BP Texas City: Discussion Questions

These discussion questions can be used to stimulate discussion about lessons from the Texas City disaster at team meetings, town halls, safety meetings etc.

It would be helpful to view the CSB video “Anatomy of a Disaster” before these discussions.

1. The operators intentionally overfilled the column so as to manage the risks as they understood them. Can you explain their behaviour? Are you aware of other examples where people deviate from procedures so as to manage the risks as they understand them?

2. On the morning of March 23, the raffinate tower start-up began with a series of miscommunications. What kinds of communication failures occurred? What lessons should be learnt from these failures? How effective are our safety critical communications in ensuring a common understanding of process safety issues - including those between shifts, teams (e.g. operations and maintenance) and individuals (e.g. supervisors and operators)?

3. Human errors contributed to the overfilling of the tower for 3 hours. Individuals do not plan to make such errors – they do what makes sense to them at the time. Numerous conditions influenced the decisions and actions of the operations personnel. These conditions created a workplace the increased the likelihood for human errors to occur. Can you name some conditions that influence human performance? How can we identify what these deficiencies might be in advance, so that we prevent incidents?

4. The computerised control system did not provide key information in a useful format. Do our human computer interfaces provide relevant personnel with all necessary process information and oversight in a clear and timely manner?

5. A staffing assessment recommended an extra panel operator for ISOM start-up, but one was not provided. How do we ensure that sufficient levels of appropriate staff (e.g. operators, supervisors, technicians, managers and technical assistance) are available under all operating conditions (i.e. having the right numbers of the right people in the right place at the right time)?

6. Some of the operators had worked more than 29 consecutive days, and operator fatigue likely contributed to the incident. How does fatigue increase the risks of such incidents? How do we manage the potential impact of fatigue on the performance of staff? How effective is this process?

7. Do we recognise that start-up is a more dangerous time than steady state operation? If so, what do we do about the increased risk? How does this apply to start-ups after trips? Do we have start-up checklists/operational procedures which we refer to at every step?

8. Effective training for the management of abnormal situations was not provided. Will our people act and decide appropriately during an upset? How do we know they will?

9. A lack of supervisory oversight during the start-up was contrary to safety guidelines. Do we define what we mean by “supervision”? How does supervision impact on our control of risk? How well do we support supervisors in their roles and responsibilities?

10. The policy was not to replace existing vents with flares, although policies required that new plants be equipped with flares. This is known as “grandfathering” - allowing equipment to serve out its natural or design life, even though according to new standards it is no longer acceptable. What are the pros and cons of “grandfathering”? Are you aware of cases of grandfathering in our company? How justified are they?
11. How is the risk of ignition minimised on our facilities? Can you locate and examine these rules? Are they unambiguous? Are they complied with? Why? Why not?

12. Six instruments malfunctioned on the day of the incident including a high level alarm, a sight glass on the tower and a miscalibrated level transmitter. How do we assure ourselves that such safety critical elements are functioning correctly, or will function on demand?

13. Texas City infrastructure and equipment was found to be in “complete decline”. There were concerns about the potential for a major incident due to mechanical integrity problems. What indicators do we use to provide assurance that we are managing mechanical integrity? How effective are they, and what do they tell us?

14. What is “normalisation”? Can you identify examples in your part of the organisation?

15. Reliance on the personal injury rate as a safety indicator failed to provide a true picture of process safety performance at Texas City. What is the difference between personal and process safety? What is wrong with using personal injury statistics as an indicator of how well major hazards are being managed?

16. There were dramatic process safety near misses at Texas City from which little was learnt. What systems do we employ for recording and learning from such events? How effective are they? Do we identify process safety deficiencies and address them promptly?

17. The Texas City refinery did not have a positive safety culture. The causes of the incident extended beyond the ISOM unit to the actions of people at all levels of the organisation. How would you describe our safety culture? Why? What aspects are key to maintaining our safety culture? What would have the largest improvement on our culture?

18. It has been said that Texas City suffered from a “learning disability”. How effectively do we learn from process safety events or major accidents occurring in other organisations?

19. The Chief Executive for Refining and Marketing failed to uncover any of the problems at Texas City when he visited the site. Why do you think this is? What questions do you think senior managers should ask when visiting our facilities?

20. The Corporate Refining executives ordered a 25% reduction challenge for 2005; even though much of the refinery's infrastructure and process equipment were in disrepair, and despite the 2005 refinery safety leadership business plan highlighting the possibility that “Texas City kills someone in the next 12-18 months”. How do we ensure that our budget decisions do not impact on process safety management?

21. Which of the above issues would you prioritise for improvement in the company? Why?