, for example, are of doubtful impact. **St. Joseph's and MoPub's** comments are to the same effect as United's. **ANG** objects to the necessity for notifying customers "at least semi-annually by mailings" since the operator also has to have at least nine (9) billing messages. If nine (9) billing messages are not adequate, then two (2) additional messages probably would not provide any additional education. This is an additional expense that adds nothing to safety The commission finds that the terms "excavation-related activity" and "as comprehensive as necessary" are presently contained in CFR 192.615(d) and, as performance terms, have caused no difficulties. The term "exca-

vation" is defined in Chapter 319, RSMo. The commission finds further that this change actually reduces the requirements of the staff guidelines for this subsection which the operators are presently complying with. Finding further, if an operator doubts the effectiveness of these minimum requirements, additional more comprehensive and effective methods must be developed and implemented.
4 CSR 240-40.030(12)(M) [192.619] Uprating Requirements vis-a-vis Maximum Allowable Operating Pressure.

KPL comments are to the same effect as their comments for proposed (11)(B), concerning uprating restrictions. The company's concerns will be addressed if revised wording proposed in those comments is accepted. The commission finds that by addressing operator concerns made under (11)(B) [192.553], similar concerns directed to this requirement will be satisfied. As a result, subsection (M)1.B. will be, as shown below, revised to add the word "highest" to the affected section and to permit use of pressure testing done after July 1, 1965.
4 CSR 240-40.030(12)(P)6. [192.625] Odorant Test and Calculation Criteria.

UE says that for odorant injection at small usage stations, quarterly calculations are not necessarily meaningful in nonheating months. UE suggests more reliance on odor intensity tests and longer inspection intervals for injection rates. **KPL** notes that they check individually odorized services every two (2) years for sufficient odorant, their experience indicating this frequency is adequate. KPL thinks semi-annual testing would be excessive and proposes the following wording: "At individually odorized service lines, the odor intensity shall at least be checked once every two (2) years. No odorant injection rate calculations are required for these systems."

The commission agrees that checking all individually odorized lines twice a year may be unnecessary. However, safety considerations require that large volume, high use customers do not deplete their odorant. To reconcile both operator and commission concerns, the rule has been changed, see below, to so provide. Regarding odorant checks in nonheating months, the commission finds that a no-usage test result satisfies the intent of the rule as proposed.
4 CSR 240-40.030(12)(S) [192.631] Safety Criteria in Customer-Owned Facilities, Conditions of Service.

Laclede objects to this rule, since it states that operators must meet proposed (10)(J), which Laclede also opposes. This rule should be modified to state that "the operator will provide the new customers with the following information," and then specify that "the notification should be made in the following manner: 1) by first class mail; 2) by personal delivery; or 3) in some other practical manner."

If required to provide this information to all turn-ons, in addition to new customers, the cost to Laclede would be fifty thousand dollars ($50,000) to sixty thousand dollars ($60,000) per year. If required to personally provide the information to each customer prior to effecting turn-on, Laclede's costs would be five hundred sixty thousand dollars ($560,000) to six hundred seventy thousand dollars ($670,000) each year. **MGUTC's** comments are the same, to some extent, as on proposed (10)(J). The requirement to provide customer information "before providing gas service" is unreasonable, since there is no practical way to deliver printed information. **ANG's** comments also include those by MGUTC; in addition, ANG says clarification is needed as to who must be provided information: customers who move to the operator's system? "First-time" customers? Or those who move inside a system? **St. Joseph and MoPub** object to the phrase "provide gas service" as vague, both in this rule and in proposed (10)(J). Also, the information required to inform the customer of his "responsibility" regarding "equipment" is unclear. What information? And how should it be transmitted? **United's** comments were to the same effect as St. Joseph and MoPub, adding that the rule will be costly if not limited to new customers. United notes as well that the rule requires operators to terminate "unsafe" fuel lines, a provision already in utility tariffs. Since other proposed rules would eliminate cast iron, ductile iron and copper in new services, does this imply that services of this material are "unsafe", thus triggering termination? **Springfield's** comments are the same as MGUTC. **KPL** suggests their wording in proposed (10)(J) would eliminate concerns in this proposed rule. To allow operator flexibility in providing information based on customer accessibility, KPL proposes the following: "When providing new gas service to a customer, the operator must provide the customers with the following:" The commission finds that operator concerns regarding this requirement are both reasonable and helpful. To accommodate same, without sacrificing safety considerations, the requirement has been amended as shown below.
4 CSR 240-40.030(13) General.

UE makes the same comment here as they did **supra**, for 4 CSR 240-40.030(8). The commission incorporates by reference its findings made under 4 CSR 240-40.030(8), **supra**.
4 CSR 240-40.030(13)(E) [192.707] Line Markers for Mains.

Laclede objects to the revision in 2.B. which removes the exemption or markers in Class 3 and 4 locations. As a result, markers at virtually every street crossing would be required, except where placement of a marker is impractical. This is an ambiguous exception, subject to ongoing controversy and the subject of a DOT proposal. The rule will reduce safety because marks in Class 3 and 4 locations can only be installed in the general vicinity of gas mains. Laclede estimates the initial cost to comply will exceed four million dollars ($4,000,000), and cost two hundred thousand dollars ($200,000) annually thereafter. Since the cost outweighs the benefits, Laclede suggests the Public Service Commission wait for DOT's final rule. **MGUTC** objects to the rule, suggesting the Public Service Commission wait for DOT's final rule. **ANG's** comments are the same as MGUTC, adding that markers may be necessary on both sides of some public roads where the pipe location is uncertain, but in most cases it is unnecessary. **United** objects because the standard for practicality is not defined. As proposed, the rule could require markers on each side of the street in every block in every city of this state. There is no need for blanketing cities with these signs, especially considering other rules proposing customer and public notification. United opposes adoption of the rule. **Springfield** comments as does MGUTC, adding that the rule includes several terms such as, "impractical" which is subjective and has no real meaning. **KPL** comments to the same effect as MGUTC. KPL does not think this rule should require markers on both sides of public roads and railroads. As a practical matter, most systems already place more than one (1) line marker, based upon terrain, adjacent occupancy and use of rights-of-way. Problems with local governmental requirements, and company experience with possible problems in areas adjacent to the buried pipeline, contribute toward KPL's opposition. The commission finds that requiring markers on both sides of all crossings may, as operators have suggested, be excessive. As a result, and to reflect operator concerns, this rule has been substantially changed (as demonstrated below) in such fashion as to return to the existing federal requirement for distribution mains, while imposing more stringent standards for higher pressure feeder and transmission lines.
4 CSR 240-40.030(13)(L) [192.721] Annual Inspection of Feeder Mains.

MGUTC notes that a clearer definition of "feeder line", is required, as discussed in (1)(B).

ANG comments as does MGUTC, adding that there is no advantage in patrolling lines unless they fall under transmission line guidelines, given that operators are required to have a damage prevention program.

United objects to the rule, noting that feeder line patrolling would cost them more than ten thousand dollars ($10,000) annually. **Springfield** comments as does MGUTC.

The commission finds its change of the definition of "feeder line", referenced **supra** and shown below, addresses these comments.

4 CSR 240-40.030(13)(M) [192.723] Requires Instrument Surveys of Certain Steel and Buried Lines at Stated Intervals. **MGUTC** says the rule is unreasonable, since it requires operators to survey lines for which they have no records; those installed by property owners at their choice and risk. The frequency of leak surveys, MGUTC says, should be coordinated with developing DOT rules. **ANG** comments as does MGUTC, suggesting the requirement to survey buried fuel lines be removed.

United asks if the rule applies to customer-owned lines. If so, surveying customer-owned lines would be difficult and expensive when an operator did not install them and has no records. United estimates its annual cost at nine thousand dollars ($9000), and questions the justification for increased surveys for plastic and protected steel lines in 2.B.(II), which will cost approximately six thousand dollars ($6000) a year. **Springfield**, although not objecting to increased frequency of gas leak surveys, does object to leak surveying customer-owned fuel lines. Springfield would assume a significant liability in leak surveying customer-owned facilities. If leaks are not detected, and an incident results, the city may be liable. **Granby** objects to the rule, noting it would have a negative impact on smaller municipals with manpower constraints. The commission's emergency rule took a month to complete. **KPL** notes that new wording is needed to clarify that customer fuel lines, connected to unprotected steel services, are leak surveyed in conjunction with appropriate service surveys and suggests the following: "(b)(2)(i) (fifteen) 15 months, but at least once each calendar year, for unprotected steel services and associated buried fuel lines to the nearest building wall." KPL also suggests rewording as follows: "(b)(2)(ii) (three) 3 years for all other pipelines and associated buried fuel lines to the nearest building wall." **Laclede** comments that if the proposed revisions to this federal rule are approved, they will greatly increase the scope, the nature and the frequency of leak surveys as well as increasing costs. If approved, the customer-owned gas piping downstream from the meter or operator piping (whichever is further downstream) would require inspection including lines serving gas grills, lights and swimming pool heaters. Laclede doubts if the commission has authority to require the customer to permit, and the operator to perform, such surveys. Although Laclede now conducts yearly instrument leak surveys of its bare mains and intermediate pressure services, the inclusion of customer-owned fuel lines will require an enormous identification program, a procedure which does not now exist, and which would be difficult to develop and implement. To implement this program would cost approximately one million dollars ($1,000,000) per year, with annual compliance costs estimated to be an additional two hundred fifty thousand dollars ($250,000) per year. The company has no current control over the installation and location of buried customer-owned fuel lines, nor will the proposed rule give Laclede such authority. Increasing the company's leak survey responsibilities, as proposed herein, is not supported by any finding of inadequacy, and should not be adopted. The commission finds that both the commission, and the operators under its jurisdiction, have the requisite authority to inspect and leak survey customer-owned fuel lines for the reasons given by the commission in its finding made under rule 4 CSR 240-40.030(8)(B) [192.352]. These findings are hereby incorporated by reference. Regarding small operator comments to the effect they lack resources or manpower to achieve gas safety in the fashion prescribed, the commission finds that the benefit of periodic leak surveys far outweighs the burden to such smaller systems. The commission finds as well that early leak detection may be the least expensive and most efficient modality to ensure gas safety. As a result, the frequency of leak surveying has been, and will remain, as stated in the rule.

4 CSR 240-40.030(13)(N) [192.725] Requires Retesting of Service/Fuel Lines When Disconnected.

Laclede again questions the commission's authority to regulate customer-owned lines to the same extent and degree as those owned and operated by Laclede. Commenting further, Laclede says it has insufficient control over customer-owned lines to adopt and apply industry and applicable local codes in inspecting these facilities, or to maintain extensive records thereof. Laclede's comments regarding section 192.519 also apply here, and testing at any time other than a meter turn-on would increase the cost of such work as well as deter customers from calling Laclede to perform this work. Appliance service contractors would be able to perform the work at less cost. Laclede says their rates for such service could become noncompetitive, and therefore be counterproductive to the commission's objective, since it would decrease, not increase, the number of safety checks. The company says the rule is not based on any known safety problems and should not be adopted. **MGUTC** says that this section needs to be better defined. Inspecting a customer's fuel line each time service is disconnected is unreasonable, since the act of disconnecting service does not change the inside conditions. A cursory inspection during a relight is a matter of general policy, but additional inspections or record keeping is not reasonable. **ANG** comments as does MGUTC, adding that all wording referring to fuel lines should be removed. The operators often have service disconnected to maintain or repair the system, which has no effect on the customer's fuel line. As written, the rule would still require retesting. **St. Joseph and MoPub** say that "disconnected" with regard to a "disconnected service line" needs to be redefined. The proposed rule is also vague, in that it is not clear whether it applies only when the service line pipe is physically severed from the main, or when it is just valved off at the main. "Temporarily disconnected" is also unclear. How long is "temporarily?" Does it apply to a seasonal voluntary disconnect for the summer? The company says further confusion is produced in proposed 3. because "temporarily disconnected" and "temporarily discontinued" are not distinguished. **United** comments as does St. Joseph, adding that if a seasonal voluntary disconnect for the summer is covered by this rule, then utilities may wish to increase their reconnection charges to cover the cost of the additional testing. **Springfield** comments as does MGUTC, adding that the lines in question belong to the customer. The city should not be expected to accept liability. **KPL** suggests that paragraph 1. be revised as follows: "1. Except as provided in paragraphs (13)(N)2. and 3. of this rule, each disconnected service line must be tested in the same manner as a new service line, and the associated fuel line must be tested at the intended delivery pressure before reinstating service." KPL also says that to test a fuel line operating at a pressure exceeding two (2) psig will require either the physical separation of the fuel line from the service line for an air test, or the manipulation of the existing service regulator to provide the necessary test pressure. No useful purpose is served by either action.

Kennett comments that it has no control over, or knowledge of, the disconnection of appliances inside the customer's home. The commission finds these operator comments regarding their, and the commission's, authority to order or conduct reinspections of customer-owned fuel lines are substantially the same as comments made under 4 CSR 240-40.030(13)(M) [192.723], **supra**. The commission's findings on this aspect of the instant requirement are, therefore, the same as found under 4 CSR 240-40.030(13)(M) [192.723], which findings are hereby incorporated by reference. Finding further, the commission agrees that tests may be performed at the intended delivery pressure before reinstating services, as provided **infra**. The term "disconnected" refers to a physical separation of the piping, whereas "discontinued" refers to a connected line, but one not then in use. "Temporary", a term now in use under CFR 192.725(b), does apply to seasonal disconnects.

4 CSR 240-40.030(13)(R) [192.739] Regulator Overpressure, Protection and Warning Devices, and Prevention of Unauthorized Valve Operation.

UE's comments **supra** under 4 CSR 240-40.030(4)(DD)—[192.197], also apply here.

United questions whether the type of warning device the commission describes in

6. actually exists and is available for purchase. Nor is there a proposed date for compliance with this rule. If operators are to install such devices, they need lead time to do so. In addition, the phrase "adequate from the standpoint of reliability of operation" is vague, conclusionary, and not an appropriate standard, an assertion also made by **St. Joseph and MoPub**. The commission does not agree that "adequate from the standpoint of reliability of operation" is vague, conclusionary or an inappropriate standard. This phrase is a current minimum federal standard and applies to all operators in this rulemaking. Couched in performance language, it permits operators flexibility in application. Were it otherwise, operators would doubtlessly protest because it is too specific, tying them to procedures or solutions inappropriate for their widely differing systems. Nor is there any "question" that such warning devices exist; audible relief devices, SCADA systems and telemetered pressure alarms are widely available. The commission agrees with operator concerns regarding compliance time. As shown **infra**, the rule has been changed to effect compliance one (1) year after the effective date.

4 CSR 240-40.030(13)(S) [192.741] Telemetering and Pressure Recording Instruments.

MGUTC notes that the terms "graphic" and "continuously recorded" need clearer definition. **ANG** comments to the same effect, noting that some operators use a SCADA system connected to a computer with alarms for pressure differences. These are not recorded, and in most cases are not kept since no necessity for the information exists.

Springfield comments as does MGUTC, adding that the rule seems to eliminate the use of a computer-based telemeter system such as SCADA, which poll each monitoring location periodically and store information electronically. The commission agrees that the context in which "graphic" and "continuously recorded" are used needs clarification. As shown, **infra**, a change has been made to achieve this. The commission also finds that (13)(S) does not eliminate the use of computer-based SCADA systems solely because the information is not retained at close intervals.

4 CSR 240-40.030(13)(V) [192.747] Selection and Maintenance of Emergency Valves.

Laclede objects to the proposal, since it would require most, if not all, distribution valves to be checked for accessibility and serviced annually, many more than presently required, by federal rules. The rule also requires partial operation. Laclede now inspects six thousand five hundred (6500) valves, two hundred sixty-four (264) of which are partially operated on certain systems. Partially operating all the valves would cause packing/gland/stem leaks and related nuisance calls. The company says these valves were not intended to be routinely operated, and there is no point in generating useless leaks. Further, it is unsafe to partially operate bypass valves, quarter-turn valves, or valves with an undocumented number of turns to open/close and will cost Laclede one hundred fifty thousand dollars ($150,000) to two hundred thousand dollars ($200,000) per year to do so. Subparagraph 3.C. and 3.D. mention previously referenced "relight zones" in the context of additional valves, a rule which Laclede also objects to [4 CSR 240-40.030(4)(V)]. Laclede urges the commission not to adopt this rule. **MGUTC** comments that the term "feeder line" needs clarification and notes that partial operation of valves poses a serious problem, given that older valves typically develop small leaks through the valve stem when operated. **ANG** comments as does MGUTC, objecting, again, to subsection (3)(C) which refers to the eight (8) hour relight period. ANG suggests it be revised to read "as soon as possible under safe working conditions." **St. Joseph and MoPub** object to the proposal because it places a requirement on the operator to determine which valves are necessary for safe operation and which are not. The criteria for check are vague and subjective, since some operators consider all valves to be necessary for safe operation of the system. Also unclear is which valves would be covered by the provisions of 1. and/or 2. The rule is also defective because proposed 3.D. makes an operator responsible to know where there are conditions of "greater than normal pipeline failure risk." What is the normal failure risk? **United's** comments are the same, substantially, as St. Joseph and MoPub.

Springfield finds the entire rule in need of further clarification and definition, particularly the term "partial operation." **KPL** suggests the words "and distribution line" be deleted from paragraph 2, given KPL's concern with partial operation of distribution line valves. These lines are presently checked for accessibility, serviced annually, and experience indicates partial operation causes nonhazardous leakage around the valve core. Although nonhazardous, these leaks require repair and could cause replacement of the valves at a considerable cost. See comments, **supra**, regarding the eight-hour relight zones under (4)(V). The commission, although mindful of comments that partially operating emergency valves may damage them, finds a far greater danger is presented by emergency valves which do not work. The only way to ensure that emergency valves operate is to operate them. However, to reconcile operator and agency concerns, the rule has been amended to provide for valve operation every two (2) years, rather than annually. As for the objection that this provision requires an operator to determine which valves are necessary for the safe operation of its system, the commission hopes that all Missouri operators already possess this information. This is neither a vague nor a subjective criterion, save for those operators who know nothing of their system. This phrase, as well as "greater than normal pipeline failure risk" is performance-oriented, to recognize differences in systems and operating procedures. The term "feeder line" has been clarified **supra**, in the definition section of this rule; "partial operation" has long been used in CFR 192.745, with application to all operators.

4 CSR 240-40.030(13)(Z) [192.755] Protecting Cast Iron Pipelines.

Laclede comments that it experiences two (2) types of situations where buried cast iron pipe can become disturbed: planned construction and unplanned emergency repairs. Unplanned projects are those that arise due to sewer collapse, water main breaks, or other unexplained erosion or cave-ins. Planned projects are, and always have been, part of the company's operating procedures. Laclede says that the increased replacement in this proposed rule is similar to a rule in the New York Public Service Commission's rules, except in New York the rules applied only to cast iron pipes eight inches (8") or less in diameter. This rule would apply to all sizes of cast iron pipes. In 1986, after a four (4)-year research program, the New York Commission waived the rule. This action, together with Laclede's many years of experience in operating, maintaining and inspecting its cast iron system, shows that the "angle of repose" replacement requirement to all sizes of cast iron pipe is excessive, and provides no reduction in risk sufficient to justify the massive expenditures required to replace cast iron. The company says that complying with the proposed rule would require it to replace cast iron with steel or plastic pipe, and cost between four million three hundred thousand dollars ($4,300,000) and five million seven hundred thousand dollars ($5,700,000) per year. Laclede recommends the commission withdraw the blanket application of the angle of repose requirement for all cast iron pipe. Instead, the company suggests that operators establish a procedure for protection of cast iron pipelines adjacent to foreign trenches. This will enable operators to recognize and consider local conditions that affect the cast iron, rather than apply a rigid formula as prescribed by this rule. Laclede also notes that recent incidents involving cast iron pipe have involved small diameter pipe operated at pressures above those found on any of Laclede's cast iron systems, the highest of which is twenty-five (25) psig., and this only infrequently. More than ninety percent (90%) of Laclede's cast iron mains are part of the low pressure system, which operates at less than one-third (1/3) pound (psig). The company strongly recommends that reliance on "angle of repose" be withdrawn and that

the commission approve a requirement permitting each operator to establish a system specific procedure. **UE's** comments on this rule are found under 4 CSR 240-40.030(12)(I).

MGUTC feels that the replacement of cast iron pipe near excavations by others requires more study. Angle of soils requirements are difficult criteria to analyze, especially in smaller, minor excavations. Also, the ease with which a main can or should be taken out of service for replacement must be considered. **ANG** comments to the same effect as MGUTC.

St. Joseph and MoPub say that the conditions listed in 1.A. through F. are vague and subject to speculation. What is the definition of "as soon as feasible" in 2.? Would that include replacement in the normal course of a formal replacement program? Calculations of the angle of repose for different soils are difficult. **United** comments to the same effect as St. Joseph and MoPub. The commission finds merit in operator objections to the proposed use of "angle of repose" in subsection (2). The commission also finds merit in the comments concerning the diameter of the involved pipeline. This requirement will be changed, as shown **infra**, to at least partially address operator concerns. The commission rejects comments concerning the operating pressure of the pipeline. Low-pressure pipelines are as apt to fail as high-pressure pipelines and these facilities are likely to be located under pavement in urban areas. The phrase "as soon as feasible" does not include replacement in the course of an ongoing formal replacement program. A performance phrase, it is employed to give operators flexibility in applying the requirement.

4 CSR 240-40.030(14)(B) [192.1103] Leak Investigation and Classification Procedures.

Laclede objects to this rule, noting it would increase Laclede's cost from two million three hundred thousand dollars ($2,300,000) to two million six hundred fifty thousand dollars ($2,650,000) per year with no demonstrated safety improvement. The company notes that proposed (14)(B)1. should have the word "immediate" replaced with "prompt." Laclede described its long-standing procedures, and feels they are effective in identifying and eliminating potential hazards. To do a property line test on every service call as proposed would be very costly without increasing customer safety. Also, the building wall test would identify hazardous Class 1 and 2 leaks, while the property line test would identify nonhazardous Class 3 leaks. The instrument leak surveys in proposed (13)(M) provide a more frequent and effective method for finding Class 3 leaks than property line tests. The second barhole would increase service rates, and Laclede would not be able to compete with appliance service contractors. Laclede responds to four thousand three hundred (4300) appliance service calls per average month and if appliance calls were lost, over fifty thousand (50,000) customer premises annually would no longer be tested. The property line barhole test alone would increase costs by eight hundred thousand dollars ($800,000) to eight hundred fifty thousand dollars ($850,000) per year with no benefit. The company feels the repeat investigation in proposed (14)(B)7. is completely unnecessary and should be withdrawn, noting that evidence was provided that safety could be increased, or leaks detected, after a proper initial investigation. A repeat test would also unnecessarily inconvenience customers, who would be required to be home for second responses or risk having their gas shut off, possibly in extreme weather. Laclede's annual costs would be one million five hundred thousand dollars ($1,500,000) to one million eight hundred thousand dollars ($1,800,000), without enhancing safety. **MGUTC** objects to the requirement of two (2) subsurface tests as unreasonable, adding to both the time and cost of routine service work. The proposed rule should be studied for cost effectiveness. Property line tests find Class 3 leaks that can be repaired in five (5) years, which is greater than the three (3) year survey cycle in proposed (13)(M). Such a leak would be discovered in the normal proposed survey without this extra test. The recheck in "no-leak" situations is unreasonable, and should be studied for cost effectiveness. Also, this rule may discourage calling for minor leaks due to the inconvenience of the call-back. **ANG** comments, as did MGUTC, noting that numerous routine situations are not provided for in the exceptions to leak tests. Leak tests should only be at the riser, and only for leak calls, not for routine calls. If a test at the riser is required, it should only be for instances when the meter, riser, or attached piping is disturbed in the course of the service call. **United** concurs with MGUTC regarding the two (2) subsurface tests, and estimates that the extra leak tests would add fifteen (15) to twenty (20) minutes to each call. At ten thousand (10,000) calls per year, United's added cost would be one hundred thousand dollars ($100,000) per year for services checked several times per year, many of which are nonproblem polyethylene and protected steel. Paragraph (14)(B)7., requirement of a three (3) day repeat check, is questionable, requiring more personnel. Normal leak investigations are so complete that leaks, if present, are located and operator personnel will not leave the location unless they are satisfied that no leak exists. The three (3) days pose a problem of gaining entrance and the operator may not be able to comply with this provision. **Springfield** says the definition of "work" is inadequate, and feels the rule should only apply when a utility employee does work on a gas service line or meter. **UE** objects to two (2) tests, suggesting that one (1) is sufficient at the structure given that the object of the test is to see if gas is entering the structure. If the structure test is negative, the second proposed test one hundred feet (100') away is not needed, and adds unnecessarily to the number of tests required considering enhanced leak survey proposals. UE finds the erratic timing and the lack of targeting of these proposed tests make them illogical, such as in the case of stable occupants versus high tenant turnover locations. This lack of targeting could lead, in a high turnover location, to frequent testing of new plastic lines. **KPL**, owing to the difficulty of finding people home on weekends and holidays, proposes the following change to proposed (14)(B)7.: "A repeat leak investigation shall be conducted within (three) 3 days, excluding Saturdays, Sundays and holidays, of any leak or odor notice from the general public where, during the initial leak investigation, no leak was found or no explanation of the odor was determined." **Kennett** notes that they have many "read in & read out" orders which normally take the serviceman about one (1) minute on the premises. If the city is required to take a leak check at the property line (or the service tap), it would have to use a line locator to find the service line at the property line. This would take more time than a "read in, read out" and possibly require additional personnel. Kennett notes that leaks at the property line would probably be a Class 3 leak, which does not require repair for five (5) years; yet, per the new proposed rule 192.723, such a check would be made every three (3) years. The city proposes an exception in (B)6. which allows "read in and read outs" without conducting the property line check.

The commission finds that a strong leak detection program is the most efficient and cost effective method for preventing explosions and fires. Thus, Laclede's suggestion that investigation of a known gas leak or odor should be "prompt" instead of "immediate" is rejected. Response to such a report must in every event be immediate; to do less would imperil lives and property. Nor does the commission agree with those operators who urge the elimination of tests on routine service calls, or whenever operators conduct work on customer premises. Again, the best safety measures are those which prevent explosions and fires by a routine and simple survey, which is what the commission is prescribing. The commission agrees that service lines constructed of polyethylene or cathodically protected steel should, to some extent, be exempt, a provision contained **infra**. The commission also finds merit in operator concerns regarding difficulties in conducting repeated investigations within the prescribed three (3) days. The rule has been changed, **infra**, to reflect these concerns. Concluding, the commission finds that no exception is intended for operator "read-ins/read-outs:"

under the rule, this constitutes "work on a customer's premises."

4 CSR 240-40.030(14)(C) [192.1105] Leak Classification.

Laclede comments this proposed rule has two (2) changes from those in existence since 1972, the first being that a daily recheck be performed of each Class 2 leak which was reclassified from a Class 1 leak as a result of venting a leak where gas was detected entering a building. The second change is to reduce the maximum time allowed for rechecking a Class 3 leak from seven (7) months to six and one-half (6 1/2) months. The company is unaware of any problems occasioned by the current leak classification procedures during their seventeen (17) year existence. Instead, the procedures have provided a proven level of safety to the public whereas the new rule would add one hundred thousand dollars ($100,000) to Laclede's annual costs, and should not be adopted. **United** questions if the new rule means an operator must repair a leak within fifteen (15) days with daily checks. If so, the rule should be modified to read: "However the leak must be rechecked daily until repaired, but the repair must take place within [fifteen] 15 days." The commission finds this regulation is substantially similar to rules which have been enforced since 1972. Nonetheless, the minor changes added during this rulemaking have generated operator comments, one of which objects to daily rechecks of Class 2 leaks. The commission finds that such rechecks are reasonable, given that they are to be performed on gas leaks which were once Class 1 leaks, having been reduced by venting gas. In short, an active leak still exists, with natural gas escaping into the area. In such circumstances, a daily check, for safety's sake, seems prudent. The same operator objects to being required to recheck Class 3 leaks every six and and one-half (6 1/2) months instead of every seven (7) months. However, present state standards require such checks every six (6) months, not every seven (7). Thus, the commission's proposal, in effect, gives this and other operators an additional two (2) weeks for scheduling and routing. The commission finds merit in United's request for an explanation of the sentence beginning "However the leak , but not to exceed fifteen (15) days" (Class 1 leak). The rule has been changed, see below, to address this comment.

4 CSR 240-40.030(15)(B) [192.1202]

United comments that the phrase "designated commission personnel" should be better defined. The commission finds that adding "designated commission personnel" to the definitions, shown **infra**, addresses this comment.

4 CSR 240-40.030(15)(C) [192.1203] Bare-Steel Service Line Replacement and Leak Survey Program.

Laclede objects to this rule, noting it has had an effective bare-steel and service replacement program in place for thirty (30) years, having replaced one hundred eighty-six thousand (186,000) services since 1958. The company program, coupled with leak surveys, continues on an orderly planned basis without regulatory mandate, leading to the replacement of more than eighty-five percent (85%) of Laclede's original bare-steel services. The cost to replace the remaining lines (not yard lines) is estimated at forty-five million dollars ($45,000,000 to fifty million dollars ($50,000,000). The company's various replacement and monitoring programs are far more sophisticated than an arbitrary "replace it all" requirement and the company can identify and schedule replacements far more efficiently than the proposed rule. Inasmuch as 4 CSR 240-40.030(15)(E) would require Laclede to submit a plan to the commission by May 1, 1990 to protect cathodically, or replace, bare steel mains, the company recommends that a program covering replacement of bare steel services be made a part of that plan. Laclede strongly recommends that the commission delete this proposal, eliminate the two options proposed, and instead require each operator to submit its own plan to the commission by May 1, 1990, to cover the replacement and monitoring of unprotected steel service lines on its system. As for yard lines, the company says that no definitive data on yard lines now exists from which an accurate estimate can be made on replacement costs. The company strongly believes that replacing, inspecting or maintaining yard lines is not, and cannot be, Laclede's responsibility. Nor can the costs associated therewith be the responsibility of Laclede or its general ratepayers. The company asks that the commission also see Laclede's comments regarding 4 CSR 240-40.030(13)(M). **MGUTC** urges the commission to study this rule further to determine its cost effectiveness. Older lines have proven their serviceability over the years with a sound leak survey and replacement program. **ANG** feels the rule needs further study, and notes that many unprotected lines are in low corrosion condition. If so, records of leaks should be the determining factor in replacement. "Yard lines" should not be included in this rule since they are customer-owned piping, installed by customers or their agents, over which operators have no control and do not know the exact location, making surveys very difficult. Should the commission proceed with this rule, ANG suggests that the date for the notification to the commission be one (1) year after the effective date of the regulation and that the replacement date in paragraph 1. be five (5) years after the notification date. **St. Joseph and MoPub** object to the rule because not all unprotected steel or cast iron pipes need replacement in the time frames proposed. The commission relies too heavily on some particular instances and mistakenly generalizes that similar corrosion or other unsafe conditions exist statewide. Although St. Joseph amd MoPub would never knowingly provide service through unsafe instrumentalities, they doubt that all pipe of particular composition should be scrapped when it can be shown that it still has many serviceable years remaining. Nor is there evidence that this is a nationwide or even regional problem. The massive replacement required by this rule can have a significant impact upon statewide gas rates. Not only would new investment in new lines be required, translating into higher rate base and revenue requirements, but depreciation reserves would be affected by early retirement of pipe with significant serviceable life remaining. St. Joseph and MoPub suggest that the commission add a provision allowing a utility the opportunity to identify areas or categories of operator-owned pipe with a demonstrable safety record and allow those to be exempted from the replacement program. Special surveys or tests, or other forms of leak detection criteria can be considered to assuage concerns about safety aspects in these instances. To force the abandonment of pipe without some compelling evidence that it is required for the public safety is not prudent. Such evidence has been presented in this docket. **United** repeats, to some extent, its comments made under 4 CSR 240-40.030(8)(B) [192.352]. The commission fails to give a reason for replacing bare pipes if they are not causing problems. Leak surveys and records will indicate lines needing replacement. United comments that some operators may want to bill customers directly for the costs, rather than passing them on to all customers. The company urges the commission to publicly indicate who should be responsible for the massive costs this proposal will entail. **UE** states that any mandatory and expedited replacement of facilities, for no reason other than the nature of the material, is a waste of the company's time, money and manpower, and the ratepayers' money. Cast iron, bare steel and unprotected coated steel pipe all have very long, safe service records. These materials require care, but valuable lines, some known to be nearly one hundred (100) years old, are still serving customers adequately and safely. Using such lines requires adequate and comprehensive safety programs but UE has a planned system renewal program, one that has successfully led to the replacement of lines when their useful life is ended. The commission's proposed rule is reasonable only if lines are allowed to remain in place for their entire life. UE estimates the cost of replacing unprotected steel service lines as approximately eight million dollars ($8,000,000). The company notes as well the damage to city streets that

would be caused by wholesale replacement of cast iron mains and steel services in the centers of older cities. UE concludes its comments by asking the commission to reconsider the necessity for the proposed replacement program, after it has fully reviewed and evaluated the emergency leak survey results. **KPL** proposes to add a new part, Subsection (C), as follows: "other plans submitted and approved by PSC." KPL suggests this, since they have another option for replacement of service lines, one (1) differing from (a) or (b). **Public Counsel** comments that the Public Service Commission may be imposing burdens throughout the state for a one company problem. The proposed replacement programs have not received sufficient study. Two (2) recent accidents involve stress fractures, not corrosion, something that could happen to any pipe. The Public Counsel cautions against an expensive wholesale replacement program without careful study of its effectiveness or alternatives. This replacement program may not solve the problem. The commission finds that to achieve gas safety both the commission and the operators have the requisite authority to order the replacement, and to replace, unprotected steel service and yard lines. The commission's findings made, **supra**, under subsection (8)(B) also apply to operator comments made above. Said findings are therefore incorporated by reference. The commission finds that scheduled replacement is the most efficient method for ridding Missouri's natural gas systems of unprotected steel service lines. The commission is mindful of operator concerns that a local problem, primarily confined to one operator's system is being advanced to justify a rule with statewide application. Regarding this point, the commission finds that unprotected steel is, by its very nature, subject to corrosion over time, a fact recognized by Laclede's long standing and ongoing program to replace these services. Nor is the commission insensitive to the estimated expenses of a statewide, systemwide, replacement program. To some extent, these expenses will be borne by ratepayers throughout the state, and it behooves the commission to strike a reasonable balance between achieving gas safety at a reasonable cost. To do so, the commission has approved changes in the proposed rule, shown below, which allow operators greater flexibility in planning for, and replacing, unprotected steel gas piping provides for all rules, not just this one.

4 CSR 240-40.030(15)(D) [192.1205] Cast Iron Replacement Program.

Laclede objects to this proposal noting it already has an effective maintenance and replacement program for cast iron mains based on a thirty (30) to forty (40) year leak/repair history, condition reports, age, soil conditions, and paving projects, in addition to the criteria in this proposed rule. The company's program is cost effective and has outstanding results. If the intent of this proposal is to eliminate all cast iron mains by a specific date, Laclede strongly opposes it as simplistic and out-of-step with today's technology. An arbitrary mandate to replace perfectly good cast iron would cost up to four hundred eighty million dollars ($480,000,000) on Laclede's system. **MGUTC** says this proposal requires further study to prove its cost effectiveness. **St. Joseph and MoPub** comment as they did under 4 CSR 240-40.030(15)(C) [192.1203]. **ANG** also suggests this rule needs further study, and that pipe history and conditions around the pipe should weigh heavily in replacement considerations. ANG suggests a monitoring program be implemented instead of a replacement proposal, adding that under the right conditions, cast iron pipe could be safely used far into the future. **United** comments that regarding subsections (15)(C) and (D), some utilities have already mounted replacement or rehabilitation programs of their own. The commission should provide for this, as an exception to this proposed requirement. **UE** refers the commission to its comments under 4 CSR 240-40.030(15)(C) [192.1203] and, in addition, estimates it has two hundred eighty-five (285) miles of cast iron pipe. To replace it, UE estimates costs at nearly twenty-two million dollars ($22,000,000). **KPL**, in conjunction with the Missouri and Kansas State Commission, is requesting that an outside consulting service prepare a suggested replacement program for both cast iron and bare steel piping. The consultant's recommendations are scheduled to be completed within eighteen (18) months of the letting of a contract. Therefore, submission of the plan for commission approval should be deferred until the consultant's report is accepted. **Granby** estimates that its cost of replacing eight and one-half (8 1/2) miles of mains per this proposal would be three hundred fifty thousand dollars ($350,000) or more. The commission finds in many of these comments an apparent failure to understand this requirement. As written, this proposal does not require the replacement of cast iron piping; it instead requires that operators devise and submit a plan for, if necessary, the eventual replacement of unsafe cast iron piping. To judge by their comments, some operators already have such plans. Whether said plans are "effective" remains, under this rule, to be seen. Given the observed tendency of cast iron piping to crack, especially when support structures have been disturbed, the commission finds that safety considerations require commission staff involvement in, and approval of, operator plans for cast iron replacement. The commission staff will evaluate outside consultant studies presently underway, together with operator programs as submitted, to address this rule as required, in order to achieve better criteria for replacement and/or protection plans.

4 CSR 240-40.030(15)(E) [192.1207] Operators to Establish Program to Protect or Replace Unprotected Bare Steel Mains, Feeder and Transmission Lines. **Laclede** comments that it currently has a replacement program and does not plan to cathodically protect mains that it intends to replace, except in areas that have experienced leaks. Details of the program will be submitted to the commission as requested. The company reports further that it has already replaced three million four hundred seventy-eight thousand feet (3,478,000') of bare steel main on a planned basis since 1958. **St. Joseph and MoPub** comment as they did under 4 CSR 240-40.030(15)(C) [192.1203]. **UE's** comments are contained under 4 CSR 240-40.030(15)(C) [192.1203]. **United's** comments are found under 4 CSR 240-40.030(15)(D) [192.1205].

Granby's comments may be found under 4 CSR 240-40.030(15)(D) [192.1205]. **MGUTC** says this proposal requires further study to prove its cost effectiveness. **KPL** comments as they did under 4 CSR 240-40.030(15)(D) [192.1205].

The commission finds that nothing in this requirement obligates an operator to cathodically protect a main that it intends to replace. The operator programs are to provide for cathodic protection or replacement, not both. The commission staff will evaluate outside consultant studies presently underway, together with operator programs as submitted, to address this rule as required, in order to achieve better criteria for replacement and/or protection plans. The balance of operator comments are to the same effect as made under rules 4 CSR 240-40.030(15)(C) and (D), **supra**. To these comments, the commission incorporates by reference its responses then made.

4 CSR 240-40.030 Appendix D [Appendix D to Part 192] Change in Cathodic Protection Criteria.

United notes that the National Association of Corrosion Engineers (NACE) is presently studying the proposed requirements with regard to compensation for voltage drops, since this is a matter of some controversy within the industry. It would be more appropriate to wait until that body has made its findings than to institute requirements now that may not enjoy professional sanction or recognition. **KPL** comments that multiple rectified integrated systems shall require multiple test equipment in order to comply with II. KPL will have to purchase this test equipment in order to comply with these requirements, at substantial cost with no safety benefits. **CORRPRO** comments that NACE has been working on a revision of the cathodic protection criteria since July of 1986, and recommends that Appendix D be replaced with NACE's most recent draft of "Criteria and Other Considerations for Cathodic Pro-

tection." The commission finds little merit in these operator comments. Waiting for associations to finalize on-going projects, or federal agencies to finalize rulemakings, could take months or even years. The commission believes that the requirement as proposed reflects prudent cathodic protection practices that are currently understood, and used, throughout the industry. Should substantial final changes to the NACE criteria emerge, the commission will evaluate same and, if appropriate, amend this requirement.

4 CSR 240-40.020 Incident and Annual Reporting Requirements

(2) Definitions, (191.3) As used in this rule and in the RSPA forms referenced in this rule—

(B) Designated commission personnel means the address contained in section (5) (191.7) for required correspondence and means the list of staff personnel supplied to the operators for required telephonic notices.

Editor's Note: Subsequent subsections of this section will be relettered.

(4) Missouri Reporting Requirements. (191.6)

(A) Within two (2) hours following discovery **by the operator, unless emergency efforts to protect life and property would be hindered,** each gas operator shall notify designated commission personnel by telephone of each incident within his/her service area that involves an ignition, eruption or explosion resulting from the escape of natural gas which—

3. Results in estimated property damage, including cost of gas lost, to the gas operator or others, or both, of five thousand dollars ($5,000) or more; [or]

4. In the judgment of the operator, was significant even though it did not meet the criteria of (4)(A)1., 2. or 3.; or

5. Exceeded the two (2)-hour notification time period in (4)(A) which would require submission of a written explanation of reasons with the operator's incident report.

(C) The original and one (1) copy of any written federal incident and annual report required by this rule shall be submitted to designated commission personnel as follows:

3. Safety-related condition reports required by section (12) (191.23) shall be submitted [~~concurrently~~] **as required by section (5) (191.7)** to designated commission personnel.

(13) Filing Safety-related Condition Reports. (191.25)

[~~(C) Filing of Implementation Costs. All operators shall file with the commission on or before July 31 of each year the actual additional cost incurred by the operator to comply with these rules. The additional costs shall be those incurred by the operator during the state fiscal year (July 1—June 30) which are over and above the costs required to comply with the pipeline safety regulations existing prior to the adoption of this rule.~~]

4 CSR 240-40.030 Safety Standards—Transportation of Gas by Pipeline

(1) General.

(B) Definitions. (192.3) As used in this rule—

3. Designated commission personnel means the address contained in 4 CSR 240-40.020(5) (191.7) for required correspondence.

Editor's Note: Subsequent paragraphs of this subsection will be renumbered.

[~~4.~~] **5.** Feeder line means a distribution line or main used in the transportation of gas from a source(s) of supply to one (1) or more distribution centers (cities, towns, communities, etc.) or to one (1) or more large volume customers or from one (1) distribution center to another distribution center or a pipeline installed to interconnect source(s) of supply and operated at pressures **that are greater than one hundred (100) psig, but** which produce hoop stresses less than twenty percent (20%) SMYS. A feeder line is sometimes referred to as a feeder main;

[~~23. Sealed or unvented area means an area where an underground gas leak could not readily vent itself through the soil to the atmosphere. Sealed or unvented areas include, but are not limited to, areas having pavement, sidewalks or frozen soil.~~]

Editor's Note: Subsequent paragraphs of this subsection will be renumbered.

(G) General. (192.13)

4. This section and sections (9), (11)—(16) of this rule apply regardless of installation date. The requirements within other sections of this rule apply regardless of the installation date only when specifically stated as such.

(J) Filing of Required Plans, Procedures and Programs. Each operator shall file with designated commission personnel all [~~required~~] plans, procedures and programs **required by this rule** (to include welding and joining procedures, construction standards, corrosion control procedures, replacement programs, operating and maintenance plans, damage prevention programs and emergency plans). In addition, each change must be filed with designated commission personnel within twenty (20) days after the change is made.

[~~(K) Filing of Implementation Costs. All operators shall file with the commission on or before July 31 of each year the actual additional cost incurred by the operator to comply with these rules. The additional costs shall be those incurred by the operator during the state fiscal year (July 1—June 30) which are over and above the costs required to be expended to comply with the pipeline safety regulations existing prior to adoption of this rule.~~]

(2) Materials.

(B) General. (192.53) Materials for pipe and components must be—

4. Only of steel [~~and~~] **or** polyethylene for pipe for the **underground** construction of pipelines, except that other previously qualified materials may be used for—

A. Repair of existing facilities constructed of the same material; and

B. Fittings, valves or other appurtenances attached to the pipe; and

5. Other piping materials may be used with approval of the commission.

(D) Plastic Pipe. (192.59)

1. New [~~plastic~~] **polyethylene** pipe is qualified for use under this rule if—

(3) Pipe Design.

(K) Design of Copper Pipe **for Repairs.** (192.125)

(4) Design of Pipeline Components.

(V) Distribution Line Valves. (192.181)

2. Each regulator station controlling the flow or pressure of gas in a distribution system must have a valve installed on the inlet piping and on the outlet piping at a sufficient distance from the regulator station to permit the operation of the valve during an emergency that might preclude access to the station. **An outlet valve on regulator stations will not be required on single-feed distribution systems when the outlet piping size is less than two inches (2″) in nominal diameter.**

(DD) Control of the Pressure of Gas Delivered from High-pressure Distribution Systems to Service Equipment. (192.197)

1. Characteristics of a service regulator [~~include:~~] **for use under provisions of subparagraph (4)(DD)2.A.**

(EE) Requirements for Design of Pressure Relief and Limiting Devices. (192.199)[~~:~~] Except for rupture discs, each pressure relief or pressure limiting device must—

8. Except for a valve that will isolate the system under protection from its source of pressure, be designed to prevent unauthorized access to or operation of isolation valves that will make the pressure relief valve or pressure limiting device inoperative[~~:~~], [~~V~~]valves that would bypass the regulator or relief devices, and shut-off valves in control lines that, if operated, would cause the regulator or overpressure protection device to be inoperative. [~~must also be designed to prevent unauthorized operation.~~] These precautions must be taken regardless of the installation date;

9. [Adequate] **Be designed and installed so that adequate** overpressure protection [shall be] is provided [at] for all town border stations and district regulator stations regardless of installation date; [and]

10. Where a monitor regulator is used for overpressure protection, [a] **be designed and installed to include an internal or separate** device that indicates a failure of the operating regulator [must be included,] regardless of installation date[.]; and

11. For existing installations, the requirements of paragraphs (4)(EE)8.—10. must be met within one (1) year of the effective date of this rule.

(8) Customer Meters, Service Regulators and Service Lines.

(B) General. Service line installations and/or service and yard line replacements made after [July 1, 1989,] **the effective date of the rule** must be installed, owned, operated and maintained by the operator regardless of meter location. Installations of customer-owned service lines and customer-owned yard lines, as defined in (1)(B) (192.3), will not be permitted. If the customer meter is **not** located at the [property line] **building wall**, the service line to the customer's nearest building shall be installed, owned, operated and maintained by the operator.

(9) Requirements for Corrosion Control.

(E) External Corrosion Control—Buried or Submerged Pipelines Installed Before August 1, 1971. (192.457)

1. Each buried or submerged transmission line **and each buried or submerged feeder line or main in excess of one hundred feet (100')**[, feeder line or main] installed before August 1, 1971, that has an effective external coating must be cathodically protected along the entire area that is effectively coated, in accordance with this section **unless definitely scheduled in a replacement program in (15)(E)**. For the purposes of this section, a pipeline does not have an effective external coating if its cathodic protection [on] current requirements are substantially the same as if it were bare. The operator shall make tests to determine the cathodic protection current requirements.

2. Except for cast iron or ductile iron, each of the following buried or submerged pipelines installed before August 1, 1971, must be cathodically protected in accordance with this section in areas in which active corrosion is found:

B. [Bare or ineffectively coated pipes at compressor, regulator and measuring stations] **Effectively coated feeder lines and mains not in excess of one hundred feet (100')**; and

(F) External Corrosion Control—Examination of Buried Pipeline When Exposed. (192.459) Whenever an operator has knowledge that any portion of a buried pipeline is exposed, the exposed portion must be inspected for evidence of external corrosion if the pipe is bare, or if the coating is deteriorated. If the operator finds that there is active corrosion, that the surface of the pipe is [generally pitted] **pitted due to corrosion**, or that corrosion has caused a leak, it shall investigate by record review and excavation to determine the extent of the corrosion **requiring remedial action**. If external corrosion is found, remedial action must be taken to the extent required by subsection (9)(R) (192.483) and the applicable paragraphs of subsections [of] (9)(S), (T) or (U). (192.485, 192.487 or 192.489[.])

(G) External Corrosion Control—Protective Coating. (192.461)

1. Each external [insulating] **protective** coating applied for the purpose of external corrosion control must—

(I) External Corrosion Control—Monitoring. (192.465)

4. Each operator shall take prompt remedial action to correct any deficiencies indicated by the monitoring required in paragraphs (9)(I)1.[; 2. and]—3. Corrective measures must be completed within six (6) months **unless otherwise approved by designated commission personnel.**

(P) Atmospheric Corrosion Control—General. (192.479)

1. Pipelines installed after July 31, 1971. Each aboveground pipeline or portion of a pipeline installed after July 31, 1971, that is exposed to the atmosphere must be cleaned and either coated or jacketed with a material suitable for the prevention of atmospheric corrosion. **An operator need not comply with this paragraph for an inside pipeline, if the operator can demonstrate by test, investigation or experience in the area of application, that a corrosive atmosphere does not exist.**

(V) Corrosion Control Records. (192.491)

1. Each operator shall maintain records or maps to show the location of cathodically protected piping, cathodic protection facilities, other than unrecorded galvanic anodes installed before August 1, 1971, and neighboring structures bonded to the cathodic protection system. Each operator shall develop and maintain maps showing, at a minimum, the location of cathodically protected mains and transmission lines and all cathodic protection facilities such as [galvanic anodes,] rectifiers, test points, electrical isolating devices and interference bonds. **These map requirements must be met within one (1) year of the effective date of this rule.**

(10) Test Requirements.

(B) General Requirements. (192.503)

4. Each [joint] **connection** used to tie-in a test segment of pipeline is excepted from the specific test requirements of this section, but it must be leak tested at not less than its operating pressure.

(I) Records. (192.517) [Each operator shall make, and retain for the useful life of the pipeline, a record of each test performed under subsections (C)—(G) (192.505, 192.507, 192.509, 192.511 and 192.513). Where applicable to the test performed, the record must contain at least the following information:]

1. For mains, each operator shall make and retain for the useful life of the pipeline, a record of each test performed under subsections (10)(C)—(E) and (G) (192.505, 192.507, 192.509 and 192.513). Where applicable to the test performed, the record must contain at least the following information:

Editor's Note: Paragraphs 1. through 9. of subsection (10)(I) now become subparagraphs A. through I. of paragraph (10)(I)1.

2. For service lines, each operator shall make, and retain for the useful life of the pipeline, a record of each test performed under subsections (10)(F) and (G) (192.511 and 192.513). Where applicable to the test performed, the record must contain the test pressure, leaks and failures noted and their disposition and the date.

(J) Test Requirements for Customer-owned Fuel Lines.

1. At the **initial** time an operator [establishes service] **physically turns on the flow of gas to a customer—**

A. Each segment of fuel line [intended to operate at a pressure not to exceed two (2) psig] must be tested for leakage to at least the [intended] delivery pressure;

[B. Each segment of fuel line intended to operate at a pressure exceeding two (2) psig must be tested for leakage at one and one-half (1 1/2) times the intended delivery pressure;

[C.] B. An inspection of the accessible customer gas piping and equipment shall be conducted to determine that the requirements of any applicable industry codes, standards or procedures adopted by the operator to assure safe service are met. [The operator shall adopt, at a minimum, the requirements of The National Fuel Gas Code (NFPA 54)] or the [BOCA Basic/National Mechanical (BOCA) Code]; and

[D.] C. The requirements of any applicable local (city, county, etc.) codes must be met.

(11) Uprating.

(B) General Requirements. (192.553)

5. Establishment of a new maximum allowable operating pressure. subsections (12)(M) and (N) (192.619 and 192.621) must be reviewed when establishing a new MAOP. The pressure to which the pipeline is raised during the uprating procedure is the test pressure that

must be divided by the appropriate factors in subparagraph (12)(M)1.B. (192.619[a][2]) **except that pressure tests conducted on steel and plastic pipelines after July 1, 1965 are applicable.**

(12) Operations.

(C) Procedural Manual for Operations and Maintenance. (192.605)

1. General. Each operator shall prepare and follow [~~for each pipeline,~~] a manual of written procedures for conducting normal operations and maintenance activities and handling emergencies. The manual must also include procedures for handling abnormal operations. This manual must be reviewed at intervals not exceeding fifteen (15) months, but at least once each calendar year, and appropriate changes made as necessary to ensure that the manual is effective. [~~This~~] **The manual must be revised, if necessary to meet the requirements of this rule, within one (1) year of the effective date of the rule and this** manual must be prepared before initial operations of a pipeline system commence and appropriate parts must be kept at locations where operations and maintenance activities are conducted.

2. Maintenance and normal operations. The manual required by paragraph (12)(C)1. of this rule must include procedures for the following where applicable for an operator's facilities to provide safety during maintenance and normal operations:

A. Operating, maintaining and repairing [~~the~~] pipelines in accordance with each of the requirements of this section **and sections** (13) and (14) of this rule;

E. Starting up and shutting down any part of [~~the~~] **a** pipeline in a manner designed to assure operation within the MAOP limits prescribed by this rule, plus the build-up allowed for operation of pressure limiting and control devices;

K.(III) Periodic inspection and testing of pressure limiting equipment to determine that it is in a safe operating condition and has adequate capacity; [~~and~~]

M. Testing and inspection of customer-owned gas piping and equipment.

(D) Personnel Qualification.

1. No operator may permit an individual (operators themselves, employees of operators, independent contractors and subcontractors, and employees of these contractors) to perform on a pipeline system an operation, maintenance or emergency-response function regulated by this rule unless that individual has been trained and successfully completed a test designed to demonstrate possession of the knowledge and skills required under paragraph (12)(D)2. of this rule. The test must be written, hands-on, or oral or any combination of these methods. For some functions, a test might consist of observing on-the-job performance supplemented by appropriate queries. **The training and testing requirements of this subsection must be met for all applicable employees within eighteen (18) months following the effective date of this rule.** However, an individual who does not meet these requirements may be permitted to perform such a function when directly supervised by someone who has properly met the requirements for qualifications.

(I) Damage Prevention Program. (192.614)

2. The damage prevention program required by paragraph (12)(I)1. of this rule must, at a minimum—

B. Provide for at least a semiannual notification of the public in the vicinity of the pipeline. Provide for actual notification of the persons identified in subparagraph (12)(I)2.A. as often as [~~necessary~~] **needed**, but at least annually [~~every twelve (12) months~~] **(once each calendar year at intervals not to exceed fifteen (15) months)** by registered or certified mail. These mailings to excavators should include a copy of Chapter 319, RSMo. Both the public notification and the excavator notifications should include the following:

(J) Emergency Plans. (192.615)

2. Each operator shall—

B. Train the appropriate operating personnel [~~at least annually~~] **and conduct an annual review** to assure that they are knowledgeable of the emergency procedures and verify that the training is effective; and

(M) Maximum Allowable Operating Pressure—Steel or Plastic Pipelines. (192.619)

1. Except as provided in paragraph (12)[~~L~~](M)3. of this rule, no person may operate a segment of steel or plastic pipeline at a pressure that exceeds the lowest of the following:

B. The pressure obtained by dividing the **highest** pressure to which the segment was tested after construction or uprated as follows:

(P) Odorization of Gas. (192.625)

6. Except as provided for in subparagraphs (12)(P)6.A. and B. of this rule, each operator shall conduct, at least monthly, odor intensity tests with an instrument and determine odorant injection rates to assure the proper concentration of odorant and odorant intensity in accordance with this subsection.

B. At individually odorized service lines, the odor intensity shall be checked at least once [~~every six (6) months~~] **each calendar year at intervals not to exceed fifteen (15) months.** No odorant injection rate calculations are required for these systems **except odorant tanks should be checked periodically to assure adequate odorant is available.**

(S) Providing Service to Customers.

1. [~~No operator may provide gas service until the requirements of subsection (10)(J) are met.~~] **No operator may physically turn on the flow of gas to a customer until the requirements of subsection (10)(J), except for subparagraph (10)(J)1.C., are met. Requirements of subparagraph (10)(J)1.B. need not be met for emergency outages or curtailments.**

2. [~~Before~~] **When** providing gas service to **a new or relocated** customer, the operator must provide the customer with the following:

(13) Maintenance.

(E) Line Markers for Mains and Transmission Lines. (192.707)

1. Buried pipelines. Except as provided in paragraph (13)(E)2. of this rule, a line marker must be placed and maintained as close as practical over each buried main and transmission line—

A. [~~On both sides at each crossing of a public road and railroad; and~~] **At each crossing of a public road or railroad. Some crossings may require markers to be placed on both sides due to visibility limitations or crossing widths; and**

2. Exceptions for buried pipelines. Line markers are not required [~~for buried mains and transmission lines~~]—

A. [~~Located~~] **For buried mains and transmission lines located** at crossings of or under waterways and other bodies of water; [~~or~~]

B. [~~Located~~] **For buried feeder lines and transmission lines located in Class 3** or Class 4 locations where placement of a marker is impractical[~~.~~]**;** or

C. For buried mains other than feeder lines and transmission lines in Class 3 or Class 4 locations—

(I) Where placement of a marker is impractical; or

(II) Where a damage prevention program is in effect under (12)(I).

(N) Test Requirements for Reinstating Service Lines and Fuel Lines. (192.725)

1. Except as provided in paragraphs (13)(N)2. and 3. of this rule, each disconnected service line must be tested in the same manner as a new service line and [~~each disconnected fuel line~~] **the associated fuel line** must be tested [~~in accordance with subsection (10)(J)~~] **to the intended delivery pressure** before being reinstated.

(R) Pressure Limiting and Regulating Stations—Inspection and Testing. (192.739) Each pressure limiting station, relief device (except rupture discs) and pressure regulating station and its equipment must be subjected at intervals not exceeding fifteen (15) months but at least once each calendar year to inspections and tests to determine that it is—

6. Equipped with a [~~warning~~] device to indicate a malfunction of the operating regulator in accordance with paragraph (4)(EE)10. (192.199[j]) [~~and adequate~~] **that is adequate** from the standpoint of reliability of operation; and

8. The requirements of paragraphs (13)(R)5.–7. must be met within one (1) year of the effective date of this rule.

(S) Pressure Limiting and Regulating Stations—Telemetering or Recording Gauges. (192.741)

1. Each distribution system supplied by more than one (1) district pressure regulating station and/or furnishing service to more than one thousand (1000) customers must be equipped with graphic telemetering, [~~or~~] recording pressure gauges, **or another device (other than pressure gauges unless they are continuously monitored)** to indicate the gas pressure in the district.

4. All telemetered or recorded pressure data [~~shall be continuously recorded and~~] shall be identified, dated and kept on file for a minimum of two (2) years.

(V) Valve Maintenance—Distribution Systems. (192.747)

2. Feeder line and distribution line valves, the use of which may be necessary for the safe operation of a distribution system, shall be inspected [~~and partially operated~~] at intervals not exceeding fifteen (15) months but at least once each calendar year. **These valves must be partially operated during alternating annual inspections.**

(Z) Protecting Cast Iron Pipelines. (192.755) When an operator has knowledge that the support for a segment of a buried cast iron pipeline is disturbed or that an excavation or erosion is close enough to cause more than half the pipe diameter to lie within [~~the angle of repose for the particular soil involved~~] **a line that is drawn from the bottom of the excavation at a forty-five degree (45°)** angle from the horizontal; however, a lesser angle should be used for sandy or loose soils.

2. If eight inches (8″) or less in nominal diameter, then [A]as soon as feasible, this segment of cast iron pipeline, which shall include a minimum of ten feet (10′) beyond the angle [~~of repose for the particular soil involved~~] **defined in subsection (13)(Z)**, must be replaced, except as noted in paragraph (13)(Z)[~~3.~~]4. of this rule; [~~and~~]

3. If greater than eight inches (8″) in nominal diameter, then, as soon as feasible, appropriate steps must be taken to provide permanent protection for the disturbed segment from damage that might result from external loads, including compliance with applicable requirements of subsection (7)(J) (192.319) and paragraphs (3)(I)1. (192.317[a]) and (8)(G)2.–4. (192.361[b], [c] and [d]); and

[~~3.~~] 4. Replacement of cast iron pipelines would not necessarily be required if—

B. For parallel excavations, the pipe lies within the angle [~~of repose for the particular soil involved~~] **defined above** for a length less than ten (10) times the nominal pipe diameter not to exceed six feet (6′).

(14) Gas Leaks.

(B) Investigation and Classification Procedures.

6. Whenever the operator conducts work on a customer's premises, [~~at least two (2)~~] tests of the subsurface atmosphere must be made using gas detection equipment. At least one (1) test must be at the service entrance to the structure, and **for unprotected steel and copper service lines,** at least one (1) **additional** test must be made at the customer's property line, approximately one hundred feet (100′) from the structure, or at the service tap at the main, whichever is closest to the structure. In lieu of conducting the tests of the subsurface atmosphere, the operator may conduct a leak survey of this pipe with gas detection equipment capable of detecting gas concentrations of one hundred (100) parts per million, gas-in-air. These tests are required when working any type of customer gas service order or call, with the exception of collections, meter readings and cathodic protection work.

7. A repeat leak investigation shall be conducted within three (3) calendar days of any leak or odor notice from the general public where, during the initial leak investigation, no leak was found or no explanation of the odor was determined. **When access to the premise is limited, outside leak investigations are sufficient.**

(C) Leak Classifications.

1. Class 1 leak is a gas leak which, due to its location and/or magnitude, constitutes an immediate hazard to a building and/or the general public. It shall require immediate corrective action which shall provide for public safety and protect property. Examples of Class 1 leaks are a gas fire, flash or explosion; broken gas facilities such as contractor damage, main failures or blowing gas in a populated area; an indication of gas present in a building emanating from company-owned facilities; a gas reading equal to or above the Lower Explosive Limit in a tunnel, sanitary sewer or confined area; gas entering a building or in imminent danger of doing so; and any leak which, in the judgment of the supervisor at the scene, is regarded as immediately hazardous to the public and/or property. When venting of the leak is the immediate corrective action taken for Class 1 leaks where gas is detected entering a building, the leak may be reclassified to a Class 2 leak. [~~However, the leak must be rechecked daily until repaired, but not to exceed fifteen (15) days.~~] However, **the leak shall be repaired within fifteen (15) days and rechecked daily until repairs are completed.** Leaks of this nature, if not repaired within five (5) days, may need to be reported as a safety-related condition required by sections (12) and (13). (191.23 and 191.25)

(15) Replacement Programs.

(C) Replacement Program—Unprotected Steel Service Lines and Yard Lines. At a minimum, each investor-owned, municipal or master meter operator shall establish instrument leak detection survey and replacement programs for unprotected company and customer-owned steel service lines and yard lines. The operator shall choose from the following options, unless otherwise ordered by the commission, and shall notify the commission by May 1, 1990 of which option, or combination of options, the operator will implement[—]:

2. Conduct of annual instrument leak detection surveys on all unprotected steel service lines and yard lines. The operator shall compile a historical summary listing the cumulative number of unprotected steel service lines and yard lines installed, replaced or repaired due to underground leakage, and with active underground leaks in a defined area. Based on the results of the summary, the opertator shall initiate replacement, to be completed within eighteen (18) months, of all unprotected steel service lines and yard lines in a defined area once twenty-five percent (25)% or more meet the previously mentioned repair, replacement and leakage conditions. At a minimum, ten percent (10%) of the unprotected steel service lines and yard lines in the system as of the effective date of this rule must be replaced annually[.]; and

3. Conduct annual instrument leak detection surveys on all unprotected steel service lines and yard lines and implement a replacement program. The program must be prioritized and replacements based on the greatest potential for hazards. At a minimum, ten percent (10%) of the unprotected steel service lines and yard lines in the system as of the effective date of this rule must be replaced annually.

(16) Waivers of Compliance. Upon written request to the secretary of the commission, the commission, by authority order, and under such terms and conditions as the commission deems appropriate, may waive in whole or part compliance with any of the rules and requirements contained in the rule which are more stringent than minimum federal requirements. Waivers will be granted only on a showing that gas safety is not compromised. If any such request is denied, the denial will be in writing and state the reason(s) therefor.

Editor's Note: Appendix E is not being reprinted, however, it should include the following changes.

Appendix E. Index—Safety Standards—Transportation of Gas by Pipeline.