OSC 12
Ohio Safety Congress & Expo

WELL AT HOME. SAFE AT WORK.

105 The Finer Points of "Management of Change"

Bryan Haywood

Thursday, March 29, 2:30 to 3:30 p.m.

Ohio Bureau of Workers' Compensation

Chemical Process Safety

The finer points of OSHA's and EPA's Management of Change Requirements

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Defining the problem

Chem NEP Citations by PSM Element

Element	Description	% of PSM Citations	Cumulative %
j	Mechanical Integrity	22.5%	22.5%
d	Process Safety Information	21.6%	44.1%
e	Process Hazard Analysis	17.9%	62.1%
f	Operating Procedures	12.1%	74.1%
g	Training	4.4%	78.5%
l	Management of Change	4.3%	82.8%
h	Contractors	3.5%	86.3%
o	Compliance Audits	3.5%	89.9%
c	Employee participation	3.0%	92.9%
m	Incident Investigation	2.5%	95.4%
n	Emergency Planning & Response	2.3%	97.7%
i	Pre-startup Review	1.6%	99.3%
k	Hot Work	0.7%	100.0%

As of March 2011, MOC was #6 in Citations issued

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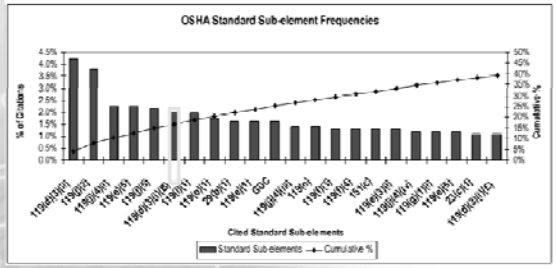
Defining the problem

Chem NEP Citations by OSHA Standard Sub-element



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OSHA & EPA Requirements

- Establish and implement **WRITTEN PROCEDURES** to manage changes (except for "replacements in kind") to
  - process chemicals,
  - technology,
  - equipment,
  - **procedures**; and,
  - **changes to facilities** (stationary sources)

  that affect a covered process [.119(l)(1) & 68.75(a)]
- Assure the following considerations are addressed prior to ANY change:
  - Technical basis for the proposed change [(l)(2)(i) & 68.75(b)(1)]
  - Impact of change on safety and health [(l)(2)(ii) & (b)(2)]
  - Modifications to operating procedures [(l)(2)(iii) & (b)(3)]
  - Necessary time period for the change [(l)(2)(iv) & (b)(4)]
  - Authorization requirements for the proposed change [(l)(2)(v) & (b)(5)]

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OSHA & EPA Requirements

- Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change **prior** to start-up of the process or affected part of the process [(l)(3) & 68.75(c)]
- If a change results in a change in the process safety information (PSI), such information shall be updated accordingly [(l)(4) & 68.75(d)]
- If a change covered by this paragraph results in a change in the operating procedures **or practices** required by paragraph (f) of this section, such procedures or practices shall be updated accordingly [(l)(5) & 68.75(e)]

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Difficult Changes

- There are three (3) types of changes that seem to allude many facilities:

1. Changes to Procedures and Practices
   - Operating Procedures, Maintenance Procedures, Safe Work Practices (SWP) – including HW, and Emergency Plan
   - An MOC is even required when we revise our MOC program!!!!!
2. Changes to "facilities" that could impact process safety
3. Changes to personnel

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"Procedures & Practices"

- What does "procedures and practices" required by paragraph (f) of this section entail?
  - (f)(4) is the one causing the most issues…
    - *The employer shall develop and implement safe work **practices** to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.*
- Repeating the requirement…
  - *If a change covered by this paragraph results in a change in the operating procedures **or practices** required by paragraph (f) of this section, such procedures or practices shall be updated accordingly* [(l)(5) & 68.75(e)]

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"Procedures & Practices"

Bottom Line…

- a MOC is REQUIRED for changes to the following Safe Work Practices:
  - LOTO (Written program, machine specific procedures, etc.)
  - Confined Space Entry
  - Line Break/Process Opening
  - Control over entrance (Safe Work Permitting)
- It would be wise to include the following SWP/Plans as well:
  - Respiratory Protection,
  - ERP/EAP,
  - Hotwork, and
  - PPE Hazard Assessments

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"Change to Facilities"

- How do we define "facilities"?
- Most know that a change to a piece of equipment that the HHC touches requires an MOC, but how about a change in the "process area" that does not actually make a physical change to the equipment????
  - Installing a new electrical disconnect to comply with LOTO and the NEC in a flammable process?
    - The disconnects had always been inside a MCC (positive pressured) within the process, but the new NEC calls for a local disconnect. The one installed was NOT rated for a Class I Division 2 location. MOC would have caught this!!!
  - Installing emergency lighting in an engine room at a refrigeration plant to comply with 1910.37 lighting and exit signage?
    - The new lighting was not designed for a flammable Group D location, but since it was for OSHA compliance the facility felt no MOC was needed.

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"Change to Facilities"

- How about installing the new air compressor in the engine room?
  - The old one was outside and exposed to the elements. In order to better care for the new one the decision was to install it inside the Ammonia Compressor Room. As it turns out, the only open space large enough was in front of the fresh air intakes for the emergency ventilation system. On top of hampering the ventilation system, the new compressor was wired separately from an outside source; thus it was not tied into the emergency electrical shunt/dropout!
- How about adding large windows to the process building?
  - A facility wanted to add windows to their process area building. The windows they installed were normal household windows. Their worst case release scenario for their RMP took into consideration that their vessel was indoors. When the new calculations were run, it was determined that the windows would not be able to withstand the sudden pressure rise associated with their RMP WCS and would essentially blow out an entire wall of windows, thus loosing the advantage of an "indoors release" greatly impacting their WCS end-point.

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"Personnel Changes"

U.S. Department of Labor
Occupational Safety and Health Administration

Inspection Number: 313138075
Inspection Dates: 03/28/2011 - 09/23/2011
Issuance Date: 09/23/2011

Citation and Notification of Penalty

Company Name: Kraft Foods Global, Inc.
Inspection Site: 910 Mayer Avenue, Madison, WI 53704

Citation 2 Item 1 Type of Violation: Other

29 CFR 1910.119(l)(1): The employer did not establish and implement written procedures to manage changes to process chemicals, technology, equipment, and procedures; and, changes to facilities that affect a covered process:

The employer did not implement procedures to manage changes to the management personnel prior to the change.

a) Changes to the Facility Manager

b) Changes to the Powerhouse Supervisor

c) Changes to the PSM Coordinator

Date By Which Violation Must be Abated: Corrected During Inspection
Proposed Penalty: $ 0.00

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"Personnel Changes"

- Other personnel changes that would need an MOC:
  - Facility went from four (4) operators per shift to three (3), yet their emergency shut down procedure(s) required four (4) qualified operators.
  - Facility reduced the staffing levels of their full time fire brigade/ERT members on site without any type of formal review process to determine the impact this would have on their documented emergency response plans for fire, HAZMAT, and CS rescue. They actually went from being 100% self sufficient in all types of emergencies to needing a strong reliance with the community response services, yet had not contacted them to verify they had the equipment, training or staffing levels to meet the facility's needs.

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"Personnel Changes"

- EPA's position on changes to personnel…
- *Tanner Industries, which operates ammonia distribution facilities across the country, including one in East Providence, R.I. and one in Inkster, Michigan, is subject to the Clean Air Act's risk management planning requirements because ammonia is an extremely hazardous substance. While Tanner did take some actions to address the risks of an accidental release of ammonia at its facility in Rhode Island, Tanner* ***failed to address the risk associated with the fact that its facility is not staffed except when ammonia is being received or distributed there****.*

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Solution

- TRAIN, TRAIN, and TRAIN some more!
- Managers, Engineers, Operators, Maintenance, and Contractors have to be WELL TRAINED in order to IDENTIFY changes
- Set the expectation that even the "slightest change" may have a HUGE IMPACT

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