

MANAGING THE HEALTH AND SAFETY ASPECTS OF ORGANIZATIONAL CHANGE

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Abstract

Management of change (MOC) is recognized as a key element in the control of major accident hazards, and MOC for changes to process, technology, equipment, etc. is now fairly straightforward for the process industries. However, anecdotal evidence suggests that organizational changes are not as well addressed.

Such changes include:

- Reorganization
- Downsizing of the workforce
- Attrition and ageing of the workforce
- Outsourcing of critical services under contract
- Loss of skills, knowledge or attitudes as a result of the above

This paper presents the findings of a workshop on this topic organized by the process safety management (PSM) division of the Canadian Society for Chemical Engineering. The workshop examined the nature of some of the issues associated with the above, and approaches used by companies in addressing them. It led to an initiative to develop guidance and suggestions for the process industries, and also a template that can be used to aid in applying MOC principles to the sensitive issue of organizational change.

1. Introduction

In July of this year a workshop was organized by the Process Safety Management committee of the CCPA/CSChE on the subject of managing the safety and health aspects of organizational change. The purpose of the workshop was to examine the issues associated with the above and approaches used by some companies in addressing them. The intended audience was safety professionals and operations, safety or personnel managers. This workshop was organized because there is a large amount of organizational change occurring in industry and a growing recognition of the need to manage the safety and health aspects of these changes.

This paper will share some of the key findings identified at this workshop and further action that will be pursued.

2. The Need to Manage Organizational Change

Management of change (MOC) is recognized as a key element in the control of major accident hazards, and MOC for changes to process, technology, equipment, etc. is now fairly straightforward for the process industries. However, changes to the human and sociological aspects are more difficult to address and anecdotal evidence suggests that perhaps such changes are not being adequately addressed.

Such changes include:

- Reorganization or re-engineering
- Downsizing of the workforce
- Attrition and ageing of the workforce
- Outsourcing of critical services under contract
- Changes affecting the competence or performance of other organizations providing critical services under contract (e.g. equipment design, process control soft ware, hazard and risk assessment)
- Loss of skills, knowledge or attitudes as a result of the above

The need to manage the health and safety (H&S) impacts of organizational change has been previously identified by The Center For Chemical Process Safety (Ref 1), and guidelines have been issued by the Chemical Manufacturers Association (now American Chemistry Council) (Ref 2) and the Health and Safety Executive (Ref 3). The CCPS conference held in Toronto in October 2001 had 3 papers addressing this subject.

Failure of the management of organizational change is increasingly being recognized and identified as a causal factor in a number of significant incidents. Most organizations are not likely at the stage of identifying organizational change management as a causal failure. There is a strong case that effectively managing the health, safety and environmental effects of organizational change will have a good financial payback.

3. Case Studies

Jack Philley (Reference 5) has identified the organizational change factors associated with three significant world incidents. They are summarized as follows:

- Bhopal
There were multiple breakdowns in safeguards. Several were related to organizational changes and downsizing. e.g. initially there were 11 highly trained/educated operators per shift for which a college degree was required. After several years, staff was reduced to 6 operators per shift, on-shift supervisors reduced from 3 to 1, education requirements lowered and the Safety Dept reduced from 7 to 1 part-time.
- Challenger
Between 1970 & 1986 NASA trimmed 71% of Safety/Reliability & QA dept staff. Restructuring reduced autonomy & had those responsible for monitoring oversights answering to the people they were supposed to be watching.
- Esso Longford
On September 25, 1998, at the Esso Longford facility in Australia, a major gas release and fire occurred that took the life of two persons and caused significant economic consequences. The event was the ultimate result of a series of causes and unusual circumstances, some of which were related to organizational changes. The facility was in the process of re-starting when there was an equipment failure (cold brittle fracture) resulting in a large gas release and subsequent ignition. There were abnormal staffing conditions at the time. The report of the Royal Commission stated: "...two structural changes to operations management occurred at Longford, which were relevant ...relocation of engineers from Longford to Melbourne and the redefining of roles & responsibilities of supervisors & operators." There were no experienced engineers on site and several temporary changes in staffing.

4. Workshop Findings

It was very apparent during introductory discussions that many safety professionals have concerns with respect to managing the H&S aspects of organizational change. Few companies have guidelines in place to manage this issue and some of those that do have only partial compliance or success. At the same time organizational change is occurring in most companies.

Workshop attendees came to the following conclusions about Organizational Change Management (OCM):

- Change is an essential component of the continuous improvement process
- Organizational changes can impact the behaviour and performance of people in critical functions & thus plants must have systems that monitor and control organizational effectiveness.
- Even planned improvements can compromise organizational integrity if their function and purpose is not fully understood
- No standard method exists for evaluating organizational changes. What has worked in one site may fail at another because of long established relationships, practices, etc. Most large corporations apply a standard checklist but ultimately apply gut feel and intuition.
- Significant changes require a detailed review
- Include environmental aspects as well as S&H and consider quality issues as well.

Attendees identified the following of concerns with respect to OCM:

- Decisions are often made by high level management without consultation or awareness of S&H implications. Senior management often considers such decisions to be confidential.
- There is a lack of standards and procedures for organizational change in many organizations
- If there are standards and procedures they are being by-passed or ignored by the senior management during major organizational changes
- Incident reports do not identify organizational change management as a cause
- There is a need to sensitize senior management to the importance of managing the H&S aspects of organizational change.

5. Key factors for success

The following were identified by workshop attendees as key factors for success:

- Clear management support (an essential)
- Written guidance as a Corporate Standard
- Clear identification of purpose and scope
- Identification of responsibilities of site personnel
- Provide a general framework yet allow multi-tiered approach depending on the complexity, magnitude and confidentiality of the change
- Identification of critical groups (in operations, maintenance, technical, management) and critical operations
- Includes a review or safety assessment process
- Includes the management of temporary change

- Includes transitional actions (contingency plans)
- Considers operations, maintenance and technical views
- There is stakeholder involvement
- Development of an action plan
- Appropriate management approval and sign-off
- Implementation monitoring and follow-up
- Records & statistics are maintained
- System Audit

4. **Approaches considered**

Processes for organizational change management were discussed at the workshop. Guidelines have previously been issued by the Chemical Manufacturer's Association (now the American Chemistry Council, Ref 2) and by the Health and Safety Executive (Ref 3). It was suggested and agreed that the NOVA procedure provides a good flowchart for the process and it was adopted as a starting basis. The flowchart is shown in Figure 1

The main steps of the OCM process are as follows:

i) Identification of the Change

The first step is to identify and understand the nature and scope of the pending change so that an effective assessment may be conducted. Identify and record the purpose scope and potential timing of the change.

ii) Preliminary Screening of safety, health and environmental (SHE) Impacts

One may begin by determining the personnel or positions affected by the change and the affected work processes with identification of potential SHE impacts. A simple "high-medium-low" prioritizing system can be used to set priorities. This step may be performed by the safety liaison for small changes or by a change team for larger changes as appropriate.

If the change is considered critical then further analysis is required.

iii) SHE Impact of the Change

It is recommended that a checklist be used to assess the SHE impact. Depending on the size of the change this may be completed by the Safety Liaison, the change manager or a change team. It is generally recommended that a team involving plant management, engineering, maintenance and a representative from the work group involved assess the impact.

While completing the checklist, it may become apparent that a more detailed analysis is needed. Such analysis might involve use of a team with the appropriate expertise to conduct a review much like a process hazards analysis (PHA) team. The analysis might be a What-If or brainstorming session, a modified HAZOP or a detailed job task review.

iv) Action Plan Development and Approval

The worksheets and detailed analysis are used to prepare a proposed action plan. Agreed-upon actions should be assigned and target completion dates established. Plant management should approve the plan and such approval documented.

The action plan should also consider the need to monitor leading SHE indicators or key work processes during the implementation of the change. For instance, the plan may decide that work permitting or craft safety effectiveness or near misses as a leading indicator should be monitored during the implementation phase.

v) **Communicate and Implement the Plan**

The approved action plan should be communicated to the personnel involved. The potential benefits of such communication include easier and faster implementation of the actions, familiarity with and feedback on the planned monitoring process and improved understanding and support of the change itself. Such communication may result in the identification of other issues or actions not previously identified.

5. Further Work

It is intended that a guideline be produced to aid companies in developing their OCM guidelines and practices. A subcommittee was struck at this workshop to make this happen with the original assignment to produce a flow diagram and screening table. It is anticipated that the guideline will be developed in the next year and that it will be posted on the PSM division website of the CSChE, www.cheminst.ca/division/psm/index.htm.

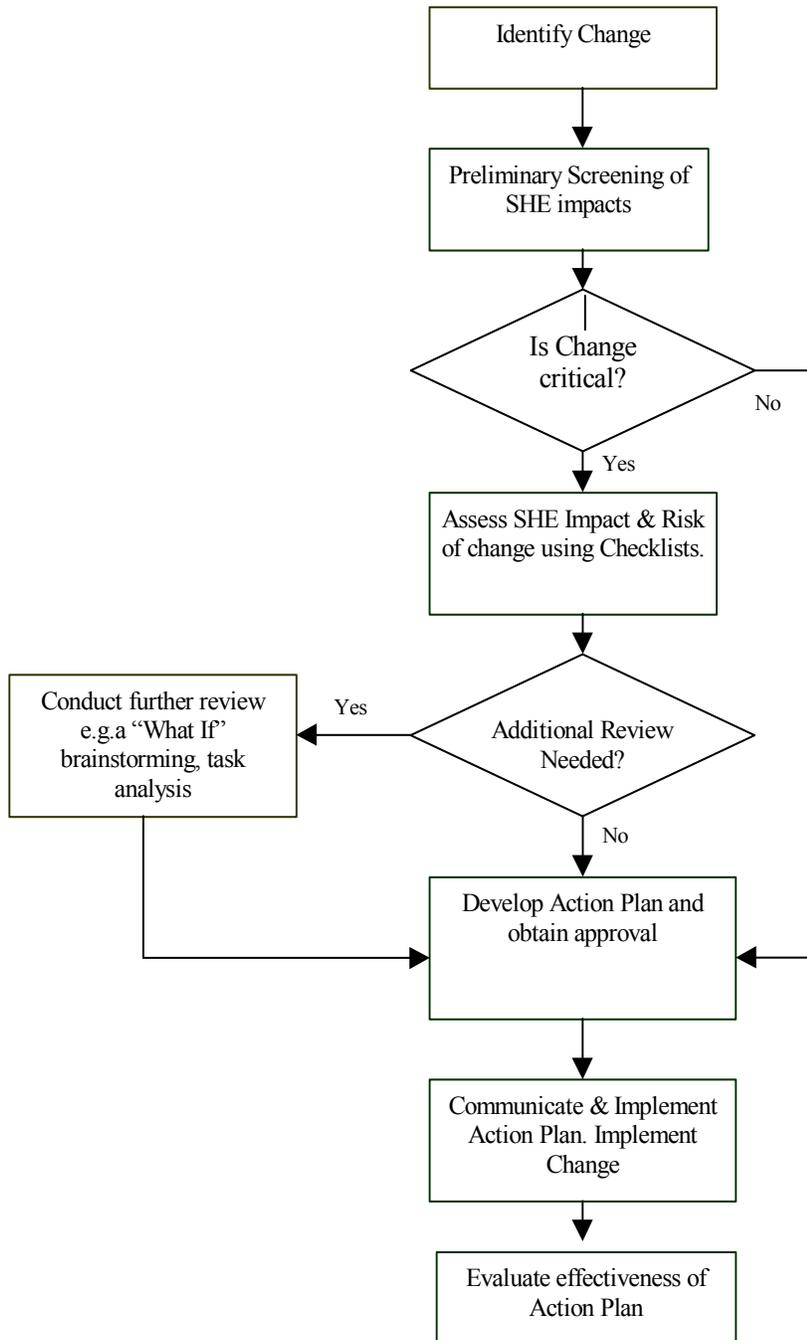
6. Conclusion

In summary, organizational change is a frequent occurrence with many companies and will continue to be so. It is a necessary part of the continuous improvement process and necessary for business survival. Few companies have effective procedures or systems in place to manage the health and safety impacts of such changes. Inadequate organizational change management is now being recognized as a contributing cause to some significant incidents of the past and some recent investigations have identified it as a contributing cause. A flowchart and general procedure has been provided for managing the process and a screening checklist provided.

References

1. Center for Chemical Process Safety, "Plant Guidelines for Technical Management of Chemical Process Safety," 1992
2. Chemical Manufacturers Association, "Management of Safety and Health During Organizational Change – A Resource and Tool Kit for Organizations Facing Change", 1998
3. Health and Safety Executive (UK), "Business re-engineering and Health and Safety Management, Best practice model", 1996.
4. Govt of Victoria, "The Esso Longford Gas Plant Incident, Report of the Longford Royal Commission," Govt Printer, State of Victoria, Australia
5. Jack Phillely, Baker Engineering & Risk Consultants, "Potential Impacts to Process Safety Management from Mergers, Acquisitions, Downsizing and Re-engineering, Process Safety Progress, Vol. 21, No. 2, June, 2002

Figure 1 Organizational Change Management Flow Diagram



Organizational Change Management – SCREENING TABLE

Definition of SHER / Quality role:

A job position that involves tasks which, if not performed properly, may create significant risk of a:

- (a) process related accident leading to serious injury, loss of life, significant loss of property, or violation of safety and environmental laws or regulations, OR
- (b) quality related non-conformance leading to a serious customer non-conformance

Is the change Critical to SHER/Quality? (use the guide questions below if req'd) yes no

If yes, proceed to Assessment Tool (form 300xxB)

If no, complete Action Plan (form 300xxD) if necessary.

Could the change affect...	Yes	No
Leadership		
Performance to meet the required standards / policy?		
Implementation / development of SHER / Quality programs?		
Accountability for SHER / Quality policy and performance?		
Review and approval of reported performance and improvement plans?		
Staff		
Understanding of roles and responsibilities with respect to SHER/Quality?		
Ability to perform the job without direct supervision?		
Ability to sustain/improve SHER / Quality performance?		
Operations and Site Services		
Work authorization procedure requirements?		
Confined space entry procedure requirements?		
Lockout/ tag-out procedure requirements?		
Operations SHER / Quality effectiveness?		
Site services SHER / Quality effectiveness		
Emergency Response		
Warden roles?		
ER procedures / call-out?		
ER Capability?		
SHER / Quality		
Injury/illness record keeping?		
Incident investigation and SHER/quality problem resolution?		
SHER/ Quality audits/inspections?		
Observation programs?		
Regulatory compliance?		
SHER training?		
Occupational health program?		
Process Safety Program?		
Assessing the implications of new regulations?		
Contractors		
Contractor SHER orientation?		
Contractor SHER program implementation?		