



# PIPELINE PLAN IT

Bringing RP 1174 Onshore Hazardous  
Liquid Pipeline Emergency Preparedness  
and Response to Life in Your Organization

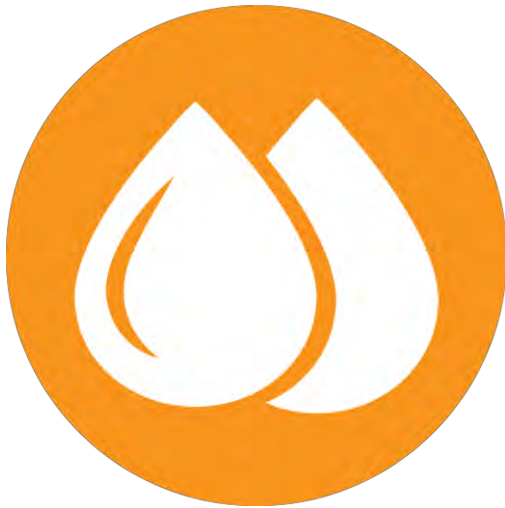


# Recent PHMSA Rules Created



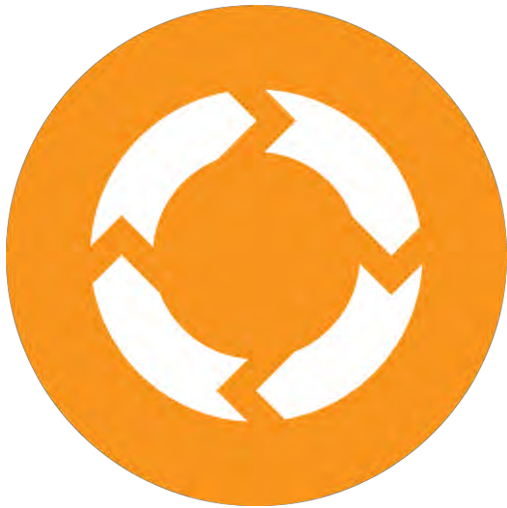
- Pipeline & Hazardous Materials Safety Administration (PHMSA) has created rules governing our industry
  - Calls for increased pipeline safety
  - New reporting requirements
  - Additional inspections
- RP 1174 represents API/AOPL effort to proactively align members with industry best practices

# Need for Industry Improvement Concerning Spills



- Increase accountability
- Make sure plan is all-encompassing
- Need awareness of campaign
- Need consistent & precise execution of programs & precise execution of programs

# Pipeline Plan It Theme



- API and AOPL are launching a public service announcement-style campaign called *Pipeline Plan It*
- Informative content to help operators stay up-to-speed on the latest emergency response strategies will be disseminated through videos, white papers, webinars, articles and more.
- **We're creating a movement!**



# What is RP 1174?



- An initiative to define the managerial elements for safe, timely & effective onshore hazardous liquid pipeline emergency response
- An enhanced framework to enable continual improvement of response
- Processes informed by shared industry experiences, lessons learned & existing standards

# How Can You Find and Use RP 1174?



- RP 1174 can be purchased here:  
[https://www.techstreet.com/api/standards/a-pi-rp-1174?product\\_id=1907691](https://www.techstreet.com/api/standards/a-pi-rp-1174?product_id=1907691)
- Access supporting materials at  
<http://www.pipelinesms.org/index.php/more-systems/emergency-response/>
- Commit to implementation here:  
<http://www.pipelinesms.org/wp-content/uploads/2017/10/RP-1174-Commitment-Letter-for-Implementation.pdf>

# RP 1174 STEP BY STEP

Onshore Hazardous Liquid Pipeline  
Emergency Preparedness:  
An RP 1174 Walk-Through For Your Team



# Goals of This Program for Operators



- Define the managerial elements for safe, timely & effective pipeline emergency response
- Provide you with an enhanced framework to enable continual improvement of response
- Share industry experiences, lessons learned & existing standards
- Set the stage for protocols & training for adoption



# Overview: Emergency Management System

“*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 & recommendations...*”

# Management Commitment



- To achieve the operator's emergency management system objectives, management should demonstrate its support through:
  - Company policy
  - Management participation
  - Allocation of resources & funding



# Management System Recommendations



- The emergency response management system should include the following:
  - **Statements of the system's** policies & objectives
  - Documented procedures established for emergency response activities
  - Documents, records & job aids to ensure the safe, timely & effective planning, operation & control of emergency response processes & conformance with specified requirements

# Management System Recommendations



- Identification of legal & other applicable emergency response requirements or standards that the operator uses for compliance
- Processes intended to ensure continuity & promote system improvement
- Measurable goals & objectives

# Communication of Management System



- You should:
  - Ensure that all procedures are established, documented, implemented, evaluated, maintained & periodically reviewed
  - Communicate the emergency management system to appropriate personnel within various departments of your organization
- These departments may include:
  - Emergency response
  - Risk management
  - Health, safety, environmental & security
  - Insurance, finance & procurement
  - Operations
  - Communications & public relations

# Control of Documents & Records



- Maintain a documented procedure for identification, distribution & control of documents required for emergency management.
- The procedure should specify responsibilities for document approval & re-approval & should identify the controls needed to ensure that the required emergency response documents, including revisions, translations & updates
  - a) Are reviewed & approved for adequacy prior to issue & use
  - b) Identify changes & revision status
  - c) Remain legible & available

# Management of Change (MOC)



- Maintain a procedure for management of change (MOC). For each MOC, identify any required approvals prior to introduction of changes
- Consider permanent or temporary changes – Incorporate planning for the effects of the change
- The types of changes that an MOC procedure addresses shall include:
  - Technology
  - Procedures
  - Personnel (internal & contractor)
  - Organizational roles & responsibilities
  - Training

# 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 organization
  - Time limitations
  - Qualification & training of personnel affected by change (including contractors)
- Application of MOC may trigger use of risk assessment to evaluate the impact of change on overall risk



# Overview: Preparedness



- Document your emergency preparedness program as part of an emergency management system
- Account for the preparedness requirements of federal, state, local & tribal agencies
- Ensure the availability of resources essential to establishing, implementing, maintaining & improving the emergency management system
  - Resources may include emergency response equipment, human resources, specialized skills, infrastructure, technology & finances

# Response Plans



- Develop Response Plans to address the response to a release or the substantial threat of a release of hazardous liquid
- Establish policies & procedures in Response Plans that describe how to activate internal & external response resources
- Policies or procedures should include definition of emergency, internal & external notification procedures, response information to activate initial resources & escalation of resources as needed

# Safety: Your Primary Goal During any Incident Response



Develop a separate personnel safety plan & a separate public safety plan to address:

- a) Health & Safety Plan (HASP)
- b) Hazard & risk assessment
- c) Equipment needs
- d) Emergency notifications
- e) Emergency medical service
- f) Hazardous materials handling
- g) Air monitoring
- h) Hazard zones

# Safety: Your Primary Goal During any Incident Response



- i) Decontamination
- j) Weather conditions
- k) Public protection (e.g., evacuations, shelter-in-place, etc.),
- l) Perimeter security
- m) Training verification & needs
- n) Product information (e.g., safety data sheet [SDS])
- o) PPE

# Risk-Based Planning



- Incorporate a risk-based approach for emergency response planning apply risk-based planning to identify areas that may require additional planning & resources.
- Adapt your integrity risk model to include emergency planning
- Note that the formula for determining risk is the likelihood of an event occurring is multiplied by the potential consequences of the event; Release volume may be considered as either likelihood or consequence

# Risk Formula: Likelihood & Consequences



- To determine likelihood, the operator should consider a variety of factors, which may include the following:
  - Pipeline operations
  - Depth of cover
  - Integrity data
  - Pipeline history
  - Release volume
- To determine consequence, consider a variety of factors, which may include the following:
  - Federally defined high consequence areas (HCAs) (e.g., operator-defined at risk population areas, high population areas, water intakes)

# Risk Formula: Likelihood & Consequences



- Supervisory control & data acquisition (SCADA) capabilities
- Flow path, remote valves & check valves;
- Scenic or commercial water impact;
- High commercial or industrial impact;
- Areas of historic & cultural significance;
- Areas of congregation
- Areas with oil spill removal organization (OSRO) coverage & capability gaps  
Availability of specialty equipment (e.g., high capacity pumps, frac tanks, tanker trucks)
- Political or media sensitivity

# Pipeline Facility Description (Part 1)



- Response Plan should include descriptions of all pipeline facilities & components, operations & transported commodities. Include the following information associated with pipeline facility & the associated system or systems:
  - a) Pipeline facility or system description
  - b) Equipment & pipeline facility operations description
  - c) Product information
  - d) Other considerations such as worst-case discharge volume, waterways within planning distance, wildlife habitats and more



# Discharge Planning



- Determine a WCD for each of its response zones & provide in Response Plan the methodology, including calculations, used to arrive at that volume
- State & local jurisdictions may have additional volume calculation requirements
- Identify alternative discharge scenarios using risk-based approach Considerations should include the following areas as a minimum:
  - Populated areas
  - Water crossings & nearby water bodies
  - Environmentally & economically sensitive areas
  - Areas of historic & cultural significance
  - Other operator-identified risk areas

# Response Times: Initial Emergency Response Phases

- Establish response times in accordance with regulatory expectations
- Seek ways to improve upon regulatory response times
- Although shown separately, these phases can happen simultaneously

## PHASE 1

### Discovery, Shutdown, & Notification

For a confirmed incident, the operator shall follow pipeline shutdown procedures & activate the emergency response procedures within the Response Plan. Within the first hour of a confirmed incident, the operator should make immediate notifications (see 5.2.9.2) & set up or integrate into an existing Incident Command. The operator should also assess incident potential.

## PHASE 2

### Resource Mobilization

The operator shall over respond by deploying more resources (personnel, equipment, & contractors) than initial information indicates may be required. The operator shall deploy or stage resources strategically and scale the response effort to fit the incident as data & information become available. As an example, the operator may mobilize & deploy resources prior to confirming an incident.

## PHASE 3

### Initial Response Actions

Once the operator's representatives have arrived onsite (if not already present), they shall meet with local first responders to assess the situation & integrate into Unified Command (UC). The UC will establish an Incident Action Plan (IAP).



# Notification



- Identify the roles & responsibilities of emergency responders in accordance with NIMS Incident Command System (ICS) & communicate those responsibilities to designated personnel
- Understand the roles & responsibilities of local first responder agencies under NIMS
- Establish emergency response procedures that ensure the ability to communicate promptly, respond quickly to the emergency, mitigate risks & protect people & the environment

# Notification



- Identify specific communication requirements, response team 24-hour contact details & a process for emergency notifications with contingencies for critical or unique situations
- Identify an escalation strategy for when a responder is not available or not able to be contacted. This communication process & system should be auditable & trackable

# Shutdown

“Develop specific operating procedures for immediate shutdown & isolation of a pipeline during an emergency. This procedure shall describe how to safely shut down the pipeline, what actions shall be taken to investigate the issue, detailed communication requirements & defined responsibilities. Establish a process that describes how to restart the system after a shutdown.”

# Public Protection



- Work with response agencies to make decisions related to public protection, including evacuations & shelter-in-place orders.
- Response Plan should consider conditions for recommending public protection measures
- Be prepared to provide financial or other resources to support long-term evacuations & other public protection measures

# Evacuation & Shelter-in-Place Orders



- Cooperate with local response agencies in case of evacuation or shelter-in-place order
- Consider the following for short-term & long-term evacuation:
  - Transportation
  - Security
  - Evacuee contact or communication needs
  - Populations with disabilities or access & functional needs
  - Lodging & meals
  - Medicines & health care
  - Public health

# Evacuation & Shelter-in-Place Orders



- Public health
  - Pets
  - Determination of when evacuees may safely return home
  - Process for verifying evacuees
  - Ongoing communication with evacuees
  - Communication of potential health impact information to emergency medical centers
  - On-site emergency first aid
- Local response agency has authority over evacuation & shelter-in-place orders; You may have to support & provide resources for those orders



# Tactical Response Scenarios



- Response tactics should cover pipeline facilities, operations & environment.
- Utilize available pre-plans to assist in the development of the tactical response objectives, including ACPs, geographical response plans & tactical response plans.
- Scenarios that can require tactical response include product releases
  - a) In a populated area
  - b) To water
  - c) Into a wetland
  - d) On land
  - e) Into subsurface
  - f) On tribal lands
  - g) In parks or recreational areas
  - h) In environmentally & economically sensitive areas
  - i) In areas of historic & cultural significance

# Resource Management: Assessment



- Establish criteria or incident classifications to assess level of resources required to respond to emergencies
- Consider the nature of the incident, including the following:
  - Hazard (e.g., product release, fire or explosion)
  - Volume & area affected
  - Location
  - Type of product
  - Weather conditions
  - Community impacts
  - Environmentally & economically sensitive areas
  - Areas of historic & cultural significance

# Resources



- The operator shall identify specific resources that can be activated quickly to over respond to the emergency. The response team should include the following:
  - Operator personnel & operator-owned equipment
  - OSROs
  - Mutual aid & co-op agreements
  - IMTs
  - Local first responders (fire department, law enforcement, emergency medical services, PSAP, emergency management, etc.)

# Resources



- Contractors
  - Consultants (including wildlife rehabilitation experts)
  - Agencies
- Response Plan should address the use of volunteers in alignment with the ACP & state programs
  - Consider including an audit program for its OSROs to provide assurance that they will be able to provide the needed resources & capabilities

# Equipment



- Identify equipment needs & develop an equipment strategy
- Consider the following response equipment during emergency planning:
  - Safety equipment
  - Protection & containment equipment
  - Source control equipment
  - Depressurization equipment
  - Recovery equipment
  - Decontamination equipment
  - Aerial support (helicopters, line flyers, unmanned aerial vehicle);
  - Vessels or boats
  - Air & water sampling & monitoring equipment

# Equipment



- Disposal, storage & transportation equipment
  - Firefighting resources (foam, specialized hazmat equipment, water supply, etc.)
  - Equipment to rehabilitate wildlife
- Staging & early mobilization of equipment is critical to achieving a safe, timely & effective response & to mitigating consequences.

# Sustained Response Considerations



- When developing the Response Plan, consider all requirements needed to sustain the response team for long-term (e.g., weeks, months, or years) operations, which can include lessons learned from prior response activities
- Sustained response considerations should include the following as a minimum:
  - Food
  - Shelter
  - PPE
  - Laundry
  - Portable toilets
  - Power generators
  - Lighting
  - Offices, meeting facilities, equipment & staging areas
  - Personnel scheduling
  - Communication & information technology (IT) equipment
  - Equipment maintenance
  - Supplies & logistics
  - Offsite claims processing & public information location

# Responder Outreach



- Develop outreach programs to provide information regarding pipeline emergency response techniques, training & engagement opportunities
- Establish a planned & systematic approach to communicate with local first responders & to foster coordination during an emergency
- Establish public awareness programs to assist in this effort
- Engagement opportunities should include the following:
  - a) Drill planning, participation, execution & evaluation
  - b) Site visits
  - c) Active participation in LEPCs
  - d) Training opportunities such as the following:
    - 1) Web-based or in-person training
    - 2) Lessons learned meetings
    - 3) Reviews of prior incidents



# Emergency Response Action Plan



- Develop an Emergency Response Action Plan (ERAP) for each of the response zones in which you operate
- ERAPs should provide key information, such as the following, that can be useful in the initial stages of an emergency response:
  - Contact lists
  - Notification lists
  - Resource lists
  - Response checklists
  - Initial ICS forms such as the ICS 201
  - Basic tactics
  - SDS

# Business Impact & Continuity



- Establish a Business Continuity Plan, focusing on preserving critical processes & day-to-day operations during major incidents or disasters & minimizing financial impact on the business.
- The objectives of a Business Continuity Plan should include the following:
  - Maintaining viability of the business & continuing to provide a minimum acceptable level of service,
  - Managing & controlling risks
  - Minimizing interruption to operations
  - Coordinating the restart plan & when appropriate, returning to the same service level as prior to the business interruption

# Corporate Crisis Management



Establish a Corporate Crisis Management Plan that

- Provides identified executive leadership with the information needed to respond to pre-determined trigger events, or incidents that have the potential to develop into a crisis if not addressed
- Enables the operator to respond in a safe, timely, effective & organized manner by establishing clear roles & responsibilities for executive leadership, including boundaries among business units, IMTs & corporate headquarters
- Guides the focus of effective executive leadership to avoid becoming over involved in the operational respons
- Provides clear definition of the difference in roles & responsibilities for the IMT, which is focused on managing the incident itself, versus the crisis management team, which is focused on managing the effects of the incident



# Plan Document Management



- Establish & implement a process that documents the location of the Response Plan, how the Response Plan can be accessed, how changes or modifications to the Response Plan are managed & communicated to stakeholders, & how previous versions are removed or destroyed to prevent access to older content
- This process shall address complex facilities that share regulatory agency requirements & how the Response Plan is communicated to all parties. In addition, the process should identify the parties responsible for plan document management
- Update Response Plan & submit it to the Department of Transportation (DOT) if necessary
- Provide Response Plan to response agencies upon request
- Consider risks associated with sharing security sensitive information
- You may direct a requesting response agency to the DOT

# Training & Exercises



- Develop a training & exercise program for emergencies
- Use National Preparedness for Response Exercise Program (PREP) Guidelines to satisfy exercise requirements
- Training & exercise program should meet the unique needs of the operator
- Consider using the Homeland Security Exercise & Evaluation Program (HSEEP)

# Spill Response Training



- In addition to providing response training required by regulation, provide general spill response training to those employees expected to respond to an emergency
- Training should prepare the response team members for operating in a NIMS ICS environment, for using response plans & for recognizing the types of spills & response techniques
- You may adapt spill response training to the expected actions of a spill responder

# Spill Response Training *(cont...)*



- Spill response training may include the following:
  - Response Plans
  - Fate & transport of spilled hazardous liquids,
  - Environmentally sensitive areas,
  - Basic response equipment,
  - OSRO program,
  - ACP & NCP
  - Your response management system

# Tactical Response & Equipment Deployment Training



- Develop a program to provide training to operator personnel who are expected to deploy equipment during an emergency
- Provide training to operator personnel who will directly supervise equipment deployment by contractors
- Training should prepare operator personnel to understand
  - a) How equipment operates
  - b) How to perform the following:
    - 1) Deploy & use equipment
    - 2) Avoid hazards when using equipment
    - 3) Use equipment in all weather conditions
    - 4) Maintain equipment
    - 5) Decontaminate equipment
  - c) When to use & not to use equipment



# Drills & Exercises



- Use PREP for exercise design & evaluation
- These exercises should include specific information identifying scenarios that could impact the environment, community & operator resources
- You may develop exercises internally or through contractors. The operator (internal exercises) or a government agency (external exercises) may initiate drills & exercises
- Participate in relevant external exercises sponsored & conducted by outside entities such as other operators, government regulatory agencies, co-ops, or emergency response agencies
- Invite other operators to attend, participate in, observe, or evaluate exercises

# Incident Management Team Exercises



- In accordance with PREP, participate in annual IMT exercises that
  - a) familiarize IMT members with their duties & responsibilities in the event of an incident & to evaluate the IMT's response capabilities
  - b) develop relationships to improve coordination with response agencies & other government organizations that may participate in actual incidents
  - c) test the effectiveness of the operator's response plans

# Critique, Evaluations & Record Retention



- Continually evaluate training & exercise programs & modify these programs based on after-action reports & improvement plans.
- Develop after action reports and improvement plans for incidents
- Maintain records that document the level of training received by each response team member & that verify completion of required refresher courses
- Retain records of training for all emergency response personnel to verify accuracy & qualifications
- If you rely on OSROs to meet response requirements, retain records (e.g., annual letter of certification or training & exercise records) that verify the OSRO has been trained & completed equipment deployments per PREP

# Overview: Response

*“The operator shall respond to emergencies in accordance with regulatory requirements & with the operator's policies, procedures & Response Plans.”*

# Discovery



If you've discovered or been notified of an incident, perform the following, in order of priority:

- a) Determine the safety of the reporting party & others in the vicinity of the incident
- b) Assess the situation & its potential consequence
- c) Gather as much information as is available, including the following:
  - 1) Location of incident (address or global positioning system [GPS] location)
  - 2) Time of discovery
  - 3) Incident description (source, assets involved, fire, vapor fog, bubbles, etc.)
  - 4) Product type & estimated volume
- d) Name of reporting party & contact information

# Discovery



- 4) Product type & estimated volume
- 5) Impacts (e.g., environmentally sensitive areas, population, waterways,
- 6) historically & culturally significant areas, etc.)
- 7) Immediate risks or exposures
- 8) Current response actions (public protection, road closures, notifications, etc.)
- 9) Initial remedial actions (source control)
- 10) Name & contact of on-scene emergency agencies
- 11) Weather conditions
- 12) Possible responsible party
- 13) Possible cause

# Activation



- Upon the indication of an incident, activate the emergency response procedures outlined in Response Plan
- Response programs should include a tiered or scaled response to incidents ranging from those with minimal to extensive public & environmental impact, property damage, or media attention
- Activate a higher response tier when faced with minimal information early during the response

# Shutdown & Investigation



- Procedures shall address the process for classifying & investigating alarms received through internal means such as a pipeline monitoring system
- Procedures shall also address notifications or complaints of a potential incident received from an employee, the general public, or emergency response agency.
- If information is conflicting or incomplete, then you should provide controllers guidance regarding when to shut down the pipeline & activate the response activities



# Notifications: Internal & External

Your process shall include provisions to make immediate notifications as defined in the Response Plan. Prioritize placing calls to the local PSAP.



Internal

Depending on the severity of the incident, the operator should notify the following internal contacts:

- Qualified individual or IC
- Local operations personnel
- Incident & crisis management teams
- Operations control center



External

- Notify local first responders so emergency response plans & hazard assessments can be initiated & information regarding public protection can be distributed. Ensure information provided to first responders is sufficient for responders with varying levels of experience & knowledge. Share critical information so first responders can analyze the situation & plan their response. Critical information should include product type, anticipated volume release, hazards, actions to be taken, etc. Depending on severity of incident, notify external contacts



# Incident Command



- Activate a command staff consisting, as a minimum, of an IC & Safety Officer
- Designate additional command & general staff positions, as identified by NIMS ICS, based on the response scope & complexity
- Designate an Incident Commander (IC) based on qualifications & experience. The IC shall be responsible for the overall management of the incident
- Incident Command shall act to minimize impacts & stabilize the incident
- Response priorities during an emergency shall be life safety, product containment, source control & protection of property & the environment

# Resource Mobilization



- Immediately deploy personnel & equipment to the general incident location
- Deploy resources strategically, scaling the response effort to fit the incident as data & information become available.
- Initially over respond to the incident & scale the response as additional information about the nature of the incident is gathered.
- Establish a process to determine if an escalation of resources is warranted. The operator should consider the following during the escalation evaluation process
- The operator may consider a staggered deployment method for critical positions (e.g., Public Information Officer [PIO], Liaison Officer [LOFR], Situation Unit Leader [SIT]) so that initial priority tasks can be completed while the IMT is en route to the scene.

# Incident Commander Should Designate These Roles



- Safety Officer
- Operations Section
- Planning Section
- Logistics Section
- Finance/Administration Section
- Life Safety
- Containment & Source Control
- Environmental Protection

# Business Continuity & Response Transition



- Assess the effects of a response on internal & external (third-party) business
- Implement, as necessary, policies & procedures to address business claims compensation, third-party business disruption & business interruption
- Early during the response, engage the UC to determine the end objectives for the response
- General staff should develop a plan for transitioning from emergency response into a project or environmental remediation phase  
Endpoints for response transition may include mitigation of the immediate threat & recovery of released product
- Plan for the transition from emergency response to an environmental remediation project to ensure all emergency response activities are completed before the demobilization of personnel
- Assign adequate resources for environmental remediation

# Debriefing & Evaluation



- Develop a post-incident debriefing & evaluation process and establish a process to ensure that emergency response plans, policies & procedures are updated
- Debriefing & evaluation should identify the effectiveness of plans, procedures, equipment & techniques.
- The process should involve a debriefing of the individuals who played a role in Incident Command (agencies & first responders included) as well as a method to capture feedback from those individuals that were involved with field-related activities
- Consider the following items during the debriefing & evaluation process:
  - Safety
  - Source control
  - Release detection

# Debriefing & Evaluation



- Notifications
- Situational assessment & evaluation
- Personnel & contractor mobilization
- Resources & resource mobilization
- Response effectiveness
- NIMS ICS
- Release volume estimation
- Government affairs
- Public relations (community & media response)
- Documentation
- Communications

# Overview: Management System Review

“Plan & implement the monitoring, measurement, analysis & improvement processes needed to ensure conformity to the emergency response management system requirements of this **Recommended Practice...Continually improve the effectiveness of the system.** Emergency response management system monitoring, measurement, analysis & improvement should include determination of applicable methods, including techniques for the analysis of data & the extent of their use.”



# Monitoring, Measuring & Improving



- Ensure that competent personnel perform audits
- Personnel performing audits should be independent of those who performed or directly supervised the activity being audited to ensure objectivity & impartiality of the audit process
- Records of the audits should provide objective evidence of implementation & maintenance of the emergency management system
- Identify timeframes for addressing detected nonconformities
- The management responsible for the area being audited should ensure that any necessary corrections & corrective actions are implemented & effective

# Monitoring, Measuring & Improving



- The operator should report in the management review the results of internal audits & the status of corrective actions. The operator should maintain records of the results of internal audits
- To demonstrate the suitability & effectiveness of the emergency management system, the operator should maintain a documented procedure for the identification, collection & analysis of data related to system performance
- The operator should use data to evaluate where continual improvement of the effectiveness of the emergency management system can be made.

# Corrective Action & Continual Improvement



- Maintain a documented procedure to correct management system nonconformities, to take corrective actions to eliminate the causes & to minimize the likelihood of recurrence
- Corrective actions should be appropriate to the effect(s) of the nonconformity encountered.
- The procedure should identify requirements for the following activities:
  - a) Reviewing a process nonconformity
  - b) Determining & implementing corrections
  - c) Identifying the root cause & contributing factors of the nonconformity & evaluating the need for corrective actions
  - d) Implementing corrective action to minimize the likelihood of recurrence

# Corrective Action & Continual Improvement



- e) Identifying the timeframe & responsible person(s) for addressing corrections & corrective action
- f) Verifying the effectiveness of the corrections & corrective action taken
- g) Applying MOC when the corrective action requires new or changed controls within the emergency management system

# Management Review



## Input Requirements

The input to management review should include the following, as a minimum:

- a) Emergency management system goals & objectives
- b) Effectiveness of actions resulting from previous management reviews
- c) Results of audits
- d) Changes that could affect the emergency preparedness & response processes, including changes to legal & other applicable requirements
- e) Process performance
- f) Status of corrective actions
- g) Recommendations for improvement

# Management Review



## Output Requirements

- The output from the management review should include a summary assessment of the effectiveness of the emergency management system
- The assessment should include any required changes to the processes, any decisions & actions, required resources & improvement of products in meeting user requirements
- Top management should approve the output of management reviews
- Document management reviews & maintain records of these reviews.

# Questions

Download the guide and keep up with the latest RP 1174 news and resources:

[aopl.org/emergencyresponse/api-rp-1174/](http://aopl.org/emergencyresponse/api-rp-1174/)



# Appendix: Helpful Glossary of Acronyms

ACP	Area Contingency Plan	HCA	High Consequence Area
API	American Petroleum Institute	HVL	Highly Volatile Liquids
CFR	Code of Federal Regulations	HSEEP	Homeland Security Exercise & Evaluation Program
DOT	Department of Transportation	IAP	Incident Action Plan
EPA	Environmental Protection Agency	IC	Incident Commander
ERAP	Emergency Response Action Plan	ICS	Incident Command System
FEMA	Federal Emergency Management Agency	IMT	Incident Management Team
GPS	Global Positioning System	ISO	International Organization for Standardization
HAZWOPER	Hazardous Waste Operations & Emergency Response	LEPC	Local Emergency Planning Committees
HASP	Health & Safety Plan		



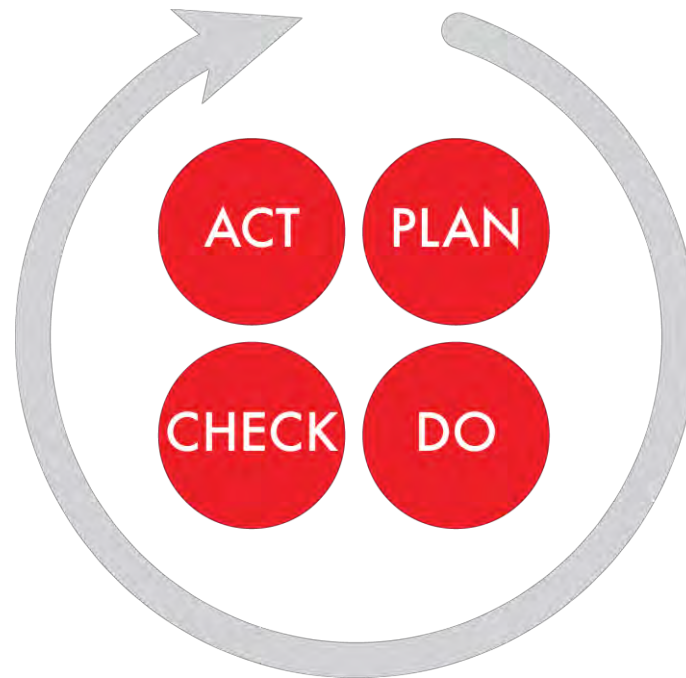


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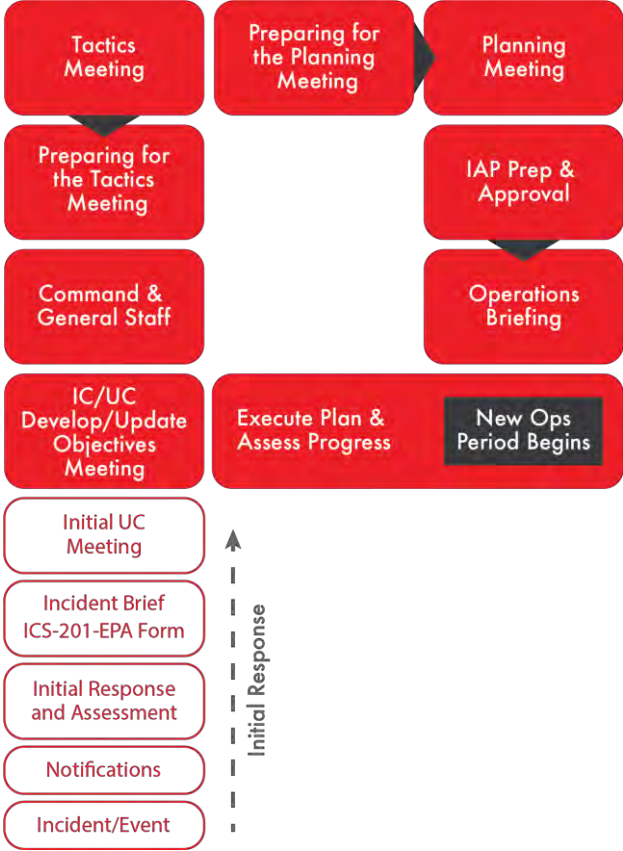
LOFR	Liaison Officer	PREP	National Preparedness for Response Exercise Program
MOC	Management of Change	PSAP	Public Safety Answering Point
NCP	National Contingency	SCADA	Supervisory Control & Data Acquisition
NFPA	National Fire Protection Association	SDS	Safety Data Sheet
NIMS	National Incident Management System	SIT	Situation Unit Leader
OSRO	Oil Spill Removal Organization	UC	Unified Command
PDCA	Plan–Do–Check–Act	USCG	United States Coast Guard
PIO	Public Information Officer	WCD	Worst-Case Discharge
PPE	Personal Protective Equipment		



# The Plan-Do-Check-Act (PDCA) Cycle



# The Operational Period Planning Cycle



# NIIMS ICS Organization Structure Example

