

Recommended Practice for Onshore Hazardous Liquid Pipeline Emergency Preparedness and Response

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0 Introduction

This Recommended Practice (RP) has been developed for onshore hazardous liquid pipeline operators (hereinafter “the operator”), with the intent to align industry, government, and emergency response organizations’ expectations, practices, and competencies and to promote safe, timely, and effective response to incidents. It defines the fundamental emergency response requirements for those claiming conformity to the requirements of this document.

While this document may include some elements of other management systems (such as safety, environmental, financial, or risk management), it does not include all requirements specific to those systems. This document may be used either in conjunction with or independent of other industry-specified documents.

For an operator to function effectively, it must determine and manage numerous linked activities. An activity that transforms inputs into outputs is one way to define a process. This document promotes a process approach for the application of specific clauses when developing, implementing, and improving the effectiveness of pipeline emergency response programs. This approach provides for uninterrupted control over the stated requirements, as well as facilitating the overlap of processes, including the following:

- a) demonstrating management commitment,
- b) structuring risk management decisions,
- c) increasing confidence in risk controls,
- d) providing a platform for sharing knowledge and lessons learned, and
- e) promoting a safety-oriented culture.

Process activities include determination of needs throughout pipeline operations, provision of resources, identification of the proper sequence or order of a series of activities, monitoring and measuring the effectiveness of the activities performed, and applying changes or corrections to those activities as needed.

Goal of the Document

The goal of this document is to provide operators with an enhanced framework to enable continual improvement of pipeline emergency response. The framework builds on an operator’s existing pipeline-related activities and draws upon industry experiences, lessons learned, and existing standards. The framework is comprehensive in its intent to define the managerial elements for safe, timely, and effective emergency response.

NOTE “Pipeline” is defined in Terms and Definitions (see 3.1.16) to address, more broadly, pipeline systems.

Figure 1 illustrates this RP’s four strategic areas of focus (communication, training, exercise, and learning) and the associated goals of each.

API 1174 Emphasis

This RP emphasizes:

- increased proactivity through training and planned exercises,
- improved communications and clarified response management responsibilities throughout the operator’s organization (including contractor support), and
- provision of safe, timely, and effective emergency response by regularly evaluating operations to identify and address risks



Figure 0.1—Strategies and Goals

These factors make response management activities more effective, comprehensive, and integrated.

Standard Management System Principles

This RP is based on the following standard management system principles.

- Commitment, leadership, and oversight from top management are essential to the overall success of an emergency response process. Management commitment ensures that the elements set forth in this RP are established with clear accountability for implementation and with a clear connection from objectives to day-to-day activities.
- A safety-oriented culture is essential to enable the effective implementation and continual improvement of emergency response processes and procedures.
- Management of risk is an integral part of the design, construction, maintenance, and operation of a pipeline.
- Pipelines are designed, constructed, operated, and maintained in a manner that complies with federal, state, and local regulations and conforms to applicable industry codes and consensus standards with the goal of reducing risk, preventing incidents, and minimizing the occurrence of abnormal operations.
- Application of a comprehensive and systematic approach to pipeline emergency response creates an organization that can mitigate incidents and promotes a learning environment for continual improvement.
- Protection of life and property and minimization of adverse environmental consequences are essential.

- Periodic audits of the implemented elements of the document are essential to ensure effective execution of procedures, to identify improvement opportunities, and to improve performance.
- Support for and encouragement of employees to report risks, hazards, and safety incidents by providing a feedback system enables the operator to learn from experience.

The operator may consider using the Plan–Do–Check–Act (PDCA) cycle (see Annex A).

Recommended Practice for Onshore Hazardous Liquid Pipeline Emergency Preparedness and Response

1 Scope

This Recommended Practice (RP) provides to operators of onshore hazardous liquid pipelines a framework that promotes the continual improvement of emergency planning and response processes, including identification and mitigation of associated risks and implementation of changes from lessons learned. This RP assists the operator in preparing for a safe, timely, and effective response to a pipeline emergency.

This RP applies to assets under the jurisdiction of the U.S. Department of Transportation (DOT), specifically U.S. Title 49 *Code of Federal Regulations (CFR)* Parts 194 and 195. Operators of non-DOT jurisdictional pipelines or tank assets could make voluntary use of this document.

This RP is not intended to apply to the following:

- a) post-response environmental remediation,
- b) exploration and production operations,
- c) offshore hazardous liquid pipeline operations,
- d) facility piping, or
- e) natural gas transmission and distribution pipeline operations.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document applies (including any addenda/errata).

API Recommended Practice 1162, *Public Awareness Programs for Pipeline Operators*

FEMA *National Incident Management System Document* (NIMS Document) ¹

ISO 9000:2005 ², *Quality management systems—Fundamentals and vocabulary*

USCG/U.S. EPA *Incident Management Handbooks* ³

USCG Title 33 *CFR* Part 154, *Facilities Transferring Oil or Hazardous Material in Bulk*

USCG Title 33 *CFR* Part 155, *Oil or Hazardous Material Pollution Prevention Regulations for Vessels*

U.S. DOT Title 49 *CFR* Part 194 ⁴, *Response Plans for Onshore Oil Pipelines*

U.S. DOT Title 49 *CFR* Part 195, *Transportation of Hazardous Liquids by Pipeline*

¹ FEMA, a division of U.S. Department of Homeland Security, Washington, DC 20528, www.fema.gov

² International Organization for Standardization, 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland, www.iso.org.

³ U.S. Coast Guard Marine Safety Center (part of DOT), 2100 Second Street, S.W., Washington, DC 20593, www.uscg.mil.

⁴ U.S. Department of Transportation, 1200 New Jersey Ave, SE, Washington, DC 20590, www.dot.gov.

U.S. EPA Title 40 *CFR* Chapter I Subchapter J Part 300⁵, *National Oil and Hazardous Substances Pollution Contingency Plan. (National Contingency Plan)*

3 Terms, Definitions, Acronyms, and Abbreviations

3.1 Terms and Definitions

For the purposes of this RP, the following terms and definitions apply.

3.1.1

activation

Act or process of mobilizing personnel, equipment, or a combination thereof to engage in a response operation.

3.1.2

compliance

Act or process of satisfying the legal and other applicable requirements of a regulation or regulatory body.

3.1.3

correction

Action to eliminate a detected nonconformity.

3.1.4

corrective action

Action to eliminate the cause of a detected nonconformity or undesirable situation.

3.1.5

document (noun)

Written statement of requirements or record of actions taken and completion of requirements.

3.1.6

effectiveness

Extent to which planned activities are completed and planned results achieved

NOTE Adapted from ISO 9000:2005, 3.2.14.

3.1.7

emergency

Event that requires immediate response to mitigate a problem or conduct subsequent investigations, as defined in regulation or as defined by the operator.

NOTE An emergency can involve injuries, significant property damage, released product, a fire or an explosion or a natural disaster. Emergencies can be accompanied by media attention, can impact third parties, or can require notification of local, state, tribal, or federal regulatory agencies.

3.1.8

job aid

Guidance that assists a worker in performing a role or task and provides quick-reference information rather than in-depth training.

3.1.9

legal requirement

Obligation imposed on an operator, including those that are statutory or regulatory.

⁵ U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, Washington, DC 20460, www.epa.gov

3.1.10**management**

Person or group of people, as defined by the operator, who directs and controls all or part of a pipeline facility, location, department, or other function; has the fiscal responsibility for the organization; and is accountable for ensuring compliance with legal and other applicable requirements.

NOTE For some operators, top management (see ISO 9000:2005) and management are the same.

3.1.11**management of change****MOC**

Process used by operators to manage changes to their pipeline facilities, processes, organizations, and documents to ensure that changes are identified, planned, controlled, and communicated.

3.1.12**management system**

Framework of elements that an organization uses to direct and control work to achieve its objectives in an intentional and continual manner.

3.1.13**operator**

Person who owns or operates pipeline facilities.

3.1.14**oil spill removal organization****OSRO**

Company that specializes in cleaning up oil spills and is classified in accordance with the United States Coast Guard OSRO Classification Guidelines and 33 *CFR* 154 and 155.

NOTE 1 Adapted from the National Pollution Funds Center Glossary on the United States Coast Guard website.

NOTE 2 Such companies often serve as contractors or subcontractors for spill response efforts.

3.1.15**periodic**

Period of time as defined by regulation or, in the absence of regulation, by the operator.

3.1.16**pipeline**

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.

3.1.17**pipeline monitoring system**

Methods used by the operator to monitor the condition of its pipeline system.

NOTE Such methods may include supervisory control and data acquisition (SCADA), volume balance, etc.

3.1.18**procedure**

Specified way to conduct an activity or process.

3.1.19**public safety answering point****PSAP**

Entity responsible for receiving 9-1-1 calls and processing those calls according to a specific operational policy.

3.1.20**record** (noun)

Document providing evidence of activities performed or results achieved.

3.1.21**risk**

Situation or circumstance that has both a likelihood of occurring and the potential for negative consequence.

3.1.22**Unified Command****UC**

Application of Incident Command System (ICS) used when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions.

NOTE Agencies work together through the designated members of the Unified Command to establish their designated Incident Commanders at a single incident command post and to establish a common set of objectives and strategies and a single Incident Action Plan. This is accomplished without losing or abdicating authority, responsibility, or accountability.

3.2 Acronyms and Abbreviations

For the purposes of this standard, the following acronyms and abbreviations apply.

ACP	Area Contingency Plan
API	American Petroleum Institute
CFR	Code of Federal Regulations
DOT	Department of Transportation
EPA	Environmental Protection Agency
ERAP	Emergency Response Action Plan
FEMA	Federal Emergency Management Agency
GPS	global positioning system
HAZWOPER	Hazardous Waste Operations and Emergency Response
HASP	Health and Safety Plan
HCA	high consequence area
HVL	highly volatile liquids
HSEEP	Homeland Security Exercise and Evaluation Program
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System
IMT	incident management team
ISO	International Organization for Standardization
IT	information technology
LEPC	Local Emergency Planning Committees

LOFR	Liaison Officer
MOC	management of change
NCP	National Contingency Plan
NFPA	National Fire Protection Association
NIMS	National Incident Management System
OSRO	oil spill removal organization
PDCA	Plan–Do–Check–Act
PIO	Public Information Officer
PPE	personal protective equipment
PREP	National Preparedness for Response Exercise Program
PSAP	public safety answering point
SCADA	supervisory control and data acquisition
SDS	safety data sheet
SIT	Situation Unit Leader
UC	Unified Command
USCG	United States Coast Guard
WCD	worst-case discharge

4 Emergency Management System

4.1 General

The operator shall establish an emergency management system. The emergency management system should address legal requirements, regulations, operator lessons learned, best practices, applicable consensus standards, and recommendations of this document.

4.2 Management Commitment

Management shall demonstrate commitment to the establishment of an emergency management system. To achieve the operator's emergency management system objectives, management should demonstrate its support through company policy, management participation, and allocation of resources and funding.

NOTE Funding and resource requirements for development and implementation of an emergency management system vary according to the system's objectives, design, and scope. Management support affects acceptance of the emergency management system and the overall effectiveness and success of the program.

4.3 Management System Recommendations

4.3.1 General

The emergency response management system should include the following:

- statements of the system's policies and objectives;
- documented procedures established for the emergency response activities as required by regulation, this RP, or the operator;
- documents, records, and job aids to ensure the safe, timely, and effective planning, operation, and control of emergency response processes, and conformance with specified requirements;

- d) identification of legal and other applicable emergency response requirements or standards that the operator uses for compliance;
- e) processes intended to ensure continuity and promote system improvement; and
- f) measurable goals and objectives.

4.3.2 Procedures

The operator should ensure that all procedures referenced within this system are established, documented, implemented, evaluated, maintained, and periodically reviewed.

4.3.3 Communication of Management System

The operator should communicate the emergency management system to appropriate personnel within various departments of an operator's organization. These departments may include:

- emergency response;
- risk management;
- health, safety, environmental, and security;
- insurance, finance, and procurement;
- operations;
- communications and public relations.

4.3.4 Control of Documents

The operator should maintain a documented procedure for the identification, distribution, and control of documents that are required for its emergency management system and by this RP. The procedure should specify responsibilities for document approval and re-approval, and should identify the controls needed to ensure that the required emergency response documents, including revisions, translations, and updates:

- a) are reviewed and approved for adequacy prior to issue and use;
- b) identify changes and revision status; and
- c) remain legible and available.

The operator should remove obsolete documents from all points of issue or use or otherwise identify documents to prevent unintended use if they are retained for any purpose.

4.3.5 Control of Records

The operator shall verify the records requirements of all applicable laws and regulations (federal, state, local, or tribal) and develop a documented procedure to identify the controls and responsibilities needed for the identification, collection, storage, protection, retrieval, retention time, and disposition of records. The operator shall establish, control, and retain records as required by law, regulations, internal company policy, and this RP.

4.4 Management of Change

4.4.1 General

The operator shall maintain a documented procedure for management of change (MOC). For each MOC, the operator shall identify any required approvals prior to the introduction of such changes.

This procedure shall consider permanent or temporary changes. The process shall incorporate planning for the effects of the change for each of these situations.

NOTE MOC is a formalized approach used to introduce and approve proposed modifications and to transition organizations, teams, and individuals to a desired future state, environment, procedure, or process.

4.4.2 Types of Change

The types of changes that an MOC procedure addresses shall include the following:

- technology,
- procedures,
- personnel (internal and contractor),
- organizational roles and responsibilities,
- training.

4.4.3 Elements of MOC Procedure

An MOC procedure should include the following:

- reason for change,
- authority for approving changes,
- analysis of implications,
- documentation of change process,
- communication of change to affected parts of the organization,
- time limitations,
- qualification and training of personnel affected by the change (including contractors).

NOTE Application of MOC may trigger use of risk assessment to evaluate the impact of change on overall risk.

5 Preparedness

5.1 General

The operator shall have a documented emergency preparedness program as part of an emergency management system. The operator shall account for the preparedness requirements of federal, state, local, and tribal agencies. The operator's emergency preparedness program should incorporate the recommendations of this RP.