

TR Number	18-28
Primary Reference	192.5
Purpose	Provide guide material for this section. (Current guide material is “No guide material available at present.”) Review existing GM for Class Location and revise as appropriate in light of Amendment 192-125.
Origin/Rationale	<p>Lane Miller email 9/12/2018</p> <p>On July 31, 2018, PHMSA published an Advanced Notice of Proposed Rulemaking (ANPRM) seeking public comments on its existing class location requirements for natural gas transmission pipelines as they pertain to actions operators are required to take following class location changes due to population growth near a pipeline.</p> <p>There have been several times through the years that the committee has tried to develop guidance material for this part of the Guide, but consensus of the group could not be reach. In this ANPRM starting on page 36861, PHMSA does a great job that describes Class Location History and Purpose and goes on to describe the application of “Clustering.” I feel that this information would be beneficial to the user of the Guide, and it is recommended to either reference this information of the ANPRM or incorporate the information into the Guide.</p> <p>From TR 19-37 (closed) - Review existing GM for Class Location and revise as appropriate in light of Amendment 192-125.</p>
Assigned to	Design

Note: Revisions are shown in **yellow highlight** and **red font**.

Section 192.5

~~This guide material is under review following Amendment 192-125.~~

~~No guide material necessary.~~

[Editorial Note: The following guide material is new and therefore not underlined.]

1 GENERAL

Class locations were developed to differentiate areas situated along pipeline routes by the risk of personal injury and property damage from a potential pipeline failure. ~~Safety margins and standards are commensurate with the potential consequences of a failure based on the population density near the pipeline.~~

2 CLASS LOCATION SCOPE AND IMPACT

- (a) Class locations are used in 32 sections across **11-42** of the 16 subparts that comprise 49 CFR Part 192 to apply more rigorous safety requirements to higher population densities along the pipeline.
- (b) Code sections impacted by class location are shown in the table below.

Section	Section Title
§192.5	Class locations

§192.8	How are onshore gathering pipelines and regulated onshore gathering pipelines determined?
§192.9	What requirements apply to gathering pipelines?
§192.65	Transportation of pipe
§192.105	Design formula for steel pipe
§192.111	Design factor (F) for steel pipe
§192.121	Design of plastic pipe
§192.150	Passage of internal inspection devices
§192.175	Pipe-type and bottle-type holders
§192.179	Transmission line valves
§192.243	Nondestructive testing
§192.327	Cover
§192.485	Remedial measures: Transmission lines
§192.503	General requirements
§192.505	Strength test requirements for steel pipeline to operate at a hoop stress of 30 percent or more of SMYS
§192.555	Upgrading to a pressure that will produce a hoop stress of 30 percent or more of SMYS in steel pipelines
§192.609	Change in class location: Required study
§192.610	Change in class location: Change in valve spacing
§192.611	Change in class location: Confirmation or revision of maximum allowable operating pressure
§192.613	Continuing surveillance
§192.619	Maximum allowable operating pressure: Steel or plastic pipelines
§192.620	Alternative maximum allowable operating pressure for certain steel pipelines
§192.624	Maximum allowable operating pressure reconfirmation: Onshore steel transmission pipelines
§192.625	Odorization of gas
§192.634	Transmission lines: Onshore valve shut-off for rupture mitigation
§192.705	Transmission lines: Patrolling
§192.706	Transmission lines: Leakage surveys
§192.707	Line markers for mains and transmission lines
§192.710	Transmission lines: Assessments outside of high consequence areas
§192.714	Transmission lines: Repair criteria for onshore transmission pipelines
§192.903	What definitions apply to this subpart?
§192.933	What actions must be taken to address integrity issues
§192.935	What additional preventive and mitigative measures must an operator take

TABLE 192.5i

3

CLASS LOCATION DETERMINATION

- (a) Class locations for onshore gas pipelines are not determined at any given point of a pipeline by counting the number of dwellings in static mile-long pipeline segments stacked end-to-end. They are determined by using a “sliding mile” as specified in §192.5(a), through the use of class location units (§192.5(a)) that are continuous pipeline segments one (1) mile in length, extend 220 yards on either side of the centerline of a pipeline, and which move along the pipeline. Notwithstanding the provisions of §192.5(c), the number of buildings suitable for human occupancy or certain buildings or outdoor areas meeting the requirements as stated in §192.5(b)(3)(ii) within a class location unit determines the class location for the entire mile of pipeline contained within the class location unit.
- (b) Operators equate the concept of a “sliding mile” with class location units. The “sliding mile” is a unit that is one (1) mile in length, extends 220 yards on either side of the centerline of a

pipeline, and moves along the pipeline. The number of buildings suitable for human occupancy or certain buildings or outdoor areas meeting the requirements outlined in §192.5(b)(3)(ii)(h) within this sliding mile at any point during the mile's movement determines the class location for the entire mile of pipeline contained within the sliding mile.

- (c) When higher dwelling concentrations are encountered during the continuous sliding of this mile-long unit, the class location of the pipeline rises commensurately. When the building counts lower, the class location will decrease.
- ~~(d) Operators are permitted to remove segments out of the "sliding mile" for class location determination if there are no other dwellings in the remaining portions of the mile.~~
- (d) Whenever there is a change in class location that will cause an apparent overlapping of class locations, the higher-numbered class location applies.
- (e) Actual calculated class locations will vary from several tens of feet to several miles in length.
- (f) Class locations can change as buildings are added, removed, or change function over time and also when the use of an outside area changes over time.
- (g) Tools and techniques that can be used to perform class location surveys include the following.
 - (1) Aerial or satellite imagery.
 - (2) GIS datasets – land parcels, land use, building types, population density.
 - (3) On-the-ground survey.

4 "CLUSTER RULE" ADJUSTMENTS (§192.5(c))

- (a) Clustering is a method to reduce the length of a Class 2, 3, or 4 locations in a sliding mile unit class location units that requires a Class 2, 3, or 4 classification by allowing operators to "cluster" the buildings for human occupancy and reduce the amount of pipeline mileage affected by the higher class location and allows compliance activities for the segment(s) not included within the cluster to be performed in accordance with the applicable standards and timeline(s).
- (b) The following example excerpt from the Advance Notice of Proposed Rulemaking (ANPRM), titled "Pipeline Safety: Class Location Change Requirements" (83 FR 36861, July 31, 2018), illustrates the concept of clustering.

~~"...Assume there is a class location unit/sliding mile containing 47-52 homes close to near one another. The class location unit would be a Class 3 location per the definition provided at §192.5(b). However, an operator can consider these homes as a "cluster" and appropriately apply the adjustment at §192.5(c) so that the boundaries of the Class 3 location are 220 yards upstream and downstream from the furthest edges of the clustered homes (buildings for human occupancy). Therefore, while the entirety of the pipeline is in a Class 3 class location unit, The only pipe subject to Class 3 requirements is the length of the cluster of 52 homes plus 220 yards on both sides of the cluster. The remaining pipe in the class location unit/sliding mile, the pipe that is outside of this clustered area, should be classified as Class 1 or 2 as determined in §192.5(b), could therefore be operated at Class 1 requirements rather than at the otherwise required Class 3 requirements."~~

- (c) When using clustering, an operator should ensure that all buildings for human occupancy within a class location unit are covered by the appropriately determined class location requirements. Any new buildings for human occupancy built in a class location unit where clustering has been used might also be clustered, whether they form a new, independent cluster or are added to the existing cluster. ~~A single house could form the basis of a second~~

cluster under this requirement, as all buildings within a specified class location unit should be protected by the maximum class location level that was determined for the entire class location unit.

(d) The following excerpt from the ANPRM illustrates the concept of changes within a class location unit that had used clustering:

“... there is a cluster of 47 homes at one end of a class location unit/sliding mile, and 3 homes are built at the other end of the class location unit, the operator must count and treat those 3 homes as a second cluster, with the length of the cluster plus 220 yards on both sides of the cluster subject to Class 3 requirements. The pipeline between these two clusters would still be in a Class 3 location per its class location unit, as there would be 50 homes within the sliding mile, but the pipeline between the clusters could be operated under Class 1 location requirements. If the 220-yard extensions of any two or more clusters intercept or overlap, the separate clusters must be considered a single cluster for purposes of applying the adjustment.”

5 CLASS LOCATION CHANGES

- (a) If a pipeline is operating **at a hoop stress** greater than 40% SMYS, and a class location changes due to an increase in population density, the operator shall make a study to determine if the MAOP is commensurate for the new class (§192.609). See guide material under §192.609 for additional information.
- (b) Increases or decreases in class location **need to should** be communicated to field operations as they could affect inspection frequencies.

6 RECORDS

Records **required by §192.5** may be kept in a variety of formats that include the following.

- (a) Geographical information system (GIS).
- (b) Work management or compliance systems.
- (c) Other electronic databases.
- (d) Paper.

GMA G-192-1

2 GOVERNMENTAL DOCUMENTS

PHMSA-OPS	Advance Notice of Proposed Rulemaking “Pipeline Safety: Class Location Change Requirements” (83 FR 36861, July 31, 2018)	§192.5
	Distribution Integrity Management: Guidance for Master Meter and Small Liquefied Petroleum Gas Pipeline Operators	GMA G-192-8
