

Annex F

(Informative)

Task Specific AOC Guidance

F.1 Purpose

This annex provides guidance to identify task specific abnormal operating conditions (AOCs) for inclusion in the AOC section of individual Covered Task Standards.

F.2 Objective

F.2.1 General

U.S. regulations require operators to validate that qualified individuals can recognize and react to AOCs. Annex B includes a set of normative covered task standards that may be adopted by the operator as part of their qualification program. Each covered task standard includes a section that documents AOCs specific to the performance of the covered task that should be evaluated when individuals are being qualified to perform the work described in the covered task standard.

This Annex describes how task specific AOCs should be identified for inclusion in covered task standards. Guidance is provided to distinguish AOCs from emergencies, abnormal operations (AOs), and safety related conditions (SRCs), which are other U.S. regulatory terms that should not be confused with AOCs when constructing an AOC list. Guidance is also provided to eliminate potential AOCs that are listed as a task step, related to improper task performance, or are generic in nature and not directly related to the task being performed.

F.3 Terms and Definitions

F.3.1 Pipeline Condition

A pipeline condition is defined as a circumstance that affects the appearance, quality, or working order of a 'pipeline,' 'pipeline component,' or the 'pipeline system.'

F.3.2 Pipeline Component

Pipeline component means any part of a pipeline which may be subjected to pipeline pressure including, but not limited to, pipe, valves, elbows, tees, flanges, and closures.

F.3.3 Pipeline or Pipeline System (liquids)

Pipeline or pipeline system means all parts of a pipeline facility through which a hazardous liquid or carbon dioxide moves in transportation, including, but not limited to, line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, metering and delivery stations and fabricated assemblies therein, and breakout tanks.

F.3.4 Pipeline (gas)

Pipeline means all parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe,

compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.

F.4 Regulatory Interpretation

F.4.1 General

The regulatory definition for an AOC needs to be slightly modified when applied to guide the identification of task specific AOCs. For the purpose of this annex, a task specific AOC is defined as a condition directly associated with the performance of a covered task that may indicate a malfunction of a component or deviation from normal operations that may:

- indicate a condition exceeding design limits; or
- result in a hazard(s) to persons, property, or the environment.

The definition is identical to the definition given in section 3 of this document, with the addition of the bolded and italicized text.

F.4.2 Distinguishing between Emergencies and AOCs

The U.S. regulatory framework requires operators to establish procedures that govern the response to emergencies. Emergencies are defined for liquids pipelines in 49 C.F.R. pt. 195.402(e)(2), and gas pipelines in 49 C.F.R. pt. 192.605, and are summarized below.

For liquids pipelines:

- fire or explosion occurring near or directly involving a pipeline facility;
- accidental release of hazardous liquid or carbon dioxide from a pipeline facility;
- operational failure causing a hazardous condition; and
- natural disaster affecting pipeline facilities.

For gas pipelines:

- gas detected inside or near a building;
- fire located near or directly involving a pipeline facility;
- explosion occurring near or directly involving a pipeline facility; and
- natural disaster.

Emergency conditions are different than AOCs and AOs. Emergency conditions involve significant consequences that cannot be easily addressed or resolved. Investigation after an AOC or an AO is identified may lead to the discovery of an emergency condition, but once identified, the response to the emergency must follow an established emergency procedure.

Conditions that meet the threshold to be deemed an emergency should not be included in an AOC list.

F.4.3 Distinguishing between Abnormal Operations (AO) and AOCs

The U.S. regulatory framework distinguishes between an ‘abnormal operating condition’ (AOC) and an ‘abnormal operation’ (AO). AOs are a sub-set of procedures that each operator is mandated to have in place by 49 C.F.R. pt. 195.402(d)(1) for liquids pipelines and 49 C.F.R. pt. 192.605(c)(1) for gas pipelines.

AO procedures describe how an operator will respond to, investigate, and correct the cause of the following events to provide safety when operating design limits have been exceeded:

- unintended closure of valves or shutdowns;
- increase or decrease in pressure or flow rate outside normal operating limits;
- loss of communications;
- operation of any safety device; or
- any other malfunction of a component, deviation from normal operation, or personnel error which could cause a hazard to persons or property.

The key distinction that should be made when interpreting between an AOC and an AO is related to the final bullet point listed above. An AOC is a *condition that may indicate* a malfunction of a component or deviation from normal operations; whereas an AO would *require* a malfunction of a component or a deviation from normal operation to have occurred before it can be realized. Put another way, an AOC is an observation that something may be wrong and further investigation is warranted; whereas an AO occurs when something has gone wrong, and an established procedure must be followed to mitigate the consequence and prevent a potential emergency. Investigating an AOC may lead to the discovery of an AO.

Both AOCs and AOs are designed to prepare staff to recognize and react to abnormal situations, but they are distinguished by the degree of evidence that is available to the observer, and the level of procedural control each operator must establish to guide the response.

Conditions that meet the threshold to be deemed an AO should not be included in an AOC list.

F.4.4 Distinguishing between Safety Related Conditions (SRC) and AOCs

The U.S. regulatory framework has established a series of safety related conditions (SRCs) that must be reported to the Office of Pipeline Safety (OPS). SRCs are listed in 49 C.F.R pt. 195.55(a) for liquids pipelines and 49 C.F.R. pt. 191.23 for gas pipelines.

SRCs are related to reporting and overlap exists with AOs and emergency conditions. However, all SRCs involve the identification of an actual malfunction of a component or an actual deviation from normal operations that preclude them from meeting the definition of an AOC.

Conditions that meet the definition of an SRC should not be included in an AOC list.

F.4.5 Distinguishing between Generic AOCs and Task Specific AOCs

Task specific AOCs should be directly associated with the performance of the covered task. This association will serve to focus AOC training and evaluation activities for the task on the knowledge and skills specific to the standard in question.

General AOCs are different than task specific AOCs. General AOCs are conditions that are not directly associated with the performance of one or more covered tasks, but it is reasonable to expect qualified individuals to recognize and react appropriately should the condition be encountered during the regular course of job performance. General AOCs should meet the U.S. regulatory definition of an AOC provided in Section 3. General AOCs should be included as part of the training and evaluation process for all individuals performing covered work, but they should not be listed on individual task standards.

F.4.6 Distinguishing between Task Steps and AOCs

Conditions observed as a result of performing a task step that specifically instructs an individual to identify the condition, should not be included in the Task Standard AOC list. When this occurs, the task step explanation should be written to provide the individual with sufficient direction to react appropriately.

For example, *Task 15.1 – Perform Visual Inspection of Surface Conditions of Right-of-way*, includes a task step directing the individual to ‘*perform the visual inspection/patrol of the right-of-way.*’ If in the course of doing so, the individual identifies conditions such as stained soil, dead vegetation, or pipeline damage, the task explanation requires them to make proper notification. Since the purpose of the task step is to identify conditions, the conditions should not be listed in the AOC section of the standard.

F.4.7 Distinguishing between Failure to Correctly Perform Tasks and AOCs

Operators are required to qualify individuals to correctly perform covered tasks. Failure by an individual to properly perform a covered task is a qualification issue. Potential modes of task performance failure should be addressed as part of the qualification process and should not be listed in the AOC section of the standard.

F.5 Identifying Task Specific AOCs

Figure F.1 depicts the recommended process to identify task specific AOCs. Table F.1 provides guidance on the decisions and actions listed in the process as they relate to the regulatory interpretation provided in this annex.

Figure F.1 – Task Specific AOC Identification Process

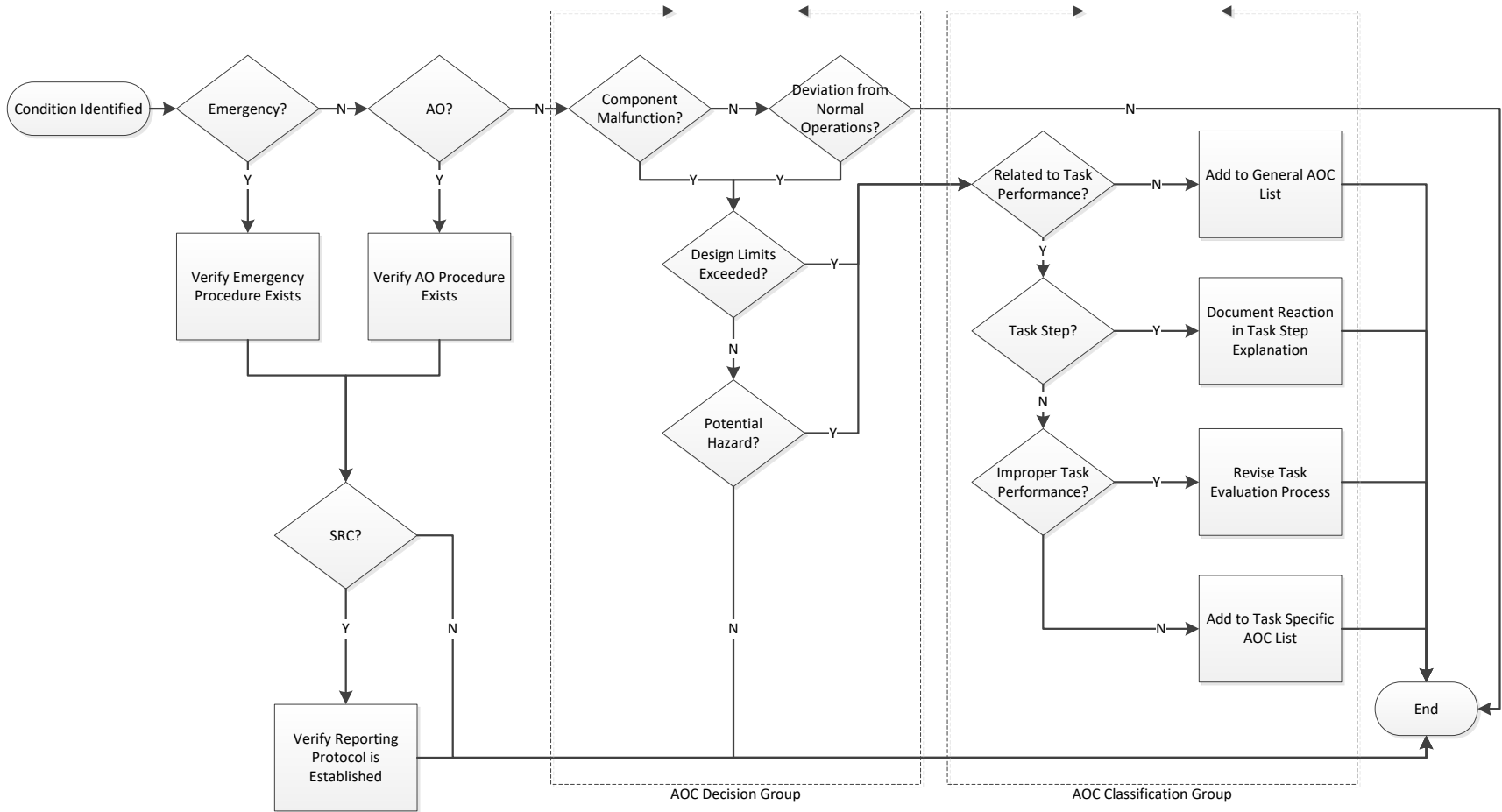


Table F.1 – Task Specific AOC Identification Process Description

Step	Explanation	
Condition Identified	The process begins with the identification of a ‘pipeline condition’ as defined in section 3 of this annex.	
Emergency Decision <ul style="list-style-type: none"> • If yes, then ‘Verify Emergency Procedure Exists’ and proceed to SRC decision • If no, then proceed to AO decision 	If the condition meets the definition of an emergency, then it is not an abnormal operation (AO) or an abnormal operating condition (AOC). Operators should verify an emergency procedure exists to guide response to the condition.	
AO Decision <ul style="list-style-type: none"> • If yes, then ‘Verify AO Procedure Exists’ and proceed to SRC decision • If no, then proceed to AOC Decision Group 	If the condition meets the definition of an AO, then it is not an AOC. Operators should verify an AO procedure exists to guide response to the condition.	
SRC Decision <ul style="list-style-type: none"> • If yes, then ‘Verify Reporting Protocol is Established’ • If no, then further action is not required. 	Safety Related Conditions (SRC) must be reported to the Office of Pipeline Safety (SRC). Operators should verify a process exists to facilitate timely reporting when required.	
AOC Decision Group	Component Malfunction or Deviation from Normal Operations Decision <ul style="list-style-type: none"> • If yes to either question, then proceed to ‘Design Limits Exceeded’ decision • If no, then further action is not required 	For the condition to be deemed an AOC, it must indicate a malfunction of a component or a deviation from normal operations may have occurred.
	Design Limits Exceeded or Potential Hazard Decision <ul style="list-style-type: none"> • If yes, then proceed to AOC Classification Group • If no, then further action is not required 	For the condition to be deemed an AOC, it must also indicate that design limits may have been exceeded, or that it may result in a hazard(s) to persons, property, or the environment.

AOC Classification Group	<p>Related to Task Performance Decision</p> <ul style="list-style-type: none"> • If yes, proceed to 'Task Step' decision • If no, then add to 'General AOC List' 	<p>AOCs that are not directly related to work being performed should be included on a list of general AOCs. General AOCs should not be listed on individual task standards.</p>
	<p>Task Step Decision</p> <ul style="list-style-type: none"> • If yes, then 'Document Reaction in Task Step Explanation' • If no, then proceed to 'Improper Task Performance' decision 	<p>Conditions observed as a direct result of performing a task step should not be considered an AOC. The task step explanation should document the appropriate reaction.</p>
	<p>Improper Task Performance Decision</p> <ul style="list-style-type: none"> • If yes, then 'Revise Task Evaluation Process' • If no, then 'Add to Task Specific AOC List' 	<p>Failure to properly perform a covered task is a qualification issue and not an AOC.</p> <p><i>AOCs that remain after this step should be considered a task specific AOC and they should be included in AOC table of the appropriate task standard(s).</i></p>
	<p>End</p>	<p>The process concludes after the identified condition has been appropriately classified.</p>