

## COMMON TOPICS

### Common topic 3: Safety critical communications

#### Key areas to examine

Safety critical communication situations which could be examined include:

- Shift handover (see below);
- Communications during emergencies;
- Any form of remote communication between control room and outside operators e.g. during shutdowns;
- Permit-to-work procedures, particularly if the work continues over a shift change;
- Communication of hazards and risks to contractors;
- Use of radios;
- Plant labelling and identification;
- Communication of changes to procedures.

Problems with communication leading to major accidents/incidents are well known, for example Piper Alpha.

Effective communication is important in all organisations when a task and its associated responsibilities are handed over to another person or work team. Critical times when good communication must be assured include: at shift changeover, between shift and day workers, between different functions of an organisation within a shift (e.g. operations and maintenance) and during process upsets and emergencies. Although the importance of reliable communication may be recognised, guidance for personnel on how to communicate effectively may be lacking.

#### What can go wrong?

Unreliable communications can result from a variety of problems including:

- Missing information,
- Unnecessary information,
- Inaccurate information,
- Poor or variable quality of information,
- Misunderstandings,
- Failing to carry forward information over successive shifts.

Miscommunications and misunderstandings are most likely to occur when the parties communicating have a different understanding of the current state of the process. More time will be needed to communicate when such differing 'mental pictures' exist.

#### Improving communications

A number of simple steps can improve communications in the workplace:

- Carefully specify what key information needs to be communicated;
- Aim to cut out the transmission of unnecessary information;
- Use aids (such as logs, computer displays) based on the key information needs to help accurate communication;
- Aim to repeat the key information using different mediums, e.g. use both written and verbal communication;
- Allow sufficient time for communication, particularly at shift handover;
- Encourage two-way communication with both the giver and recipient of the information taking responsibility for accurate communication;
- Encourage the asking of confirmation, clarification and repetition;
- Encourage face-to-face communication wherever feasible;
- Try to develop the communication skills of all employees; and
- Aim to set standards for effective and safe communication.

### **Shift handover**

Risk areas:

- During plant maintenance, particularly when this work continues over a shift change.
- When safety systems have been over-ridden;
- During deviations from normal working;
- Following a lengthy absence from work;
- When handovers are between experienced and inexperienced staff.

In order to manage the risks, sites should:

- Give effective shift handover communication a high priority;
- Include communication skills in the selection criteria for shift-workers and develop the communication skills of existing staff;
- Provide procedures which specify how to conduct an effective shift handover;
- Place greater reliance on written communication when 12-hour shifts are in operation;
- Where possible, plan maintenance work to be completed within one shift, thereby eliminating the risk of miscommunication of maintenance issues at shift handover.

For shift handovers to be effective they should be:

- Conducted face-to-face;
- Two-way - with both participants taking joint responsibility for ensuring accurate communication via verbal and written means, based on a pre-determined analysis of the information needs of incoming staff;

- Given as much time as necessary to ensure accurate communication.

Areas for improvement may include:

- Specification of key information needed by incoming operators to update their 'mental model' of plant status;
- Design of operator supports (logs, displays etc.), based on the operator's information needs;
- Involvement of end-users when implementing changes to established methods of communication at shift handover, thereby facilitating their acceptance and use.

### **Specific documents**

In addition to the general documents that should be requested prior to the visit (see chapter 'Aim of the Guidance') it is recommended that the following documents, which are specific to this topic, should also be requested:

- Details of training for safety critical communications, such as in emergencies;
- Procedures for conducting shift handovers;
- Details of Permit-to-work system and procedures.

### **Enforcement and advice**

Enforcement should be considered where there is evidence of a lack of formal or effective procedures and training in safety critical communications.

### **Guidance**

- **Reducing error and influencing behaviour**, HSG48
- **Effective design of workplace risk communications**, Research Report 093
- **Guidance on permit-to-work systems in the petroleum industry**, OIAC 1997
- **Effective Shift Handover - A Literature Review** OTO 96 003

## Question set: Safety critical communications

	Question	Site response	Inspectors view	Improvements needed
1. Is there is a process to identify and define the communications requirements for the safe operation of plant e.g. for PTW, shift handover, control room to field/maintenance communications?				
1a	<p>Management questions:</p> <ul style="list-style-type: none"> <li>• Has the company considered effective ways to communicate major hazard information to contractors/temporary staff/visitors?</li> <li>• Is there a process to select the key information to be communicated (from internal and external sources)?</li> <li>• Is there a system to communicate changes in practice and lessons following an incident?</li> <li>• Does a process exist to monitor the effectiveness of the communication of major hazard information?</li> <li>• Are the workforce actively involved in communications (i.e. not just passive receivers of information)?</li> <li>• Is there a process to ensure that modifications, changes to processes, procedures, systems and organisation are communicated to all relevant staff?</li> </ul>			
1b	<p>Operator questions:</p> <ul style="list-style-type: none"> <li>• Is there evidence that the key major hazard information has been understood by the target audience (i.e. staff, contractors, visitors)?</li> <li>• Is there is evidence that changes to practices, as a result of an incident, are understood by staff?</li> <li>• Is there is an audit trail documenting the monitoring process?</li> </ul>			
2. Have the communication routes been clearly defined?				
2a	<p>Management questions:</p> <ul style="list-style-type: none"> <li>• Have communications been considered in defining the plant's safety command and control structure?</li> <li>• Are there routes by which operators can raise safety concerns with management and is the loop then closed adequately?</li> <li>• Is there is a process to review the communications routes in light of plant / organisational change?</li> <li>• Are the key communication aspects of critical procedures assured?</li> <li>• Is there a defined structure for shift handover arrangements?</li> </ul>			
2b	<p>Operator questions:</p> <ul style="list-style-type: none"> <li>• Is there evidence that key communication channels are documented?</li> <li>• Do operators know when to report safety concerns?</li> <li>• Do operators understand where they can obtain key safety information?</li> <li>• Can staff describe the safety implications of any recent changes to the plant?</li> </ul>			

