

Executive Summary of Report of Findings

21 January 2005

Introduction

As a leadership response to the tragedy at the UU3 in September of last year as well as the death from a fall at AU2, Don Parus, the site manager, called for an assessment of safety behavior and culture. The scope of the assessment was intended to address all aspects of "protection", including therefore process safety, integrity management, people's perceptions of equipment conditions, and so on. This scope was in part a response to the fire at the UU4 the previous spring, which fortunately, resulted in no casualties, but was an extremely serious event.

Don Parus's commitment was unusual in that he truly invited people in various presentations at Texas City to give the leadership team the "bad news". The leadership team launched the assessment with a review of the topics for the assessment and selected a cross-representative sample of 160 people, 112 were interviewed. The interviewees included the leadership team members, 38 tier three, 31 tier four, and 29 hourly employees, all categories representing all parts of the plant, including several contractors. In addition, 1,080 people filled out an anonymous survey that included multiple choice as well as text box answers to expand the findings.

Instead of devoting specific sections to the various incidents, the report organized the findings first in the categories of *unsafe acts* and *workplace conditions*. One intention was to discover the latent conditions that can combine with unsafe acts or violations, causing releases, injury, and explosions.

The report ends with an examination of the *organizational factors*, the parents of the downstream "problem children" referred to in the previous categories of latent conditions. As much as possible, quotes were used from the 600 pages of interview notes and the hundreds of pages of text box answers, so that people reading it could hear the voices of their own organization. This summary attempts to distill down to key themes - capturing both that which was typical but also that which was critical (from internal and external experts or specialists), to the protection of people and the site.

Recommendations are in a separate document in order to let the voices of the Texas City Site be heard with little outside commentary or conclusion.

Summary

Unsafe Acts:

Many reported feeling blamed when they had gotten hurt or that they felt investigations were too quick to stop at operator error as the root cause.

Many noted the recent responses by management to the UU3 tragedy as being unprecedented in their caring, and that there has been improvement in the past two years.

Many report *errors* due to a lack of time for job analysis, a lack of adequate staffing, a lack of supervisory staffing, or a lack of resident knowledge of the unit in the supervisory staff.

Intentional deviations from safe operating procedures (violations) were also reported to be common because of the oft-cited “culture of casual compliance.”

Workplace Factors:

Workplace factors breed unsafe acts. They are also more easily managed.

Condition of the Kit

There is an exceptional degree of fear of catastrophic incidents at Texas City.

People talked or wrote at length about serious hazards are in the operating units from CUI, abandoned asbestos, piping integrity issues, inadequate spare pumps and parts, and other equipment and operating hazards.

Of these, piping integrity was repeated again and again. Even where there have been recent investments in piping integrity, people reported that they often could not shut the unit down to in fact replace the pipe they had fabricated.

The tolerance of these kinds of risk “distracted” people from routine safe practices at the task level, or made them feel skeptical about the commitment to safety at the plant.

Procedures:

Procedures seem too long and complex and vary enormously in how they are interpreted across the site. People adapt to the particular unit, supervisor, or even operator for how to follow even the most important procedures (e.g., LOTO and ATW).

(Efforts to standardize procedures are underway. People from A&A pointed out that their safety record is excellent and hoped that the refinery employees would be open to learning from them and implementing these best practices.)

Training:

Almost all interviewees say the quantity and quality of training at Texas City is inadequate, and prohibits the site from having a common understanding of the core HSSE management system, as well as compromising other protection-critical competence.

Compliance Delivery:

There was receptivity about the concepts of “just culture” and compliance delivery, but the education phase is not yet complete. People want more training in how to take it to their employees, and verify that what was taught was, in fact, learned. Many see it as one of the keys, but also want clarity and simplification of procedures, standards, etc. so that they can answer “compliance with what?”

Integrity Matters

Clear Policies / Procedures known to all & followed.

Production Pressure and Staffing

Most interviewees *at the production level* say that the pressure for production, time pressure, and understaffing are the major causes of accidents at Texas City. They say all of these have gotten steadily worse in recent years and that cuts have gone beyond what is safe in many cases. People across levels perceived that understaffing had gotten to a point where it was significant enough to undermine protection, that is, safety, process safety management, environmental management, and integrity management.

Leadership at Unit/MAT Level:

Many say that supervisors and superintendents are committed to safety but are concerned that superintendents and supervisors get squeezed into positions where it appears as though they must compromise safety. Most appreciate the production pressure aspect of that squeeze, while many note the rise in activities like paperwork, initiatives, and other projects that take supervision off focus.

Many mentioned progress in local leadership's value for diversity not just in hires at the hourly and front line levels, but in MAT and Function leadership as well.

What Is Recognized and Rewarded

Most interviewees say that production and budget compliance gets recognized and rewarded before anything else at Texas City. A few say that safety performance is recognized and rewarded, but mostly during TAR periods.

Organizational Factors:

Commitment, cognizance, and competence at the organizational level are the engine that drives a site toward protection fitness. We will highlight some commitment and cognizance findings here.

Commitment:

Commitment has two components: motivation and resources.

There is a sense that commitment to protection has increased over the past two years, especially to individual safety. Don Parus and a few members of his team are widely perceived to be the source of this different level of commitment.

The personal commitment of Don Parus is viewed by many as the strongest reason for hope that the site will become safer. People see him as genuine, a strong leader for safety and more than half believed accomplishing the bold goals was possible if he continued to drive the effort.

People see commitment as tested by the following:

- The longevity of the leadership team - turnover and organizational transition (BP South Houston, NewCo separation, etc.) has made management of protection very difficult.

Leadership
Findings

Staffing

Communicate Leadership
Findings

- A demonstrated willingness to shut down an operation or unit when unsafe conditions warrant it - people pointed to examples of where this has occurred and said these examples must be understood and acknowledged more widely to counteract the still strong tendency to keep things running no matter what.
- A demonstrated willingness to get what the site needs from the corporation.

People also want to see commitment/motivation in the form of management in terms of two themes:

Culture of accountability

- Instill a culture of accountability to keep clear who has what authority, decision, etc, what people can expect from other functions/MATs, and to truly hold people to account for the protection-related aspects of their jobs and follow-through.
- Create a credible, comprehensive plan to address the gaps in operational reliability/protection near and long term.

Commitment: Resources:

Cost pressures

There is a strong sense that the commitment shown by Don Parus and others is undermined by the lack of resources to address severe hazards that persist. For most people, there are many unsafe conditions that prove that cost cutting and production are more important than protection.

Poor equipment conditions are made worse in the view of many people by a lack of resources for inspection, auditing, training, and staffing for anything besides 'normal operating conditions'.

Cost pressures are widely reported to have undermined the integrity of turnarounds as well as routine maintenance. Many noted that the turnaround work that has moved into ongoing maintenance increases hazards and risk.

Cognizance

Several aspects of the organization's systems and culture determine *cognizance*, or awareness of risk. The question is. "Do we know what we need to know in order to make the right choices about safety and integrity management?"

PSM

Integrity management concerns are not filtering up adequately for managers to make well-informed choices. Engineering Authority, Inspection, and PSM all show up again and again as not having a sufficient voice to get those concerns heard at the right level and acted upon.

The question for any company is how good they are at managing *through* two inevitable barriers: the position paradox and the "check the box" mentality. *Texas City is at high risk on these two counts.*

Position paradox: The people who have the most influence over the decisions that determine the safety and integrity management of a particular site are almost

always the most distanced from those conditions. Unless managed, the result is blindness for the senior-most level of the site as well as those above the site.

BP as a corporation has had this blindness and Texas City is no exception. People report that critical information is not getting through to the top, and they cite many reasons. Some of these are that there is not enough auditing or inspection, no one has time or competence to "monitor the monitors", many managers pay more attention to individual safety concerns and lack the same passion or knowledge of PSM and integrity management issues, and many note that existing monitoring and reporting systems are not monitored or effective.

'Check the box': This is meant in two ways. First the traditional understanding of 'check the box' as exemplified by going through the motions of safety procedures, training, etc; the second is that once something has been completed it is 'checked off' and the constant tweaking and attention to that which has been put in place for protection is forgotten or avoided. These manifest as other sources of blindness to real hazards at Texas City, even in the case of serious risk assessments, MOC, and HAZOPs.

Critical events, (breaches, failures, or breakdowns of a critical control measure) are generally not attended to. There is very little analysis of trending data, where such data is captured. People reported fundamental problems with what gets left up to non-expert people with regard to integrity standards, engineering specifications and learning, and say that key performance indicators conceal too much of what managers really need to know.

The connection between key people's assessments of risk and the capital planning process has seemed weak and important issues are not resolved because of an over-reliance on benchmarks.

People do not tend toward making the business case for proper investment in protection, shutting down a unit - with some heroic exceptions. It is critical for BP Group and Site management to avoid over-relying on people who report to them for the cognizance of risk they need.

Safety Management Systems: Quality of what is Collected and Drive to Action:

The traction system has great potential. It needs to be managed, and managed for the quality of items vs. quantity - people need education in how to usefully frame items so, for example, they are actionable. The system itself needs to be made far more user-friendly (sorting, priority, etc.), which we understand is now beginning to be addressed by HSSE. Near-misses need better definition, and a different tolerance of risk needs to be highlighted and rewarded when it appears.

Action taken in response to SMS information is weak. There is a substantial backlog of incomplete items in traction, the PSM database, actions from HAZOPs are perceived to lag, and the person entering the item does not necessarily find out if it is in fact closed.

'CATS' is an example of a safety program that is working well at A&A that can inform replication in safety councils in the refinery.

Many people had examples of times that a manager who was responsive to a safety concern increased people's willingness to report after that.

There are emerging examples of certain managers having some success at building a 'reporting culture'.

Training, Development, and Organizational Learning

Processes for ensuring that people have appropriate competencies are weak. For example, many people said the VTA is very ineffective and there is no evaluation of the effectiveness of training, especially in the field.

There is great concern about losing competence vital to protection in the coming years.

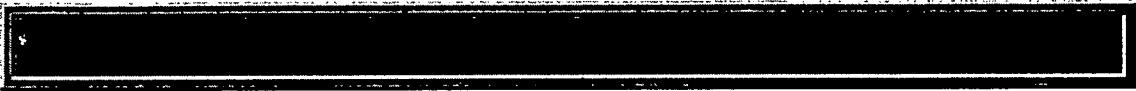
Commitment to communication with front line leaders has had substantial and positive effects in communication and their development, but more is needed to assure that they are accountable to pass on information to their people.

Education in risk assessment, recognition of major hazards, MOC, as well as consistent procedures is needed to fundamentally change people's risk tolerance. A particular example of widespread confusion is the answer to, "Under what organizational change conditions do we need to do an MOC?"

Conclusion:

Clearly, these findings more than account for the underlying causes of the recent tragedies and fire. What they point to are the existing latent conditions within the site protection system at the human/machine interface, the level of local workplace conditions, and at the organizational factors level.

What they do not convey is people's passion for making Texas City *productive and safe*, the pride and care that came through in every conversation and the depth of desire to make things right. There are many leaders at Texas City at every level who are looking to be heard and to get to work on the right things. Much courage has already been shown and there is more there to draw upon to build the future of this site.



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