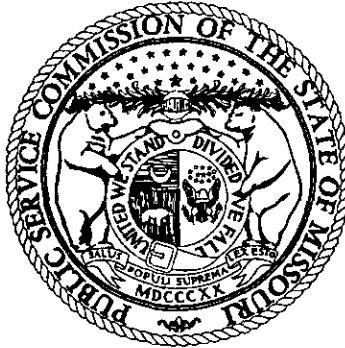


**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**



In the Matter of the City of Granby)
Regarding the Incident at 132 West) Case No. GS-96-277
Neosho Street, Granby, Missouri, on)
February 7, 1996.)

In the Matter of the Missouri Public)
Service Commission,)
)
Complainant,) Case No. GC-96-452
)
v.)
)
The City of Granby, Missouri,)
)
Respondent.)

REPORT AND ORDER

Issue Date: September 3, 1997

Effective Date: September 16, 1997

docket for the investigation of the incident in the City of Granby which precipitated this complaint.

The incident in question occurred on February 7, 1996, at approximately 1:00 a.m. when a natural gas explosion and subsequent fire occurred at a residence inside the corporate limits of the City of Granby located at 132 West Neosho Street, killing the occupant of the house. The single-family residence and its contents were destroyed.

On June 24, 1996, the Staff filed its gas incident report in the incident docket and, subsequently, filed the same report in this docket. In that report, the Staff found the probable cause of the incident to be the ignition of natural gas that had accumulated within the residence as the result of migration from a fracture in a three-inch diameter gas main located near the residence and owned and operated by the City's municipal gas system. The Staff states that:

"The main fracture was probably the result of a combination of previous mechanical damage that had occurred on the pipe and from long-term bending stresses induced on the pipe due to ground subsidence. The mechanical damage on the pipe could have occurred at anytime prior to the incident. The ground subsidence was probably the result of incomplete compaction of the backfill material placed under the gas main during a previous sewer main construction under the natural gas main." (Gas Incident Report, Page 1).

The Staff alleged four violations of the Public Service Commission's rules by the City of Granby: 4 CSR 240-40.030(14)(C), regarding actions to protect persons and property subsequent to the incident; 4 CSR 240-40.030(12)(C)1, regarding following the procedures in its Operations and Maintenance Manual; 4 CSR 240-40.030(13)(X), involving

prevention of accidental ignition; and, 4 CSR 240-40.020(4)(A)1 through 4, requiring two-hour notification of incidents.

Stipulation and Agreement

On February 4, 1997, the parties, including the City, the Staff and the Office of the Public Counsel (OPC) filed a Unanimous Stipulation and Agreement, appended to this Report and Order as Attachment A. The proposed Stipulation and Agreement is supported by entry into evidence of the testimony of Staff Witness Richard A. Fennel. Presentation of that proposed agreement took place on March 6, 1997, during an on-the-record proceeding.

In the proposed Stipulation and Agreement, the parties agree that the City has complied and will continue to comply with the six courses of action recommended by the Staff.

The City has complied with Staff's first recommendation by identifying approximately eighty (80) locations where sewer mains crossed beneath natural gas mains; investigating all of the locations for the possibility of soil subsidence and possible third party damage; identifying all locations of crossings of natural gas mains and sewer mains under gravel driveways, alleys, parking lots and investigating these locations for fill subsidence; excavating, exposing and examining natural gas mains in five of the locations; and making new maps that incorporated the gas mains, sewer mains and water mains.

The City has satisfactorily complied with Staff's second recommendation by City inspectors examining pipelines for damage during all phases of construction and inspecting the backfilling of all excavations; and, making a record of all pipeline examinations and maintaining them in the City's files.

The City has satisfactorily complied with Staff's third recommendation by having the City's gas crew, police chief, fire chief and consultant review the City's response to the incident at 132 East Neosho Street; discussing both the timeliness and extent of the gas leak investigations as well as conducting inside leak investigations; and, scheduling specific training in leak investigations and emergency response to be conducted on a continuing basis.

The City has satisfactorily complied with Staff's fourth recommendation by evaluating its training methods in conjunction with its Emergency Procedures Manual, which addresses the use of isolation valves; purchasing sparkless tools to be used during live natural gas operations, which have been added to the Emergency Vehicle Equipment List and in the Emergency Procedure Manual; and, conducting an Emergency Response Training Session on an annual basis.

The City has satisfactorily complied with Staff's fifth recommendation by putting procedures in place which should ensure that, if a pipeline emergency occurs, an immediate investigation will be initiated and the appropriate telephone notices will be made in a timely manner.

The City has satisfactorily complied with Staff's sixth recommendation by filing its response to the Staff's recommendations on July 15, 1996, and to the additional Staff comments on October 2, 1996.

In addition, the City agrees in the proposed Stipulation to excavate and expose a larger sample of not less than fifteen of the approximately seventy-five (75) remaining locations where sewer mains cross beneath natural gas mains to determine if additional damage to natural gas mains exist. These excavations will be completed within six (6) months of the date of any order approving this Unanimous Stipulation and Agreement. Within thirty (30) days of completion of these excavations, the City shall send the Staff: a) a summary that details the addresses of the locations

excavated and examined; b) the date of the excavations; c) any damage noted, and d) any remedial action taken. Further, the City will provide the Staff with a minimum of forty-eight (48) hours' notice of each planned excavation to allow the Staff the opportunity to witness such excavations.

If the investigation of the additional locations uncovers additional excavation related damage, the City agrees to investigate as many of the approximately sixty (60) remaining locations as the Staff determines is necessary. The excavation and investigation of any additional locations will be undertaken at a rate that would complete approximately twenty (20) locations every six (6) months beginning the date the City receives notice from the Staff. If less than twenty (20) additional locations are selected for an investigation, the rate of completion will be approximately three (3) per month.

If the investigation of the additional locations uncovers additional damage that could impair the serviceability of the natural gas mains or service lines, appropriate repairs or replacements will be undertaken.

Finally, the City of Granby has agreed to remit a penalty of \$5,000 to the State School Fund.

The Commission has reviewed the Staff's incident report, evidence of record, and the terms and conditions of the Stipulation and Agreement. The Commission finds the terms and conditions of the Stipulation to be just, reasonable and in the public interest and will approve the Agreement. The Commission points out to the City the extreme serious nature of this incident and cautions the City that strict and timely compliance with the terms of the Stipulation will be required. Acceptance of this agreement does not diminish the Commission's concerns regarding gas safety on a statewide basis. The Commission is particularly concerned about situations

where gas follows a service line into a home and sets up a hazardous condition, potentially leading to serious injury.

Conclusions of Law

The Missouri Public Service Commission has arrived at the following conclusions of law.

That the City of Granby, Missouri, is a municipality as defined in Section 386.020(24) RSMo. 1994, Cum Supp. 1995, and operates a municipal gas system under Section 386.310 RSMo. 1994, and is therefore subject to the jurisdiction of the Commission regarding safety matters, including the Commission's safety rules in 4 CSR 240-40.020 and 4 CSR 240-40.030.

The standard for Commission approval of a stipulation and agreement is whether the agreement is just, reasonable and in the public interest. The Commission finds the Stipulation and Agreement, Attachment A, to be just, reasonable and in the public interest and will approve the Agreement.

IT IS THEREFORE ORDERED:

1. That the Unanimous Stipulation and Agreement, filed February 4, 1997 and incorporated herein as Attachment A by the parties, is hereby approved.

2. That the City of Granby, Missouri, is hereby ordered to fully comply with the terms and conditions of the Stipulation and Agreement in a thorough and timely fashion.

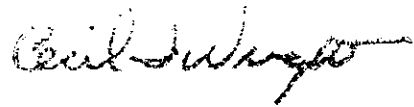
3. That the Staff of the Commission is instructed to closely monitor compliance by the City of Granby with the terms and conditions of the Stipulation and Agreement and file progress reports in this docket until satisfactory completion by the City of Granby with all terms and

conditions. These progress reports will be at six-month intervals, beginning six months from the effective date of this Order.

4. That Case No. GS-96-277, the original incident docket, is hereby closed.

5. That this Report and Order shall become effective on September 16, 1997.

BY THE COMMISSION



**Cecil I. Wright
Executive Secretary**

(S E A L)

Lumpe, Ch., Crumpton and Murray, CC., concur.

Dated at Jefferson City, Missouri,
on this 3rd day of September, 1997.

Complaint on or before July 30, 1996. Granby filed its Answer on July 29, 1996. On August 8, 1996, the Commission issued its order establishing an early prehearing conference on August 30, 1996, and setting September 6, 1996, as the deadline to file a recommended procedural schedule or stipulation and agreement in this docket. On August 19, 1996, Granby filed a motion to reschedule early prehearing conference. On August 22, 1996, the Commission issued its order rescheduling the early prehearing conference for September 18, 1996.

An early prehearing conference was held as ordered on September 18, 1996. During the on the record portion of the prehearing, the deadline to file a recommended procedural schedule or stipulation and agreement was extended until October 2, 1996. In compliance with the Commission's order in the recorded portion of the prehearing, the Staff respectfully submitted the following procedural schedule:

Early Prehearing Conference or Stipulation Presentation	November 12, 1996
Direct Testimony to be filed by Granby	January 6, 1997 3:00 p.m.
Rebuttal Testimony to be filed by Staff, Office of the Public Counsel and Intervenors	February 17, 1997 3:00 p.m.
Surrebuttal Testimony to be filed by Granby	March 10, 1997 3:00 p.m.

Prehearing Conference	March 19, 1997
Hearing Memorandum Due	March 26, 1997 3:00 p.m.
Hearing	April 3-4, 1997 10:00 a.m.

The Commission adopted the procedural schedule set out above by its order dated October 8, 1996.

On November 4, 1996, Granby filed an unopposed Motion to Reschedule Early Prehearing Conference or Stipulation Presentation. On November 8, 1996, the Commission issued an Order Amending Procedural Schedule in this docket. In that order the Commission canceled the early prehearing conference or stipulation presentation scheduled for November 12, 1996. Further, the Commission amended the existing procedural schedule to require the Staff to file direct testimony on January 6, 1997 and to require Granby and the Office of the Public Counsel to file rebuttal testimony on February 17, 1997.

In the Complaint the Staff contends that Granby committed four separate violations of Commission rules related to the incident at 132 West Neosho Street. Specifically, the Staff contends that:

- a. Granby gas personnel failed to take the proper actions in the proper order to conduct investigations and

determine the extent of the natural gas migration in violation of Commission rule 4 CSR 240-40.030(14)(C)1;

b. Granby failed to follow the procedures in its Operations and Maintenance Manual in violation of Commission rule 4 CSR 240-40.030(12)(C)1;

c. Granby failed to take reasonable measures to prevent accidental ignition of natural gas in violation of Commission rule 4 CSR 240-40.030(13)(X); and

d. Granby failed to notify the Commission of the incident within two (2) hours as required by Commission rule 4 CSR 240-40.020(4)(A)1.

Neither the Complaint nor the Incident Report found that the claimed violations of Commission rules were the cause of the incident or resulting fatality.

II. STIPULATIONS AND AGREEMENTS

As a result of numerous discussions and meetings among the parties, without conceding the legal merits of any of the Staff's allegations of violation and with Granby denying any negligence or fault, the signatories hereto stipulate and agree as follows:

1. At approximately 1:06 a.m., CST, Wednesday, February 7, 1996 an explosion and subsequent fire involving natural gas occurred at 132 West Neosho Street in Granby, Missouri.

2. Natural gas service in Granby, Missouri is provided by the City of Granby Missouri.

3. Granby is a "municipality" as defined in § 386.020(24) RSMo Supp. 1995¹ and operates a "municipal gas system" under § 386.310 RSMo, and is subject to the safety jurisdiction of the Commission, including the gas safety regulations of the Commission contained in 4 CSR-240-40.020 and 4 CSR 240-40.030.

4. As a result of the natural gas explosion and subsequent fire, the resident of 132 West Neosho Street died of complications from second and third degree burns she received during the explosion and fire.

5. The residence at 132 West Neosho Street was destroyed by the explosion and subsequent fire and a car parked in the driveway received heat damage, resulting in property damage in excess of \$35,000.

6. During the investigation conducted by the Gas Safety Staff, the Staff concluded that the probable cause of the incident

¹ All references to the Revised Statutes of Missouri will be to the 1995 Cumulative Supplements unless otherwise specified.

was the ignition of natural gas that had accumulated in the residence at 132 West Neosho Street. The Staff further concluded that: a) The natural gas had escaped and migrated from a fracture in the 3-inch diameter steel natural gas main located in a right-of-way adjacent to 132 West Neosho Street; b) The fracture occurred at approximately 12:30 a.m. on February 7, 1996; c) The released natural gas migrated through the soil and into the residence.

7. Based upon its investigation, the Staff further concluded that: a) The fracture evidently resulted from downward and lateral forces acting on the natural gas main; b) These forces caused bending stresses that exceeded the ultimate strength of the pipe at a point on the pipe that had already been weakened and made brittle due to prior mechanical damage on the main; c) These downward and lateral forces were created as the backfill in the sewer line excavation settled, causing a downward and lateral deflection in the natural gas main; d) The bending stress had increased over several years from the forces caused by the soil settlement surrounding the main; e) Dents from the mechanical damage created stress concentrators in the same area of the pipeline that the

bending occurred; f) Both the mechanical damage and the stresses from soil settlement had likely been present over a period of time.

8. Based upon its investigation of the incident at 132 West Neosho Street the Staff recommended six courses of action Granby should undertake. Those recommendations were:

a. First, the Staff recommended that the City identify, investigate and review all locations where their natural gas mains were near the 1990 sewer main construction project for possible third party damage and soil settlement. The Staff also recommends that remedial action, up to and including excavation and consolidating the support beneath the natural gas main in areas where the surface of the ground has obviously subsided in those areas where the natural gas main crosses over sewer mains.

b. Second, the Staff recommended that the City review its procedures for evaluating and inspecting construction activities in the vicinity of its natural gas pipelines, to increase their effectiveness. The Staff also recommends specific requirements to assure proper backfilling and prevention of other damage to natural gas pipelines due to construction near their lines;

c. Third, the Staff recommended that the City review its procedures for responding to, and investigating natural gas incidents. Specifically, leak investigations must be initiated in a timely manner and the scope of the investigation must be widened until the operator personnel have determined the source of the natural gas and/or the extent of migration. The importance of checking inside nearby buildings adjacent to the underground leak or incident site must be emphasized;

d. Fourth, the Staff recommended that the City evaluate the training methods that are used to instruct personnel in the proper emergency response procedures and working with live natural gas operations. The circumstances of,

and the problems encountered, in the February 7 incident should be incorporated into the training. In order to comply with 4 CSR 240-40.030(12)(J)2.B., the training must be effective, verified, and reviewed annually. Training in the use of isolation valves to eliminate having to work under conditions where natural gas is present, to stop the flow of natural gas to the area to eliminate the hazard should be incorporated into the training;

e. Fifth, the Staff recommended that the City develop procedures to assure that, in the event a pipeline emergency occurs in the future, an immediate investigation of the incident will be initiated and the appropriate telephone call(s) to the Staff and U.S. DOT be made in a prompt manner; and

f. Sixth, the Staff recommended that Granby be directed to file a response regarding each of the recommendations contained in this docket within thirty days of the filing of this report.

9. The parties to this docket believe that Granby has satisfactorily complied with all six of the Staff's initial recommendations.

a. Granby has satisfactorily complied with Staff's first recommendation by completing the following actions: 1) Identifying approximately eighty (80) locations where sewer mains crossed beneath natural gas mains; 2) Investigating all of the approximately eighty (80) locations for the possibility of soil subsidence and possible third party damage and identifying these locations; 3) Identifying all locations of crossings of natural gas mains and sewer mains under gravel driveways, alleys, and parking lots and investigating these locations for fill subsidence; 4) Excavating, exposing and examining natural gas mains in five locations from those areas noted in number 2, above; 5) New maps were made that incorporated the gas mains, sewer mains, and water mains on one map to facilitate identifying where

natural gas mains and sewer mains are in close proximity;²

b. Granby has satisfactorily complied with Staff's second recommendation by putting the following procedures in place: 1) City inspectors will examine pipelines for damage during all phases of construction and will inspect the backfilling of all excavations; 2) A record will be made of all pipeline examinations and maintained in Granby's files;

c. Granby has satisfactorily complied with Staff's third recommendation by taking the following actions: 1) On February 15, 1996, the Granby gas crew, police chief, fire chief and consultant reviewed the City's response to the incident at 132 West Neosho Street. Both the timeliness and extent of the gas leak investigations were discussed as well as conducting inside leak investigations; and 2) Specific training in leak investigations and emergency response is scheduled to be conducted on a continuing basis;

d. Granby has satisfactorily complied with Staff's fourth recommendation by taking the following actions: 1) Granby has evaluated their training methods in conjunction with their Emergency Procedures Manual, which addresses the use of isolation valves. A procedure review was conducted on February 15, 1996; 2) Granby has purchased sparkless tools to be used during live natural gas operations. These tools have been added to the Emergency Vehicle Equipment List and in the Emergency Procedure Manual; and 3) An Emergency Response Training Session will be conducted on an annual basis;

²Based upon the findings from the investigations noted in number 4, the Staff further believes Granby must excavate and expose additional identified locations where the natural gas mains and sewer mains cross to determine if additional damage to the natural gas mains exist. This is set out supra in numbered paragraph 10.

e. Granby has satisfactorily complied with Staff's fifth recommendation by putting procedures in place which should insure that, if a pipeline emergency occurs, an immediate investigation will be initiated and the appropriate telephonic notices will be made in a timely manner; and

f. Granby has satisfactorily complied with Staff's sixth recommendation by filing its response to the Staff's Recommendations on July 15, 1996 and to the additional Staff comments on October 2, 1996.

Granby will continue to comply with the Staff's recommendations in the manner set out above.

10. Based upon the findings from the investigations noted in numbered paragraph 9(a)(4), set out above, Granby agrees to excavate and expose a larger sample of not less than fifteen of the approximately seventy-five (75) remaining locations where sewer mains cross beneath natural gas mains to determine if additional damage to natural gas mains exist. These excavations will be completed within six (6) months of the date of any order approving this Unanimous Stipulation and Agreement. Within thirty (30) days of completion of these excavations, the City shall send the Staff:

- a) a summary that details the addresses of the locations excavated and examined;
- b) the date of the excavations;
- c) any damage noted, and
- d) any remedial action taken.

Further, the City will provide the Staff with a minimum of forty-eight (48) hours notice of each

planned excavation to allow the Staff the opportunity to witness such excavations.

11. If the investigation of the additional locations set out in numbered paragraph 10 uncovers additional excavation related damage, the City agrees to investigate as many of the approximately sixty (60) remaining locations as the Staff determines is necessary. The excavation and investigation of any additional locations will be undertaken at a rate that would complete approximately twenty (20) locations every six (6) months beginning the date the City receives notice from the Staff. If less than twenty (20) additional locations are selected for an investigation, the rate of completion will be approximately three (3) per month.

12. If the investigation of the additional locations set out in numbered paragraphs 10 and 11 uncovers additional damage that could impair the serviceability of the natural gas mains or service lines, appropriate repairs or replacements will be undertaken.

13. The Commission has authority to direct the Office of the General Counsel to seek penalties in circuit court for violation of Public Service Commission rules under §§ 386.570 and 386.600 RSMo. If the Commission found Granby committed the four rule violations asserted by the Staff, it could authorize the Staff to seek a maximum of \$2,000 in penalties for each of the four violations or

a total of \$8,000 payable to the state school fund. Although Granby does not admit that it violated the four rule provisions in issue, Granby agrees to remit a monetary penalty in the amount of \$5,000 to the state school fund for the sole purpose of settlement of the Staff's Complaint. Based upon Granby's satisfactory response to the Staff's Recommendations and the significant expense required for Granby to comply with those recommendations, the parties agree that a reduction from \$8,000 to \$5,000 is reasonable and appropriate.

14. The signatories to this Unanimous Stipulation and Agreement shall not be prejudiced or bound in any manner by the terms of this Unanimous Stipulation and Agreement in this or in any other proceeding, except as otherwise expressly specified herein. Granby does not admit any negligence or other liability, and such is expressly denied by the City.

15. This Unanimous Stipulation and Agreement has resulted from negotiations among the signatories and the terms hereof are interdependent. In the event the Commission does not adopt this Unanimous Stipulation and Agreement in total, the Unanimous Stipulation and Agreement shall be void and no signatory shall be bound by, prejudiced or in any way affected by any of the agreements or provisions hereof: (a) in this proceeding; (b) in any

future proceeding; and/or (c) in any proceeding currently pending under a separate docket.

16. In the event the Commission does adopt this Unanimous Stipulation and Agreement in total, the signatories shall not be prejudiced, bound by or in any way affected by the terms of this Unanimous Stipulation and Agreement: (a) in any future administrative or court proceeding; and/or (b) in any administrative or court proceeding currently pending under a separate docket, except as otherwise expressly specified herein.

17. In the event the Commission accepts the specific terms of this Unanimous Stipulation and Agreement, the signatories waive, with respect to the issues resolved herein: (a) their respective rights pursuant to § 536.080.1 RSMo 1994 to present testimony, to cross-examine witnesses, and to present oral argument and written briefs; (b) their respective rights to the reading of the transcript by the Commission pursuant to § 536.080.2 RSMo 1994; and (c) their respective rights to judicial review pursuant to § 386.510 RSMo 1994.

18. The prepared testimony of Richard Fennel will be filed in support of the Unanimous Stipulation and Agreement. If neither Granby nor the Office of the Public Counsel file a document within five (5) business days of receipt of such testimony containing

rebuttal testimony or requesting the opportunity to cross examine Mr. Fennel, the prepared testimony shall be received into evidence without objection.

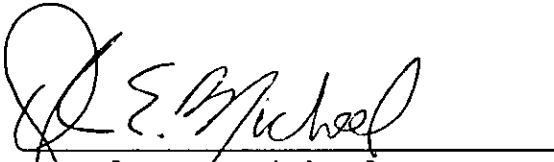
19. The Staff shall also have the right to provide, at any agenda meeting at which this Unanimous Stipulation and Agreement is noticed to be considered by the Commission, whatever oral explanation the Commission requests, provided that the Staff shall, to the extent reasonably practicable, provide the other parties with advance notice of when the Staff shall respond to the Commission's request for such explanation once such explanation is requested from Staff. Staff's oral explanation shall be subject to public disclosure, except to the extent it refers to matters that are privileged or protected from disclosure pursuant to the protective order issued in this case. Additionally, Staff will verbally notify the other parties of any date(s) this Unanimous Stipulation and Agreement is scheduled for discussion at an agenda meeting as soon as the Staff becomes aware of such.

20. To the extent that the Commission believes that an on-the-record formal presentation of this Unanimous Stipulation and Agreement is necessary, the parties agree to make themselves available at the Commission's convenience to answer any questions

the Commission might have during the formal hearing scheduled in this docket or any agenda meeting.

WHEREFORE, the signatories respectfully request that the Commission issue its Order approving the terms of this Unanimous Stipulation and Agreement.

Respectfully submitted,



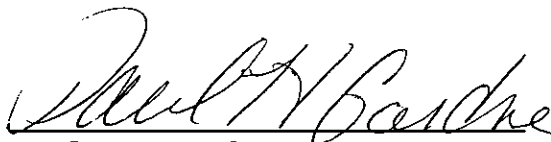
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by CDM