Gathering Lines – A Regulatory Summary

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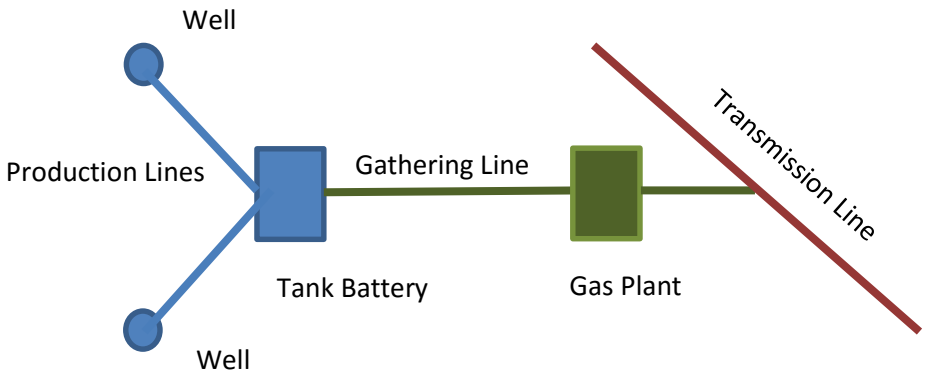
PHMSA: Onshore Gas Gathering

- Gathering Line means a pipeline that transports gas from a current production facility to a transmission line or main.
- Does not apply if
  - Pipeline operates at less than 0 psig
  - Through a pipeline that is not a regulated onshore gathering line as determined in 192.8
  - Within inlets of the Gulf of Mexico, except for the requirements of 192.612
- Uses American Petroleum Institute Recommended Practice 80 (API RP 80) as the basis for defining an onshore gathering line, with additional limitations.
- Type A Regulated Onshore Gas Gathering Lines
  - Metallic lines with a maximum allowable operating pressure (MAOP) of 20% or more of specified minimum yield strength (SMYS), as well as nonmetallic lines with an MAOP of more than 125 psig, in a Class 2, 3, or 4 location.
  - Subject to all of the requirements for transmission lines, except for the accommodation of smart pigs in new and replaced lines and the gas integrity management requirements.
  - Permitted to use an alternative process for complying with the operator qualification requirements.
- Type B Regulated Onshore Gas Gathering Lines
  - Metallic lines with an MAOP of less than 20% of SMYS, as well as nonmetallic lines with an MAOP of 125 psig or less, in a Class 3 or Class 4 location (Area 1) or in a Class 2 location (Area 2).
  - Any new or substantially changed line must comply with the design, installation, construction, and initial testing and inspection requirements for transmission lines and, if of metallic construction, the corrosion control requirements for transmission lines.
  - Operators must include these lines within their damage prevention and public education programs, establish the MAOP of those lines under § 192.619, and comply with the line marker requirements for transmission lines.

PHMSA June 2008 Final Rule: Petroleum Gathering

- Defines gathering line as a pipeline 8 5/8 inch or less that transports petroleum from a production facility.
- Defines regulated rural gathering line as any pipeline in a rural area that:
  - has a nominal diameter of between 6 5/8 and 8 5/8 inches;
  - operates at a stress level greater than 20 percent of the specified minimum yield strength or,
  - in certain cases, operates at a pressure of more than 125 psig; and
  - is within ¼-mile of an unusually sensitive area.
- Establishes new safety requirements for regulated rural gathering lines

Production line, Gathering Line, Transmission Line



Texas Railroad Commission

- From a pipeline integrity management perspective, the state of Texas requires operators to treat production (flow) pipelines after the first point of measurement the same as gas gathering pipeline

Maximum Allowable Operating Pressure

- The maximum pressure at which a pipeline segment can operate under 192
- Calculated using
    - 192.619 for steel or plastic pipelines
    - 192.621 for high pressure distribution systems
    - 192.623 for low pressure distribution systems
- MAOP (per 192.619) cannot exceed the lowest of:
    - Design pressure of weakest element (piping, valves, fittings)
        - Steel Pipe – 192.105
        - Plastic Pipe – 192.121
        - Limitations for plastics – 192.123
    - Test pressure (derated by class location)
        - Tested per Subpart J
        - Steel - Derated by class location
        - Plastic – Test pressure divided by 1.5 for all class locations.
    - Maximum operating pressure (MOP) during the 5 years preceding application date
        - Highest operating pressure in the 5 years preceding
            - ✓ Onshore lines – 7/1/1970
            - ✓ Gathering lines – 3/15/2006 or date the line becomes subject to this part, whichever is later
        - Unless
            - ✓ Tested in accordance with 192.619(a)(2) after July 1, 1965 or
            - ✓ Uprated in accordance with part 192 Subpart K
        - Not an option for older pipelines
    - Maximum safe pressure determine by operator

        - Considering history of the segment, particularly known corrosion and the actual operating pressure

- Steel MAOP Calculation (192.105)
    - P = 2*S*t/D*F*E*T
        - P = MAOP, psig
        - S = SMYS, psi (35,000 psi for Grade B, 25,000 for lines with no information)
        - t = thickness, inches
        - D = diameter, inches
        - F = design factor per 192.111
        - E = Longitudinal Joint factor per 192.113
        - T = Temperature derating factor per 192.115

- Plastic MAOP Calculation (192.121)
    - P = (2*S/(SDR) – 1)*DF
        - P = MAOP, psig
        - S = HDB (Hydrostatic Design basis)
        - SDR = Standard Dimension Ratio
        - DF = Design Factor (0.32 or 0.42)

Class Location

- The class location unit is an onshore area that extends 220 yds (1/8 mile) on either side of the centerline of any continuous 1-mile length of pipeline. The class location is determined by the number of buildings in the class location unit.
- Class 1 – 10 or less buildings (generally considered not-regulated)
- Class 2 – 10 to 46 buildings
- Class 3 – 46 or more buildings or where the pipeline lies within 100 yds of (a) building occupied by 20 or more persons on at least 5 days per week for 10 weeks in any 12-month period or (b) a well-defined outside areas (i.e., playground, recreation area, outdoor theater).
- Class 4 – Buildings with four or more stories above ground.
- For Regulated Type B, Area 2 lines, the class location unit is reduced to 150 feet and including 5 or more buildings.