

INSTRUCTIONS FOR FORM PHMSA F 7100.2 (01-2002)
INCIDENT REPORT - GAS TRANSMISSION AND GATHERING SYSTEMS

GENERAL INSTRUCTIONS

Each gas transmission or gathering system operator shall file Form PHMSA F 7100.2 for an incident that meets the criteria in §191.3 as soon as practicable but not more than 30 days after the incident. Operator, distribution line, gathering line, and transmission line are defined in §191.3 Code of Federal Regulations (CFR). Liquid natural gas (LNG) facility operators are exempt from filing reports in §191.15(c). Releasing gas during maintenance or other routine activities need not be reported if the only reportable criteria met is losing gas of \$50,000 or more as defined in §191.3 (1)(ii).

Damage from secondary ignition need not be reported unless the damage to facilities subject to Part 192 exceeds \$50,000. Secondary ignition is a gas fire where the cause is unrelated to the gas facilities, such as electrical fires, arson, etc. Please submit reports according to §191.7. If you have questions about this report or these instructions or need copies of Form PHMSA F 7100.2, please write to the Information Resources Manager, Office of Pipeline Safety, 1200 New Jersey Ave., SE, East Building, 2nd Floor (PHP-10), Room Number E22-321, Washington, DC 20590 or call (202)366-8075. All forms and instructions are on the OPS home page, <http://ops.dot.gov>.

SPECIAL INSTRUCTIONS

An entry should be made in each block. If the data is unavailable, please enter Unknown. Please avoid Unknown entries if possible. Estimated data is preferable to unknown data. If Unknown or estimated data entries are made, a supplemental report should follow if the operator learns the answers to the questions. If the block is not applicable, please enter N/A.

In blocks requiring numbers, all blocks should be filled in

using zeroes when appropriate. When decimal points are required, the decimal point should be placed in a separate block.

Examples: (Part 5) Nominal Pipe Size /0/0/2/4/ inches
/1/.5/0/ inches

Wall Thickness /.5/0/0/ inches

/1/.2/5/ inches

If OTHER is checked, include an explanation or description on the line next to the item checked.

SPECIFIC INSTRUCTIONS

PART A - GENERAL REPORT INFORMATION

Initial, Supplemental, Final Report Section

Check boxes are provided as follows for:

☐ Original Report ☐ Supplemental Report
☐ Final Report.

Check the box for Original Report if this is the initial report filed for this incident. If all of the information requested is known and provided at the time the initial report is filed, including final property damages and failure cause information, check the box for Final Report as well as the box for Original Report, indicating that no further information will be forthcoming.

If all of the information requested on the form is not known or provided at the initial report filing, check only Original Report. If this is an update to an Original Report but all information requested is still not known, check Supplemental Report.

Check Final Report if all requested relevant information has been provided, and there will be no further updates to reported property damages or causal information.

If you are filing a supplemental or final report, please check the Supplemental Report or Final Report box. Please complete parts A(1), A(2) and A(3). You must also complete Part B. When filling in the supplemental, only enter the data that has changed. Please do not enter previously submitted information that hasn't changed, other than the parts specified in this instruction that are needed to provide us with a way to identify your previous filed report.

ITEM 1. The Pipeline and Hazardous Materials Safety Administration (PHMSA) assigns the operator's five-digit identification number. If you do not know the identification number, please leave the operator identification number blank. The operator address entry in 1.c. is the office filing the incident report. If the operator does not own the pipeline, enter the Owner's five-digit identification number in 1.d. Contact us at (202) 366-8075 if you need assistance with an identification number for 1.d.

ITEM 2. The time of the incident should be shown by 24-hour clock notation.

Examples:

1. (0000) = midnight = /0/0/0/0/
2. (0800) = 8:00 a.m. = /0/8/0/0/
3. (1200) = Noon = /1/2/0/0/
4. (1715) = 5:15 p.m. = /1/7/1/5/
5. (2200) = 10:00 p.m. = /2/2/0/0/

ITEM 3. Incident location information should be as complete as possible, including the nearest City, Town, Township, County or Parish, Borough, Section, and Range. Offshore incident identification should be located by State or Outer Continental Shelf (OCS) identification and block identification. In addition to the general location information, provide latitude and longitude, if available, including projection and datum used in collecting the data.

The latitude and longitude of the incident are to be reported as Decimal Degrees with a minimum of 5 decimal places (e.g. Lat: 38.89664 Long: -77.04327). If you have coordinates in degrees/minutes or degrees/minutes/seconds, use the formula below to convert to decimal degrees:

$$\text{degrees} + (\text{minutes}/60) + (\text{seconds}/3600) = \text{decimal degrees}$$

e.g. $38^{\circ} 53' 47.904'' = 38 + (53/60) + (47.904/3600) = 38.89664^{\circ}$

All locations in the United States will have a **negative** longitude coordinate. Be sure a negative (-) sign precedes your longitude coordinate on your report. If you cannot locate the incident with a GPS or some other means, the U.S. Census Bureau provides a tool for determining them, (<http://tiger.census.gov/cgi-bin/mapbrowse-tbl>). You can use the online tool to identify the geographic location of the incident. The tool displays the latitude and longitude in decimal degrees below the map. Any questions regarding the required format, conversion or how to use the tool noted above can be directed to Amy Nelson (202.493.0591 or amy.nelson@dot.gov).

The class location should be the class location at the incident site as defined in §192.5. Federal Land other than Outer Continental Shelf means all lands the United States owns, including military reservations, except lands in National Parks and lands held in trust for Native Americans. Incidents at Federal buildings, such as Federal Court Houses, Custom Houses, and other Federal office buildings and warehouses, are not to be reported as being on Federal Lands.

ITEM 4. Leak - an event that involves the unintentional release of gas from a pipeline that requires immediate or scheduled repair. The source of the leak may be holes, cracks (which include propagating and non-propagating, longitudinal and circumferential), separation or pullout, and loose connections. Leaks that are either inconsequential or incidental to the operation of a pipeline and which can be checked or repaired under routine daily maintenance are not reportable leaks. Examples of such non reportable leaks include escape of gas through valve stem packing, through compressor rod packing, loosened connections and relief valves.

Rupture - a complete failure of a portion of the pipeline.

Propagation - the extension of the original opening in the pipeline in an area of nominal wall thickness resulting from the internal forces on the pipeline.

Tear - an extension of the original opening in the pipeline resulting from an externally applied force, such as a bulldozer, backhoe, or grader.

ITEM 5. When a person dies within 30 days of the initial accident date, report as a fatality. When a person dies subsequent to an injury more than 30 days past the accident date, report as an injury. This aligns with the Department of Transportation's general guidelines for all modes for reporting deaths and injuries.

In-patient hospitalization means hospital admission and at least one overnight stay.

Property damage or loss includes costs due to property damage to the operator's facilities and to others' property; gas lost; facility repair and replacement; leak locating; right-of-way cleanup; and environmental cleanup and damage. Facility repair, replacement, or change that is not related to the incident but the operator does for convenience is not to be included. An example of doing work for the operator's convenience is to work on facilities unearthed because of the incident. Litigation and other legal expenses related to the incident are not reportable.

High consequence area means:

1. A commercially navigable waterway, which means a waterway where a substantial likelihood of commercial navigation exists;
2. A high population area, which means an urbanized area as defined and delineated by the Census Bureau that contains 50,000 or more people and has a population density of at least 1,000 people per square mile;
3. An other populated area, which means a place as defined and delineated by the Census Bureau that contains a concentrated population, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area;
4. An unusually sensitive area, as defined in 195.6

If gas ignited, but there was no explosion, check box 5e.
If an explosion occurred, check box 5f.

Enter estimated number of people in the general public evacuated, if any, in item 5g, and check off the reason for evacuation.

For item 6, "Elapsed time until the area was made safe" means the time from the incident occurrence until the incident is brought under control and does not significantly threaten public safety. This does not necessarily mean that the flow of gas has been stopped. If the time of occurrence is unknown, the time when the operator was first notified or made aware of the incident should be used to calculate elapsed time.

PART B - PREPARER AND AUTHORIZED SIGNATURE

Preparer is the name of the person most knowledgeable about the information in the report or the person to be contacted for more information.

Authorized Signature may be the preparer, an officer, or other person whom the operator has designated to review and sign reports. Please enter the preparer's e-mail address if the preparer has one.

PART C - ORIGIN OF INCIDENT

ITEM 1. If the incident occurred on a gathering line operated by a distribution company, please check gathering system.

ITEM 2. Check the appropriate item in this section. If the failure occurred on an item not provided in this section, check the "OTHER" box and specify in the space provided the item that the failure occurred on. A sample list of possible "OTHER's" is included in the appendix under Part C, Item 2, Other.

ITEM 3. If steel or plastic was involved, check the box provided for steel or for plastic. If material other than steel or plastic was involved, check the box for Other and specify the material involved. If plastic was involved, check applicable items 3a through 3c that pertain to plastic. Check item 3c (joint failure) if plastic pipe segments joined by heat-fusion (butt or socket), electrofusion or mechanically coupled connections were involved. A sample list of possible "Other"s is included in the appendix under Part C, Item 3, Other.

ITEM 4. Check the appropriate item in this section.

ITEM 5. "Year the pipe or component which failed was installed" means the year installed at the incident location.

PART D - MATERIAL SPECIFICATION

Complete sections D (1 through 6), if applicable, where incident failure involved a pipe or valve.

ITEM 1. Nominal pipe size is the diameter in inches used to describe the pipe size; for example, 2-inch, 4-inch, 8-inch, 12-inch, 30-inch.

ITEM 2. Enter pipe wall thickness in inches.

ITEM 3. Specification is the specification to which the pipe or component was manufactured, such as API 5L or ASTM A106. When more than one item has failed, and the origin of the failure is not clear, complete Part C ITEM 4 to explain the additional item(s).

ITEM 4. See the appendix section of these instructions under Part D, Item 4, Seams for a list of common seam types.

ITEM 5. Enter valve type (flange-welded, bell-plug, etc.)
See the appendix section of these instructions under Part D, Item 5, Valves for a list of common valve types.

ITEM 6. Provide the pipe or valve manufacturer if failure was on pipe or valve. Enter year pipe or valve was manufactured. See the appendix section of these instructions under Part D, Item 6, Manufacturer for a list of common pipe manufacturers.

PART E - ENVIRONMENT

Under pavement includes under streets, sidewalks, paved roads, driveways and parking lots.

Provide depth of cover in inches where incident involved buried pipe or component.

PART F - APPARENT CAUSE

There are 25 numbered causes in Part F. Check the box to the left of the cause of the incident and complete all of the sub-element items to the right of or below the cause you indicate.

The 25 causes are broken into 5 categories in sections F1 through F5. General descriptions of the 5 categories followed by more detailed instructions for each section and for specific causes are provided below.

General description of sections F1 through F5:

Section F1: Corrosion. If the cause was Corrosion (internal or external), indicate whether the corrosion was internal or external and check appropriate sub-elements from F1 a through e.

Section F2: Natural Forces. This includes all outside forces attributable to causes not involving humans.

Section F3: Excavation. This section covers excavation causes.

Section F4: Other Outside Force Damage. This section covers outside force causes not readily attributable to Sections F2 and F3., including previously damaged pipe and vandalism.

Section F5: Material and Welds. This section covers Material and Weld failure causes. Complete sub-elements a-g in section F5 if any cause in section F5 is indicated. "Fitting" means a device, usually metal, for joining lengths of pipe into various piping systems; includes couplings, ells, tees, crosses, reducers, unions, caps and plugs.

Section F6: Equipment and Operations. This section covers failures of malfunctions of relief/control devices and equipment, failed or broken couplings, including thread failures, failures in seal/pump packing, and failures caused by incorrect operations by operator personnel. Note: Report gasket or o-ring failures under Section F5, item 16, Joints, by checking the appropriate circle for gasket or o-ring.

Section F7: Other. This section is provided for failure causes that do not fit in any other area provided in Sections F1 through F6. If the failure cause is unknown at time of filing this report, check item 24 and indicate whether the investigation is complete or still under investigation. If the failure cause is known but doesn't fit in any category in sections F1 through F6, check item 25 and describe the cause. Continue in Part G, narrative description, if more space is needed.

Specific instructions for sections F1 through F7

PART F1 -CORROSION

Corrosion includes a leak or failure that galvanic, bacterial, chemical, stray current, or other corrosive action causes. Examples: A corrosion leak is not limited to a hole in the pipe. If the bonnet or packing gland on a

valve or flange on piping becomes loose and leaks due to corrosion and failure of bolts, it is classified as Corrosion. If the bonnet, packing, or other gasket has deteriorated before the end of its expected life and caused a leak or failure and a new gasket is required, it is classified as a Material Defect. An incident at a facility that corrosion weakens and that fails with outside force as a contributing factor is classified as Corrosion. Except for deterioration due to corrosion, leaks resulting from materials deteriorating after the expected life are classified as Other.

If either item F1-1 (external corrosion) or F1-2 (internal corrosion) are checked, complete subparts a - e to the right of the items, pointed to by the arrow.

Subpart a - Pipe Coating

Galvanized pipe with no dielectric coating is considered bare.

Subpart b - Visual Examination

If the Visual Examination method is not listed here, indicate "Other" and give a description of method used. A list of example "Other" descriptions is included in the appendix under Part F1, Subpart b, Visual Examination.

Subpart c - Cause of Corrosion

If the Cause of Corrosion is not listed here, indicate "Other" and give a description. A list example "Other" causes is included in the appendix under Part F1, Subpart c, Cause of Corrosion.

Subpart d - Cathodic Protection

"Under cathodic protection" means cathodic protection in accordance with Part 192, Appendix D. Recognizing that older pipelines may have had cathodic protection added over a number of years, provide an estimate if exact year cathodic protection started is unknown.

PART F2 - NATURAL FORCES

The Natural Forces category includes all outside forces attributable to causes not involving humans.

Item 3: 'Earth Movement' refers to failures caused by land shifts such as earthquakes, landslides, or subsidence.

Item 5: 'Heavy rains and floods' refer to all water related failure causes such as washouts, flotation, mudslides, or water scouring. While mudslides involve earth movement, report them here since typically they are an effect of heavy rains or floods.

Item 6: 'Temperature' refers to those causes that are related to temperature effects, or where temperature was the initial cause; for example, thermal stress, frost heave, or frozen component failures.

PART F3 - EXCAVATION

The Excavation category includes leaks or failures caused by earth-moving or other equipment, tools or vehicles, or other excavation activities.

Item 8: Damages resulted from an Operator (including their contractors): check this item if the failure was caused by the operator or the operator's contractor or agent or other party working for the operator as a result of excavation.

Item 9: Third Party Damage- check this item if failure cause was from excavation damages resulting from action by outside party/third party caused by personnel or other party other than the operator or his agent.

Subpart 9.c- 'Prior notification' means that the operator had been notified that excavation or construction work was to be done near the pipeline before the incident occurred. If the operator was notified, but the operator believes the notice was inadequate, improper, or incomplete, check NO and explain in Part G, Narrative Description Of Factors Contributing to the Event.

Subpart 9.d-'Was pipeline marked?': Indicate whether the pipeline was marked or not. If the pipeline was marked, complete all items i through iv that apply.

Examples: A contractor working for the operator gouges the operator's pipeline and buries it without repair. If the pipeline leaks at a later date, the leak should be classified as damage resulted from item **F3.8-Operator Excavation Damage (including their contractors)/Not Third Party** if the operator can determine the leak resulted from the contractor's actions. If the contractor had been working for someone other than the operator, the leak should be classified as **F3.9- Third Party Excavation Damage**. A contractor working for the operator excavates near the operator's pipeline, which is later damaged by earth movement in the zone the excavation affects. The damage should be classified as **F3.8-Operator Excavation Damage (including their contractors)/Not Third Party**. If the contractor had been working for other than the operator in this situation, **F3.9- Third Party Excavation Damage**. In both situations, the damage should not be attributed to damage by moving earth. Pipeline leaks resulting from vehicular traffic loading should be classified as "Car, truck or other vehicle not relating to excavation activity damaging pipe". Pipeline leaks resulting from pullout of a mechanical fitting due to the repeated action of freezing should be classified as "Temperature, Frost heave". A pipeline or coating that an outside party or third party damages that later leaks due to corrosion or outside force should be reported under **F3.9- Third Party Excavation Damage**. A pipeline or coating that the operator or a contractor working for the operator damages that causes later leaks due to corrosion or outside force should be reported under **F3.8- Operator Excavation Damage (including their contractors)/Not Third Party**.

ITEMS 10 - 13, Other Outside Force Damage Causes.

This section covers outside force causes that do not fit the other two categories (Natural forces, Excavation). Fire/explosion as primary cause of failure implies that fire/explosion occurred prior to failure and not as a result of failure. If a fire/explosion occurred as a result of the failure and not prior to the failure as cause of

failure, do not check item 10, but check item A.5.e. If the primary cause of damage was caused by a vehicle other than a vehicle involved in excavation, check item 11. If a vehicle involved in excavation caused the damage, check the appropriate item under the Excavation Damage section (items 8 and 9). If the primary cause of failure was a rupture of previously damaged pipe, check item 12. An act of vandalism may be described here by checking item 13.

PART F5 - MATERIAL AND WELDS

Report both material defects and construction defects or failures in this section. If a material or construction defect was on the body of the pipe, component or joint, check appropriate boxes under items 14-16. If a weld failure was involved, check appropriate boxes under items 17 - 19. Complete subparts a - h if any cause was checked in Part F5. Identify if the failure was from a material failure or construction defect by checking the appropriate item in subpart F5.a.

ITEMS 14 - 16, Material.

This section includes leaks or failures from a defect within the material of the pipe, component or joint due to faulty manufacturing procedures. Leaks or failures from material deterioration in service that do not result from an original defect or corrosion are reported under Other.

ITEMS 17 - 19, Welds.

Acronyms used in this section:

LF ERW : low frequency electro-resistance weld

HF ERW : high frequency electro-resistance weld

DSAW : double-submerged arc weld

SAW : submerged arc weld

Weld-related material defects includes leaks or failures from a defect within the material of the pipe, component or longitudinal weld or seam due to faulty welding or weld-related manufacturing procedures. Leaks or failures from material deterioration in service that do not result from an original defect or corrosion are reported under Other.

Sub-Elements a - h

Construction defect includes leaks in or failures of original sound material due to force being applied during field construction, that caused a dent, gouge, excessive stress, or some other defect that eventually resulted in failure. Included are leaks in or failures of faulty wrinkle bends, faulty field welds, and damage sustained in transportation to the construction or fabrication site.

PART F6 - EQUIPMENT AND OPERATIONS

This section includes malfunctions of control and relief equipment (typically the result of failed and leaking valves), failures of threaded components and broken pipe couplings, and seal failures such as compressor pump packing failures. Incidents resulting from incorrect operations or inadequate procedures are also included in this category.

Item 20- Malfunction of Control/Relief Equipment

Examples of this type of failure cause include overpressurizations resulting from malfunction of control or alarm device, relief valve malfunction, and valves failing to open or close on command or which opened or closed when not commanded to do so. Note: if an overpressurization occurred, please check item Part A.8.d.

Item 21 - Threads stripped, broken pipe coupling

Examples of this type of failure include failures on

compressors, meters, or regulator stations where the failure resulted from a crack in a component or threads of a component such as nipples, flanges, valve connections, line pipe collars, etc.

Item 22 - Ruptured or Leaking Seal/Pump Packing

Examples of this type of failure generally include failures where compressor pump packing or other pump seals fail.

Item 23 - Incorrect Operation

Incorrect operation failures are typically those where better procedures may have prevented an incident from occurring. These types of failures most often occur during maintenance activities. Some examples of this type of failure are unintentional gas ignition during a welding or maintenance activity or other reportable incidents where a fire occurred not intentionally started by the operator, where an employee removes the wrong bolts from an assembly, leaves a valve open or closed at the wrong time, or failures where human error, employee fatigue, and/or lack of experience may have played a role.

PART F7 - OTHER

This section is provided for failure causes that do not fit in any category in Sections F1 through F6. If the failure cause is unknown at time of filing this report, check item 25. If the failure cause is known but doesn't fit in any category in sections F1 through F6, check item 24 and describe the cause. Continue in Part G, narrative description, if more space is needed.

PART G - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE INCIDENT

The narrative is needed only when it is useful to clarify or explain unusual conditions. It should be a concise description of the incident, including the probable cause, and the facts, circumstances, and conditions that may have contributed directly or indirectly to causing the incident. Explanations of estimated data may be included in the

narrative. If the OTHER block was checked in Part F7 item 24 or 25, the narrative should describe the incident in detail, including the known or suspected cause.

APPENDIX

Part C, Item 2, Other

NIPPLE FITTING

FLANGE FITTING

COMPRESSOR/TURBINE

GASKET

DRIP/RISER

GIRTH WELD

LONGITUDINAL WELD

FILLET WELD

Part C, Item 3, Other

GASKET

O-RING

PACKING

ALUMINUM

CAST IRON

WROUGHT IRON

ASBESTOS

FIBER GLASS

GALVANIZED RUBBER

REINFORCED RUBBER

UNKNOWN

Part D, Item 4, Seams

ELECTRIC RESISTANCE WELD

SUBMERGED ARC WELD

DOUBLE SUBMERGED ARC WELD

BUTT WELD

FURNACE LAP WELD

SEAMLESS WELD

FLASH WELD

Part D, Item 5, Valves

BALL

CHECK

BLEEDING

PRESSURE REDUCING

RECIPROCATING

GATE

PLUG

UNKNOWN

Part D, Item 6, Pipe Manufacturers

ACME NEWPORT

AMER. MANNEX CO

ANDERSON GREENWOOD

AO SMITH

ARMCO STEEL

BETHLEHEM STEEL

CONSOLIDATED WESTERN

GROVE

INGERSOL_RAND

JONES & LAUGHLIN

KAISER STEEL CO.

LONE STAR STEEL

NATIONAL TUBE

REPUBLIC STEEL

ROCKWELL

U S STEEL

YOUNGSTOWN

YOUNGSTOWN SHEET&TUBE

Unknown

Part F1, Subpart b, Visual Examination

FINE CRACKS

PIN HOLE LEAK

GENERAL INTERNAL PITTING

Part F1, Subpart c, Cause of Corrosion

ATMOSPHERIC CORROSION

CHEMICAL CORROSION

EROSION/CORROSION

SOUR GAS

WATER/LIQUID

CO2 & WATER

INTERGRANULAR CORROSION