

Valve Installation and Minimum Rupture Detection Standards

DOCKET NO. PHMSA-2013-0255 (AMENDMENT 192-134)

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§192.3 – Definitions

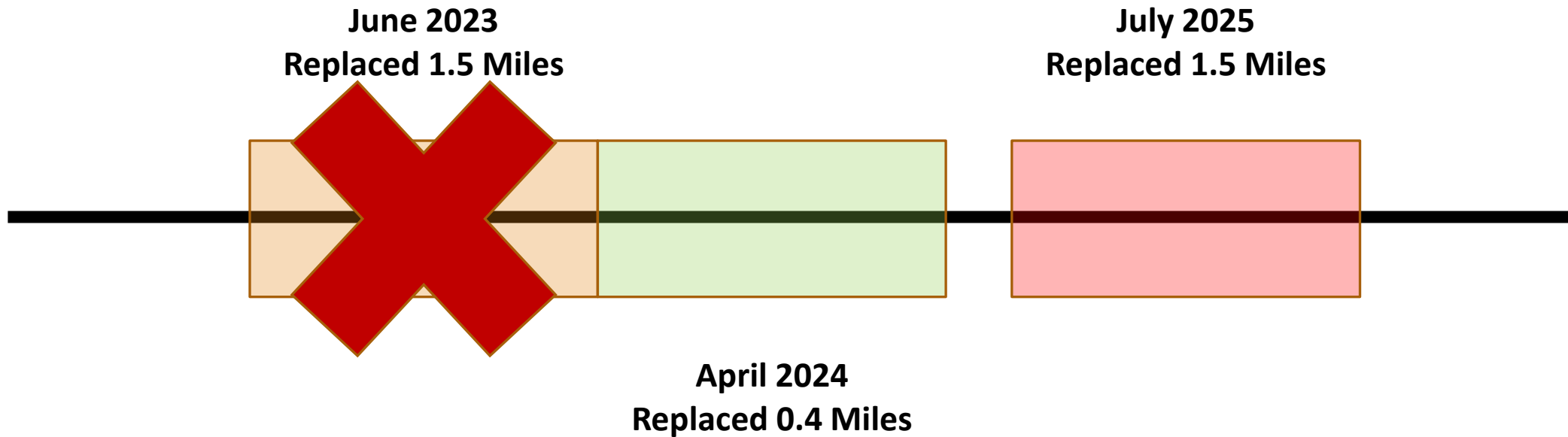
Entirely replaced onshore transmission pipeline segment

Entirely replaced onshore transmission pipeline segment means, for the purposes of §192.179 and §192.634, where 2 or more miles, in the aggregate, of onshore transmission pipeline have been replaced within any 5 contiguous miles of pipeline within any 24-month period.

Not applicable to Gathering line

§192.3 – Definitions

Entirely replaced onshore transmission pipeline segment



§192.3 – Definitions

Notification of Potential Rupture

Notification of potential rupture means the notification to, or observation by, an operator of indicia identified in § 192.635 of a potential unintentional or uncontrolled release of a large volume of gas from a pipeline.

Not applicable to Gathering line

§192.3 – Definitions

Rupture-Mitigation Valve (RMV)

Rupture-mitigation valve (RMV) means an automatic shut-off valve (ASV) or a remote-control valve (RCV) that a pipeline operator uses to minimize the volume of gas released from the pipeline and to mitigate the consequences of a rupture.

Not applicable to Gathering line

§192.9 – What requirements apply to gathering lines?

The FR for RMV's was **vacated** by US Supreme Court ruling on May 16, 2023, as it applies to gathering pipeline facilities.

§192.18 – How to notify PHMSA

(c) Unless otherwise specified, if an operator submits, pursuant to §192.8, §192.9, **§192.179**, §192.506, §192.607, §192.619, §192.624, §192.632, **§192.634**, **§192.636**, §192.710, §192.712, **§192.745**, §192.921, or §192.937, a notification for use of a different integrity assessment method, analytical method, sampling approach, or technique (e.g., “**other technology**” or “**alternative equivalent technology**”) than otherwise prescribed in those sections, that notification must be submitted to PHMSA for review at least 90 days in advance of using the other method, approach, compliance timeline, or technique.

§192.179 – Transmission Line Valves

(e) Newly Installed Transmission

- Constructed after April 10, 2023
- Greater than or Equal to 6”

Exemption:

- Class 1 or Class 2 with a PIR less than or equal to 150’
- 192.18 Notice, demonstrating installation would be economically, technically or operationally infeasible for the new pipeline.
- Gathering

§192.179 – Transmission Line Valves

(f) Entirely Replaced Transmission Pipeline Segment

- Constructed after April 10, 2023
- Greater than or Equal to 6”
- Replacement project involves a valve
 - Addition, Replacement, or Removal

Exemption:

- Class 1 or Class 2 with a PIR less than or equal to 150’
- 192.18 Notice, demonstrating installation would be economically, technically or operationally infeasible for the replacement project.
- Gathering

§192.179 – Transmission Line Valves

(g) Alternative Equivalent Technology

- Must notify PHMSA (§192.18)
- Must include a technical and safety evaluation in the notice
- Must comply with §192.634 and §192.636 if valves

§192.179 – Transmission Line Valves

(g) Alternative Equivalent Technology – Manual Valve

Must include with notification a demonstration that installation of RMV as otherwise required would be;

- Economically,
- Technically, or
- Operationally infeasible

Exception:

- Manual Compressor Station Valve if continuously manned, no notice required but must comply with 192.636.
- Gathering

§192.179 – Transmission Line Valves

(h) Pipe Replacements – Valve Spacing Requirements

The valve spacing requirements of paragraph (a) of this section do not apply to pipe replacements on a pipeline if the distance between each point on the pipeline and the nearest valve does not exceed:

Class Location	Nearest Valve	Total Spacing
Class 1 or Class 2	10 Miles	20 Miles
Class 3	7 ½ Miles	15 Miles
Class 4	4 Miles	8 Miles

§192.610 – Change in Class Location: Change in valve spacing

Pipe Replacement to meet MAOP (§192.611, §192.619, §192.620)

Class Location change occurs after October 5, 2022

Length of Replacement	Replacement Period	Applicable Rule
2 or More Miles / 5 Contiguous Miles	24 Months	§192.610(a)
Less than 2 miles / 5 Contiguous Miles	24 Months	§192.610(b)
Less than 1000' / 1 Contiguous Mile	24 Months	§192.610(c)

§192.634 – Transmission Lines: Onshore Valve shut-off for rupture mitigation

§192.634(a) – Applicability

New or Entirely Replaced Transmission Pipeline Segments

Equal to or greater than 6”

Located in HCA, Class 3 or Class 4

After April 10, 2023, Newly installed or use of existing RMV or Alternative Equivalent Technology (AET)

Operational within 14 days or placing into service (or returning to service)

Exemption: Class 1 or Class 2 with PIR less than or equal to 150’

Not applicable to gathering

§192.634 – Transmission Lines: Onshore Valve shut-off for rupture mitigation

§192.634(b)(2) – Shut-off segment valve spacing

If pipeline is subject to 192.634(a)

Class Location	Spacing Between Valves
Class 4	Eight (8) Miles
Class 3	Fifteen (15) Miles
Class 1 or Class 2	Twenty (20) Miles

§192.634 – Transmission Lines: Onshore Valve shut-off for rupture mitigation

§192.634(b)(3) – Laterals

RMV's or Alternative Equivalent Technologies can be installed at points other than mainline receipt or delivery points if the length of the lateral does not contribute more than 5% of Total Shut-Off Segments gas volume. (Calculated as Max Flow at Operating Pressure)

§192.634 – Transmission Lines: Onshore Valve shut-off for rupture mitigation

§192.634(b)(3) – Laterals (Check valves)

Laterals less than or equal to 12”, check valves can be used as an alternative equivalent technology.

Not subject to §192.636

Must be inspected, operated, and remediated per §192.745

Must notify PHMSA per §192.18/ §192.179

§192.634 – Transmission Lines: Onshore Valve shut-off for rupture mitigation

§192.634(b)(4) – Crossovers (Manual Valves)

Manual Valves as an alternative equivalent technology can be used in lieu of RMV if:

- Locked and closed during normal operations
- Develop and Implement operating procedures
- Document the valves are closed and locked (lock-out/tag-out)
- Notify PHMSA per §192.18 and §192.179

§192.635(a) – Notification of Potential Rupture

Who must the operator consider as sources of rupture notification or observation?

- Operator (i.e. Control Room Operator)
- Field Personnel
- Nearby Pipeline Personnel (or other utility worker)
- Local First Responders
- Public Authorities
- Public
- **Not applicable to gathering**

§192.635(a) – Notification of Potential Rupture

What indications must an operator consider?

Unanticipated or Unexplained

- Pressure Loss
- Flow Rate Change
- Pressure Change
- Equipment Function or Instrumentation Indication
- Release of Large Volume of Gas
- Fire or Explosion (immediate vicinity)

§192.635(b) – Notification of Potential Rupture

When does a notification occur?

A notification of potential rupture occurs when an operator first receives notice of or observes an event specified in §192.635(a)

§192.636 – Response to a rupture and capabilities of RMV

When must a valve be fully closed after rupture identification?

- (b) – Fully Closed within 30 Minutes
- (c) – Left Open IF detrimental to Public Safety
 - Established in Operating Procedures
 - Notified PHMSA (§192.18)
 - Coordinated with Local Emergency Responders
 - Procedures to determine if left open (environmental factors included)
 - Communication Plan with Local Emergency Responders

§192.636 – Response to a rupture and capabilities of RMV

Valve Monitoring and Operation Capabilities

Must be capable of monitoring or controlled as follows:

- (d)(1) – Operated during normal, abnormal and emergency conditions
- (d)(2) – Monitored for Status
 - Position and Upstream/Downstream Pressures
 - ASV/Manual – Monitor pressure or flow between RMV
- (d)(3) – Back-up power to SCADA or Communications System

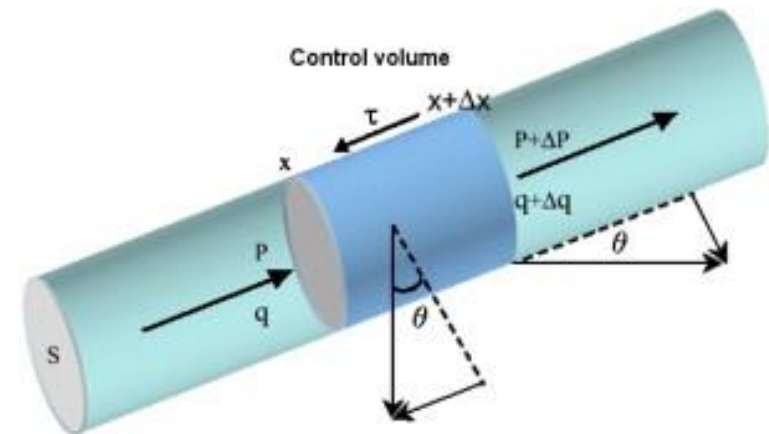
§192.636 – Response to a rupture and capabilities of RMV

Flow Modeling for Automatic Shutoff Valves

Flow Modeling for the Shut-Off Segment, including laterals, so that the valves will close within 30 minutes.

Must Include:

- Anticipated Maximum, Normal or other flow volumes
- Operating Conditions (15 Month)
- Must be modeled between RMV or Looped System
- If conditions change, a new model must be made, then reset ASV



§192.636 – Response to a rupture and capabilities of RMV

Non-HCA Manual Valves – Class 1

If a request pursuant to §192.18 and §192.179 for manual valves, the operator can also request an exemption from §192.636(b)

(30 Minute time to closure)

§192.745 – Valve Maintenance: Transmission lines

(c) – Must conduct Point-to-Point Verification on RVC's per §192.631 (c) & (d)

(d) – Alternative Equivalent Technology

- 30 Minute Drill – Initial drill and Periodic Validation (Full Closure)
- Random Selection AEV in lieu of RMV (25% Drill), each pipeline system and within each O&M field work unit
- Revise Response Efforts (30 Minute Failure), Must select Alternative valve within 7 days of failed drill, and must revise to meet 192.636 but within 12 months.
- Lessons Learned
- Does not apply to §192.636(g)

§192.745 – Valve Maintenance: Transmission lines

(e) – Remedial Measures

Repair / Replace within 12 months and

Designate alternative valve withing 7 Calendar Days

(f) – Document and Confirm ASV Shut-in pressures annually (not to exceed 15 months)

§192.935 – What additional preventive and mitigative measures must an operator take?

(c) – Risk Analysis for gas releases and protection against ruptures

If a RMV is determined to be an efficient means of adding protection to HCA in event of gas release, must install RMV or alternative equivalent technology.

(f) – Periodic Evaluations

Risk Analysis per §192.935(c) must be reviewed by the operator and certified by a senior executive of the company. Must occur once per calendar year, not to exceed 15 months.

Also occurs within 3 months of an incident or SRC

§192.617 – Investigation of failures and incidents

§192.617(a) – Post-failure and incident procedures

Each operator must establish and follow procedures for investigating and analyzing **failures and incidents** as defined in § 191.3, including sending the failed pipe, component, or equipment for laboratory testing or examination, where appropriate, for the purpose of determining the causes and contributing factor(s) of the failure or incident and minimizing the possibility of a recurrence.

Applies to Transmission, Offshore and Type A gathering.

Type C Gathering under 192.615

Not applicable to Type B per 192.9(d).

§192.617 – Investigation of failures and incidents

§192.617(b) – Post-failure and incident lessons learned

Each operator must develop, implement, and incorporate lessons learned from a post-failure or incident review into its written procedures, including personnel training and qualification programs, and design, construction, testing, maintenance, operations, and emergency procedure manuals and specifications.

Applies to Transmission, Offshore and Type A gathering.

Type C Gathering under 192.615

Not applicable to Type B per 192.9(d).

§192.617 – Investigation of failures and incidents

§192.617(c) – Analysis of Rupture and Valve Shut-offs

If an incident involves the closure of a rupture-mitigation valve (RMV) or the closure of alternative equivalent technology, the operator of the pipeline must also conduct a post-incident analysis of all of the factors that may have impacted the release volume and the consequences of the incident and identify and implement operations and maintenance measures to prevent or minimize the consequences of a future incident.

Applies to Transmission, Vacated by court ruling for gathering

§192.617 – Investigation of failures and incidents

§192.617(c) – Analysis of Rupture and Valve Shut-offs

The analysis must include all relevant factors impacting the release volume and consequences, including, but not limited to, the following:

- (1) Detection, identification, operational response, system shut-off, and emergency response communications, based on the type and volume of the incident;
- (2) Appropriateness and effectiveness of procedures and pipeline systems, including supervisory control and data acquisition (SCADA), communications, valve shut-off, and operator personnel;

Applies to Transmission, Vacated by court ruling for gathering

§192.617 – Investigation of failures and incidents

§192.617(c) – Analysis of Rupture and Valve Shut-offs

The analysis must include all relevant factors impacting the release volume and consequences, including, but not limited to, the following:

(3) Actual response time from identifying a rupture following a notification of potential rupture, as defined at § 192.3, to initiation of mitigative actions and isolation of the pipeline segment, and the appropriateness and effectiveness of the mitigative actions taken;

Applies to Transmission, Vacated by court ruling for gathering

§192.617 – Investigation of failures and incidents

§192.617(c) – Analysis of Rupture and Valve Shut-offs

The analysis must include all relevant factors impacting the release volume and consequences, including, but not limited to, the following:

- (4) Location and timeliness of actuation of RMVs or alternative equivalent technologies; and
- (5) All other factors the operator deems appropriate.

Applies to Transmission, Vacated by court ruling for gathering

§192.617 – Investigation of failures and incidents

§192.617(d) – Rupture post-failure and incident summary

The operator must complete a summary of the post-failure or incident review within 90 days of the incident

If the investigation is pending, conduct quarterly status reviews until the investigation is complete and a final post-incident summary is prepared.

Must be reviewed, dated and signed by the appropriate Senior Executive Officer

All investigation and analysis documents and records of lessons learned must be kept for the applicable life of the pipeline

Applies to Transmission, Vacated by court ruling for gathering

§192.615 – Emergency Plans

§192.615(a)(2) – Communication with Emergency Responders and Officials

Establishing and maintaining adequate means of communication with the appropriate public safety answering point (911) or appropriate emergency coordinating agencies.

Applies To Transmission

§192.615 – Emergency Plans

§192.615(a)(6) – Actions to take in Emergency

Taking necessary actions, including but not limited to, emergency shutdown, valve shut-off, or pressure reduction, in any section of the operator's pipeline system, to minimize hazards of released gas to life, property, or the environment.

Applies To Transmission

§192.615 – Emergency Plans

§192.615(a)(8) – Emergency Response

Notifying the appropriate public safety answering point available for the location of the pipeline of gas pipeline emergencies to coordinate and share information to determine the location of the emergency (Planned Responses and Actual Responses).

Applies To Transmission

§192.615 – Emergency Plans

§192.615(a)(8) – Rupture

The operator must immediately and directly notify the appropriate public safety answering point or other coordinating agency for the communities and jurisdictions in which the pipeline is located after receiving a notification of potential rupture, as defined in Sec. 192.3, to coordinate and share information to determine the location of any release, **regardless of whether the segment is subject to the requirements of Sec. 192.179, Sec. 192.634, or Sec. 192.636.**

Applies To Transmission

§192.615 – Emergency Plans

§192.615(a)(11) – Control Room Actions

Actions required to be taken by a controller during an emergency in accordance with the operator's emergency plans and requirements set forth in §192.631, §192.634, and §192.636.

Applies To Transmission

§192.615 – Emergency Plans

§192.615(a)(12) – Rupture Identification

Each operator must develop written rupture identification procedures to evaluate and identify whether a notification of potential rupture, as defined in Sec. 192.3, is an actual rupture event or a non-rupture event. **Applies To Transmission**

For operators installing valves in accordance with Sec. 192.179(e), Sec. 192.179(f), or that are subject to the requirements in Sec. 192.634, those **procedures must provide for rupture identification as soon as practicable.**

§192.615 – Emergency Plans

§192.615(c) – Establish and Maintain Liaison with Emergency Responders and Officials

Each operator must establish and maintain liaison with the appropriate public safety answering point (i.e., 9–1–1 emergency call center) where direct access to a 9–1–1 emergency call center is available from the location of the pipeline, as well as fire, police, and other public officials

Applies To Transmission

192.615 Emergency Plans (October 4, 2022)

Specified by Amendment 192.30 for 192.9 (b), (c) and (e)(1)(iv))

- 192.615(a)(2)- Establish and maintaining adequate means of communication with appropriate fire, police, and other public officials.
- 192.615(a)(6)- Emergency shutdown and pressure reduction in any section necessary to minimize hazards to life or property.
- 192.615(a)(8)- Notifying appropriate officials of gas pipeline emergencies and coordinating planned responses and actual responses during the emergency.
- 192.615(a)(10)- Beginning actions under 192.617, soon after the end of the Emergency as possible
- 192.615(a)(11)- Actions required by controller in accordance with 631.

As of 192.134-All Gathering Except Type B.

Anyone have a friend who owns a pipeline?

