

MSS SP-115-2006

**Excess Flow Valves,
1 1/4 NPS and Smaller,
for
Fuel Gas Service**

Standard Practice
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EXCESS FLOW VALVES, 1 1/4 NPS AND SMALLER, FOR FUEL GAS SERVICE

0. PURPOSE

To provide a Standard Practice for Excess Flow Valves that are designed and installed in fuel gas piping systems to reduce the flow of gas should the flow in the service line exceed some predetermined level.

1. SCOPE

1.1 This Standard Practice covers Excess Flow Valves used in fuel gas distribution systems with operating pressures of 5 inches water column and above.

2. DEFINITIONS AND ABBREVIATIONS

2.1 Requirements for Excess Flow Valves covered by this Standard Practice are classified into two pressure ranges as follows:

- a) Low Pressure – Valves for use on systems with pressures between 5" w.c. and 5 psig.
- b) High Pressure – Valves for use on systems with pressures of 5 psig and above.

2.2 **Excess Flow Valve (EFV)** A device designed to automatically stop or limit the flow of gas in the event that the flow in the fuel gas service line in which it is installed exceeds a predetermined level.

2.2.1 **Excess Flow Valve – Bypass (EFVB)** An EFV designed to limit the flow of gas upon closure to a predetermined level. EFVBs reset automatically once the service line downstream is made gas tight and pressure is equalized across the valve.

2.2.2 **Excess Flow Valve – Non-Bypass (EFVNB)** An EFV designed to stop the flow of gas upon closure and prevent equalization of pressure across the valve. EFVNBs must be manually reset.

2.3 **Closure Flow Rate** The predetermined level of gas flow through an EFV at a given inlet pressure which causes closure.

2.4 **Bleed-by Flow Rate** The amount of gas flow at a given inlet pressure through an EFVB after closure.

2.5 **Leak Rate** The amount of gas flow at a given inlet pressure through an EFVNB after closure.

2.6 **EFV Minimum Design Inlet Pressure** The minimum pressure at which the EFV is designed to function as specified by the manufacturer.

2.7 **EFV Maximum Operating Pressure** The maximum pressure at which the EFV is designed to function as specified by the manufacturer.

2.8 **Abbreviations** Abbreviations of terms used in this Standard Practice are as follows:

- a) EFV – Excess Flow Valve
- b) EFVB – Excess Flow Valve – Bypass
- c) EFVNB – Excess Flow Valve – Non-Bypass
- d) SCFH – Standard cubic feet per hour
- e) psig – pounds per square inch gage pressure
- f) psia – pounds per square inch absolute pressure
- g) "w.c. – inches water column pressure
- h) SG – Specific Gravity
- i) CTS – Copper Tube Size
- j) NPS – Nominal Pipe Size
- k) °F – degrees Fahrenheit

3. VALVE TYPES AND SIZES

3.1 **Valve Types**

3.1.1 **Excess Flow Valve – Bypass (EFVB)** See Section 2.2.1.

3.1.2 **Excess Flow Valve – Non-Bypass (EFVNB)** See Section 2.2.2.

3.2 **Nominal Pipe Sizes** The EFVs covered by this Standard Practice shall be constructed to fit piping systems no smaller than 1/2 CTS and no larger than 1 1/4 NPS, including both pipe and tubing sizes.