

<b>TR Number</b>	<b>2022-34</b>
<b>Primary</b>	192.617
<b>Purpose</b>	Review GM and revise as appropriate in light of Amendment 192-130.
<b>Origin/Rationale</b>	Amendment 192-130
<b>Assigned to</b>	OM/OQ Task Group

### Section 192.617

~~This guide material is under review following Amendment 192-130.~~

*Note:* Although not required, operators should consider developing written procedures for failure investigations on Type B gathering lines.

#### 1 GENERAL

- (a) Data on all failures and leaks should be compiled to support compliance with §192.613. A failure investigation should be performed to determine the cause of the failure and minimize the possibility of a recurrence.
- (b) For information on failures of PE pipe, see 3 of the guide material under §192.613.
- (c) For information on reporting failures of mechanical fittings, see Guide Material Appendix G-192-8, Section 10.

#### 2 TYPES AND NATURE OF FAILURES **AND INCIDENTS** THAT SHOULD BE ANALYZED

- (a) ~~Failure investigation should be conducted for incidents as defined in §191.3. While the term “incident” is defined, the term “failure” is not defined in Parts 191 or 192.~~ An operator should ~~also~~ consider investigating any ~~other~~ failure that enables the operator to establish patterns that might be occurring on its pipeline system. For examples, see guide material under §192.613.
- (b) A failure is a condition in which a human, structure, component, device, or system fails to adequately perform its intended purpose. Such a condition might or might not also meet the definition of an “incident” in §191.3 or the reporting requirements of §191.5.
- (c) An accident is an unplanned occurrence that results in a release of natural gas from a pipeline. Accidents are failures occurring in pipeline systems for which the pipeline operator must make a report to the Office of Pipeline Safety if the definition of “incident” in §191.3 is met.
- (~~b~~d) If a failure or incident on an onshore gas transmission pipeline involves the closure of a rupture mitigation valve (RMV) or the closure of alternative equivalent technology, the operator must conduct a post-incident analysis under §192.617(c) and (d).

*[Publication/Editorial note: Combined lettering with TR 18-04 shown in 3 below. If this TR is approved before TR 18-04, the lettering needs to revert to 3(a)-(e) instead of 3(a)-(h) as shown below.]*

#### 3 FAILURE **AND INCIDENT** INVESTIGATION

- (a) Failure **and incident** investigation and subsequent analysis should determine the root cause(s) of the failure. The investigation may be as simple as assembling an internal review group or as complex as conducting a full-scale failure investigation with laboratory analysis of a failed component.
  - (1) Section 192.617(a) requires operators to establish and follow procedures for investigating and analyzing failures and incidents. Where appropriate, an operator

- should send the failed pipe, component, or equipment for laboratory examination and testing. Additionally, operators must develop, implement, and incorporate lessons learned from a post-failure or incident review into its written procedures.
- (2) Not every failure or incident requires laboratory analysis, examination, or testing. However, each failure or incident needs an investigation or analysis sufficient enough to allow the operator to determine the contributing factors, and to minimize the possibility of a recurrence.
  - (3) If the failure or incident involves an onshore gas transmission pipeline, the operator must evaluate and mitigate, as necessary, significant changes that pose a risk to safety or the environment through a management of change process (MOC) under §192.13(d). See guide material under §192.911 for more information on MOC.
- (b) The information for completing a 30-day incident report form contained in Part 191 may constitute an adequate analysis of a reportable failure or leak. See §§ 191.9 and 191.15.
- (c) A subject matter expert (SME) individual or team can perform an extensive evaluation, or a more simplified evaluation based on the nature of a system and its operation. The SME should be knowledgeable by training or experience in the procedures for the investigation of an incident or other failure.
- (~~b-d~~) The general process for performing root-cause analysis is as follows.
- (1) Assemble the review team.
  - (2) Define the problem and gather data and documentation.
  - (3) Identify factors that contributed to the problem (i.e., causal factors).
  - (4) Find the root cause for each causal factor, such as people, equipment, material, process, or outside influence.
- (e) Steps to identify and prevent reoccurrence include:
- (1) Determine the extent of condition, including identification of locations, equipment, or assets with the potential for similar or same failures to occur.
  - (2) Ensure information identified in extent of condition analysis is captured in an investigation report and carried through to recommended actions and assignments.
  - (~~5~~3) Develop and assign recommendations, considering the following.
    - (i) Minimizing the possibility of a recurrence (§192.617).
    - (ii) Review of procedures ((§192.605(b)(8)).
    - (iii) Human error (§192.805(d and e)).
    - (iv) Abnormal operations (§192.605(c)).
  - (~~6~~4) Distribute recommendations and review the operator’s procedures. Ensure consideration is given to communication with all potentially impacted personnel. This may include personnel from control room, purchasing, training, operations, and Operator Qualification.
  - (~~7~~5) Implement the recommendations.
  - (6) Track action items and recommendations to closure.
- (f) Consider testing the involved facilities, whether buried or aboveground. Evaluations could include leak or other surveys, inspecting for signs of recent excavation activity, physical damage to aboveground facilities, or evidence of vehicle damage.
- (~~e-g~~) For failures of mechanical fittings, consider following the evaluation steps in 93 below.

(h) The analysis of ruptures or the closure of an RMV or alternative equivalent technology on an onshore gas transmission pipeline must include all relevant factors impacting the release volume and the consequences. See §192.617(c) and (d) for a list of some of the relevant factors. The post-incident or post-failure review should include detection and mitigation actions, response time, valve location, valve actuation, and SCADA system performance. The review is not limited to these factors and may include other factors deemed appropriate by the operator.

4 RESPONSE TO FAILURE ...

5 DATA COLLECTION ...

~~6 INVESTIGATION ...~~

67 SPECIMENS ...

78 TESTING AND ANALYSIS ...

89 CONSIDERATIONS FOR MECHANICAL FITTINGS ...

910 REFERENCE ...