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# API RP 1174 Gap Analysis Tool Guide

**Version 1.0**

The American Petroleum Institute published API RP 1174: Onshore Hazardous Liquid Pipeline Emergency Preparedness and Response in December of 2015 to provide pipeline operators with a framework to create adaptive emergency planning and response processes, which includes the identification and mitigation of risks. This recommended practice (RP) establishes the base requirements of pipeline emergency response program management systems while giving operators the flexibility to implement the various elements in ways that are appropriate to their specific circumstances.

Pipeline operators already use a variety of management systems, processes and procedures (formal and informal) to satisfy both regulations and internal expectations for emergency management. Many of which already address various requirements of RP 1174. Pipeline operators may want to take the steps necessary to verify that their existing management systems explicitly conform to some or all of the requirements of RP 1174, and to modify them as needed. This guide explains an assessment tool which can be used by pipeline operators to help them review their current management systems and programs against the requirements of API RP 1174, to identify any gaps, and to develop plans to address each gap.

Operators can start by performing a “gap analysis” to see how their existing systems might already satisfy some of the requirements of RP 1174 and to identify any gaps. They will then develop and implement action plans to address each gap as they see fit. The implementation spreadsheet will assist them in that endeavor.

This Implementation spreadsheet summarizes the requirements of the RP, but it does not contain them verbatim. It is sufficiently detailed to assist the operator in implementation of the RP. The implementation spreadsheet will help the pipeline operator:

* Identify the key personnel to be involved in the development of an emergency management system (EMS).
* Establish the roles and responsibilities of the key personnel.
* Link and compare the pipeline operator’s existing management systems to the requirements of API RP 1174.
* Identify any gaps between the pipeline operator’s existing management systems and API RP 1174.
* Identify and prioritize actions to address each gap.
* Identify owners for each activity.
* Track actions through implementation.

The industry has developed this guide and its associated spreadsheet to assist pipeline operators with the development and implementation of emergency management systems that conform to the RP. All of the tools are available online at [www.pipelinesms.org.](http://www.pipelinesms.org/)

## Disclaimer

This guide and the associated spreadsheet, as well as the other materials and website, are not a replacement for, nor do they provide any interpretation of, API RP 1174. The examples given in this guide and the spreadsheet are just that – examples, which might be appropriate for one company in one circumstance, but not for others. These materials are not mandatory, and impose no additional requirements upon pipeline operators. They are intended to assist companies to get started on the journey towards a fully functional and effective emergency response management system, while realizing that each company will take their own path. Each company should develop an emergency response management system that is suited to their operations and company structure, and then continue to modify that emergency response management system as conditions change.

## Overview

The Gap Analysis Spreadsheet has rows which correspond to the major requirements found in RP 1174, and columns that can be used to document current programs, identify potential gaps, and develop action plans for each of those requirements.

The persons using the Implementation Spreadsheet should read the RP beforehand to gain an understanding of the actual requirements and how they are inter-related. Even then, the Implementation Spreadsheet is best used with a copy of API RP 1174 in hand. The spreadsheet summarizes the various requirements within the RP, but does not quote the requirements verbatim. To connect the spreadsheet summary to the actual language of the RP, each question in the spreadsheet identifies the corresponding RP element or sub-element. The actual language of the RP will put the spreadsheet question into the larger context, and help the user to make appropriate decisions about the existence of any gaps as well as to identify any necessary actions to address them.

**Gap Analysis Tab**

The Gap Analysis tab contains a summary list of the RP requirements, as well as several columns that allow the user to identify existing programs relevant to those requirements, identify and describe any gaps, identify and prioritize actions to close each gap, and assign responsibility and due dates for those actions and track them to completion.

**API RP 1174 Requirement Column**

The Requirement column in the Gap Analysis tab contains the requirements in API RP 1174. It is a guide for the organization to compare its current programs against the basic requirements in the RP.

**API RP 1174 Criteria Column**

The Criteria column in the Gap Analysis tab contains a list of Criteria that if met will satisfy the requirement in API RP 1174. It breaks the requirement down into manageable pieces, enabling the operator to develop, prioritize and implement an action plan for further improvements.

**Evidence (examples included) Column**

Pipeline operators frequently have many different systems that address a variety of needs. Some of the existing systems may not be identified as ‘emergency management’, and instead may be part of other work processes such as budgeting, human resources, public relations, operations, maintenance or engineering. Some of these may be formal with written documentation, and others may be informal with little written documentation. All of these systems may be relevant to an EMS, and may need to be evaluated during the gap analysis process. The Implementation Tool has listed, for each question, some examples of documents and records that may have the requested information, process or plan.

The Evidence column contains information to help the user identify evidence that would satisfy the criteria and meet the API RP 1174 Requirement.

The Evidence column is where the user can document the processes, systems and/or procedures that are currently in use which fully or partially address the Requirement.

The examples given in the Evidence column are not the only way to demonstrate conformance to the RP. The person answering the question for the pipeline organization should evaluate all potential information sources and list the relevant systems in the Evidence column of the spreadsheet. If there are multiple processes, systems and procedures, it is recommended that the user document which process, system or procedure addresses which part of the requirement.

**Gap Column**

Once the current systems are identified in the Evidence column, the user can then compare these systems to the RP’s requirements and internal expectations, and determine if a gap exists. Gaps exist when the current systems do not address the full requirements of the RP, or do not meet internal expectations beyond the requirements of the RP. The user should refer to the text of the RP to determine if their existing systems address all of the RP’s requirements.

The RP discusses some aspects of the emergency management system which are not requirements. These are contained in the notes or contain words such as ‘may’ or ‘should’ (instead of “must” or “shall”). These things may be good ideas for a pipeline operator’s EMS, and the operator may decide that they should be done. The spreadsheet allows these things to also be documented as “gaps” even though their implementation is not required to be in conformance to the RP. These are the operator’s internal expectations. For the purposes of the API 1174 gap analysis only ‘required’ and ‘should’ requirements have been listed. Operators may decide to address the ‘may’ or ‘optional’ requirements outside of this analysis.

Based on the comparison of the requirements in the RP and internal expectations versus the information placed in the Evidence column, the user will be able to document a ‘Yes’, there is a gap, or ‘No’, there is not a gap, answer. These answers are documented in the Gap column. Note that management systems require documentation of how the required activities are to be done. The lack of a documented process would be a “gap”, even if the pipeline operator may simply need to put into writing the informal process that is already in use in order to close the gap.

**Description of Gap or Gaps**

This column is used to document the identified gap or gaps. The gap should be specific. Vaguely documented gaps can result in actions that will not completely close the gap.

**Description of Potential Actions to Close Gap Column**

If the Gap column has a ‘Yes’ answer, the Description of Potential Action(s) to Close Gap column is where the specific action steps will be documented that when completed will be able to change the answer to a ‘No’. The actions also may be items to improve existing systems beyond the Recommended Practice requirements.

There may be several potential solutions for each gap, and users are encouraged to identify as many potential solutions as possible. There are some good reasons for this ‘brainstorming’ approach. First, you may discover you can solve multiple gaps with a single solution. Second, different potential solutions may need different resourcing or amount of resourcing. If the resources to resolve the issue are not readily available, a different solution may need to be implemented with the available resources. Third, Management or Top Management may simply prefer one solution to the others and they have the final decision making responsibilities. For some pipeline organizations, the list of potential actions will be long. A long list is not a problem but it should be managed wisely for the organization to make steady progress.

API RP 1174 is an emergency management system that includes continuous improvement.

Action items should be completed in priority order, with the available resources. Time, personnel,

and budget should be considered when building the action plan. All actions do not need to be completed at once but can be spread out over time.

**Required (R), Should (S) Column**

This column indicates whether the criteria is required in API RP 1174 (a “shall” statement) or whether it is indicated as a ‘should’. This can assist the operator in determining the priority of items they want to action.

**Priority Column**

Prioritization of the selected actions is done after all the potential actions have been evaluated. Not all actions will have the same level of priority. Some actions must be completed before others can begin. Other actions might be ‘nice to have’, but not necessary for implementation of the EMS. The assigned priorities should consider:

* the action items that must be completed before others can be done
* the actions that are necessary to initialize the continuous improvement cycle
* the actions that are necessary to conform to the requirements of the RP
* the availability of resources.

The Priority column is used to document the organization’s decisions about the relative priority of each action item. The Implementation spreadsheet allows each action to be given a priority ranking (high, medium, or low). The criterion of what is high, medium, or low is for the tool user to define.

Some organizations use a common prioritization scheme across all systems. The Implementation Tool user may set up a different prioritization scheme than the one suggested here.

**Owner Column**

For each action, an owner is to be identified. The Owner will be accountable for completing the action by the identified due date. The Owner should be a person even though the action may require a team. After the actions have been assigned, the new workload for the action owners should be evaluated to ensure they can fulfill their normal job responsibilities while making timely progress on the assigned action items.

**Due Date Column**

For each action, a completion or due date should be assigned. The due date should be realistic taking into consideration the amount of work involved with the action, the amount of day-to-day work the Owner is managing, and the need for other actions to be completed prior to the assigned action. It may be appropriate to assign and reassign actions and due dates through several iterations of this process during the implementation program

**Status Column**

The Status column is to document the status of the action for completion. It is a good practice to not identify an action as complete until it has been verified. This can be done through audits or assessments.

**Monitoring Implementation Progress**

The gap analysis tool includes two calculations to help the operator assess where they are overall in meeting the requirements of the RP. The 1st time through the gap analysis will provide the operator with a baseline from which they can identify, prioritize and plan which improvements they want to action.

*Percentage of 'Required' implemented* automatically calculates how many of the ‘required’ criteria in the API RP 1174 have been met.

*Percentage of all requirements (“shall” and “should” statements) implemented* calculates the total number of criteria that have been met.

As improvements are implemented, the percentages will increase.

**Next Steps**

Once the Action Plan is developed, the pipeline organization can begin the process of addressing the actions and implementing the emergency management system. During the implementation process, operators are encouraged to continue to think of ways to improve their systems, and to modify the implementation spreadsheet accordingly. These types of ongoing modifications are entirely consistent with the continuous improvement process.