CalARP/RMP/PSM

Program Upkeep Requirements & Common Program Deficiencies

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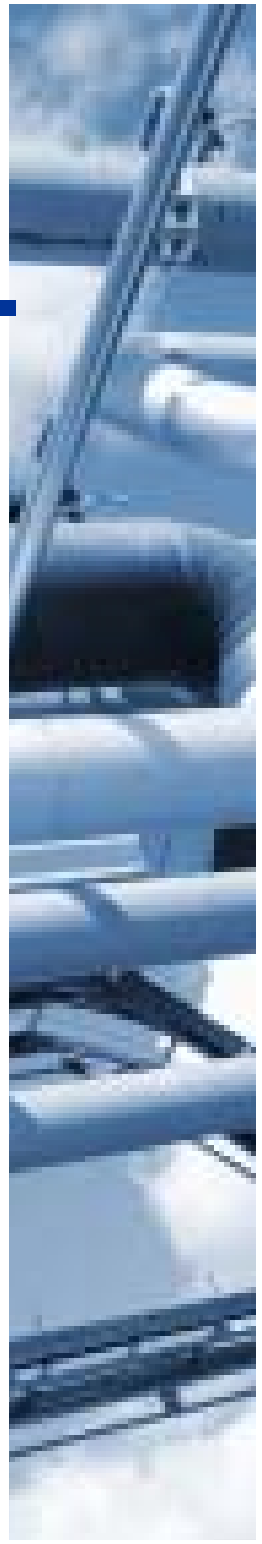
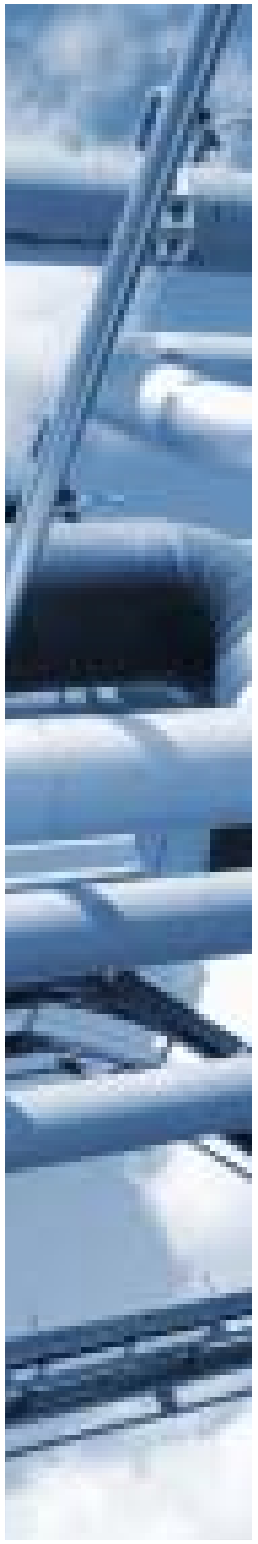
Key Topics

- CalARP/RMP/PSM – Key Program Requirements
- CalARP/RMP/PSM – Key Program Upkeep Requirements
- Common Program Deficiencies

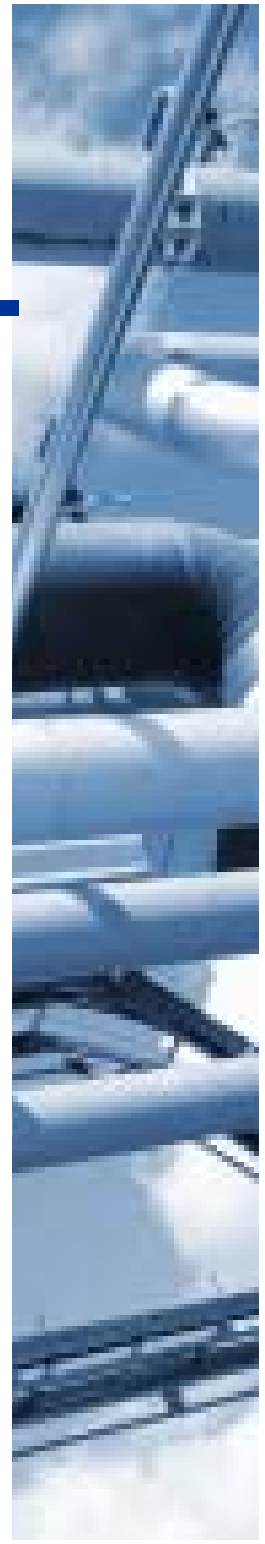


Key Program Requirements



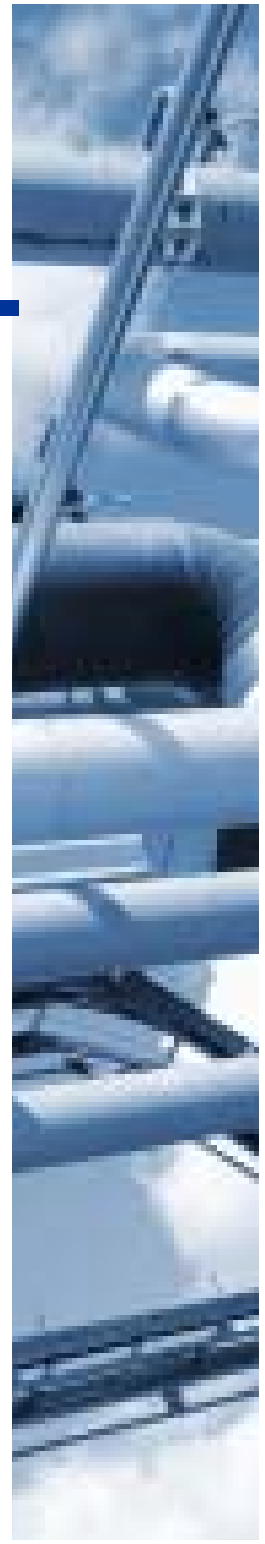
Regulatory Initiatives

- Industry Initiatives were absorbed into Performance/ “Management System”-Based Federal Regulatory Requirements (United States)
  - 1992 - 29 CFR 1910.119 - “Process Safety Management of Highly Hazardous Chemicals” (February 24)
  - 1996 - 40 CFR Part 68 - “Risk Management Programs for Chemical Accidental Release Prevention”



Regulatory Initiatives

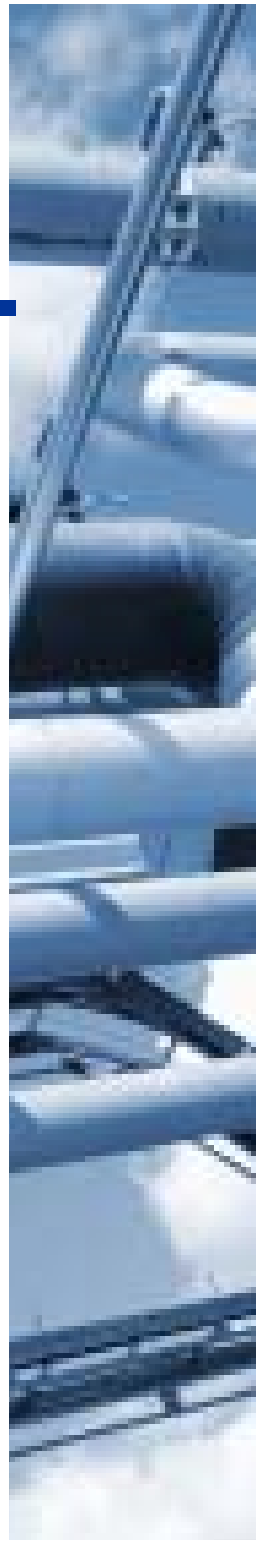
- California
  - 1994 - California - General Industry Safety Orders, Title 8, Chapter 4, Sect 5189 - “Process Safety Management of Acutely Hazardous Materials” (February)
  - 1998 - California - CCR, Title 19, Chapter 4.5, Sect. 2735-2785 - “California Accidental Release Prevention (CalARP) Program” (November)



Who is Required to Submit?

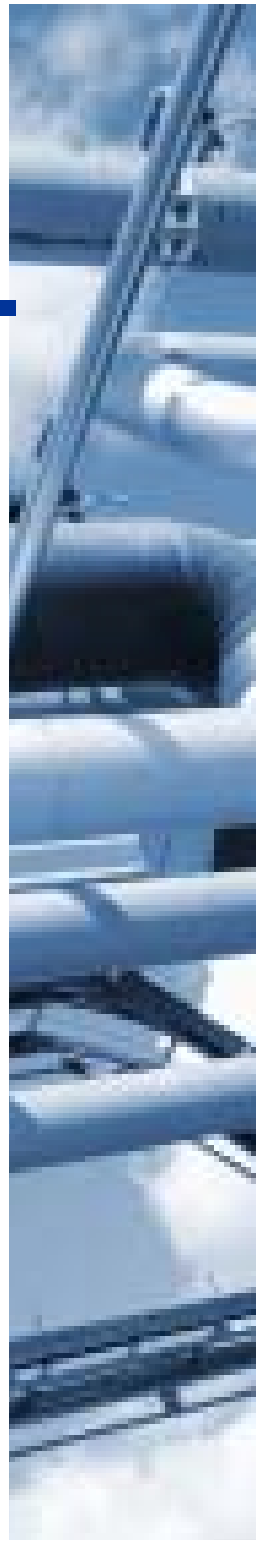
Any facility having a hazardous substance over the state threshold is required by the State of California to develop a California Accidental Release Prevention (CalARP) Program.

Those facilities meeting the Environmental Protection Agency's (EPA) Risk Management Plan (RMP) threshold quantities also must submit to the EPA.

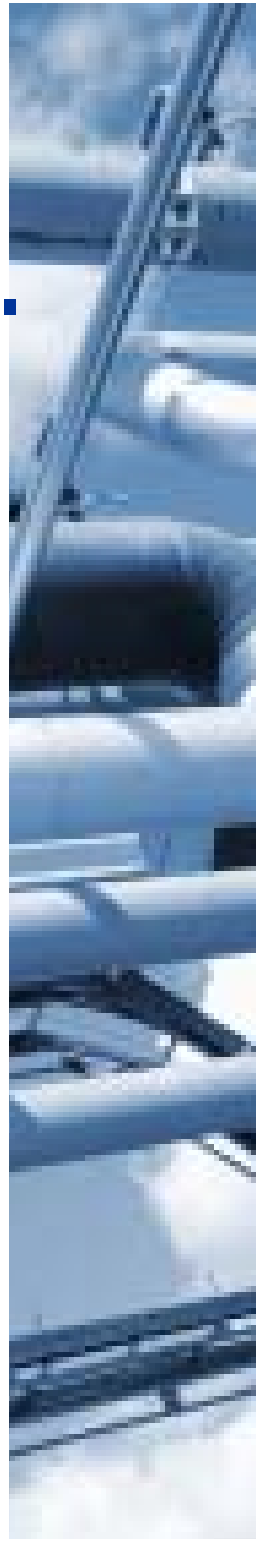


CalARP/RMP/PSM Elements

- Submittal
- Management Program
- Hazard Assessment
- Prevention Program
- Emergency Response Program



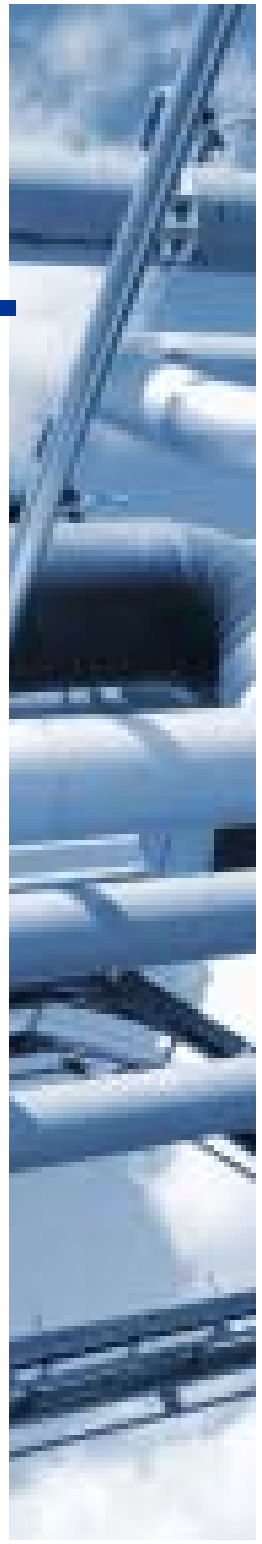
CalARP/EPA RMP/OSHA PSM/Cal-OSHA PSM Program Overlap Compliance Matrix				
Section	**EPA (40 CFR)**	**OSHA (29 CFR)**	**Cal OSHA (8 CCR)**	**CalARP (19 CCR)**
Trade Secrets		1910.119 (p)		
Process Safety Information	68.65	1910.119 (d)	5189 (d)	2760.1
Process Hazard Analysis	68.67	1910.119 (e)	5189 (e)	2760.2
Operating Procedures	68.69	1910.119 (f)	5189 (f)	2760.3
Training	68.71	1910.119 (g)	5189 (g)	2760.4
Mechanical Integrity	68.73	1910.119 (j)	5189 (j)	2760.5
Management of Change	68.75	1910.119 (l)	5189 (l)	2760.6
Pre-Startup Safety Review	68.77	1910.119 (i)	5189 (i)	2760.7
Compliance Audits	68.79	1910.119 (o)	[IIPP]	2760.8
Incident Investigation	68.81	1910.119 (m)	5189 (m)	2760.9
Employee Participation	68.83	1910.119 (c)	5189 (p)	2760.10
Hot Work Permit	68.85	1910.119 (k)	5189 (k)	2760.11
Contractors	68.87	1910.119 (h)	5189 (h)	2760.12
Emergency Response Plan	68.95	1910.119 (n)	5189 (n)	Article 7



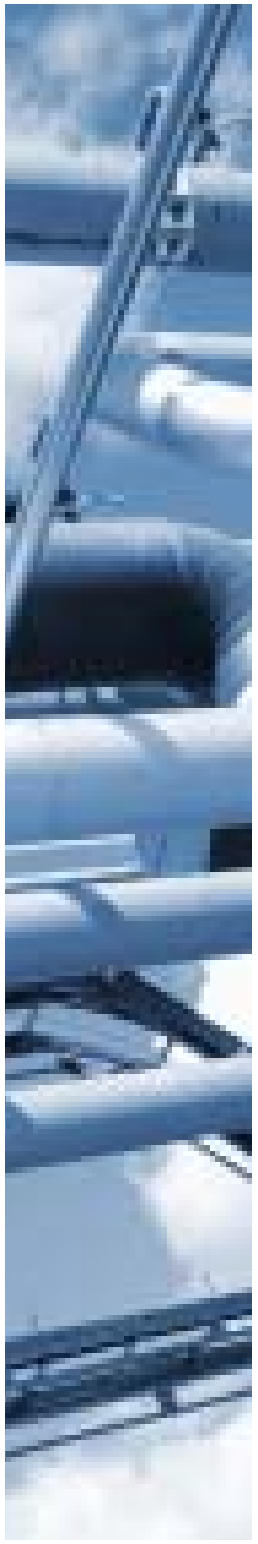
How Did We Get Here?

Purpose

- Document that personnel are safely operating and maintaining a process that utilizes a highly hazardous material
- Ensure management are dedicating minimum resources needed to prevent accidental releases
  - Training
  - Equipment and Maintenance
  - Personnel

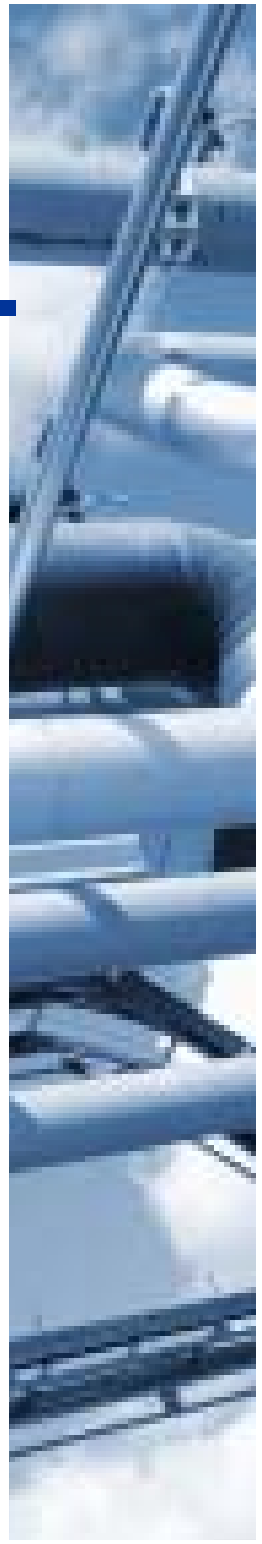


Key Program Upkeep Requirements



CalARP/RMP/PSM Key Periodic Requirements

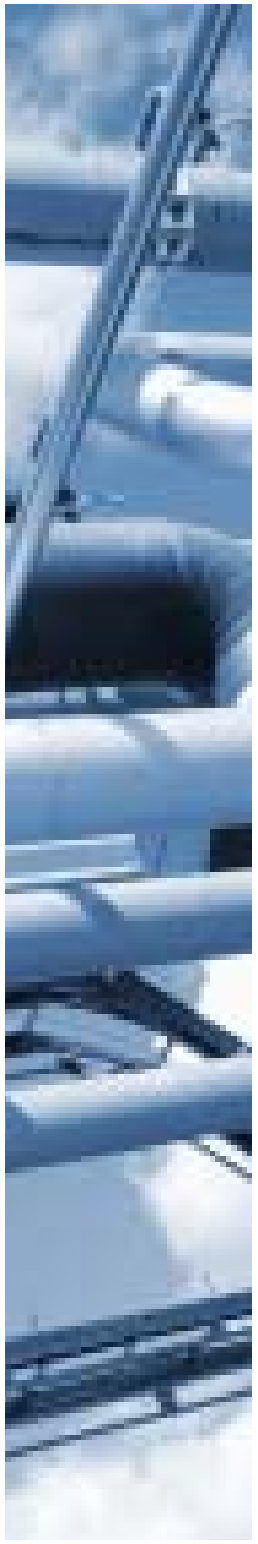
- Annual Review/Update
  - Operating Procedures
  - Emergency Action Plan or Emergency Response Plan
- Every 3-Years
  - Refresher Training
  - Compliance Audit (CalARP/RMP)
- Every 5-Years
  - CalARP/RMP Submittal
  - Hazard Assessment
  - Process Hazard Analysis (P3) or Hazard Review (P2)
  - External Events (CA only)
- Non-Incidental Changes in Design or Operation !!
  - Review of several elements, depending on change.



"CalARP Coordinator Program Maintenance"

CalARP Program 3 Section	CalARP Coordinator Responsibility Program 3				Annual Review/Update
	Initial	Not-In-Kind Change to Process	Every Three Years	Every Five Years	
CalARP Submittal	✔	✔		✔	
Hazard Assessment	✔			✔	
Process Safety Information	✔	✔			
Process Hazards Analysis	✔	✔		✔	
Operating Procedures	✔	✔			✔
Training	✔	✔	✔		
Mechanical Integrity	✔	✔			
Management of Change	✔	✔			
Pre-Startup Safety Review	✔	✔			
Compliance Audit	✔		✔		
Incident Investigation	✔				
Hot Work Permit	✔				
Contractors	✔				
Emergency Action Plan	✔				✔
P & IDs	✔	✔			

Common Program Deficiencies

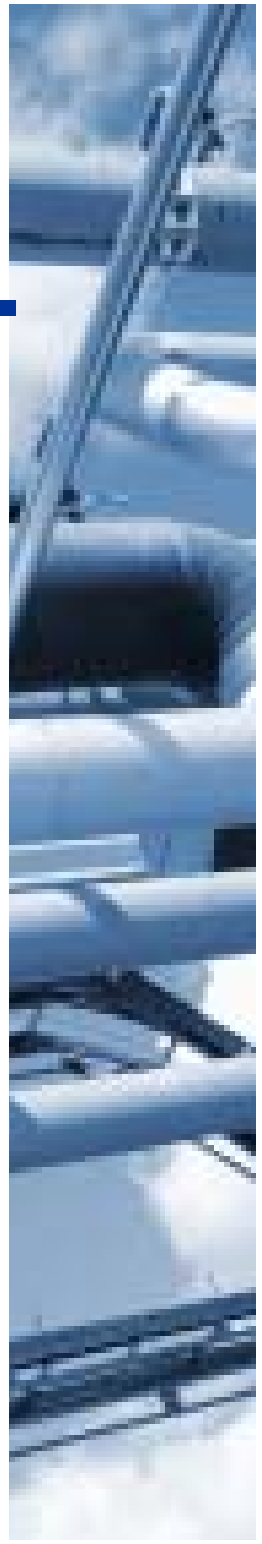


When Do I Resubmit?

- By the Five Year Anniversary date.

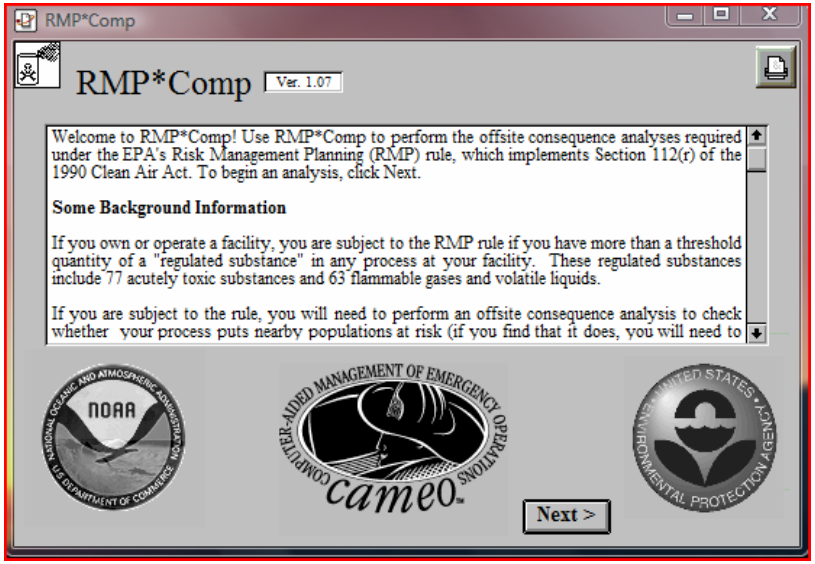
OR

- Change in inventory that altered the Offsite Consequence Analysis distance by a factor of two (i.e. 1 mile to 2 miles).
- Ownership changes or emergency contact/CalARP Coordinator changes.
- A reportable incident has occurred.



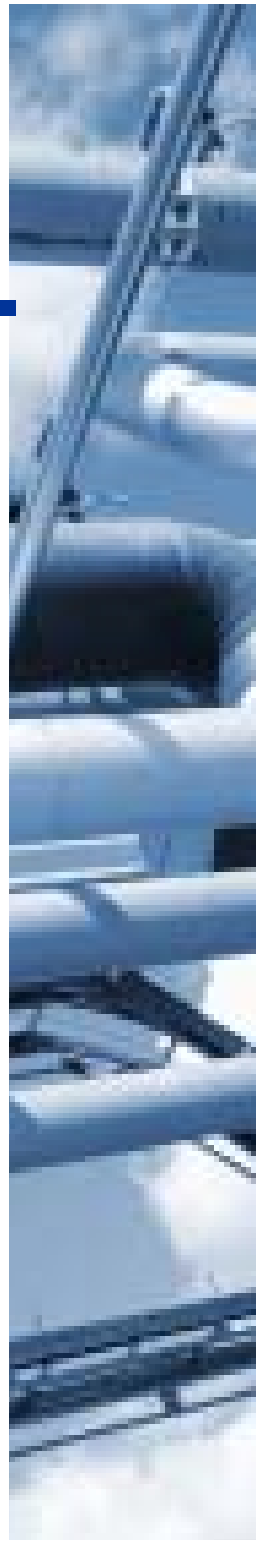
Hazard Assessment (HA) Elements

- Offsite Consequence Analysis
  - Worst Case Scenario
  - Alternative Release Scenario
- It is recommended that the Hazard Assessment Report consist of an EPA approved Dispersion Model and are structured in a format that is easily updatable and understandable by facility personnel and regulators.

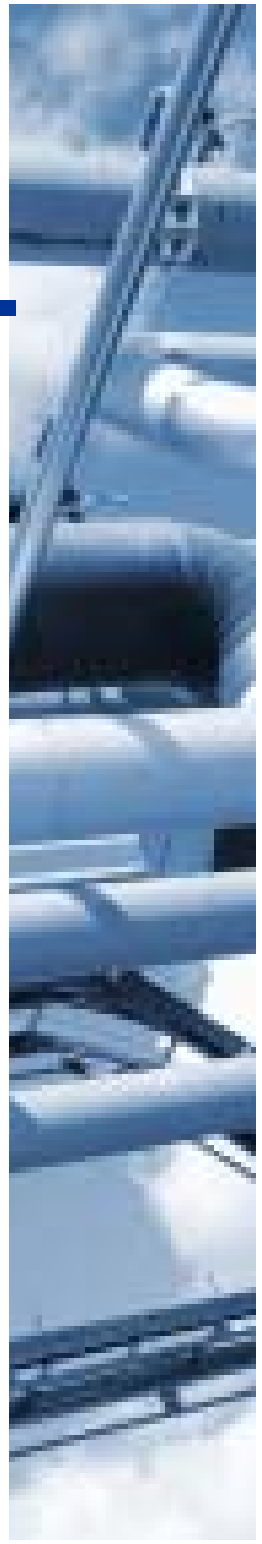


Common Deficiencies

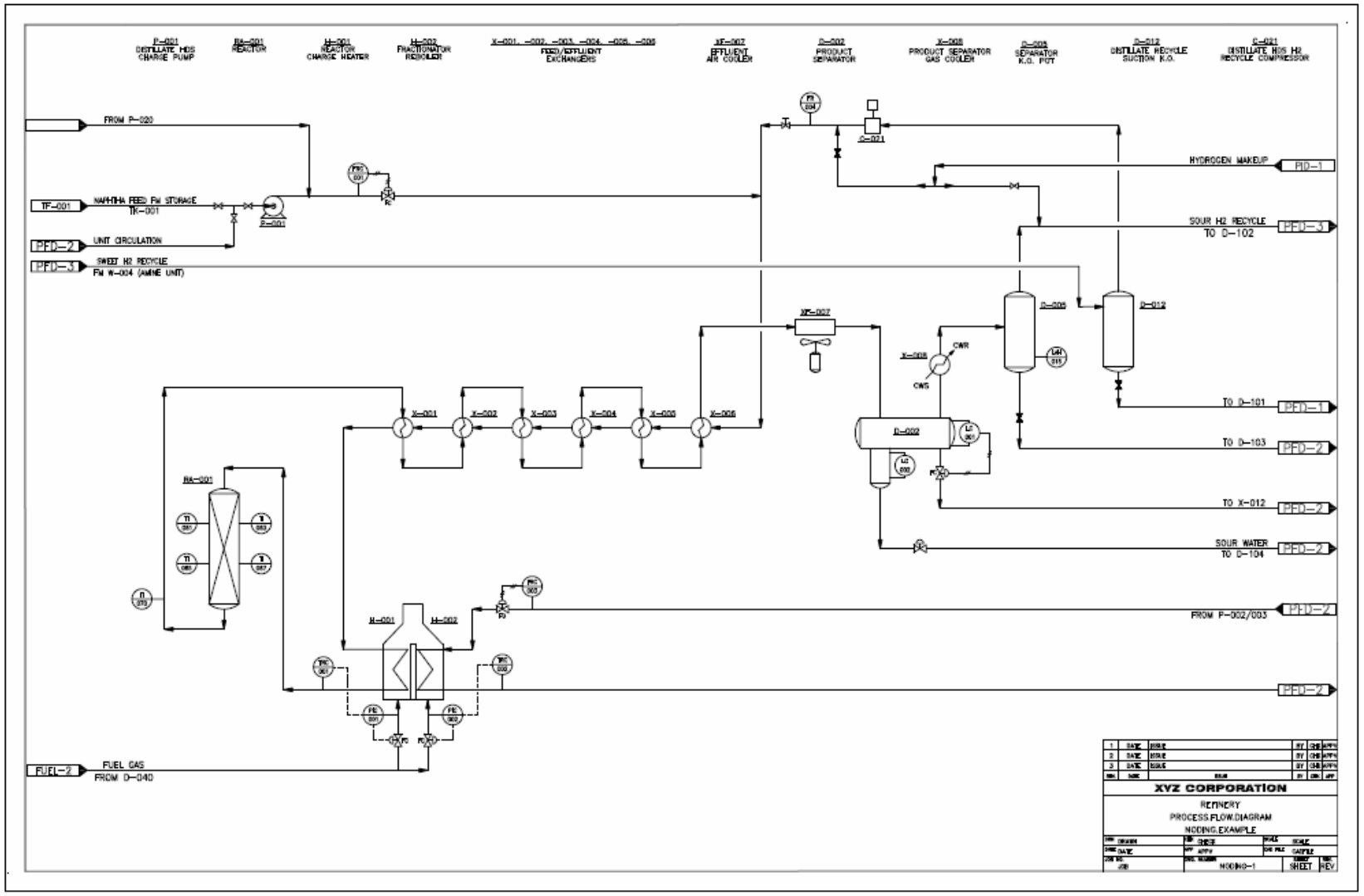
- CalARP submittal
  - CalARP submittal (or RMP Submit) not completed and submitted to agency when necessary
  - Management System is not in place
- Hazard Assessment
  - Description of scenario selection is not available
  - Revalidation: Failure to update populations, sensitive receptors and maps.



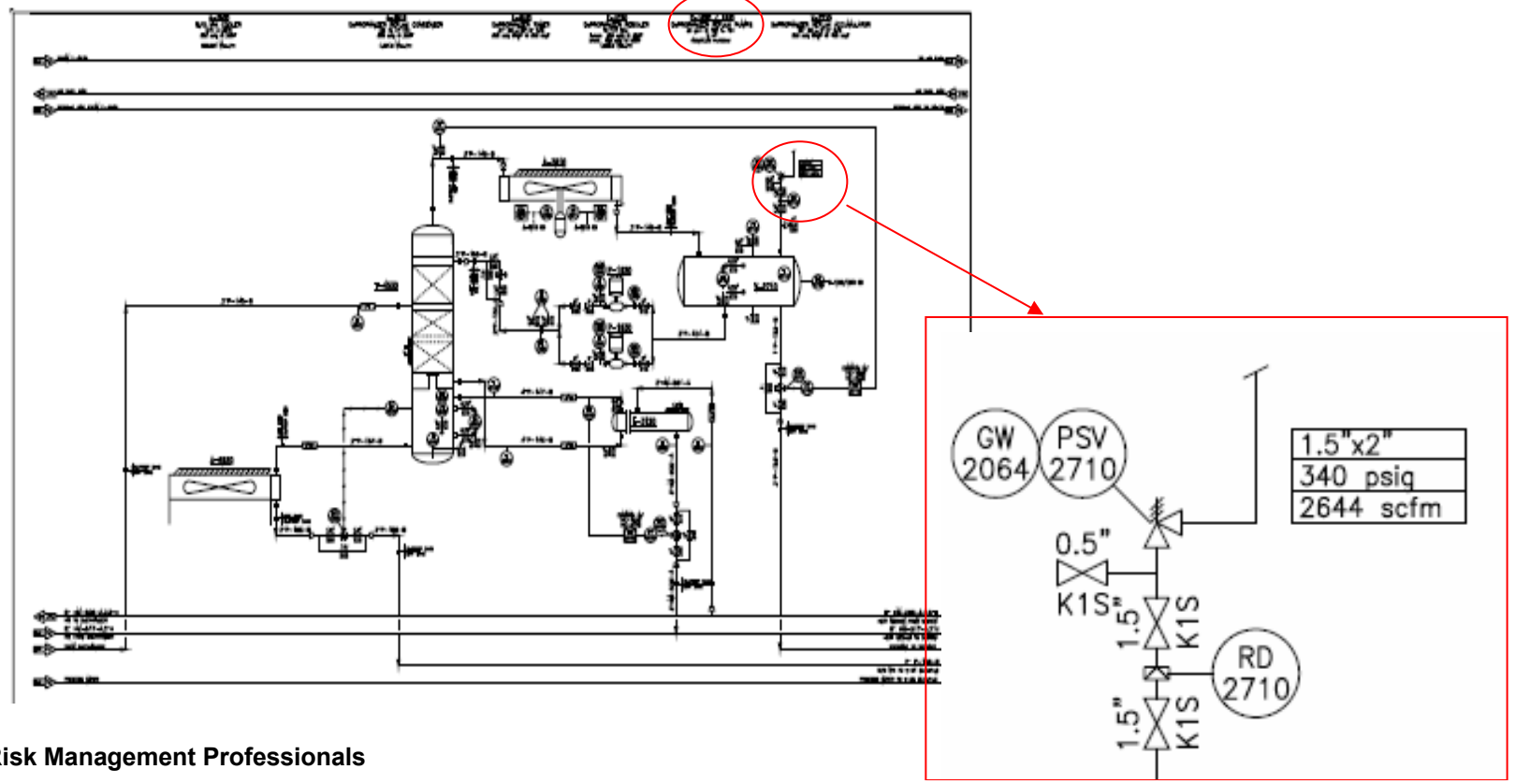
Process Safety Information	Safety Information
<u>Information pertaining to the hazards of the regulated substances in the process</u>: •Toxicity Information; Permissible exposure limits; Physical data; Reactivity data; Corrosivity data; •Thermal and chemical stability data; and, •Hazardous effects of inadvertent mixing of different materials that could foreseeable occur. <u>Information concerning the technology of the process</u>: •A block flow diagram or simplified process flow diagram; •Process chemistry; •Maximum intended inventory; •Safe upper and lower limits for such items as temperatures, pressures, flows or compositions; and, •An evaluation of the consequences of deviations. <u>Information pertaining to process equipment</u> : •Materials of construction; •Piping and instrument diagrams (P&IDs); •Electrical classification; •Relief system design and design basis; •Ventilation system design; •Design codes and standards employed; •Material and energy balances •Safety systems (interlocks, detection, or suppression).	•Hazardous characteristics of the regulated substance (the Material Safety Data Sheets [MSDS] will be used for this purpose) •Maximum intended inventory of the process •Safe upper and lower limits for key process parameters (temperature, pressure, level, etc.) for the main components of the process •Equipment specifications in terms of materials of construction, dimensions, safe operating limits, intended usage, etc. •Design codes employed including design conditions and operating limits •Safety systems



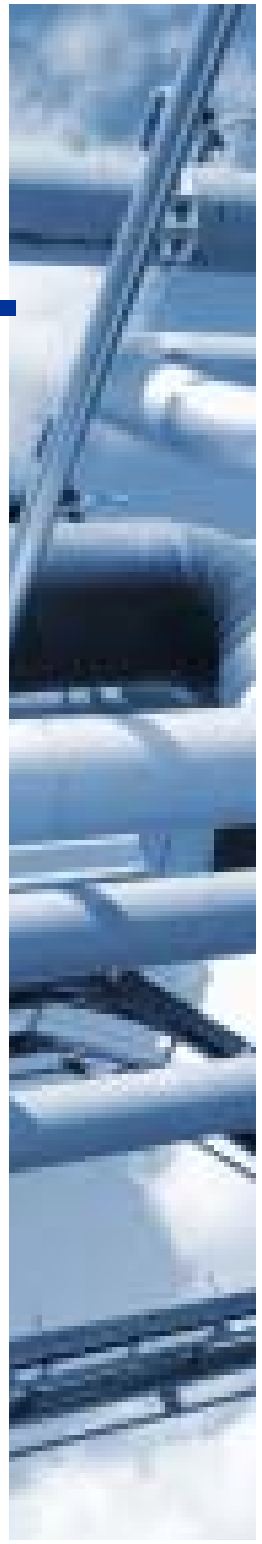
Process Flow Diagram



Piping & Instrumentation Diagram (P&ID)



Material Safety Data Sheets



ISOBUTANE
Material Safety Data Sheet

EMERGENCY PHONE NUMBERS / MANUFACTURERS NAME

(800)424-9300
CHEMTREC

(661)399-4270
Seneca Resources Corporation
2131 Mars Court, Bakersfield, CA 93308-6830

I. MATERIAL IDENTIFICATION

Material Trade Name:	Iso Butane
Synonyms:	2-Methyl Propane, TriMethyl Methane
Chemical Family / Formula:	Aliphatic Hydrocarbon, Alkane Series IC_4H_{10}
CAS No.:	106-97-8

II. INGREDIENTS

Composition:	Occupational exposure limits	CAS No.
> 93% Iso Butane	ACGIH OSHA TWA 800 ppm	106-97-8
< 5% Normal Butane	ACGIH OSHA TWA 800 ppm	106-97-8
< 5% Propane	Simple asphyxiant	97-98-6
< 0.5% Methane	Simple asphyxiant	74-41-4

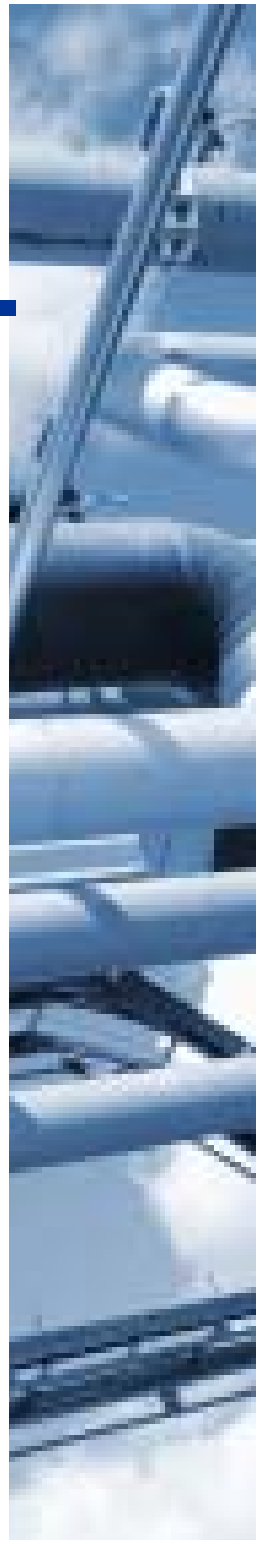
III. PHYSICAL DATA

Boiling Point:	11ºF @ 14.7 psia (760mm/HG)
Specific Gravity:	.559
Vapor Pressure:	72
Solubility in H_2O:	Insoluble
Evaporation Rate:	NA Gas at standard temp and pressure
Vapor Density:	2.01 (Air = 1)
% volatile by volume:	100
Appearance and Odor:	Gas, slight hydrocarbon odor

Process Safety Information

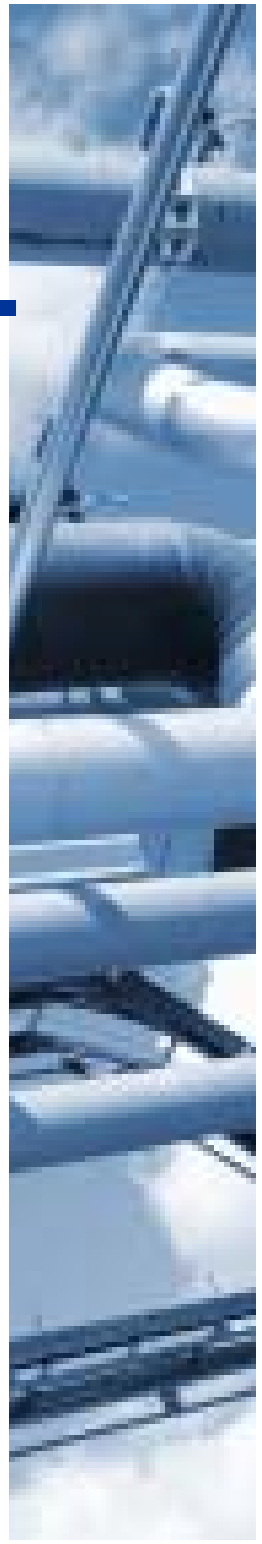
Responsibilities:

1. Ensure that the Process Safety Information is readily available to the employees.
2. Update Process Safety Information if a change occurs that makes any key safety-related information inaccurate.

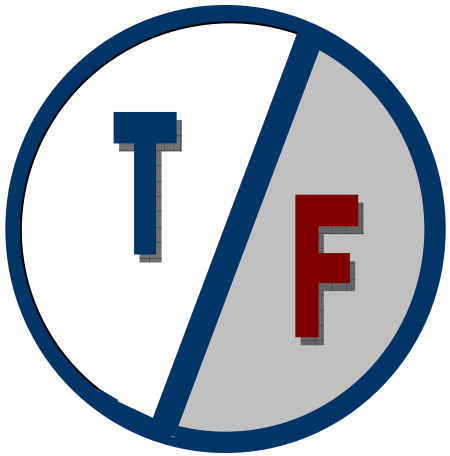


Common Deficiencies

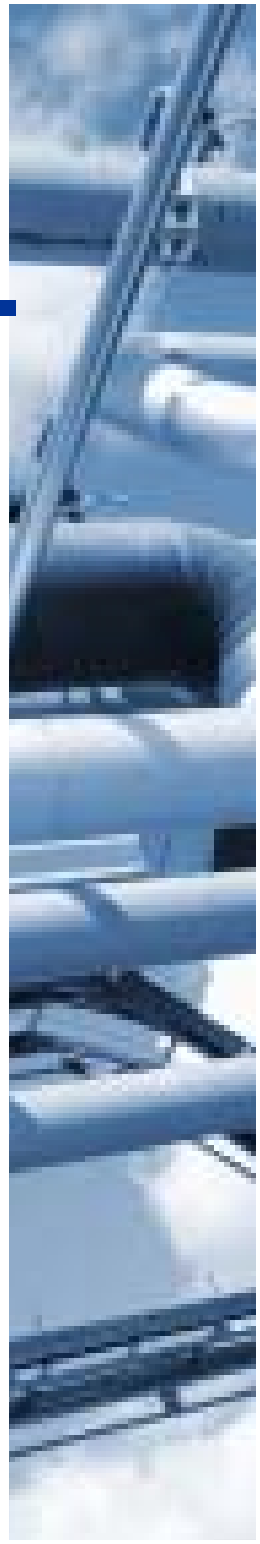
- Piping and Instrumentation Diagrams (P&IDs) are missing or do not reflect changes that have been made to the system
- Relief system design or design basis not documented
- Compliance with recognized and generally-accepted good engineering practices not documented
- Electrical area classifications and electrical distribution system not documented
- Chemical reactivity hazard evaluations not documented



Quiz

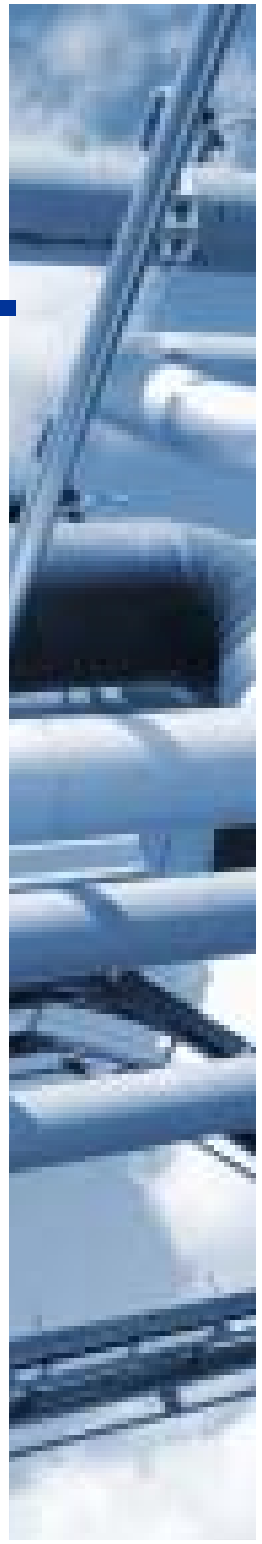


- Process Safety Information is required to be up-to-date (including P&IDs) prior to conducting the Process Hazard Analysis
- MSDSs can be used to meet all Process Safety Information requirements



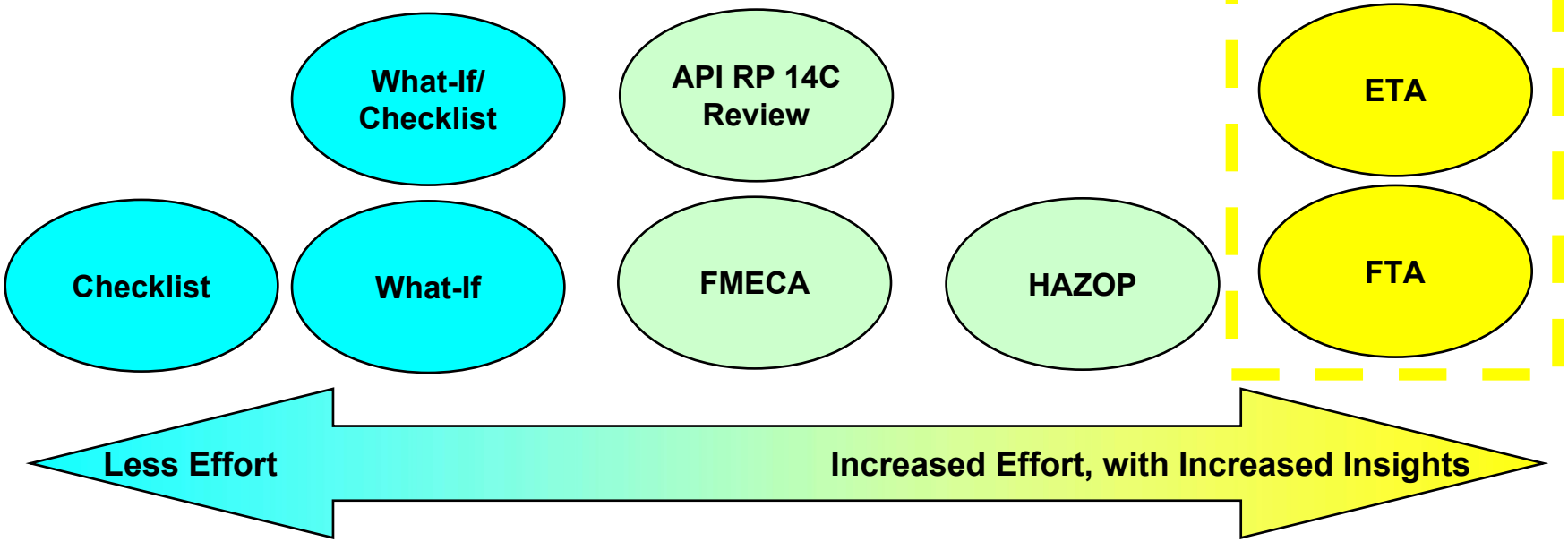
Process Hazard Analysis/ Hazard Review

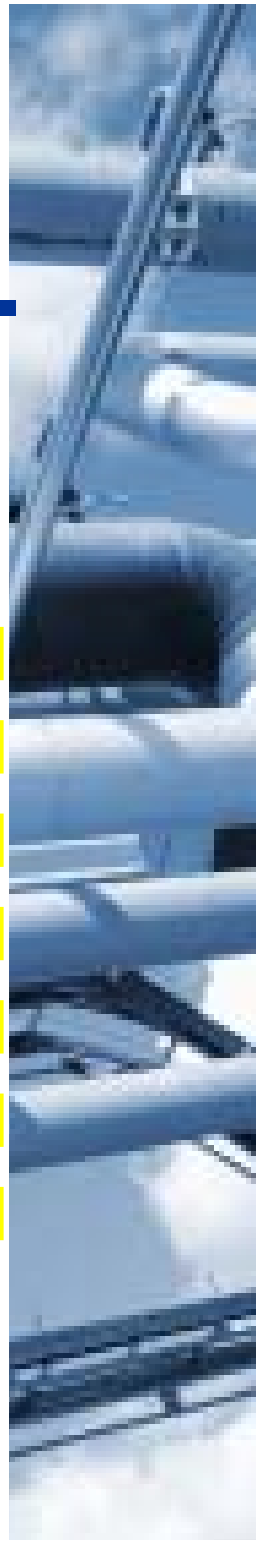
- Identifies hazards of the process chemical, operation and external events that could affect the facility
- Identifies risk to property, health and life
- Lists the worst-case consequences
- Identifies the safeguards in place
- Provides an objective method to measure the effectiveness of safeguards and need for additional safety features



PHA Tool Spectrum

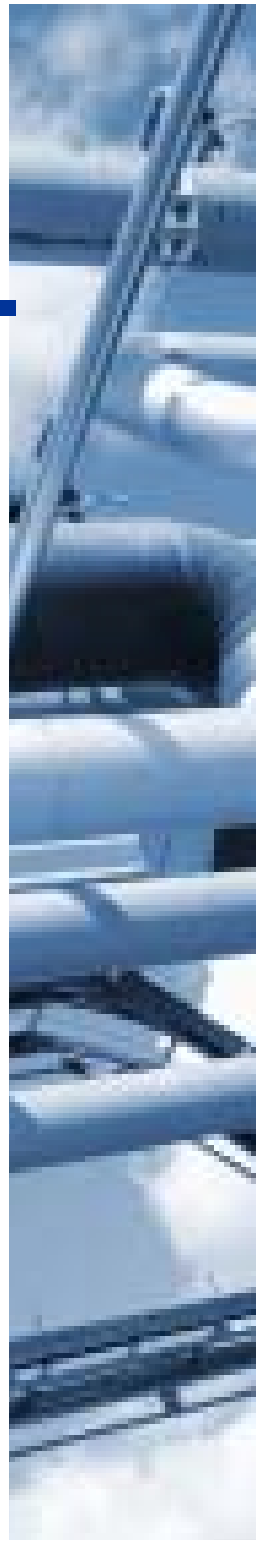
Each of these tools provides a different perspective & different insights.





Common Deficiencies

- Process Hazard Analysis (PHA)
  - Five-year updates not done on-time
  - Recommendations not closed or closure not documented
  - Human factors or facility siting not addressed in report
  - Facility siting not based on current design codes & standards
  - Industry-accepted approach not used, or not used correctly
  - Inconsistent consideration of scenarios and risk-ranking
  - External events, including seismic, not addressed



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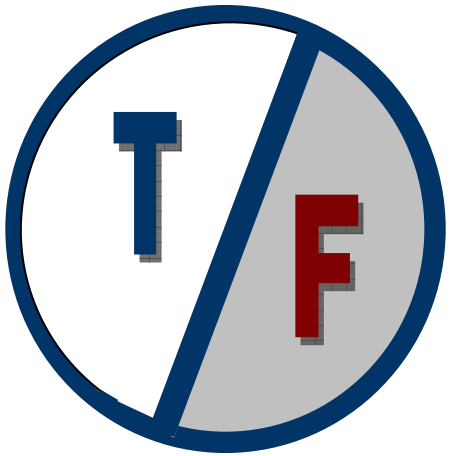
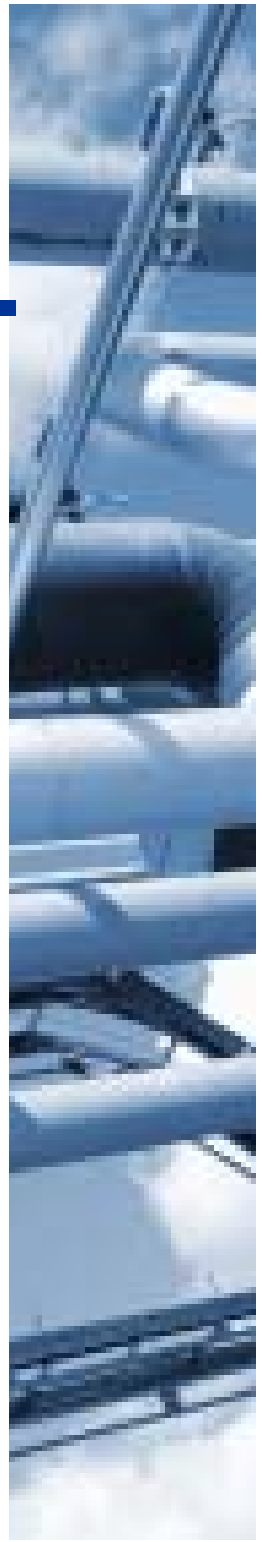


- The “What-If” and HAZOP Study techniques are the most commonly applied for PHAs
- Required expertise for the PHA Team includes engineering, operations, and PHA methodology



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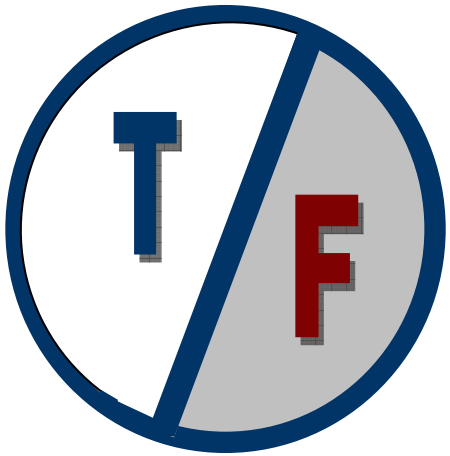
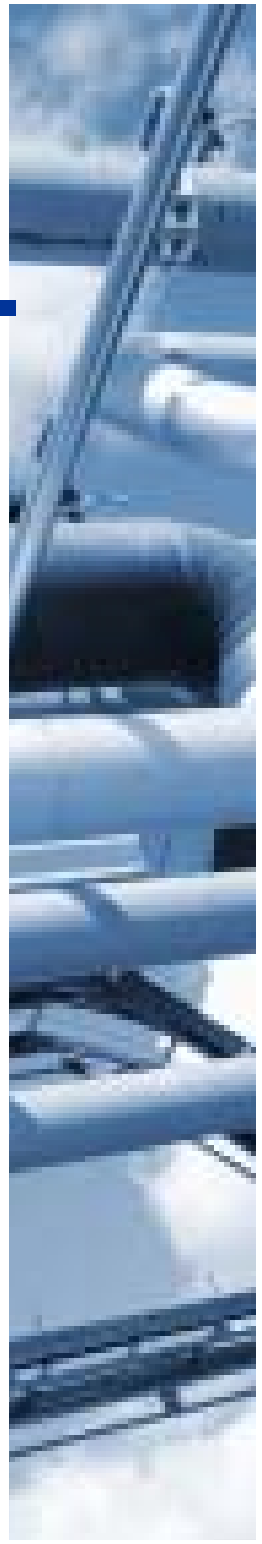


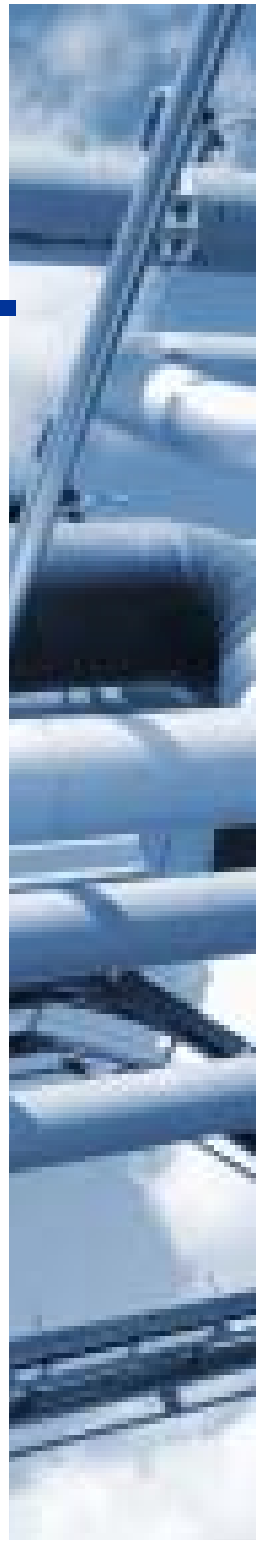
- Closure of PHA Recommendations is the responsibility of the facility, and the auditing agency (e.g., EPA, OSHA) would typically not be inquisitive as to status
- PHA Revalidations are required at least every five years



Operating Procedures

Procedures:

- Initial startup
- Normal operations
- Temporary operations
- Emergency shutdown including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators, to ensure that emergency shutdown is executed in a safe and timely manner
- Emergency operations
- Normal shutdown
- Startup following a turnaround, or after an emergency shutdown



Operating Procedures

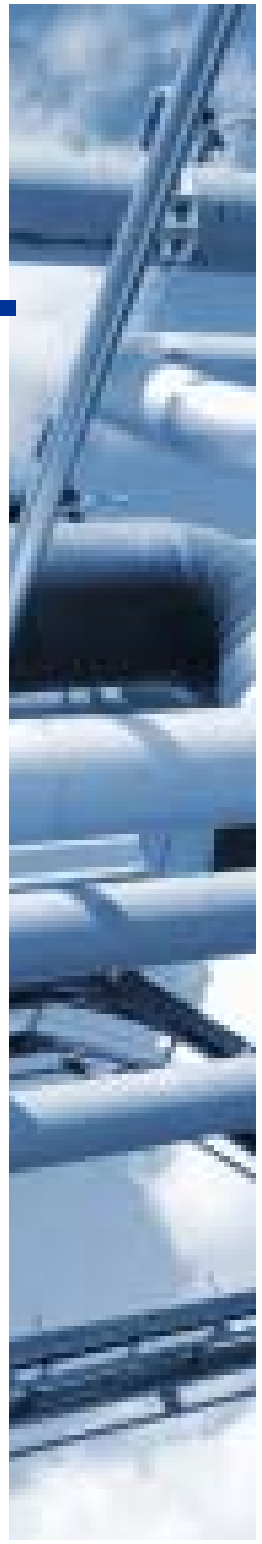
Operating limits:

- Consequences of deviation
- Steps required to correct or avoid deviations

Safety and health considerations:

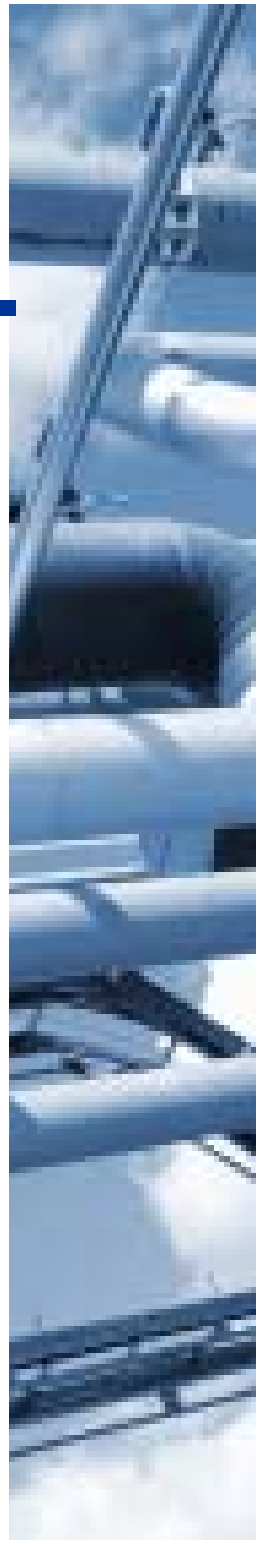
- Properties of, and hazards presented by, the chemicals used in the process
- Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment
- Control measures to be taken if physical contact or airborne exposure occurs

The operating procedures also include Lockout/Tagout procedures, confined space entry; opening process equipment or piping, and control over entrance into a stationary source by maintenance, contractor, or other support personnel. These safe work practices apply to employees and contractor employees.



Common Deficiencies

- Operating Procedures (OP)
  - Procedure outdated or annual review not performed
  - Written procedures not synchronized with Operator actions
  - Each phase of operation not listed
  - Emergency shutdown procedure job assignments not clear
  - Temporary operations not included
  - Acceptable alarm setpoint range not documented
  - Procedures not in the language of the user



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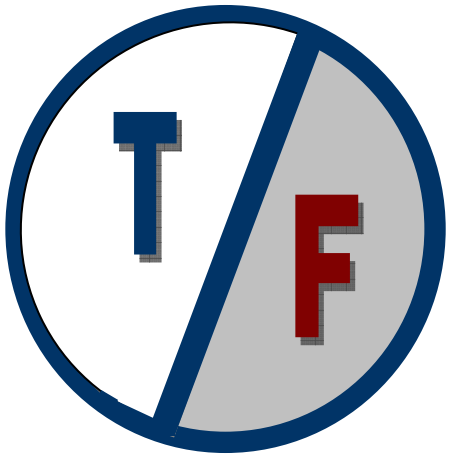
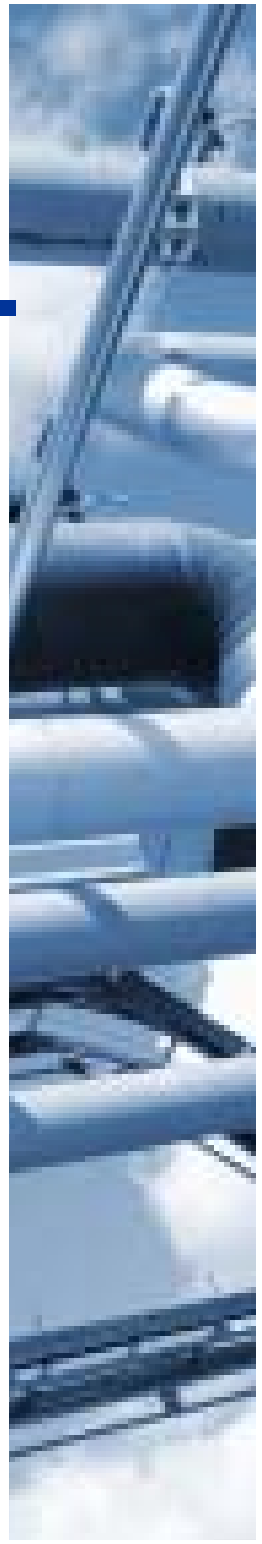
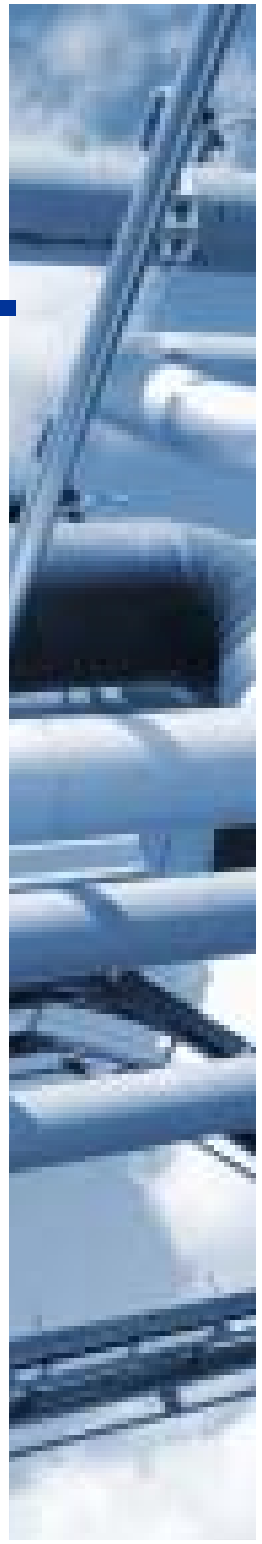


- If there have been no changes to the system there is no need to certify the Operating Procedures each year
- Contractors are not required to follow the facility Operating Procedures



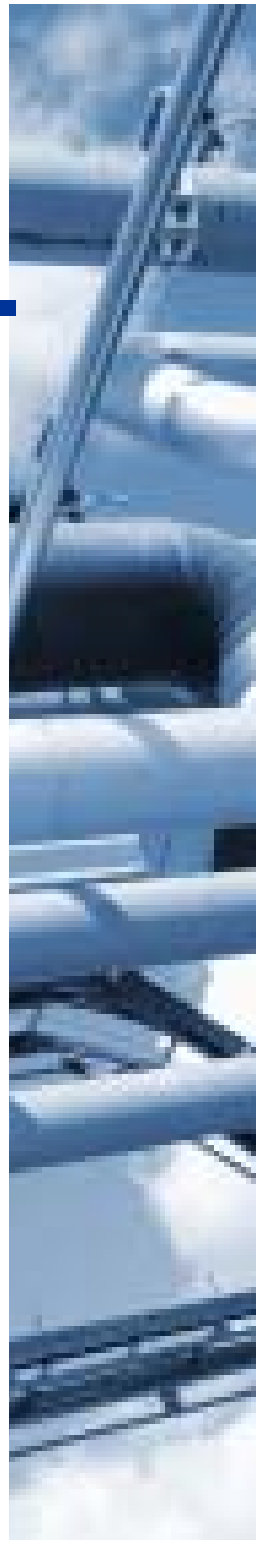
Training

- The training program must address operating procedures, safety, health, maintenance, emergency response, etc.
- The initial documented operator training must include:
  - Safety & health hazards
  - Emergency operations including shutdown
  - Safe work practices applicable to the operator's assigned job task
  - Safety systems & their functions
  - Operating limits, the consequences of deviating from the operating limits or procedures
- The training records must include:
  - The identity of the operator trained
  - The date of the training
  - The means used to verify that the training was received & understood by the employee



Common Deficiencies

- Training (TRN)
  - Documentation that demonstrates that training has been performed not available
  - Training does not cover maintenance procedures
  - Training records do not indicate the means used to verify that the employee understood the training
  - Training not in the language of the user



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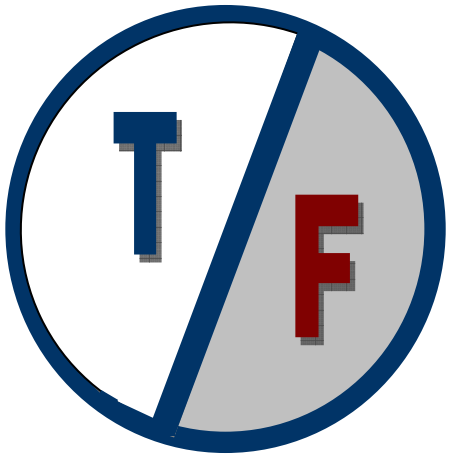
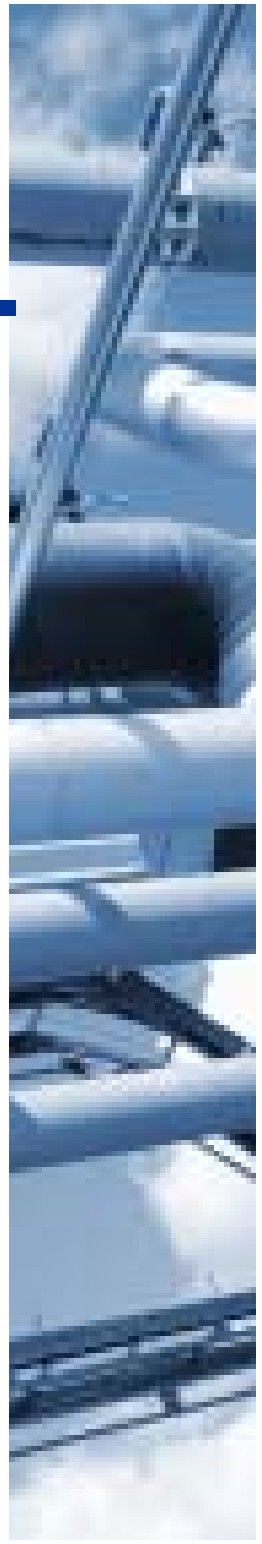
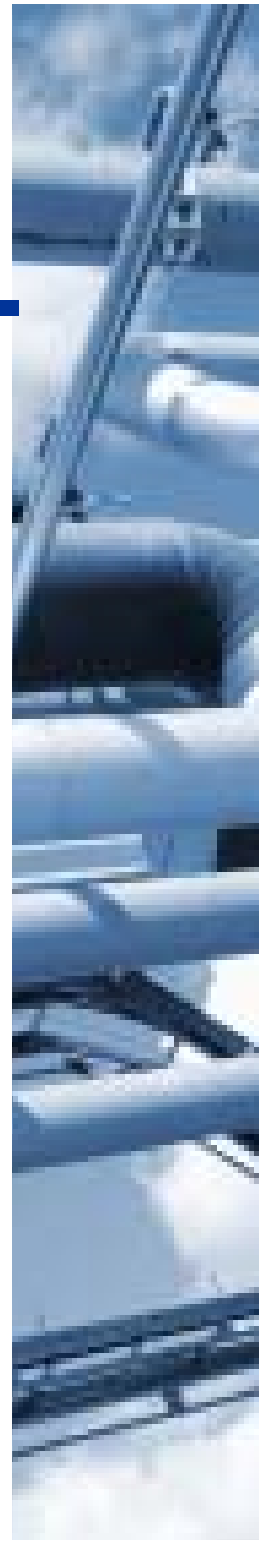


- Refresher training on the applicable facility Operating Procedures is required to be completed every three years
- Training records should document the means used to verify training comprehension



Mechanical Integrity/ Maintenance

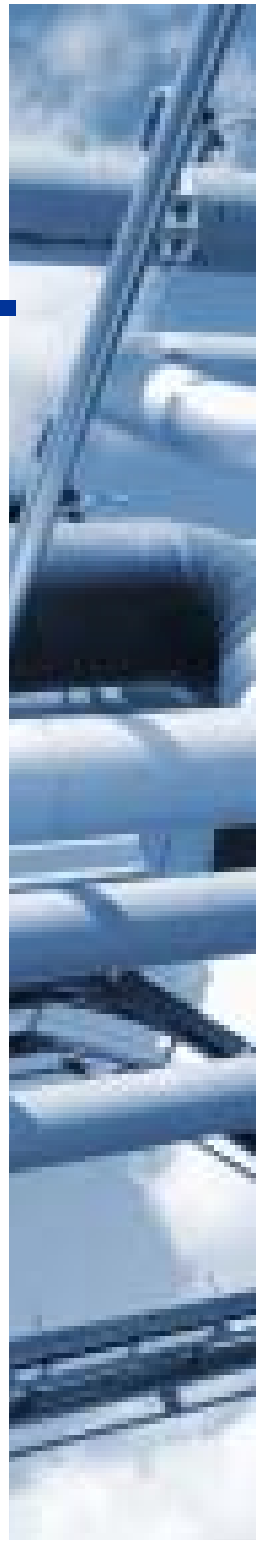
- Describes the process and safety equipment preventive maintenance and inspection schedules
- Can not have a Fix-at-Failure Maintenance Strategy
- Must have a Preventive Maintenance program based on manufacturer recommendations
  - If a contractor is used, you still must develop a written schedule of what he is replacing, overhauling, cleaning, etc. and on what frequency



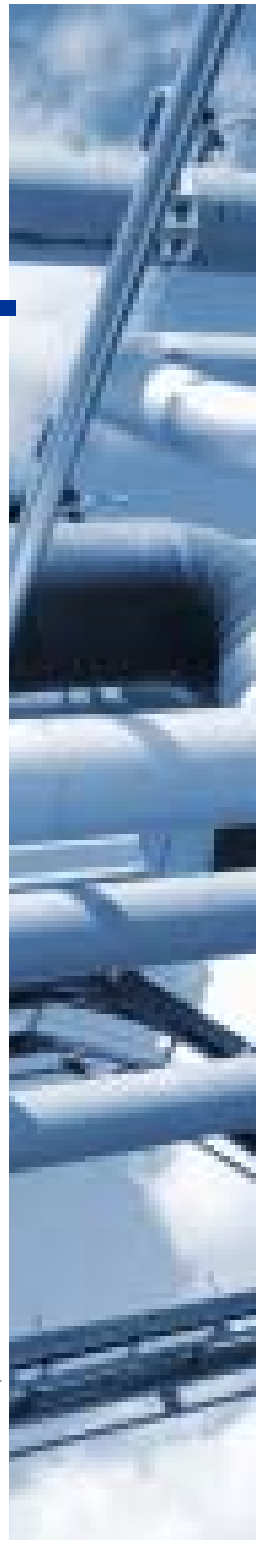
Mechanical Integrity

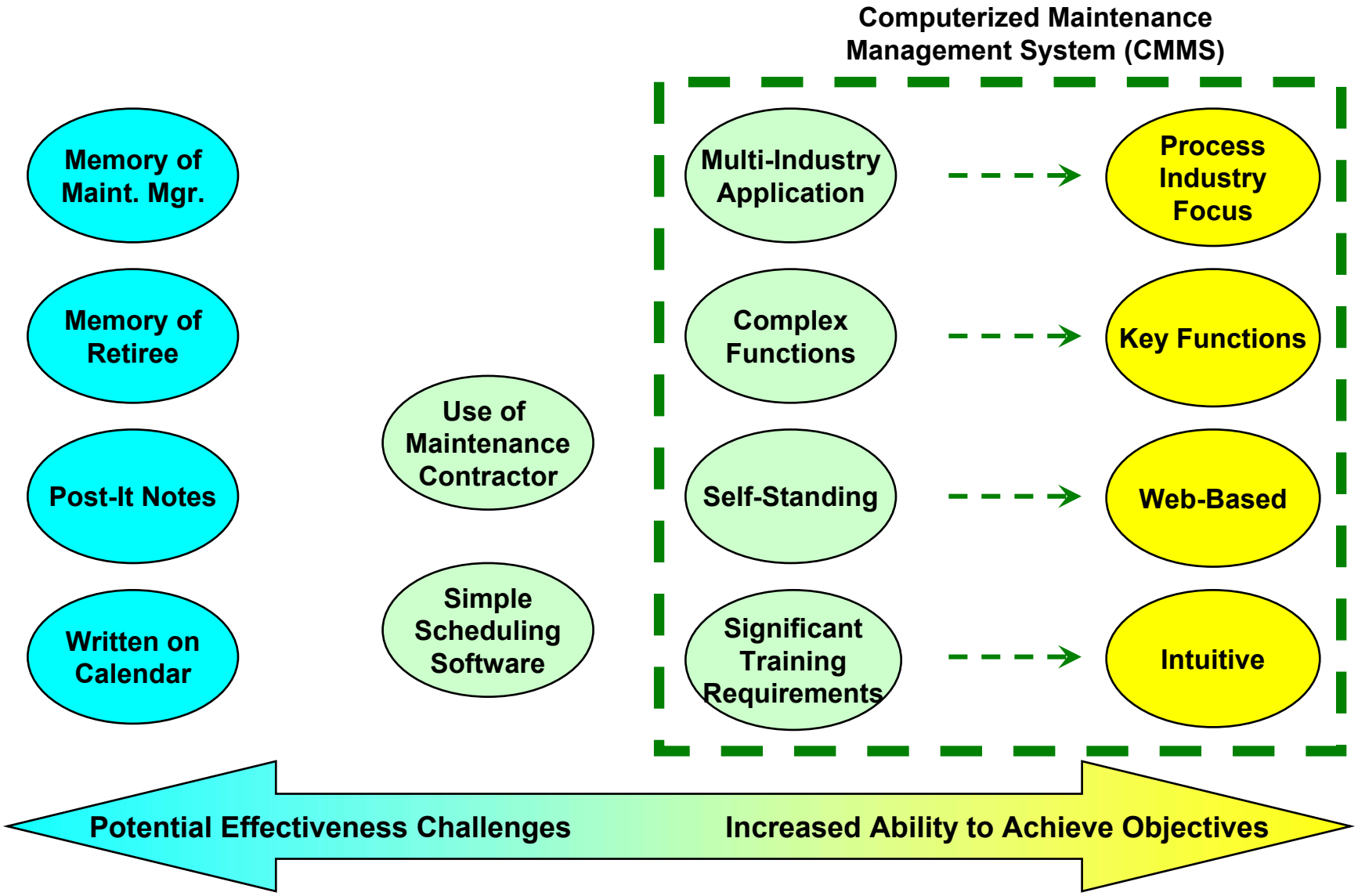
Regulations require you to:

1. Ensure that there is an established and implemented written procedure to maintain on-going integrity of process equipment, including a procedure to periodically review, document, and approve delays.
2. Ensure that each employee or contractor involved in maintaining the on-going integrity of process equipment is given an overview of that process and its hazards. Ensure that the employee can perform the job task in a safe manner.
3. Perform regular inspection and tests of equipment and perform the required maintenance work. Maintain inspection, testing, and maintenance records.

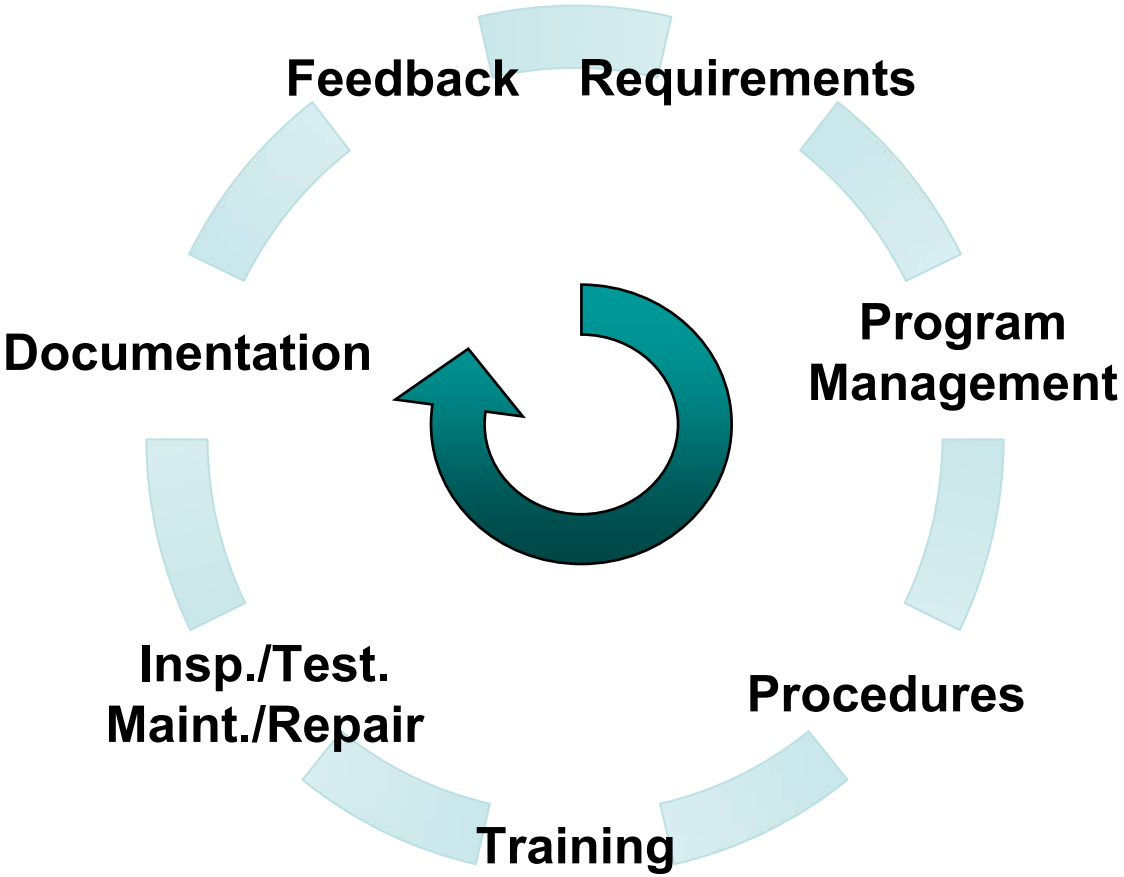


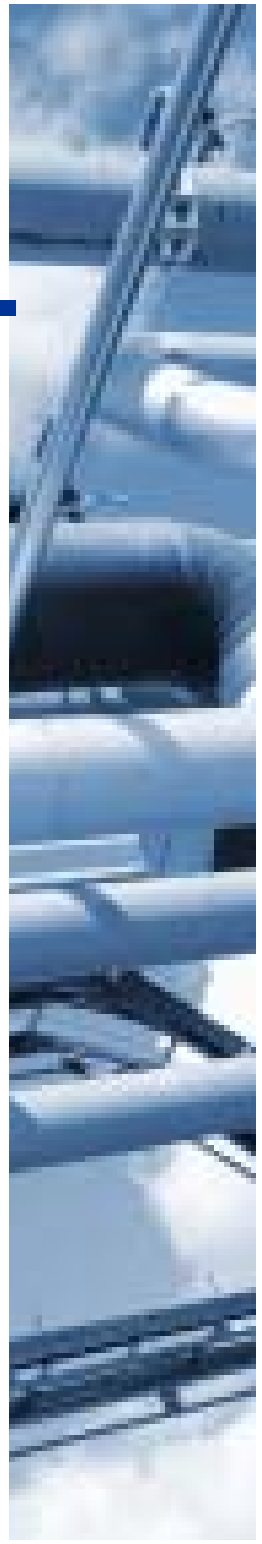
MI Implementation Spectrum





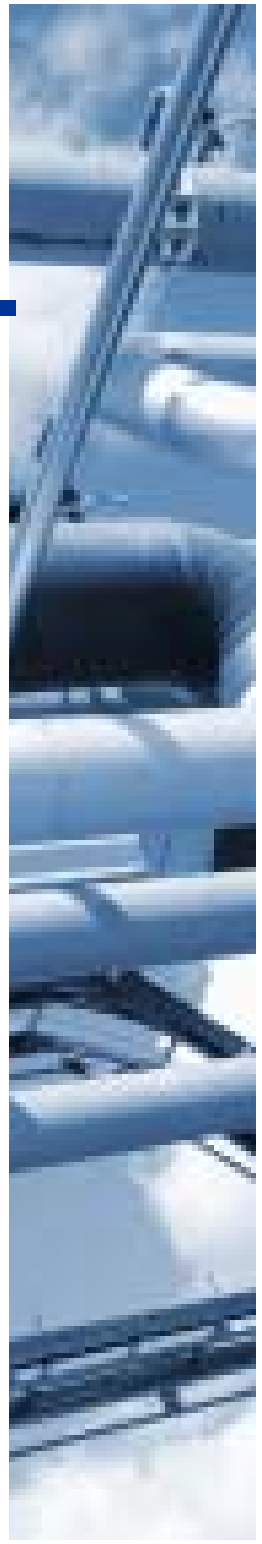
MI Program Elements





Common Deficiencies

- Mechanical Integrity (MI) / Maintenance
  - Written procedures related to the ongoing integrity of the process not available, not complete, or not implemented
  - Inspections/maintenance are not occurring or inspection/maintenance frequency is not consistent with industry standards
  - Equipment deficiencies not corrected in a safe or timely manner
  - Facility relies on a Contractor and does not have a written preventive maintenance schedule that it is committed to
  - MI activity NOT DOCUMENTED!!!



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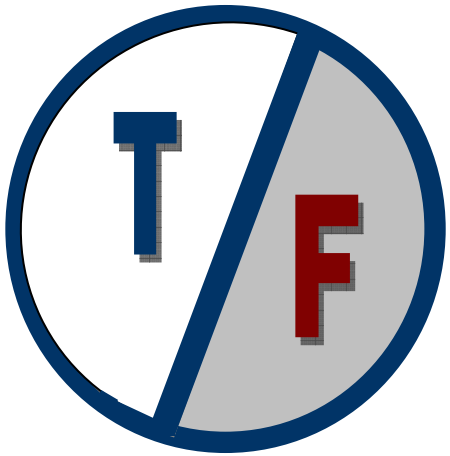
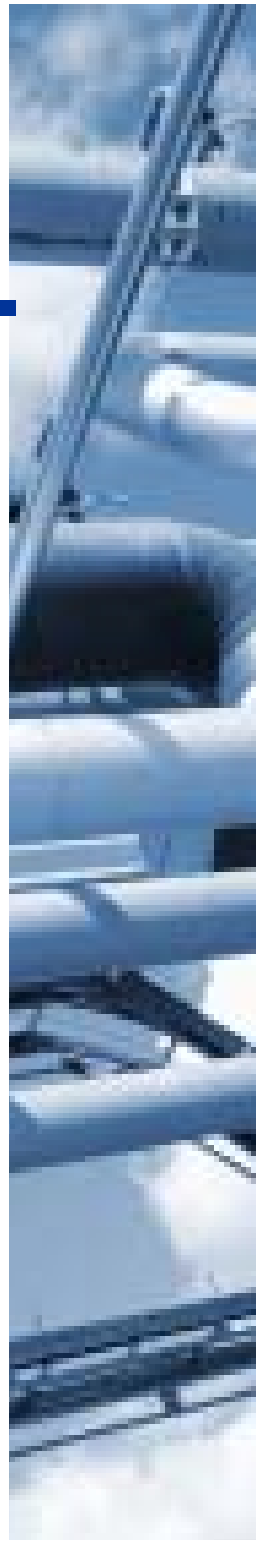
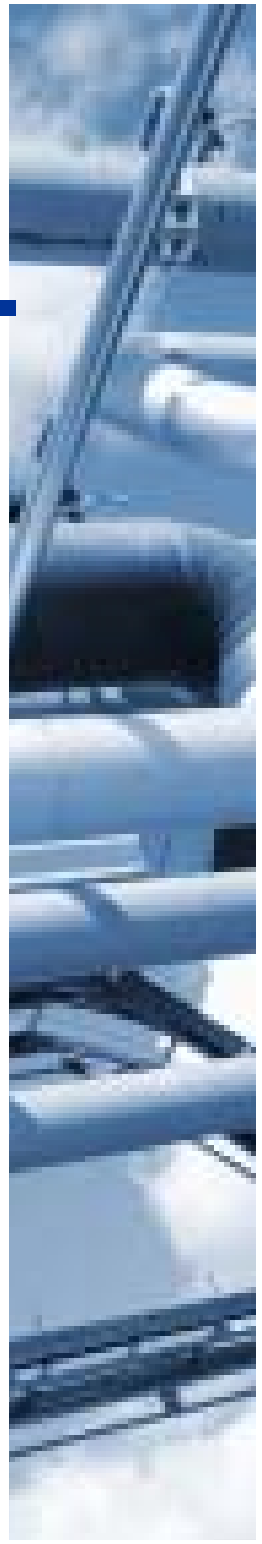


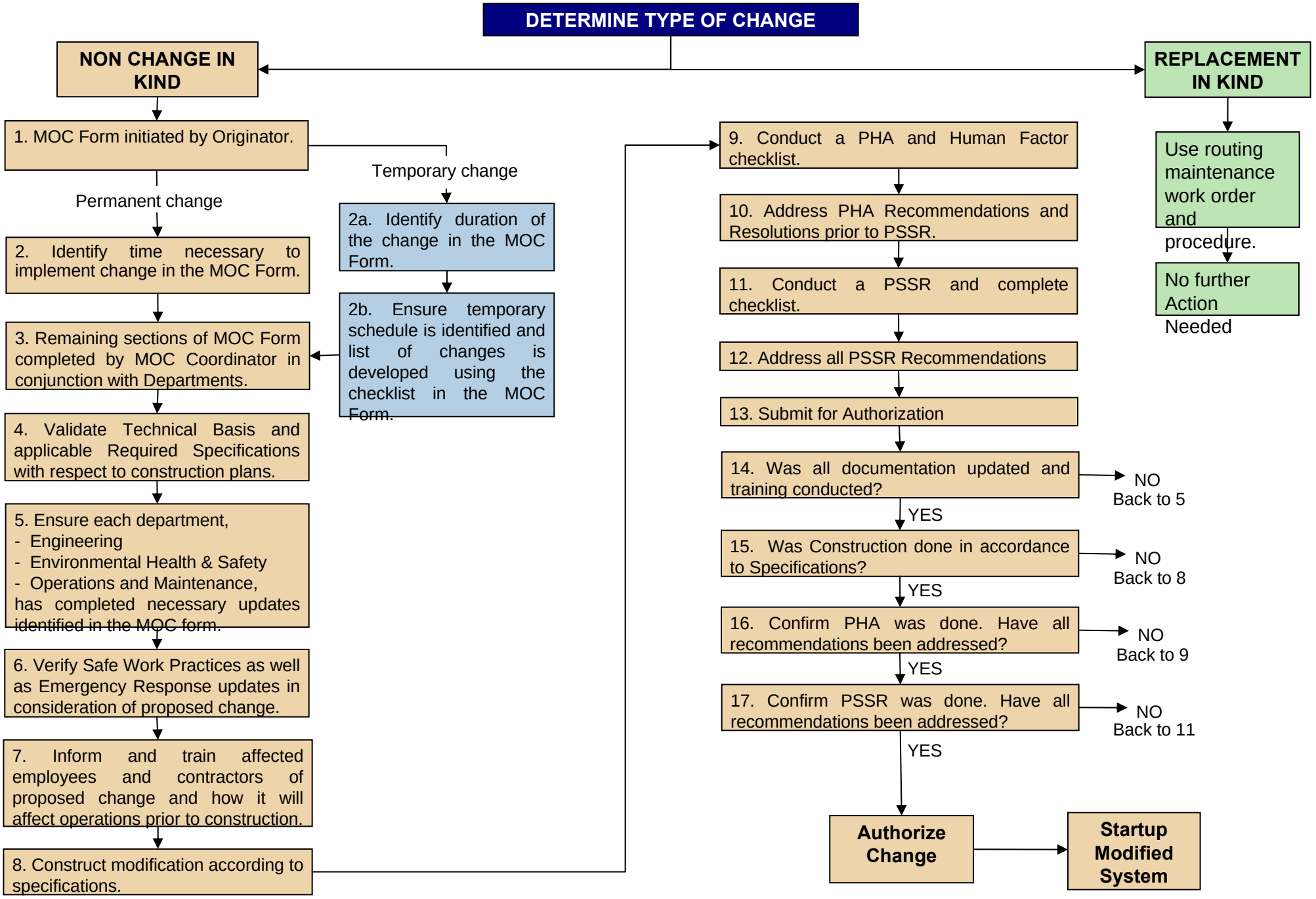
- A relief valve is one type of equipment typically encompassed by MI Programs
- The MI Program requires a written procedure, but documenting implementation is left as an option to the facility



Management of Change

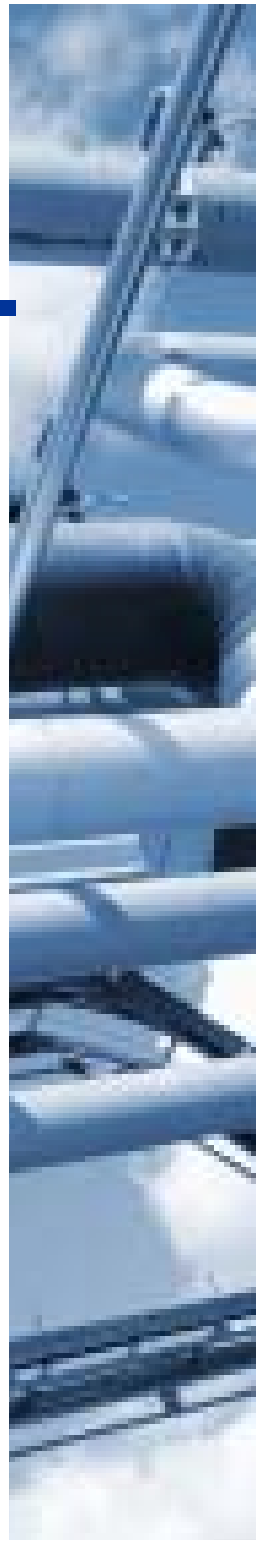
- Ensure a safe and systematic method is used to make changes to processes that contain highly hazardous materials
- Identify the technical basis for any proposed change. Ensure that the changes have been designed utilizing good engineering practices and regulatory requirements
- Ensure all required modifications to operating procedures, process safety information, and/or other EPA RMP/OSHA PSM documentation have been made
- Inform and train involved employees of process change and new requirements




DETERMINE TYPE OF CHANGE
NON CHANGE IN KIND
REPLACEMENT IN KIND
1. MOC Form initiated by Originator.
Permanent change
Temporary change
2. Identify time necessary to implement change in the MOC Form.
2a. Identify duration of the change in the MOC Form.
2b. Ensure temporary schedule is identified and list of changes is developed using the checklist in the MOC Form.
3. Remaining sections of MOC Form completed by MOC Coordinator in conjunction with Departments.
4. Validate Technical Basis and applicable Required Specifications with respect to construction plans.
5. Ensure each department,
- Engineering
- Environmental Health & Safety
- Operations and Maintenance,
has completed necessary updates identified in the MOC form.
6. Verify Safe Work Practices as well as Emergency Response updates in consideration of proposed change.
7. Inform and train affected employees and contractors of proposed change and how it will affect operations prior to construction.
8. Construct modification according to specifications.
9. Conduct a PHA and Human Factor checklist.
10. Address PHA Recommendations and Resolutions prior to PSSR.
11. Conduct a PSSR and complete checklist.
12. Address all PSSR Recommendations
13. Submit for Authorization
14. Was all documentation updated and training conducted?
NO
Back to 5
YES
15. Was Construction done in accordance to Specifications?
NO
Back to 8
YES
16. Confirm PHA was done. Have all recommendations been addressed?
NO
Back to 9
YES
17. Confirm PSSR was done. Have all recommendations been addressed?
NO
Back to 11
YES
Authorize Change
Startup Modified System
Use routing maintenance work order and procedure.
No further Action Needed

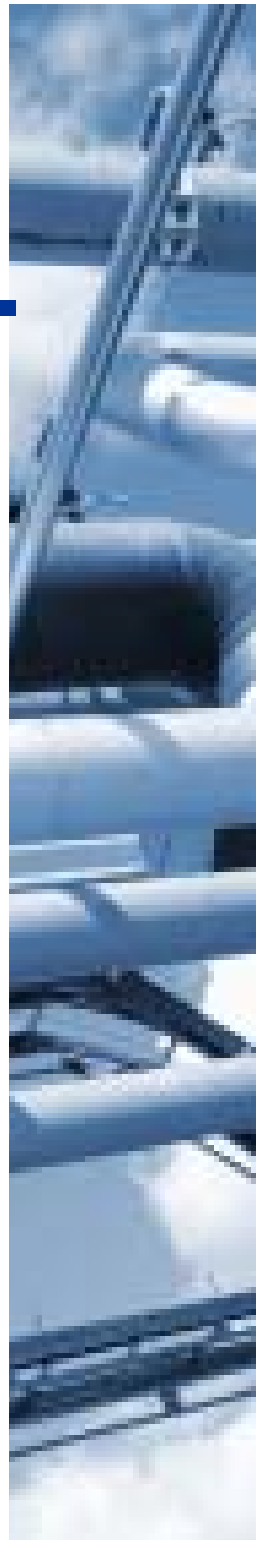
Common Deficiencies

- Management of Change (MOC)
  - MOC Procedure not current or used
  - Prevention Program documentation not updated to reflect a change in the system



Pre-Startup Safety Review

- Conducted for all new process construction and modified processes to ensure that the system is safe for initial and continued operation
- Confirms that elements of the Management of Change have been completed
- Ensures that PHA recommendations have been closed prior to startup.



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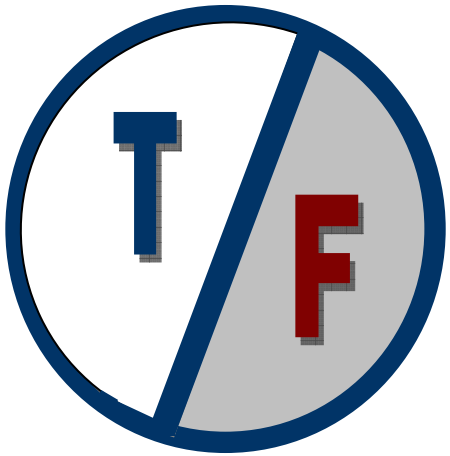
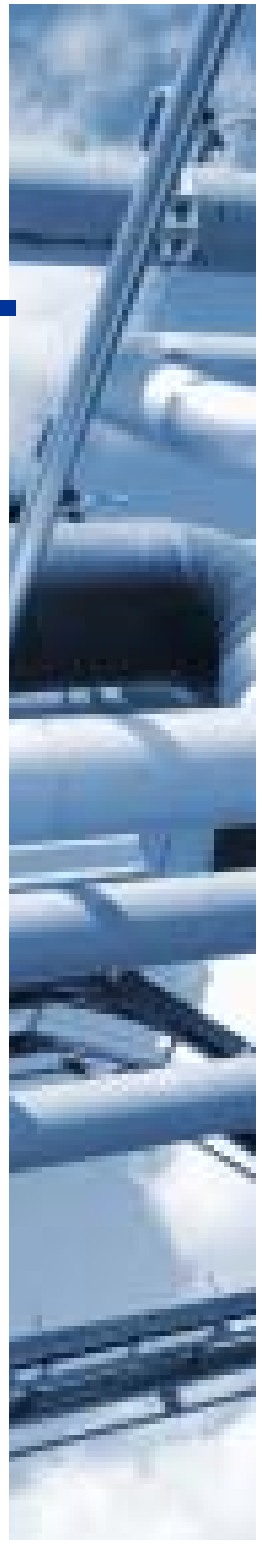
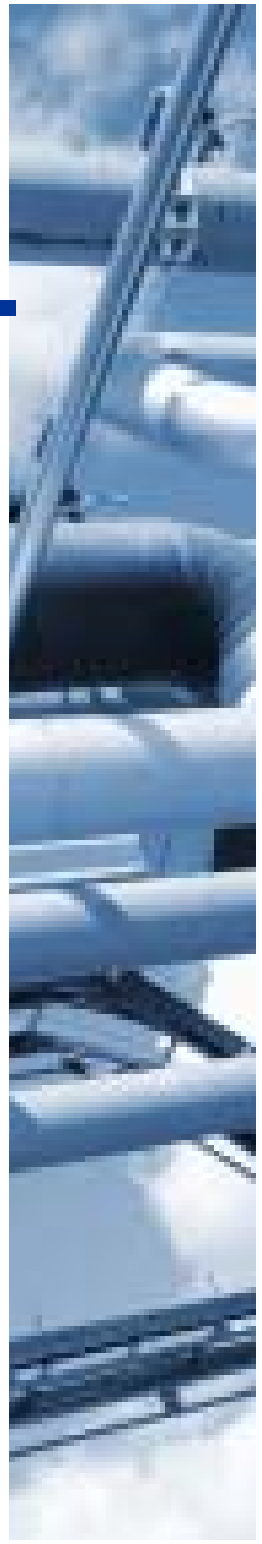


A Pre-Startup Safety Review must be completed for all process modifications, including “in-kind” changes



Common Deficiencies

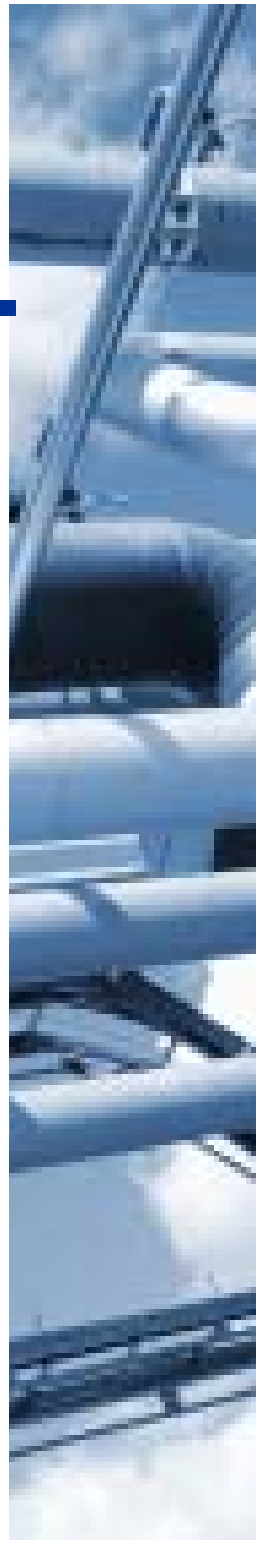
- Pre-Startup Safety Review (PSSR)
  - Written procedures do not exist
  - Pre-Startup Safety Review documentation is not completed or kept on file following implementation of the MOC procedure
  - Documentation is not completed, and signed-off, until after start-up



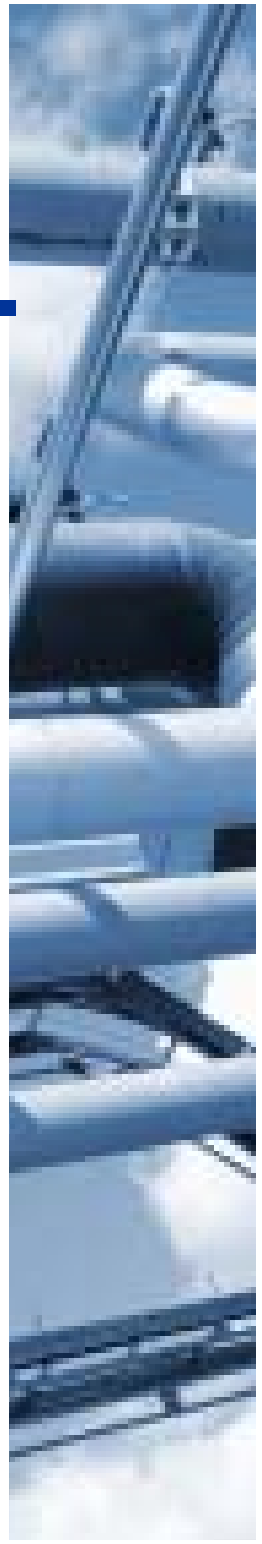
Compliance Audits

CalARP/RMP have nearly identical requirements:

- Certify evaluation of compliance (3 years)
- Document findings
- Address deficiencies
- Retain two most recent audit reports
- Can be addressed by developing checklists to address:
  - Technical compliance
  - Actual effectiveness



Compliance Audit Checklist



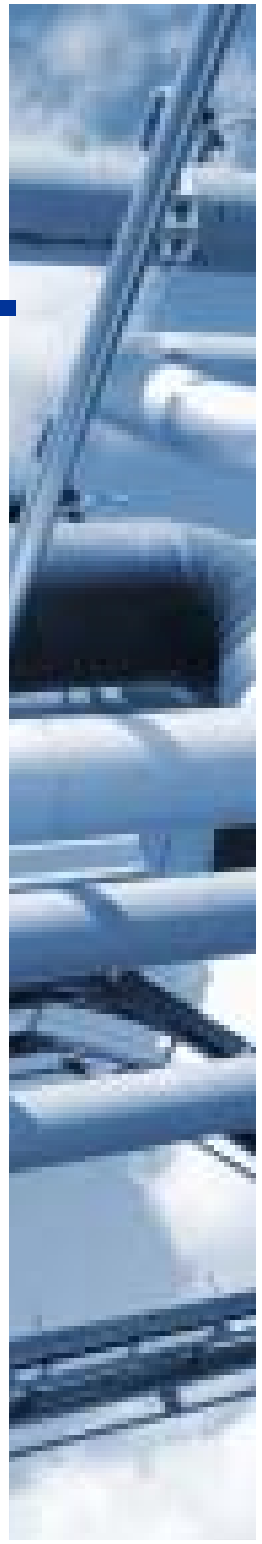
XI. Hot Work Permits (HWP)

OSHA PSM: **29 CFR Part 1910.119 (k)**
EPA RMP: **40 CFR Part 68.85**

Regulatory Requirement	Yes	No	Comments	Recommendations	Assigned #
107) Are there procedures for issuing a hot work permit for each hot work operation conducted on or near a covered process?					
108) Does the hot work permit: (a) Document that the fire prevention & protection requirements as specified in **29 CFR §1910.252[a]** have been implemented prior to commencing the hot work operations? (b) Indicate the date(s) authorized for hot work? (c) Indicate the object on which hot work is to be performed? (d) Are the permits being kept on file until completion of the hot work operations?					

Common Deficiencies

- Compliance Audits (CA)
  - Lack of follow-through on recommendations
  - Compliance audit not completed every three years
  - Performing an audit of program, but not supporting with documentation



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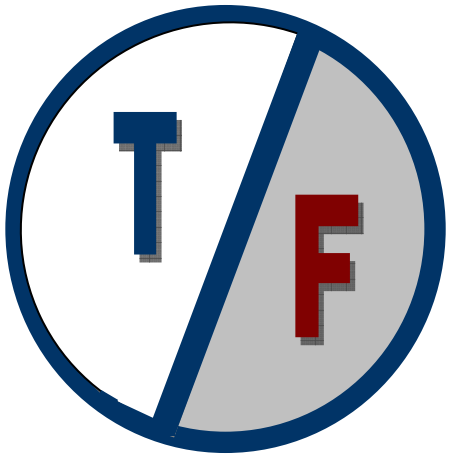
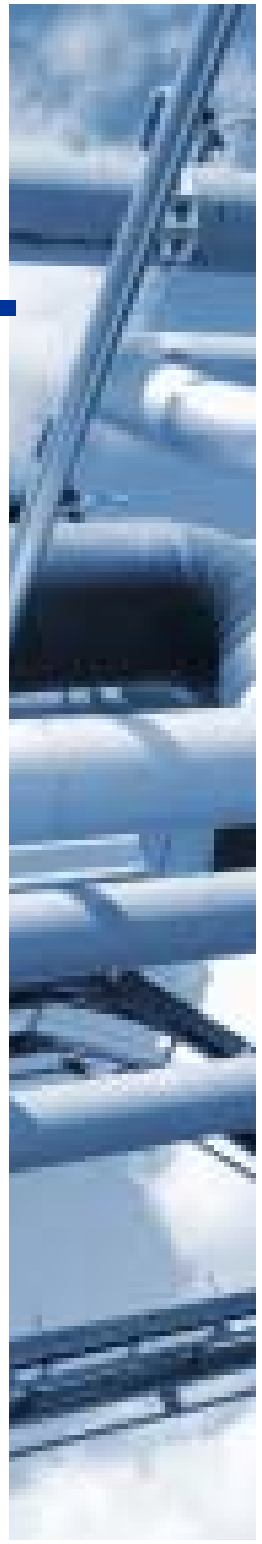
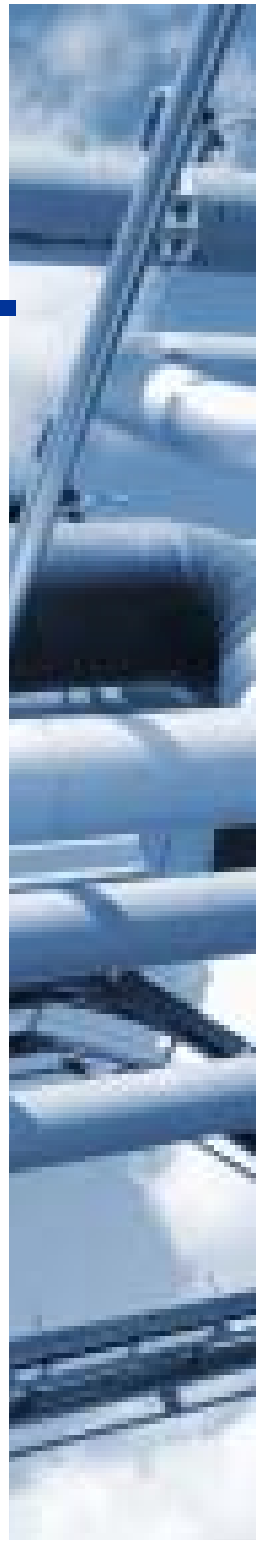


- All past Compliance Audits must be kept on file for the lifetime of the process
- The 5-Year update satisfies the Compliance Audit requirements
- An audit by an external agency (e.g., EPA, OSHA) counts as a Compliance Audit



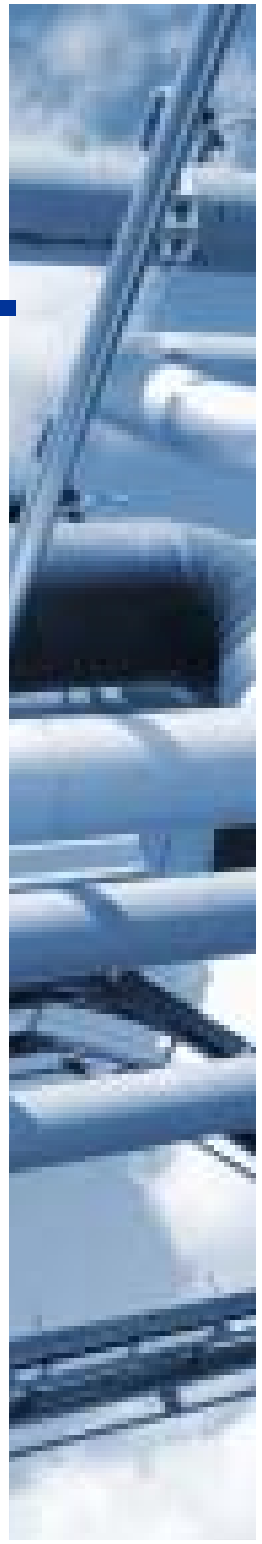
Incident Investigation

- Describes the process of Incident Investigation
  - All incidents must be investigated and reported including near-miss incidents
  - Initiate the incident investigation as promptly as possible (No later than 48 hours following the incident)
  - The report should be reviewed with all affected personnel including contract employees



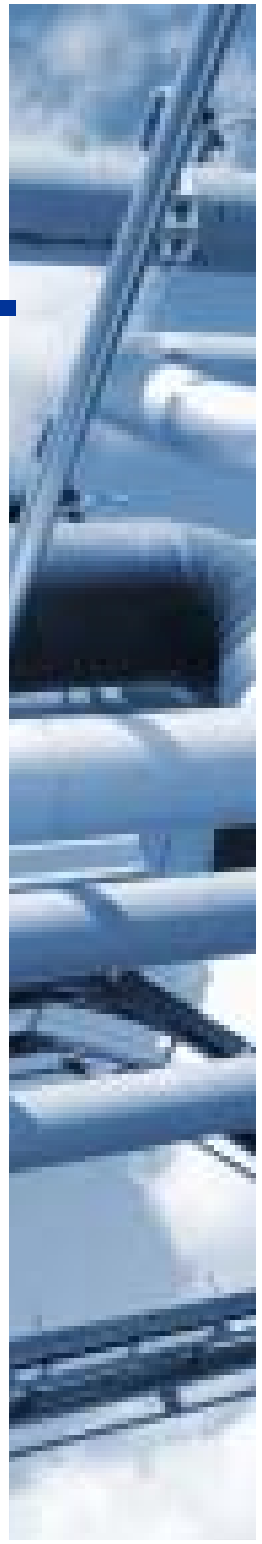
Examples of "Near Misses"

- That liquid isn't supposed to be in that tank. Oops, forgot that valve hidden beneath the deck plate.
- Relief valves relieving is not meant to be normal practice. A relief valve is not a regulator and this is a deviation from the design intent.
- ESDs or BOPs actuated are not normal shutdown practices.
- Increased corrosion rates – Why? Its great that inspection picked it up but what do we do about it. What's causing it? Is the metallurgy adequate?
- Fouling of equipment or repeated premature failure of controls and devices



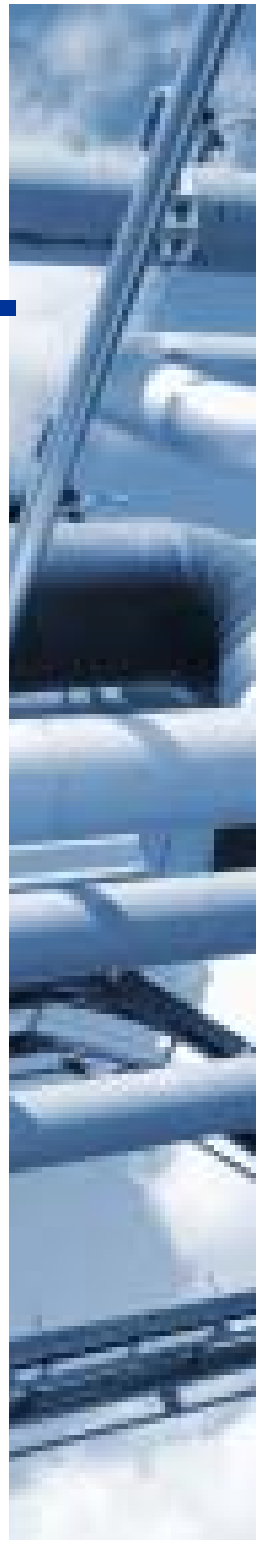
Incident Investigation

- The Incident Investigation report needs to include the following:
  - Date of incident
  - Date investigation began
  - A description of the incident
  - The factors that contributed to the incident (especially root causes)
  - Any recommendations resulting from the investigation



Common Deficiencies

- Incident Investigation not done correctly
- Incident Investigation team not formed within the first 48 hours of the incident
- Lack of follow-through on recommendations
- Findings not shared with affected employees



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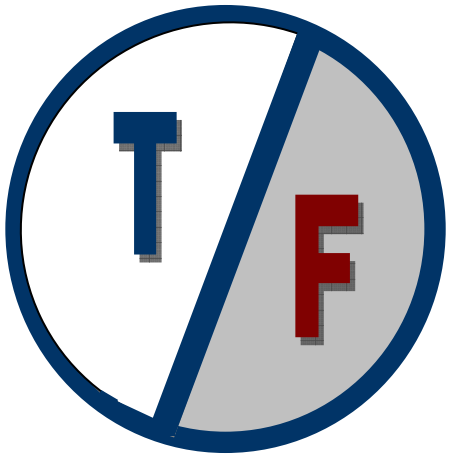
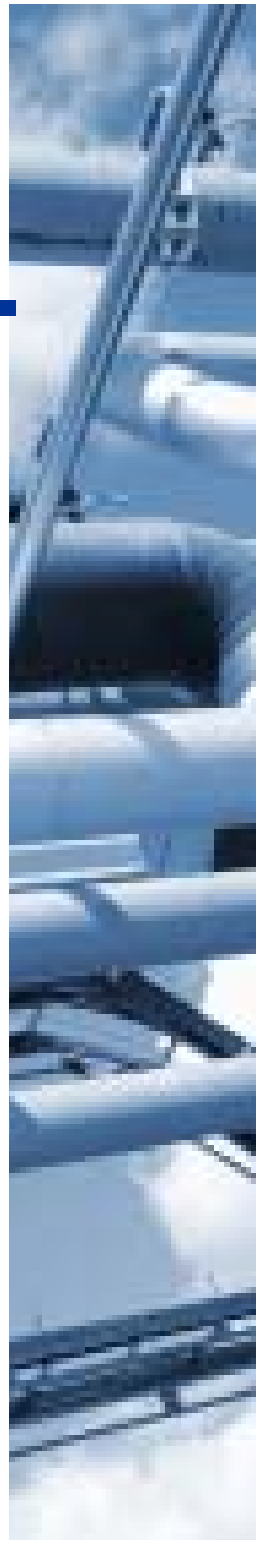
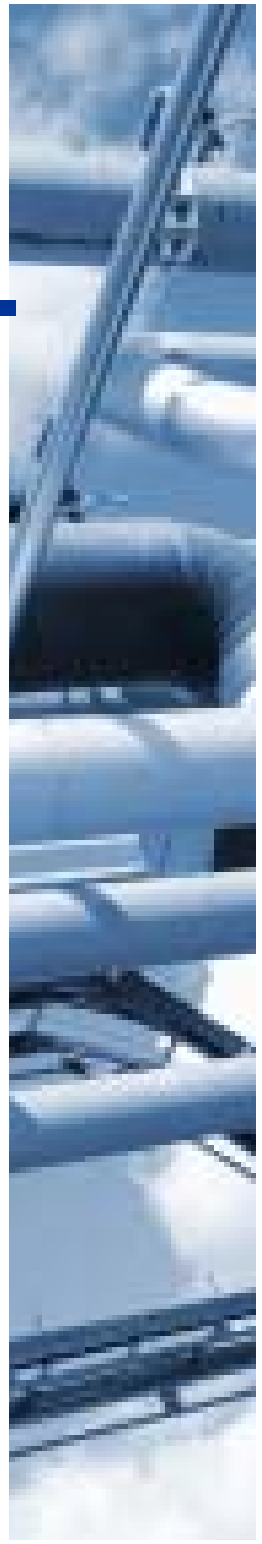


- Incident Investigation procedures only need to be implemented when the system damage is greater than $50,000
- The Incident Investigation must be initiated within 48 hours of the incident



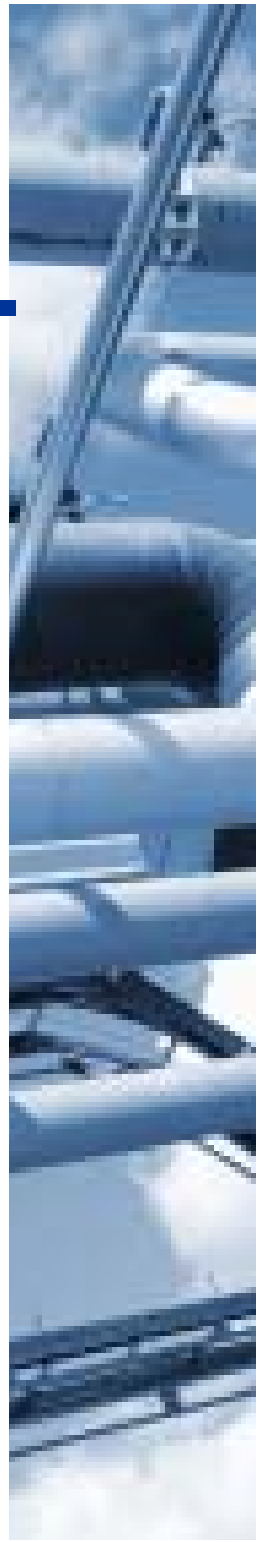
Common Deficiencies

- Incident Investigation (II)
  - Lack of follow-through on recommendations
  - Findings not shared with affected employees
  - Incident investigation team is not formed within the first 48 hours of the incident
  - No investigation or documentation of “near-misses”



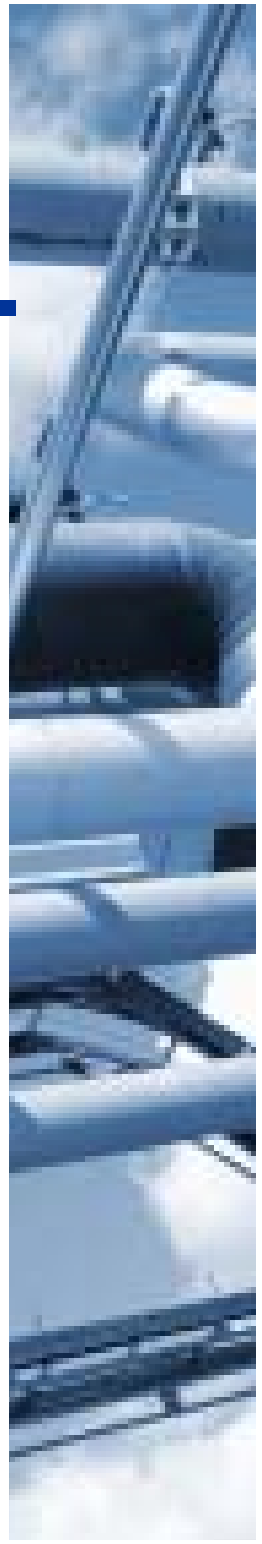
Employee Participation

- As part of the RMP/ PSM Program, it is required that employees are consulted on the conduct and development of program elements
- Employees should have access to elements of the program



Common Deficiencies

- A written Employee Participation plan is not documented and shared with employees.
- Employees involved in the covered process do not know where RMP/PSM documentation is located.



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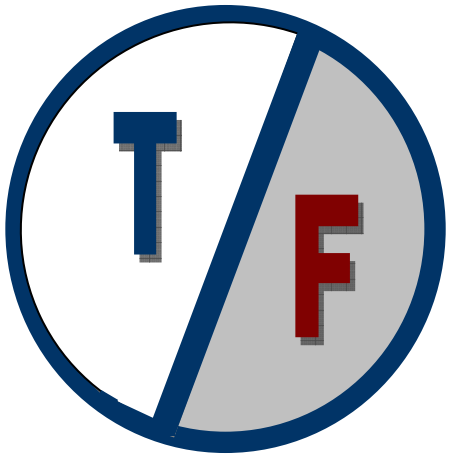
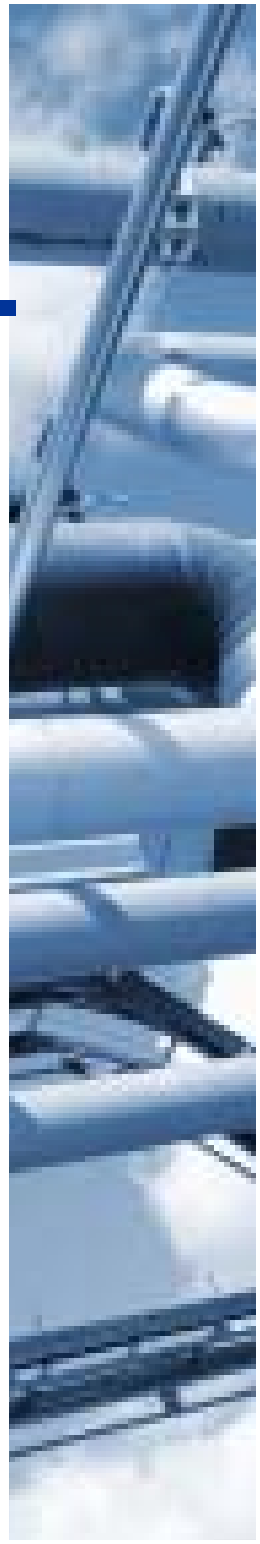
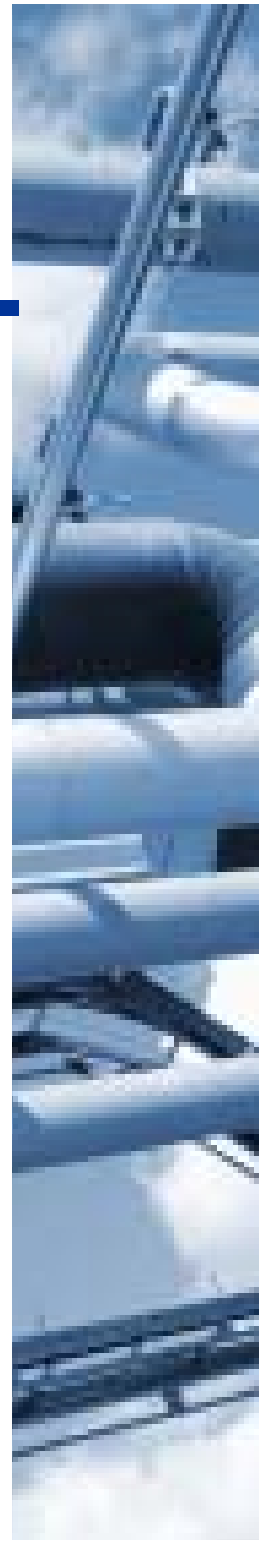


Employers are required to consult with employees and their representatives on the conduct and development of process hazard analyses



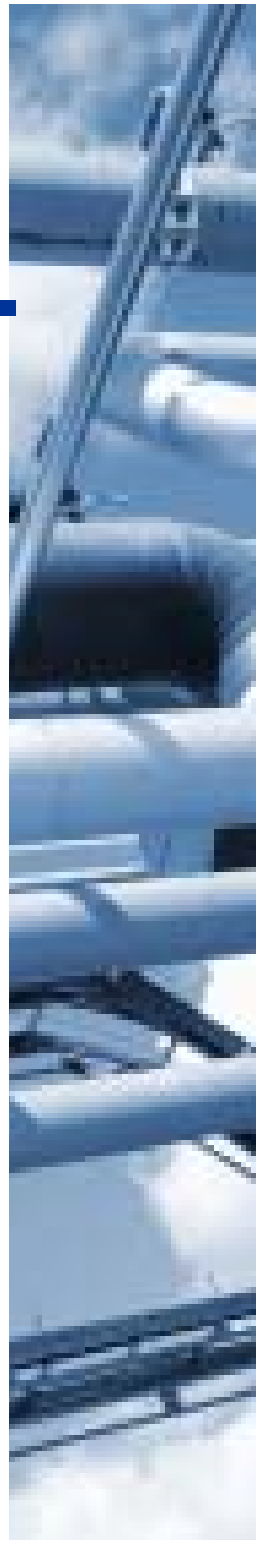
Hot Work Permit

- A procedure must be in place for issuing a hot work permit for each hot work operation conducted on or near the covered process
- The hot work permit must:
  - Document that the fire prevention & protection requirements as specified in 29 CFR §1910.252[a] have been implemented prior to commencing the hot work operations
  - Indicate the date(s) authorized for hot work
  - Indicate the object on which hot work is to be performed
  - Be kept on file until completion of the hot work operations

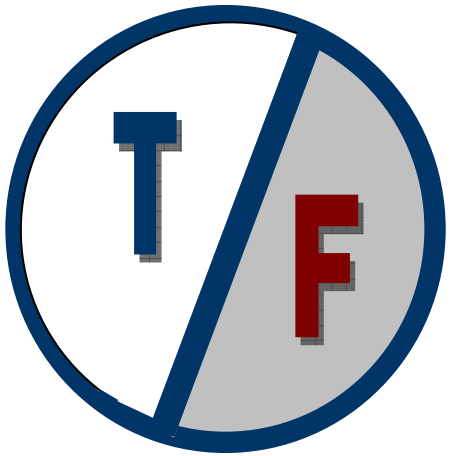


Common Deficiencies

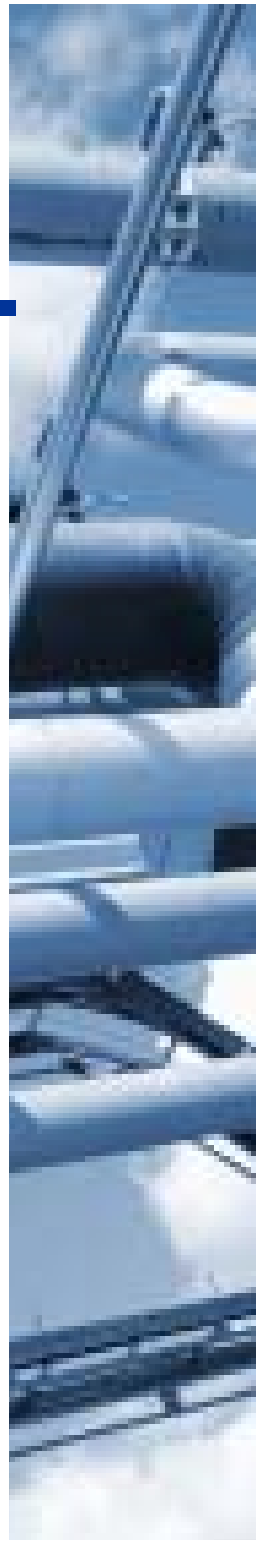
- Employees are not trained nor knowledgeable of the procedures
- Hot work records are not documented and kept on file
- Safe work practices (e.g., LO/TO, HWP, Confined-Space Entry, Line Breaking) not followed



Quiz

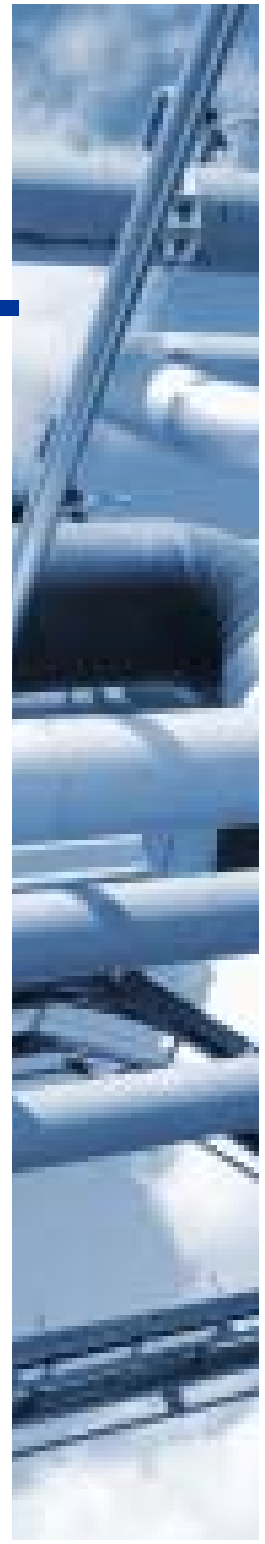


Hot Work Permits are not required to be completed when contractors are working on the regulated process



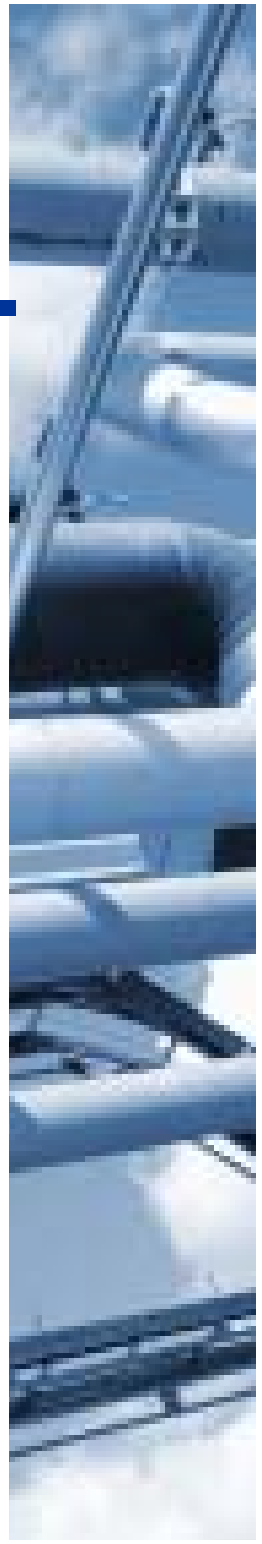
Contractors

- It is the responsibility of the facility to ensure that any contractor going to work on or near the regulated process is qualified and fully aware of the potential hazards associated with the system.
  - When selecting a contractor, obtain and evaluate information regarding the contract owner or operator's safety performance and programs.
  - The contractor owner or operator shall ensure that each contract employee is trained in safe work practices.
  - Periodically evaluate the performance of the contract owner or operator, including training records and verifying safe work practices.

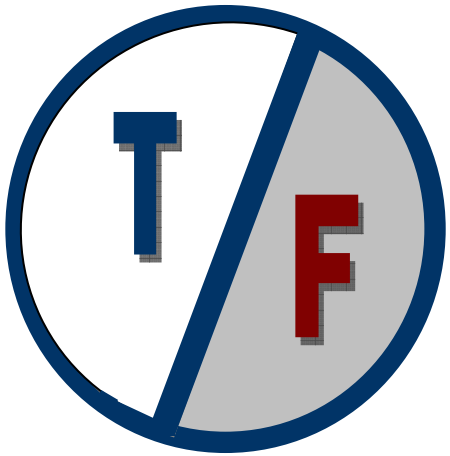


Common Deficiencies

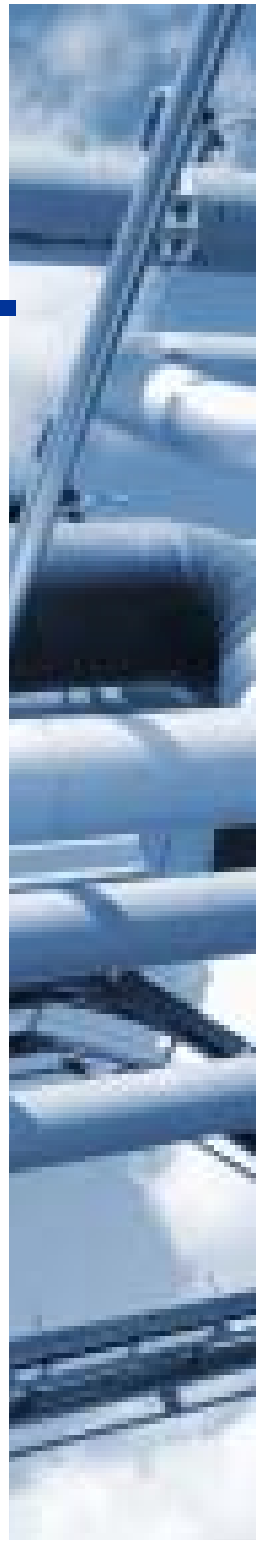
- Contractors (CON)
  - Lack of documentation on contractors that the facility is known to frequently use for handling maintenance or construction
  - Lack of Contractor/Visitor safety training



Quiz

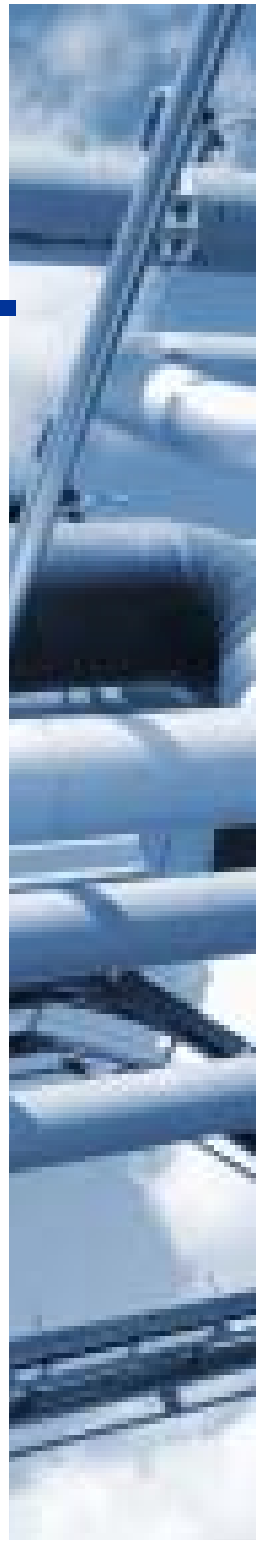


The Contractors element of the Prevention Program requires that I maintain a file containing at least the following records: qualifications and training records for my contractors, my contractors safety performance records, an evaluation of their onsite safe work practices



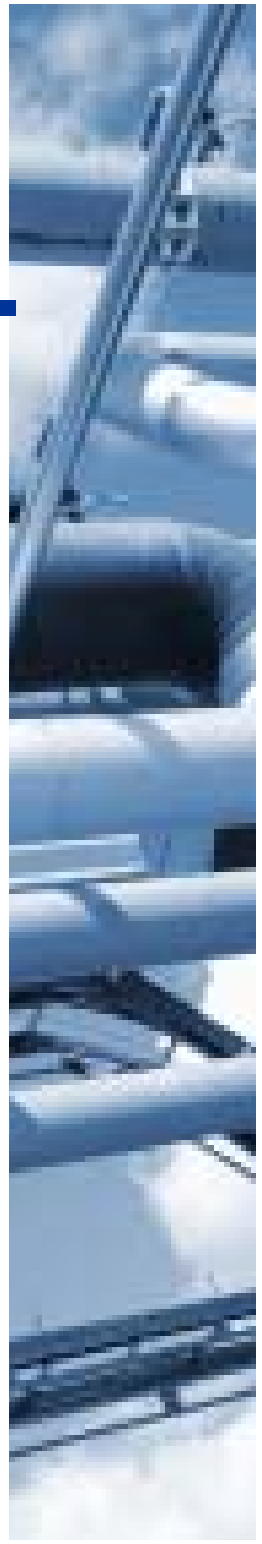
Emergency Planning & Response

- If the facility is a first responder, an Emergency Response Program is required.
- The owner or operator of a stationary source whose employees will not respond to accidental releases of regulated substances need not comply with the Emergency Response Program provided they meet the following:
  - For stationary sources with any regulated toxic substance held in a process above thethreshold quantity, the stationary source is included in the community emergency response plan
  - For stationary sources with only regulated flammable substances held in a process above the threshold quantity, the owner or operator has coordinated response actions with the local fire department; and,
  - Appropriate mechanisms are in place to notify emergency responders when there is a need for a response.

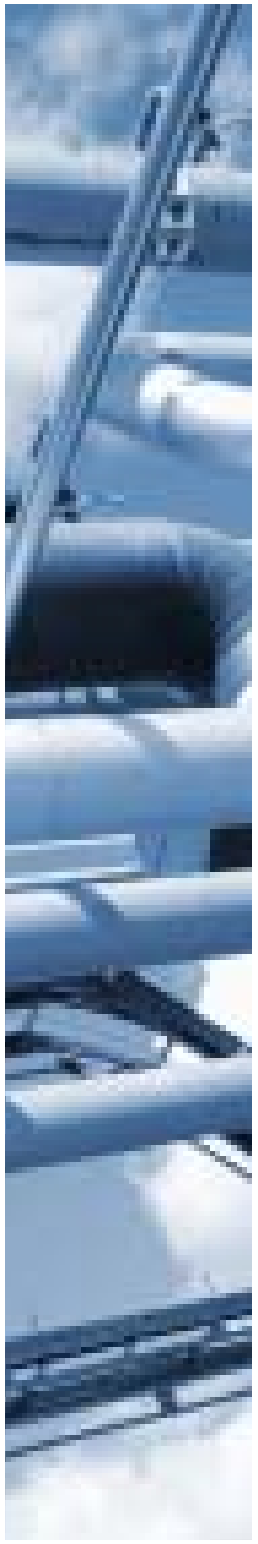


Common Deficiencies

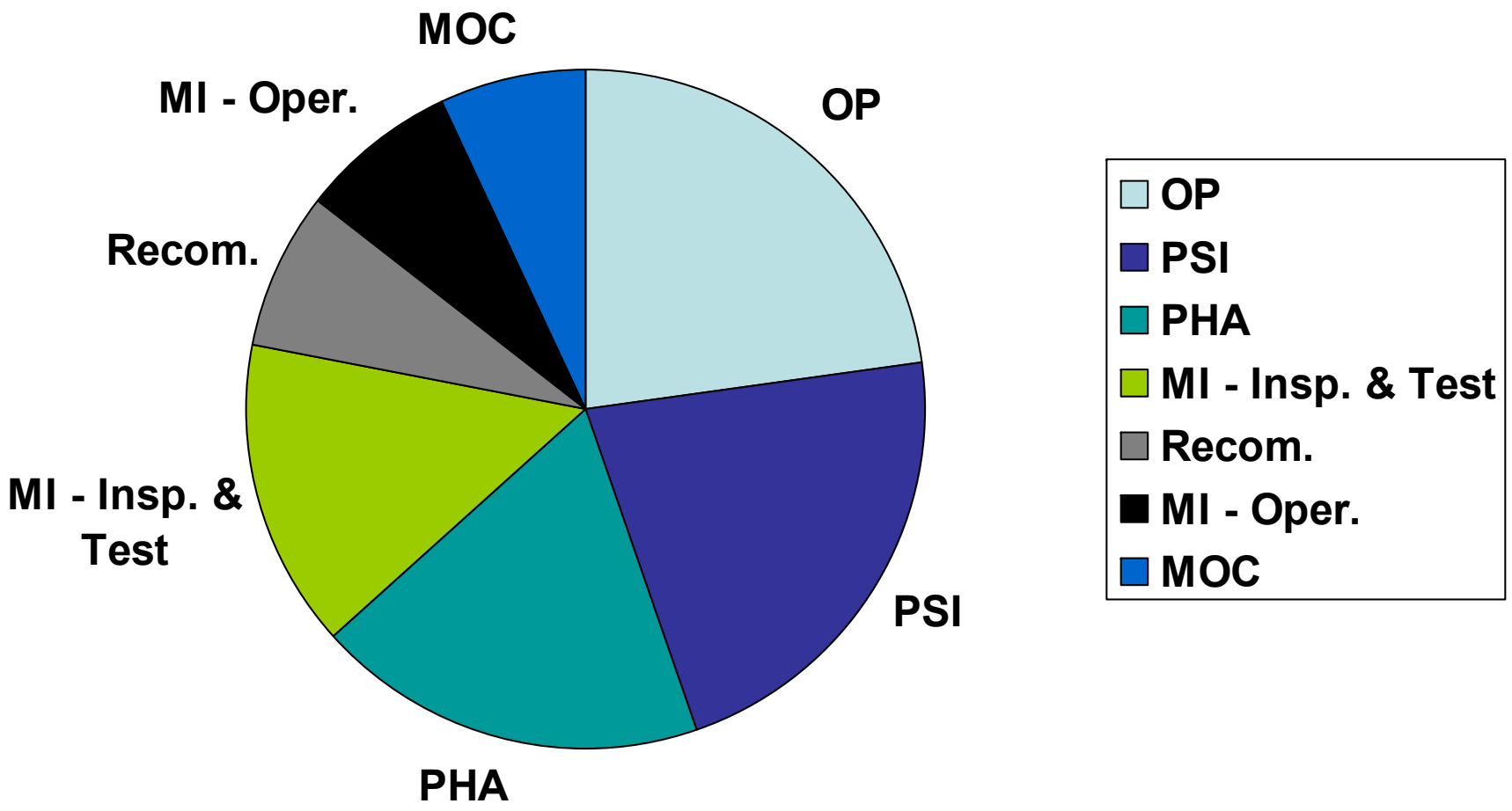
- Emergency Planning & Response (EP&R)
  - ERP vs. EAP
  - Not up-to-date
  - Phone numbers outdated
  - Usability
  - Annual review not performed
  - Training
  - Physicals and fit testing
  - Emergency response equipment



Most Common Program Deficiencies



Select Citation Summary

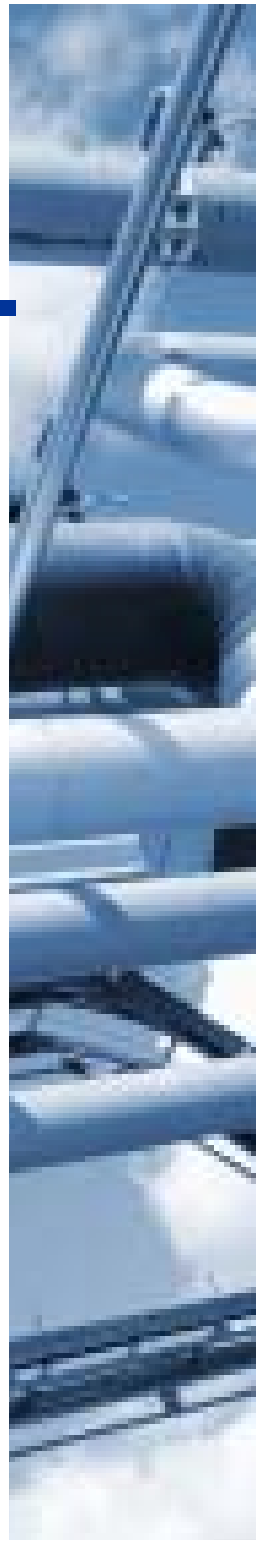


Steinway, Seitz, Perry, and Siegel, "Before OSHA Comes Knocking …," Chemical Engineering Progress, March 2009.

Common Program Deficiencies

The most common program-wide deficiency:

ADDRESSING
RECOMMENDATIONS

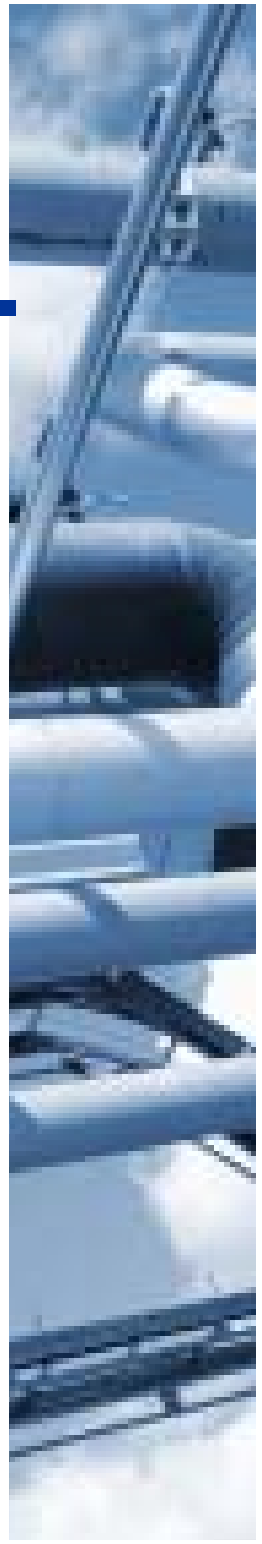


Recommendation Follow-up

Federal OSHA has the following guidance for Process Hazard Analysis findings:

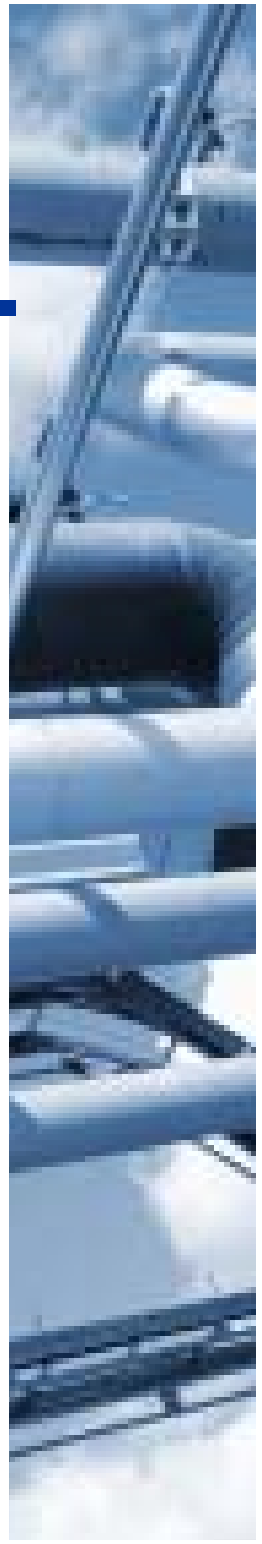
An employer can justifiably decline to adopt a recommendation where the employer can document, in writing, and based upon adequate evidence, that one or more of the following conditions is true:

1. The analysis upon which the recommendation is based contains factual errors.
2. The recommendation is not necessary to protect the health and safety of employees and contractors.
3. An alternative measure would provide a sufficient level of protection.
4. The recommendation is infeasible.



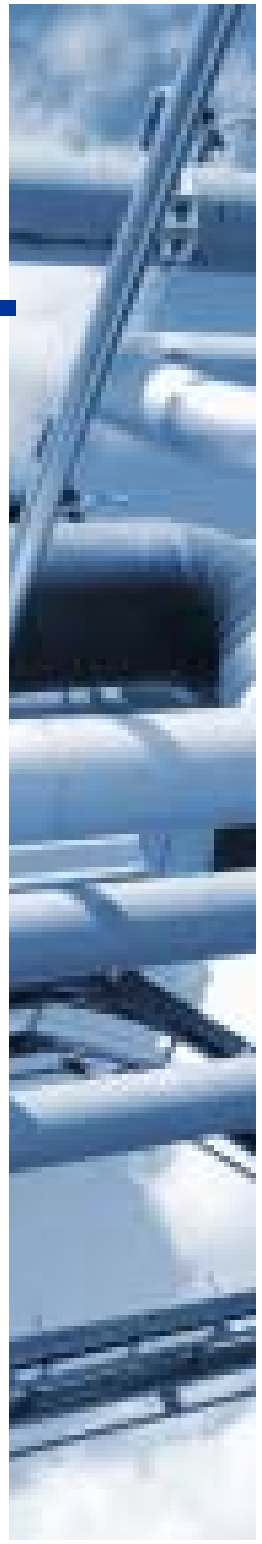
Recommendation Follow-up

- Assign an individual responsible for following up on the recommendation.
- Assign an anticipated date of completion to each and every recommendation.
- Document the actions taken for addressing the recommendation, label it as “CLOSED” and state the date of completion.



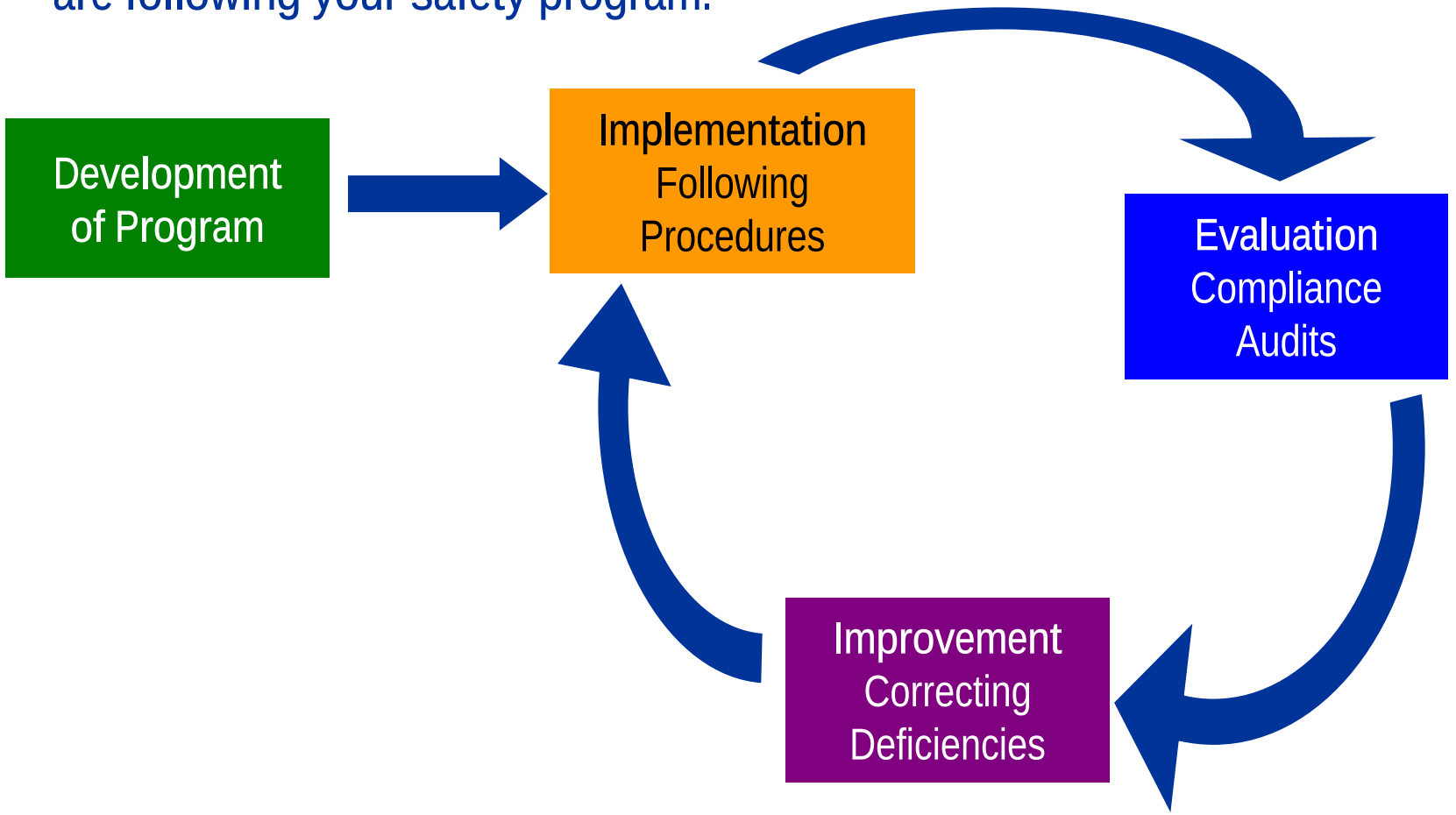
Things to Remember

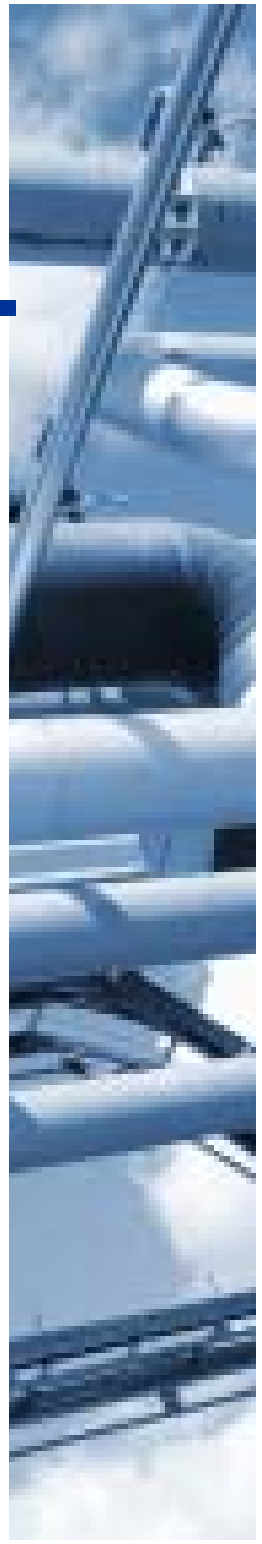
- Even if the facility performs all of the actions of their recommendations (i.e., installing sensors, labeling piping, etc.), if the documentation that originally stated the recommendations is not updated; it is a deficiency.



Prevention Program Life Cycle

These are “living” documents. Deficiencies will occur, procedures will change. The idea is to update and follow-up in order to demonstrate you are following your safety program.





Questions?

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Risk Management Professionals