

LESSONS LEARNED FROM OSHA'S REFINERY AND PILOT CHEMICAL NEP'S

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(March, 2013)

This document provides a summary of lessons learned so far with OSHA PSM NEP inspections. These lessons learned can be used to help prepare for a NEP inspection by OSHA.

Findings from the Refinery NEP

- The list-based approach finds more hazards than the PQV approach.
- List questions result in citations on other issues.
- Focus on RAGAGEP resulted in a large number of deficiencies.
- Facility siting is an issue.
- The most-frequently cited PSM elements in the refinery NEP were:
 - Mechanical integrity
 - Process safety information
 - Operating procedures
 - Process Hazard Analysis
 - Management of change
- Based on citations, points of weakness are:
 - MI: No written procedures, operation with equipment deficiencies, inspection and testing not did not follow RAGAGEP, and incorrect frequencies.
 - PSI: equipment information (P&IDs missing or incorrect, failure to document compliance with RAGAGEP, relief system design and design basis not documented).
 - PHA: findings / recommendations not addressed, facility siting not addressed

- SOPs: emergency shutdown not addressed, safe work practices not established
- MOC: Not established or implemented
- Citations reflect in part, the specialized training received by OSHA inspectors in topics such as process safety information and incident investigation.
- Refineries are not resolving PHA and audit recommendations and findings at a rate expected for such companies.

Findings from the Pilot Chemical NEP

- The most-frequently cited PSM elements in the pilot chemical NEP were:
 - Mechanical integrity
 - Process safety information
 - Process Hazard Analysis
 - Operating procedures
 - Management of change
- Based on citations, points of weakness are:
 - MI: No written procedures, operation with equipment deficiencies, inspection and testing not performed and incorrect frequencies.
 - PSI: equipment information (P&IDs not accurate, failure to document compliance with RAGAGEP, relief system design and design basis not documented).
 - PHA: PHA not performed, findings / recommendations not addressed, hazards of the process not addressed
 - SOPs: no written procedures, no annual certification
 - MOC: Not established or implemented

Some other findings are:

- Some potentially catastrophic incidents are not investigated.
- Deficiencies identified in compliance audits were not addressed

Key Conclusions

- OSHA inspectors will expect compliance with recognized and generally accepted good engineering practices (RAGAGEP), industry recommended practices, and Center for Chemical Process Safety (CCPS) guideline books.
- Many of the safety-related problems that were uncovered in the pilot chemical NEP were also found during the refinery NEP. Points of weakness are similar between refineries and chemical plants.
- PSI for equipment is often incomplete.
- Facility siting is an omission.
- Equipment is often operated outside acceptable limits.
- Written procedures are often missing.
- PHA recommendations often are not resolved in a timely manner or at all.
- Process changes are made without MOC review.