

What to and what not to do!



S.O.P.'S and Line Break or System Entry - So Who's Idea Was This Anyway?

29 CFR 1910-119(f) CCR Title 19 Section 2760.3 Title 8 5189(f)
Standard Operating Procedures

- Federal - OSHA
- State - California Emergency Management Agency - enforced through CUPA under CalARP
- Dates back to military operations
- Internet search of term "SOP" nets 334,537 (2002) 93,100,000 (2012) hits yes, that's 93 million
- OSHA cites heavily in this area
- Tied to the next regulation in both codes is "training"

What's Required in the Training Component?

- Anyone not certified and employed in their current position on June 21, 1999, working on or around the ammonia refrigeration system
- Initial training
- Refresher training - includes those in place 6/21/99
- Operating procedures, if you don't have them; your probably not training on them
- Certification of training

So, What's an SOP?

Dictionary Definition - 

Uniformly followed procedure: a procedure that is usually followed when carrying out a particular operation or dealing with a particular situation.



Regulators Definition

Written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address certain other conditions



If Developed by Employer, Who Writes It?

Who is most qualified to determine what needs to be written and how procedures should be performed?

Who knows the system the best?

Who knows what is being done in your facility?

Should this be put in the hands of an outsider or plant manager?



Should a Procedure Be Written for Every Situation That Might Arise?

- Compressors/condensers
- Pressure vessels & piping
- Purgers/pumps/chillers
- Valves - relief, control, S/O
Expansion, regulating
- Alarm systems
- Filter systems



Good Paper Poor Practice

Be prepared to follow through with what you say you're going to do, you will be expected to be doing it!



What's to Be Included?

- Safety & health considerations
- Properties and hazards presented by chemical
- Precautions (PPE)
- Control measures
- Control of hazardous chemical & inventory levels
- Special or unique hazards
- Safety systems and their functions

Safety & Health Considerations

- Hazcom
- Lockout/tagout
- Confined space entry
- Hotwork
- Bloodborne pathogen
- Emergency response program
- Evacuation plan



Properties & Hazards Presented by Chemical

- IDLH
- Flammability limits
- Reactions at different concentrations
- Severe burn probability if contact with liquid form of chemical
- Severe lung, eye, nose and throat damage varying dependant upon exposure to vapor chemical

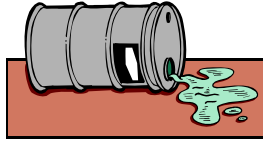
Precautions - PPE

- Gloves, goggles, boots, aprons & face shield, charged water hose
- APR/cartridge respirator
- Level B suits & ancillary equipment
- Level A tanks, masks, suits and ancillary equipment
- Monitoring equipment



Control of Hazardous & Chemical Inventory Levels

- Proper disposal & inventory control
- Oil
- Ammonia
- Reportable quantities
- purchase/release
- Annual reports
- Other chemicals as required



Special or Unique Hazards

- Must be system specific
- Must be equipment specific
- Types of materials
- Limited access/egress
- Different from other similar applications
- Use sound, feel, smell type of information when possible

Safety Systems & Their Functions

- Deadman valves
- Control switches - cutouts
- Pressure relief valves
- Diffusion - how to/when To
- Solenoids
- Alarms/Sensors



Steps for Each Operating Phase

- Initial startup
- Normal operations
- Temporary operations
- Emergency shutdown - responsibility
- Emergency operations
- Normal shutdown
- Startup following turnaround or emergency shutdown

What Is Normal?

- Operating limits - conditions
- Consequences if not kept within stated
- How to avoid this situation
- How to correct this situation should it arise
- If I don't know what normal is, how do I know it's not normal?
- If I know it's not normal, will I do something I shouldn't?



Access, Use & Review

- Accessible to those who work in or maintain the process
- Reviewed as necessary for current needs & use
- Certified annually that they are current and accurate
- History should be kept as with system

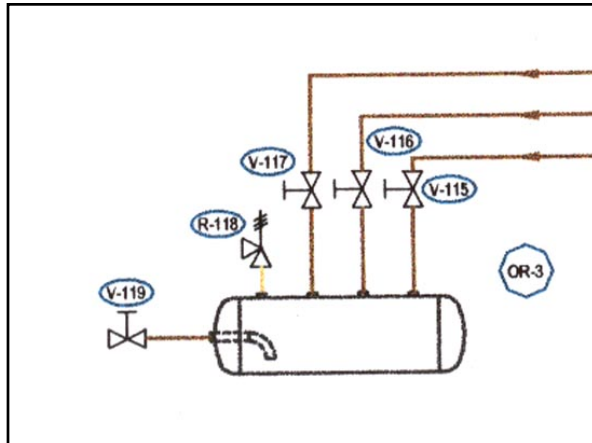
Knowing the Priorities

- During what task do most accidents involving NH3 take place?
- What would be second?
- Common sense
- Think about it!
- Don't waste time and paper!
- Make something that you will use

SOP for Oil Draining



- Operating conditions
- Health & safety considerations
- Step by step instructions
- Personnel protective equipment
- Correctly identified
- Location
- Phases of operation
- Special considerations
- Training & documentation



Questions & Answers



Thank You for
being here!

