HUMAN FACTORS

BRIEFING NOTE No. 21

Supervision

Supervisors have a vital role to play in maintaining the integrity of the barriers that have been put into place to manage process safety hazards, for ensuring the reliability of tasks, providing leadership, reinforcing standards and expectations for personnel behaviours and to counter deficiencies in management systems.

Why supervision?

Inadequate supervision has been a contributor to a number of accidents.

> 'In reality, poor supervision will rarely be a direct cause of an accident, but indirectly it can make a significant contribution.'
>
> Source: Reference 1

Does your company have a problem with supervisor competence?

If the answer to any of the following questions is 'No', then you should take action!	Yes	No
1. Do supervisors have the full range of technical skills to carry out their role?		
2. Are operators who are appointed to a supervisor role:		
• thoroughly assessed for the role?		
• fully trained in the range of skills required for the job?		
• coached and mentored by a more senior person when first appointed?		
3. Are supervisors generally well respected for their all-round competence?		
4. Are supervisors appointed on merit/management potential, and not because of their technical abilities or time served in an operational role?		
5. Does the organisation actively seek feedback on supervisor performance as part of the appraisal process?		
6. Do supervisors have the necessary skills and knowledge to supervise contractors?		
7. Are supervisors' communication and social skills generally good?		
8. Are supervisors given necessary resources (including time off the job) to develop their competence?		
9. Do supervisors have a clear and complete job description describing required competencies?		
10. Are supervisors highly visible in the workplace and generally present when needed?		
11. Are supervisors in the workplace regularly? Do they talk to their teams and have a good picture of what is going on?		

What do supervisors do?

Supervision is a multifunctional role embedded within the team and includes:

- work planning and risk management;
- assigning staff and contractors to tasks, including delegating;
- overseeing and assessing their team's work;
- team building;
- guiding, coaching/mentoring, developing, advising, counselling and supporting team members;
- attending to disputes, team conflicts and disciplinary matters;
- taking a key role in abnormal situations, emergencies and incident investigations;
- administrative 'paperwork' tasks;
- communicating clearly with senior managers and with their team (as a key conduit for information and as an influencer), and
- identifying possible enhancements to personnel (e.g. competence), plant and processes.

Supervisors should be able to assess their teams' strengths and weaknesses and adjust their own role in a task accordingly. This may be required in a dynamic situation such as an emergency or if staff are new/inexperienced. For example, if it became clear that certain team members are unable to cope, the supervisor should rapidly reassign their tasks or carry them out him/herself. Such interventions require the supervisor to have sufficient technical skills to recognise the problem.

Supervisory tasks are thus wide-ranging and require a large array of technical and non-technical skills and competencies. However, as many organisations are moving towards a flatter structure and some are developing self-managed teams, the specific function of supervision may be delivered by others who are not designated as 'supervisor'. However, the principles for improving supervision competence apply to whoever is responsible for the supervisory task, hence the word 'supervisor' is retained here.

> Most supervisors report that 80 – 90 % of their problems are not caused by lack of technical knowledge, but are problems relating to managing their work and their workforce.
>
> Source: Reference 3

Lack of non-technical skills in supervisors can increase human error, and thus incidents or accidents, because supervisors may fail to:

- encourage teams to report problems;
- set a good example and thus encourage their team to adhere to safe practices;
- present themselves as open, caring and approachable, and
- spend sufficient quality time with teams, gaining trust, noticing and resolving workforce fatigue, stress and other problems.

CASE STUDY 1

'[. . .] why is competence assessment considered important? Firstly, review of past major incidents indicates that staff have, on occasion, unknown to the company lacked key safety knowledge and skills. For example [. . .] the supervisors with responsibility for inspecting and maintaining the automatic train warning system, of the train involved in the 1997 Southall rail crash, did not correctly understand the test procedures.'

Source: Reference 2

What should my company do about it?

Supervision has become a key human factors topic and several guidance documents have been published on the subject. The organisation should recognise that supervision is a key role in ensuring safety as well as production. The organisation should consult the latest research and guidance on the subject to ensure that management responsibilities (outlined below) are fulfilled. Management should take particular note of surveys carried out on supervisor competence and consider whether the findings apply locally, or even conduct their own internal review.

The organisation should also recognise that supervisors are unlikely to have the full range of technical skills and knowledge of the multi-disciplinary or third-party teams they supervise. A key supervisory skill is to understand their team members' work sufficiently to ensure it is performed to the required technical and safety standards. The supervisor and his/her manager should also recognise any gaps in their understanding and ensure that support is always available to assist with tasks or situations that are unfamiliar.

The supervisor role should not be allowed to expand in an uncontrolled way – particularly with non-safety administrative 'paperwork' tasks dominating the working day. Nor should it be allowed to 'drift' whereby small – perhaps informal – adjustments to the role, over time, change it beyond all recognition.

Management responsibility

Management should ensure that they have in place:

- a clear and comprehensive job description for supervision roles;
- a process able to identify suitable supervisors against that job description, which should be based on:
    - technical and non-technical skills;
    - personality, including being: able to motivate others; risk aware; flexible and adaptable to changing situations;
    - potential to be coached and trained in the role, and
    - subordinates' (including contractors') opinions on potential supervisor.
- suitable means for establishing and enhancing supervisor competence via mentoring, supervised practical experience in the role, AND formal training (in, for example, crew resource management (CRM), team building or stress management);
- systems and processes for ensuring that supervisor competence is monitored and evolves to meet new or altered demands; these can arise from, for example, organisational or technical changes, and
- Sufficiently competent personnel to deputise for absent supervisors; noting that temporary supervisors may need to be carefully monitored and the limits on their duties clearly defined.

Management should consider CRM training (see Reference 4) to enhance supervisor competence with their team. Sufficient resources should be allocated to provide training, including time off to attend the courses and time in the workplace to practise and consolidate the skills required.

Supervisors may also benefit from a knowledge of group dynamics and the pitfalls of biases or 'groupthink' that can lead to ineffective use of the group in decision-making situations.

CASE STUDY 2

A supervisor opened a hatch in a fluid tank releasing H_2S. This led to the death of the supervisor and injury to another operator. Neither was equipped with supplied air. The supervisor would have been aware of the potential danger but clearly failed to follow procedure and had not planned the job correctly. It is believed that operators had become complacent regarding the dangers of H_2S.

It was recommended that inspections and audits are carried out on all contractors and supervisors and that further annual HSE training is given focusing on supervisors to ensure those in the role meet the highest safety standards.

Source: Step Change in Safety, safety alert no. 03389, https://www.stepchangeinsafety.net/

Measuring performance

Below is a sample of performance indicators that could potentially be used to monitor how effectively supervisor competence is being managed, divided into leading indicators (showing that a problem may occur in future) and lagging indicators (showing that there is currently a problem). See Briefing note 17 *Performance indicators* for more information on using performance indicators.

Leading indicators	Lagging indicators
Reports from supervisors' subordinates. Training plans/training records lacking specific training for supervisors. Active monitoring, observation and interview of supervisors. Absence or inadequacy of any job description for supervisor role. Quality of the 'pool' of potential candidates in supervisor role.	Incidents suggesting supervisor lack of competence (note: this may be a symptom of other supervisor issues such as insufficient number of supervisors.) Number of supervisor tasks not completed or habitually postponed. Supervisor absenteeism. Safety culture audit results (may also be a leading indicator.)

CASE STUDY 3

An offshore contractor came under pressure from its clients to be able to demonstrate competence. The contractor had received two 'improvement notices' from the regulator which demanded improvements in competence controls, but gave no direction as to how these should be developed.

Analysis indicated that the problem lay primarily with supervisory and management grades, and with maintenance positions. National standards were considered too generic, and did not cover the appropriate grades. The contractor decided to produce in-house standards: a small number covering only a few safety-critical tasks, including processes such as risk assessment, inspection, crew training, and leadership. Promotion standards were also developed to clarify career paths from one grade to another, and were used as the basis of training programmes.

Development costs were modest, record systems are slim-line and paper-based, and ongoing costs are minimal.

The contractor's safety performance in recent years has been among the best in the sector and has been recognised in a series of awards.

Source: Webster Scot website, http://rowanhill.com/?page_id=211

References

1. HSE (2004), *Different types of supervision and the impact on safety in the chemical and allied industries,* RR292, http://www.hse.gov.uk/research/rrhtm/rr292.htm
2. HSE (2003), *Competence assessment for the hazardous industries,* RR086, http://www.hse.gov.uk/research/rrhtm/rr086.htm
3. EI Hearts and Minds, *Improving supervision,* https://heartsandminds.energyinst.org/toolkit/IS
4. Energy Institute (2014), *Guidance on crew resource management (CRM) and non-technical skills training programmes*, http://publishing.energyinst.org/publication/free-to-download/guidance-on-crew-resource-management-crm-and-non-technical-skills-training-programmes2

Further reading

- HSE (2001) *Effective supervisory safety leadership behaviours in the offshore oil and gas industry,* OTO 0065/1999, http://www.hse.gov.uk/research/otohtm/1999/oto99065.htm
- HSE, *Human factors: Supervision*, http://www.hse.gov.uk/humanfactors/topics/supervision.htm
- Flin, R. *et al* (2008). *Safety at the sharp end,* Ashgate Publishing Company, Burlington, VA, USA.
- North Sea Offshore Authorities Forum (NSOAF) (2008), *Multi-national audit: Supervision*, http://www.hse.gov.uk/offshore/NSOAF-Supervision-report.pdf