

Report Guidance Specific to Oil & Gas Production, Gathering, and Processing Sites for TAC 101 Subchapter F Emissions Events and Scheduled Startup and Shutdown Activities

Scenario 1

A failure at a gas processing plant occurs resulting in the shutdown of an upstream gas gathering system compressor station by the high discharge pressure safety shutdown device. This causes the diversion valve at the inlet header of the compressor station to route gas to a flare (emergency or process flare). Unauthorized emissions through the flare are estimated to exceed the reportable quantity; therefore the gas compressor station must report the emissions event through STEERS.

1) What is the reported cause of the event?

The cause is the failure at the gas processing plant.

2) What is the emissions point?

The flare is the emissions point.

3) What facilities at the regulated entity are involved in the emissions?

The by-pass valve that routes gas to the flare and the flare should both be identified as facilities that experienced the emissions event. Although the compressor and compressor engine went down as a result of the emissions event, there are no unauthorized emissions attributed to those facilities.

4) What facilities are required to be identified by FIN and/or EPN number?

Only those facilities that are involved in the emissions event are subject to emissions inventory reporting requirements. They must all be identified by common name, and those that are assigned an alpha-numeric FIN must also be identified in the report by that number.

5) What authorizations and emissions limitations should be listed for the facilities involved in the emissions event?

The preconstruction authorization and associated limitations should be listed only if they are applicable to the emissions, if these emissions were evaluated and included in the authorization. If the flare is only authorized by 106.492, there is no applicable limitation for these emissions and there is no authorization to be listed.

NOTE: In many cases, the emissions event at the gathering system compressor station would end when the system operator shuts the inlet header valve(s), moving the emissions events further upstream to the producing leases. For those upstream facilities the cause of the emissions event would still be the failure at the gas processing plant, and the emissions points, designation of facilities involved and other reporting requirements would be identified as described in this scenario.

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Scenario 2

A gas processing plant plans scheduled maintenance and coordinates with the operators of the gas gathering system and the producing leases served by the gas gathering system. For the purposes of this example, it is presumed that the gathering system operator will be able to coordinate shutdown and startup with the gas plant in such a manner that the gathering system experiences no unauthorized emissions associated with the scheduled maintenance activity at the gas plant. At the producing leases, the increase in pipeline pressure upstream of the compressor prevents additional lease gas from entering the pipeline. The pressure relief valve on the emergency flare line diverts produced gas from the gas-liquid separators to the emergency flare (which has no “permitted emissions”) to prevent a separator malfunction and overflow of liquids at the lease.

The operators of the producing leases can submit STEERS notifications of a scheduled maintenance startup and shutdown activity 10 days (or as soon as practicable) prior to the maintenance activities, providing the required information in TAC 201.211(a) and (b) for the initial notice and final report.

- 1) The expected duration and quantities for emissions from the regulated entity must be provided. If the total predicted emissions at the reporting regulated entity are exceeded by at least a reportable quantity, then the entire maintenance activity becomes an emissions event for the reporting regulated entity.
- 2) Each STEERS report for a regulated entity will list the name of the owner or operator of the reporting regulated entity, the RN number, and the location of the emission point(s) at the reporting regulated entity with unauthorized emissions caused by the scheduled maintenance.
- 3) The type of scheduled maintenance, startup, or shutdown activity and the reason for the scheduled activity may be listed as “Planned maintenance activities at the (name of gas processing plant).”
- 4) The facilities which had unauthorized emissions as a result of the maintenance activity are the emergency flare (the source of the combustion products emitted) and the pressure relief valve (which is the facility that routed the uncombusted emissions to the flare). The emissions point is the emergency flare.
- 5) For the purposes of this example, presume that the regulated entity in question is not NOW a “major” facility and does not submit an emissions inventory, but it was “major” and did submit an emissions inventory two years ago. The pressure relief valve has no emissions in normal operations and was never assigned a FIN. Since this site no longer is subject to emissions inventory requirements, the FIN and EPN numbers reported for the emergency flare would be “N/A.” (The

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definition for “Agency established facility identification number” applies only to facilities for which emissions inventory requirements are currently applicable)

- 6) There are no pre-construction authorization numbers or authorized emissions limits for the emergency flare or for the emergency relief bypass valve because these facilities are used only when there are emissions events and maintenance activities and have no “authorized emissions limits.”

Scenario 3

The acid gas from an amine sour gas sweetening unit goes to a sulfur recovery unit (SRU) which extracts elemental sulfur and sends the unreacted acid gas to a tail gas incinerator (TGI) that is a separate facility from the SRU. The operation is a “major facility” for Title V purposes.

The amine unit has a malfunction which results in a carryover of hydrocarbon gas in the acid gas stream to the SRU. The SRU continues to make sulfur from the H₂S, but not at the required efficiency. The SO₂ emissions from the tail gas incinerator exceed the permit limit by more than the reportable quantity, there are some additional uncombusted H₂S emissions because of the higher H₂S content in the tail gas, and there are some VOC emissions from incompletely combusted hydrocarbons.

1) What is the reported cause of the event?

The cause of the emissions event is the amine sour gas sweetening unit malfunction, if the malfunction occurred within the unit itself. If the unit malfunctioned because of some upstream problem, such as liquid hydrocarbon carryover in the gas feed to the amine unit, the upstream problem would be described as the “cause” of the emissions event.

2) What is the emissions point?

The tail gas incinerator stack.

3) What facilities at the regulated entity are involved in the emissions event?

- a) The amine unit, (which is the source of the hydrocarbon gas which resulted in the VOC emissions from the tail gas incinerator.
- b) The SRU, which is the source of the excess acid gas because of the reduced SRU efficiency combusted in the TGI and therefore, the source of the excess H₂S emissions from incomplete combustion.
- c) The TGI, which is the source of the excess SO₂ from the excess acid gas combustion.

4) What facilities are required to be identified by FIN and/or EPN number?

The amine unit has no process emissions under normal operations and does not have a FIN. The SRU has a FIN because it is the source of H₂S emissions resulting from

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incomplete combustion of the tail gas. The tail gas incinerator has a FIN, along with an EPN with permitted allowable emissions of SO₂, CO, VOC, H₂S, and NO_x.

- 5) What authorizations and emissions limitations should be listed for the facilities involved in the emissions event? Because in this example an upset resulted in increased process emissions (H₂S, VOC, and SO₂) it is necessary to provide the preconstruction authorization number and allowable emissions for the facilities which experienced the emissions event.

Scenario 4

A maintenance event is planned to occur over a six-day period with an anticipated total SO₂ emission of 6,000 lbs. The reportable quantity for SO₂ is 500 lbs, and assume for this example the activity will result in emissions exceeding the RQ in a 24-hour period. Therefore it must be reported in accordance with 101.211(a). The STEERS report is submitted with an estimated 6,000 lbs of SO₂ emissions. A final report of the activity is required, because the actual emissions were different than those of the initial notification.

- 1) If the final report describes emission of SO₂ as 6,500 lbs or less, then the activity remains a scheduled maintenance activity.
- 2) If the actual emission of SO₂ is 6,501 lbs or more, then the activity becomes an emissions event and will be evaluated by the TCEQ to determine if it is excessive or if it is subject to an affirmative defense.