GLOSSARY

TERMS AND COMMONLY ABBREVIATED ORGANIZATIONS

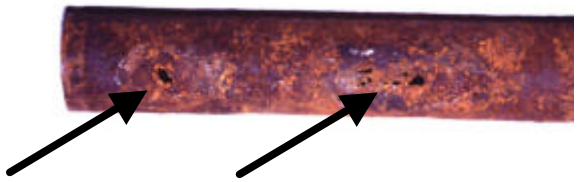
TERMS

A

ABANDONED PIPELINE: A pipeline that is physically separated from its source of gas and is no longer maintained under 49 CFR Part 192.

ABANDONMENT: The process of abandoning a pipeline.

ACTIVE CORROSION: Continuing corrosion which, unless controlled, could result in a condition that is detrimental to public safety.



ACTUATOR: A device designed to shut off gas flow upon flame failure, pilot outage, control impulse, overpressure, or underpressure without a person being physically at the location. Valve actuators on mainline transmission systems are primary operated by pushing a button at a control station.

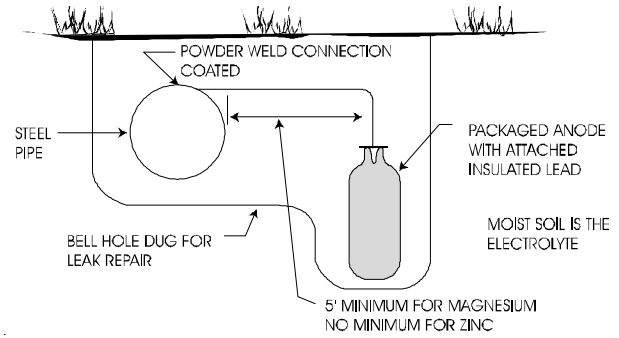
ADHESIVE JOINT: A joint made in plastic piping by the use of an adhesive substance which forms a bond between the mating surfaces without dissolving either one of them.

ADMINISTRATOR: The Administrator of the Research and Special Programs Administration or any person to whom authority in the matter concerned has been delegated by the Secretary of Transportation.

ALTERNATING CURRENT (AC): A current whose direction changes with time (e.g., commercial electricity used to run home appliances).

AMBIENT TEMPERATURE: The temperature of the surrounding medium, usually

ANODE: A positive electrode in an electrolytic system, such as applied in cathodic protection; the electrode at which oxidation or corrosion occurs.



ANODELESS RISER: A steel casing with a plastic pipe inside. The plastic pipe inside the steel casing is the service line carrying gas to the customer meter.

B

BALL VALVE: A valve in which a pierced sphere rotates within the valve body to control the flow of fluids.

BAR HOLE: A small diameter hole made by a plunger bar in the ground along the route of the gas pipe when searching for gas leaks. (Is a process of checking the sub-surface atmosphere for gas leaks.)

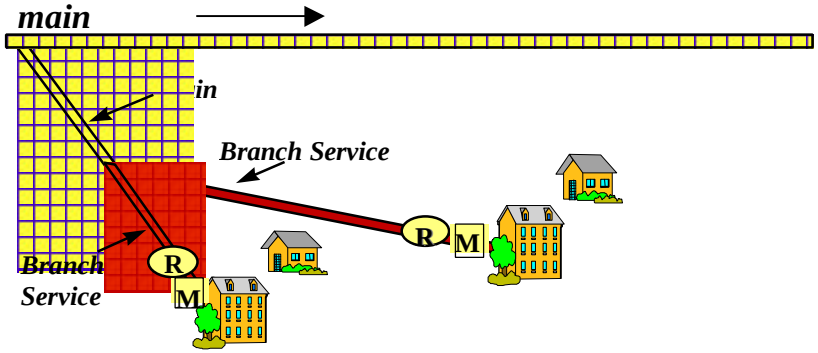
BARLOW'S FORMULA: See HOOP STRESS.

point is approximately -260° F).

BOTTLE: A gastight structure completely fabricated from pipe with integral drawn, forged caps and tested in the manufacturer's plant.

BOTTLE-TYPE HOLDER: Any bottle or group of interconnected bottles buried underground in one location and used for the sole purpose of storing gas. (per ASME Guide)

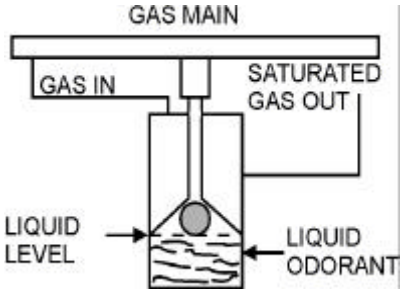
BRANCH SERVICE LINE: A branch service line can be a main to the branch point (common source of supply). If the branch point is underground, much of the service line can be a main. If the branch is aboveground at a bank of meters, all of the service line can be a main, part of which being aboveground.



BRITISH THERMAL UNIT (BTU): The quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit. A common unit of measurement for gas prices. See THERM.

BUTT FUSION JOINT: This technique consists of heating the squared ends of matching surfaces by holding them against a heating plate until fusion temperature is reached, pushing the two softened ends against one another, holding under pressure for the prescribed manufacture's time, and allowing the joint to cool.

BY-PASS TYPE ODORIZER: The equipment in which a portion of the main gas stream is diverted, by an orifice plate or partially closed valve in the line through a tank provided with baffles or wicking. The odorant-saturated portion of the by-pass gas is then returned to the stream. Generally used for low, more uniform flows.



C

CARBON STEEL: By common custom, steel is considered to be carbon steel when (1) no minimum content is specified or required for aluminum, boron, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium, zirconium, or any other element added to obtain a desired alloying effect; (2) the specified minimum content does not exceed 1.65 percent for manganese or 0.60 percent for copper.
All carbon steels may contain small quantities of unspecified residual elements unavoidably retained from raw materials. These elements (copper, nickel, molybdenum, chromium, etc.) are considered incidental and are not normally determined or reported.

CAST IRON: Applies to gray cast iron which is a cast ferrous material in which a major part of the carbon content occurs as free carbon in the form of flakes interspersed through the metal.

CATHODIC PROTECTION (CP): A cathodic polarization method that is widely and effectively used to limit corrosion.

CENTERING : The process of approximating a leak location.

COMBUSTIBLE GAS INDICATOR (CGI): Used as a leakage detection instrument for subsurface and confined area surveys. It is also used to center, pinpoint and classify a gas leak.

COMBUSTION: The process of burning.

COMPRESSED NATURAL GAS (CNG): Natural gas stored

CURB VALVE: A valve installed for the purpose of shutting off the gas supply to a building. It is installed below grade in a service line, at or near the property line. It is operated by use of a removable key or wrench, through a curb box or standpipe.

CRITICAL BOND: A compensating bond attached between offending pipelines or other metallic structures to reduce or eliminate stray current interference and whose failure would jeopardize protection of the structure.

CUSTOMER METER: A device which measures gas delivered to a customer for consumption on the premises.

CUSTOMER REGULATOR: A device that maintains a set pressure to the customer.

D

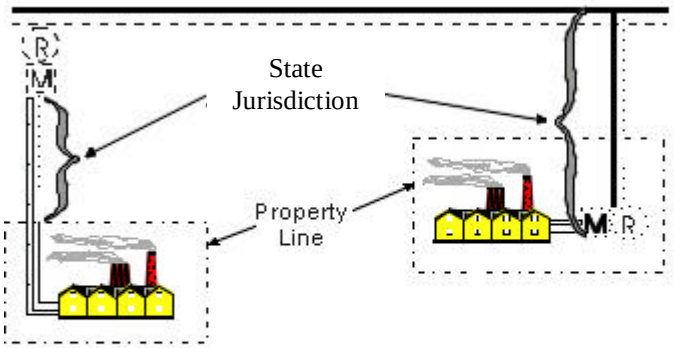
DESTRUCTIVE TESTING: Testing in which the part being tested is rendered unusable to prove the strength of the part being tested

DETERMINE: To establish or ascertain definitely after considering an investigation or calculation.

DIRECT CURRENT (DC): The opposite of AC; DC current stays constant over a period of time (e.g., a flashlight battery).

DIRECT SALES LATERAL (INTRASTATE OR INTERSTATE SALES LATERAL): A pipeline that transports gas to a large volume customer such as a factory or power plant. This pipeline is upstream from a distribution center or directly off of a transmission line. This pipeline by definition is a transmission line and is jurisdictional to the state pipeline safety program if one exist.

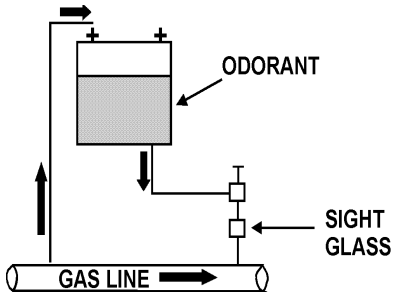
Operator Responsibility – Intrastate Lateral



DISCOVERY: To gain knowledge of something through: observation, study, or search; to be the first to find, learn, or observe.

DISTRIBUTION LINE: A pipeline other than a gathering or transmission line.

DRIP TYPE ODORIZER: Equipment for introducing odorant from a storage tank directly into a gas stream through gravity flow. The odorant may be regulated by orifice float valves, or rotameters.



DUCTILE IRON (SOMETIMES CALLED NODULAR IRON): A cast ferrous material in which the free graphite present is in a spherical form rather than a flake form. The desirable properties of ductile iron are achieved by means of chemistry and a fertilizing heat treatment of the castings.

E

ELBOW or ELL: A pipe fitting that makes an angle in a pipe run. Unless stated otherwise, the angle is usually assumed to be 90 degrees. Compare STREET ELL.

ELECTRIC-FLASH-WELDED PIPE: Pipe having a longitudinal butt joint wherein coalescence is produced, simultaneously over the entire area of abutting surfaces, by the heat obtained from resistance to the flow of electric current between the two surfaces, and by the application of pressure after heating is substantially completed. Flashing and upsetting are accompanied by the expulsion of metal from the joint. Typical specification: API 5L. See PIPE MANUFACTURING PROCESS.

ELECTRIC-FUSION-WELDED PIPE: Pipe having a longitudinal butt joint wherein coalescence is produced in the performed tube by manual or automatic electric-arc welding. The weld may be single or double and may be made with or without the use of filler metal. Typical specifications:

ASTM A 134, ASTM A 139: Single or double weld is permitted with or without the use of filler metal.

ASTM A 671, ASTM A 672, ASTM A 691, and API-5L: Requires both inside and outside welds and use of filler metal.

Spiral-welded pipe is also made by the electric-fusion-welded process with either a butt joint, a lap joint or a lock-seam joint. Typical specifications:

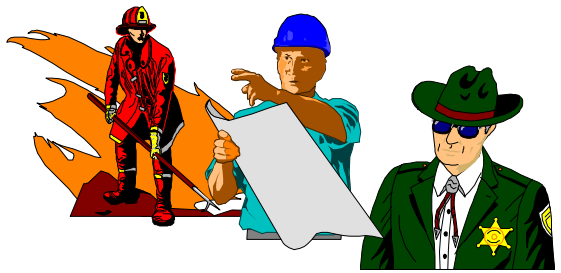
ASTM A 134, ASTM A 139, and API 5L: Butt joint.

ASTM A 211: Butt joint, lap joint or lock-seam joint.

See PIPE MANUFACTURING PROCESS.

ELECTRIC-RESISTANCE-WELDED PIPE (ERW): Pipe which has a longitudinal butt joint wherein coalescence is produced by the application of pressure and by the heat obtained from the resistance of the pipe to the flow of an electric current in a circuit of which the pipe is a part. It is produced in individual lengths, or in continuous lengths from coiled skelp and subsequently cut into individual lengths. Typical specifications: ASTM A 53, ASTM A 135, API 5L. See PIPE MANUFACTURING PROCESS.

EMERGENCY RESPONSE PERSONNEL: Any persons engaged in the response to hazardous materials emergency, including firefighters, police, civil defense/emergency management officials, sheriffs, military, manufacturing and transportation personnel.



EXPOSED LINE: A pipeline where the top of the pipe is protruding above the seabed in water less than 15 feet deep, as measured from the mean low water.

EXPLOSIVE: Chemical material that can undergo a sudden and violent release of pressure and heat.

F

FLAME IONIZATION (FI): Used as a leakage detection instrument for surface surveys. It indicates the presence of gas in parts per million (PPM).

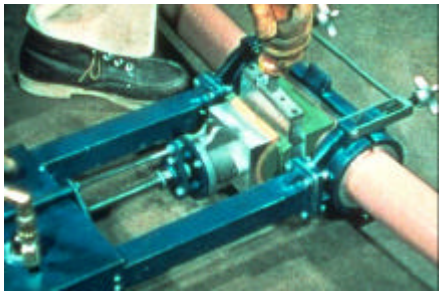
FLAMMABLE: A substance that will burn readily or quickly.

FLAMMABLE (EXPLOSIVE) RANGE: The range of a gas or vapor concentration that will burn or explode if an ignition source is introduced. Limiting concentrations are commonly called the "lower explosive or flammable limit" (LEL/LFL) and the "upper explosive or flammable limit" (UEL/UFL). Below the explosive or flammable limit the mixture is too lean to burn and above the upper explosive or flammable limit is too rich to burn.

Physical Properties of Various Explosive Liquids and Gases					
MATERIAL	**Chemical Formula**	**Specific Gravity Air = 1**	**Ignition Temp °F in Air**	**Lower Expl.Limit (% gas)**	**Upper Expl.Limit (% gas)**
Methane	CH_4	.55	1193	5.3	15.0
Natural Gas	Blend	.65	1163	4.5	14.5
Ethane	C_2H_6	1.04	993-1101	3.0	12.5
Propane	C_3H_8	1.56	957-1090	2.2	9.5
Butane	C_4H_{10}	2.01	912-1056	1.9	8.5
Hexane	C_6H_{14}	3.0	437	1.1	7.5
Gasoline	Blend	3-4.0	632	1.4	7.6
Acetone	C_3H_6O	2.0	869	2.5	12.8
Benzene	C_6H_6	2.8	928	1.2	7.8
Carbon Monoxide	CO	1.0	1128	12.5	74.0
Hydrogen	H_2	.1	932	4.0	75.0
Hydrogen Sulfide	H_2S	1.2	500	4.0	44.0

FURNACE-LAP-WELDED PIPE: Pipe which has a longitudinal lap joint that is produced by the forge welding process. In this process, coalescence is produced by heating performed tube to welding temperature and then passing it over a mandrel. The

FUSION: A process of joining plastic pipe with heat. See HEAT FUSION JOINT.



G

GAS: Natural gas, flammable gas, or gas which is toxic or corrosive.

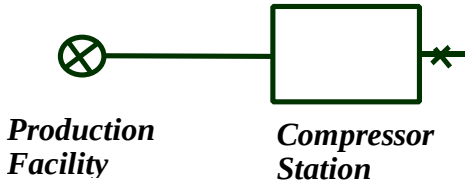
GATE STATION: A location at which gas may change ownership from one party to another (e.g., from a transmission company to a local distribution company), neither of which is the ultimate consumer. Purchased for the sole purpose of resale. Also referred to as city gate station, town border station.

GATE VALVE: A full opening and closing valve depending upon deformation of mating surfaces for control.

GATHERING LINE: A pipeline that transports gas from a current production facility to a transmission line or main. The definition of gathering line is based upon a letter written to Dale Johansen on May 9, 1985. This letter is used as a guideline concerning 4 points where the gathering line terminates. The gathering line can terminate at any of these points based upon population density, distance from busy roads or highways, and location concerning environmental sensitive area. Determination is made on a case-by-case basis.

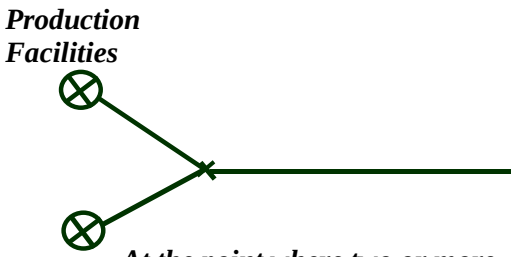
POINT #1

POINT #2



If there is no upstream processing plant - Outlet of a main line compressor

POINT #3



At the point where two or more well lines converge.

POINT #4

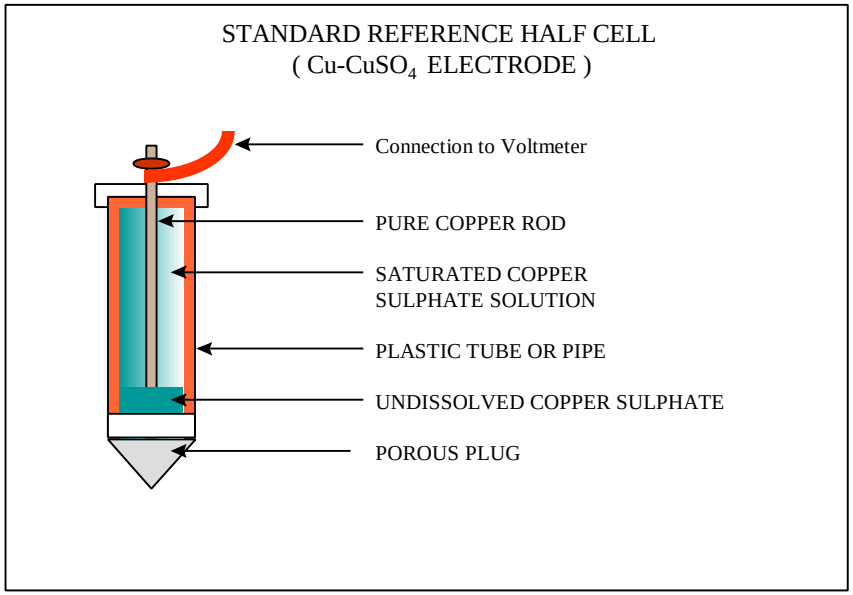
GLOBE VALVE: A valve equipped with an orifice and a stem attached to a plug and matching circular seat. Shut-off is obtained by direct contact of the plug and the seat. Body of valve is normally spherical.

GROUND TEMPERATURE: The temperature of the earth at pipe depth. See AMBIENT TEMPERATURE, TEMPERATURE.

GULF OF MEXICO AND ITS INLETS: The waters from the mean high water mark of the coast of the Gulf of Mexico and its inlets open to the sea (excluding rivers, tidal marshes, lakes, and canals) seaward to include the territorial sea and Outer Continental Shelf to a depth of 15 feet, as measured from the mean low water.

H

HALF-CELL (REFERENCE ELECTRODE): A device, which usually has copper, immersed in a copper sulphate solution. The open circuit potential is constant under similar conditions of measurement. It is used to measure the voltage potential at the junction of the metallic surface and the electrolyte (pipe surface to soil or seawater) with respect to that of the junction of the copper and the copper sulphate in the half-cell.



HEAT FUSION JOINT: A joint made in thermoplastic piping by heating the parts sufficiently to permit fusion of the materials when the parts are pressed together.

HIGH PRESSURE DISTRIBUTION SYSTEM: A distribution system in which the gas pressure in the main is higher than the pressure provided to the customer.

HOLIDAY: A discontinuity or break in the anti-corrosion coating protection on pipe or tubing that leaves the bare metal exposed to corrosive processes.

HOOP STRESS (Barlow's Formula): The stress in a pipe wall acting circumferentially in a plane perpendicular to the longitudinal axis of the pipe and produced by the pressure of the fluid in the pipe. Hoop stress calculation:

$$S = \frac{PD}{2t}$$

S = hoop stress, in psi
P = internal pressure
D = outside diameter of the pipe in inches
t = normal wall thickness, in inches

HOT TAP: The process of making branch piping connections to operating pipelines, mains, or other facilities while in operation. The connection of the branch piping to the operating line and the tapping of the operating line is done while it is under gas pressure.

HOUSEKEEPING: The administrative control that involves containing and removing chemical hazards, (e.g., vacuuming, proper storage and handling, prompt removal and correct disposal of chemical waste).

HYDROCARBON (H.C.) FILTER: A filter used to filter out heavier hydrocarbons when using the CGI. Gasoline, propane, butane and commercial solvents are good examples of heavier hydrocarbons.

I

IGNITION TEMPERATURE: The minimum temperature required to ignite gas or vapor without a spark or flame being present. See FLAMMABLE (EXPLOSIVE) RANGE

INJECTOR TYPE ODORIZER: A pump type odorizer. The flow rate of the gas stream is monitored by an electronic sensor which, in turn, controls the pump speed.

INPATIENT HOSPITALIZATION : Admission and confinement in a hospital beyond treatment administered in an emergency room or outpatient clinic in which confinement does not occur.

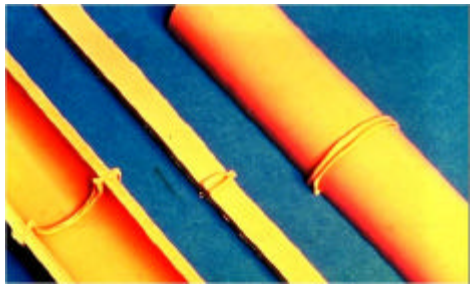
INSTRUMENT PIPING: Pipe, valves and fittings used to connect instruments to main piping, to other instruments and apparatus, or to measuring equipment.

INTERNAL NIGHT CAP: A plug or cap attached to the open end of a line during construction or while making repairs during off work periods to keep foreign matter out of the pipe.

IRON: See CAST IRON, DUCTILE IRON.

J

JOINT: Could mean connection between two lengths of material, such as pipe. Joint can also mean a piece of pipe (i.e., joint of pipe). See LENGTH.



L

LARGE VOLUME CUSTOMER: A customer who receives similar volumes of gas as a distribution center. This may include factories, power plants and institutional users.

LINE SECTION: A continuous run of transmission line between adjacent compressor stations, between a compressor station and storage facilities, between a compressor station and a block valve, or between adjacent block valves.

LIQUEFIED PETROLEUM GAS (LPG): A gas containing certain specific hydrocarbons which are gaseous under normal atmospheric conditions, but can be liquefied under moderate pressure at normal temperatures. Propane and butane are principal examples.

LIQUEFIED PETROLEUM GAS (LPG)-AIR MIXTURE: Liquefied petroleum gases distributed at relatively low pressures and normal atmospheric temperatures which have been diluted with air to produce desired heating value and utilization characteristics.

LISTED SPECIFICATION: A specification listed in section I of Appendix B of 49 CFR Part 192.

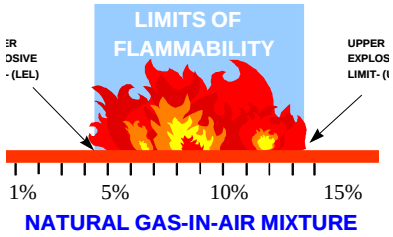
LOCAL DISTRIBUTION COMPANY (LDC): Purchases gas for resale.

LOCK-UP or LOCK-OFF: The point at which a regulator or governor shuts off completely.

LONG-TERM HYDROSTATIC STRENGTH OF PLASTIC PIPE: The estimated hoop stress, in psi, which would result in a failure of the pipe if the pipe were subjected to 100,000 hours of hydrostatic pressure.

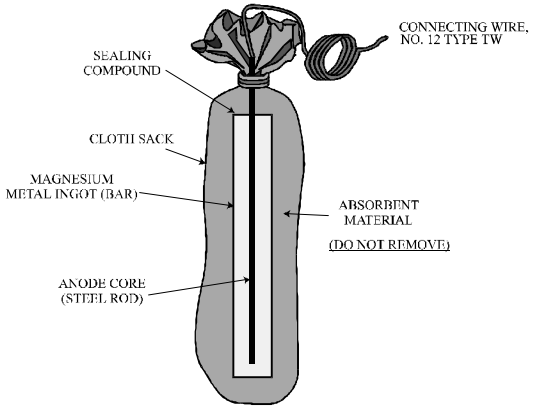
LOW PRESSURE DISTRIBUTION SYSTEM: A distribution system in which the gas pressure in the main is substantially the same as the pressure provided to the customer. This is restricted to residential and small commercial service only.

LEL: Lower Explosive Limit is read from the CGI. LEL is the minimum amount of airborne chemical that must be present in the air-chemical mixture to make it explosive. See FLAMMABLE (EXPLOSIVE) RANGE.

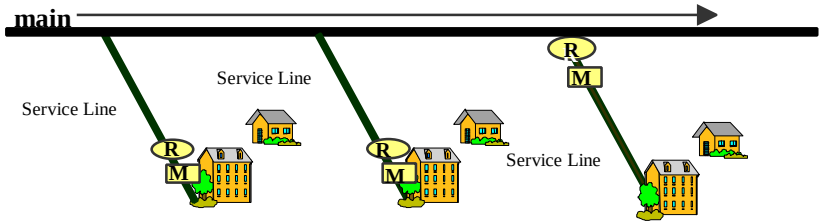


M

MAGNESIUM ANODE: See ANODE.



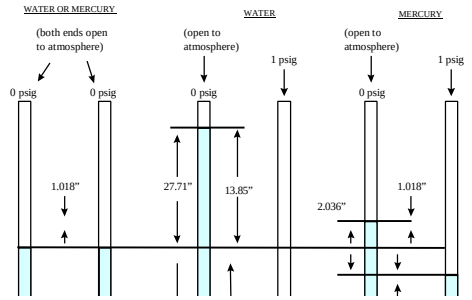
MAIN: A distribution line that serves as a common source of supply for more than one service line.



MALLEABLE IRON: A mixture of iron and carbon, including small amounts of silicon, manganese, phosphorous and sulphur which, after being cast, is converted structurally by heat treatment into primarily a matrix of ferrite containing nodules of temper carbon.

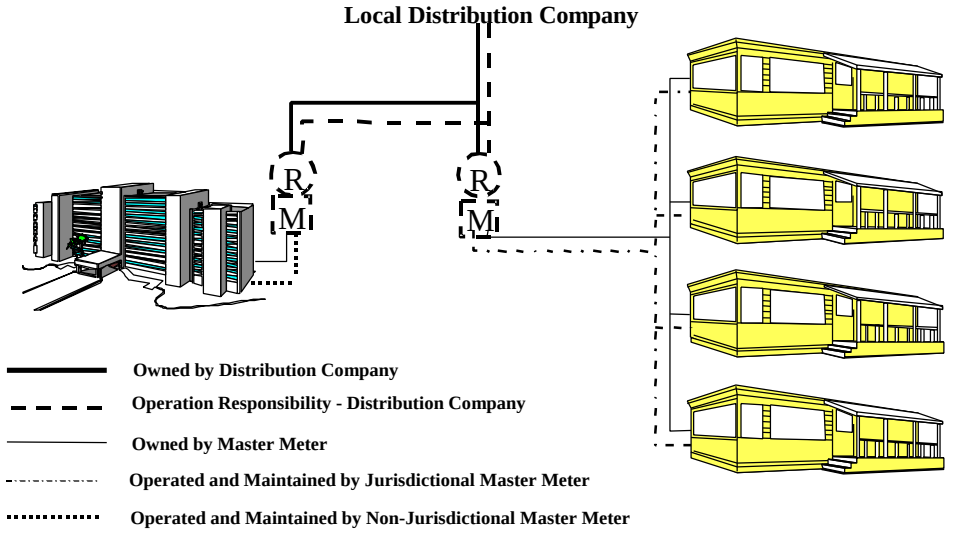
MANDREL: A metal bar that serves as a core around which material (as metal) may be cast, molded, forged, bent, or otherwise shaped.

MANOMETER: A tube in the shape of a U, partially filled with liquid of suitable density. When points of different pressure are connected to respective ends of the manometer, the liquid is pushed up in the low-pressure side of the manometer, and the difference in liquid level between the two sides of the U is an indication of pressure difference. (One side may be open to atmosphere for gauge pressure measurement.)



MASTER METER SYSTEM: A pipeline system for distributing gas within, but not limited to, a definable area, such as a mobile home park, housing project, or apartment complex, where the operator purchases metered gas from an outside source for resale through a gas distribution pipeline system. The gas distribution pipeline system supplies the ultimate consumer who either purchases the gas directly through a meter or by other means, such as by rents.

Operator Responsibility - Master Meter



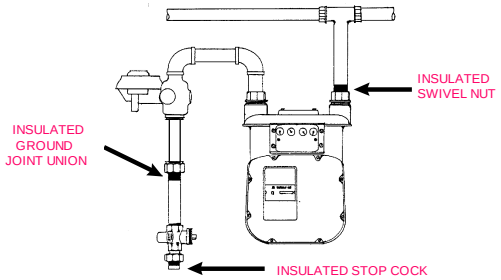
***MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP*):** The maximum pressure at which a pipeline or segment of a pipeline may be operated under 49 CFR Part 192.

MAXIMUM ALLOWABLE TEST PRESSURE: The maximum internal fluid pressure permitted for testing, for the materials and locations involved.

MCF: One thousand cubic feet.

MERCAPTAN: An organic chemical compound having a distinctive odor used for odorization of gas streams.

METER SET ASSEMBLY: The piping installed to connect the inlet side of the meter to the gas service line, and to connect the outlet side of the meter to the customer's fuel line.

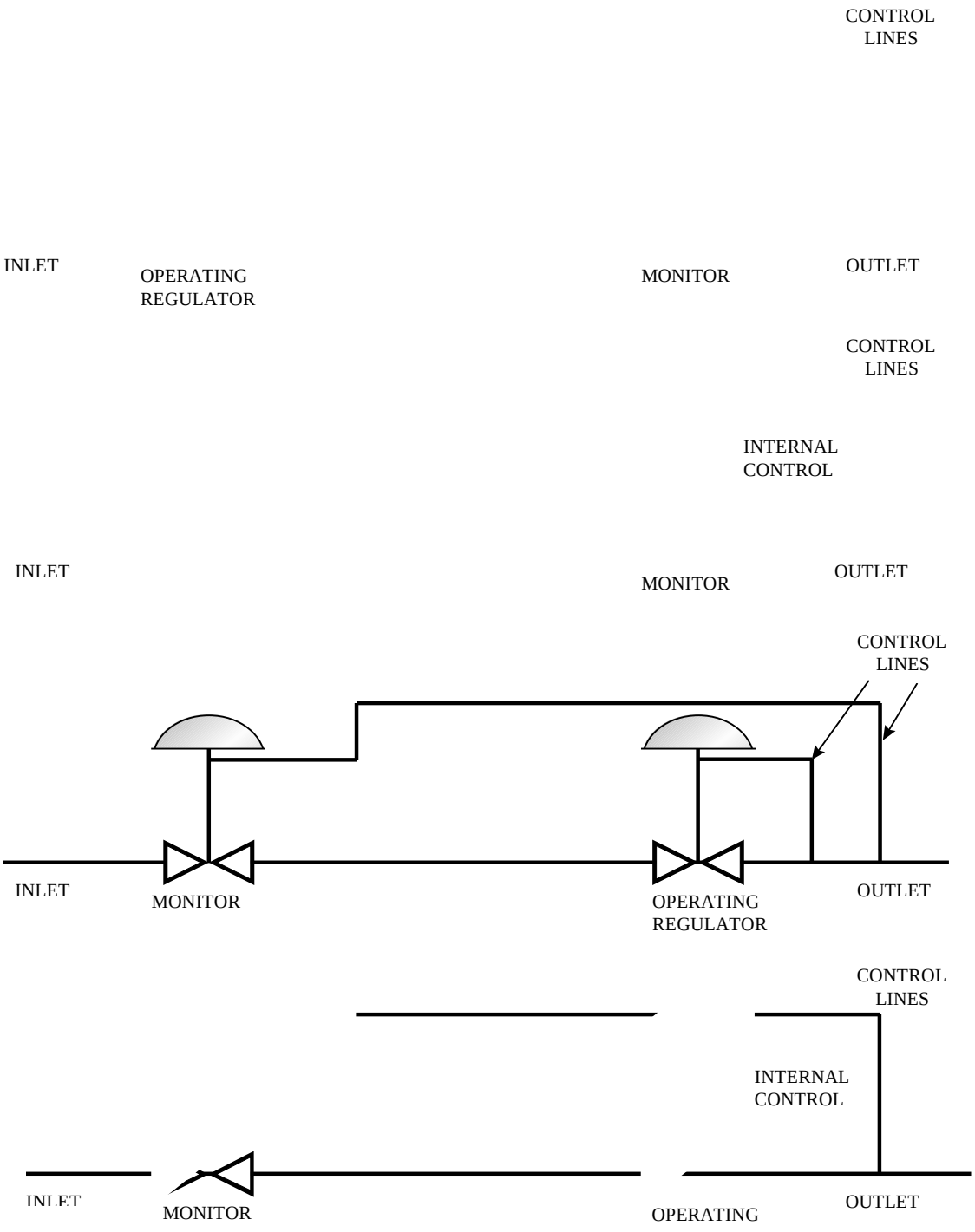


METERS: See CUSTOMER METER, METER SET ASSEMBLY.

METHANE: The lightest in the paraffin series of hydrocarbons. It is colorless, odorless and flammable; it forms the major portion of natural gas, CH_4. See FLAMMABLE (EXPLOSIVE) RANGE.

MITER JOINT: A joint made by cutting the pipe at an angle, then joined together. 49 CFR 192.233 provides guidelines for miter joints in steel pipelines.

MONITORING REGULATOR: A pressure regulator, set in series with another pressure regulator, for the purpose of providing automatic overpressure protection in the event of a malfunction of the primary regulator.


CONTROL
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O

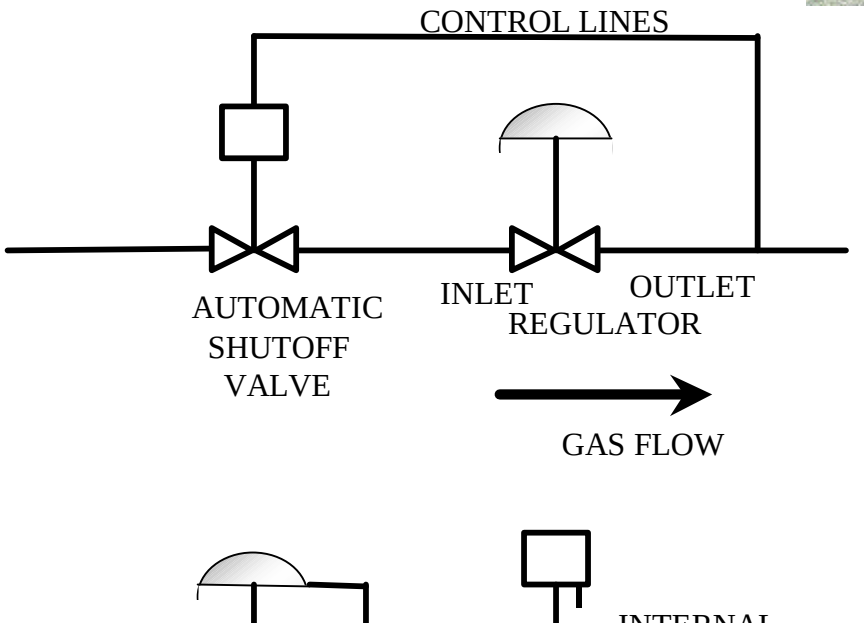
ODORANT: A substance giving a readily perceptible odor at low concentrations in the material into which it is mixed, and used as a warning sign of the presence of the gas. See MERCAPTAN.

ODORIZER: A piece of equipment such as wicks, drips, and injector used to odorize gas. See WICK, DRIP and INJECTOR TYPE ODORIZERS.

OPERATING STRESS: The stress in a pipe or structural member under operating conditions.

OPERATOR: A person who engages in the transportation of gas.

OVERPRESSURE PROTECTION: The use of a device or equipment installed for the purpose of preventing pressure in a pipe system or other facility from exceeding a predetermined limit. See PRESSURE LIMITING STATION, PRESSURE REGULATING STATION, PRESSURE RELIEF STATION, and SERVICE REGULATOR**.**



P

PARALLEL ENCROACHMENT: That portion of the route of a transmission line or main which lies within, runs in a generally parallel direction, and does not necessarily cross, the rights-of-way of a road, street, highway or railroad.

PARTS PER MILLION (PPM): Parts of the chemical in each one million (1,000,000) parts of the air chemical mixture. A unit to express exposure limits.

PEAK SHAVING: The use of fuels and equipment to generate additional gas to supplement the normal supply of pipeline gas during periods of extremely high demand. The use of LNG, underground storage and pipeline holders are good examples.

PERFORMANCE LANGUAGE: Prescribes a level of safety. It leaves the method or "how to" to the operator's discretion. For example, periodic sampling is required to assure the proper concentration levels.

PERSON: Any individual, firm, joint venture, partnership, corporation, association, State, municipality, cooperative association, or joint stock association, and including any trustee, receiver, assignee, or personal representative thereof.

PERSONAL PROTECTIVE EQUIPMENT: Equipment that protects the individual who wears it by placing a barrier between that individual and a hazard; includes protective eye wear, face shields and masks, gloves, boots, hats, clothing, and respirators.

PETROLEUM GAS: Propane, propylene, butane, (normal butane or isobutanes), and butylene (including isomers), or mixtures composed predominantly of these gases, having a vapor pressure not exceeding 1434 kPa (208 psig) at 38^{o} C (100^{o} F).

pH: Acidic or basic corrosives are measured to one another by their ability to dissociate

PIG: A device used to clean the internal surface of a pipeline. Pigs are usually barrel shaped, made of metal, and covered with metal brushes. They may also have rubber or plastic cups and be made entirely of plastic. They are inserted into the pipeline by means of a device called a pig-trap and pushed through the line by pressure of flowing fluid or gas. The forward movement of the pig, together with its rotation, cleans the rust, liquids and other undesired substances from the pipeline; also called a go-devil. See SMART PIG.

PINPOINTING: The process of locating the exact source of leakage with a minimum of excavation.

PIPE: See DOUBLE-SUBMERGED-ARC-WELD PIPE, ELECTRIC-FLASH-WELD PIPE, ELECTRIC-FUSION WELDED PIPE, ELECTRIC-RESISTANCE-WELDED PIPE, FURNACE-LAP-WELDED PIPE, INSTRUMENT PIPING, LENGTH, PIPE CONTAINER, PIPE MANUFACTURING PROCESS, PIPE-TYPE HOLDER, SAMPLE PIPING, and SEAMLESS PIPE.

PIPE-CONTAINER: A gas-tight structure assembled from pipe and end closures. See also Pipe-type holder.

PIPE MANUFACTURING PROCESS: Types and names of welded joints are used herein as defined in the American Welding Society (AWS) Publication A3.0 " Standard Welding Terms and Definitions" except for the following terms which are defined in this glossary:

Double-submerged-arc-welded pipe
Electric-flash-welded pipe
Electric-fusion-welded pipe

PIPELINE: All parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.

PIPELINE FACILITY: New and existing pipeline, rights-of-way, and any equipment, facility, or building used in the transportation of gas or in the treatment of gas during the course of transportation.

PITOT TUBE: A small device that can be inserted into a pipe to measure the flow of liquid or gas. This device is composed of two tubes arranged in such a manner that will allow the measurement of both the velocity and static pressures of the flowing liquid or gas. The difference in these pressures is a function of the flow within the pipe.

PLASTIC: A material which contains, as an essential ingredient, an organic substance of high molecular weight. It is solid in its finished state and, at some stage of its manufacture or processing, can be shaped by flow. The two general types of plastic referred to in this Guide are thermoplastic and thermosetting. See THERMOPLASTIC PIPE, and THERMOSETTING PLASTIC PIPE.

PLASTIC PIPE JOINTS: See ADHESIVE JOINT, HEAT FUSION JOINT and SOLVENT CEMENT JOINT.

PLUG VALVE: Metal valve in which a pierced plug rotates in a tapered or cylindrical body to control flow through the valve.

PLUNGER BAR: A device used to bar holes along the route of a gas pipe when searching for gas for leaks.

PE: Polyethylene plastic pipe.

PRESSURE: Expressed in pounds per square inch above atmospheric pressure, i.e., gauge, pressure (abbreviation-p.s.i.g, unless otherwise stated). See MAXIMUM ALLOWABLE TEST PRESSURE, OVERPRESSURE PROTECTION, PRESSURE LIMITING STATION, PRESSURE REGULATING STATION, PRESSURE RELIEF STATION, and STANDUP PRESSURE TEST.

PRESSURE LIMITING STATION:
Consists of apparatus which, under abnormal conditions, will act to reduce, restrict or shut off the supply of gas flowing into a transmission line, main, holder, pressure vessel or compressor station piping in order to prevent the gas pressure from exceeding a predetermined limit. While normal pressure conditions prevail, the pressure limiting station may exercise some degree of control of the flow of gas or may remain in the wide open position. Included in the station are any enclosures and ventilating equipment, and any piping and auxiliary equipment (such as valves, control instruments or control lines).

PRESSURE REGULATING STATION: Consists of apparatus installed for the purpose of automatically reducing and regulating the gas pressure in the downstream transmission line, main, holder, pressure vessel or compressor station piping to which it is connected. Included in the station are any enclosures and ventilating equipment, and any piping and auxiliary equipment (such as valves, control instruments or control lines).

PRESSURE RELIEF STATION: Consists of apparatus installed to vent gas from a transmission line, main, holder, pressure vessel, or compressor station piping in order to prevent the gas pressure from exceeding a predetermined limit. The gas may be vented into the atmosphere or into a lower pressure gas system capable of safely receiving the gas being discharged. Included in the station are any enclosures and ventilating equipment, and any piping and auxiliary equipment (such as valves, control instruments or control lines).

PRIVATE RIGHT-OF-WAY: Those that are not located on roads, streets or highways

PURGING: The act of replacing the atmosphere within a container by an inert substance in such a manner as to prevent the formation of explosive mixtures. Commonly used inert substance includes Nitrogen (N) or Carbon Dioxide (CO_2). Also, the act of replacing the inert substance with gas before putting the line into service.

Q

QUALIFIED WELDER: A welder who has demonstrated the ability to produce welds meeting the requirements of an appropriate standard.

QUALIFIED WELDING PROCEDURE: A tested and detailed method by which sound welds can be produced.

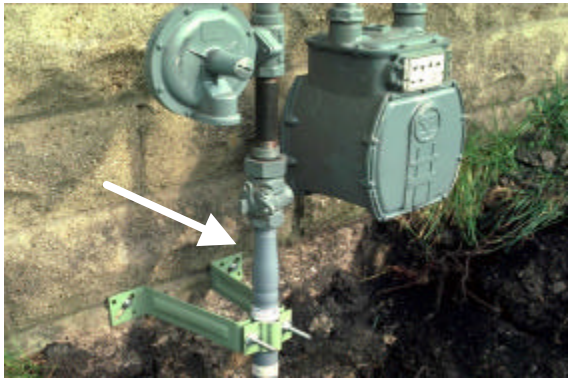
R

RECTIFIER: A device for converting alternating current to direct current, used in the gas industry for external corrosion control of pipe and other metals.

REGULATOR STATION/DISTRICT: Equipment installed for the purpose of automatically reducing and regulating the pressure in the downstream pipeline or main to which it is connected. Included are piping and auxiliary devices such as valves, control instruments, control lines, the enclosure, and ventilation equipment.

REGULATORS: See PRESSURE LIMITING STATION, PRESSURE REGULATING

RISER: A general term for vertical runs of gas piping. See ANODELESS RAISER.



RUPTURE: A violent, rapid bursting open of a container, such as a pipelines.

S

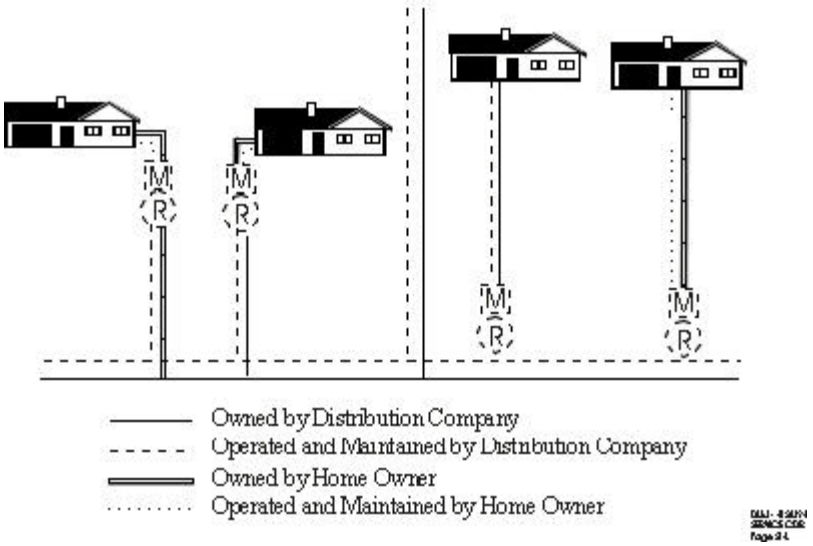
SAMPLE PIPING: Pipe, valves and fittings used for the collection of samples of gas or other fluids.

SEAMLESS PIPE: A wrought tubular product made without a welded seam. It is manufactured by hot working steel or, if necessary, by subsequently cold finishing the hot-worked tubular product to produce the desired shape, dimensions and properties. See PIPE MANUFACTURING PROCESS.

SECONDARY STRESS: Stress created in the pipe wall by loads other than internal fluid pressure. Examples are backfill loads, traffic loads, beam action in a span and loads at supports and at connections to the pipe.

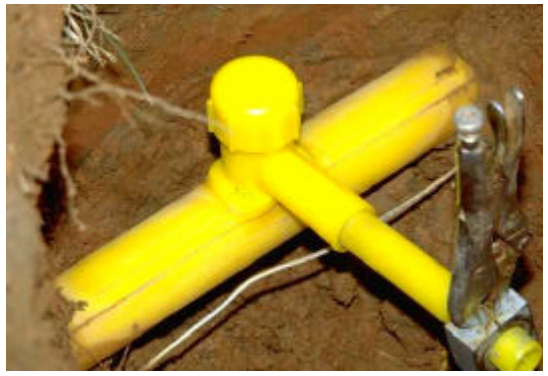
SERVICE LINE: A distribution line that transports gas from a common source of supply to (a) a customer meter or the connection to a customer's piping, whichever is farther downstream, or (b) the connection to a customer's piping if there is no customer meter. A customer meter is the meter that measures the transfer of gas from an operator to a consumer.

Operator Responsibility - Service Line



SERVICE REGULATOR: A device installed on a gas service line to control the pressure of the gas delivered to the customer.

SERVICE TEE: A tee in a customer's service piping with one leg closed and used for access to the service pipe in case of plugging with solids. Also, a tee used for making a hot tap on a main to supply a service.



SMART PIG: An instrumented inspection device or internal inspection pig. These pigs can detect certain irregularities or anomalies in the pipe wall. This type of pig records the existence, location, and relative severity of the anomalies through use of recording equipment carried on board the pig. The pig can later be recovered and any external anomalies can be examined visually to verify their existence and severity.

SOLVENT CEMENT JOINT: A joint made in thermoplastic piping by the use of a solvent or solvent cement which forms a continuous bond between the mating surfaces.

SPECIFIC ACTION LANGUAGE: A detailed and exact statement prescribing materials, dimensions, and workmanship for something being built, installed or manufactured. For example, plastic pipe used for distribution systems must meet ASTM D 2513.

SPECIFIC GRAVITY: Physical data that describes whether a liquid is lighter or heavier than water. For natural gas, whether it is lighter or heavier than air.

SPECIFIED MINIMUM YIELD STRENGTH (SMYS):

(a) For steel pipe manufactured in accordance with a listed specification, the yield strength specified as a minimum in that specification; or

(b) For steel pipe manufactured in accordance with an unknown or unlisted specification, the yield strength determined in accordance with §192.107(b).

SQUEEZE OFF TOOL: Consists of curved surfaces with minimum radii that come together against the pipe wall. Stops, used to prevent the pipe being squeezed beyond a minimum allowable distance specified by the pipe manufacture, are

STANDARD CUBIC FEET PER HOUR: SCFH.

STANDUP PRESSURE TEST: A test to demonstrate that a pipe or piping system does not leak as evidenced by the lack of a drop in pressure over a specified period of time after the source of pressure has been isolated.

STEEL: An iron-base alloy, malleable in some temperature range as initially cast, containing manganese, carbon and often other alloying elements. See CARBON STEEL.

STOPCOCK (ALSO CALLED A SERVICE LINE VALVE): A valve located in the service line ahead of the service regulator, or ahead of the meter when there is no regulator.

STREET ELL: An L-shaped pipe fitting with external threads on one end and internal threads on the other end. Compare ELL.

STREET TEE: A tee with external threads on one of the run connections and with internal threads on the opposite run connection and the side outlet.

STRESS: The resultant internal force that resists change in the size or shape of a body acted on by external forces. See HOOP STRESS, MAXIMUM ALLOWABLE HOOP STRESS, OPERATING STRESS, SECONDARY STRESS, TENSILE STRENGTH, and YIELD STRENGTH.

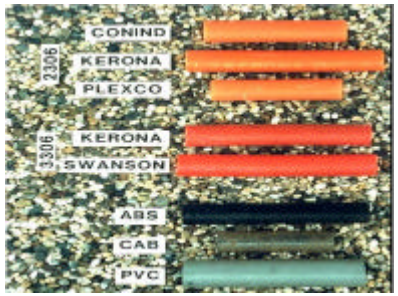
T

TAPPING TEE: A tee used to connect a service line to a main. Includes a cutter to tap main.

TEMPERATURE: The degree of "hotness" or "coldness" as measured on a definite scale. Is expressed in degrees Fahrenheit (F) unless otherwise stated. See AMBIENT TEMPERATURE and GROUND TEMPERATURE.

TENSILE STRENGTH: The highest unit tensile stress (referred to the original cross

THERM: 100,000 Btu's - a common unit for the sale of natural gas.



THERMOPLASTIC PIPE: A plastic pipe which is capable of being repeatedly softened by increase of temperature and hardened by decrease of temperature. Theses would include Polybutylene (PB), Polyethylene (PE), and Polyvinylchloride (PVC).

THERMOSETTING PLASTIC PIPE: A plastic pipe which is capable of being changed into a substantially infusible or insoluble product when cured under application of heat or chemical means. Reinforced fiberglass is a good example.

THICKNESS. See NOMINAL WALL THICKNESS .

TRACER WIRE: Wire that is buried along with the plastic pipe. The typical gage of wire that is used is 12

TRANSMISSION LINE: A pipeline, other than a gathering line, that:

(a) Transports gas from a gathering line or storage facility to a distribution center, storage facility, or large volume customer that is not downstream from a distribution center;
(b) Operates at a hoop stress of 20 percent or more of SMYS; or
(c) Transports gas within a storage field.

A large volume customer may receive similar volumes of gas as a distribution center, and includes factories, power plants, and institutional users of gas.

TRANSPORTATION OF GAS: The gathering, transmission, or distribution of gas by pipeline or the storage of gas, in or affecting interstate or foreign commerce.

TRENCH: A long cut in the ground which is achieved by hand or by machine such as a trencher. Installation of transmission, mains, or service pipelines, regardless of the kind of pipe may be accomplished by trenching.

U

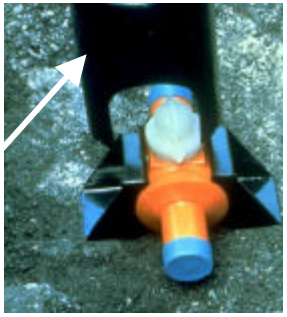
UNACCOUNTED FOR GAS: The difference between the total gas purchases available from all sources and the total gas accounted for as sales, net interchange, and company use. This difference includes leakage or other actual losses, discrepancies due to meter inaccuracies, variations of temperature and/or pressure, and other variants, particularly billing lag.

UNDERGROUND STORAGE: The utilization of subsurface facilities for storing gas which has been transferred from its original location for the primary purposes of conservation, fuller utilization of pipeline facilities. These are usually natural geological reservoirs such as depleted oil or gas fields or water-bearing sands sealed on the top by an impermeable cap rock. The facilities may be manmade or natural caverns.

V

VALVE: A mechanical device for controlling the flow of fluids; types such as gate, ball, globe, needle and plug valves are used.

VALVE BOX: A housing around an underground valve to allow access to the valve for operation and to protect the valve from mechanical damage or the effects of weather.

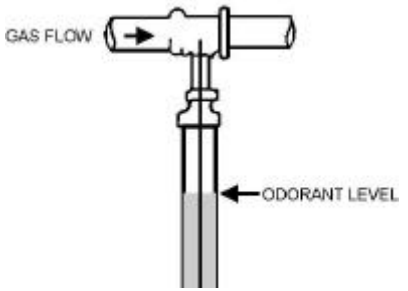


W

WELDING PROCESS: A grouping of methods by which metals are welded. Examples of processes are: submerged metal arc welding, oxyacetylene welding, resistance welding.

WET GAS: Natural gas containing liquefiable hydrocarbons. Natural gasoline, butane, pentane and other light hydrocarbons can be removed by chilling and pressure or by extraction. It also refers to gas that has water in excess of 7 lbs per million cubic feet (Mmcf).

WICK TYPE ODORIZER: A piece of equipment which odorizes the gas by having natural gas flow across a wick saturated with odorant. Generally used for individual odorized lines such as farm taps.



Y

YIELD STRENGTH: The stress at which a material exceeds its elastic limits and the material begins to deform permanently.

COMMONLY ABBREVIATED ORGANIZATIONS

AGA**:** American Gas Association

ANSI: American National Standards Institute, formerly the United States of America Standards Institute (USASI). All current standards issued by USASI and American Standards Association (ASA) have been re-designated as American National Standards and continue in effect.

API: American Petroleum Institute

ASME: American Society of Mechanical Engineers

ASTM: American Society for Testing and Materials

DOT:: U.S. Department of Transportation

FERC: Federal Energy Regulatory Commission

GPTC: Gas Piping Technology Committee

INGA: Interstate Natural Gas Association

ISO: International Standard Organization

MSS: Manufacturers Standardization Society of the Valve and Fittings Industry

NACE: National Association of Corrosion Engineers

NAPSR: National Association Pipeline Safety Representatives

NARUC: National Association of Regulatory Utility Commissioners

NFPA: National Fire Protection Association

NPRM: Notice of Proposed Rule Making

NPGA: National Propane Gas Association

NRC: National Response Center. Serves as notification center for pollution incidents in US waters and gas incidents as defined in 49 CFR 191.3. Located at US Coast Guard Headquarters in Washington, DC. The NRC relays reports to appropriate regional authorities for response actions.

NTSB: National Transportation Safety Board

OPS: Office of Pipeline Safety, a federal agency under RSPA