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TITLE: REPAIR OF GAS DISTRIBUTION MAINS AND SERVICES

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REV 2a (10/29/2021)

1. Appendix B - Updated the description for Repair type: Electrofusion repair on damaged & leaking elevated pressure PE plastic pipe. Also updated Electrofusion to Electrofusion.
2. Numbered 5.0 to 5.5
3. Appendix A - Updated Repair Type "Pipe repair clamp on PE plastic pipe" to include "(Install spring washer c/s #382-1757)" to reflect the part number.

REVISIONS: (See ★)

- 1) Section 5.3 - Section Rewritten.



Gas Operations Standards

TITLE: REPAIR OF GAS DISTRIBUTION MAINS AND SERVICES

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TITLE: REPAIR OF GAS DISTRIBUTION MAINS AND SERVICES

1.0. SCOPE

This specification details the requirements for qualified personnel (Company, Per Diem and Contractor) to repair gas distribution mains and services.

2.0. LEGAL REQUIREMENTS

Federal: [49 CFR Part 192](#), Section [309](#), [311](#), [605](#), and [753](#)

New York State: [16 NYCRR Part 255](#), Section [309](#), [311](#), [605](#), and [753](#)

3.0. DEFINITIONS

3.1 Inside Gas Leaks – Gas leaks originating from extension piping, meter piping, house piping, or connected gas appliances. (See Section 3.2)

3.2 Outside Gas Leaks - Gas leaks originating from mains or service piping outside the foundation or building wall and service piping upstream of the head of service (HOS) valve.

Leaks originating from above-ground customer-owned piping or equipment after the HOS valve (e.g. meter, regulator, barbecue, or pool heater) shall be treated and documented as inside gas leaks. (See Section 3.1)

3.3 Pressure

- A) **Low:** Pressure up to and including 12” WC
- B) **Intermediate (Ossining System):** Pressure greater than 1 psig and up to and including 5 psig.
- C) **Medium:** Pressure greater than 2 psig and up to and including 15 psig.
- D) **High:** Pressure greater than 15 psig and up to but less than 125 psig.

3.4 Qualified Gas Personnel - Company employees or gas contractors that have been Operator Qualified to perform assigned covered tasks and recognize and react to abnormal operating conditions. The qualification must not have expired.

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3.0 **DEFINITIONS** (Continued)

3.4 Qualified Gas Personnel (Continued)

To tap an energized pipeline, weld steel, and join plastic pipe by heat fusion, electrofusion, or with mechanical fittings, individuals shall themselves be Operator Qualified in these covered tasks. All other covered tasks shall be completed by Operator Qualified individuals or individuals under the direct observation (remain in direct visual and verbal contact at all times) of one who is operator qualified.

3.5 Permanent Repair - Repairing a pipe or appurtenance to eliminate or mitigate a hazard.

3.6 Temporary Repair - Repairing or securing a pipe or appurtenance to mitigate a hazard and maintain service until permanent repairs can be made.

4.0. TEMPORARY REPAIR

4.1 Whenever practical, avoid applying a temporary repair. If the volume of escaping gas cannot be controlled, measures shall be taken to safely stop the flow of gas (e.g. valving off, squeeze-off, installation of stoppers). (See Gas Specifications [IP-42](#), "Requirements for Airline Respirator (ALR), Flame Retardant Coveralls (FRC), Harness & Line (H/L), and Harness and Gantry (H/G)," [IP-7](#), "Cut-Outs and Tie-Ins of Existing Gas Mains," [G-8178](#), "Shut-off of Polyethylene (PE) Plastic Pipe/Tubing Used for Gas Mains and Services")

4.2 Temporary repair(s) to mitigate an outside gas leak shall:

- Not be backfilled.
- Be surveilled at least daily until a permanent repair has been made. The applicable Gas Manager shall determine when the surveillance frequency is to be increased.
- Not constitute a repair to close out or downgrade an outside leak.

Temporary repair(s) to mitigate an inside gas leak shall be made and re-inspected in accordance with the requirements in Gas Specification [G-11837](#), "Investigation of an Inside Gas Leak or Odor Call and Issuance of a Warning Tag."

4.3 See [Appendix A](#) for approved temporary repairs

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5.0. PERMANENT REPAIR

5.1 When making a repair on steel pipe installed prior to 1972, install a 32 lb. "hot spot" magnesium anode on the pipe. (See Gas Specifications [G-11830](#), "Corrosion Testing on Buried Steel Gas Mains and Services" and [G-8205](#), "Corrosion Control of Buried Steel Gas Mains and Services")

5.2 When making a repair on steel pipe installed 1972 and later, install the appropriate size and number of magnesium anodes on the pipe and install a test station (if a test station does not exist). (See Gas Specifications [G-11830](#) and [G-8205](#))

★ 5.3 Each cast iron caulked bell and spigot joint that is exposed for any reason other than replacement or abandonment, must be encapsulated (See Gas Specification [IP-25](#), "Installation of Encapsulation Kits for Sealing Cast Iron Bell and Spigot Joints and Other Fittings" and Appendix B of this specification).

5.4 See Gas Specification [G-8219](#), "Procedure for Handling Inoperable Metallic Valves" for details on maintenance and repair of valves.

5.5 See [Appendix B](#) for approved permanent repairs.

6.0. RECORDS RETENTION

Any records generated in the course of performing work in accordance with this specification shall be maintained as required by Corporate Instruction [CI-870-1](#) "Records Management". Guidance on the retention of Company Gas Operations records can also be found on the [Records Management](#) intranet site.

7.0. REFERENCES

[CI-870-1](#) "Records Management"

[EO-9911](#) Welding Procedure for High Pressure Fittings

[EO-17130](#) Dresser Style 220 Repair Sleeve for Installation over Mechanical Couplings

[EO-17131](#) Dresser Style 220 Repair Sleeve for Installation over Reinforced Mechanical Couplings

[EO-17132](#) Dresser Style 220 Repair Sleeve Special 24" O.D. 3/8 x 34" I.D.

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7.0 REFERENCES (Continued)

EO-17133	Dresser Style 220 Repair Sleeve For Over Joint Harness Assembly
G-1064	Shielded Metal Arc Welding Procedure for Welding Steel Pipe and Fittings
G-8005	General Specification for the Installation of Gas Distribution Mains
G-8100	General Specification for the Installation of Gas Distribution Services
G-8104	Polyethylene Pipe, Tubing and Fittings for Gas Mains and Services
G-8149	Responsibility for Maintenance/Replacement of Gas Services and Also the Testing Requirements for Temporarily Disconnected Gas Services
G-8153	Reinforcing Compression Fittings
G-8178	Shut-off of Polyethylene Plastic Pipe/Tubing Used for Gas Mains and Services
G-8202	Encapsulation Kits for Low and Medium Pressure Cast Iron or Steel Gas Distribution Systems Up to and Including 36"
G-8204	Pressure Testing Requirements For Gas Mains and Services
G-8205	Corrosion Control of Buried Steel Gas Mains and Services
G-8219	Procedure for Handling Inoperable Metallic Valves
G-11809	Outside Gas Leak Reporting, Classification, Surveillance, Repair and Follow-Up Inspection
G-11830	Corrosion Testing on Buried Steel Gas Mains and Services
G-11837	Investigation of an Inside Gas Leak or Odor Call and Issuance of a Warning Tag
G-11870	Repair of Steel Gas Transmission Pipelines Operating at 125 PSIG or More

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7.0 REFERENCES (Continued)

G-100,158	Pipe Repair Clamps for Gas Mains and Services
G-100,281	Weld End Forged Fittings for Gas Piping
G-100,285	Compression End Coupling , Tees, Elbows, Line Caps and Riser Tees for Gas Pipe & Tubing
G-100,299	Insulated Service Saddles for Steel and Cast Iron Gas Mains
IP-7	Cut-Outs and Tie-Ins of Existing Gas Mains
IP-9	Requirements For Written Procedures and Contingency Plans
IP-25	Installation of Encapsulation Kits for Sealing Cast Iron Bell and Spigot Joints and Other Fittings
IP-27	Installation of Electrofusion Fittings on Plastic Pipe/Tubing and Molded Fittings Using a Universal Electrofusion Processor
IP-30	Procedure for Removing or Replacing Live Intermediate, Medium and High Pressure Gas Pipe and/or Fittings Without No-Blow Equipment
IP-42	Requirements for Airline Respirator (ALR), Flame Retardant Coveralls (FRC), Harness & Line (H/L), and Harness and Gantry (H/G)
IP-44	Use of the Bonsai / Completion Plug Puller On Low, Intermediate, and Medium Pressure Service Tees
HOT GAS6045	Installation of LLFA (ALFA) Tape.

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APPENDIX A

Approved Temporary Repair Methods for Gas Distribution Mains and Services

Repair Type	Pipe Material PE = PE plastic ST = steel CI = cast iron WI = wrought iron CT = copper	Operating Pressure LP= low IP = intermediate MP = medium HP = high	Reference Gas Specifications
Soap and bandage (c/s #682-0112)	PE, ST, CI, WI, CT	LP, IP, MP	
Wax Tape (c/s #631-2292, 631-2300)	PE, ST, CI, WI, CT	LP, IP, MP	G-8213
Sticking, pinning, or staking a gas leak <i>Should not be left unattended</i>	PE, ST, CI, WI	LP, IP, MP, HP	IP-30
Strapping a gas leak (e.g. rubber gaskets and hose clamps)	PE, ST, CI, WI, CT	LP, IP, MP, HP	
Temporary service/main bypass (e.g. flexible bypass hose; aboveground bypass)	PE, ST, CI, WI, CT	LP, IP, MP, HP	G-8005, G-8100, IP-7, IP-40, IP-9
Pipe repair clamp on PE plastic pipe (Install spring washer c/s #382-1757)	PE	LP, IP, MP, HP	G-100,158
Trident Seal (c/s #342-4777) to repair: 1. Pinhole leaks on pipe up to 4" 2. Threaded fittings 3. Couplings	ST	LP, IP, MP, HP	G-11809
★ LLFA (ALFA) Tape (To be used only after completing approved training HOT GAS6045) 1" LLFA Tape (c/s 342-1525) 2" LLFA Tape (c/s 342-1526) Putty, LLFA Smooth (c/s 342-1527) 2" Fiberarmour (c/s 342-1528)	PE, ST, CI, WI, CT	LP, IP, MP, HP	HOT GAS6045

APPENDIX B

Approved Permanent Repair Methods for Gas Distribution Mains and Services

Repair Type	Pipe Material PE = PE plastic ST = steel CI = cast iron WI = wrought iron CT = copper	Operating Pressure LP= low IP = intermediate MP = medium HP = high	Reference Gas Specifications
Full or partial replacement gas service via relay or insertion	PE, ST, CI, WI, CT	LP, IP, MP, HP	G-8149, G-8100, IP-9, IP-27
Full or partial replacement gas main via relay or insertion	PE, ST, CI, WI, CT	LP, IP, MP, HP	G-8005, IP-7, IP-9, IP-27
Installation of main/service liner (e.g., Paltem, Starliner) <i>Contact Gas Distribution Engineering for guidance</i>	ST, WI, CI	LP, IP, MP, HP	G-8005, G-8100
Complete abandonment of pipe	PE, ST, CI, WI, CT	LP, IP, MP, HP	IP-7, , IP-9, G-8204, G-8153, IP-30, IP-44, G-8178, G-8104, G-100-281, G-100,285
Valve maintenance and repair	PE, ST, CI, WI, CT	LP, IP, MP, HP	G-8219
Tightening a leaking compression fitting (other than 2" ST HP)	PE, ST, CI, WI, CT	LP, IP, MP, HP	
Tightening a leaking 2" HP compression coupling with installation of a secondary repair: 1. mechanical sleeve (e.g., Dresser Style 54); 2. welded sleeve (e.g., Dresser Style 220 or 220S), OR 3. Trident Seal	ST	HP	
Removing/replacing a leaking fitting, connection, or component (e.g., purge pipe, drip riser, saddle, or valve)	PE, ST, CI, WI, CT	LP, IP, MP, HP	IP-30, IP-44
Pipe repair clamp: half seal/ full seal, with or without a service outlet connection (metallic pipe only)	ST, WI, CI	LP, IP, MP, HP	G-100,158
Installing a strap saddle	ST, WI, CI	LP, IP, MP, HP	G-100,299
Encapsulation of cast iron joint or leaking mechanical fitting or component	ST, WI, CI	LP, IP, MP	IP-25, G-8202
Electrofusion repair patch on damaged & leaking LP PE plastic pipe. <i>Repair patch may be installed under live conditions</i>	PE	LP	IP-27, G-8104
Electrofusion repair on damaged & leaking elevated pressure PE plastic pipe (e.g., patch, branch saddle cover). <i>Repair may only be installed after the flow of gas has been stopped</i>	PE	IP, MP, HP	IP-27, G-8104
Electrofusion repair patch on damaged & Non-leaking PE plastic pipe.	PE	LP, IP, MP, HP	IP-27, G-8104
Welding Repairs (e.g., grinding & weld repair, welded sleeve, high hat, hot tap, welding patch plate)	ST	IP, MP, HP	G-11870, G-1064, EO-9911, EO-17130, EO-17131,EO-17132, EO-17133
Internal sealant repair of CI joints (e.g., CISBOT)	CI	LP, IP, MP	