



*North Sea Offshore Authorities Forum*

MULTI-NATIONAL AUDIT

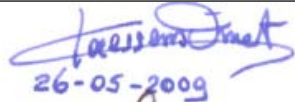

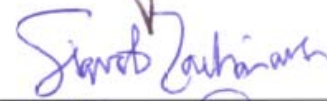

**‘SUPERVISION’**

*‘Supervision is an ongoing process, not an event’*

2007-2009



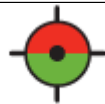
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OSLO / 25<sup>th</sup> of August 2008



## **CONTENTS**

DOCUMENT APPROVAL .....	iii
CONTENTS .....	v
EXECUTIVE SUMMARY .....	vii
1. INTRODUCTION.....	1
2. TERMS OF REFERENCE and AUDIT OBJECTIVES.....	3
3. METHODOLOGY, SCOPE and PLANNING .....	5
4. AUDIT OBSERVATIONS .....	9
5. AUDIT CONCLUSIONS .....	11
6. AUDIT FOLLOW-UP INITIATIVES.....	15

### **Appendices**

- A1. Audit aspects and observations
- A2. List of references
- A3. European and national legislation
- A4. Inspection toolkit ‘Supervision’
- A5. Glossary and abbreviations
- A6. Terms of Reference
- A7. Literature review highlights
- A8. Leadership Commitment Model
- A9. Template example



## **EXECUTIVE SUMMARY**

### **Introduction of the NSOAF**

The North Sea Offshore Authorities Forum (NSOAF) consists of representatives of authorities responsible for the supervision of offshore activities in North West Europe. The current membership represents Denmark, Faro Islands, Germany, Republic of Ireland, the Netherlands, Norway, Sweden and the United Kingdom. The NSOAF was founded in 1987.

It has one common aim:

*“Ensure and encourage continuous improvement in Health, Safety, Environmental Care and the Welfare of offshore workers”*

The members of NSOAF have an annual plenary meeting in which activities are summed up and new tasks are initiated and discussed. This work primarily takes place through the five following permanent working groups: Training, HS&E, EU (European Union), Wells and CCS (Carbon Capture & Storage).

### **Mandate, methodology, scope and planning**

Regularly multi-national audits are carried out by NSOAF. On the basis of a mandate from the 2007 plenary meeting, the audit ‘Supervision’ was initiated and carried out jointly amongst four Authorities (SSM, HSE, DEA and PSA).

A bottom-up approach was chosen, from the worksite to the boardroom. The audit started with an introduction to onshore management and a document review, followed by a three day offshore platform visit. In total 13 offshore platforms were visited, with eight operators involved. After the completion of all the offshore visits, the audit team evaluated the observations and findings.

On basis of this review several industry-wide challenges were defined.

Also a ‘Leadership commitment model’ for the aspect ‘supervision’ was developed and accepted by the team. These two elements were used during the interviews with the onshore line management. The audit was scheduled and executed during 2008 and early 2009.

### **Audit conclusions**

Although the companies audited were selected as representative of the industry in size and operation, and with a degree of cross border operations, the sample size does not permit firm judgments to be made on the industry as a whole. However, the following key strengths and key challenges were identified as common to all of the companies audited and therefore very likely to represent the industry-wide position.

#### Key Strengths:

1. The importance of supervision is well recognized and understood by personnel at all levels. Therefore, supervision aspects were observed to be well covered in the various **management systems**.
2. The need for supervisors to have **management skills** such as, inter personal communication, safety leadership, intervention, coaching etc. commonly called ‘**Soft Skills**’ is recognized and accepted. Training exists for these as well as company initiatives for improvement in these areas.
3. The need for effective **competency assurance** is recognized and accepted.

4. Management consider that offshore supervisory input to the offshore resource and activity **planning process** as crucial.

#### Key Challenges:

1. The assurance of **contractor supervision competency**;
2. The provision of **adequate supervision**;
3. Monitoring of **supervisory performance**;
4. The assurance of **supervisory knowledge and management of safety barriers**.

### **Audit follow-up initiatives**

On the yearly plenary NSOAF meeting on 29<sup>th</sup> April 2009 in Hanover, the following initiatives were agreed on:

1. Each regulator shall send the audit report, accompanied with a cover letter to all their relevant E&P North Sea Operators and Trade Associations. The letter shall emphasize the potential lateral learning amongst the E&P operators concerning the different aspects related to supervision. Also a statement about the importance of the following different aspects of safety barrier management shall be included: safety barrier knowledge, recognition of barrier degradation and/or decay by supervisors and managers, and their competency to manage these safety barriers.
2. A toolkit for worksite visits including safety interventions for supervisors shall be developed by the industry for the industry.
3. A study shall be initiated of what is existing in the literature about learning from incidents/accidents/near misses.
4. If opportunity arises, each regulator shall promulgate the audit findings at offshore workforce events: i.e. OIM meetings, workforce involvement gatherings, trade associations exchange meetings.
5. ‘Supervision’ will be one of the themes at the second NSOAF conference in 2010.

### **Audit overall conclusion**

The objectives of the audit were met conform to the Terms of Reference.

During the audit process lateral learning amongst the participating regulators has been achieved through the several planned audit team meetings by developing common interview templates and by sharing observations and conclusions.

The aspects of supervision were challenged at different stages of the audit and at different levels (bottom-up approach: from worksite to boardroom) within the organization of the operators audited. The operator view on industry-wide challenges was also part of the audit.

As a spin-off of the audit it was agreed on various follow-up initiatives which are a good incentive for the European offshore industry to improve the effectiveness of supervision. ‘Supervision’ will be a theme at the second NSOAF conference in 2010.

# 1. INTRODUCTION

## Supervision and Health and Safety

Supervision is a management function and therefore a key component in any effective safety management system. It may be more fully described as:

“Supervision is a critical management function that can be delivered by one or more individuals within and/or external to a team. It involves controlling, influencing and leading a team. People with supervisory roles are expected to maintain discipline, to take responsibility, and be held accountable for the actions of a team” (see appendix-A2, ref.10)

This and other research carried out on behalf of the HSE, which provided the basis for the audit, identified a number of ‘Success Characteristics’ that are typically observed in organisations that achieve good safety performance, supervision having a key role in their implementation.

They include:

- Demonstrating senior management commitment to health and safety so that ‘stakeholders’ are in no doubt about how important health and safety is to the organisation,
- Leadership during normal and abnormal situations,
- Communication within and between teams and between employees and management to ensure effective and efficient flow of information,
- Employee involvement in health and safety to improve understanding and gain ownership,
- Defining clear roles and responsibilities,
- Training and competence.

Historical accident data has shown that management and supervision have been identified as significant organisational factors affecting accidents. Supervision is a safety barrier to accidents. It should therefore also incorporate the control over situational awareness or risk perception, compliance and competence.



## **2. TERMS OF REFERENCE and AUDIT OBJECTIVES**

At the 20<sup>th</sup> North Sea Offshore Authorities Forum (NSOAF) annual meeting in Haugesund (Norway) on April 2007 the Terms of Reference was agreed.

The objectives of the audit are formulated in the Terms of Reference as follows;

1. To persuade the NW-European E&P offshore industry of the necessity to:
  - a. Improve supervision as being a crucial aspect in the risk management process
  - b. Improve the effectiveness of supervisory roles and responsibilities and the involvement of (senior) management in the safety management system
  - c. Develop and share and adopt best practices of supervision
2. To obtain further evidence of consistency of approach by individual Regulators in the North Sea.
3. To share the audit outcome with the NW-European E&P offshore industry trade associations.
4. To share the audit outcome with IRF.

The objectives were met by the following actions;

1. For each company audited a three day visit to one offshore installation was carried out. During this period several meetings were attended and many interviews were taken from various employees at different levels. Workplace visits formed also part of the offshore visit. The crucial aspect in the risk management process played a central role during the offshore visit.  
The effectiveness of supervision and the involvement of onshore senior management in the supervision process was discussed with several senior managers at their offices. The involvement was assessed by using a 'Leadership Commitment Model' (see appendix-A8). Special attention was paid during the visits regarding improvement initiatives of the different companies.

Note: A key objective was to persuade, however, very early on during the audit process it was recognized that there was no necessity for this with any of the companies involved.

2. The consistency of audit approach was established by piloting a user guide. Agreed templates were established as tool for the interviews and worksite visits. In appendix-A4 an inspection toolkit 'Supervision' has been put together by HSE for future use on discretion of the other NSOAF members.
3. The audit outcome and follow-up initiatives will be shared with the NW-European E&P offshore industry trade associations at the NSOAF conference in 2010.
4. The audit outcome will be shared with the IRF in the second half of 2009.

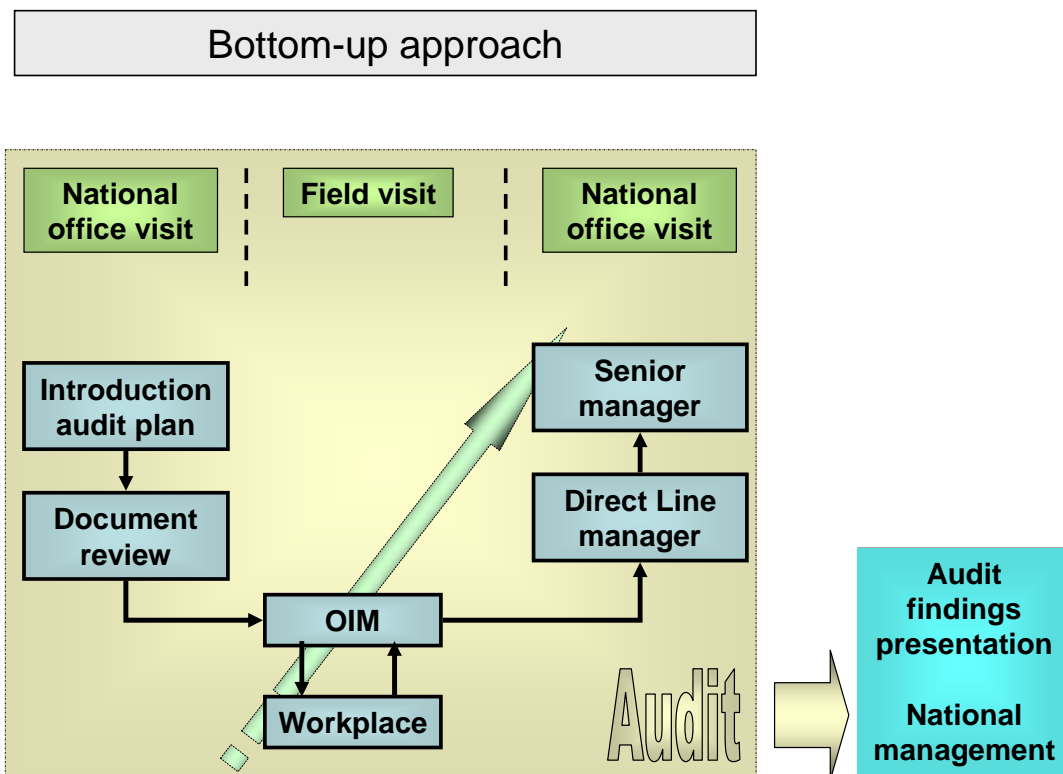


### 3. METHODOLOGY, SCOPE and PLANNING

#### 3.1 Methodology

The methodology recognises the fact there are many different ways of delivering supervision, and they all have different strengths and weaknesses.

A bottom-up approach was chosen. That is from the worksite to the boardroom.



The audit started with an introduction to the onshore management and a document review, which was carried out with company representative(s) familiar with the relevant documentation.

The next step was a three day offshore platform visit. During the platform visit the offshore manager (OIM), supervisors and workforce were interviewed, individually and/or as a team. Informal talks were held with personnel (tea-shack) as well as worksite assessments, real and fictive.

After the offshore visit, interviews were held with onshore line managers. Where necessary follow-up interviews were held with the onshore managers to discuss the outstanding issues from the first interviews.

Each audit was then reported back to the onshore management. An important purpose of the onshore activity was to let the management comment on the observations from the offshore visit.

During the offshore and onshore meetings the following was especially addressed;

- Focus on safety culture and process safety
- The use of common inspection templates for each supervision topic to ensure consistency in execution
- Focus on only production/maintenance process
- The identification of barriers and suggestions for improvement and best practices
- Supervision of contractor personnel

### 3.2 Scope

The following production platforms and companies were chosen to be, as far as the small sample size would allow within the audit programme, representative of the North Sea offshore operation, taking into account such characteristics as size, nationality, cross border operation etc.

<b>AUDITS</b>		
<b>Regulator in charge</b>	<b>Company</b>	<b>Offshore installation</b>
SSM	Total	L7CC
	GdFSuez	L10-complex
	Shell	K14-FA-1C
HSE	BP	Ravenspur North
	Shell	Nelson
	Talisman	Tartan
	Total	Dunbar
PSA	Conoco Philips	Ekofisk field C.
	Talisman	Gyda
	BP	Valhall
	Shell	Draugen
DEA	Maersk	Gorm
	Dong	Siri

SSM: State Supervision of Mines  
HSE: Health and Safety Executive  
PSA: Petroleum Safety Authority  
DEA: Danish Energy Authority

### 3.3 Timetable

At an early stage, the initial project meetings and pilot inspection identified that lateral learning would be more effectively achieved by more frequent project meetings- given the constraints of costs and logistics associated with joint inspections- and not by joint inspections as initially intended by the ToR.

Year	M	AUDIT	Host	DATE	PRESENTATION	
2007	S	<b>TOR</b>			HS&E WG presentation ( 20-09 / NL)	
	O					
	N	Team kick-off meeting	UK	20&21 nov		
	D					
2008	J	Team meeting / audit preparation	DK	24&25 jan		
	F				NSOAF/E&P industry trade ass. (19-02/NL)	
	M	Team meeting / audit preparation Team meeting / pilot field audit findings shared	NL NL	5&6 mar 27&28 mar		
	A	Agreement on final auditplan			NSOAF plenary meeting ( 8&9-04 / DK )	
	M	<b>Audit introduction by companies</b>				
	J					
	J	<b>Field audits completed</b>				
	A	Team meeting / field audits findings shared	N	25&26 aug		
	S	Field audit summaries completed				
	O	Office audit preparation by international teams				
	N	Team meeting / interim office audit findings shared	UK	27&28 nov		
	D					
	2009	J				
		F	<b>Office audits completed</b>			HS&E WG presentation ( 12-02 / NL)
M		Team coord. meeting / NSOAF composite report	UK	27 mar		
A					NSOAF plenary meeting (29&30-04 / D)	
M		Final team meeting / auditreport and close-out	NL	26&27 may		
J		<b>NSOAF composite auditreport completed</b>				



## **4. AUDIT OBSERVATIONS**

Although the companies audited were selected as representative of the industry in size and operation, and with a degree of cross border operations, the sample size did not permit firm judgments to be made on the industry as a whole. As a way of breaking the subject of supervision in to auditable topics the audit team identified the following 12 key aspects of supervision

1. Selection, training & assessment of supervisors
2. Supervisory roles, responsibilities and accountabilities
3. Organisational support for supervisors
4. Supervision delivery and planning / performance indicators
5. Contractors and supervision
6. Valuing subordinates / workgroup participation / decision making
7. Communication / handovers
8. Supervisory worksite visits
9. Learning culture / supervision and accidents/incidents
10. Process safety
11. Procedures & instructions
12. Leadership

For all twelve aspects several templates were set up (a total of 50). Each template being an assessment tool supporting the evaluation process. Each template contains topic background information and guiding questions (see appendix-A9). All templates were compiled in a user guide. All regulators audited several companies in their own country. As many of the observations were specific to each company, the audit team decided to round off each audit on company basis. In appendix-A1 observations are listed, but should not be read as common across the companies audited

In view of this NSOAF audit composite report, the audit team found it more appropriate towards the E&P industry in general to identify the key strengths and key challenges that were found to be common to all of the companies. These are provided in the chapter-5 'Audit Conclusions'.



## 5. AUDIT CONCLUSIONS

### 5.1 Key Strengths

- 1) The importance of supervision is well recognized and understood by personnel at all levels. Supervision aspects were observed to be well covered in the various **management systems**. Although the supervision process was not normally identified as a discrete part of the management system, it was clear that the focus of companies was to ensure effective supervision as intended by the management system.  
One of the key objectives identified in the ToR was to persuade the industry of the necessity to improve supervision. However, given the foregoing, persuasion on the importance of supervision was not necessary with any of the companies inspected.
- 2) The need for supervisors to have **leadership skills** such as, inter personal communication, safety leadership, intervention, coaching etc. commonly called '**Soft Skills**' is recognized and accepted. Training exists for these as well as company initiatives for improvement in these areas.
- 3) The need for effective **competency assurance** is recognized and accepted.
- 4) Management consider that offshore supervisory input to the offshore resource and activity **planning process**.

### 5.2 Key Challenges

The audit team considers the following to be the key challenges that are applicable to the North Sea E&P industry.

- 1) The assurance of **contractor supervision competency**;

Operators heavily rely on contractors supervisors in their own organisations as well as the use of specialist contractors supervisory staff for special activities. These supervisors are key figures in managing safety prevention barriers. In order to carry out this duty they must have the relevant competencies i.e. technical, situational awareness / risk perception and soft skills. The challenge of the operators is to ensure that the contracting process contains safeguards to assure that the delivered supervision by contractor supervisory staff meets the agreed standards.

Related issues:

- A contractual agreement of supervision competency and the process by which this is assured e.g. contractor appraisal system that includes monitoring/appraisal reports from the operator
- The auditing by the operator of the contractors' competency systems against agreed standards/processes
- Industry-wide competence training: companies appear to be trying to provide competency training individually rather than on a common industry wide basis,

even though the company identified competencies required by supervisors has a very high degree of commonality in the industry.

- Small contractor companies find it difficult to maintain effective appraisal systems

## 2) The provision of **adequate supervision**;

This challenge appears to issue from a current industry – wide demographic and manpower economics situation. That is, there is a general lack of skilled/knowledgeable/experienced supervision personnel. This is at a time when there is a high industry – wide necessity to backfill supervision posts due to retirements and to meet the growing supervision demands of extended and upgraded field life plans and related installation integrity and modification work.

Related issues:

- Those identified for promotion having to take on supervisory roles quickly and ahead of what were previously agreed training/assessment/mentoring timetables.
- Lack of awareness of impact of organisational changes e.g. flat organisation to supervision.
- Increase in supervisory workloads and control-span
- The supervisor’s job may not be desirable because of supervisory workload and pressures. Those who raised this issue did not refer to rewards but said that the effort required was too great. If this view is in anyway wide spread it could cause additional serious long term implications for staffing, recruitment and retention.
- Sufficient time and resources for defined essential supervisory tasks. A common observation was a high and growing administrative demand on supervisors.
- For example, there was anecdotal evidence that the role of onshore support appears to be reversing due to heavy traffic of requests to supervisors for technical information, system/process checks etc. from onshore staff (UKCS). On the other hand, it was observed that efforts are being made to move administration to onshore, i.e. related to maintenance activities.
- The quality of activity and resource planning
- Senior management response and commitment

## 3) Monitoring of **supervisory performance**;

Regular monitoring and assessment of supervisory performance is necessary to verify the effectiveness of the supervision process within organisations. It also proves whether the set company expectations /standards / practices regarding supervision are met.

Related issues:

- Setting ‘Goals’ for achievement of delivery of adequate supervision
- The need of meaningful key performance indicators for supervisory performance.
- Job descriptions along with roles and responsibilities not being set out and included in the companies SMS and/or lacking adequate descriptions, communication and confirmation of understanding and inclusion in appraisal system.
- The related company standards and practises not clearly identified or linked to supervisors’ roles and responsibilities.
- Senior management not clearly accountable for supervision and supervisory resources and the recognition that “lack of supervision is a management failure”

#### 4) The assurance of **supervisory knowledge and management of safety barriers**;

A key element in the process of management of major hazards is the knowledge of safety critical systems and safety barriers. The challenge for the companies is to ensure the provision of adequate management and supervisory knowledge of safety barriers within the organisations in order to minimise the risk of serious occupational and major hazard accidents. A shift in focus was observed in most of the companies from occupational incidents and “ice-berg approach” to understanding of critical barriers and mechanisms that can lead to a major accident. This is mainly a result of the investigation from the Texas City refinery accident. It is anticipated that this will be incorporated in future supervisory practise.

##### Related issues:

- Knowledge of the role of barriers which prevent initiation and escalation of major incidents
- Recognition of barrier degradation and/or decay
- Understanding and recognizing of the potential significance and consequences of barrier degradation
- Optimising hazard management, for example, by more workforce/supervisors/management engagement and making them “owners” of hazard barriers in their day-to-day tasks.
- Investigation training for supervisors and their involvement in incident investigation.
- Training of managers and supervisors in process safety
- Training for personnel that have informal supervisory roles e.g. foremen.
- Complacency regarding major hazard risk
- Ownership by onshore management in the day to day operation
- Knowledge by onshore line management regarding operational process safety
- Learning from process safety related incidents/near misses



## 6. AUDIT FOLLOW-UP INITIATIVES

On the yearly plenary NSOAF meeting on 29<sup>th</sup> April 2009 in Hanover, the following initiatives were agreed on:

1. Each regulator shall send the audit report, accompanied with a cover letter to all their relevant E&P North Sea Operators and Trade Associations. The letter shall emphasize the potential lateral learning amongst the E&P operators concerning the different aspects related to supervision. Also a statement about the importance of the following different aspects of safety barrier management shall be included: safety barrier knowledge, recognition of barrier degradation and/or decay by supervisors and managers, and their competency to manage these safety barriers.

**Action: All and DEA/SSM for cover letter**

2. A toolkit for *worksite visits* including safety interventions for supervisors shall be developed by the industry for the industry.

The HSE to advise the STEP Change Leadership Team of the project findings and to propose that they work with the STEP Change Competency Work Group on the objective of an OPITO Supervision Competency Standard. This could form the basis for a more industry-wide acceptance, as for example in an OGP environment.

**Action: HSE**

3. A study shall be initiated of what is existing in the literature about *learning from incidents/accidents/near misses*.

**Action: PSA**

4. If opportunity arises, each regulator shall promulgate the audit findings at offshore workforce events: i.e. OIM meetings, workforce involvement gatherings, trade associations exchange meetings.

**Action: All**

5. 'Supervision' will be one of the themes at the second NSOAF conference in 2010.

**Action: NSOAF Working Group HS&E**



## **A1. AUDIT ASPECTS and OBSERVATIONS**

The subject of supervision was broken down into twelve aspects. The topic descriptions are primarily drawn from the literature research. The 'Observations' are not always common to all operators, but could be relevant to a specific area of one operator. The 'Key observations' are also not common to all operators, but more of common interest for the specific topic.

It should be noted that the audit sample size was not significant enough where industry-wide judgements could be made from these observations. A number of common issues and challenges are presented in chapter-5 'Audit Conclusions'.

### **A1.1 Selection, training & assessment of supervisors**

The careful selection of people for a supervisory role is likely to contribute to more effective supervision. The selection process is also likely to reflect a company's understanding and commitment to the supervisory role.

Supervisors should have the relevant skills, knowledge and experience (competence) to carry out their responsibilities effectively.

In an effective management system there will be a degree of ongoing assessment/monitoring of employees.

#### Observations

- Supervisors are in general selected on the basis of a combination of technical competence and people management skills in terms of fitness to lead and motivation through a structured appraisal system.
- People management skills for Operator supervisors are well developed.
- Electrical risk awareness training for non-electrical supervisory staff is not part of the training matrix.
- There is in general a balance of technical and behavioral training being provided.
- For smaller contracting companies supervisory people management skills were often lacking.
- Most operators have training matrices containing the necessary supervisory training.
- The assessment of supervisors by line management is in general executed in liaison with HR-department
- The need for implementation of competence development for supervisors is recognized and most operators have a competence development system.
- There are often no formal criteria established for selection of supervisors with leadership responsibility, e.g. (senior) technician. Although some issues and qualities are emphasized: i.e. interaction and ability to corporate.
- Accident/incident investigation training for supervisors is seldom included in a training matrix.
- Very few supervisors were found to have been involved in incident investigations.

### Key observations

1. Risk awareness training related to major hazards has received greater attention over the last years. However, it is not consistently applied.
2. People management skills training for contractor supervisory staff of small contracting companies is not always fully addressed .
3. Supervisors rarely had incident investigation training or had been involved in incident investigation.

## **A1.2 Supervisory roles, responsibilities and accountabilities**

Roles & responsibilities should be clearly defined, documented and communicated effectively. Supervision is a management function that can be delivered by one or more individuals within and/or external to a team.

### Observations

- Job descriptions with roles, responsibilities and well defined tasks are mostly documented.
- Some offshore personnel are not familiar with their job description.
- Job descriptions are in some cases not regular checked on content and if necessary updated.
- There were instances where roles and responsibilities in job descriptions for main contractors were not discussed.
- Competency requirements are not always clearly defined in job descriptions of supervisory staff.
- The competency of supervisory sub-contractor staff is not always transparent for the operator.
- Supervisor accountabilities are usually addressed in the yearly staff appraisal by agreeing on tasks and targets.

### Key observations

4. Job descriptions are sometimes used for recruitment purposes only.
5. Job descriptions of supervisory staff do not always contain competency requirements.
6. It appears that supervisors seldom consult competency records of sub-contractor staff, which may suggest that access and completeness needs to be improved.

### **A1.3 Organisational support for supervisors**

Organisations have to understand how they deliver supervision and the inherent weaknesses in their chosen approach. Management then has to implement the appropriate counter-balances to ensure those weaknesses do not introduce risk. The possible negative effect of other organisational factors such as multi-skilling and use of contractors must also be considered.

#### Observations

- Onshore daily operational support is consistent and well structured.
- Onshore expert support is readily accessible.
- Due to market forces, the contractor is often phasing high turnover of key contractor personnel.

#### Key observations

7. A high turnover of key contractor personnel reduces the effectiveness of the line management structure.

### **A1.4 Supervision delivery and planning**

Supervision has a key influence on the way teams perform. Therefore, the way supervision is delivered must be appropriate for the way the team functions.

More recent evidence suggests that it is not just management participation and involvement in safety activities which is important, but the extent to which management encourage the involvement of the workforce. The workforce are more likely to take ownership and personal responsibility for safety where there they are positively involved in decision making processes.

#### Observations

- The use of advanced computerized planning tools is common practice.
- Planning meetings are held as per schedule.
- The 'fixed' and/or 'frozen' resource and activity planning is frequently amended.
- The onshore contractor planners often have a lack of offshore expertise.
- Backlogs of preventive maintenance work orders are monitored.

#### Key observations

8. Frequent changes in the 'fixed' and/or 'frozen' resource and activity planning disturbs the supervision process.

9. The planning process can be negatively affected due to the lack of offshore expertise by the onshore contractor planners.

## **A1.5 Contractors and supervision**

The use of (sub)contractors can have a significant impact on health and safety performance (positive and negative). Hence supervision of contractors (including third party contractors) must be properly managed.

Long-term contractors are generally more integrated than short-term contractors, and hence supervision presents less challenges

Supervisory arrangements for contractors are not always clearly defined.

Whilst company activity increasingly includes the management of third parties, this is often not reflected in a structured way within the organisation's working practices. It is therefore important that companies consider how they are managing contractors and the consequences of the method employed in terms of the effects on safety performance.

### Observations

- Offshore supervisors are part of the planning process.
- Offshore, the operator and main contractor are fully integrated (one team approach).
- Supervision requirements are not always well detailed in contracts and if they are taken up, they are not always effectively verified/audited by the client.
- A web based induction training has been introduced by some operators and is proving effective.

### Key observations

10. A high turnover in contractor staff disturbs the personnel training and assessment process and has a direct impact on the supervision process.

11. The contracting out is sometimes so extensive that the operator does not have the expertise to assess sound quality requirements of contractor activities.

## **A1.6 Valuing subordinates / workgroup participation / decision making**

Valuing employees/workers is found essential in improving their safety behaviour.

The following are examples of how employee participation/involvement can be improved:

- ownership for safety can be increased by providing training and opportunities
- safety specialists should play an advisory or consultancy role
- easy reporting of concerns, e.g. by organisational change
- involve staff about decisions that are likely to affect them

For a safety system to be effective, it must meet certain criteria. Petersen records the following six criteria (see appendix-A2, ref. 15);

1. Force supervisory performance
2. Involve middle management
3. Have top management visibly showing their commitment

4. Have employee involvement
5. Be flexible
6. Be perceived as positive

### Observations

- Permanent contractor staff are mostly fully integrated.
- On the job training and coaching of new staff is well developed and registered.
- For routine activities, the challenge / communication during the PTW process between all parties involved and/or prior re-endorsement of ongoing permits was seen in several cases to be poor.
- Workforce initiatives are encouraged by the companies and actively followed up.

### Key observations

12. Supervision is not often made explicit part of the permit to work process, neither in the permit template.

## **A1.7 Communication / handovers**

The important aspects of communication:

- assertiveness / speaking up
- asking questions
- listening
- giving appropriate feedback
- attending to non-verbal signals

### Observations

- Operational daily morning calls are consistently held.
- Structured meeting schedules are mostly in place and adhered to.
- Operational handovers at all levels are mainly well documented and information is made accessible to others. Some weaknesses observed, also different view of the effectiveness of handover routines between senior and junior personnel.
- Obvious barrier decay situations which require extra control measures are not always challenged by onshore line management.
- Fortnightly plenary shift handovers is standard for some operators.
- 'Face to face' handovers are common for mostly all key supervisory personnel.
- People skills and behaviours of subordinates are seldom discussed between line manager and supervisor with the focus being mainly on expertise and knowledge.

### Key observations

13. The management and the communication regarding obvious barriers decay situations can be improved.

## **A1.8 Supervisory worksite visits**

There is concern in the offshore industry that supervisors do not have sufficient time to make worksite visits as often as is necessary.

Frequent worksite visits are important, but work activity supervision, to be effective, should also be appropriate. That is, the frequency and detail of supervision should take into account such matters as: the degree of risk and hazard of the work activity, the complexity of the task, the skills / knowledge / experience / behaviour / affinity with E&P industry of those carrying out the task, the personality mix of the task team, etc.

### Observations

- The importance of worksite visits by supervisors is well accepted.
- The effectiveness of worksite visits is seldom assessed.
- There is a perceived imbalance between platform office work and workplace visits by offshore contractor supervisory staff
- In some cases contractor staff were not using the required personal protective equipment.
- There are different opinions about how time would be spent at the worksite and what the purpose of the supervisor presence should be regarding visible leadership, openness, situational work observation, safety interventions, etc.

### Key observations

14. There is generally no system in place to assess the effectiveness of worksite supervision. The majority of the companies are only focusing on time spent at the worksite and not on the relevant supervisory aspects during a worksite visit.

15. In some instances there was no evidence that workplace visits were planned by sub-contractor supervisory staff.

16. There were cases where the necessary situational awareness and risk perception of contractors was overlooked by supervisors.

## **A1.9 Learning culture / supervision and accidents/incidents**

While the theory behind the causes of accidents and how to prevent them is comprehensive. The practical implementation of 'lessons learned' is lacking. Management and supervision have been identified as significant organisational factors affecting accidents.

### Observations

- Similar incidents were in one case observed within a short period in the same company.
- Quality of incident investigations is mainly of a high standard.
- Near misses with potential high consequences are not always getting the same attention as incidents and accidents.

## Key observations

17. ‘Near miss’ reporting, tracking, learning, reviewing emerging trends and communicating to the workforce can in most cases be made more effective and is underdeveloped by some operators.

18. Lessons learned from incidents and accidents are in some cases ineffectively disseminated (loss of corporate memory).

## **A1.10 Process safety**

**Process safety** means the management of hazards that can give rise to major accidents involving release of potentially dangerous materials, release of energy (such as fire or explosion) or both (definition taken from the Baker Report).

The recommendations on process safety in the report of ‘the *BP US Refineries independent safety review panel*’ are also relevant for the upstream oil and gas industry.

## Observations

- Follow-up of long-standing overrides is often inadequately managed.
- Identification and documentation of temporary out-of-service process equipment do not always receive the required attention.
- The criteria for use of temporary and/or degraded equipment is seldom defined.

## Key observations

19. Process safety related initiatives (i.e. management of safety barriers) are given enhanced focus. However, there were cases where some process safety related issues, such as long-standing overrides, criteria for temporary and degraded equipment, did not always receive the priority they require.

20. Oil and gas operations related hazards are often insufficiently recognized by contractor supervisory staff. These are also often not included in the activity control measures.

21. The proper management of the impact on the overall Asset Integrity when one of the Asset Integrity dimensions is changed (Design, Technical or Operational) was observed in some cases to be missing.

22. Interventions for process safety related issues (i.e. follow-up of longstanding overrides) are often not applied consistently.

## **A1.11 Procedures & instructions**

Procedures and instructions on their own do not ensure successful health and safety management; the level of success is determined by how organisations implement them, most importantly the involvement of the workforce in the initiation and regular update of the procedures and instructions.

### Observations

- Accessibility of procedures and instructions is in general good.
- There were cases where procedures were insufficiently consulted by contractor staff.
- There were cases where the use of procedures by supervisory staff was not effectively enforced.

### Key observations

23. The knowledge by some contractor staff of operator procedures and instructions was seen to be poor
24. Regular enforcement of procedures is often not specifically embedded in the management system.
25. An overabundance of procedures may lead to poor procedural consultation by contracted staff.

## **A1.12 Leadership**

### Leadership Commitment Model (see Appendix-A2, Ref. 20)

For this aspect of supervision, a leadership commitment model was used with the following eight topics with a corresponding main question;

1. Business case – Value beyond the bottom line  
*Why do senior managers think supervision is important?*
2. Accountability  
*How are senior managers accountable for managing supervision?*
3. Behavior  
*How do senior managers actively demonstrate they are committed to managing supervision?*
4. Managing Contractor Supervision  
*What is the senior managers' thinking, strategy and involvement regarding management of contractor supervision?*
5. Prioritisation  
*How are senior managers demonstrating that supervision on health and safety is a high priority on their business agenda?*
6. Integration  
*How do senior managers best integrate supervision into the course of doing business?*
7. Measuring, Monitoring and Reviewing  
*How do senior managers track supervision through a business?*

## 8. Learning

*How do senior managers promote knowledge sharing in the area of supervision?*

### Observations

- Most companies recognize that achieving a sound health and safety culture in their organization is fundamental to handle health and safety effectively.
- There is a clear management understanding and appreciation of the importance of supervision as a key aspect of effective safety management.
- There are different initiatives to improve leadership issues regarding supervision.
- There is not always a regular check on supervision performance/effectiveness.
- Offshore visits of onshore managers are not always properly planned or documented.
- Supervision is often not always explicitly mentioned in the company policy statement. However, it is more commonly implied in lower level documents of the Company Management System (CMS).
- Senior managers actively demonstrate their commitment to managing supervision by regular offshore worksite visits with focus on promoting toolbox talks and face to face talks.
- External Behavior Safety Program surveys are initiated and reviewed in order to analyze senior management behavioral attitude.
- Senior managers are informed via daily reports of the operations.

### Key observations

26. The knowledge and use of the facility status mainly regarding Safety Critical Elements is often poor but improvement initiatives are initiated by the majority of the operators.

27. In general companies have no description of the Supervision Process in their management system.

28. Supervisors are made accountable for managing supervision by the yearly agreed tasks and targets.

29. Currently most operators have restructured the maintenance organization by re-introduction of operator supervisory staff in key positions.

30. Regarding management of sub-contractor supervision, supervisory arrangements, i.e. *Imported Risk*, are perceived as a challenge.

31. The importance of continuity and competence regarding contractor personnel is recognized.

32. The importance of near miss reporting is recognized as a valuable Leading Safety Indicator.

33. Company Performance Standards for supervision are seldom defined.

34. The supervision process is not audited separately, however aspects of supervision are audited in internal and corporate audits.

35. Senior managers are in general encouraging operational personnel to report near miss incidents.



## **A2. LIST OF REFERENCES**

- 1) Optimising hazard management by workforce engagement and supervision  
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- 2) Director Leadership of Health and Safety  
HSL / 2005 / 21
- 3) The causes of Major Hazard Incidents and how to improve Risk Control and Health and Safety Management: a review of the existing literature  
HSL / 2006 / 117
- 4) Development of a leadership resource pack  
HSE / 2000 / OTR 098 (Offshore Technology Report)
- 5) The role of managerial leadership in determining workplace safety outcomes  
HSE / 2003 / RR 044
- 6) Using soft people skills to improve worker involvement in health and safety  
HSE / 2007 / RR 580
- 7) Developing process safety indicators: a step-by-step guide for chemical and major hazard industries  
HSE / 2006 / ISBN 07176 6180 6
- 8) Leading health and safety work  
HSC / 2007 / IMDG 417
- 9) Effective supervisory safety leadership behaviours in the offshore oil and gas industry  
HSE / 1999 / OTR 065
- 10) Different types of supervision and the impact on safety in the chemical and allied industries  
HSE / 2004 / RR 292
- 11) Benchmarking employee supervisory processes in the chemical industry  
HSE / 2005 / RR 312
- 12) Strategies to promote safe behaviour as part of a health and safety management system  
HSE / 2002 / CRR 430 (Contract Research Report)
- 13) Factoring the human into safety: Translating research into practice // Crew Resource Management Training for Offshore Operations  
HSE / 2003 / RR 061
- 14) Site managers and safety leadership in the offshore oil and gas industry  
Elsevier Science / 2001 / Safety Science 37 (2001) 39-57
- 15) Safety Supervision  
Dan Petersen (management consultant safety/organizational behavior) / 1998
- 16) Hearts and Minds / Energy Institute
- 17) P. Hersey and K.H. Blanchard / Leadership and the One Minute Manager / 1999
- 18) Changing Minds / A practical guide for behavioural change / Step change in safety
- 19) Safety Interventions / A Status Challenge for Managers and Supervisors  
SPE paper – 111801 / April 2008



### A3. EUROPEAN AND NATIONAL LEGISLATION

Country	Regulation	Reference	Requirements
EU	92/91/EEC,	Annex, Part A , Common minimum requirements applicable to on- and offshore	2.2. Person in charge; 2.3. Supervision: To ensure workers' safety and health protection during all operations undertaken, the necessary supervision must be provided by persons having the skills and competence for this duty, in accordance with the national law and/or practices ...etc; 2.4. Competent workers; 2.5. Information, instructions and training; 2.6. Written instructions; 2.7. Safe working methods; 2.8. Work permits
NL	Working Conditions Act	Art. 5	Pursuant the working conditions policy, the employer shall lay down a written inventory and evaluation of the risks inherent to the work carried out by the employees
		Art. 8	Information & instruction 1. The employer shall ensure that the employees are properly informed about the work to be carried out and the related risks, and about the measures aimed at preventing or limiting those risks. 2. The employer shall ensure that the employees are given proper instruction adapted to their separate tasks in relation to the working conditions. 3. If personal protection equipment is made available to the employees, and if safety devices are fitted to work resources or are otherwise installed, the employer shall ensure that the employees are aware of their objective and operation and the way in which they should be used. 4. The employer shall supervise compliance with the instructions and regulations aimed at preventing or limiting the risks referred to in the first paragraph and the correct use of the personal protection equipment.
		Article. 19, sub1 & 2	Various employers Sub.1. If in a company various employers have work carried out, they shall co-operate effectively ...etc. Sub.2. Before commencement of work..., the employers shall ensure that the way in which the co-operation is conducted, the measures that are taken for this purpose and the way in which the measures are supervised are laid down in writing
	Working Conditions Decree	Article. 2.41, sub 1 & 2	Obligations of the employer Sub.1. If manned workplaces in the mining industry are being used a responsible person should carry out supervision Sub.2. High risk work will be exclusively performed by competent personnel
		Article. 2.42	Co-operation, safety- and health document
		Article. 2.42 a	Permit to work system
		Article. 7.6	Expertise of employees

Country	Regulation	Reference	Requirements
UK	Health & Safety at Work Act 1974	Sec2 & 2(2)d, Sec 3	2 It shall be the duty of every employer to ensure , so far as is reasonably practical, the health, safety and welfare at work of his employees. 2(2)(c) the provision of such information, instruction, training, and supervision as is necessary to ensure, in so far as is reasonably practicable, the health safety and work of his employees.
		Sec 7	It shall be the duty of every employee while at work- a) to take reasonable care for the health and safety of himself and of other persons who may be affected by his acts or omissions at work b) ...to cooperate with his employer .. To enable the duty or requirement to be performed or complied with.
	The Electricity at Work Regulations 1989	Reg. 16	Requirements: No Person shall be engaged in any work activity where technical knowledge or experience is necessary to prevent <b>danger</b> or, where appropriate, <b>injury</b> , unless he possess such knowledge or experience, <u>or is under such degree of supervision as may be appropriate having regard to the nature of the work.</u>
	Regulation: Ionising Radiations Regulations 1999	Reg. 17 (4) (a)	Requirements: The radiation employer shall: appoint one or more suitable radiation protection supervisors for the purpose of securing compliance with these Regulations in respect of work carried out in any area made subject to local rules pursuant to paragraph (1).
	The Provision and Use of Work Equipment Regulations 1998 [PUWER]	Reg 8	1) Every employer shall ensure that all persons who use work equipment have available to them adequate health and safety information and, where appropriate, written instructions pertaining to the use of work equipment. 2) Every employer shall ensure that any of his employees who supervises or manages the use of work equipment has available to him adequate health and safety information and, where appropriate, written instructions pertaining to the use of the work equipment.
	Prevention of Fire Explosions, Emergency Response Regulations 1995 [PFEER]	Reg 6	The duty holder shall establish such appropriate organisation and arrangements as are to have effect in, or in anticipation of an emergency and which shall include arrangements - a) for command by competent persons which can be maintained , so far as is reasonably practical, throughout an emergency b) for there to be sufficient number of persons on the installation competent to undertake emergency duties and operate relevant equipment.

Country	Regulation	Reference	Requirements
UK	Lifting Operations and Lifting Equipment Regulations 1998 [LOLER 98]	Reg 6	Positioning and Installation to prevent loads striking people by: drifting falling , being released unintentionally.
		Reg.8 (1) (b)	"Appropriate supervision" means that it should be proportionate to the risk and take into account the personnel involved in the particular lifting operation such as those disabilities and the inexperienced. Levels of supervision are determined by the nature of the work, and the competence of those involved in using the equipment and assisting with the lifting operation.

Country	Regulation	Reference	Requirements
DK	Offshore Safety Act No. 1424/2005	Sec. 6 - 10	The licensee, the operating company, the OIM and any employer must by supervision ensure that work is performed in a safe and healthy way and in accordance with legislation. Furthermore the operating company must coordinate health and safety when more employers are working on the installation. Any contractor has the obligation to ensure that, by supervision, work on an offshore installation is performed in a safe and healthy manner.
		Sec. 11 - 12	The OIM must ensure that the operation, maintenance and changes of an installation is performed according to the management system.
		Sec. 13	The employees have to participate in the cooperation regarding health and safety.
		Sec. 20	A management system for health and safety is required. The management system must ensure and document that the offshore installations, their condition, operation and maintenance as well as the performance of all work being carried out is in compliance with health and safety requirements in the legislation. The company responsible for the operation has to supervise that the management system is implemented and followed.
		Sec. 50	Requirements on proper training and competence
	Executive Order no. 1183/2007 on management of safety and health on offshore installations	Sec. 27-29	Requirements for the management system
		Sec. 30	Requirements on permit to work system
		Sec. 32	Coverage of management systems if two or more offshore installations are operated in combination
		Sec. 22-23	The employer must ensure adequate and proper education, training and instruction of the employees especially when the employee is newly employed, has been transferred or has changed assignments or when changes has been made to equipment or new technology has been introduced.
	Executive Order no. 127/1996 on the performance of work, etc.	Sect. 9, para 2	It must be secured that only employees who have received proper instruction have access to hazardous areas.

<b>Country</b>	<b>Regulation</b>	<b>Reference</b>	<b>Requirements</b>
<b>N</b>	The framework regulation	Section 10	The party responsible shall ensure that everyone carrying out work for him in petroleum activities, have the competence required to carry out such work in a safe and prudent manner
		Section 14	In the event of entering into a contract, the party responsible shall ensure that the contractors and suppliers are qualified to fulfil the requirements of rules and regulations relating to health, environment and safety, and shall follow up that the participants comply with the requirements during conduct of the work assigned in the petroleum activities.
	The management regulation	Section 11	The party responsible shall ensure adequate manning and competence in all phases of the petroleum activities, cf. the Framework Regulations Section 10 on organisation and competence.
		Section 21	The party responsible shall follow up to see that all elements of his own and of other participants' management system are established and functioning as intended, and that a fully satisfactory level of health, environment and safety exists.
	The activities regulation	Section 19	It shall be ensured that the personnel at all times have the competence necessary to be able to carry out the activities safely and in accordance with the legislation relating to health, environment and safety. In addition the personnel shall be capable of handling situations of hazard and accident, cf. the Management Regulations Section 11 on manning and competence and these regulations Section 21 on practice and drills



## A4. INSPECTION TOOLKIT ‘SUPERVISION’

HSE has developed an inspection toolkit ‘Supervision’ as a spin-off from this audit. Other authorities can use this toolkit as appropriate.

### Background

During 2008 a North Sea Offshore Authorities Forum (NSOAF) project team carried out a number of inspections of supervision on production installations. The countries involved in the project were the Netherlands (chair), the U.K, Denmark and Norway.

The supervision project final report can be found at the Authorities websites.

This inspection toolkit has been structured on the approach and findings of the project to support inspection of supervision by the Offshore Division. Although the project inspections were carried out on production installations only, the toolkit is relevant to all supervision roles and responsibilities offshore.

### Contents

### Page

Supervision and Health and Safety	2
NSOAF Audit Conclusions	3
Legal and enforcement overview	6
Toolkit Inspection Structure	7
Onshore Inspection	8
• Supervision and the Safety Management System	
• Supervision and contractors	
• Selection of supervisors	
• Training of supervisors	
• Assessment of supervisors	
• Operational and organisational support to supervisors	
Plan and allocate work and resources	
Monitor performance and compliance	
Provide leadership	
Facilitate communication, team work, workforce involvement	
Audit and Review	17
Offshore Inspection	19
Closing the inspection	20
Annex – Question Sets	21

## Supervision and Health and Safety

Supervision is a management function and therefore a key component in any effective safety management system. It may be more fully described as:

“Supervision is a critical management function that can be delivered by one or more individuals within and/or external to a team. It involves controlling, influencing and leading a team. People with supervisory roles are expected to maintain discipline, to take responsibility, and be held accountable for the actions of a team” *HSE research report 292, Entec UK Ltd 2004.*

This and other research carried out on behalf of the HSE, which provided the basis for the inspection project, identified a number of ‘Success Characteristics’ that are typically observed in organisations that achieve good safety performance, supervision having a key role in their implementation.

They include:

- Demonstrating senior management commitment to health and safety so that ‘stakeholders’ are in no doubt about how important health and safety is to the organisation,
- Leadership during normal and abnormal situations,
- Communication within and between teams and between employees and management to ensure effective and efficient flow of information,
- Employee involvement in health and safety to improve understanding and gain ownership,
- Defining clear roles and responsibilities,
- Training and competence.

## NSOAF AUDIT CONCLUSIONS

### Key Strengths

1. The importance of supervision is well recognized and understood by personnel at all levels. Supervision aspects were observed to be well covered in the various **management systems**. Although the supervision process was not normally identified as a discrete part of the management system, it was clear that the focus of companies was to ensure effective supervision as intended by the management system.  
One of the key objectives identified in the ToR was to persuade the industry of the necessity to improve supervision. However, given the foregoing, persuasion on the importance of supervision was not necessary with any of the companies inspected.
2. The need for supervisors to have **leadership skills** such as, inter personal communication, safety leadership, intervention, coaching etc. commonly called '**Soft Skills**' is recognized and accepted. Training exists for these as well as company initiatives for improvement in these areas.
3. The need for effective **competency assurance** is recognized and accepted.
4. Management consider that offshore supervisory input to the offshore resource and activity **planning process**

### Key Challenges

The audit team considers the following to be the key challenges that are applicable to the North Sea E&P industry.

1. The assurance of **contractor supervision competency**;

Operators heavily rely on contractors supervisors in their own organisations as well as the use of specialist contractors supervisory staff for special activities. These supervisors are key figures in managing safety prevention barriers. In order to carry out this duty they must have the relevant competencies i.e. technical, situational awareness / risk perception and soft skills. The challenge of the operators is to ensure that the contracting process contains safeguards to assure that the delivered supervision by contractor supervisory staff meets the agreed standards

Related issues:

- A contractual agreement of supervision competency and the process by which this is assured e.g. contractor appraisal system that includes monitoring/appraisal reports from the operator
- The auditing by the operator of the contractors' competency systems against agreed standards/processes
- Industry-wide competence training: companies appear to be trying to provide competency training individually rather than on a common industry wide basis,

even though the company identified competencies required by supervisors has a very high degree of commonality in the industry.

- Small contractor companies find it difficult to maintain effective appraisal systems

## 2. The provision of **adequate supervision**;

This challenge appears to issue from a current industry – wide demographic and manpower economics situation. That is, there is a general lack of skilled/knowledgeable/experienced supervision personnel. This is at a time when there is a high industry – wide necessity to backfill supervision posts due to retirements and to meet the growing supervision demands of extended and upgraded field life plans and related installation integrity and modification work.

Related issues:

- Those identified for promotion having to take on supervisory roles quickly and ahead of what were previously agreed training/ assessment/mentoring timetables.
- Lack of awareness of impact of organisational changes e.g. flat organisation to supervision.
- Increase in supervisory workloads and control-span
- The supervisor’s job may not be desirable because of supervisory workload and pressures. Those who raised this issue did not refer to rewards but said that the effort required was too great. If this view is in anyway wide spread it could cause additional serious long term implications for staffing, recruitment and retention.
- Sufficient time and resources for defined essential supervisory tasks. A common observation was a high and growing administrative demand on supervisors. For example, there was anecdotal evidence that the role of onshore support appears to be reversing due to heavy traffic of requests to supervisors for technical information, system/process checks etc. from onshore staff (UKCS). On the other hand, it was observed that efforts are being made to move administration to onshore, i.e. related to maintenance activities.
- The quality of activity and resource planning
- Senior management response and commitment

## 3. Monitoring of **supervisory performance**;

Regular monitoring and assessment of supervisory performance is necessary to verify the effectiveness of the supervision process within organisations. It also proves whether the set company expectations /standards / practices regarding supervision are met.

Related issues:

- Setting ‘Goals’ for achievement of delivery of adequate supervision
- The need of meaningful key performance indicators for supervisory performance.
- Job descriptions along with roles and responsibilities not being set out and included in the companies SMS and/or lacking adequate descriptions, communication and confirmation of understanding and inclusion in appraisal system.
- The related company standards and practises not clearly identified or linked to supervisors’ roles and responsibilities.
- Senior management not clearly accountable for supervision and supervisory resources and the recognition that “lack of supervision is a management failure”

#### 4. The assurance of **supervisory knowledge and management of safety barriers**;

A key element in the process of management of major hazards is the knowledge of safety critical systems and safety barriers. The challenge for the companies is to ensure the provision of adequate management and supervisory knowledge of safety barriers within the organisations in order to minimise the risk of serious occupational and major hazard accidents.

Related issues:

- Knowledge of the role of barriers which prevent initiation and escalation of major incidents
- Recognition of barrier degradation and/or decay
- Understanding and recognizing of the potential significance and consequences of barrier degradation
- Optimising hazard management, for example, by more workforce/supervisors/management engagement and making them “owners” of hazard barriers in their day-to-day tasks.
- Investigation training for supervisors and their involvement in incident investigation.
- Training of managers and supervisors in process safety
- Training for personnel that have informal supervisory roles e.g. foremen.
- Complacency regarding major hazard risk
- Ownership by onshore management in the day to day operation
- Knowledge by onshore line management regarding operational process safety
- Learning from process safety related incidents/near misses

## Supervision and the Law

Supervision is referred to in various pieces of legislation:

Health and Safety at Work etc. Act 1974, Section 2(c)

The provision of such information, instruction, training and **supervision** as is necessary to ensure, so far as is reasonably practicable, the health and safety at work of his employees.

Lifting Operations and Lifting Equipment Regulations 1998, Regulation 8(1) (b)

Every employer shall ensure that every lifting operation involving lifting equipment is –

- (a) properly planned by a competent person;
- (b) appropriately **supervised**; and
- (c) carried out in a safe manner.

Ionising Radiations Regulations 1999, Regulation 17(4)

The radiation employer shall –

- (a) appoint one or more suitable radiation protection **supervisors** for the purpose of securing compliance with these regulations in respect of securing compliance with these Regulations in respect of work carried out in any area made subject to local rules pursuant to paragraph (1); and
- (b) set down in the local rules the names of such individuals if appointed.

## **Toolkit Inspection Structure**

Although an inspector is seeking to confirm the existence and effectiveness of the key elements of supervision, how companies implement these will differ widely. Therefore, the introduction of each topic provides the effective aspects for that topic and some examples and discussion of how these have been or may be addressed.

There is then a suggested inspection approach with supporting question template. These are only suggestions, the inspection structure as always a matter for the inspector's discretion.

The inspection objective is to confirm the existence of effective key elements for each topic.

The overall approach suggested, which will maximise effective use of time offshore, is to provide the company with the purpose and objectives of the inspection and to first arrange an onshore meeting with company managers able to provide the fullest picture of supervision and its link to the SMS with supporting documentation and processes. The project experience is that at least half a day should be set aside for this. The meeting will also identify the relevant persons offshore to provide the necessary verification.

## Onshore inspection

### Supervision and the Safety Management System

The first thing that the inspector should gain an understanding of is the role the company expects supervisors to play within its SMS and how and what the company expects supervisors to contribute to its SMS effectiveness in that role. There should be supporting documentation for these expectations. Given the project experience, where and how this is documented within the SMS is likely to vary greatly from company to company.

What is important is that the company is clear in its expectations of the supervisory role within its SMS and that these are set out in a manner that can be, and has been, effectively communicated to its supervisors.

#### Examples from the project

##### Company A:

The key health and safety requirements of all managers and supervisors was set out in the highest level company policy statement and signed by the CEO. This was then supported by a second policy statement which set out, in broad terms, how managers and supervisors were expected to deliver these first level requirements. This was then further broken down to manager and supervisory grade roles and responsibilities supported by individual job descriptions and performance agreements. There was therefore, from a first principle policy statement to individual contract agreements, unambiguous and well communicated supervisory roles, responsibilities and expectations.

##### Company B:

As with company A, the first principle policy statement set out key safety expectations. However, this company made no distinction between managers and supervisors, referring to all as 'leaders'. The policy statement was further supported by the courses 'Managing Essentials' and 'Operating Essentials' within the company's corporate training programme set to underpin their SMS or 'Operating Management System' as it was called. The company's objective was to create a culture of accountability with a business focus on deliverables. Supervisors were therefore clearly told what they were accountable for and what they were expected to deliver with a supporting training programme to provide them with the technical knowledge and soft skills to achieve these.

## Supervision and contractors

Offshore production companies generally have a high degree of contracted out work, the supervisory role is no exception. What is not managed directly by a company may be described as an “imported risk”. This is well recognised by the offshore industry and there are continuous and various approaches to managing this.

As has already been said, supervision is a management function. If supervision by contractors is not as effective as that of company supervisors, or fails to meet company supervisory expectations, then there is essentially degradation in operational management with the concomitant risk of increased incidents and accidents. The project found there was a significant difference in the approach and detail of how supervisory imported risk was managed.

As the inspector gains insight into how a company manages the key elements of supervision, he or she must also seek to understand, in parallel, how a company manages these five key elements in respect to supervision by contractors.

### Examples from the project.

#### Company A:

The company had recognised that imported risk was the root of much of its accident history and had implemented a permanent system to address this. It first revisited the key roles and responsibilities for supervisors and then identified from this the base skills and knowledge – both technical and soft – that would be required to fulfil these effectively. The company then structured an assessment and audit system, covering the selection, training and assessment of supervisors and approached their key contractors to agree to being audited against this. The contractors agreed and the outcome was a base supervisory standard across the company’s key contractors and subject to routine review and assessment by the company. There was a very substantial reduction in accidents and incidents.

#### Company B:

The company expects that contractor supervisors have the same relevant skills and knowledge requirements as their own staff and have contractor vetting system. Supervisory requirements are set out in contract to each company with the intention that the contractor will be audited against this. However, requirements are set out only in broad terms and with no close partnership work with the contractor as with company A. Company B has an outcomes operational focus and in reality supervision effectiveness was only dealt with on failure rather than proactively as in the case of company A.

### **Suggested Questions: Supervision and the Safety Management System**

What role does the company expect supervisors to play in regard to the company’s SMS?

How does the supervisory role fit into the company’s SMS?

What contribution does the company expect supervisors to make to the effectiveness of its SMS?

How are they supervisory role expectations documented and how are they communicated to supervisors?

Does any of this differ for contractor supervisors, and if so, how?

## Selection of supervisors

The careful selection of people for a supervisory role will contribute to more effective supervision. A company's selection process should reflect the company's expectations of that role and their commitment to it.

If the responses and evidence to topic 1 enquires have been found wanting it is likely that the selection process will be flawed, given that the company has not been clear in its SMS expectations of supervisors.

### Examples from the project.

All companies but the smallest contractors had annual performance appraisal systems and gave these as the basis for supervisor identification and selection. However, the detail and application of these appraisal systems varied greatly with an element of informality in some. Not surprisingly, those companies with an obvious commitment to supervisor effectiveness; both their own and their contractors, applied their appraisal systems rigorously with assessors being trained in the assessment process.

#### Company A:

This company used what they called a 'Behavioural Competency Dictionary' To describe and quantify the expected management and supervision behaviours and soft skills competencies for each company level of supervision or management, for example, the degree and quality of leadership. This meant that post holders and possible post candidates knew exactly was expected of them.

### **Suggested Questions: Selection of Supervisors**

What is the process for identification and selection of people for the role of supervisor?

How is this documented?

In what way is the company involved in its contractors' selection of supervisors?

In what way is this process audited and reviewed?

## Training of supervisors

Supervisors should have the relevant skills, knowledge and experience (competence) to be able to meet their responsibilities effectively. Their employers should therefore have in place a system that identifies and supplies these competencies and ensures supervisors' continued development and the maintenance of their required competencies.

### **Baker Report recommendation:**

**A system should be implemented to ensure that senior managers, supervisors, workers and contractors possess an appropriate level of process safety knowledge.**

### Project findings

All companies had training programmes that were a mix of technical and 'soft' skills with a bias towards managerial or people skills. The companies that had well defined supervisory roles and responsibilities also had training that directly aligned with these requirements. Where roles and responsibilities were less well defined training was more general and less tailored, although still containing both technical and managerial skills and knowledge and with a similar bias towards managerial skills.

There was some evidence of promotion ahead of identified training being supplied. One company was addressing this by setting in place a basic supervisory skills/knowledge requirement for its contractors. It was accepted that it would be some time before a supervisor completed their full supervisory training course but that supervisor should have certain key skills and knowledge prior to taking up a supervisory role for the first time. It was these skills that the operator and contractor had mutually agreed to.

### **Suggested Questions: Supervisor Training**

How is supervision training identified?

How is this process documented and managed?

What supervision competencies are required before a supervisor takes up a post for the first time?

How do you ensure these are in place before the post is taken up?

How does the company ensure that supervisor competence is maintained?

What involvement does the company have in the identification, supply and management of contractor supervision training?

How is the effectiveness of training assessed? For example, is there specific post training assessment or is this rolled in to general monitoring and assessment?

What is in place for the audit and review of these processes?

## Assessment of supervisors

In any effective management system there will, and should, be some form of ongoing monitoring and assessment of employees. This is particularly important for supervisors to ensure the continued effectiveness of the company's SMS.

### Project findings

Like selection, monitoring and assessment of supervisors was formalised through the company's annual appraisal system. However, all companies and large contractors said that monitoring and assessment was a daily, weekly and monthly process of comparison of the supervisor's conduct, work activities and outcomes against such measures as plans of work, safety performance indicators, ISSOW system use, etc.

### **Suggested Questions: Assessment of supervisors**

What is the process for monitoring and assessing supervisors against their roles, responsibilities and expected deliveries?

How is this process documented and communicated?

How is this process reviewed and audited?

What is the company's involvement in the monitoring and assessment of its contractor supervisors?

## Operational and Organisational Support to supervisors

In addition to the foregoing supervision topics:

- clarity of role in a company's SMS
- selection
- training
- assessment

Companies need to provide relevant organisational and operational support to supervisors to ensure that in their day to day work they are able to provide and influence the safety culture the company envisage.

Research identified Key supervisory activities to be:

Planning routine work for the team  
Allocating routine work to team members  
Making decisions under normal conditions  
Making decisions under abnormal conditions  
Monitoring the team's performance  
Planning activities specifically related to H&S  
Allocating activities specifically related to H&S  
Monitoring H&S performance  
Ensuring compliance with H&S rules and procedures  
Leading the team during normal situations  
Leading the team during abnormal situations  
Facilitating communication within the team and between the team and management  
Ensuring teamwork and developing the team  
Facilitating workforce involvement  
Applying disciplinary procedures

Also, as part of the research carried out on behalf of the HSE, the responses to a questionnaire survey highlighted four factors found to have impact on subordinate safety behaviour:

1. Valuing subordinates
2. Visiting the workplace
3. Work group participation (hazard evaluation/planning/decision making)
4. Effective two-way communications

Organisational and operational support for the foregoing activities and impacts, for the purposes of inspection, may be gathered under the following supervision requirements:

- plan and allocate work and resources
- monitor performance and compliance
- provide leadership
- facilitate communication, team work and workforce involvement

These will be addressed in a variety of ways and, as was found by the project in the most supervisory proactive companies, likely be seen as work of continual improvement and change.

The following are examples from the project of how companies are addressing such organisational and operational support to supervisors.

### **Plan and Allocate work and resources**

In only one of the project inspections were there any issues with supervisors, contract and operator, not being fully integrated to the planning process, both long and short term. All managers interviewed agreed that supervisors' contributions were a fundamental part of that process.

There were however refinements to aid the supervisors' allocation of resources and planning. For example one company would identify for the supervisors the priority objectives/activities in the short term plans in order that, should there be a clash of work demands, the supervisors knew what should take precedence.

### **Monitor performance and compliance**

This refers to monitoring of the supervisors' performance and of compliance to company standards, rules and practices by the workforce. Complaints of administrative barriers keeping the supervisors from the worksite were common to all interviews during the project. This therefore can be seen as a challenge for the industry as a whole and the following are some examples of how companies are trying to identify the actual barriers to effective supervision and provide the necessary time and support.

Time and activity and worksite:

Company A specified a percentage of the supervisors' time to be spent at the worksite e.g. 80%, and provided guidance, with training, on how to structure that time effectively. Company B required detailed activity recording from supervisors to help identify barriers to effective time use. Company C used training in 'positive intervention' to support the company's safety intervention system.

All of the forgoing approaches also supported the onboard drives for full compliance by providing structured time and effective intervention with the workforce.

### **Provide leadership**

### **Facilitate communication, teamwork and workforce involvement**

This refers to the provision of leadership by supervisors. Supervisors are the daily interface of management with the workforce and the standards of conduct set by them are instrumental to an effective safety culture.

Supervisors are also the eyes and ears of management. Effective communication means effective engagement with the workforce, thereby proving the vital feedback loop to the boardroom.

The following are examples of how supervisory leadership, communications, teamwork and workforce involvement were being supported:

Training for a participative management style, for example, being able to positively manage the participation of staff in risk assessments and task process decisions.

The provision of Safety Leadership training.

The provision of Positive Intervention training to support work-site interventions and inspections.

The visible support of onshore management during installation visits.

## **Audit and Review**

An organisation puts in place arrangements to supervise its activities and describes these along with the associated procedures within the Safety Management System (SMS). Fundamental to an effective SMS is that within the SMS there are processes in place to review and audit performance and compliance.

Review should be an ongoing monitoring process that ensures that the supervisory activities are working and provide an early alert to any problems that need to be addressed. Audit is more structured, comparing supervisory arrangements in place to what should be in place, and evaluating these against the intended corporate objectives. A key difference of audit from review is that an audit should always have an effective degree of separation of the auditors from the process being audited.

When inspecting the audit and review arrangements for supervision inspectors should, as a minimum:

- Identify a section in the Safety Management System that describes the arrangements for review and audit of the supervision arrangements.
- Establish that these audit and review arrangements include such matters as training, competence and availability.
- Ensure that the audits and review are taking place.
- Identify audit and review outcomes and confirm that these have been taken forward into actions.
- Verify that these actions are being tracked and closed out satisfactorily.

## **Offshore Inspection**

The offshore inspection is in essence a verification of the outcomes of the interviews and document review of the onshore inspection. The inspector will therefore be confirming the systems, procedures, standards, documentation, implementations, initiatives, etc. presented onshore.

Given the variety of ways in which effective supervision can be met the planning detail for the offshore section will therefore be on a company by company basis.

Although the onshore inspection section dealt with the following topics as discrete matters, this was done for purpose of subject information only, as these topics are interlinked and are unlikely to be separated in a live SMS.

- Supervision and the Safety Management System
- Supervision and contractors
- Selection of supervisors
- Training of supervisors
- Assessment of supervisors
- Operational and organisational support to supervisors

Interviews carried out with supervisors, managers and the workforce will therefore naturally range across all of these topics.

### **Offshore Interviews**

The onshore inspection will have identified the personnel, staff and contractors, who should be able to provide the necessary confirmations. Where possible there should also be a mix of experience, time onboard and length of time in post, for example, newly promoted supervisors who can speak to such matters as selection, mentoring and basic post competencies.

For detail confirmation one to one interviews are likely to be the norm but the inspector should also make use of group interviews which are helpful in bringing out differing viewpoints.

## Operational and Organisational Support

For the topic of Operational and Organisational Support, in addition to interviews, the inspector should consider attending fora such as: planning, meetings, shift handovers, safety briefs, risk assessments, and site intervention visits.

### **Some suggested leading questions for this topic:**

What difficulties, if any, are there in fulfilling your roles and responsibilities?

How are you involved in the planning process?

Are there any difficulties with this and if so what are?

What is it that helps you plan your work and allocate resources?

What, if anything, gets in the way of planning your work planning and resource allocation?

What barriers, if any, are there to you getting to the worksite as often as you would like?

In what way are you involved in setting/writing procedures?

In what way are you involved in incident investigation?

How do you ensure the workforce comply with all procedures?

What difficulties are there in doing this?

Supervisors are generally expected to provide a certain amount of leadership. What is expected of you in regard to leadership and what has/does the company do to support you in this?

How often do you meet with the onshore management?

What is discussed at these meetings?

What do you think is the most effective part of your job as a supervisor, and why is that?

What if anything, do you think would improve your job as a supervisor?

## Closing the inspection

Normal procedures should be followed when reporting back to the company. Note the section on enforcement when requesting action to be taken.

## Annex Question Sets

### **Suggested Questions: Supervision and the Safety Management System**

What role does the company expect supervisors to play in regard to the company's SMS?

How does the supervisory role fit into the company's SMS?

What contribution does the company expect supervisors to make to the effectiveness of its SMS?

How are they supervisory role expectations documented and how are they communicated to supervisors?

Does any of this differ for contractor supervisors, and if so, how?

### **Suggested Questions: Selection of Supervisors**

What is the process for identification and selection of people for the role of supervisor?

How is this documented?

In what way is the company involved in its contractors' selection of supervisors?

In what way is this process audited and reviewed?

**Suggested Questions: Supervisor Training**

How is supervision training identified?

How is this process documented and managed?

What supervision competencies are required before a supervisor takes up a post for the first time?

How do you ensure these are in place before the post is taken up?

How does the company ensure that supervisor competence is maintained?

What involvement does the company have in the identification, supply and management of contractor supervision training?

How is the effectiveness of training assessed? For example, is there specific post training assessment or is this rolled in to general monitoring and assessment?

What is in place for the audit and review of these processes?

**Suggested Questions: Assessment of supervisors**

What is the process for monitoring and assessing supervisors against their roles, responsibilities and expected deliveries?

How is this process documented and communicated?

How is this process reviewed and audited?

What is the company's involvement in the monitoring and assessment of its contractor supervisors?

## A5. GLOSSARY and ABBREVIATIONS

### Accountability:

Obligation to deliver agreed results.

### Barrier:

A functional grouping of safeguards and controls selected to prevent the realisation of a hazard.

### Competence:

A person's ability to meet – accurately and reliably – the performance requirements for a defined role.

### Control:

See also *barrier*. Used specifically for a barrier which mitigates the consequences of an initial event.

### Mitigation:

A barrier whose role is to limit consequences, generally by limiting escalation, but which does not prevent the initial event.

### Performance standard:

A measurable statement, expressed in qualitative or quantitative terms, of the performance required of a system, item of equipment, person or procedure, and that is relied upon as the basis for managing a hazard.

### Process safety:

The management of hazards that can give rise to major accidents involving release of potentially dangerous materials, release of energy (such as fire or explosion) or both (Baker Report definition).

### Safety climate:

A typical definition; *safety climate is the workforce's attitudes and perceptions at a given place and time. It is a snapshot of the state of safety providing an indicator of the underlying safety culture of an organisation.*

### Safety culture:

Organisational Indicators of Safety Culture; there are at least five global components or indicators of safety culture. They include organisational commitment, management involvement, employee empowerment, reward systems, and reporting systems.

A typical definition; *safety culture is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to and the style and proficiency of, an organisation's health and safety management.*

### Supervision:

Supervision is a critical management function that can be delivered by one or more individuals within and/or external to a team. It involves controlling, influencing and leading a team.

People with supervisory roles are expected to maintain discipline, to take responsibility, and be held accountable for the actions of a team

(source; HSE research report 292, Entec UK Ltd 2004).

Supervisor:

The supervisor is the *shop-floor face* of the organisation, the filter or lens through which management messages and attitudes are transmitted to the workforce and views and feedback from the shop-floor passed back up to line management (Lardner & Miles, 1998).

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CCS: Carbon Capture and Storage

CMS: Common Management System

DEA: Danish Energy Authority

E&P: Exploration and Production

HSE: Health and Safety Executive

IRF: International Regulators Forum

ISSOW: Integrated Safe System Of Work

MNA: Multi-National Audit

NSOAF: North Sea Offshore Authorities Forum

OGP: Oil and Gas Producers (international association)

OIM: Offshore Installation Manager

OPITO: Oil and Gas Academy

PSA: Petroleum Safety Authority (Norway)

PTW: Permit To Work

SMS: Safety Management System

SPE: Society of Petroleum Engineers

SSM: State Supervision of Mines (The Netherlands)

ToR: Terms of Reference

UKCS: United Kingdom Continental Shelf

## **A6. TERMS OF REFERENCE**

### **TERMS OF REFERENCE FOR THE NSOAF INTERNATIONAL THEME AUDIT PROGRAMME OF 'SUPERVISION'**

#### **Introduction**

Ensuring the health and safety of personnel working in the North West European offshore E&P industry is vitally important and must be a common objective for the industry as for the National Regulators alike.

All NSOAF members have their own regulatory regimes based on national expectations, legal systems and individual National cultures, but they have common objectives. Indeed, we are increasingly confident that the various regulatory regimes are very similar in practice. Continuing to work together in addition to holding regular liaison meetings will not only strengthen ties and understanding, but will also bring greater consistency to regulatory practice and standard-setting across the whole of the North Sea area. This should bring both challenge and benefit to the industry.

Supervisors are the key figures in accident and incident prevention because they are responsible for managing the prevention barriers in place which control workplace hazards. They are responsible for safe execution of the work on the basis of the best available practices or good oil field practices. They can also prevent accidents and incidents by defining safe work routines, providing clear work instructions, assigning competent persons on high risk jobs, motivating the people to work safely. This can be achieved through tool box meetings, and ensure the people at work adhere to the given worksite instructions / procedures or work permits during their daily routine supervisory tours of the work place. Consequently the supervisors provide a considerable contribution to safety at work.

This document sets out the framework for conducting a theme audit programme by NSOAF members.

#### **Objectives**

The four individual Regulators are to conduct at least one audit on a nominated operator in their sector of the North Sea.

To persuade the NW-European E&P offshore industry of the necessity to:

- Improve supervision as being a crucial aspect in the risk management process
- Improve the effectiveness of supervisory roles and responsibilities and the involvement of (senior) management in the safety management system
- Develop, share and adopt best practices of supervision

To obtain further evidence of consistency of approach by individual Regulators in the North Sea.

To share the audit outcome with the NW-European E&P offshore industry trade associations.

To share the audit outcome with IRF

#### **Scope of work**

The scope of work will be to perform systematic theme audits of operators active in two or more NSOAF member national sectors. The theme that has been selected for this programme is '*Supervision*'

A national team from the Regulatory authority will perform each theme audit in its own sector.

To evaluate the outcomes of the individual theme audits and prepare a composite report on the overall audit programme.

Companies selected to be auditees and Regulatory bodies to conduct audits are:

AUDITS				Audit findings reporting & feedback	
Regulator in charge	Company	Offshore installation	Regulator joining office audit	National	Corporate
SSM	Total	L7CC	+ HSE		+ HSE
	Wintershall	L8P4	+ DEA	+ DEA	
	Shell	K14-FA-1C	+ HSE + PSA		
HSE	BP	Ravenspur North	+ PSA		+ PSA
	Shell	Nelson	+ PSA + SSM		+ PSA + SSM
	Talisman	Tartan	+ PSA		
	Total	Alwyn	+ SSM		
PSA	Conoco Philips	Ekofisk field C.	+ DEA	+ DEA	
	Talisman	Gyda	+ HSE		+ HSE
	BP	Valhall	+ HSE		
	Shell	Draugen	+ HSE + DEA		
DEA	Maersk	Gorm	+ SSM	+ SSM	
	Dong	Siri	+ PSA	+ PSA	

The NSOAF HS&E Working Group has nominated an audit team co-ordinator and assistant (Netherlands and UK respectively). They will co-ordinate the activities of the various national audit teams and provide a composite overview report of the total activity. Individual national audit teams will provide the co-ordinator and assistant with a summary report of the findings and recommendations of their individual activities.

National audit teams will have their own specific responsibilities and structure, consisting of team leaders and members.

Audit teams shall base their pre-planning, execution and reporting on recognised audit standards and experiences fed back from previous audits undertaken for the NSOAF HS&E Working Group. Wherever possible meetings and discussions to determine the audit strategy etc shall be co-ordinated to ensure efficient use of both human and economic resources.

The audit co-ordinator will be responsible for ensuring the following milestones are adhered to:

1. Submission of terms of reference for information to the NSOAF plenary meeting on 19 April 2007.
2. The audit coordinator and assistant coordinator (Netherlands and UK) will develop and distribute templates and question sets to ensure a consistent approach in each participating country.
3. National teams to complete theme audits in their own sectors by December 2008 and submit findings to the audit co-ordinator by January 2009.
4. Audit co-ordinator and assistant to prepare a draft composite report for the NSOAF HS&E Working Group by 17 February 2009 and finalise the composite report by 31 March 2009.
5. Final composite report to be presented to the main NSOAF meeting during April 2009.

The NSOAF member countries responsible for national and or international duties will be expected to provide the necessary personnel and resources to fulfil these requirements.

YEAR	M	AUDIT	PLACE	DATE	PRESENTATION
2007	S	<b>TOR</b>			HS&E WG presentation ( 20-09 / NL)
	O				
	N	Team members kick-off meeting			
	D				
2008	J	Team coördination meeting	DK	24&25 jan	NSOAF/E&P industry trade ass. (19-02 / NL)  NSOAF plenary meeting ( 8&9-04 / DK )  NSOAF-Operators conference (Aberdeen)
	F	Team members meeting / audit preparation	NL	20&21 feb	
	M	Pilot field audit completed / findings shared	NL	27 mar	
	A	Agreement on final auditplan			
	M	<b>Audit introduction by companies</b>			
	J	<b>Field audits completed</b>			
	J				
	A	Major observations field audits	N	26&27 aug	
	S	Field audit summaries completed			
	O	Office audit preparation by internat. teams			
	N	<b>Office audits completed</b>			
	D	Company audit reports completed			
	2009	J		UK	
F		Team coördination meeting / NSOAF composite report			
M		<b>NSOAF composite auditreport completed</b>			
A					
M		<b>Audit findings feedback to companies</b>			
J					

## International Team Assignments and Responsibilities

Co-ordinator: Country: Netherlands  
Responsibilities –

- To develop an overall audit strategy and plan
  - To identify the tasks required for achieving the audit objectives
  - To assign defined requirements and time required for each task
  - To assist and facilitate discussions with nominated companies
  - To advise the NSOAF HS&E Working Group of any significant obstacles encountered and advise of any impact on the audit objectives and programme
  - To issue the final audit report to the NSOAF HS&E Working Group and the audited operator
  - To issue a written evaluation report to NSOAF HS&E Working Group
- Assistant Co-ordinator: Country: UK

## Responsibilities –

To assist the team co-ordinator in developing templates and question sets

To identify and prepare a list of all required documentation and reference material

To correlate audit tasks and facilitate transmission of completed audit reports to team co-ordinator.

To co-ordinate the preparation of the draft audit report for audit team and audited companies review and discussions

Audit Team Members: Countries: Denmark, Netherlands, Norway & UK Responsibilities –

To co-operate with and support the team co-ordinator and assistant co-ordinator

To organise and lead the theme audits in their sectors

To nominate appropriate personnel from their own authorities to conduct the audits.

To collate audit findings, conclusions and recommendations as requested by the assistant co-ordinator

To provide contributions to the draft audit report as requested by the assistant co-ordinator

## References & Standards

The common standard for all the national audits shall be HS G (65) – Successful Health and Safety Management.

Guidelines to perform quality and / or environmental management system audit EN-ISO-19011:2002.

NSOAF HS&E Working Group document ‘Worksite supervision’, 22 November 2005.

The report of ‘The BP U.S. Refineries Independent Safety Review Panel’, January 2007

To ensure consistency the International audit team shall prepare and issue a list of reference documents and any other relevant standards for use by the National audit teams.

The Causes of Major Hazard Incidents and How to Improve Risk Control and Health and Safety Management: A review of the Existing Literature. Health & Safety Laboratory, Report Number HSL/2006/117

Director Leadership of Health and Safety, Health & Safety Laboratory, Report Number HSL/2005/21

Effective supervisory safety leadership behaviours in the offshore oil and gas industry, HSE Offshore Technology Report 1999/065

Different types of supervision and the impact on safety in the chemical and allied industries, HSE Research Report 292, 2004

Strategies to promote safe behaviour as part of a health and safety management system, HSE Contract Research Report, 430/2002

Benchmarking employee supervisory processes in the chemical industry, Research Report 312, 2005

## A7. LITERATURE REVIEW HIGHLIGHTS

The references underneath are listed in Appendix-A2.

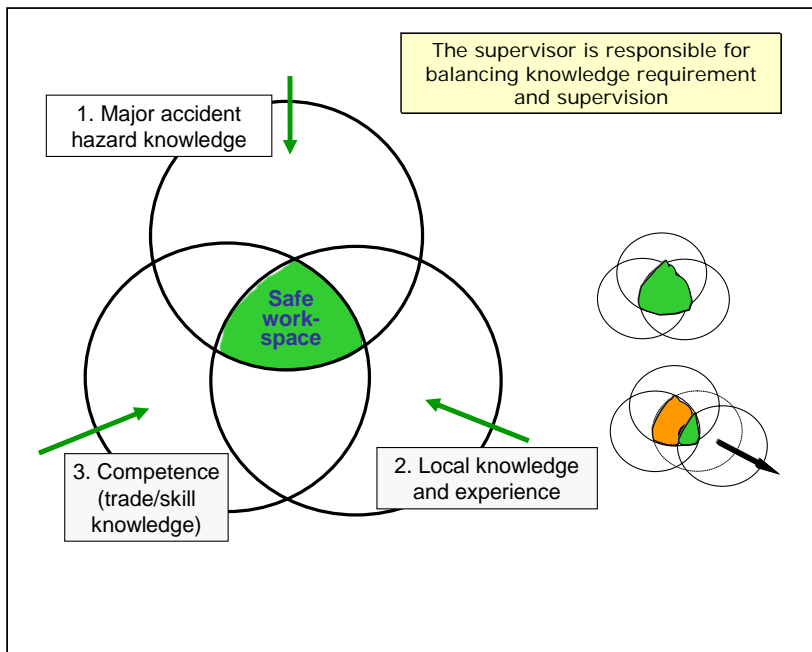
*Today's industrial sectors face a stark reality. Eroding health and safety threatens to become endemic due to the economic growth in all developed economies, labour shortage, the lack of skilled workers and the aging workforce. Safety performance is being severely compromised by an insufficiently skilled workforce and inadequate levels of training and supervision.*  
(Ref.-1)

*To reset the equilibrium between the level of workforce competence and the level of supervision required to improve safety performance to an acceptable level, can be achieved by improving;*

- 1. Understanding by the workforce of hazard management, and*
- 2. The organisation and focus of supervision in order to restore an optimal balance between workforce competence and level of supervision.*

(Ref.-1)

### ***Managing a safe workplace during change; a knowledge approach to competence and risk management***



*Balancing competence and supervision can be viewed as providing the sufficient interaction between the different sources of knowledge required for task completion in a high hazard environment(Miles 2006 / Ref.-1)*

*Interventions; Work is required to understand which interventions have been applied, how effective they have been and the context in which they work. The lack of literature on what has been applied to prevent major accidents also suggests that evaluation work has not been carried out; this should be linked to any work to implement interventions. (Ref.-3)*

*The regulator may benefit from developing a better measure of safety culture. (Ref.-3)*

*While the theory behind the causes of accidents and how to prevent them is comprehensive, the translation of this theory into practice is lacking. Therefore, evidence to show that application of*

*this knowledge will prevent accidents, is also lacking. (Ref.-3)*

*A positive safety culture and effective safety management system seem likely to be influential in achieving compliant behaviour. (Ref.-3)*

*Worker involvement works most effectively through the creation of a health and safety culture within an organisation which integrated health and safety into everyone's roles. (Ref.-6)*

*Clear communication of issues and policies works best when communication flows up and down the organisation and is open. (Ref.-6)*

*There are three levels of soft skills;*

- 1. basic skills: these relate to the possession of basic awareness and competence, which permits the worker to work in a dependent way looking to the actions and decisions of others, particularly superiors.*
- 2. interpersonal and intrapersonal skills: these relate to the possession of knowledge and awareness which permit the worker to operate more independently, autonomously and using his or her own initiative.*
- 3. conceptual and more complex behavioural skills: these relate to the possession of confidence and authority, so that as well as undertaking their activities, workers are confident and empowered to challenge others. This third level of skills promotes interdependent working, in which the worker's decisions routinely shape those of others.*

*(Ref.-6)*

*Essential principles for leadership actions for directors and board members are: strong and active leadership from the top, worker involvement and assessment and review. (Ref.-8)*

*Four aspects of supervisor safety management were found to be important. These were: valuing subordinates; visiting the worksite frequently; a participative style of management and effective communication. It is suggested that the subordinates of supervisors who display these behaviours most frequently are less likely to be involved in an accident. (Ref.-9)*

*Different factors appear to drive safe behaviour (i.e. encouraging fellow workers to work safely) than drive risk taking behaviour (taking short cuts). Positive safety behaviour can be encouraged by increasing the status of safety on the installation and by supervisors creating a supportive environment. Risk taking behaviour can be reduced by creating a learning culture on the installation and by supervisors communicating the importance of safety, setting a positive example and visiting the worksite frequently. (Ref.-9)*

*Interpersonal aspects of supervisor safety management need to be addressed. Training programs should be practical as opposed to knowledge based and focus on the development of positive relationships with subordinates. (Ref.-9)*

*Management and supervision have been identified as the most significant organisational factors affecting accidents, largely as a result of heavy workloads rather than an overt neglect of responsibility. However, most organisations fail to fully understand the relationship between supervision and health and safety. (Ref.-10)*

*Organisations have to understand how they deliver supervision and the inherent weaknesses in their chosen approach. Management then has to implement the appropriate counter-balances to ensure those weaknesses do not introduce risk. Other factors, such as multi-skilling and use of*

*contractors must also be considered, as they also affect how supervision impacts on health and safety. (Ref.-10)*

*Supervision has a key influence on the way teams perform. Therefore, the way supervision is delivered must be appropriate for the way the team functions. (Ref.-10)*

*Individuals with any form of supervisory role must have the necessary competence and opportunity to fulfil their responsibilities. (Ref.-10)*

*Contractors can have a significant impact on health and safety performance. Hence supervision of contractors must be properly managed. (Ref.-10)*

*Few organisations have key performance indicators that specifically address supervisory performance. (Ref.-10)*

*As organisations have evolved, how supervision is delivered, and by whom has become less clear. Subsequently methods of measuring and reviewing supervisory performance have become less effective. Senior managers do not always explain to their teams how important they believe supervision is to health and safety, which can result in mixed messages being perceived. (Ref.-10)*

*Supervisory arrangements for contractors are not always clearly defined. (Ref.-10)*

*In flatter organisational structures it is important to be clear about how supervisory activities are to be performed, and by whom. (Ref.-10)*

*Bureaucratic organisations must ensure that sufficient resources are in place to carry out all supervisory activities. (Ref.-10)*

*Operating companies must ensure they have enough resources to the level of supervision needed by contractors in all circumstances. (Ref.-10)*

*The key message is that personalities have to suit team and company cultures. (Ref.-10)*

*Remarkably little has been written about the relationship between supervision and health and safety. (Ref.-10)*

*Lack of supervision is a management failure. (Ref.-10)*

*Supervision is actually a management function that can be delivered by one or more individuals within and/or external to a team. (Ref.-10)*

*A reduction in the rate of lost-time injuries is not a reliable indicator of how well major hazards are being managed. Therefore, it is important to develop other indicators of the management processes in relation to how hazards are managed. (Ref.-11)*

*There is no evidence to suggest that there is causal relationship between health and safety performance and methods of supervision. (Ref.-11)*

*The main factors influencing the choice of supervisory method are compliance with health, safety and environmental legislation and the demonstration of effective risk control. (Ref.-11)*

*It is widely accepted that human behaviour is a contributory factor in approximately 80% of accidents. Perceiving the problem as “within the employee” limits the identification of effective solutions. Behavioural change is not brought about by changing the person, but by changing their environment. (Ref.-12)*

*From the workforce on the UKCS, 70% agree that “most accident are due to human failure” and over a third cited “lack of care and attention” as the most common cause of accidents. (Ref.-13)*

*Management commitment to safety is recognised as a fundamental component of an organisation’s safety culture. (Ref.-14)*

*More recent evidence suggests that it is not just management participation and involvement in safety activities which is important, but the extent to which management encourage the involvement of the workforce. Moreover, management must be willing to devolve some decision-making power to the workforce by allowing them to become actively involved in developing safety interventions and safety policy, rather than simply playing the more passive role of recipient. In this way workers are more likely to take ownership and responsibility for safety. (Ref.-14)*

*The OIM represents a key link between the onshore and offshore facets of the organisation, and as such, he plays an important role in communicating the safety message from senior levels within the onshore organisation to the workforce at the sharp end. Therefore, OIM’s appear to have a critical role to play in developing and maintaining the safety climate in the offshore environment. It is recognised within the industry that these individuals possess a wealth of knowledge and personal experience of safety and leadership which could be accessed, combined and used for the identification and development of best practice in safety leadership offshore. (Ref.-14)*

*Outstanding safety issues relate to human behaviour and motivation rather than to technical procedural issues. (Ref.-14)*

*In recent years, it appears that progress in making industrial conditions safer has ceased. One of the causes of this lack of progress is our inability to transform our fundamental belief about supervisory responsibility into supervisory action. (Ref.-15)*

*The old textbooks said the supervisor was the key person in safety. That is not true, for we know today that the supervisor reacts to what is important to his boss. (Ref.-15)*

*The roles in safety are simple and clear-cut:*

- 1. The role of the first-line supervisor is to carry out some agreed-upon tasks to an acceptable level of performance.*
- 2. The roles of middle and upper management are to:*
  - a. Ensure subordinate performance.*
  - b. Ensure the quality of that performance.*
  - c. Personally engage in some agreed-upon tasks.*
- 3. The role of the executive is to visibly demonstrate the priority of safety.*
- 4. The role of the safety staff is to advise and assist each of the above.*

*(Ref.-15)*

*The act, the condition and the accident itself are all symptoms of something wrong in the management system. The role of safety is not to remove the symptom, but to find out what is wrong with the system. (Ref.-15)*

*The need for accountability systems in management is essential to safety success. (Ref.-15)*

*To achieve safety in an organization, the safety system to be effective must meet the following criteria:*

- *Force supervisory performance.*
- *Involve middle management.*
- *Have top management visibly showing their commitment.*
- *Have employee participation.*
- *Be flexible.*
- *Be perceived as positive.*

*(Ref.-15)*

*The key to effective line safety performance is management procedures that fix accountability. (Ref.-15)*

*The real Formula:                    **A → C → B → E**  
Accountability builds Culture which gets Behaviours resulting in Excellence*

*(Ref.-15)*

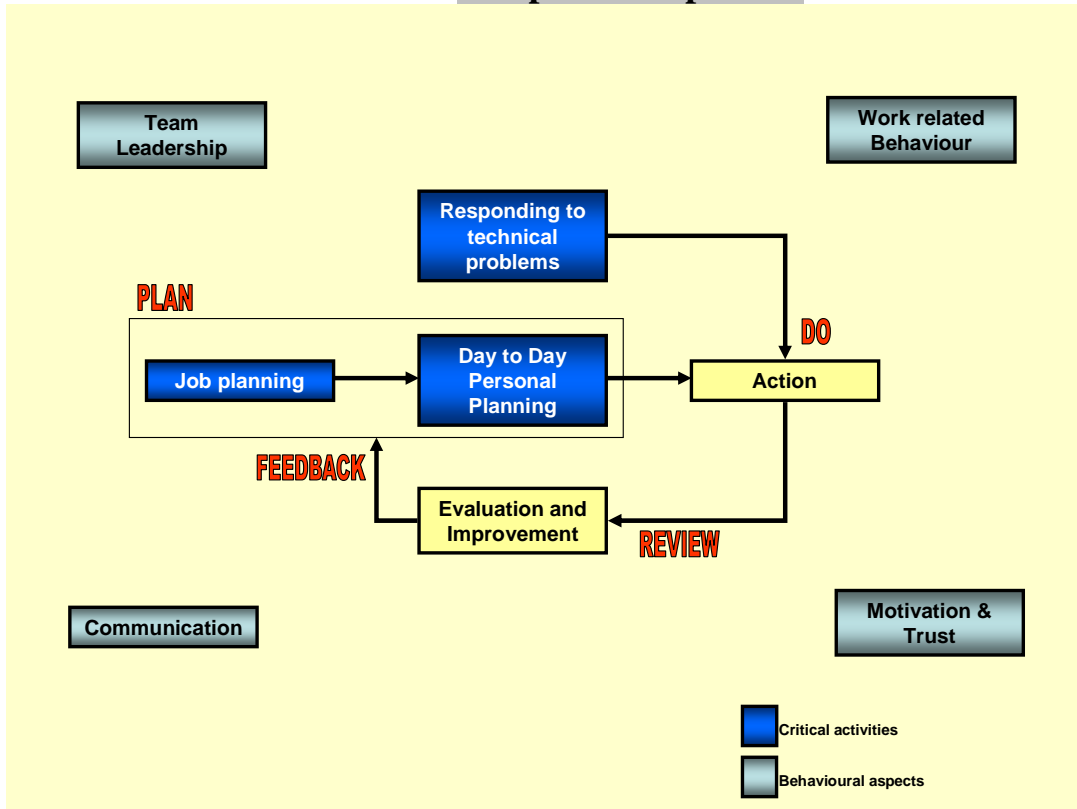
*Communication skills and the ability to stop the job and conduct safety conversations are found in many safety management systems in the offshore oil and gas industry. The skill to perform safety interventions is a crucial part of a supervisor's and manager's role.*

*(Ref.-19)*

*Results showed that two particular communication strategies (the use of open questions and the creation of "what if"-scenarios) are important for a positive safety conversation outcome.*

*(Ref.-19)*

## A supervision process



(Ref.-16 / Hearts and Minds / Energy Institute)

## Hersey and Blanchard Situational Leadership Model

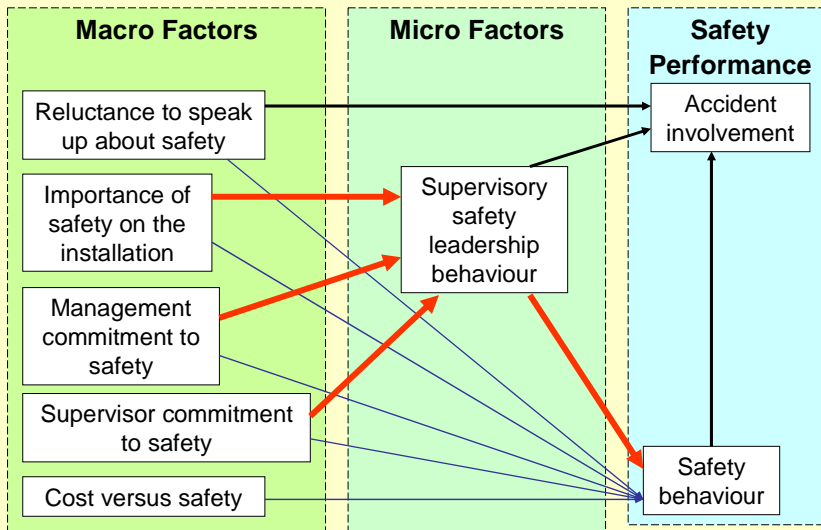
- **Task behaviour** is the extent to which the leader provides directions for the actions of followers, sets goals for them, and defines their roles and how to undertake them.
- **Relationship behaviour** is the extent to which the leader engages in two way communication with followers, listens to them and provides support and encouragement.

*By observing the worksite activities, talking with the workers and executing interviews, we must be able to determine the leadership style **actually** in place and the leadership style **experienced** by the workers.*



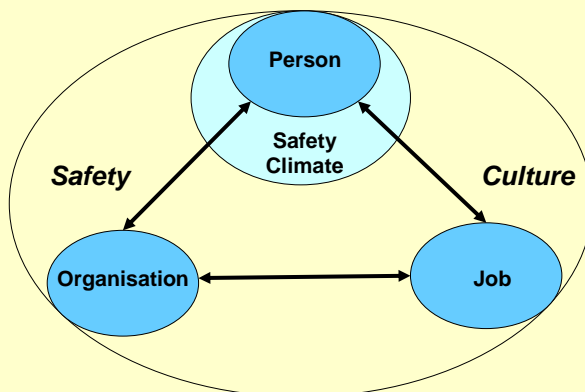
*(Ref.-17 / P. Hersey and K.H. Blanchard / Leadership and the One Minute Manager / 1999)*

## Overall findings in micro-macro model



(Ref.-9 / *Effective supervisory safety leadership behaviours in the offshore oil & gas industry*)

## Changing Minds / Step change in safety



**Safety culture:** refers to the collective values and attitudes of the people in the organisation

**Safety climate:** refers to the service features of the safety culture determined from the workforce's attitudes and perceptions at a given place and time. It is a snapshot of the state of safety providing an indicator of the underlying safety culture of an organisation

(Ref.-18 / *Changing Minds / A practical guide for behavioural change / Step change in safety*)

## A8. LEADERSHIP COMMITMENT MODEL

### Introduction:

This leadership model is based on HSE report “Development of a leadership resource pack , HSE 2000 OTR 098“(Appendix A2, ref.- 4)

### Objective:

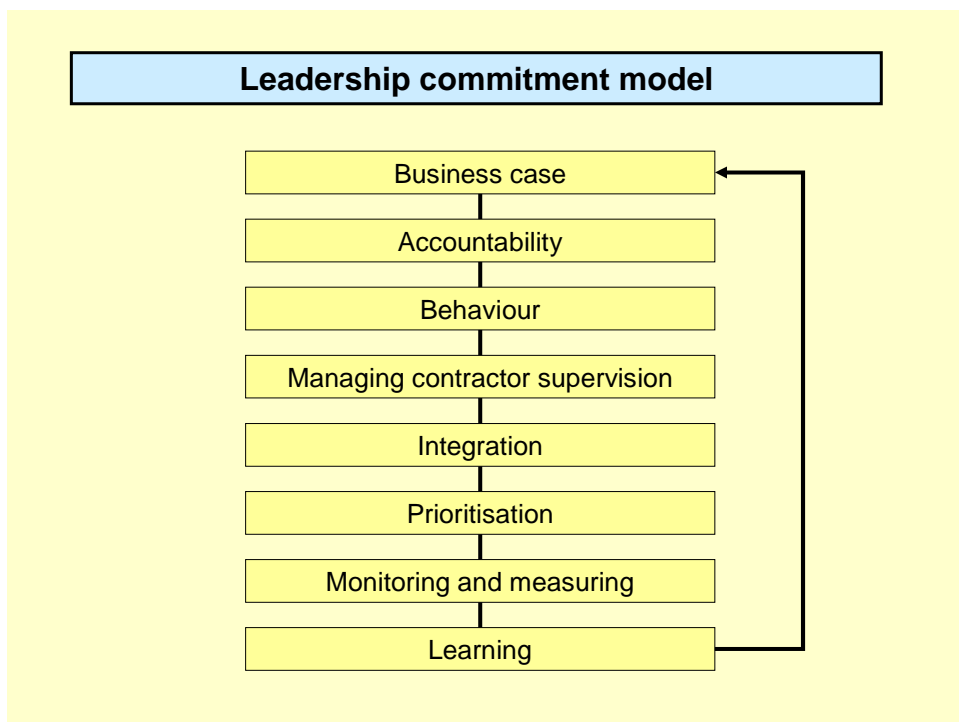
Characterising leadership commitment regarding supervision

### Set-up:

- An eight-stage model
- Each stage considers the influence a senior manager could exert in leading ‘supervision’ management practices within a company
- From the specific context of the business case management system for managing supervision via the role of senior managers in incorporating ‘learning’ into business thinking to improve company practice

### Senior manager role:

‘Visible’ driving supervision performance improvements



**Questionnaires**

<p><b>1. Business case – Value beyond the bottom line</b></p> <p><i>Why do senior managers think supervision is important?</i></p>	
<p><b>Defining questions</b></p>	<ul style="list-style-type: none"> <li>➤ Why are companies managing supervision?</li> <li>➤ Is ‘supervision’ included in the policy statement and if so why is that?</li> <li>➤ Where in the Management System (MS) is supervision as a critical business control measure first quoted and why at that point ?</li> </ul>
<p><b><u>Key words</u></b></p> <p><i>Corporate Governance</i></p>	<p><b><u>Themes</u></b></p> <ul style="list-style-type: none"> <li>➤ Integrating supervision in corporate governance processes is regarded as good practice</li> </ul>

<p><b>2. Accountability</b></p> <p><i>How are senior managers accountable for managing supervision?</i></p>	
<p><b>Defining questions</b></p>	<ul style="list-style-type: none"> <li>➤ What business model or framework exists for assigning accountability and responsibility for managing supervision?</li> </ul>
<p><b><u>Key words</u></b></p> <p><i>Performance Contracts</i></p> <p><i>Management Frameworks</i></p> <p><i>Communication</i></p> <p><i>Incident</i></p>	<p><b><u>Themes</u></b></p> <ul style="list-style-type: none"> <li>➤ Senior managers have incentive criteria for supervision incorporated into business (and personal) balanced scorecards or performance contracts that are bonus linked</li> <li>➤ Clear internal management accountability should exist for reporting supervision</li> <li>➤ Senior managers should be involved in supervision discussions across different business functions and with other business units</li> <li>➤ Senior managers ensure suitable action plans are implemented</li> </ul>

<i>Investigation</i>	to install preventative measures (page 18 ‘the real formula’ / book ‘Safety Supervision’, Dan Petersen: A(ccountability) → C(ulture) → B(ehaviour) → E(xcellence)
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### 3. Behaviour

*How do senior managers actively demonstrate they are committed to managing supervision?*

- |                           |  |
|---------------------------|--|
| <b>Defining questions</b> | <ul style="list-style-type: none"> <li>➤ How do senior managers demonstrate their interest and commitment to supervision?</li> <li>➤ How do senior managers encourage supervision?</li> <li>➤ How is ‘visible management’ and ‘Leading by example’ demonstrated during offshore visits (themes discussed / people talked to / topics during face-to-face talks / examples of feedback / documented)?</li> <li>➤ How is the impact of changes in the organisation of middle management on supervision handled?</li> <li>➤ How do senior managers explain to their teams the importance of supervision to health and safety?</li> <li>➤ Do senior managers participate in incident investigations?</li> <li>➤ Are senior managers trained in effective safety interventions (SPE-11801; open questions / if-what scenarios) and if so what does the training involve?</li> </ul> |
|---------------------------|--|

- | <u>Key words</u>  | <u>Themes</u>   |
|-------------------|---|
| <i>Visibility</i> | <ul style="list-style-type: none"> <li>➤ Senior managers include supervision in discussions with operational personnel at every opportunity and follow-up any concerns</li> <li>➤ Senior managers attend safety meetings and regularly provide operational personnel with feedback on company health and safety initiatives (provide evidence)</li> <li>➤ Senior managers speak at health and safety training seminars held by contractors</li> </ul> |
| <i>Enthusiasm</i> | <ul style="list-style-type: none"> <li>➤ Senior managers ensure suitable action plans are implemented to install</li> </ul>   |

	preventative measures
<i>Pride &amp; Recognition</i>	➤ Senior managers can readily identify examples of best practice within their business unit
<i>Business Planning</i>	➤ Senior managers commend/reward and publicise examples of exemplary contributions by teams and/or individuals
<i>Advanced Auditing</i>	➤ Senior managers ensure plans for managing change include provisions for mitigating H&S risks
<i>Formal Checks</i>	➤ Senior managers influence good H&S behaviours by encouraging individuals to consider the consequences of their observed practices
	➤ Formal checks are carried out on the H&S behaviours of senior managers and employees at periodic intervals (Dupont)

## 4. Managing Contractor Supervision

*What is the senior managers' thinking, strategy and involvement regarding management of contractor supervision?*

<b>Defining questions</b>	How do senior managers ensure that supervisory arrangements for contractors are clearly organised? How is supervision addressed in contracts? Why has the company taken this approach? How does supervision feature in managing relationships with contractors?
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<u>Key words</u>	<u>Themes</u>
<i>Performance Contracts</i>	➤ Senior managers have incentive criteria for supervision incorporated into business (and personal) balanced scorecards or performance contracts that are bonus linked
<i>Management Frameworks</i>	➤ Clear internal management accountability should exist for reporting supervision There should be a clear strategy for the management of 'imported risk'
<i>Communication</i>	➤ Senior managers should be involved in supervision discussions across different business functions with contractors and partners

## 5. Prioritisation

*How are senior managers demonstrating that supervision on health and safety is a high priority on their business agenda?*

**Defining questions** ➤ How do senior managers prioritise supervision on health and safety on day-to-day basis?

### Key words

*Internal Discussions*

*Resources*

### Themes

➤ Senior managers discuss health and safety as the first item at any meeting using open questions to encourage responses; e.g. morning calls not only address technical/personnel/logistic issues but also H&S issues for safety critical activities

➤ Senior managers invest in tools for tracking near misses or learning opportunities

## 6. Integration

*How do senior managers best integrate supervision into the course of doing business?*

**Defining questions** ➤ How do senior managers embed supervision in the management process?

### Key words

### Themes

➤ Company policy, part of the appraisal system, promoted at all safety communications opportunities etc.

## 7. Measuring, Monitoring and Reviewing

*How do senior managers track supervision through a business?*

### **Defining questions**

- What techniques do senior managers adopt when monitoring supervisory activities and measuring supervisory performance?
- How do senior managers monitor feedback from staff?
- Do senior managers encourage the adoption of early warning systems such as near miss reporting?
- The LTI is not a reliable indicator to monitor the management of major hazards; which indicators are used?
- Which Performance Standards are in place for supervision?
- Do senior managers monitor if operational manuals and start-up instructions are in place and up to date?
- Is supervision a topic during the internal audit process?  
Are there examples of supervision related follow up actions?

### **Key words**

### **Themes**

*Staff Surveys*

- Senior managers monitor staff feedback through opinion and/or climate surveys, the findings are also presented to personnel and actions implemented as appropriate

*Reporting*

- Senior managers provide regular health and safety briefings to operational personnel and to executives at board level

*Key Performance Measures*

- Senior managers support the development of leading (positive) performance indicators through industry programmes e.g. Step Change (oil and gas UK)

*Internal Audits*

- Senior managers review findings from a health and safety perspective and implement supporting action plans to address them

## 8. Learning

*How do senior managers promote knowledge sharing in the area of supervision?*

### **Defining questions**

- Lack of supervision is often one of the causes leading to an incident/accident; which concrete follow up actions were initiated in the past to improve supervision?
- How do senior managers promote near miss reporting?  
Are suitable reporting tools available?  
What are the emerging trends and how are they communicated?

### **Key words**

### **Themes**

*Dissemination*

- Senior managers get involved in health and safety discussions (i.e. supervisory issues) vertically and horizontally across a business

*Networks*

- Senior managers participate in health and safety industry programmes e.g. UKOOA's Step Change initiative and share information with others in the company

*Sharing Knowledge*

- Senior managers share good practice or learning from incidents through Intranets, open meetings

*Knowledge Tools*

- Senior managers support near miss reporting through provision of suitable tools and review emerging trends

*Near Miss Reporting*

- Senior managers encourage operational personnel to identify and prioritise local health and safety issues



## A9. TEMPLATE EXAMPLE

<p><b>Topic</b></p> <ul style="list-style-type: none"> <li>• Numbering: numbering; e.g. <b>T2.3m</b> <ul style="list-style-type: none"> <li>○ T = Topic (or Template)</li> <li>○ 2 = subject 'The Selection of Supervisors'</li> <li>○ 3 = third topic within this subject</li> <li>○ if relevant, the interviewee</li> </ul> </li> <li style="padding-left: 20px;">m = manager (can be offshore manager (OIM) / onshore manager)</li> <li style="padding-left: 20px;">s = supervisor</li> <li style="padding-left: 20px;">w = workforce</li> <li style="padding-left: 20px;">a combination from these above</li> </ul> <ul style="list-style-type: none"> <li>• name of the topic</li> </ul>			
<p><b>Factors affecting the topic</b></p> <p style="text-align: center;">This part contains background information based on literature review and previous worksite observations and highlights key aspects related to the topic..</p>			
<p><b>Guiding questions</b></p> <p style="text-align: center;">This section contains suggested or guidance questions that the inspector can use to assess the topic Although an inspector has a certain freedom in directing interviews, the evaluation categories and inspection notes; such as barriers/improvements/best practise etc. must be completed.</p> <p><u>General guidance</u></p> <ul style="list-style-type: none"> <li>▪ Make sure that focus stays on supervision and not about health and safety only</li> <li>▪ If questions generate negative responses, always ask for suggestions to improve</li> <li>▪ If interviewees mention changes, always find out why they took place and what the impact was</li> </ul>			
<p><b>Evaluation categories</b></p> <p style="text-align: center;">If it is not possible to complete the evaluation categories the reason for this must be provided in the inspection notes.</p>			
<p><b>a) .....</b></p> <div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>	<p><b>b) .....</b></p> <div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>	<p><b>c) .....</b></p> <div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>	<p><b>d) .....</b></p> <div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>
<div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>	<div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>	<div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>	<div style="text-align: right; border: 1px solid black; width: 20px; height: 20px; margin-left: auto;"></div>
<p><b>Inspection notes</b></p> <p><i>(Record your comments or explanation here. Also, any relevant references/good practices and evidence to explain your answer)</i></p> <p>Barriers:</p> <p>Supportive:</p> <p style="padding-left: 20px;">It is important to record the risk posed by the current arrangements and the effort required to implement improvement.</p> <p>It is important to consider how current arrangements have occurred. For example, are they driven by systems or have they built up through custom in practice (in which case they may not be sustainable, especially if changes occur).</p>			