IP THE INSTITUTE OF PETROLEUM

HUMAN factors no10

briefing notes

For background information on this series of publications, please see Briefing Note 1 - Introduction

COMMUNICATIONS: *- information can be passed from one person to another by word of mouth, in writing, or by using signs (eg. hand signals), pictures (diagrams, photographs etc), or by computer displays and presentations. In all cases, the essential requirement is that the information should be complete and accurate and given to the right person in the right form at the right time. It is also important that feedback is given to the person who makes the first communication so that it's clear that the message was received and understood. It is especially important to have good communications at shift handover - see* What's the problem?

communications

Case studies

1. A gas leak occurred during recommissioning of a test separator. Day shift production crew found they could not operate the orifice carrier to fit a new orifice plate; they isolated it for investigation. The night shift maintenance crew repaired the orifice carrier and left it ready to fit the plate.The night shift production operator did not know the orifice plate needed to be fitted. Handover from maintenance to production was verbal and the status of the orifice carrier was misunderstood. The production operator removed the isolations without checking the status of the plant. Gas escaped through the open cover plate. Recommendations included:
   - On tasks where equipment is isolated and dismantled, a formal tool-box talk should be held to ensure all work groups are fully conversant with individual and group expectations.
   - On completion of a task, the status of the work site should be clearly identified during handover and endorsement of the permit.
   - Prior to reinstatement of equipment, it is mandatory that operations ensure the plant condition is safe to start-up.

Source: Step Change SADIE record number 124: www.stepchangeinsafety.net

2. 420 feet (128 metres) of tubing was dropped in a well. Personnel thought the tubing was clear of the shear rams, and closed them shearing the tubing, which was fished out of the hole with a loss of two days' rig time. It appeared that important information was not clearly communicated to the crew coming on tour by the crew leaving tour. Suggested corrective actions were:
   - Drillers, tourpushers and toolpushers should review the activities of the previous tour at crew change. Any changes and any other pertinent information should be discussed.
   - A brief discussion with the entire crew should be held prior to each crew change (tool-box talk) to ensure each person understands operations in progress at the time of crew change.

Source: IADC Safety Alert 98-28: www.iadc.org/alerts/htm

What's the problem?

HSE examined shift handover in 16 offshore companies (reference 1). Some companies:

- Did not clearly define responsibilities and information needs
- Did not provide written guidance
- Did not mention it in their safety case
- Lacked risk awareness among their operators
- Provided little or no training
- Did little monitoring or auditing
- Had accidents that involved miscommunication at shift handover, e.g. maintenance or plant status.

Has your company had any of these problems?

1. Are shift handovers very often rushed with the minimum of information exchanged?
2. Could work be better planned so that there is no need to handover a job from one shift to another?
3. Are communications no better during high-risk periods?
4. Are there lots of problems with intercoms, phones, radios or other hardware, e.g. poor sound quality, badly located, lots of 'dead zones' or background noise?
5. Are employees often surprised by information given by management until a 'bombshell' is dropped?
6. Are logbooks noticeboards, permit to work records etc badly kept (either through negligence or due to bad design)?
7. Have the workforce generally had little or no training in communications skills (or had training, but it was poor)?
8. Are noticeboards, leaflets and other written materials full of mainly useless or out of date information?
9. Are methods of communication often inadequate (e.g. information passed verbally that should really be in writing)?
10. Do employees regularly raise communication (or other) problems but the company does not seem to act on this?

If the answer to any of the above is 'yes', then you need to take action!

What can I do about it?

Ask people, either face to face, or by giving out a question sheet to find out about various forms of communication in their workplace. You could base some questions on points 1 to 10 above, or there are ideas for questions in reference 1.

i. Find out whether anyone feels that:
   - Insufficient information is exchanged within the company in general
   - Communications equipment or documents are poor
   - Procedures or training relating to communications are generally poor.

ii. Draw the information to the attention of company management.

What should my company do about it?

It is clear that accurate and timely communications are important for safety and efficiency in work. Much of human factors is about communications: to perform a specific task, an operator will need to know what to do. Part of the process of selecting personnel is an interview in which existing skills and experience will be discussed. This is a communication process exploring the skills and knowledge that potential employees and contractors already have. When work starts, specific issues about each job should be described in tool-box talks and in the procedures used. Both should emphasise health and safety issues. Training is a form of communication. First, it involves finding out what training is required, then passing new information to personnel to improve their skills and knowledge. Displays, signs and labels in the workplace communicate factual and safety information. Many operators will need to use radios, phones or intercoms to contact others. Problems arising will need to be communicated via a reporting system. All of these are communication issues: they are also human factors issues.

Courtesy: Mike Goldwater, Network Photographers

Continuing communication during oil spill booming emergency exercise

Management responsibility

Management should ensure that it has control over all aspects of communications in the workplace. If information is not being sent, received, understood or acted on, the company should investigate and remove any barriers to communication. To do this, management must have systems in place for monitoring and auditing communications.

Good communications

Management should ensure that all employees:

- Clearly understand the communication needs of all tasks they are required to carry out - whether normal operations, maintenance, fault or emergency tasks
- Have easy access to good quality communications equipment
- Where possible, are not prevented from communicating by excess background noise
- Are not given or required to give unnecessary information
- Have procedures and other supporting documents available to assist communications (e.g. logbooks and instructions for using systems)
- Are trained in all communications procedures (e.g. terminology used; hand signals, how to use computer-based information)
- Are able to contact supervisors or managers at any time ('open door' policy)
- Have the means to report problems and receive feedback in good time
- See managers and supervisors on site demonstrating their commitment to work quality and safety
- Are aware that the company looks across different divisions and outside itself for new ideas.

Shift handovers

Management should ensure that:

- Clear procedures/written guidance are in place describing the key information to be exchanged and how this should be done (e.g. word of mouth, in writing or both)
- Handovers are face-to-face wherever possible allowing crews to question each other
- Handovers are not distracted e.g. by time pressure
- Handover procedures take into account higher risk periods, e.g. lengthy maintenance campaigns, after long periods of absence, where safety systems are overridden, e.g. rare start-up of continuously operating plant, during unscheduled maintenance, or live safety critical permit to work
- Employees are competent to use handover procedures
- Where possible, tasks are scheduled to be completed within a shift so that there is no need for handover
- Regular and thorough monitoring and auditing is conducted
- Employees who conduct handovers are involved in the examination and improvement of the practices
- Information from incidents and accidents due to shift handover problems are brought to the attention of employees.

Communications and accident reduction

Good communication between the various management, supervisory and worker levels at an informal level is a feature of low accident plants.

Source: reference 4.

Useful reference information

1. *National inspection project on shift handover* HSE Offshore Technology Report OTO Report 98 160 (1998) www.hse.gov.uk/research/index.htm
2. *Effective shift handover - A literature review* HSE OTO Report 96 003 (1996) www.hse.gov.uk/research/index.htm
3. *Effective supervisory safety leadership in the offshore oil and gas industry* HSE OTO Report 1999/065 (2001) ISBN 0 7176 1974 5 www.hse.gov.uk/research/index.htm
4. *Organising for safety: 3rd report of ACSNI study group on human factors* HSC, HSE Books (1993) ISBN 0 7176 0865 4.
5. *Reducing error and influencing behaviour* HSE HSG48 2nd edition HSE Books (1999) ISBN 0 7176 2452 8.