PROCESS SAFETY MANAGEMENT PROGRAM

PURPOSE / SCOPE

Since 1990 OSHA established requirements for the management of hazards associated with processes using highly hazardous chemicals to help assure safe and healthful workplaces. The purpose of Process Safety Management (PSM) is to prevent or minimize consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals in various industries such as refineries, etc.

Employees are responsible for reporting hazardous conditions and dangers to their supervisor. Employees have the right to refuse unsafe work conditions.

PSM regulation applies to: 1) highly hazardous chemicals at or above threshold quantities. 2) flammable liquid or gas in a quantity of 10,000 pounds or more.

- Each Winger Companies, herein referred to as Winger, employee must follow the safety rules of the facility including the safe work practices required.
- The contract employer shall advise the contractor of any unique hazards presented by the contractor's work, or of any hazards found by the contractor's work.
- Communication must be made between the Winger crew and customer representative before and after work is completed. Any additional information, such as identified parts or materials that need to be repaired must be conveyed.

PROCESS SAFETY INFORMATION & HAZARD ANALYSIS

Winger customers shall complete a compilation of written process safety information and conduct process hazard identification before commencing work. This information is to help employees and contractors involved to identify and understand the hazards posed by those processes involving highly hazardous chemicals.

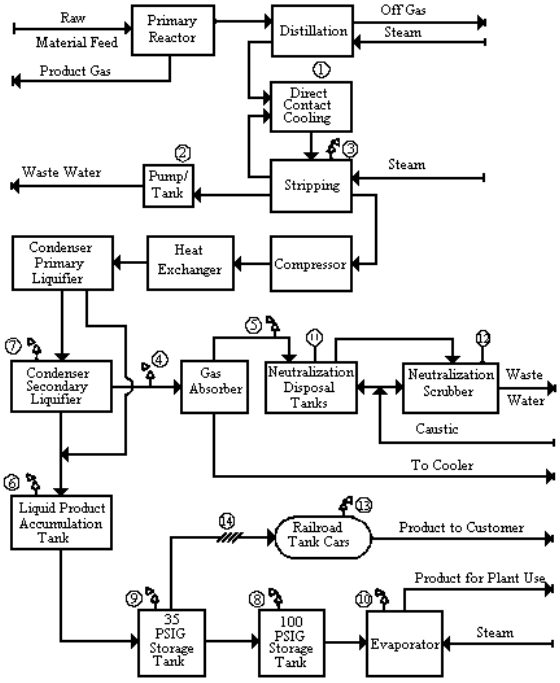
Information pertaining to the hazards of the highly hazardous chemicals in the process and shall include the following.

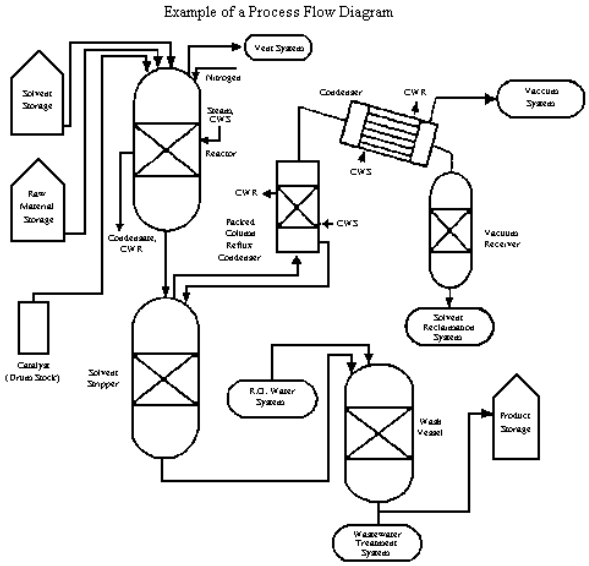
- Toxicity information
- Permissible exposure limits
- Physical data
- Reactivity data
- Corrosivity data
- Thermal and chemical stability data and
- Hazardous effects of inadvertent mixing of different materials that could foreseeably occur.

Information pertaining to the technology of the process shall include at least the following:

- 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, including those affecting the safety and health of employees.





Information pertaining to the equipment in the process shall include:

- Materials of construction
- Piping and instrument diagrams (PI&D's)
- Electrical classification
- Relief system design and design basis
- Ventilation system design
- Design codes and standards employed material and energy balances for processes built after May 26, 1992 and
- Safety systems (e.g. interlocks, detection or suppression systems)

A Process Hazard Analysis shall utilize one or more of the following:

- What-IF
- Checklist
- What-IF/Checklist
- Hazard and Operability Study (HAZOP)
- Failure Mode and Effects Analysis (FMEA)
- Fault Tree Analysis or
- An appropriate equivalent methodology.

The process hazard analysis shall address:

- The hazards of the process
- The identification of any previous incidents which had a likely potential for catastrophic consequences in the work place

- Engineering and administrative controls
- Consequences of failure
- Facility siting
- Human factors and
- A qualitative evaluation of a range of the possible safety and health effects of failure of controls on employees in the workplace.

OPERATING PROCEDURES

Operating procedures must provide clear instructions for safely conducting activities involved in each process and shall include the steps for each operating phase. Operating procedures shall be readily accessible to employees who work in or maintain a process.

CONTRACTORS

Contractors that perform maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process must follow these procedures:

- Obtain and evaluate information regarding contractor's safety performance and programs.
- Inform contractor of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process.
- Explain the emergency action plan.
- Control the entrance, presence and exit of contractors in covered process areas.
- Periodically evaluate the performance of contractors.
- Maintain a contractor injury and illness log in their process area.

MECHANICAL INTEGRITY

Process Safety Management applies to the following process equipment:

- Pressure vessels and storage tanks
- Piping systems and components such as valves
- Relief and vent systems and devices
- Emergency shutdown systems
- Controls including monitoring devices and sensors, alarms, and interlocks
- Pumps

Written procedures shall be established and implemented by the customer. Training shall be conducted for each employee involved in maintain the on-going integrity of process equipment and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

Inspection tests shall be performed on process equipment. Each inspection and test shall follow recognized good engineering practices. The frequency shall follow the manufacturer's recommendations. These inspection tests shall be documented.

Quality assurance for plants and equipment shall be performed during the construction of new plants and equipment. The customer is responsible that the equipment is fabricated and is suitable for the process application for which they will be used. Checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions.

SAFE WORK PRACTICES

Winger strives to ensure their employees are following safe work practices. Winger employees shall abide by employer's safe work practices during operations such as lockout/tagout, confined space entry, opening process equipment or piping and controls over entrance to facility. Communication shall be made by the supervisor or foreman with the customer and obtain a Safe Work Permit before commencing any work. No work shall commence until the appropriate permit is received by the working crew. All Winger hot work, lockout tagout and confined space procedures shall be followed.

HOT WORK PERMITS

The customer shall issue a hot work permit for hot work operations conducted on or near a covered process. The permit shall document that fire prevention and protection requirements have been implemented prior to beginning the hot work operations. Winger employees shall not perform hot work until a hot work permit is obtained from customer. The Hot Work Permit shall:

- Indicate the date(s) authorized for hot work
- Identity the object on which hot work is to be performed
- Kept on file until completion of hot work operations (typically one year)

MANAGEMENT OF CHANGE (MOC'S)

Management of change procedures (except for "replacements in kind") shall be used to manage changes to process chemicals, technology, equipment, and procedures and changes to facilities that affect a covered process.

Communication shall be made when repairing or maintenance of PSM systems. Winger employees shall work together with the customer to make sure these changes are managed correctly.

INCIDENT INVESTIGATIONS

Each incident which results in or could reasonably have resulted in a catastrophic release of highly hazardous chemicals in the workplace must be investigated. These investigations need to be completed as promptly as possible, but not later than 48 hours following the incident. If Winger employees are involved in such an incident, they must be reported immediately and copies of the Winger Incident Review Form shall be completed and submitted to the customer and Winger Safety Director.

EMERGENCY ACTION PLAN

Follow the emergency action plan developed for each customer location. Typically, the following takes place:

- Alarm is sounded alerting Winger employees of emergency.
- Work must be stopped immediately, ignition sources will be disengaged, tools and personal belongings left behind.
- Employees shall evacuate to the nearest evacuation as directed. If there is no audible paging system, employees shall pay attention to the plant wind sock direction and proceed upwind.
- Know the location of safety showers and eye wash stations in case of contamination.
- Head count will be performed by Winger foreman or authorized personnel.
- First aid or emergency services will be provided as necessary.

TRADE SECRETS

Winger employers must respect the confidentiality of trade secret information when the process safety information is released to them.

TRAINING

INITIAL TRAINING

1. Each employee shall be trained in the work practices necessary to safely perform his/her job.

2. The contract employer shall assure that each contact employee is instructed in the known potential fie, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan.

3. Training will be documented and kept in the Winger employee safety training file. Documentation will include a sign-in sheet with the identity of the employee, trainer's name and the means used to verify that the employee understood the training such as a safety quiz.

4. All affected employees working in PSM areas (designated Restricted Areas) must be trained in:
   - an overview of the process,
   - hazards of the process,
   - procedures applicable to the employee's job, and
   - Emergency Action Plan (EAP)

REFRESHER TRAINING:

Refresher training shall be conducted and documented for all employees involved in the operating of a process at least every 3 years, or more often as necessary. An evaluation of the previous 3 years with employee input will be used to determine the content of the refresher training.

SOURCE CREDITS:

U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) www.osha.gov
OSHA Process Safety Management Publication No. 3132
Cargill Corn Milling North America Process Safety Management Program
Process Safety Beacon April 2009 Newsletter, http://www.aiche.org/ccps/safetybeacon.htm
Energy Specialty Contracting, Inc., Safety Program

DOCUMENT CONTROL:

Initial Program March 6, 2013
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Revised May 9, 2013
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Revised October 19, 2016
Revised September 13, 2017