



Organizational MOC

Case Study at a Large Energy Company

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Abstract

Managing change to prevent harm to people, processes, and the environment is an essential part of everyone's business today. These changes may be in the form of physical changes to assets or facilities but can also be in the form of changes to personnel or organizational structure, and of which can have immediate or long term risk implications.

The increased awareness of process safety risks caused by organizational changes has created a demand for better tools and methods. This is most acute as companies undergo substantial and often complex reorganizations as they adapt to the ever changing marketplace.

This paper presents how an Organizational Management of Change (OMOC) initiative was implemented at a large energy company, with process safety covered processes, to manage the changes to safety critical positions. This paper discusses the risks—some unexpected—associated with both personnel and structural changes, and the mitigation strategies employed. Furthermore, this paper explores the challenges associated with short-duration vs. long-duration changes, as well as simple vs. complex organizational changes.

Finally, comparisons are made with facility MOC processes, and differences between OMOC and MOC identified.

1 Organizational MOC at a Large Energy Company

This paper explores the use of Organizational Management of Change (OMOC) at an energy company, “ABC Energy” who went through an extensive corporate wide restructuring. The use of a fictitious name is used to preserve confidentiality and to illustrate lessons learned across an aggregate of different clients.

ABC Energy was formed over several years of acquisition and expansion, and most processes are covered by the process safety regulations. The company employs over 1000 people consisting of: staff, contract and unionized personnel; distributed across multiple geographical locations. ABC Energy was ready to improve their operations and management performance by introducing new management behaviors, consolidating talent, and filling gaps in core competencies. They engaged experts in the field of organizational design to assist in designing the new organization. A restructuring methodology was chosen based on a cascading process whereby changes began at the top level, then the next level down, and so on, throughout the organization. This approach permitted the definition and refinement of accountabilities and the clarification of interdependencies between roles.

Accountability for each organizational change resided with management. The incumbent in each changed position was responsible for his/her own transition. An OMOC process was deployed to support the restructuring efforts with the following objectives:

- Identify and manage process safety risk
- Identify gaps in: accountabilities, responsibilities, risk, and regulatory compliance
- Identify changes to: procedures, systems, and management processes
- Manage the transitions
- Verify implementation of the transitions
- Update: job descriptions, employee contracts, and registries

The OMOC process needed to be repeatable and facilitate on-going learning. OMOCs were classified into two primary types: structural and personnel. Over the course of the multi-year reorganization over 400 OMOCs (100 structural and 300 personnel) were created.

A particular problem with OMOCs is that they often document changes that have already occurred (which would be considered very bad practice in the domain of physical MOCs). The reasons for this tended to concentrate on:

- some of the executive-driven changes created gaps in responsibilities or capabilities, which increased process safety risk
- once the gaps were discovered, temporary assignments were quickly made to minimize process safety risk

In both of these situations the change had effectively already been made, and the OMOC process was used “retrospectively” to ensure that all risks were properly assessed and mitigated.

1.1 A Case for Organizational MOC

Because restructurings within a given company is a comparatively rare event, ABC Energy did not have a mechanism for implementing a restructuring. Although HR processes support

individual personnel changes, they fall short from providing a methodology that holistically manages the hundreds of individual changes, and the inter-relationships between the individual changes.

OMOC showed promise as an overarching restructuring methodology, since an integral part of MOC process is the consideration of impacts of any potential change. The CCPS *Guidelines for Risk Based Process Safety*ⁱ, state:

[Organizational Management of Change is] *A method of examining proposed changes in the structure or organization of a company (or unit thereof) to determine whether the changes introduce new hazards or increase the risk to employee health and safety, the environment or the surrounding community.*

The assessment of “new hazards or increase the risk...”, as stipulated above, required input from:

- subject matter experts and
- owners of support systems (e.g. PSM, Health and Safety, Incident Management, etc.)

But, subject matter experts tended to focus on their domain of expertise. The danger was that any individual subject matter expert would not have a sufficiently broad view of all the hazards, and their potential interactions. To mitigate this risk, ABC Energy created a “catalogue” of:

- changes,
- risks and
- impacts

which provided a single consolidated statement of all elements of the change taking place.

1.2 Types of Organizational Change

Organizational changes during the restructuring were classified in order to determine how best to address them. The kinds of changes that were being considered as part of the restructuring included:

- Moving people in and out of positions or roles
- Creating and moving people into new positions
- Changing existing roles
- Adding new structures to the organization
- Changing the functionality and management of regulatory support systems
- Changing corporate sponsors of strategic systems
- Changing reporting structures
- Changing management or regulatory accountability

These were grouped into two change types: personnel and structural based on whether a person or the position was being changed. The following sections detail these definitions with consideration of how they were applied.

1.2.1 Personnel Changes

People moving in and out of positions were the most frequent. Figure 2 illustrates that a person has been moved out of position “P2” and a new person has been moved into this position. The

legend on the right identifies that the lowest level in the organizational hierarchy (i.e. someone with no direct reports) is level “L1”; the next level is “L2”, and so on.

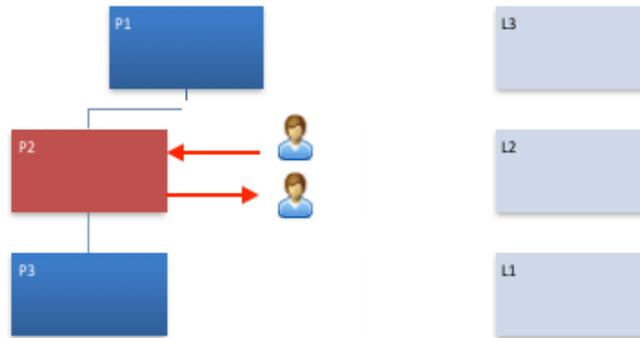


Figure 1 - Personnel Change

For each personnel change:

- tasks were reassigned,
- critical knowledge was documented and
- all other duties were accounted for.

There was often a gap between the formal, documented requirements for a position, and the activities actually performed by the person in that position. A person acquired these additional responsibilities:

- via assignment. E.g.
 - a person, say in Maintenance, may also be a member of the Emergency Response Team. This tends to be officially recognized and documented
 - a person, say in Safety, creates a monthly environmental report. This tends to be an informal assignment, with the only logic being “we are short staffed, and someone has to do this”
- via personal expertise. E.g.
 - a person, say in Operations, may be the local expert on pressure safety valve design, perhaps due to prior experience in this field,
 - a person may be called upon as a relief or backup operator, even though they don’t currently work in Operations

To ensure that each personnel change comprehensively covered the duties and responsibilities, interviews with both the incoming and outgoing person were conducted as part of the OMO process.

Careful attention was given to the transition of the incoming person when additional training may be required and critical safety tasks may get overlooked. In several cases, critical tasks were temporarily covered by the previous incumbent until proper training and experience had been obtained. Although, this wasn't always possible as the outgoing person was often also involved in transitioning into another position. This ripple effect delayed backfilling of some critical

positions as well as creating situations where one person had to cover more than one position which they often did by working extra hours. The practice of the latter was effective but not sustainable for extended periods of time.

The effort needed to assess impacts and mitigate risks was substantial, given the hundreds of changes taking place. The resources were simply not available to conduct a comprehensive assessment on ALL changes. So all proposed changes were prescreened to determine their potential severity:

- “Critical Changes” were those that had a process safety impact. These would trigger a formal OMOC process
- “Non-critical Changes” were those with no process safety impact. These followed a less rigorous process, analogous to Replacement-in-Kind versus Management of Change

Figure 2 illustrates the case where the people are moved in and out of a pre-existing position. Another kind of personnel change occurs when a person is installed into a completely new position. This was implemented in two steps:

1. A structural change: i.e. to create the new position
2. A personnel change: to transition a person into the position.

Often new positions lacked detailed job descriptions to properly assess impacts. This was observed mostly when the structure design containing the new position had not fully evolved. In these cases, it was necessary to track the progression of the position definition from the time when the person was first installed into the position and then again when the position had been finalized. This could take several months.

1.2.2 Structural Changes

Structural changes were the most difficult and challenging type of organizational change to manage. These changes primarily covered the situations when positions were added, removed or changed in organization’s structure. Figure 2 illustrates an example of a new position, “P6”, being added to the Level 2 of the organization.

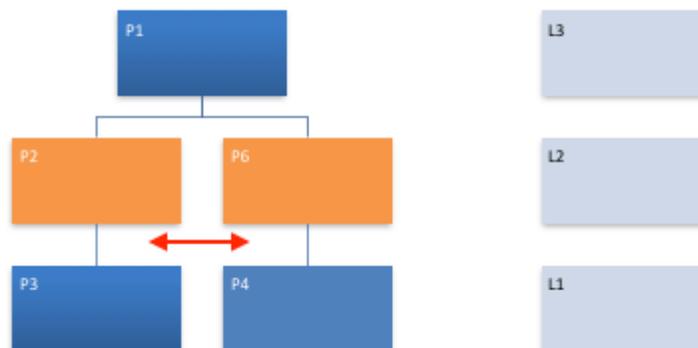


Figure 2 - Structural Change

Changes to structure impact:

- reporting lines,
- span of control,
- supporting systems and processes and
- the interaction between different organizational units.

All of these may affect the organization's ability to operate safely. For example, a high risk event may occur when there is inadequate coverage for a critical role such as Steam Chief.

Structural changes can:

- create new but "latent" risks (i.e. risks where the consequences may not surface until long after the change has been closed out),
- expose other risks that existed prior to the change itself. For example, informal arrangements where a person always "helped out" to do a certain task, but was no longer in a position to do so after the change. This was typically the case with senior individuals who had been there "since the plant was built" and felt a personal connection with all aspects of its operation and maintenance.

The approach to risk assessments follows.

1.2.3 Organizational Change Impact Assessments

There are a number of hazard analysis techniques suited to facility changes (e.g. HAZOP, LOPA, FMEA), the technique easiest to apply to organizational change is the "What-If" methodology. Essentially the question is always "What if this organizational change takes place?" The question can be refined to:

- What if this organizational change takes place; are there potential process safety consequences?
- What if this organizational change takes place; are there potential environmental consequences?

ABC Energy developed a simplified scorecard to capture the potential consequences, and identify the necessary mitigations (Table 1). For the "Process Safety" column, the way to read the scorecard is as follows:

- "What if this organizational change takes place; are there Process Safety consequences?"
 - Yes, and affected procedures need to be updated,
 - Yes, and support systems (like electronic MOC systems) need to be updated,
 - Yes, and certain databases need to be updated,
 - Yes, and the Risk Register needs to be updated,
 - Yes, and Stakeholders need to be informed.

The same logic is applied to the other columns.

The CCPS *Guidelines for Risk Based Process Safety*ⁱⁱ, under the heading of Hazard Identification and Risk Analysis, advocates for the "involvement of competent personnel". At ABC Energy, this again required convening the relevant subject matter experts, which, while very effective, was burdensome to the individuals involved.

Impacts	Environment	Health and Safety	Process Safety	Incident Management	Process Safety Information	Engineering	Maintenance
Processes							
Guidelines				X		X	
Procedures			X				
Systems			X				
Databases			X				
Risks	X	X	X		X		
Stakeholders			X		X		

Table 1 - Impact Assessment

1.3 The OMOC Process

To facilitate risk management and on-going learning the OMOC process needed to be repeatable and produce consistent results for similar changes across the organization. This would require that the level of risk and the scope for each OMOC be determined in a consistent manner which would then be used to:

- Define the specific actions based on the type of change
- Prescribe a level of rigor commensurate with the level of risk
- Drive the tools and techniques based on the level of risk
- Capture potential risks and impacts to help manage future risk

This process is diagrammed in the following figure:

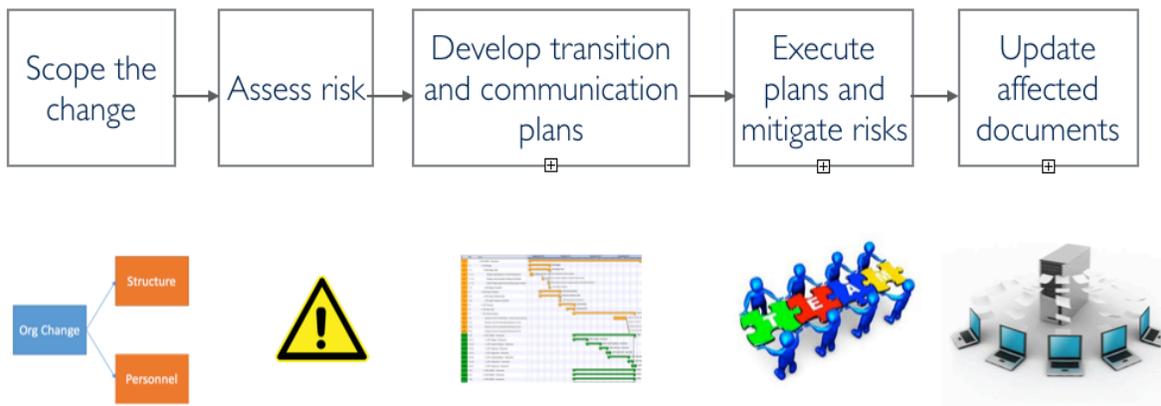


Figure 3 - OMOC Process

The first step in the OMOC process was to scope the change. This is when the change is classified as either structural or personnel using the definitions presented previously. The process then moved on to assessing the risks and the identification of impacts. These informed the development of plans to implement the change, mitigate risk and address impacts associated with the OMOC. The developed transition plans were then executed and verified followed by updating appropriate documentation and records.

The OMOC process did not manage all the activities for each organizational change. There were other supporting processes that included:

- On-boarding
- Recruitment
- Head count approval
- Organizational design
- Restructuring processes
- HR announcements
- (Traditional) Change management, including communication and addressing employee concerns.

1.4 Challenges in Implementing an Organizational Change

As previously mentioned, the OMOC process needed to produce consistent results for similar changes across any part of the organization. Achieving consistent results was frustrated by three factors:

1. Change type: personnel changes are inherently different from structural changes
2. Duration: some changes were short duration, others long duration
3. Complexity: some changes were small, others large and complex

The essential differences between different change types were discussed in sections 1.2.1 and 1.2.3. The following subsections detail the duration and complexity issues.

1.4.1 Change Duration Issues

Consideration for determining scope particularly for structure changes was influenced significantly by the timing of the implementation. Organizational changes in general can seldom be done all at once. There is always a transition period between the current As-Is structure of the organization and the new To-Be structure that is being built, as shown in Figure 4. This is easy to overlook and is of particular concern during structural changes that take an extended period of time to implement.

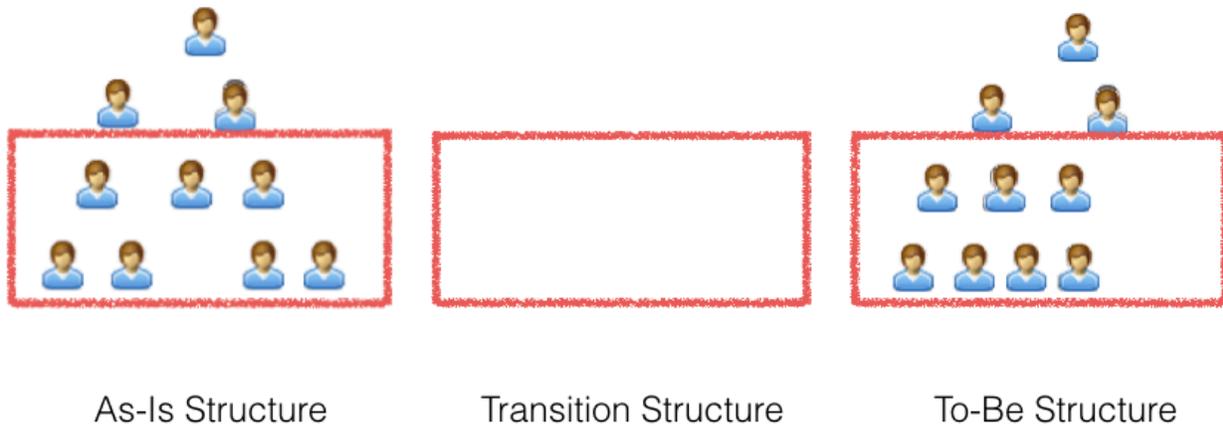


Figure 4 - Transition Structures

Although, no changes have been implemented, it is possible to identify some of the risks and impacts by comparing the As-Is to the To-Be structures. Gaps in process safety coverage and the introduction of new risks or hazards are important areas of consideration during the impact assessments for these temporary conditions.

As the restructuring continues the Transition structure advances, but not all at once. Figure 5 illustrates the scenario where the upper levels have been completed, but not the lowest level. In practical terms, all the managers have been identified, but none of them have yet been assigned their direct reports. The resources at the lowest level in the hierarchy continue to perform their prior functions, but are somewhat “managerless” at this point. A temporary condition now exists where the old and new behaviors of the organization must co-exist. In the case of ABC Energy, multiple temporary OMOCs were created as changes were done level by level and across the entire reorganization. Each intermediate transition needed its own OMOC to ensure that any gaps in critical accountabilities and activities were addressed during the implementation of that part of the To-Be structure.

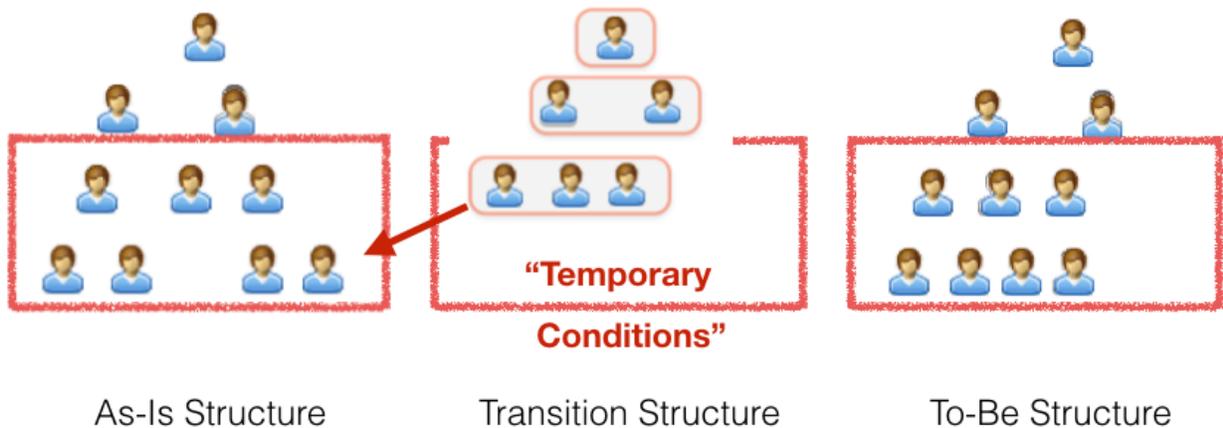


Figure 5 - Temporary Conditions

Like “temporary operations” during a facility change which require appropriate communication and constant vigilance to ensure that the duration is not exceeded, the OMOC “temporary conditions” also require constant monitoring to ensure that the final “To-Be” structure is achieved, and that the organization is not left in some higher-risk transition state.

One technique to minimize the risk is to divide a large, long duration change into a number of smaller changes, which might be termed “temporal decomposition” of a large organizational change. The sequence of structures would be:

- As-Is structure
- Transition structure 1
- Interim To-Be structure 1, a stable configuration with all responsibilities assigned, but not the final intended organizational structure
- Transition structure 2
- Final To-Be structure

This approach obviously has more steps than a single Transition structure, but is intended to reduce risks.

1.4.2 Change Complexity Issues

Structural changes always included changes to positions which tended to create large OMOCs if done all as one change. This shall be discussed, by way of an example...

Figure 6 shows an Operations Manager 1, at Level 2 in the organization, who has a span of control that is too large. He also has additional responsibilities as the area’s Steam Chief and Incident Commander. To address his excessive burden a new manager’s position is being created and will be filled by a new recruit. The new manager will take over half of the direct reports and the Incident Commander role.

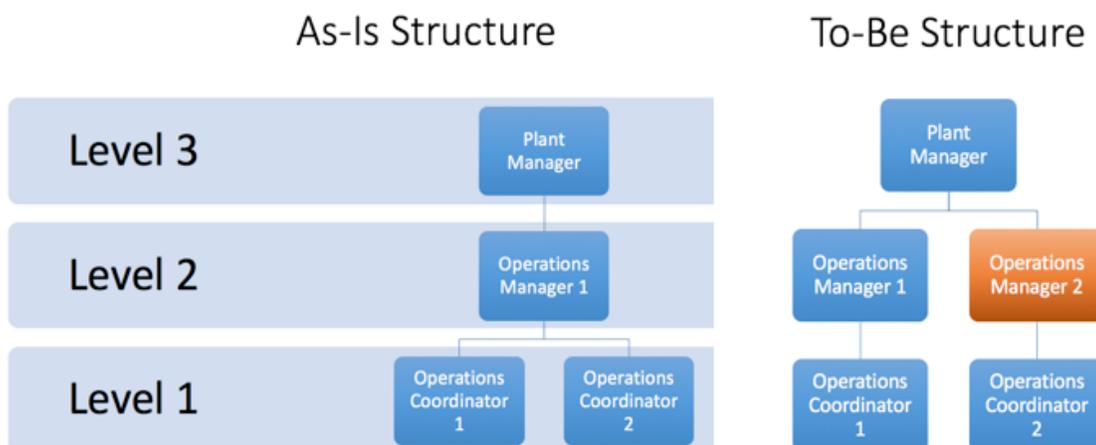


Figure 6 – Scoping Example

The approach taken by ABC Energy was to identify which parts of an organizational change were structural and which ones were personnel changes. Adding a new position to Level 2 as in

the example is a change in structure. This new position requires a personnel change to transition the new recruit. Although new positions typically only have an incoming person, in this case the role of Incident Commander is transitioning as is a portion of Operations Manager 1's accountabilities. Transition steps are needed for both these changes.

The intended organizational change was decomposed into the following individual changes:

Type	OMOC	Changes
Structural	Creation of Operations Manager 2 position	<ul style="list-style-type: none"> Level 2 structure
Personnel	Installation of new manager into new manager's position	<ul style="list-style-type: none"> Transition of the Operations Manager role Transition of Incident Commander role
Structural	Move Operations Coordinator 2 to report to Operations Manager 2	<ul style="list-style-type: none"> Change in immediate supervisor
Personnel	Change accountabilities and assigned roles for Operations Manager 1	<ul style="list-style-type: none"> Reduction in span of control Removal of Incident Commander role
Personnel	Change in reporting structure	<ul style="list-style-type: none"> Adding direct report

Table 2 – Structural Decomposition

This organizational change could all have been done as one OMOC. However, the benefits of decomposing the larger change into constituent parts included:

- clearer accountabilities: it was easier to determine who the accountable person should be for each portion of the change
- simpler management: the resulting scopes were also of reasonable size for the accountable person to manage
- clearer SME selection: it was easier to identify which SME to include in any risk identification
- more direct approval: approvers better understood exactly what they were approving, instead of a more nebulous “large number of changes”

1.5 A Comparison of OMOC with MOC

Many companies, including ABC Energy, have a mature facility MOC process. Therefore, Table 3 uses facility MOC as the standard of comparison, and it's apparent that the two processes are analogous—the differences are in the details.

	MOC	OMOC
MOC Owner	Asset Owner	OMOC Implementer
Replacement in Kind	No change to design basis	Not applicable
Initiation	Identify plant / asset structure where change occurs	Identify organizational level or position being changed
Scoping	Identify changes to asset, process, or systems	Identify changes to structure or positions
Hazard and Risk Assessment	Risk Screening, PHA, LOPA, HAZOPS	Risk Screening
Design / Planning	Design: Drawings	Planning: Transition / Communication Plans
Approvals	Asset owner + management	OMOC Owner + management
Implementation	Physical changes to: assets, process, and systems	Execution of transition plan
Training / Communication	Operator training	Execution of communication plan
Authorization to Startup	PSSR	Verification of Safety Training / System impacts implemented
Close Out	Update Documents and Drawings	Update HR and other records
Security	Open Bias	Closed Bias

Table 3 - MOC / OMOC Comparison

1.5.1 Differences Between OMOC and MOC

Despite the conceptual similarity between OMOC and MOC, stated above, the following noteworthy differences were discovered:

- **Retrospective OMOCs:** The OMOC process is most effective when started before a position is created and/or before the person is installed into the position. However, this may not be practical or possible during an intensive reorganization, given the speed at which changes are occurring. Nonetheless, OMOCs were done after the fact, in order to ensure that the necessary risks were identified and mitigated.
- **Information Security:** OMOCs are confidential and restricted to the team working on a given change. This in practice is different from facility MOCs which are visible to everyone, in keeping with the “employee participation” aspects of PSM.

1.6 Conclusion

This paper reports on the actual experiences of an energy company, with many process safety covered processes, in conducting a complete organizational transformation from the top level to every person in the field.

Changes were classified as “Safety critical” and “Non-safety critical”, with the former undergoing a formal, systematic OMOC process. About 400 changes were implemented via the OMOC process.

There are two major types of OMOCs: personnel changes and (organizational) structure changes. Examples of each are provided in the paper.

Personnel changes have obvious requirements for training and experience. But additional risks come from the fact the people often take on responsibilities that are not part of their job descriptions: e.g. participation on the Emergency Response Team or being the local pressure safety valve expert. Thorough documentation of each person’s responsibilities and capabilities is the first step in ensuring that no gaps persist after the change.

Structural changes are larger and more complex than individual personnel changes. Using “what-if” concepts as a basis, a technique was developed for identifying key risks and gaps during structural changes (see Table 1).

The OMOC process has several steps, largely analogous to facility change, but differing in details. Furthermore, the OMOC process—since it deals with people—interacts with other business processes at the company, like recruitment, on-boarding, etc., which are typically the domain of HR.

Consistent application of OMOC is frustrated by the fact that (i) there are different change types, (ii) the changes can have short and long durations, and (iii) the changes have different levels of complexity. The risks associated with long-duration changes were discussed, with the suggestion that breaking a given long-duration change into smaller components (temporal decomposition) is a viable risk reduction strategy. Complex changes can be broken into their constituent parts (structural decomposition), again as a viable risk reduction strategy.

Finally, comparisons were made between OMOC and MOC, which demonstrated high level similarity between the logic of the two processes. However, significant differences were experienced in the fact that some OMOCs are done after the fact, and the increased information security associated with OMOCs.

2 References

ⁱ CCPS, *Guidelines for Risk Based Process Safety*, Center for Chemical Process Safety, New York, 2007.

ⁱⁱ CCPS, *Guidelines for Risk Based Process Safety*, Center for Chemical Process Safety, New York, 2007.