MISSOURI GAS ENERGY
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ROBERT J. HACK
Vice President, Pricing & Regulatory Affairs

August 31, 2001

Mr. Dale Hardy Roberts
Secretary/Chief Regulatory Law Judge
Missouri Public Service Commission
200 Madison Street, Suite 100
P.O. Box 360
Jefferson City, Missouri 65102-0360

FILED[3]
SEP 0 4 2001
Missouri Public
Service Commission

RE: Case No. GS-2001-224

Dear Mr. Roberts:

Enclosed for filing in the above-referenced matter, please find an original and eight (8) conformed copies of **Missouri Gas Energy's Further Response.**

A copy of this filing has been mailed or hand-delivered this date to counsel of record.

Thank you for bringing this matter to the attention of the Commission. Please call me if you have any questions regarding this matter.

Sincerely,

Robert J. Hack

C: F. Jay Cummings
Douglas E. Micheel
Eric Anderson

Enclosures

FILED[3]
SEP 0 4 2001
Missouri Public Service Commission

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the matter of Missouri Gas Energy, A division of Southern Union Company, Regarding an incident at 1426 W. 50th Terrace, Kansas City, Missouri, on August 8, 2000.	)))))	Case No. GS-2001-224

MISSOURI GAS ENERGY'S FURTHER RESPONSE

Comes now Missouri Gas Energy ("MGE"), a division of Southern Union Company, and for its further response to the Staff filings made herein on or about March 30 and June 21, 2001, respectfully states as follows:

1. On February 7, 2001, the Staff filed a "Gas Incident Report" ("the Incident Report") in Case No. GS-2001-224. MGE filed its response to the Incident Report on or about March 8, 2001. By order dated March 20, 2001, the Commission closed the case. Thereafter the Staff filed its Motion to Late File Response and Leave Case Open (on or about March 30, 2001) and its Motion to Direct Response of Missouri Gas Energy. MGE makes this further response in an effort to satisfy all of the Staff's concerns as expressed in the Incident Report and the Staff's March 30 and June 21, 2001 filings.[1]

2. Specifically, the Staff expressed concerns that: A) "MGE's existing requirements and training address the use of PPE ("personal protective equipment") during the action of loosening the plug in the tapping tee" (Staff's June 21, 2001 filiing, para. 9); and B) "MGE's existing requirements and training address the possibility of operating heating irons being located near an excavation where there is a potential for the accidental release of natural gas." (Staff's June 21, 2001 filing, para. 11).

3. In an effort to fully respond to and satisfy the Staff's concerns, MGE states the following:

A. In response to paragraph 9 of the Staff's June 21, 2001 filing, MGE has again reviewed its requirements and training regarding the use of personal protective equipment. MGE's training material (a copy of the relevant excerpt of which is appended hereto as Attachment 1) provides "III. PROPER USE OF FIRE SUITS. A. WHENEVER A GASEOUS ATMOSHPERE EXISTS AT A JOB SITE (EITHER ABOVE OR BELOW GROUND) OR MAY BE INTRODUCED INTO THE JOB SITE, FLAME RETARDANT CLOTHING MUST BE WORN. 1. Flame retardant coveralls. 2. Flame retardant hood (the collar must be tucked into the coveralls). 3. Leather gloves." As part of the hands-on portion of our training on the use of flame retardant clothing and the use of respirators, MGE trainers emphasize in detail the need to make use of such equipment prior to the escape of any natural gas so as to minimize hazards. MGE trainers also emphasize, during the hands-on portion of the training, that excavations where the backhoe operator is still digging presents an opportunity for the escape and introduction of natural gas into the job site. Therefore, MGE believes its existing training adequately addresses the use of PPE prior to the escape and introduction of natural gas into the job site as may potentially occur during actions such as loosening the plug in the tapping tee.

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[1] To the extent necessary, therefore, MGE hereby incorporates by reference herein the contents of its Response to Staff Incident Report filed on or about March 8, 2001.

B. In response to paragraph 11 of the Staff's June 21, 2001 filing MGE has again reviewed its requirements and training regarding the practical elimination of all potential ignition sources in and around an excavation where there is a possibility for the accidental release of natural gas. MGE's training material regarding plastic fusion (a copy of the relevant excerpts of which is appended hereto as Attachments B-1 to B-4) states that "[T]he heating iron is not a closed system. Follow correct procedures in a gaseous atmosphere. To use fusion irons in a gaseous atmosphere, adjust the temperature output of the iron 10 degrees higher than your upper limits. Unplug the fusion iron from its power source and carry the iron in an insulated mitt, and begin the fusion procedure at the correct fusion temperature." (Attachment B-1) Later in the training regarding plastic fusion is a warning: "The power operated unit shall not be used in the presence of a natural gas atmosphere due to the risk of explosion or fire. In that situation, remove the brushes and use a hand crank." (Attachment B-2) Other MGE training requirements call for 1) the checking of all excavations with a combustible indicator ("CGI") prior to entry and 2) entry only with proper PPE if a gaseous atmosphere is discovered by use of the CGI. Therefore, MGE believes its existing training adequately addresses the possibility of operating heating irons being located near an excavation where there is a potential for the accidental release of natural gas.

WHEREFORE, MGE respectfully submits the foregoing as its further response.

Respectfully submitted,

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Attorney for Missouri Gas Energy, a division of Southern Union Company

Certificate of Service

I hereby certify that a true and correct copy of the above and foregoing document was either mailed or hand delivered this 31st day of August, 2001 to:

Mr. Eric Anderson
P.O. Box 360
Jefferson City, MO 65102

Mr. Douglas E. Micheel
P.O. Box 7800
Jefferson City, MO 65102

#16 IN NEARBY BUILDINGS AND SEWERS. IN SOME SITUATIONS, WHERE LIFE, HEALTH, OR PROPERTY IS NOT ENDANGERED, IT MAY WELL BE BETTER TO ALLOW THE FIRE TO BURN. WIND CONDITIONS AND THE CLOSENESS OF BUILDINGS MUST ALSO BE TAKEN INTO CONSIDERATION. CONTACT A SUPERVISOR FOR DIRECTION, IF TIME ALLOWS.

TRAINERS: You will need to set up a scenario or two to describe a situation in which it would be better to allow a fire to burn and one in which it would not be advisable to allow a fire to burn.

III. PROPER USE OF FIRE SUITS.

TEST 16 A. WHENEVER A GASEOUS ATMOSPHERE EXISTS AT A JOB SITE (EITHER ABOVE OR BELOW GROUND) OR MAY BE INTRODUCED INTO THE JOB SITE, FLAME RETARDANT CLOTHING MUST BE WORN.

1. Flame retardant coveralls.
2. Flame retardant hood (the collar must be tucked into the coveralls).
3. Leather gloves.

B. THE SUITS ARE MADE OF "NOMEX," A MATERIAL DESIGNED BY NASA. THEY ARE 1% STAINLESS STEEL TO PROVIDE A GROUND FOR STATIC ELECTRICITY.

C. THE SUITS ARE WASHABLE. THERE IS NO LOSS OF THE FLAME RETARDANT ABILITY OF THE SUIT AFTER REPEATED WASHINGS.

TEST 17 D. WHEN THE CONDITIONS WHICH REQUIRED THE SUIT TO BE WORN HAVE RETURNED TO NORMAL, THE SUIT SHOULD BE REMOVED TO PREVENT THE SERVICE PERSON FROM BECOMING OVERHEATED.

IV. PROPER USE OF FRESH AIR BREATHING APPARATUS.

TEST 18 A. FRESH AIR BREATHING APPARATUS SHOULD BE WORN WHEN A GASEOUS ATMOSPHERE EXISTS IN EXCAVATIONS.

TEST 19 B. OTHER OPERATIONS IN WHICH YOU MAY WANT TO WEAR THE FRESH AIR BREATHING APPARATUS:

Plastic Fusion

Purpose:

This learning course will prepare personnel to heat fuse PE pipe. Normal butt and sidewall fusion is covered.

Qualification:

- Requires passing score on written exam
- Hands on plastic fusion qualification

Introduction:

TQ #1 An individual must be trained by the manufacturer's approved procedures before any field fusions may be made.

Successful test joints must be made and destructively tested in accordance with company approved standards.

TQ #2 [redacted] 1" wide with at least 8" of plastic on either side of the fusion area.

TQ #3 A test sample of appropriate pipe or

TQ #5 pipe and fitting must be visually examined by the qualified employee. After visual

TQ #4 acceptance, destructive testing must be performed.

A pressure test must be made on all installed piping.

TQ #6 If air pressure is not feasible, it may be tested at operating pressure and soap tested if the pipe was pretested.

Butt Fusion:

TQ #7 An individual performing butt fusion shall take all steps necessary to control static electricity.
Heat shall be applied only through the use of a manufactured heating plate.

The heating iron is not a sealed system. Follow correct procedures in a gaseous atmosphere.

TQ #8 To use fusion irons in a gaseous atmosphere, adjust the temperature output of the iron 10 degrees higher than your upper limits.

Unplug the fusion iron from its power source and carry the iron in an insulated mitt, and begin the fusion procedure at the correct fusion temperature.

Use a pyrometer to make sure your fusion was completed within your correct fusion temperature range. If the iron is below the temperature range, you must cut your fusion joint out and go through the joining procedure again.

TQ #9 No fusion joint shall be made when the fusion equipment is out of alignment. The flyswatter/insulator shall be inspected and cleaned prior to each use.

Clean the iron with paper towels or clean cotton cloths. Do not use synthetic or treated rags.
Install the correct insert fittings in the butt fusion unit to fit the pipe diameter.
Preheat the heater plate to 500 degrees +/- 10 degrees Fahrenheit. Check the heater plate temperature each time the heater plate is heated. Check the iron with a

TQ #10 Tempil stick or pyrometer on both

Plastic Fusion

sides of the iron. (Use Tempil sticks outside the potential fusion area. Unplug the heater plate before any manual adjustments to increase or decrease temperature.

The thermometer is for quick reference only and not to be taken as exact temperature if the heater plate. Test heater plate temperature once each hour of continuous use by using a pyrometer.
Keep the heater plate in a mitt or stand when not in use.
Do not fuse when out of proper temperature range.

Clean pipe end with paper towel or cotton cloth. Clamp pipe in fusion unit leaving enough pipe sticking out to do proper facing. Pipe 3" and larger shall be supported on a level plane to aid in providing proper alignment.
Install facing tool between the alignment clamps and lock into position. Face the ends of the pipe to be fused with a hand crank or power unit.
Apply pressure to move the pipe ends together while facing until the facer turns freely and is no longer removing shavings.
The facing tool shall always be used on factory finished ends.

WARNING: The power-operated unit shall not be used in the presence of a natural gas atmosphere due to the risk of explosion or fire. In that situation, remove the brushes and use a hand crank.

After facing, remove facer and clean shavings from pipe.
Bring the ends together to check for high-low conditions and to make sure the pipe does not slip under pressure.
If any adjustments are made, you must reface the plastic.
If the pipe slips during the fusion process, you must cut the fusion joint out, reface, and fuse again.

Butt Fusion of Similar Material: Medium to Medium Density Pipe

Insert the heater plate and bring the two pipe ends firmly into contact with the heater plate. Do not apply pressure to obtain a melt pattern.

Melt Bead Sizes:

2" or less	1/16"
3"	1/8"
4" or larger	1/4"

When the proper melt bead is formed, move the pipe away from the heater plate and remove the plate. Check the melt pattern on the ends of the pipe for a uniform nonporous appearance and proper bead alignment. If it looks improper cut it out and start over.
Bring the pipe ends together rapidly **DO NOT SLAM!**
Apply enough continuous pressure to form a double rollback bead.

Plastic Fusion

Main	Double Bead
2" or less	1/8"
3"	1/8" – 3/16"
4" or larger	1/4" – 5/16"

Once proper bead is formed, maintain pressure until the bead is cool to the touch. When cool to the touch, remove from the fusion unit and inspect for uniform, nonporous appearance.
Allow 15-30 minutes additional cooling time before pressure testing, backfilling, or rough handling the pipe.

Dissimilar Butt Fusion: High Density to Medium Density PE Pipe

Insert the heater plate between the aligned pipe ends and place the heat shield (flyswatter) between the heater plate and the medium density plastic pipe. Bring the pipe ends and flyswatter into contact with the heater plate. Use only enough pressure to hold the heater plate, flyswatter, and pipe ends in place. After the high density side develops ½ of the proper melt pattern, remove the flyswatter and bring the medium density pipe in contact with the heater plate until proper melt bead is formed on both sides.

MAIN	MELT BEAD
2" or less	1/16"
3"	1/8"
4" or larger	¼"

When the proper melt bead is formed, remove the heater plate. Check the melt pattern for uniform nonporous appearance. If appearances are good, bring the ends together. If not, stop the process, cut out the melt, and repeat the process again. Apply enough continuous pressure to form a double bead.

MAIN	ROLLBACK BEAD
2" or less	1/8"
3"	1/8"-3/16"
4" or larger	¼"-5/16"

Once the bead is formed, maintain pressure until it is cool to the touch. Once the fusion joint is cool to the touch, remove it from the fusion unit and inspect for a uniform, nonporous appearance and proper bead alignment.
When it passes a visual examination, you must allow 15-30 minutes of additional cooling time before rough handling, pressure testing, or backfilling.

Sidewall Fusion: Medium Density to Medium Density Pipe

Clean the heater, convex and concave adapter plates before assembling. Assemble the correct size adapter plates while the heater plate is cold. **Do not attempt to assemble or disassemble adapter plates while heater plates are hot! Damage will result to the aluminum threads in the heater plate if this is attempted.**
Preheat the heater plate to 500 degrees +/- 10 degrees Fahrenheit.

Plastic Fusion

Check the heater plate temperature each time the plate is heated.
Check both sides of the heater plate with a pyrometer. Do not check on the serrated edges of the adapter plates. If the heater plate temperature is out of temperature range, unplug the heater plate BEFORE making any adjustments.
The thermometer on the heater plate is for reference only. Use a pyrometer for accurate temperature measurement. If the thermometer is more than 50 degrees off, it must be replaced. Never attempt any fusion's if the heater plate is not within the proper temperature range for the plastic pipe you are working with.
Keep the heater plate in a mitt or stand between fusion's.
Place the proper sidewall unit on the pipe and tighten ONE clamp completely and then the other clamp using the proper pipeline bolsters.
Clean the surface of pipe and fitting with a clean cloth or paper towel.
Rough the surface of the pipe and the base of the fitting using a utility cloth (50 to 60 grit) to allow the transfer of heat.

Place the fitting loosely into the holder of the sidewall unit. Lower into position to visually ensure that the fitting is setting squarely on the pipe and apply **no more than** 100 psi to ensure the fitting is setting squarely on the main. Release pressure and
raise fitting to the full open position. Insert the heater plate, centered by the location pins.
Lower the heater plate onto the pipe and then lower the fitting onto the heater plate. Apply pressure (70 pounds) to ensure the heating surfaces are in complete contact with both surfaces. Apply pressure (70 pounds) until a melt bead of 1/16" can be seen on the crown of the pipe on both sides of the fitting.

MELT BEAD SIZE:

MAIN	FITTING BASE
1 ¼"	1/16"
2"	1/8"
3" or larger	1/8"-3/16"

When the proper bead size is obtained, raise fitting and remove heater plate.
Check the melt pattern for uniform, nonporous appearance. Bring the melted surfaces together with enough pressure (70 pounds) to form the fusion bead.
DO NOT SLAM!
Three beads should be evident:

- Pipe bead
- Fitting bead
- Fusion bead between the two.

Once the fusion bead is formed, maintain pressure (70 pounds) until the fusion bead is comfortable to the touch. When cool to the touch, remove from the holder and inspect the fusion bead. Allow the joint to cool 15-30 minutes before testing, tapping, or backfilling.