

Report to America on Pipeline Safety Determining Gas Transmission Fitness for Service

“Fit for Service” means a pipeline can be operated safely under current conditions. (i.e. environment, operations, physical characteristics, etc.)

Newly installed transmission pipelines are considered fit for service when they meet the design, construction and pressure test criteria included under Federal Pipeline Safety Regulations, 49 CFR Part 192, which include referenced criteria for pipe specifications and material standards, state requirements, and an operator’s specific criteria for design, construction and pressure testing.

Fitness for service for existing pipelines is determined by conducting a continuing surveillance process in accordance with Part 192 regulations (Subpart L, Section 192.613). This includes monitoring operations and maintenance activities that are conducted at frequencies as specified in Part 192 or at greater frequencies as specified by the state or by the operator, such as leak surveys, cathodic protection measurements, patrolling, and atmospheric corrosion observations. Through these operations and maintenance activities, pipeline operators continually monitor for changes in adjacent population density or property usage, capture information about leakage and corrosion history, look for substantial changes in cathodic protection requirements and evaluate for any other unusual operating conditions.

Other activities are required by Part 192 to be completed at each and every opportunity, such as coating inspections when a pipeline is exposed during excavation or internal corrosion inspections during modification of the pipeline.

In addition to the continuing surveillance activities described above, fitness for service for existing pipelines located in “high consequence areas” (typically higher density population areas or locations where people tend to congregate) is also determined by conducting an integrity assessment which includes the consideration of a variety of threats that might affect the pipeline over time. Integrity assessments on existing transmission pipelines in high consequence areas are conducted by pipeline operators routinely in accordance with Part 192 regulations (Subpart O) and relevant industry standards, such as those written by ASME, NACE and API. These assessments rely upon periodic integrity inspections, as well as data collected from on-going pipeline operation and maintenance activities.

Both an integrity assessment and a continuing surveillance process result in a determination that: 1) the pipeline is either fit for service as-is; or 2) that there are threats that need to be mitigated by repair, rehabilitation, or monitoring. If none of these methods can result in a pipeline fit for service under the current conditions, then the pipeline must be retired and/or replaced, or the operating conditions changed.

In determining an existing transmission pipeline’s fitness for service, the operator must account for relevant information which is either missing or unknown. In accounting for missing or unknown information, sound engineering principles and accepted industry practices must be applied to maintain appropriate safety margins.