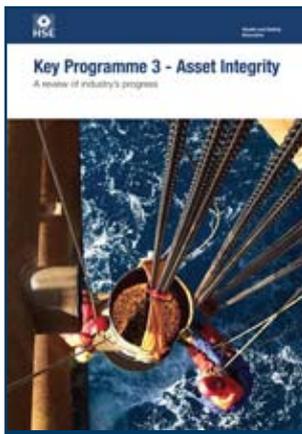


Key Programme 3 - Asset Integrity

A review of industry's progress



A report by the Offshore Division of
HSE's Hazardous Installations Directorate

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Executive summary

Synopsis

In November 2007 the Offshore Division of the Health and Safety Executive (HSE) published a report of its three-year inspection initiative known as Key Programme 3 (KP3). This was a comprehensive appraisal of asset integrity management of offshore installations on the United Kingdom Continental Shelf, and revealed significant issues regarding the maintenance of safety-critical systems used in major accident hazard control in the industry. Although raising significant concerns as well as setting challenges, the KP3 report was accepted as valid by the UK offshore oil and gas industry.

At a Parliamentary debate on 2 July 2008 to mark the 20th anniversary of the Piper Alpha disaster, the Secretary of State for Work and Pensions commissioned HSE to review the progress made by the UK offshore oil and gas industry in addressing the issues identified by the KP3 work.

HSE's Offshore Division undertook the review, with input and co-operation from key industry stakeholders, including trade unions and industry trade associations. This report presents the results of the review and includes *Asset Integrity: An industry progress report* from Oil & Gas UK (see Annex 4), and *KP3 Review project report on workforce involvement* from the Offshore Industry Advisory Committee's Workforce Involvement Group (see Annex 5).

Overall, the review found that the industry had allocated considerable resource and effort to improve offshore assets and compliance with relevant standards, and that the offshore industry leadership has responded well. There was evidence of good progress in addressing the issues identified by the KP3 work. However, the review also found that the work is by no means complete and continued effort is necessary to sustain the momentum of improvement initiatives, so that facilities are not allowed to degrade to the extent identified in the 2007 KP3 report.

The review highlights that offshore safety and the security of UK energy supply depend on successful management of oil and gas asset integrity. It is therefore essential that fluctuating economic environments should not slow progress on management approaches to achieve and sustain the improvements KP3 emphasised as necessary.

Key findings

Asset integrity/process safety management

The review found evidence of considerably raised awareness of the need for effective process safety management and major hazard risk controls. It is clear, however, that further progress in the management of asset integrity is required. The industry must also focus effort on greater reduction of significant hydrocarbon releases to build upon progress already made.

Physical state of plant

The review noted good progress on fabric and general plant maintenance, but ageing infrastructure and logistical issues make it likely that this will remain an ongoing challenge for the industry.

Safety-critical systems

There was strong evidence that remedial work has taken place to rectify matters giving cause for significant concern identified in the original KP3 report, with all the original 'red traffic lights' closed satisfactorily. However, this is a dynamic situation and there is

evidence that in some areas more effort by the industry is required to ensure that such improvements to safety-critical systems are sustained in the long term.

Leadership

The review found that leadership is now firmly on the industry's agenda and a number of high-profile initiatives have been undertaken. There was strong evidence that the role of leadership in integrity management has been effectively promoted through the industry. The industry has also developed its use of key performance indicators (KPIs) for asset integrity, which should improve the quality of information available to senior managers. It will be important that these improvements to the leadership function are preserved as senior managers change over time.

The engineering function

The review noted a strengthening of the technical authority function in a number of companies. Offshore personnel provided positive feedback on the benefits obtained. To ensure sustained positive benefit, the industry needs to adopt the enhancements to the technical authorities' role uniformly across the sector.

Corporate and cross-industry learning and communication

There was evidence that the culture in the industry is changing, with more open sharing taking place between organisations. However, the review considered that more effort is required by the industry to break down barriers which are preventing more effective integration of the work of their independent verification bodies, and also noted that concerns still exist over effective auditing and knowledge sharing within companies.

Human resources and competence

The review found that the issues centred around human resources and competence were currently less acute. This is partly due to labour market changes arising from the global downturn. The offshore industry has also made progress in addressing competence issues and has devoted significant resources to training and major hazard awareness. Some issues remain concerning the loss of experienced staff and associated corporate knowledge, particularly in major hazard risk management. It will be important that industry continues to focus on recruiting and retaining a fully competent workforce at all times.

Safety culture

The review found that progress has been made in key areas, which may produce a positive impact on safety culture offshore. This includes recent industry guidance on 'not required back' (NRB) policies and enhancing leadership knowledge and understanding. The NRB issue will remain a concern until the industry guidance becomes widely embedded and secures workforce confidence, contributing to improved safety culture.

Workforce involvement in controlling major accident hazards

The review found that major hazard risk controls and the role of installation integrity are now better understood by the offshore workforce. Maintaining this high level of awareness will be critical to future success. However, further work is necessary to achieve the aim of the requirements set by regulations for effective consultation of safety representatives on installation safety cases.

Existing mechanisms for workforce involvement

Safety representatives and safety committees have a continuing key role in health and safety management offshore. However, there are continuing questions about the effectiveness of both, and the extent to which some companies meet the requirements of the Regulations and make best use of this valuable resource.

The workforce has a high degree of awareness, but the extent to which workforce involvement and elected safety representatives are effective in securing improvements is generally not measured or assessed by companies. Though challenging to measure, this opportunity for improvement should be considered to support attainment of greater safety management benefits from workforce involvement.

Background

The offshore oil and gas industry

1 This industry employs over 25 000 people in a range of activities working offshore on over 300 installations. Although there have been improvements in health and safety offshore since the Piper Alpha disaster in 1988, the major hazards are ever present – fire, explosion, release of gas and structural failure. All of these have the potential to cause major loss of life. Specific legislation exists to deal with the hazards arising from the operation of fixed and mobile installations, wells and pipelines. This is supported by relevant legislation linked to generic industrial hazards.

2 This is a dynamic and rapidly changing industry but one with an ageing infrastructure and increasing cost pressures as the available oil and gas declines. These issues, together with the geographically isolated workforce and the inherent hazards in working offshore, require high standards of management of health and safety.

The Health and Safety Executive (HSE)

3 HSE's mission is to ensure that risks to people's health and safety from work activities are properly controlled. To achieve this for the offshore oil and gas industry HSE uses the expertise, knowledge and skills of staff in its Offshore Division (OSD), who are a part of the Hazardous Installations Directorate.

4 OSD's continuing goals for the offshore oil and gas industry are:

- to prevent major accidents with catastrophic consequences;
- to secure a Step Change improvement in injury rates and work-related ill health and consequent days lost from work;
- to support industry's goal to be the world's safest offshore sector;
- to secure more effective workforce involvement; and
- to maintain an effective regulatory framework.

Key Programme 3 – Asset Integrity

5 In 2004 HSE's Offshore Division started Key Programme 3 (KP3). This was a resource-intensive initiative involving nearly 100 co-ordinated, targeted inspections over three years. Its objective was to ensure that offshore dutyholders adequately maintained safety-critical elements (SCEs) of their installations. SCEs are those parts of an installation and its plant that exist to prevent, control or mitigate major accident hazards; the failure of which could cause or contribute substantially to a major accident.

6 A report of the findings of the KP3 programme was published in November 2007 (see Further reading). Although raising significant concerns as well as setting challenges, the report was constructively received and accepted by the UK offshore oil and gas industry.

7 KP3 raised the profile of asset integrity management and associated underpinning issues such as workforce involvement and leadership. The report underlined the importance of an engaged, trained, competent, informed and involved workforce in the effective management of a major hazard work environment.

8 At a Parliamentary debate called by Frank Doran MP on 2 July 2008 to mark the 20th anniversary of the Piper Alpha disaster, the Government announced that the Secretary of State for Work and Pensions had asked HSE to formally review progress made by the UK offshore oil and gas industry in tackling issues identified in the KP3 report. During the debate, Parliamentary Under-Secretary of State for Work and Pensions Mrs Anne McGuire stated:

'I am pleased to advise my Honourable Friend the Member for Aberdeen North, and other Honourable Members, that the Secretary of State has commissioned the HSE to review the industry's progress on the issues identified by the KP3 programme. The issues include focusing on industry leadership to create a stronger safety culture in which the involvement of the workforce, including the industry's trade unions, will be critical.'

Hansard July 2008

The KP3 report

9 The KP3 report defined asset integrity as '*...the ability of an asset to perform its required functions effectively and efficiently whilst protecting health, safety and the environment*'. Asset integrity management is the means of ensuring that the people, systems, processes and resources that deliver integrity are in place, in use, and will perform as required over the whole lifecycle of the asset.

10 The KP3 Programme involved targeted inspections of nearly 100 offshore installations representing about 40% of the total on the UK Continental Shelf. These included: fixed installations; attended and normally unattended installations; floating production installations; floating production storage and offloading vessels; and mobile drilling rigs. It involved all of OSD's Specialist and Inspection Management Team inspectors and all levels of management.

11 Inspection findings were recorded using bespoke standardised templates. Topics were scored using an extended traffic light system: Red (Non-compliance/Major failing); Amber (Isolated failure/Incomplete system); Green (In compliance); or White (Not examined). Multi-disciplinary teams of inspectors determined the traffic lights from the evidence collected.

12 HSE took appropriate action in line with its enforcement policy when a red traffic light was recorded because this indicated a major failing of a system.

13 Essential for the integrity of any installation are the safety-critical elements (SCEs). KP3 focused primarily on the maintenance management of SCEs, ie the management systems and processes that should ensure SCEs would be functioning effectively when required.

14 The areas in which the 2007 KP3 report raised important issues included:

- asset integrity/process safety management systems;
- physical state of the plant;
- matters of significant concern with major hazard risk control measures;

- human resources and competence;
- underlying issues;
 - leadership;
 - the engineering function;
 - corporate and cross-industry learning and communication.

15 Maintaining asset integrity is a continuous process through the lifespan of the asset. All systems degrade with time, and management systems are no exception to this. Continuous monitoring and review are required to ensure that management systems remain fit for purpose. Similarly, changes will inevitably occur over time in personnel, corporate structures, and ownership of assets. These changes will impact on organisations' ability to maintain asset integrity to required levels.

16 Speaking at the launch of the KP3 report on 21 November 2007, the then Chair of HSC Judith Hackitt (now Chair of HSE), said:

'In the light of the findings from the KP3 report, asset integrity will continue to be one of the main priorities for HSE's Offshore Division in 2008 and for the foreseeable future, but it must also be clear that it is for the industry itself to show leadership and face up to its responsibility.'

Ian Whewell, Head of HSE's Offshore Division, added:

'The advantages of better safety in the sector are obvious. However, ensuring the offshore infrastructure is well maintained also makes good business sense as it's not just the industry that benefits – the whole economy benefits and it will help ensure that there is a long-term sustainable future for the offshore industry.'

17 The KP3 approach for the control of asset integrity issues has been accepted without challenge by the UK offshore oil and gas industry, which has shown clear commitment to address the shortcomings identified in the report.

18 The outcomes from the KP3 programme also influenced the formulation of OSD's subsequent plan of work, helping to set priorities for the Division from 2007 onwards. Part of OSD's response to the issues raised by KP3 was the establishment of further project work to follow up specific KP3 themes.

The purpose and methodology of the 2009 KP3 Review

19 The purpose of the review was to measure the progress of the UK offshore oil and gas industry against the findings highlighted in November 2007. This review was a significant activity for HSE, although it did not seek to repeat the original scope and duration of KP3. Accordingly, OSD diverted appropriate resources to ensure a thorough and balanced approach, and to identify the work undertaken by industry and HSE since the original KP3 work finished. The review team contained personnel involved with the original KP3 work to ensure a continuity and focus.

20 The review was undertaken in two separate but linked streams of work. The first concentrated on progress with respect to the asset integrity of offshore installations and their safety-critical elements. The second stream of work focused on the involvement of the offshore workforce and improvements made in the creation of a stronger safety culture within the industry.

KP3 Review: Workstream 1 – Asset integrity

21 The methodology employed for this part of the review began with an initial scoping exercise with assessment of the information contained in the KP3 report. OSD then invited submissions from various industry stakeholders to specify the progress they had made on the findings. These industry groups included:

- trade associations – representing the full range of companies involved in the UK offshore oil and gas industry, including oil and gas operating companies, exploration drilling companies and contracting companies involved across the sector; and
- trade union organisations – involved in representing the views and interests of offshore workers.

A key composite submission received was Oil & Gas UK's *Asset Integrity: An industry progress report*, which can be found in Annex 4 and at www.oilandgasuk.co.uk/issues/health/kp3.pdf.

22 OSD also undertook a significant package of work with its own resources to provide additional, independent evidence of the industry's progress, and thus obtain an element of triangulation in the review.

23 The review team completed a series of independent case study sample inspections offshore, to validate industry's reported progress and the information available from internal OSD sources (primarily inspectors' reports). These case studies (see Annex 1) used the same approach taken during the original KP3, and the same 'traffic light' reporting template. It was therefore possible to make a direct comparison between the changed status, on the installations selected, of KP3 elements since the original programme inspections and this review.

24 The review also included specific checks to determine industry progress on the status of maintenance and SCE issues, which were considered 'red' according to the traffic light format used in the programme, originally reported in 2007 on 26 installations. The work required OSD inspectors to examine the original KP3 programme findings relating to these 'red' issues for each installation originally inspected. The review also looked at the progress on all of the matters that the original KP3 programme identified as requiring follow-up action, whether by letter or through more formal enforcement.

25 The review team cross-checked the progress reported by industry stakeholders against data held by OSD inspectors who deal with individual installations and dutyholders. The review also used information available in OSD records.

26 The team reviewed data on major and significant hydrocarbon gas releases from the hydrocarbon database (see Annex 3 for further details). A number of initiatives from joint industry work groups were also taken into account.

27 Further sources of information were interim findings from current OSD projects. Following the completion of KP3 in 2007, OSD implemented three follow-up projects:

- Management of External Corrosion;
- Effectiveness of Independent Verification Schemes;
- Quality of Auditing Systems.

These projects began before the Secretary of State's request for a report about the industry's response to KP3 and are ongoing. Additionally, OSD reviewed some audit reports produced by companies who had themselves completed or commissioned KP3 compliance audits.

28 All the information sources permitted the review team to develop a corroborated evidence base from which to draw a picture of industry performance in relation to asset integrity and the general functioning of safety-critical elements.

KP3 Review: Workstream 2 – Workforce involvement and safety culture

29 The purpose of this workstream was to identify, particularly in the context of asset integrity, the involvement of the offshore workforce in any improvements made by the industry and to seek their views on how well the industry was creating a stronger safety culture. This was achieved by drawing on reports of progress submitted by industry, a workforce survey and internal OSD inspection findings. Particular attention was paid to organisational issues, workforce training and competence.

30 In addition to the above sources of information, the Workforce Involvement Group (WIG), a subgroup of the Offshore Industry Advisory Committee, provided a key input into this part of the review. The Committee includes the participation of trade unions, trade associations and HSE, and is an important forum for the discussion of health and safety matters in the offshore industry. The WIG was asked to:

- examine the role of the offshore workforce in contributing to the effective management of safety in their workplace;
- explore the existing mechanisms for offshore workforce involvement including safety committees and safety representatives;
- identify basic skills and competencies required by offshore workers to enable them to participate in effective safety management, including hazard awareness, training, standards and industry best practice;
- identify ways in which the role of the workforce may be strengthened in order to secure an enhanced safety culture, and to present these as options for consideration by all stakeholders in the offshore industry.

The conclusions of this WIG work are contained in *KP3 Review project report on workforce involvement* which can be found in Annex 5 and at www.hse.gov.uk/offshore/kp3workforceinvolvement.pdf.

31 With the support of its Social Sciences Unit, HSE commissioned an independent market research organisation (GfK NOP) to carry out a survey among the workers based on installations in the North Sea. The key objectives of the research were to assess the views of both direct employees and contractors, to better understand:

- how health and safety is managed, especially as far as asset integrity and major hazard potential is concerned, and what role the workforce play in that health and safety management; and
- the lines of communication that work best for HSE in trying to access the offshore workforce (and vice versa).

32 The survey outcomes provided an improved understanding and richer insight into the offshore workforce attitude to health and safety, especially the management of major accident hazards.

33 Interviews with offshore workers took place at the heliports at Dyce Airport in Aberdeen and in Norwich. A total of 3813 questionnaires were collected, 3664 from Aberdeen and 149 from Norwich. Interviewing was carried out between 4 and 20 March 2009.

Industry progress on the KP3 findings

34 The findings in the KP3 report were fully accepted by the offshore oil and gas industry, which gave a firm commitment that the issues would be addressed and the performance of the industry improved. Since the start of KP3 in 2004, the industry has continued to allocate considerable resource to tackling the condition of the infrastructure, and has undertaken several initiatives to address the underlying problems identified in the report. These initiatives have been supported by the workforce and by bodies such as Step Change in Safety, a wholly owned subsidiary of Oil & Gas UK Ltd.

35 In order to determine the extent of progress made, the information collected as a result of the review was compared and considered against the key findings in the KP3 report. The report findings were grouped into broad areas, which are set out in the following sections.

Asset integrity/process safety management systems

The KP3 report

36 The KP3 report stated:

...out of the 16 management system elements examined those most likely to perform badly were: maintenance of SCEs, backlog, deferrals, measuring compliance with performance standards and corrective maintenance. Furthermore, the programme also found wide variations across industry. Over the programme's lifespan of 3 years it was found that there was a poor understanding of the impact of degraded SCEs and how degraded utility plant may impact on the performance of SCEs in the event of a major accident.

Progress reported by industry in 2009

37 Industry has recognised and accepted the need to raise the profile of effective asset integrity management. Operating companies have reviewed and, where necessary, made changes to maintenance management systems. Contracting companies have developed an asset integrity framework that is now used on dutyholder contracts.

38 The results from Oil & Gas UK's report (see Annex 4) indicate that positive progress, as measured by a reduction in the total number of 'reds' over the 16 management system elements, has been made. Figure 1 compares the 2007 and 2009 results and the progress is clearly evident, as demonstrated by the traffic light system: Red (Non-compliance/Major failing); Amber (Isolated failure/Incomplete system); Green (In compliance).

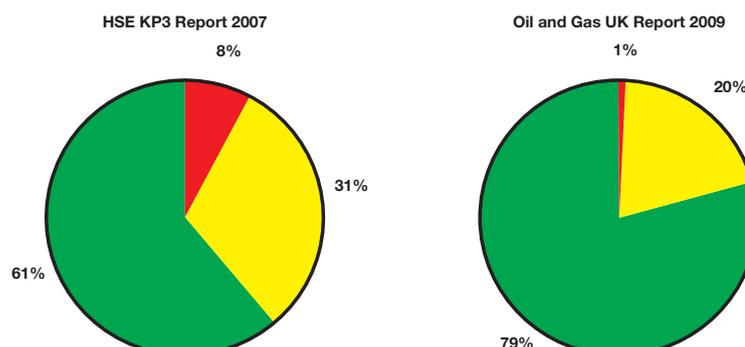


Figure 1 Management system elements 2007 and 2009

OSD inspection reports and case studies

39 Results from OSD offshore inspections show that significant work has been undertaken on improving management systems to control asset integrity, particularly in operational risk assessments and deferral management. Evidence from the case studies (see Annex 1) showed that systems and processes have now been put in place to ensure suitable risk assessments are carried out in a timely manner.

40 Analysis was carried out of the hydrocarbon releases from 1996 to 2009 (see Annex 3). The trend for steady reductions in major and significant hydrocarbon releases seen up to the period 2005/06 had not continued, with the periods 2006/07 and 2007/08 showing no improvement. There was, however, a welcome reduction in hydrocarbon releases during 2008/09, the statistical significance of which is discussed in Annex 3. There continue to be around 60 significant hydrocarbon releases annually.

OSD review findings

41 The evidence seen by the review team confirmed that there is an increased recognition throughout the industry that SCE maintenance deferrals and degraded SCEs can impact adversely on major accident barriers. Maintenance management systems are becoming biased to ensure that safety-critical maintenance is carried out on time, thus reducing the requirement for deferrals. However, despite the progress identified in the industry report, there is still evidence that maintenance of safety-critical hardware could be improved (see Annex 1). Priority should always be given to the timely repair of degraded SCEs, rather than undue reliance on operational risk assessment and deferral management systems.

42 It is clear that current progress in the management of asset integrity needs to be maintained if the frequency of significant hydrocarbon releases is to be further reduced.

Physical state of plant

The KP3 report

43 The KP3 report indicated that on the majority of installations inspected during that programme the general state of the plant was poor. This mainly related to the fabric, whereas the structures supporting the hydrocarbon process, and the process equipment itself, were considered to be in better condition. It is understood that this situation developed as a result of a number of factors including reduction in maintenance budgets, eg painters no longer being core crew, and lack of available accommodation offshore. Another contributory factor was apparent rundown of assets prior to sale by top-tier operators. The programme found that corrosion management was less than adequate in many cases, but also noted the commencement of initiatives to address this.

Progress reported by industry in 2009

44 Considerable work was reported to have taken place in improving standards of fabric maintenance. Industry said that the priority was moving from safety-critical maintenance to include fabric maintenance. This progress was reported to OSD in the form of pie charts in Figure 2 below. They show that, in the opinion of industry, the condition of fabric has improved; although they also indicate the need for further improvement. Shortage of offshore accommodation is still an obstacle in dealing with fabric maintenance. Companies have plans to use methods of providing additional accommodation, eg flotels and walk-to-work barges, which industry anticipates will enable further progress to be made.

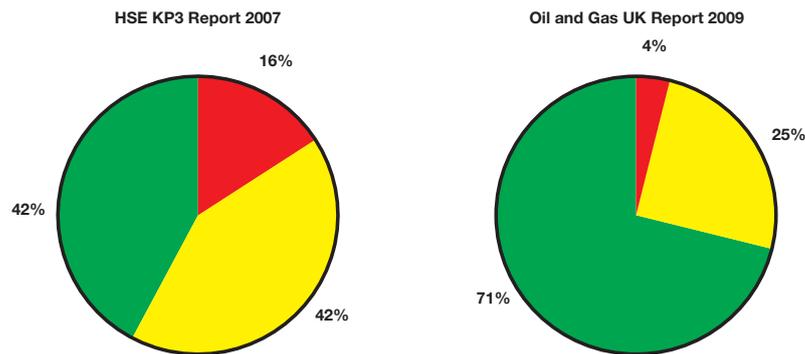


Figure 2 Physical state of plant 2007 and 2009

OSD inspection reports and case studies

45 There is strong evidence of extensive remedial work on fabric maintenance. HSE's external corrosion programme has strongly influenced industry's response in this area. During the case study inspections offshore, considerable evidence was found of asset integrity being improved with old plant being replaced, structural repairs being made and planned, and with fabric maintenance and paint programmes underway. However, there was still more to do and it was noted that work commenced in many cases had not all been completed.

OSD review findings

46 It is clear that good progress has been made to address the physical state of plant. However, despite the progress made, this area will continue to require major ongoing effort. The ageing infrastructure will provide a continuing and major challenge, and industry may struggle to keep up with fabric maintenance demands. This view is supported by the fact that OSD has taken regular enforcement action on this topic, both during KP3 and since.

47 After four years of effort in this area by the industry, this work has not progressed as far as envisaged, but the extent of the industry's efforts to address the issue is acknowledged. It is encouraging to see industry recognises that the delays in the rate of completion are often caused by logistical problems, including the lack of bed space. In many cases 'smarter' planning has improved, but not completely remedied, the situation.

48 As fabric maintenance issues continue to be of concern, this area will form part of ongoing HSE intervention activities.

Safety-critical systems

49 The integrity of the temporary refuge is an example of a safety-critical system. Lord Cullen, in his 1990 report of the Public Inquiry into the Piper Alpha disaster, identified the importance of the temporary refuge (TR).

'This evidence pointed to the need for there to be on an installation a temporary refuge which provides shelter against fires which may be massive and prolonged and against the associated smoke.'

The KP3 report

50 The KP3 report raised TR integrity and other areas as matters giving significant cause for concern:

'... a number of tests on safety-critical major hazard risk control systems found poor performance. In particular, TR HVAC dampers and doors when tested failed to close satisfactorily and would not effectively seal the TR against the ingress of smoke and gas in the event of a fire. In addition, a number of problems were found when active fire protection systems including deluge and fire pumps were tested.'

Progress reported by industry in 2009

51 Industry considered that it had made substantial and sustained progress in the areas associated with the TR HVAC (heating, ventilation and air conditioning) dampers and doors. This included improvements to hardware, changes to test frequencies and revisions to procedures. Similarly, remedial action concerning deluge systems was reported. There has been close involvement between companies and their independent verification bodies. The pie charts in Figures 3-5 below show the progress made between 2007 and 2009.

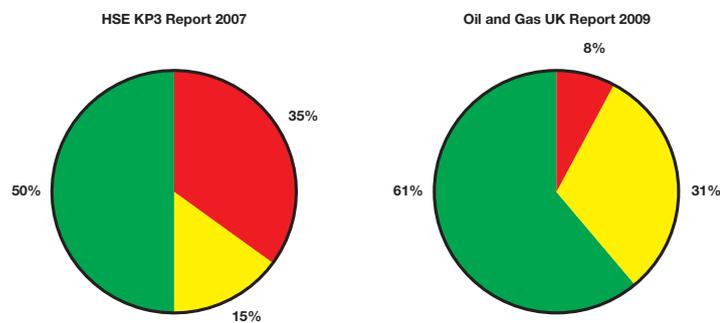


Figure 3 TR HVAC dampers 2007 and 2009

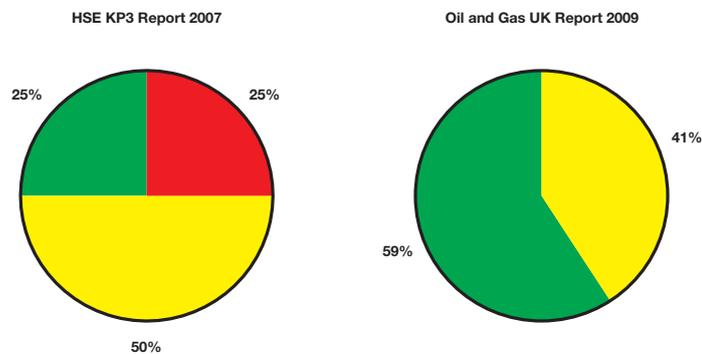


Figure 4 TR doors 2007 and 2009

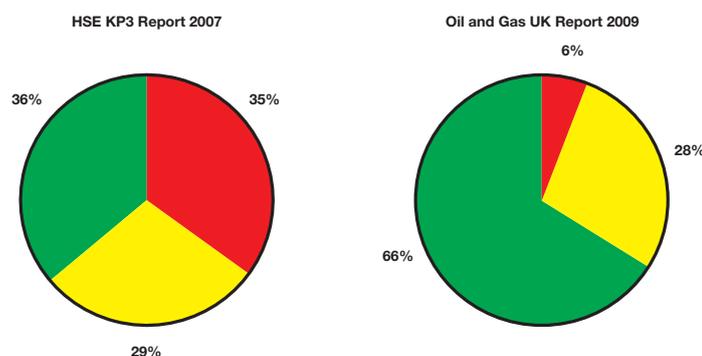


Figure 5 Deluge systems 2007 and 2009

OSD inspection reports and case studies

52 OSD inspection reports confirmed that work has been undertaken to deal satisfactorily with all those issues that were originally identified as having red traffic lights in the original KP3 report, including those where formal enforcement action was taken.

53 However, OSD inspectors have continued to find issues with regard to the condition and functioning of safety-critical systems. For example, in case study 4 (Annex 1), TR integrity remained an issue.

OSD review findings

54 The review found strong evidence that remedial work has taken place on the installations identified in the original KP3 report and all original reds have been closed.

55 However, this is a dynamic situation and the evidence provided by the industry, reflected in Figures 3 to 5 above from the Oil & Gas UK report (see Annex 4), indicates that there are some instances where the condition of SCEs have reverted to red in 2009. Additionally, in one of the OSD case studies it was identified that the status of two elements on that particular offshore platform had worsened from amber to red (this situation was quickly brought back into a state of compliance). Therefore, ensuring that any improvements in safety-critical systems are sustained must continue to be a focus of effort for the OSD and the industry.

56 The review also found that there was a raised industry awareness of maintenance issues on the safety-critical systems, particularly the need for urgent and timely repairs where equipment fails to perform appropriately under test.

57 If SCEs fail tests, then effective asset integrity management systems should be able to ensure that these are repaired in a timely fashion, and that such failures are the exception rather than the rule. The management systems in place should also ensure that key performance indicators (KPIs) quickly indicate if the number of 'ambers' increases, so that corrective action such as increased maintenance, reduced test intervals etc, can be taken to prevent them turning into reds.

58 Testing the effective functioning of safety-critical systems is essential to provide confidence that they will perform as intended. The OSD verification project indicates that there are continuing problems with verifying the performance of some safety-critical elements of major hazard risk control systems, as the relevant performance standards could not be measured effectively. This topic will continue to be of concern and will form part of ongoing OSD intervention activities.

Underlying issues – leadership

The KP3 report

59 The KP3 report stated that:

'...senior management in the industry had failed to adequately monitor the status of asset integrity. In several cases in KP3 inspections, few key performance indicators (KPIs) existed for asset integrity which led to poor decision making.'

60 The report observed that senior managers needed to improve their understanding of safety risks arising from continued operation of facilities that have degraded SCEs. It called for a 'bold step' to be taken in setting common objectives for measuring and managing the completion of maintenance.

Progress reported by industry in 2009

61 Senior management in the industry have improved their understanding of major hazard risk management. This has been achieved through workshops and highlighting the priority on asset integrity, as well as investing in skills and training. The industry has highlighted the need for KPIs associated with major hazard risk control management, and started to develop a common understanding. Oil & Gas UK has introduced cross-industry KPIs that can be used to map whole industry asset integrity progress and also provide standardised and accessible data for senior managers – adopting this system of KPIs is voluntary.

OSD inspection reports and case studies

62 It was apparent that senior managers are making a visible commitment to visit offshore installations regularly and promote the asset integrity agenda. There was evidence of increased use and improved quality of KPIs associated with asset integrity.

OSD review findings

63 An important pre-requisite for leadership is that senior managers ensure that they know what is happening and how effectively the major hazard key risk controls are being managed, ie that relevant and effective KPIs exist, are understood and are used by management at the appropriate level and compliance with them is measured. The OSD review noted that good progress has been made in this area to raise the level of knowledge and understanding that senior managers have with regard to asset integrity.

64 Since the publication of the KP3 report, Oil & Gas UK (the principal trade association for both operating companies and contractors) has become increasingly active and involved in supporting the industry leadership agenda. It now takes direct responsibility for the Step Change in Safety industry initiative and, through the Board of Oil & Gas UK and the senior company representatives on the Step Change leadership team, provides direct input to a number of key initiatives. For example, Step Change in Safety ran a series of well-attended asset integrity workshops for board directors and senior managers. In addition, a data-sharing workshop was organised where senior managers and leaders from companies throughout the industry openly shared data on their individual health and safety performance. A challenge for the industry will be to ensure that future new managers similarly obtain such asset integrity awareness and understanding.

65 The OSD review recognised the positive steps undertaken by industry and found a number of examples of the use of KPIs providing more effective leadership in the management of installation integrity.

66 Industry has voluntarily developed two cross-industry asset integrity KPIs and has achieved good participation by the end of the first year of data collection. As these become effective, senior managers should be better placed to manage and respond to asset integrity issues. Cross-industry sharing of KPI best practice should also enable it to derive significant benefits. This is a challenging area of work and industry is encouraged to continue to focus effort in this area.

Underlying issues – the engineering function

The KP3 report

The KP3 report stated that the influence of the engineering function had declined to a worrying level. It was found that technical authorities were under pressure, often reacting to immediate operational problems rather than taking a strategic role to provide expertise and judgement on key operational engineering issues.

Progress reported by industry in 2009

67 Industry had accepted the role of the engineering function as set out in the KP3 report. To reinforce the role, it held a number of workshops for both technical authorities and senior managers. From these workshops a generic model for technical authority/engineering function had evolved. The model, which included more direct reporting to senior management, had gained acceptance in the industry and was being implemented. The drilling sector has always had a stronger engineering function and consequently had not needed to make significant adjustments in this area.

OSD inspection reports and case studies

68 OSD inspections reported that the role of the technical authorities has been enhanced by a large number of dutyholders. One example of this was the organisational changes to provide offshore assets with support engineers to deal with day-to-day issues, thereby freeing a centralised pool of technical authorities to concentrate on major accident hazard aspects made by dutyholders. Evidence from the case studies found that offshore personnel were satisfied with the support they received from technical authorities and that the technical authorities were involved in deferrals and risk assessment of impaired SCEs.

OSD review findings

69 The review concluded that there have been real changes to, and strengthening of, the technical authority function in a number of companies which are showing tangible benefits. Feedback from offshore personnel indicates that they perceive a clear benefit as a result of these changes.

70 The challenge remaining for industry is to ensure that the enhancements to the technical authorities' role and resources are replicated uniformly and consistently across the industry. The risk is that the dedication of resource in this area will be allowed to decline as a result of changing economic factors present in the industry.

Underlying issues – corporate and cross-industry learning and communication

The KP3 report

The KP3 report stated that there were wide variations, not only between dutyholders but also individual assets managed by the same dutyholder. This situation could be improved by dutyholders and assets sharing best practice and by individual companies improving their monitoring and auditing functions.

Progress reported by industry in 2009

71 Industry reported that it had put in place a number of initiatives to improve the sharing of good practice and the creation and dissemination of guidance. Examples cited were the Energy Institute guidance on the management of SCEs and the work of the industry's Corrosion Management Working Group, which led to the Energy Institute publications *Guidance for Corrosion Management in Oil and Gas Production and Processing* and *Corrosion Threats Handbook* (see Further reading). There is also an industry working group on Best Practice for Maintenance Management. Step Change in Safety has created a website on asset integrity as a means to share best practice (www.stepchangeinsafety.net). Several operators have put in place mandatory training to highlight the concept of barriers in major hazard risk management.

OSD inspection reports and case studies

72 There is evidence that workshops have taken place and some learning is being transferred. However, OSD inspectors continue to observe a lack of lateral learning and sharing of health and safety related information across installations within the same organisation. From inspections during the verification and audit

projects, OSD has found that learning and sharing within companies and the use of data to improve the effective management of health and safety still requires continued effort. From HSE's perspective and experience, it is apparent that major hazard management auditing and the effective use of audit results is yet to be fully developed to a mature and effective level across the industry as a whole, although there are examples of good practice.

73 The OSD verification project has identified that the industry is not using the intelligence and professionalism provided by its independent competent person (ICP) verification activities to gain maximum benefits in managing asset integrity. It identified a number of barriers which were preventing the better integration of ICP work into dutyholders' safety management systems (see Annex 2).

OSD review findings

74 The review found evidence that the culture in the industry is gradually changing, becoming more open to sharing between organisations. Information has been exchanged by issuing guidance, as well as a series of workshops and a data sharing exercise. However, there is still evidence that some companies do not effectively share information across the business and there is still ineffective cross-business learning from audit and verification activities. Progress can only be sustained in the long term when change is embedded within each company's operational processes. This can range from the establishment of asset integrity management boards to the sharing of KPIs.

75 The review concluded that the industry needs to make more efforts to break down the barriers which are preventing better integration of ICP verification activities into individual offshore operators' safety management systems.

76 Stronger and more effective monitoring and audit systems are required by the industry to help make sure that its asset integrity remains at the required standard. The need for such active monitoring will always be ongoing because the industry is dynamic, organisations change, and a responsive management system is required.

Human resources and competence

The KP3 report

The KP3 report stated that there were concerns about levels of training and the influence of the economic cycle on availability of skilled and experienced disciplines. HSE expressed concerns over challenges faced by industry to provide the skills training and competencies required to deliver the high standards of asset integrity necessary in a major hazard industry.

Progress reported by industry in 2009

77 Industry reported that it recognised the need to recruit, develop and retain a highly skilled workforce. To meet this requirement, the industry has continued to develop training opportunities, particularly at apprenticeship level. To emphasise this requirement the Offshore Petroleum Industry Training Organisation (OPITO) has been re-organised as 'OPITO – The Oil & Gas Academy', the industry focal point for skills, learning and workforce development.

78 In April 2009 Step Change introduced the Minimum Industry Safety Training (MIST) standards to raise basic safety knowledge and awareness, and the industry intends to ensure that all the UK offshore workforce completes this training by the end of 2010. Some of this training is related to process safety and asset integrity issues. Step Change has continued to work on competency issues including aspects of permit-to-work procedures.

OSD inspection reports and case studies

79 The review case studies revealed no significant evidence of recruitment issues, but the loss of experienced staff will continue to be an issue, as will knowledge management. There was evidence of effort to further develop systems for assuring competency and skills.

OSD review findings

80 At the time of the review, issues associated with recruitment and skill shortages appeared to be less acute, not least as a result of the current global downturn and the changes to training. The review noted the offshore industry has also made progress in addressing competence issues and has devoted significant resources to training and major hazard awareness. However, the problems associated with the loss of experienced staff and associated corporate knowledge, particularly in major hazard risks, will continue to be an issue. It is therefore important that industry focuses on securing and ensuring that there is a fully competent workforce at all times. The economic cycles in the global oil and gas industry have significant influence on recruitment and preservation of necessary competence in the industry. This needs to be recognised and effectively managed to ensure that the necessary skills base is always retained.

Offshore workforce involvement

81 As requested by the Secretary of State for Work and Pensions, the review also examined the current position regarding safety culture, with particular focus on the involvement of the offshore workforce.

Safety culture

82 The purpose of the KP3 programme was to report on asset integrity rather than safety culture, although many of the elements it examined have an effect on safety culture to a greater or lesser extent. Factors that can influence safety culture include, but are not restricted to, leadership, training, workforce involvement in safety, working conditions, standards of hardware and asset integrity.

83 For example, good leadership can improve safety culture, while declining condition of hardware and integrity can affect it adversely. Issues such as the condition of plant and equipment, particularly fabric maintenance, can also impact on workforce attitudes to safety. Poor working conditions exemplified by inadequate painting, severe corrosion and defective equipment are known to impact on safety culture since the workforce draw parallels between the condition of plant and management's wider attitudes to safety.

Progress reported by industry in 2009

84 While industry did not directly report on safety culture, it highlighted a number of the relevant factors surrounding it. As the previous sections indicate, the industry has been active and invested considerable resources to improve leadership and the understanding of major hazard safety. Additionally, effort has been expended on training and improving the condition of plant, with particular emphasis on fabric maintenance.

85 The industry has recently issued revised guidance for operating companies and contractors on how to deal with situations where contract employees are 'not required back' on the installation (known as NRB). Importantly, the new guidelines and procedure have been endorsed by the offshore trade unions.

Offshore Workforce Survey

86 The survey discovered that 99% agreed that it was important for a company to have a strong health and safety culture – 80% strongly agreed with this statement, including 87% of managers. Additional findings noted that a very large majority (92%) agreed that senior managers value workforce involvement in health and safety; 91% agreed that they received adequate training from their company to enable them to be fully involved in health and safety issues; and 91% of respondents were recorded as agreeing 'to some extent' that they were confident that their health and safety concerns would be dealt with appropriately. Sixty per cent strongly agreed that they were encouraged to raise health and safety concerns in their workplace.

87 Most people (58%) were in strong agreement that their job security would not be threatened if they stopped a job they thought was unsafe. Another 32% of the sample tended to agree, leaving one in ten of the workforce actually disagreeing with this idea, ie implying that their job might be at risk if they stopped work on safety grounds. Disagreement was most common among scaffolders and marine crew (both 15%).

Workforce Involvement Group (WIG) report

88 Although the WIG report (see Annex 5) did not specifically address safety culture, the wider outcomes of the WIG's work suggest that improved workforce involvement is occurring. The formation of the OPITO – The Oil and Gas Academy, and active participation of industry leaders and senior managers in major hazard issues, is securing a better understanding of major hazard risk controls. However, two-way communication between senior management and the workforce could be more effective.

OSD review findings

89 Since 2007, progress has been made in key areas which, if successful, will impact positively on safety culture offshore. These include new guidance on NRB and enhancing leadership knowledge and understanding.

90 The NRB issue remains a concern in this industry, as indicated by the survey, but the publication of recent guidance in this area should generate an improved culture when more widely established over a longer term.

Workforce involvement in controlling major accident hazards

The KP3 report

91 The KP3 report stated:

Measuring compliance

There is evidence that the offshore workforce do not understand the link between the safety case, major accident hazard analysis, identification of SCEs and development of their performance standards.

Progress reported by industry in 2009

92 Oil & Gas UK cited progress by the industry on workforce engagement with respect to asset integrity at all levels within organisations and provided specific examples of initiatives.

Offshore Workforce Survey

93 The survey results showed that the two most common ways of gaining information about major hazards in the workplace and the measures and arrangements in place to prevent major accidents are toolbox talks and safety meetings. Each was identified by 79% of the sample. Safety meetings were mentioned by consistently high numbers in all work areas.

94 An understanding of the linkage between hazards and accidents was gained by 67% of participants from four sources of knowledge: participation in risk assessment, experience, permit to work and via employers.

95 Relatively few people mentioned elected safety representatives (41%) and their own knowledge of the installation's safety case (34%).

96 A clear majority of the sample (70%) said that they had not been consulted on the safety case. This was also the case for current safety representatives, where only 50% were consulted. The minority who had been consulted had been involved in a range of different ways, some more substantive than others. A small number of those consulted said that they were fully involved in the writing or revision of the safety case.

WIG report

97 The group identified many examples of effective involvement of the workforce in asset integrity and process safety, and felt that worker engagement on asset integrity has increased. The group also found areas for further development.

98 The group also concluded that the gathering, publication and sharing of examples of good practice was a possible line for future work.

OSD review findings

99 The 2009 Offshore Workforce Survey provided good quality information. It revealed areas for improvement and a broad indication of improved understanding of major accident risks in the offshore workforce. This work gave a good insight into how the offshore workforce obtain their health and safety information and should be incorporated into OSD's future communication strategy.

100 The survey found evidence of positive workforce attitudes and behaviours, particularly in the area of major hazard awareness and involvement. However, 70% of total participants stated they had not been consulted on installation safety cases, and of those who were currently safety representatives only 50% had been so consulted. Consultation of safety representatives in the preparation, review and revision of safety cases is a specific legal requirement and a crucial area of workforce involvement in the control of offshore major accident hazards. There is therefore further work to be done in realising both the spirit and the letter of the requirements set by regulations. Consideration should be given to having appropriate arrangements for itinerant workforce groups, for whom information provision may be more suitable than formal consultation.

101 There is evidence from offshore interventions, the workforce survey and feedback from the WIG that major hazard risk controls and the role of installation integrity are better understood by the offshore workforce. It is important to maintain this high level of awareness in the future. The recently introduced MIST standards for basic training and induction that will apply to new employees entering the industry will help to achieve this because MIST includes information on major accident hazards, asset integrity and barriers.

102 Workforce engagement has been formally identified as an issue for the industry and is being actively worked on by Step Change through one of its work groups. This is seen as an opportunity for further improvement.

Existing mechanisms for workforce involvement

The KP3 report

103 The KP3 programme was not designed to address the involvement and function of safety representatives and committees and therefore there were no specific recommendations or comments dealing with this topic.

Progress reported by industry in 2009

104 Oil & Gas UK reported, among other workforce engagement initiatives, that facilitated offsite workshops were held to address barriers to safe work and seek input for future plans. Step Change in Safety also has an elected safety representatives' network, which meets to exchange information on a regular basis.

Offshore Workforce Survey

105 The survey reported that there was a high level of agreement (92%) that safety representatives play an important part in health and safety in the workplace. Ninety per cent of the respondents agreed that the safety committee played an important part in workforce health and safety, and 40% said that safety representatives were an important source of advice and information about health and safety.

WIG report

106 As part of their work, the WIG undertook a historical review of the working of the Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989, and further details are in their report.

107 The group concluded that the roles of elected safety representatives, OIMs and supervisors were central to the success of workforce involvement. However, the WIG felt that performance of safety representatives in relation to their functions and use of powers is patchy and they found that the role of safety representatives was sometimes unclear.

108 The group reported that some managers were not always actively supporting safety representatives in their roles to the extent that safety representatives and committees were not functioning as intended by the regulations. They also considered that, while there is evidence of commitment by senior managers to workforce involvement and of a willingness on the part of many of the workforce to play a greater role in effective health and safety management, two-way communication between senior management and the workforce could be more effective.

OSD review findings

109 The survey finding, that the workforce has a high degree of awareness and involvement in the safety committee and safety representative systems, is supported by OSD's inspection findings, which includes the regular contacts OSD inspectors have with elected safety representatives at every offshore visit. The survey also found that a high proportion of the workforce (90%) felt very or fairly well involved in health and safety.

110 The review team noted that the WIG report identified some problems with the current arrangements and that further work may be needed to look at ways in which the role of elected safety representatives could be made more effective.

111 However, the survey results do not indicate the extent to which workforce involvement or the elected safety representatives are effective in securing improvements to offshore health and safety management. Though challenging to measure, this may also be an area for further investigation.

Conclusions and forward look

112 OSD and the UK offshore oil and gas industry committed considerable resources to obtaining information on the progress the industry has made in addressing the findings in the original 2007 KP3 report. This review is a snapshot of the situation within the industry at this time. The review report should therefore be viewed essentially as a status report on work in progress as the offshore oil and gas industry continues to address the issues highlighted.

113 The review confirmed that work has been undertaken to deal satisfactorily with all those issues that were originally identified as having red traffic lights in the original KP3 report, including those where enforcement action was taken. There is no doubt that since the KP3 programme commenced in 2004, and particularly since publication of the report in 2007, considerable resource has been allocated by the industry to remedial work to bring assets to the required standards. So the overall picture is an improving one across all key areas.

114 However, this work is by no means complete. Asset integrity is a dynamic situation, and there is evidence from industry and OSD sources that there are areas where the status has changed from green or amber to red. So retaining the momentum to complete the remedial work, ensuring that any improvements in safety-critical elements are sustained, and then maintaining the assets to acceptable standards should continue to be a focus of effort for the OSD and the industry.

115 With regards to securing greater workforce involvement, there is evidence, from the workforce survey, the WIG report and the experience of OSD managers and inspectors, of good progress with a high degree of engagement of the workforce within the safety representatives and safety committees systems. However, it is clear that more work needs to be done in the area of workforce consultation, particularly concerning safety cases, and in looking for ways of making the role of safety representatives and the functioning of safety committees more effective. This work should be tailored to ensure that the appropriate level of informing and/or consultation takes place and is sustained in the longer term.

116 Concerns remain about asset integrity and its management within the changing nature of ownership on the UKCS. There is increasing involvement of smaller specialised operators who are structured to maximise benefits from ageing assets and challenging reservoirs. Such changes, which often involve new maintenance systems and maintenance management software, can seriously impact on asset integrity, disrupting the flow of information such as KPIs to senior managers. It is vital that maintenance histories are secured and legacy information passed to the new operators and OSD will take particular interest in securing this continuity of data and effective transfer of corporate memory on asset integrity.

117 There remain obstacles which will challenge the industry to maintain the rate of improvement witnessed in the last two years. Examples of such issues are logistics, personnel availability and offshore accommodation and, while the industry recognises this and is attempting to address these issues, current and future economic pressures could affect success.

118 The offshore oil and gas industry has always suffered from fluctuating demand cycles, creating a negative effect on its ability to plan and allocate appropriate resources, which has previously had an adverse impact on asset integrity. The industry has given a public commitment that the lessons of the past have been learned and it will not repeat the mistakes which created the offshore installation integrity crisis highlighted by KP3. There is an expectation from the regulator that future planning will endeavour to anticipate these issues and put in place robust systems to ensure that asset integrity is appropriately prioritised, even during periods of depressed oil price.

119 Overall, good progress is being made, but there is still a challenge for industry to complete the remedial work and maintain asset integrity. It is essential that the changing economic environment does not slow progress on this vital issue.

Annex 1 Case studies

1 In the main body of this report it is explained that validating the various claims made by the industry on progress achieved was an important part of the exercise and this validation or triangulation consisted of using a number of different sources of evidence. As part of the triangulation exercise, a number of case studies were carried out. These case studies used personnel from the review team.

2 In the five cases undertaken by the review team a team member inspected the installation under review. This involved pre-inspection meetings with the dutyholder and a three-day inspection visit on the offshore facility by a team of inspectors.

3 The summarised results of these inspection case studies are provided below. The case studies support the conclusion that much work has been done but the work has not been finished and that the rate of progress is often governed by logistical issues.

KP3 Case study 1

4 In March 2009 HSE reviewed offshore progress on asset integrity for a major oil and gas company. An older-generation platform was inspected and the offshore inspection was carried out using the original KP3 programme template.

Result summary

KP3 condition	April 2005	March 2009
Red – Non-compliance/ Major failure	1	0
Amber – Isolated failure/ System incomplete	5	5
Green – In compliance	6	7

5 In the 2005 inspection the dutyholder was considered to be non-compliant with maintenance of SCEs as their performance was not measured against performance standards. The inspection this year considered that they were compliant in this area. It was observed that much work had been done with clear pass/fail tests identified in the work orders and a clear process in place for evaluating the significance of a failure in an SCE.

6 While the number of ambers remained the same for both inspections, only in two cases (system test and condition of the plant) were the areas the same. In the other cases either there was an improvement over the 2005 inspection or an area previously considered to be green was now judged to be amber – an ‘isolated failure’. This shows the dynamic nature of safety systems and the need to monitor them continuously.

7 On the platform the team observed much work on the plant with removal of redundant equipment, renovation of cranes and fabric maintenance. Yet again, the work was not complete and this area was judged to be still amber with more progress required. The dutyholder indicated that the situation should improve once the cranes renovation had been completed and they had gained the use of a walk to work jack-up.

KP3 Case study 2

8 In February 2009 HSE reviewed onshore and offshore progress on asset integrity for a medium-sized independent oil and gas company. The platform concerned was old-generation.

9 Onshore the company made presentations on their progress while offshore an inspection was carried out using the original KP3 programme template.

Result summary

KP3 Condition	October 2005	February 2009	May 2009
Red – Non-compliance/ Major failure	3	2	0
Amber – Isolated failure/ System incomplete	3	2	2
Green – In compliance	6	7	9

10 In the 2005 inspection HSE found non-compliance in three areas (maintenance of SCEs, deferrals, and condition of plant). In 2009 HSE found that maintenance of SCEs had improved to amber (problems with SAP and some risk assessments of degraded SCEs). The latest inspection also found that the deferral system had been improved and was now judged to be in compliance. In the period since 2005 much work had been undertaken with a lot of plant being renewed. However, work is still required and the team considered that the position had improved to amber. Unfortunately, operational and time constraints prevented the testing of an SCE system in 2009.

11 The 2009 inspection found that, in terms of measuring the effectiveness of the maintenance management system, the position had worsened since last examined. The root cause of this appeared to be a change of maintenance management system from MAXIMO to SAP and loss of the ability to monitor the status of safety-critical backlog and hence measure the effectiveness. The changeover was more complex than initially estimated. However, all personnel on the installation reported a marked improvement in the physical maintenance position. So HSE chose to actively monitor the circumstances. This monitoring activity has shown that the dutyholder is fully compliant at the end of May 2009 with acceptable levels of backlog and management now able to monitor maintenance performance effectively.

12 Overall, the inspection team were pleased with the progress made to date but recognised that much work, particularly fabric maintenance, was still required.

KP3 Case study 3

13 In February 2009 HSE, during the course of an intervention offshore, reviewed progress on the KP3 elements found to be red and amber during the KP3 programme inspection in 2006. The installation being examined was a FPSO operated by a major oil and gas company.

14 During the KP3 inspection in autumn 2006, HSE found non-compliance in four areas (backlog, corrective maintenance, defined life repairs, and condition of plant) and served a number of Improvement Notices. These areas were examined during the 2009 inspection, where HSE found that backlog of SCEs maintenance had reduced by a factor of nearly 30 and the inspection team considered traffic light marking to be amber. Similarly, the corrective maintenance position had also improved to green. For the case of defined life repairs all temporary repairs on hydrocarbon lines had been removed, moving the traffic light from red to green.

Result summary

KP3 condition	October 2006	February 2009
Red – Non-compliance/ Major failure	4	0 (One red is now amber, the remaining reds are now green.)
Amber – Isolated failure/ System incomplete	5	1 (All previous ambers have become green.)

15 Regarding condition of the plant, the team noted significant improvements in stiffening risers to reduce the possibility failure and hence a major hydrocarbon release. In addition, last year a two-month shutdown of part of the plant took place in order to inspect its hydrocarbon lines. Further, during 2008 and continuing into 2009, much fabric maintenance has been undertaken with major structural repairs scheduled later this year. The lack of bed spaces has presented a major problem in tackling the work.

16 The safety representatives also agreed with the HSE team’s assessment that there had been a fundamental change in management approach/commitment towards asset integrity, although also acknowledging that the post-KP3 inspection pressure from HSE helped with the improvements.

‘We were in poor condition in 2006, but are now improving big time.’
Offshore safety representative

17 In summary, the inspection team considered that there has been very significant work done to improve integrity, but the asset is still in catch-up mode – in the words of the OIM: *‘a journey to get back to basics’*.

KP3 Case study 4

18 As part of HSE’s review of the progress made by industry on the issues highlighted by the 2007 KP3 report, a study was performed on a mature, medium-sized production installation of fixed steel jacket and topsides design in the central North Sea. It had been operated by the same major energy company throughout its lifetime. The case study took place in September 2008 and reviewed onshore and offshore progress on asset integrity issues since the original KP3 inspection on the installation in June 2005.

19 The work featured a review of HSE’s records and previous interventions, onshore meetings between HSE and senior personnel from the company and an inspection of the offshore installation by a team of three HSE inspectors. The review took place during September 2008.

20 HSE examined progress on selected issues highlighted by the June 2005 inspection. All aspects that were re-examined had been allocated traffic light scores of red or amber at that time.

Result summary

KP3 condition	June 2005	February 2009
Red – Non-compliance/ Major failure	1	0 (The single red has become green.)
Amber – Isolated failure/ System incomplete	6	1 (One amber was still amber – condition of plant. All remaining ambers had become green.)

21 In the June 2005 inspection, HSE found legal non-compliance in one area: the integrity of the temporary safe refuge on the installation was compromised. A door to the refuge was incapable of proper operation. HSE served an Improvement Notice because of this. The operator installed pneumatic door opening mechanisms by 20 August 2005.

22 The review inspection in September 2008 re-examined this issue. HSE inspectors found that an external door leading to the platform control room within the temporary safe refuge was consistently open. It was providing no barrier to potential hazards from blast, fire, smoke, gas etc. The door opening/closing mechanism was defective. The fault prevented reliable self-closing of the door. However, no hydrocarbon production was occurring at the time and work to rectify the fault had commenced. Appropriate enforcement action followed and the issue was resolved.

23 Inspectors were satisfied with the progress made on other aspects, including competence, maintenance backlogs and deferrals and the general condition of plant.

24 The installation originally had very limited accommodation available to absorb additional maintenance personnel. Extra living accommodation was added to the platform after installation; but the use of flotel accommodation had made the most recent major contribution to addressing asset integrity issues, improving the condition of the plant and the infrastructure.

KP3 Case study 5

25 As part of HSE's review of the progress made by industry on the issues highlighted by the 2007 KP3 report, a study was performed on a mature, medium-sized production installation of fixed steel jacket and topsides design located in the central North Sea and operated by a variety of energy companies throughout its lifetime. The case study took place in February 2009 and reviewed onshore and offshore progress on asset integrity issues since the original KP3 inspection on the installation in March 2005.

26 The work featured a review of HSE's records and previous interventions, onshore meetings between HSE and senior personnel from the company and an inspection of the offshore installation by a team of three HSE inspectors.

27 HSE examined progress on selected issues highlighted by the March 2005 inspection. All aspects that were re-examined had been allocated traffic light scores of red or amber at that time.

Result summary

KP3 condition	June 2005	February 2009
Red – Non-compliance/ Major failure	4	0 (One red is now amber, the remaining reds are now green.)
Amber – Isolated failure/ System incomplete	4	1 (Three ambers are now green, one amber was not re-examined.)

28 During the March 2005 inspection, HSE found legal non-compliance in ten areas. This gave rise to significant concern and enforcement action. HSE served an Improvement Notice because of a failure to implement an effective system to manage the maintenance of safety-critical elements on the installation. A follow-up inspection was performed in May 2006 and some improvements had occurred by that time.

29 The September 2008 inspection reviewed the KP3 issues. The installation has limited bed space available to accommodate additional maintenance personnel but, despite this fact, HSE inspectors found that a marked general improvement had taken place, with visible progress in all areas. No red items remained and inspectors were satisfied with the positive developments made in other areas.

Case study traffic light results

Case study	Inspection date	Maintenance basics	Communication onshore/offshore	Technician/supervisor competence	Maintenance of SCEs	Supervision	Maintenance recording	Backlogs	Deferrals	Corrective maintenance	Defined life repairs	Maintenance system evaluation	Measuring compliance with performance standards	Measuring quality of maintenance work	Review of ICP recommendations/verification	Reporting to senior management on integrity status	Key indicators for maintenance effectiveness	Physical state of plant	SCE test
1	2005		Amber	Green	Red	Green	Amber	Green	Green	Green	Amber	Green						Amber	Amber
	2009		Green	Green	Green	Green	Amber	Amber	Amber	Green	Green	Green						Green	Green
2	2005		Green	Amber	Red	Green	Green	Amber	Red	Green	Green	Amber						Amber	Green
	2009		Green	Green	Green	Green	Green	Green	Green	Green	Green	Green						Green	Green
3	2005	Green	Green	Green	Green	Amber	Green	Red	Green	Red	Red	Amber						Green	Red
	2009																	Amber	Green
4	2005			Amber				Amber										Amber	Red
	2009			Green				Green										Green	Green
5	2005			Amber	Red	Amber	Green	Red	Red	Red	Amber							Amber	Green
	2009			Green	Green	Green	Green	Green	Green	Green	Green							Green	Green

Annex 2 OSD corrosion management and verification projects

Interim findings from HSE's corrosion management and verification projects

- 1 Two of HSE's current projects continue to highlight that 2007 KP3 programme lessons still needed to be fully adopted by the offshore industry.
- 2 The KP3 report in 2007 identified a number of lessons for the UK offshore industry. These lessons began to emerge as the KP3 initiative progressed, and HSE decided, as the KP3 work concluded in March 2007, to focus some of its work on these issues through two intervention projects, one on corrosion management and the second on verification. The two projects, commenced in 2007, have focused on production installation dutyholders and are due to be completed by March 2010. OSD has recently given feedback about emerging findings to the offshore industry via the Step Change Asset Integrity Steering Group and the O&GUK Health and Safety Forum.

External corrosion management project

- 3 The 2007 KP3 report identified the need for operators to have a better understanding of the potential impact of degraded, non-safety-critical plant and utility systems on safety-critical elements in the event of a major accident. The purpose of this project has therefore been to assess whether dutyholders have effective maintenance management systems for components such as walkways and stairways, piping and pipe supports, cable trays and fittings, bolts, flanges and valves for both safety-critical and non-safety-critical applications. The following summarises the key findings identified since the project commenced.
- 4 **Physical conditions:** The physical condition of installations visited during this project so far vary significantly, from good to poor, with some installations degraded to such an extent that major 'upgrade projects' are either planned or being implemented to address the situation. In three instances, a combination of poor physical condition combined with a failure to demonstrate effective management of the situation has prompted the need to serve Improvement Notices.
- 5 **Performance standards:** At the beginning of the project few of the dutyholders inspected were using measurable acceptance criteria for external corrosion of items such as gratings, bolts, cable trays and valves, and continued to rely upon subjective decisions by inspectors. However, since that time the Energy Institute, commissioned by Oil & Gas UK and, in conjunction with the offshore industry's Corrosion Management Working Group, has now published its *Guidance for Corrosion Management in Oil and Gas Production and Processing* (see Further reading). As this document now provides appropriate standards, OSD will be expecting it to be widely adopted.
- 6 **Corrosion strategies:** It is encouraging that all the dutyholders inspected so far have corrosion strategies in place. However, these have tended to focus on safety-critical plant and equipment with very few effectively recognising and addressing safety-related plant and equipment. Sometimes this was exacerbated by poorly defined roles and responsibilities which failed to clearly identify the individuals responsible for maintenance of safety-related plant and equipment.

7 **Maintenance plans:** The general focus of maintenance plans continues to be on safety-critical plant and equipment, with variable dutyholder approaches to safety-related plant and equipment, sometimes only addressing this issue at a local level with low priority.

8 **Independent audits:** The majority of dutyholders visited had not undertaken independent audits of their corrosion management system. HSE considers that such audits should cover both the safety-critical and safety-related aspects to ensure the full and effective integration of both into the corrosion management system.

Verification project

9 The Offshore Safety Case Regulations require operators of offshore installations to have their major hazard risk control measures examined by an Independent Competent Person (ICP), eg BV, DNV, Lloyds etc, to verify that they are suitable and continue to be effective.

10 The KP3 programme highlighted the need for operators to improve how they interact with their verifiers and use their findings, as their collective skills provided an important aid to integrity improvement and knowledge. HSE's verification project has therefore assessed dutyholder statutory compliance with verification-related legislation and explored how well the verification schemes are being integrated into dutyholder safety management systems (SMS) and how the scheme outputs are being used to aid cross-company learning and improvement.

11 The project has found reasonable compliance so far, particularly in relation to dutyholders having formal verification schemes and appointed independent competent persons. It is also encouraging that the industry has used the effective closing out of verification findings as one of its cross-industry leading key performance indicators.

12 However, the main area of concern is the poor implementation of the KP3 report's recommendation '*to make better use of the ICPs by fully integrating independent verification activities into dutyholders' SMS*'. In not doing so, the intelligence and professionalism provided by the existing work of their ICPs is not being used to the optimum to gain maximum benefits. It could provide for more effective delivery of maintenance if the ICP work was better integrated, but the project continues to find a number of negative indicators that prevent this, such as those set out below.

13 **Insufficient authority to resolve verification issues:** Some verification schemes are being 'managed' on a day-to-day basis by people who do not have the necessary authority to ensure that matters are addressed effectively. This level of authority is a clear indication of how important dutyholders consider the independent verification process. This also reduces the likelihood of developing a continuous improvement and effective cross-company learning culture.

14 **Limited root cause analysis of ICP findings:** Issues highlighted by independent verifiers provide clear 'near-miss' evidence about safety-critical elements offshore, yet in some cases the matters are simply rectified without sufficient analysis to find out and then fix the root causes of the problems, thus learning from failure.

15 **Limited auditing of verification schemes:** As a vital part of the management of offshore safety-critical elements, we would expect dutyholder verification systems to receive an appropriate level of auditing activity, yet the industry focus has in general been on auditing the ICP management system rather than its own verification scheme. This again limits opportunities for continuous improvement and cross-company learning.

16 **Poor verification performance standards:** OSD continues to find safety-critical element performance standards which could not be measured effectively during verification activity. In some instances they may be poorly quantified, in others they are so broad that they cannot be verified by individuals. As the performance of safety-critical equipment should be a key part of management process safety KPIs, this calls into question whether in some companies there is still a thorough understanding of the importance of such management information to provide leadership in major hazard risk control.

Oil & Gas UK response

17 Oil & Gas UK has responded formally to some of the emerging findings which were raised by OSD. It recognised the importance of corrosion management and verification. This is underlined by the Energy Institute publications *Guidance for Corrosion Management in Oil and Gas Production and Processing* and *Corrosion Threats Handbook*. Both Oil & Gas UK and HSE were involved in the development of these documents (see Further reading).

18 Oil & Gas UK also confirmed that it had been active in highlighting the importance for operators to involve their independent verification bodies (IVBs). This was addressed in the asset integrity workshops for senior managers held in 2008 and requesting that operators ask their IVBs to perform a check on asset integrity status for the purpose of this review.

The way forward

19 Both these projects will run during 2009/10, and HSE intends to cover all UK production operators before the projects are completed. In addition, OSD will continue to work with the offshore industry on these vital issues, for instance via the Step Change Asset Integrity Steering Group and the AISC Corrosion Management Work Group. Furthermore, OSD also highlights the following areas worthy of ongoing effort.

20 **Failure and incident investigation:** Few dutyholders effectively investigate to determine the root cause of failures of safety-related plant and equipment. One reason for this may be the complexity of the techniques currently used. The AISC Corrosion Management Working Group, in its *Guidance for Corrosion Management in Oil and Gas Production and Processing*, has provided a simplified technique. OSD now expects industry to adopt or use this or equivalents and will be looking for evidence of this during the remaining inspections in this project.

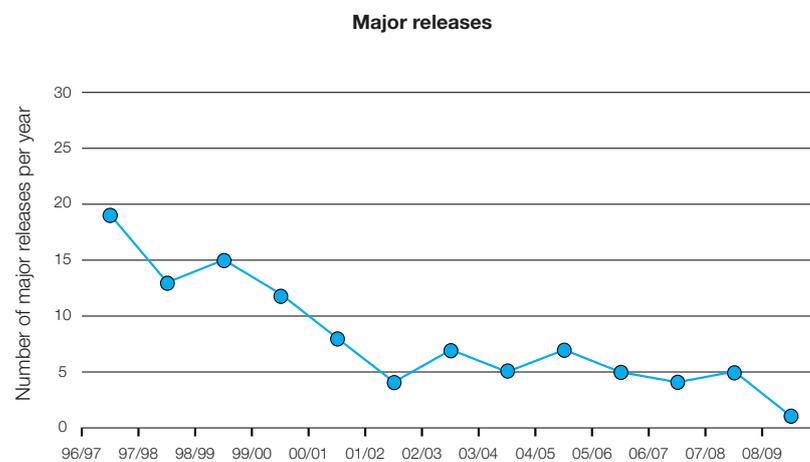
21 **Key performance indicators (KPIs):** A finding of the corrosion project is that the management of corrosion could be more effective by the use of further KPIs, particularly for safety-related plant and equipment. The *Guidance for Corrosion Management in Oil and Gas Production and Processing* provides a number of appropriate KPIs and the Corrosion Management Work Group is currently developing further industry guidance to supplement this information.

22 **Offshore workforce awareness and participation:** Although most dutyholders encourage offshore workers to report corrosion concerns through their internal reporting arrangements, few are actively carrying out corrosion awareness programmes for them.

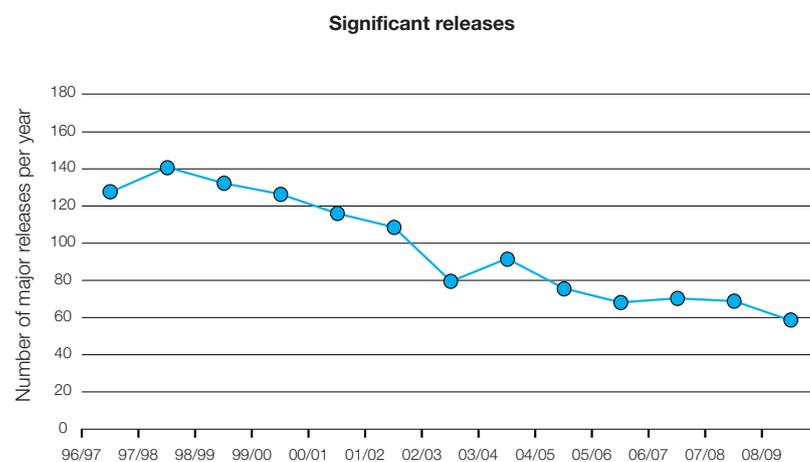
Annex 3 Hydrocarbon release data

1 Since 1996, HSE has been collaborating with the offshore industry to collect data on hydrocarbon releases. These releases have been categorised into three sizes: major, significant and minor. Minor releases are unlikely to cause significant escalation or cause a significant hazard if ignited, whereas the Piper Alpha's initial release would be classified as significant. It is believed that the state of asset integrity influences the frequency of hydrocarbon releases, and the figures below show significant and major releases for the time period 1996 to 2009.

2 The first chart shows major hydrocarbon releases over the last 13 years. It can be seen that during the period from 2001 to 2007 the major release rate appears to have plateaued. However, in 2008/09 only one major release occurred.



3 The second chart shows that over the 13 years for which information on releases has been collected, the number of significant hydrocarbon releases per year have been falling. It appears that the release rate 'plateaued' between 2005 and 2008. However, the number of significant releases did fall in the year 2008/2009.



4 Any reductions in major and significant hydrocarbon releases in recent years are welcome but their significance needs to be viewed with some caution. Given the relatively small numbers involved, the reductions in 2008/09 cannot be said to be statistically significant at the 90% confidence level. While initial indications are positive, it is therefore too early to conclude that the focus on asset integrity or other initiatives in the offshore industry has resulted in a sustained reduction in accidental hydrocarbon release rates.

Annex 4 Asset Integrity: An industry progress report by Oil & Gas UK



1 Executive summary

This report describes industry progress in response to the issues identified in the HSE's Key Programme 3 Asset Integrity Programme Report.

There has been substantial asset integrity investment over the last 4 years - over £1 billion per year has been spent. This has resulted in significant improvements in physical integrity; and considerable progress in effective asset integrity management, awareness and performance. The continuing need for effective asset integrity management throughout the remaining life of the oil and gas industry is recognised.

Our report is drawn from

- advice received from operating companies, supported by independent verifiers, of the current asset integrity status of installations inspected as part of the KP3 project; and,
- additional confirmatory cross checks undertaken by a specialist asset integrity consultant on a representative sample of operating companies.

Our analysis of operator responses to the current asset integrity status request shows that management system compliance has increased from 60% to 80% (with only 1% "red light" findings); while physical state of plant compliance has improved from 40% to over 70% (with 4% "red light" findings remaining). Remaining red light issues are being actively managed to resolution by summer 2009. Asset integrity management systems now show that

- Management knowledge, understanding, awareness, oversight and engagement on asset integrity and process safety has been improved and enhanced from Board level down. This includes the concept of barriers in major hazard risk control and the need for robust arrangements, including technically competent oversight, for safety-critical system management.
- Board level leadership has been engaged through an industry-developed interactive Asset Integrity Workshop for managing directors and their direct reports – a workshop already recognised as worldwide best practice. During 2008, 25 such workshops were held, attended by over 400 senior managers.
- Sophisticated performance monitoring arrangements are in place using consistent and measurable indicators of performance for safety-critical systems. Business leaders are now better informed and equipped to act on the information received

and hence to prioritise future action. As work on safety-critical plant and equipment is being completed, the priority for addressing fabric maintenance is rising, with most companies identifying that they will be involved in significant fabric maintenance and corrosion management programmes throughout 2009. Safety-critical maintenance backlogs have been reduced and deferral arrangements are better controlled.

- Sharing and learning is more widespread leading to a reduction in variation between assets. The quality and visibility of maintenance records is improving thus enhancing knowledge and understanding. Closer working relationships are developing between verifiers and companies, though some work remains to maximise the value of this relationship. The industry has also developed and published a range of comprehensive asset integrity guides, run numerous workshops and seminars and developed a sharing website, which is now widely used.
- Engagement of the whole workforce concerning asset integrity has increased at all levels – from CEO and the senior management team, through asset and installation management, through the engineering and technical authorities, and through the offshore workers generally. Companies have undertaken asset integrity, process safety and corrosion related roll out presentations, seminars, briefings etc to staff and contract workers.
- The important strategic role for Engineering and Technical Authorities in decision making, particularly in relation to continuing operations with degraded safety-critical plant and equipment integrity and in the maintenance deferral process, has been reinforced and re-embedded.
- Many of the lessons that have been learned and applied in the UK are already being applied elsewhere in the world through seminars, workshops and publications, as worldwide best practice. Over 1000 copies of the lessons from Piper Alpha DVD, produced by Oil & Gas UK in 2008, have been distributed worldwide
- The Asset Integrity Steering Group continues to work closely with HSE to secure lasting improvement in the management of asset integrity. The industry made a public commitment in March 2009 to continued asset integrity investment throughout the current economic downturn.

2 Background

This report has been produced in response to a request from HSE for an industry contribution to the report commissioned by James Purnell Secretary of State for Work and Pensions, on the progress made by the offshore industry in response to the issues identified in the KP3 report published in October 2007. In addition the report provides an opportunity to share ideas more widely across the offshore industry.

To compile the data presented here, each operating company was requested to check the current asset integrity status for installations visited as part of the HSE KP3 inspection programme against the traffic lights given for their installations on the HSE matrix. Companies were asked to focus attention on those matters that gave rise to 'red' and 'amber' issues on their installations and to sample a selection of 'green' findings, to confirm their current status.

Companies were requested to ask their independent verification body to comment on the current status of each KP3 element based on the verifier's current records. In addition Oil & Gas UK employed a specialist asset integrity consultant to undertake additional cross checks on a representative sample of several operating companies.

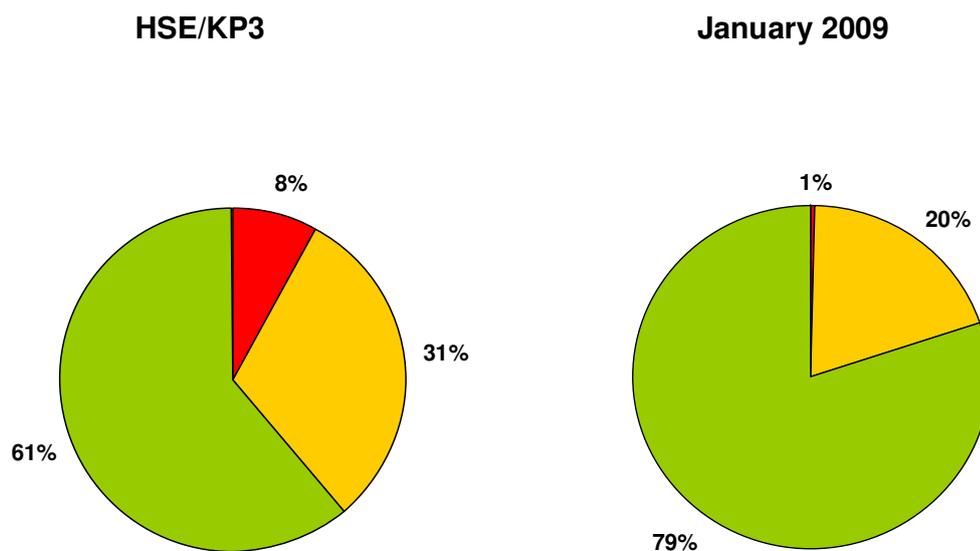
3 Asset Integrity/Process Safety Management Systems

The KP3 programme, together with other events such as Texas City and the longer term view of the potential to extend the sustainable productive life of the North Sea, acted as a catalyst for driving the asset integrity management agenda to a higher level and has resulted in a better coordinated approach. Cooperative and constructive working with HSE throughout the development and implementation of the KP3 programme resulted in significant improvements in physical integrity, together with considerable progress in effective asset integrity management, awareness and performance. Cross-industry acceptance of the need to raise the profile of effective asset integrity led to close scrutiny of existing maintenance management systems that had in some cases developed piecemeal, or where differences existed primarily as a result of mergers and acquisitions. The result was recognition of a need for change as these systems were a barrier to effective and sustainable asset integrity management.

Operating companies have reviewed, and where necessary made changes to, their maintenance management systems to provide much greater clarity for those involved in

ensuring that safety-critical plant and equipment (the barriers) is fit-for-purpose and will work on demand. This has involved training at all levels within the organisation (staff and contractors) from Board level down; and the consequent requirement to keep the management team better informed through meaningful indicators of performance and progress. Most operators have taken on additional staff, or reallocated existing resources with the specific role of targeting and improving the delivery of asset integrity management. The importance and added value arising from the involvement of key staff (Technical Authorities) in decision-making concerning degraded safety-critical elements (SCE), or the deferral process has been well recognised and accepted. And also the need for performance standards to be tested and confirmed for SCE as part of the maintenance routine, and the importance of keeping and maintaining work order history records.

3. Management System Traffic Lights



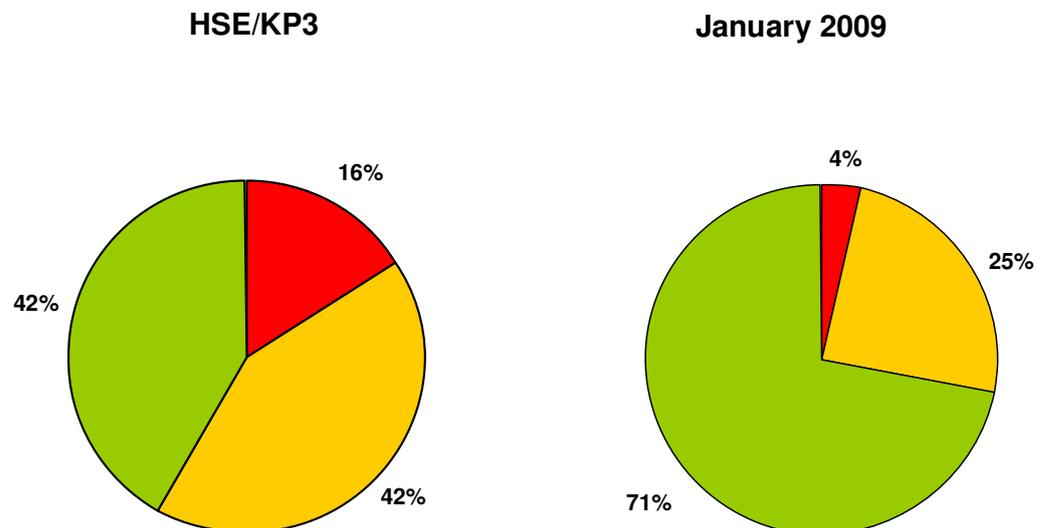
Note that the pie chart on the right represents the situation that existed at the end of January 2009. The significance of the remaining maintenance management 'red light' issues are fully recognised by the companies concerned and are being actively managed; interim mitigation measures are in place in all cases. All work relating to these issues is scheduled for completion by June 2009.

4 Physical State of Plant

The physical state of safety-critical plant has improved significantly over the last few years – as confirmed by the verification body and asset integrity specialist: while improvement in non-safety-critical plant and fabric maintenance has been less marked, there is nonetheless evidence to show that as work on safety-critical plant and equipment is being completed, the priority for addressing fabric maintenance is rising with examples of painting programmes, cable tray, deck grating and handrail repair or replacement etc on the increase. Some companies have now established key performance indicators for tracking fabric maintenance thereby ensuring that there is an increased focus on the execution of fabric repair and maintenance work scopes. Fabric maintenance on normally unattended installations can be particularly challenging – ‘walk to work’ jack-up installations or vessels have been and are being used in an attempt to expedite the liquidation of this work. Most companies have identified that they will be involved in significant fabric maintenance/corrosion management programmes through 2009. Several companies have used, or have plans to use a flotel for extended periods to support this work. One company used one of its installations to pilot a new fabric maintenance strategy – this strategy is now to be implemented on its other installations during 2009.

In 2007 Oil & Gas UK set up a Corrosion Management Work Group in conjunction with HSE and the verification bodies and assisted by the Energy Institute. The work group brought together a number of experienced corrosion management specialists. They produced a comprehensive corrosion management guide covering all the various types of corrosion likely to be encountered on offshore installations. A corrosion threats handbook was also produced to raise awareness of corrosion issues among those responsible for asset integrity matters, but who were not themselves corrosion specialists. The corrosion guide and the threats handbook have been used extensively in training programmes onshore and offshore. Over 700 copies of the threats handbook were distributed free to member companies. Further work is currently taking place to develop a guide for key performance indicators for the management of external corrosion.

4. Physical State of Plant Traffic Lights



Note that the pie chart on the right represents the situation that existed at the end of January 2009. Over 55% of remaining red light plant-related issues have been identified through rigorous operator self assessment processes that took place following the completion of KP3 inspection programme. There is a general consensus among those with remaining 'red light' issues that they will continue to be considered 'red' until work has been fully completed and despite having already made substantial progress. NB The specialist asset integrity consultant visited some of the companies with remaining red light issues and commented as follows - *"For most companies the self-evaluation tended to be made conservatively, indeed some had awarded themselves a more severe rating than would be expected from the Regulator"*.

There is every indication that all the remaining plant-related 'red light' issues will have been fully resolved by summer 2009.

5 Matters giving “significant cause for concern”

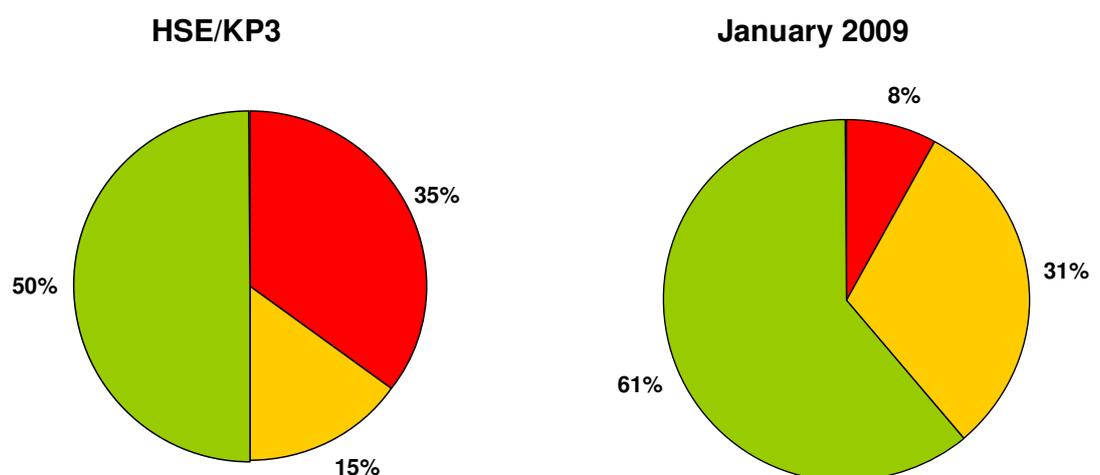
The KP3 report identified three safety-critical elements as giving ‘significant cause for concern’ across the whole industry; these were TR HVAC, deluge and TR doors.

5.1 TR HVAC

A ‘good practice’ guide for maintenance and testing HVAC dampers was developed and published in 2006 by an industry/HSE workgroup. This, together with in-company initiatives and through increased training and awareness of appropriate technicians, has resulted in much enhanced understanding of HVAC systems by offshore personnel. Some installation operators employ full-time HVAC technicians.

A substantial and sustained effort has been put into addressing the reliability and integrity of HVAC damper systems. For some operators the concerns voiced in the KP3 report led to a critical review of the whole of the temporary refuge safety-critical systems and their performance standards. There has generally been an improvement in test procedures (including ‘full loop’ testing) together with an increase in the test frequencies (frequently in conjunction with the independent verifier) HVAC data recording has also been improved. Remaining red light issues are being actively managed to resolution before summer 2009.

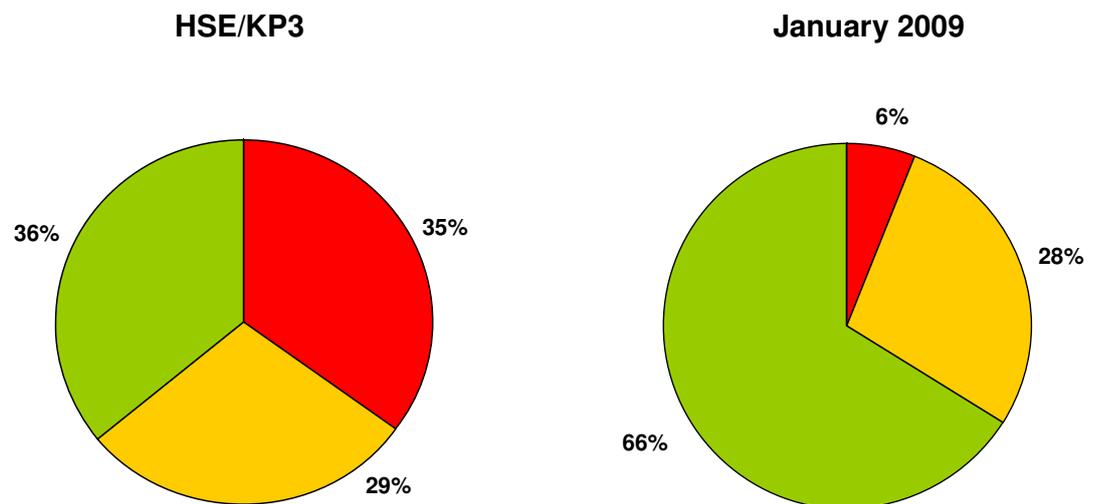
5.1 TR HVAC Traffic Lights



5.2 Deluge

Remedial action has been taken in all cases to address the types of problems identified in the KP3 report. Most operators, working closely with their independent verifier, have adopted a systematic approach to test, identify and resolve issues. One company is currently going through a deluge system design reappraisal in the light of current knowledge (as suggested in the KP3 report) – though this was after addressing the more immediate deluge functionality issues. On one installation the operator has replaced part of its deluge system with oscillating fire monitors following reappraisal of deluge needs. Remaining red light issues are being actively managed to resolution before summer 2009.

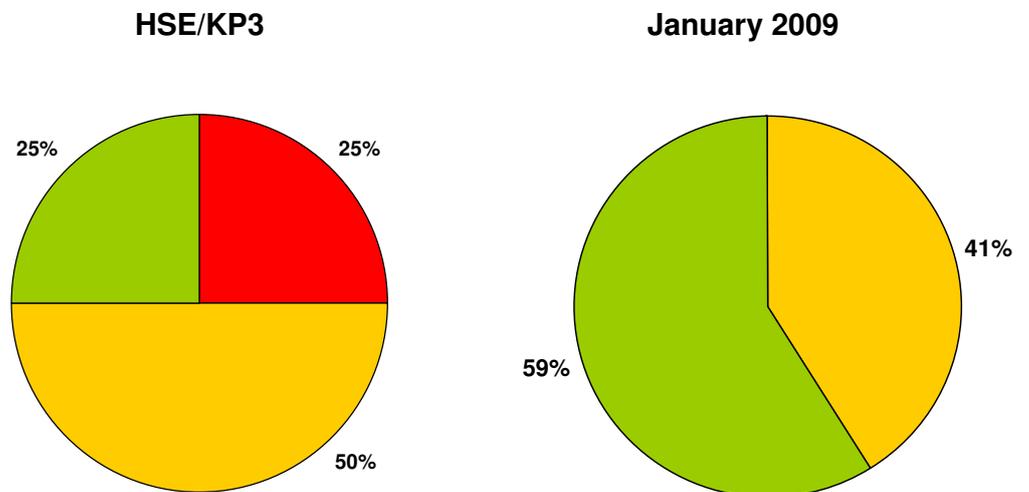
5.2 Deluge Traffic Lights



5.3 TR Doors

The need to ensure that TR doors continue to be effective in sealing the temporary refuge in the event of an emergency is clear. A number of TR doors have now been replaced, latches repaired and many door seals renewed. Work is ongoing at some installations, but no 'red light' issues remain.

5.3 TR Doors Traffic Lights



6 Dealing with the Underlying Issues

The KP3 report identified a number of underlying issues and common failures that were contributing to poor asset integrity management

6.1 Leadership

The level of understanding or appreciation by senior management of major hazard risk control and in particular the major hazard risks posed by their own operations has been enhanced through focussed Asset Integrity Workshops. Incidents such as Texas City provided another driver with individual company programmes flowing from their review of the lessons from the Baker Report. The significant business risks that arise from operating an installation with degraded safety systems are now more widely understood by senior management teams than they have ever been previously. Business leaders are now better informed on a routine basis through receipt of understandable data from sophisticated performance monitoring arrangements. The enhanced visibility of asset integrity status is enabling business leaders to make informed decisions about resource prioritisation for their assets.

An example of safety leadership within the industry is that once a year the managing directors from over 80 companies get together for a full day to discuss safety issues. Following a request from the managing directors at the May 2007 safety leadership day, Step Change in Safety developed an Asset Integrity Workshop aimed at raising senior management awareness and understanding of asset integrity management. During 2008 a total of 25 workshops were delivered, attended by over 400 senior managers from operating companies and contractors.

Industry leaders are also in agreement that asset integrity and process safety is, and will remain, a priority for foreseeable future. At the annual managing directors' Safety Leadership Day on Thursday, 19 March 2009 (attended by over 80 MDs), a commitment was made that there would be continued investment in safety, asset integrity and skills; the following joint statement was published by Oil & Gas UK and Step Change in Safety on behalf of the industry:

“Good practice in safety and sustained investment in developing the skills of the workforce always make the best business sense. This is even more crucial when business decisions are difficult. There will therefore be no change in our resolve to help the UK offshore oil and gas industry to become the global leader in safety performance.

Our goal continues to be to make the UK the safest place to work in the worldwide oil and gas industry and a recognisable global centre of excellence in workforce training and development.

This industry will continue to invest directly in safety, asset integrity, skills and training throughout the economic cycle and we will support Step Change in Safety and OPITO The Oil & Gas Academy to ensure safety continues to be our top priority. We can do no less”.

6.2 The Engineering Function

The Engineering and Technical Authorities in a company act as a backstop against continuing operations with degraded safety-critical equipment – this is an important strategic role, the importance of which has been recognised again and re-embedded within operating companies, and their resources significantly increased. In March 2008 an “Offshore Industry Engineering Function Workshop” was held; there was a high degree of engagement by Engineering and Technical Authorities from operating companies and contractors (including fabric maintenance contractors). The objectives of the workshop were to raise awareness of HSE concerns on asset integrity with a particular focus on the role and effectiveness of the engineering function and to develop a broad industry consensus on the way forward. Following the workshop industry senior leaders were provided directly with important feedback from the event by personal letter from the Asset Integrity Steering Group Chairman. Key messages from this event were built into the Asset Integrity Workshops for senior industry leaders.

6.3 Skill shortage

The Industry recognises the need to recruit, develop and retain a highly skilled workforce and the important linkage between skills, competence and safety performance.

Since the publication of the KP3 report a new Skills Academy has been established for the industry. OPITO - The Oil and Gas Academy was created in December 2007. Completely funded and directed by all sections of the industry, including the Trade Unions, the Academy is intended to provide a more focused approach to ensuring the availability of a safe, skilled and effective workforce now and into the future. HSE are granted observer status on the Board of the Academy.

In the first year of operation the academy has taken a number of new initiatives and has continued to operate the Technician Training Scheme in conjunction with ECITB. This is the most successful modern apprenticeship scheme anywhere in the UK. At the end of 2008 there were 323 OPITO managed young people in the scheme which provides a feed of around 100 high quality new technicians and process operators into the industry each year. The industry has publicly committed to recruit a further tranche of more than 100 apprentices in 2009, despite the present economic downturn.

The Academy continues to develop and update industry safety standards, including those supporting the new MISTS training referred to elsewhere, as well as working with schools, colleges and Universities on a number of projects which promote the study of science and engineering and the oil and gas industry as an attractive career choice.

Oil & Gas UK's published analysis of the industry's demographics shows that the true picture of the age profile within the industry is actually much better than previously believed and there are increasingly positive trends which point to the attraction of a young, highly skilled and diverse workforce.

6.4 Learning and communication

Efforts to ensure that the whole workforce (from CEO down) understand the major hazard control loop, the barriers in place to prevent a major accident and the role that everyone can play in ensuring their integrity have been widespread. Within companies an important outcome has been greater consistency between assets and more consistent KPI reporting to senior management teams leading to analytical evaluation of inspection and maintenance findings.

Specific areas of 'good practice' have been shared more widely through the Step Change Asset Integrity website and through participation in a number of forums, workshops and seminars; and also by contributing to integrity related guidance.

2008 marked the 20th anniversary of the Piper Alpha disaster. Many of the younger generation in the industry were either not born or were too young to remember the disaster. During 2008 Oil & Gas UK organised a number of events to ensure the lessons learned from the disaster continue to be remembered. These included

- Lessons from Piper Alpha education presentations – four educational events were held for young people entering or new to the offshore industry. Presentations were

held for young technicians and for graduate level entrants to the industry. The presentations covered the disaster itself, key lessons and their relevance to the responsibility everyone has for offshore safety today.

- Lessons from Piper Alpha DVD – Building on the success of the educational presentations, Oil & Gas UK produced a DVD so that the key messages and lessons can be shared across the industry. The DVD has now been circulated widely across the UK oil and gas industry; worldwide over 1000 copies have been distributed to more than 16 countries.
- Managing directors' presentations – at the May 2008 Managing directors' day Oil & Gas UK gave a Piper Alpha presentation to remind MDs of the importance of leadership and maintaining corporate memory to ensure the lessons from the disaster continue to be learned and acted upon.
- MP/MSP briefings 17th/18th June 2008 – Oil & Gas UK gave briefings to MPs and MSPs in London and Edinburgh on the Piper Alpha disaster, its aftermath, how far the industry has progressed since then and how the key lessons continue to be reinforced

A newly developed Minimum Industry Safety Training Standard was introduced by Step Change in Safety from April 2009 to raise basic safety knowledge and awareness throughout the UK offshore oil and gas industry and to apply best practice training at a consistent level in safety critical areas. This mandatory training is aimed at both new starts to the industry and also for refreshing experienced personnel on a 4-year cycle. The 2-day OPITO approved training course is made up from nine elements. One of the nine elements is a 2-hour module with a focus on process safety and asset integrity. A reminder of Piper Alpha is included in the form of a short DVD clip.

7 An independent review of industry progress

To give further confidence that the industry's KP3 progress "self-assessment" was an accurate reflection of the true picture, a specialist asset integrity consultant was employed to undertake a cross check on a sample of the company responses. The purpose of the cross check was to provide a robust, balanced and independent appraisal of the progress made by the UK offshore industry in addressing the issues raised by HSE's Asset Integrity Report (KP3). Seven companies participated in the cross check on the basis that they were representative of large, medium and small operators with a range of installation types spread throughout the UKCS. The consultant chosen for this work had previously worked

for HSE for a number of years, and latterly for two years as KP3 Asset Integrity Programme project manager.

The yardstick used was the original ratings determined at HSE KP3 inspections, compared with the outputs from the Oil & Gas UK self-evaluation exercise. The self-awarded ratings and the appropriateness of the corrective measures adopted by each company were tested for validity and effectiveness. A series of interviews were conducted with key company personnel in accordance with a structured format to substantiate (on a sample basis) the veracity of the self-evaluation of asset integrity performance submitted to Oil & Gas UK at the end of January 2009. The interview structure was devised to capture specific actions taken by companies in addressing noted deficiencies highlighted in the original KP3 programme. In each case all original 'red light' issues were checked, most 'ambers' and a few 'greens'.

The general conclusions from the independent KP3 Cross Check report are included verbatim.

There can be no doubt that all companies who took part in this process have made substantial progress in asset integrity performance. There is also no doubt that the companies have been steered by the lessons learned during KP3 and the emphatic messages in the final KP3 report. In addition, some learnings resulted from extrinsic sources and events, such as the Texas City disaster and subsequent Baker Report.

The concentration of effort by duty holders has been on the "red" issues, the majority of which have been closed out. But at the same time, the original "amber" scores have been or are being dealt with, often the subject of more wide-ranging solutions and adaptations of the safety management systems. Many companies, for example, have chosen to reorganise their functional structure to be better placed to address the range of issues identified during KP3.

In the self-evaluation process, some companies have been conservative in assessing themselves against the traffic light system. This should not eclipse the considerable progress made within these template areas.

There are still remaining areas that need attention. For example, despite the considerable attention given to improvements in backlogs, supervision, competence and the maintenance of safety-critical elements, some companies still have much work to do –

however, the planning mechanisms and investment that underpin such work are largely in place and progress toward full compliance as represented by a “green” KP3 rating should not be far away.

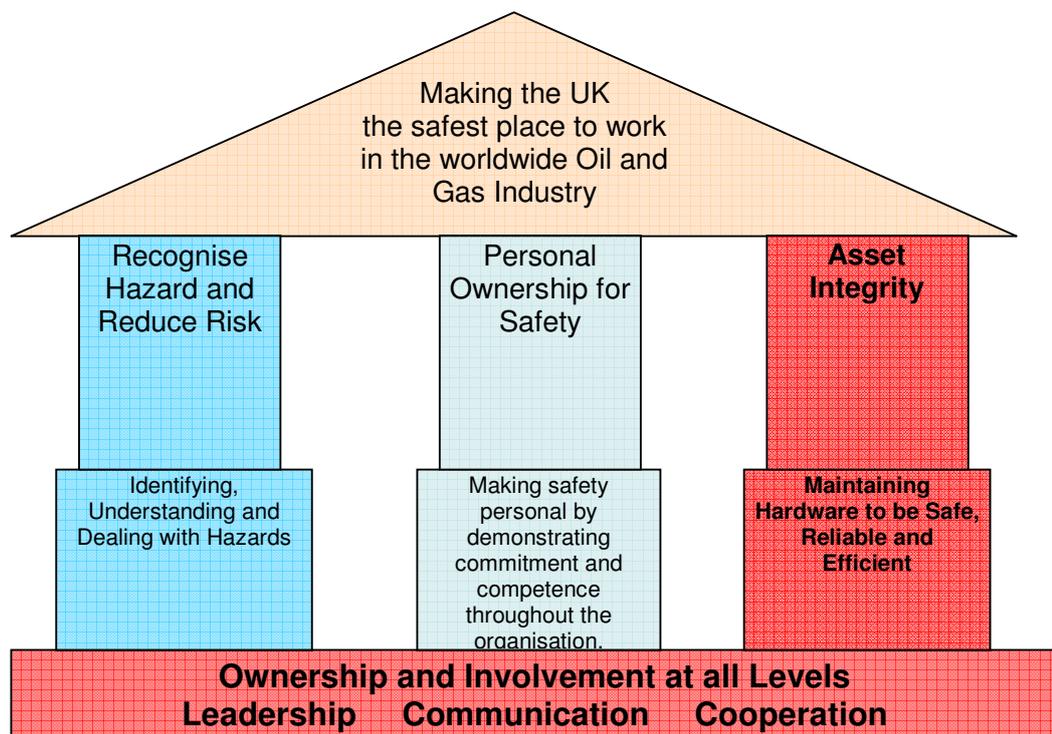
8 Workforce engagement

Workforce engagement on asset integrity has increased at all levels – from CEO and the senior management team, through asset and installation management, through the engineering and technical authorities, and through the offshore workers generally. Most companies have undertaken a series of asset integrity, process safety and corrosion related roll out presentations to staff and workers. Examples of additional workforce engagement activities include

- Technical authorities visit the platform and discuss asset integrity issues
- Technician competence training on small bore tubing assembly
- Company wide safety initiative on personal responsibility for safety
- Focussed asset integrity training for middle managers
- Participation of offshore workers in fabric maintenance inspections, operational risk assessments and diagonal slice maintenance workshops
- Corrosion awareness campaign following publication of the Oil & Gas UK Corrosion Handbook
- Integrity Engineer presentations on safety-critical equipment to the offshore workforce
- Engagement with safety representatives through facilitated offsite workshops to address barriers to safe working and to seek input to the 2009 Safety Improvement Plan
- Maintenance and Integrity Forum with workshops, lunch and learn, bulletins and offshore visits
- Key members of the offshore workforce attend quarterly management review of asset integrity
- Major accident hazard awareness workshops for managers and supervisors at Spadeadam to observe live explosions under controlled conditions
- Programme to “re-energise” Safety Representatives through a bespoke training package
- TR HVAC awareness training

9 Step Change in Safety /Oil & Gas UK response to the asset integrity challenge

The industry response to the challenge of asset integrity management has been ongoing for several years, commencing in the late 1990's as a result of concerns relating to hydrocarbon releases. Throughout the last decade the industry has worked closely and fruitfully in partnership with the Regulator and as a result has developed a considerable body of asset integrity related guidance, much of which is now being replicated world wide through organisations such as the International Association of Oil and Gas Producers (OGP).



In 2004 'Asset Integrity' became the third pillar in the Step Change in Safety temple model strategy to make the UK the safest place to work in the worldwide oil and gas industry. The industry set up an Installation Integrity Work Group as a direct response to the start of the KP3 programme. The group involved over 30 operator and contractor companies together with representatives from the verification bodies. Among other matters the group developed an Asset Integrity toolkit containing comprehensive guidance with reference to good industry practice documents for effective safety-critical plant and equipment maintenance management.

Following completion of this work and in recognition that sufficient tools were now available a high level strategic group was set up in 2007 – the Asset Integrity Steering Group. The

remit of the group is to continue to work with HSE to secure continuing improvement in the management of asset integrity through the following priority areas

- Improved education and training on the management systems for ensuring asset integrity;
- More effective sharing of HSE and industry good practices and lessons learned, together with better communication of the good work and investment that is already being made to preserve asset integrity and safely and extend the life of upstream oil and gas facilities;
- A review of existing Industry Asset Integrity Key Performance Indicators; and,
- Engagement with Engineering and Technical Authorities.

The AISG currently has two subgroups reporting to it, one on cross-industry key performance indicators and the other examining the underlying causes of hydrocarbon leakage with a view to identifying strategies for better preventing them.

Three cross-industry key performance indicators have been developed with a view to being able to demonstrate whole industry progress in effective asset integrity management through these metrics. The three performance indicators are

- KPI 1 - Major and significant hydrocarbon releases
- KPI 2 - Verification non-conformity
- KPI 3 - Safety-critical maintenance backlog

HSE has kept data on reportable hydrocarbon releases for many years. Release rates plateaued for the last 3 years after a number of years when release rates halved; however there are signs of further improvement with no major hydrocarbon releases reported for the last 12 months (for the first time since Piper Alpha). Consistent data for the other two performance indicators (KPI 2 and KPI 3) has only been available since the end of 2007. Detailed analysis is only just beginning to be possible now that more data is available so it would be premature to identify any trends at this time. Nevertheless the data begins to look promising as potential indicators of industry performance and progress as a whole.

9.1 Leadership

An “Asset Integrity Workshop” was developed by the Step Change Asset Integrity Steering Group aimed at raising senior management awareness and understanding of asset integrity management. During 2008 a total of 25 workshops, involving over 400 senior managers,

were delivered to most of the production operation duty holders and key contracting companies.

The workshop provided a one day interactive work session for MDs and direct reports to ensure a good understanding of safety cases, verification of safety critical elements, associated performance standards, Step Change toolkits, guidance etc. It was a unique opportunity for the industry leadership to work with their teams in a very interactive way to develop a better common understanding of what Asset Integrity is all about. It also enabled the team to collectively agree action plans to improve asset integrity management at all levels. The workshop is now recognised as world class best practice. Workshops have been “exported” with several taking place in the Middle East and have even reached the attention of the Australian Regulator who considers it to be an example of world class best practice.

There will be an ongoing programme of Asset Integrity Workshops in 2009 to cover remaining operators. In addition there has been a demand for a repackaging of the course with the aim of targeting and informing senior middle managers; this is currently under development.

9.2 Asset Integrity Website

In January 2008, Step Change upgraded its website to provide a dedicated area for more effective sharing of good practices and lessons learned within asset integrity. When a company or individual identifies an item worthy of sharing, a brief summary is sent to Step Change and it is posted on the website. The website automatically sends alerts all registered MDs of user companies with an interest in asset integrity.

9.3 Workshops and seminars

Throughout the KP3 programme Oil & Gas UK (then UKOOA) worked closely with HSE to raise industry awareness and improve communication and understanding. A number of well-attended seminars and workshops have been held during and after the completion of the programme. These have included

- Maintenance workshop 2004
- Asset integrity seminar 2005
- Asset Integrity seminar 2006
- Learning from major Accidents 2007
- Asset Integrity Key Performance Indicators Briefing 2009

- Process Safety Seminar (planned for July 2009)

9.4 Guidance

Various subgroups have produced comprehensive asset integrity related guidance as follows:

- *Guidelines for the Management of Safety-critical elements* – to provide guidance for the effective management of safety-critical systems (ISBN 978 0 85293 462 3)
- *Guidelines for the Management of the Integrity of Bolted Joints for Pressurised Systems* – leaking joints are a main cause of hydrocarbon releases on UKCS. The guide provides a framework for management of bolted joints and assists companies to develop their own procedures (ISBN 978 0 85293 461 6)
- *Guidelines for the Management, Design, Installations and maintenance of Small Bore Tubing Systems* – to provide a reference framework of management and technical controls and procedures necessary to ensure the continuing integrity of small bore tubing systems (ISBN 0 85293 275 8)
- *Testing regime for offshore TR-HVAC fire dampers & TR pressurisation requirements* – HSE information sheet 1/2006 – produced in conjunction with HSE
- *Hydrocarbon Release Reduction Toolkit* – provides a central reference of good practices for managers, supervisors and the workforce.(currently being revised/updated) (ISBN: 1 903003 34 9)
- *Asset Integrity Toolkit* – provides a practical framework of “observed good practice” checklists and tools to facilitate and enable review of asset integrity management
- *Guidance for corrosion management in oil and gas producing and processing* – a good practice guide for the corrosion specialist (ISBN 978 0 85293 497 5)
- *Corrosion Threats Handbook* – a guide for integrity managers and the workforce more generally, especially those less familiar with corrosion matters (ISBN 978 0 85293 496 8)

10 **Conclusions**

This report demonstrates that substantial progress has been made in effective asset integrity management since publication of the KP3 report in October 2007. In fact cross-industry efforts have been sustained and continuing since 2004. There has been considerable investment in hardware, management systems and the resources available; however it is recognised that this is not a task that will ever be “finished”, and continuing investment in effective asset integrity management is something that will always be required during the remaining life of the North Sea oil and gas industry.

Annex 5 KP3 Review project report on workforce involvement

**The Offshore Industry Advisory Committee (OIAC)
Workforce Involvement Group**

July 2009

The OIAC Workforce Involvement Group

Julie Voce, Chair – HSE
Mikey Craig – Workforce Representative
Fraser Easton – HSE Offshore Regulatory Inspector
Willie Gibson – Workforce Representative
Les Larchet – Workforce Representative
Phil Ley – OCA
Craig McDermid – Workforce Representative
Alistair McGilvray – Workforce Representative
Jake Molloy – RMT
Dave Nicholls – Step Change
Robert Paterson – Oil & Gas UK
John Skeggs – IADC, North Sea Chapter
John Taylor – UNITE
Duncan Tee – Workforce Representative

Executive summary

The terms of reference for the Workforce Involvement Group's (WIG's) role in the KP3 Review required the group to examine the role of the offshore workforce in contributing to the effective management of safety in their workplace.

The group explored the wide range of existing mechanisms for offshore workforce involvement as outlined in the HSE *Play your part* booklet (see Further reading). Specifically, this takes place through safety representatives and committees, as well as the skills and competencies required by offshore workers to enable them to participate in the effective safety management of their workplaces.

All WIG members fully contributed to and were involved in the production of this report. Oil & Gas UK and Step Change provided information relating to the progress made by the industry against the outcomes of the original KP3 report, with regard to workforce involvement and, in particular, competence and training. Workforce engagement has been identified as an issue and is being actively worked on by Step Change through one of its workgroups.

Many examples of effective involvement of the workforce in asset integrity and process safety were identified, although room for further improvement still exists. It is also clear that industry leadership is taking control of the asset integrity agenda through their active participation in workshops aimed at enhancing senior management understanding of major hazard risk control.

Knowledgeable leadership is fundamental for effective workforce involvement and there is evidence to show that worker engagement on asset integrity has increased. In addition, the Oil & Gas Academy has been in place since 2007, providing a focal point for skills, learning and workforce development.

The gathering, publication and sharing of the many examples of existing good practice is a workstream that the WIG would like to develop.

The 2009 Offshore Workforce Survey gathered 3813 responses about communication, major hazard awareness and workforce involvement in the offshore industry. This has provided an insight into workforce attitudes and behaviours, many of which are positive, especially in the area of major hazard awareness, involvement of the workforce and acknowledgement that senior management value workforce involvement.

Central to the success of workforce involvement is the role of elected safety representatives, OIMs (offshore installation managers) and supervisors. However, the performance of safety representatives in relation to their functions and use of powers detailed in the Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989 (SI 971) is patchy and their role was sometimes found to be unclear.

Overall, the WIG found encouraging evidence of workforce involvement but identified areas in need of attention and the next steps to address these are outlined below.

Communication

While there is evidence of commitment by senior managers to workforce involvement and a willingness on the part of many of the workforce to play a greater role in effective health and safety management, two-way communication between senior management and the workforce could be more effective.

Managers, OIMs and supervisors have a crucial role to play in meaningful communication and in the implementation of senior management commitment. It is important that work should be undertaken to increase managers' and supervisors' awareness of:

- the powers and functions of safety representatives and safety committees; and
- how to achieve workforce involvement in the control of major hazard risk.

This could be assisted by:

- the dissemination and sharing of good practice across the industry;
- training for managers, OIMs and supervisors, possibly undertaken together, in SI 971 provisions and the functions and powers of safety representatives and the functions of safety committees.

SI 971 Regulations

The application and effectiveness of SI 971 should be reviewed by:

- an HSE inspection project involving safety representatives, the offshore workforce and management;
- research into the role of safety representatives in the offshore industry;
- building on the 2009 Offshore Workforce Survey through focus groups and/or further surveys;

with the aim of:

- enabling and encouraging elected safety representatives to undertake their functions and exercise their powers; and
- informing a fundamental review of SI 971.

Training

There should be a review of the adequacy of training requirements for safety representatives which should determine the extent of training required.

Research

Consideration should be given to commissioning research into the offshore industry to:

- determine what are the most effective arrangements for worker representation;
- improve consultation in health and safety arrangements and performance related to major hazard risk control;
- investigate which elements of workforce participation most successfully improve health and safety at work; and
- identify the main factors that support or constrain representative worker participation in health and safety.

Foreword

The Workforce Involvement Group (WIG) is a subcommittee of OIAC which looks specifically at ways to increase worker involvement in health and safety matters offshore – it is chaired by HSE. In 2007 its membership was extended to ensure that the interests of key players across the industry were represented. In addition to HSE, offshore trade unions and trade associations, the group also includes individual volunteer workforce representatives from different grades and work areas of the offshore industry.

Since 2007, the WIG has renewed its efforts in engaging the offshore workforce, produced guidance, organised worker participation events and in 2008 was asked by the Chair of OIAC, the Head of HSE Offshore Division, to contribute to the KP3 Review through a report on workforce involvement. This is the report produced by the WIG and all members have contributed. I would like to thank them for their work and their time in completing this task in addition to their full-time jobs and their other duties.

As part of this exercise, the WIG worked with the Communications Manager of HSE's Hazardous Installations Directorate (HID) and HSE's Social Sciences Unit to develop a survey of the views of the offshore workforce on a range of issues. The results of this survey have informed this report and provided a useful insight into attitudes to health and safety. Key elements are included in the body of the report.

The WIG has organised this report in four parts: the first dealing with background and general information; the second with KP3-specific issues; the third examining the statutory framework for offshore workforce representation through elected safety representatives and safety committees; and the fourth detailing the findings of the 2009 Offshore Workforce Survey.

Julie Voce
Chair of the OIAC Workforce Involvement Group

Part 1 Introduction

Background to the KP3 Review

1 In 2004 the Offshore Division of the Health and Safety Executive started Key Programme 3 (KP3). This was a resource-intensive project involving some 100 co-ordinated, targeted inspections over three years. Its objective was to ensure that offshore dutyholders adequately maintained safety-critical elements (SCEs) of their installations.

2 The findings of KP3 were published in November 2007. Although raising significant concerns as well as setting challenges, the report (see Further reading) was well received by the UK offshore industry.

3 At the Parliamentary debate called by Frank Doran MP on 2 July 2008 to mark the 20th anniversary of the Piper Alpha disaster, the Government announced that the Secretary of State had commissioned HSE to review progress made by the offshore industry in tackling issues identified in the KP3 report. Parliamentary Under-Secretary of State for Work and Pensions Anne McGuire said:

'Increased workforce involvement in safety-critical issues is vital if the offshore industry is to improve its health and safety record. Incident statistics have plateaued over the past few years, and the UK is now reported to rank in the middle on an international basis, yet we have always aimed to be the best with regard to health and safety.'

'Taking account of those and other factors, I am pleased to advise my Honourable Friend the Member for Aberdeen North, and other Honourable Members, that the Secretary of State has commissioned the HSE to review the industry's progress on the issues identified by the KP3 programme. The issues include focusing on industry leadership to create a stronger safety culture in which the involvement of the workforce, including the industry's trade unions, will be critical.'

4 When asked by Mr Frank Doran MP if the review would also consider the structure and operation of the safety committees and safety representative system, Mrs McGuire responded:

*'That is why, in the last element, I particularly emphasised the involvement of workers and trade unions. In any of the conversations that I have had, both with the unions and with the industry, there was a strong recognition that workers, either through their organised trade unions or in other ways, must be totally involved in managing safety issues. After all, they have the most intimate knowledge of some of the issues that impact on this.'*¹

2009 Offshore Workforce Survey

Background to the survey

5 The Workforce Involvement Group (WIG) worked with HSE's Hazardous Installation Directorate's (HID's) Communications Manager and the Social Sciences Unit to develop a survey of the views of the offshore workforce on a range of issues. These ranged from the effectiveness of HSE communications to workforce involvement.

¹ Hansard July 2008

<http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm080702/halltext/80702h0001.htm#08070259000034>

6 An independent company, GfK NOP Social Research, was commissioned by HSE to carry out a quantitative survey among the near 26 500 offshore workers based on installations in the North Sea. The key objectives of the research were to assess the views of both direct employees and contractors with regard to:

- gaining an insight into how health and safety is managed, especially as far as asset integrity and major hazard potential is concerned, and what role the workforce play in health and safety management, if any; and
- the lines of communication that work best for HSE in trying to access the offshore workforce (and vice versa).

7 Interviewers were based at the heliports at Dyce Airport in Aberdeen and in Norwich. A total of 3813 questionnaires were collected – 3664 from Aberdeen and 149 from Norwich. Interviewing was carried out between 4 and 20 March 2009.

8 Just over three-quarters of the sample (77%) were contractors, while the others (23%) were directly employed by oil or gas companies. Managers and supervisors were relatively more likely to be employees (35%), while almost all scaffolders and caterers (98% and 88% respectively) were contractors.

9 Some qualitative interviewing was used to supplement the quantitative data.

10 The overall sample represents well over 10% of the offshore workforce at North Sea installations – anecdotal reports from interviewers reflected a high level of co-operation among those approached to take part in the survey. The assistance and co-operation of the helicopter companies Bond, Bristows and CHC in this exercise is gratefully acknowledged.

11 The results of the survey are used throughout this report but a summary of the main findings, and a fuller description of the methodology, are in Part 4. The questionnaire can be found in Appendix 3.

12 For the purposes of this survey, people interviewed included offshore installation managers, supervisors and other people who described themselves as ‘managers’. Some results are expressed to show the breakdown of respondents as managers and other worker grades where this is appropriate.

Offshore training and training standards

OPITO – the Oil & Gas Academy

13 The Offshore Petroleum Industry Training Organisation – OPITO, now known as the ‘Oil & Gas Academy’ – was launched in December 2007 having evolved from the original Petroleum Industry Training Board, created in 1979. It is ‘owned’ by equal industry partners Oil & Gas UK, the International Association of Drilling Contractors (IADC) and the Inter Union Offshore Oil Committee (IUOOC). OPITO develops standards based on industry demand. These standards are not mandatory but are held to be examples of good practice advised by the offshore industry. The industry funds OPITO for the provision of services, it does not receive government funding. More information on OPITO can be found at www.opito.com.

14 Standards are maintained and designed through the involvement of industry workgroups which involve all relevant interested parties – employers, employees, technical specialists and HSE representatives. OPITO does not own any standards but acts as custodian on behalf of the industry.

Vantage

15 Each person trained to OPITO standards has their personal training details recorded within the Vantage Central register, which is maintained by OPITO.

A registration fee is charged for each registration, which funds the management of data, quality assurance of training provision, maintenance and development of standards.

16 The driver for the registration and quality assurance system emanated from Lord Cullen's recommendation for the industry to have an independent central registration system of all emergency response training.

Modern apprenticeship

17 The Upstream Oil and Gas Industry Technician Training Scheme (UOGITTS) is the industry response to addressing the need for a competent, stable and flexible technician workforce. The need to replenish the workforce has never been greater as operators and contractors experience skills shortages. The four-year programme equips motivated incomers to the offshore industry with the skills and knowledge to work as process operations technicians or maintenance technicians in electrical, instrumentation and mechanical disciplines. The scheme consists of a two-year training period at college, studying full time, with a further two years on a worksite placement. This placement will either be at an offshore installation, floating production storage and offloading unit (FPSO) or onshore gas plant. This apprenticeship scheme is fully funded by industry.

18 This is the leading apprentice scheme in the UK, with a successful completion rate in excess of 90%. Average recruitment is around 120 per year. Quality is managed by OPITO from recruitment, interview, aptitude testing, college placement, and welfare to workplace placement. To date, 960 apprentices have been recruited. Overarching stewardship is provided by an industry steering group.

19 Expanded information about OPITO can be found in Appendix 1.

Step Change in Safety

20 Step Change is an offshore industry initiative aimed at improving health and safety in the offshore industry. Launched in 1997 by the International Association of Drilling Contractors, UK Offshore Operators Association (UKOOA) and the Offshore Contractors Association, its stated aim is to make the UK the safest place to work in the worldwide oil and gas industry. The Step Change vision is endorsed by PILOT, a high-level forum led by DECC – the Government Department for Energy and Climate Change, chaired by the Secretary of State and made up of senior government officials and leaders from the offshore oil and gas industry.

21 Membership is open to all companies active in the UK Continental Shelf, including offshore contractors and operators.² Step Change sets out to achieve its vision through the sharing of safety information and good practice across the industry.

22 The work of Step Change is overseen by a leadership team, responsible for setting direction and monitoring progress against objectives. This team is made up of senior managers from companies active in the offshore industry as well as representatives from trade unions, and other trade associations. HSE is represented on this leadership team by the Head of the Offshore Division.

² Step Change currently has 80 member companies, both operators and contractors. Trade associations represented include: Marine Safety Forum; Catering Organisations Trade Association; International Marine Contractors Association; International Association of Drilling Contractors; Offshore Contractors Association. Unions represented include UNITE/TGWU and RMT/OILC

23 Step Change engages with the workforce directly through the Elected Safety Representatives (ESR) network and Site Leaders network. The ESR network seeks to engage elected safety representatives and the Site Leaders network engages those at the manager/supervisory levels – engagement is via the Step Change website and through regular network meetings.

24 The industry recognises that effective workforce engagement remains a challenge and Step Change in Safety has set up a workgroup for 2009 to look at workforce engagement. It sees its work as complementary to the efforts of other groups in this area, eg the OIAC Workforce Involvement Group and the Energy Institute. Its focus will be on identifying and sharing best practice, as well as trying to help the industry identify and remove barriers to good workforce engagement.

Part 2 KP3-specific workforce issues

Competence/skills shortage and the impact on SCE maintenance management

25 On the shortage of skills, the KP3 report said:

*'The industry has taken action over recent years and put various schemes in place to attract more people into the industry, eg graduate schemes, innovative web-based systems and the excellent modern apprenticeship scheme. HSE is concerned that these schemes may not meet industry demands and there is increasing anxiety in the offshore workforce about competence, skills and lack of experience.'*³

*'There is some good practice of contracting companies taking on and training staff but the financial and contractual arrangement can make it difficult to provide offshore training. It is essential that the industry works co-operatively to provide the skills, training and competences required to enable the workforce to be capable of delivering the standards of integrity required in a high-hazard industry.'*⁴

26 There are currently approximately 26 500 people employed in the oil and gas industry offshore. A skilled and competent workforce is vital to the industry in terms of ensuring safe operations and sustaining domestic oil and gas production. To be competent, an individual must have not only the necessary skills and knowledge but also the understanding, ability and experience to apply these in his or her job. Competence is about performance in the workplace to the standards expected rather than knowledge alone.

27 The industry recognises the need to recruit, develop and retain a highly skilled workforce and the important linkage between skills, competence and safety performance.

28 Since the publication of the KP3 report a new Skills Academy has been established for the industry. OPITO – the Oil & Gas Academy was created in December 2007. Completely funded and directed by all sections of the industry, including the trade unions, the academy is intended to provide a more focused approach to ensuring the availability of a safe, skilled and effective workforce now and into the future. HSE is granted observer status on the board of the academy.

³ KP3 report, HSE, Nov 2007, p 28

⁴ KP3 report, HSE, Nov 2007, p 29

29 In the first year of operation, the academy has taken a number of new initiatives and has continued to operate the Technician Training Scheme in conjunction with the Engineering Construction Industry Training Board (ECITB). This is one of the most successful modern apprenticeship schemes in the UK. At the end of 2008 there were 323 OPITO-managed young people in the scheme, which provides a feed of around 100 high-quality new technicians and process operators into the industry each year. The industry has publicly committed to recruit a further tranche of more than 100 apprentices in 2009, despite the present economic downturn.

30 A newly developed Minimum Industry Safety Training Standard (MISTS) was introduced by Step Change in Safety from April 2009 to raise basic safety knowledge and awareness throughout the UK offshore oil and gas industry and to apply best practice training at a consistent level in safety-critical areas. This training is aimed at both new starts to the industry and also for refreshing experienced personnel on a four-year cycle. The two-day OPITO-approved training course is made up of nine elements. One of these is a two-hour module with a focus on process safety and asset integrity. A reminder of Piper Alpha is included in the form of a short DVD clip.

31 The academy continues to develop and update industry safety standards, including those supporting the new MISTS training, as well as working with schools, colleges and universities on a number of projects which promote the study of science and engineering and the oil and gas industry as an attractive career choice.

32 Oil & Gas UK's published analysis of the industry's demographics shows that the true picture of the age profile within the industry is actually much better than previously believed and there are increasingly positive trends which point to the attraction of a young, highly skilled and diverse workforce.

33 The KP3 report said:

*'Poor performance in maintenance systems has been further exacerbated by a workforce that is depleted in experience. The pressures arising from shortages of competent manpower and skills have become severe over recent years. This issue impacts on all areas of SCE maintenance management.'*⁵

34 In response to the KP3 report, operating companies have reviewed and, where necessary, made changes to their maintenance management systems to provide much greater clarity for those involved in ensuring that safety-critical plant and equipment is fit-for-purpose and will work on demand. This has involved training at all levels within the organisation (staff and contractors) from Board level down; and the consequent requirement to keep the management team better informed through meaningful indicators of performance and progress.

35 Oil & Gas UK state that most operators have taken on additional staff or have reallocated existing resources with the specific role of targeting and improving the delivery of asset integrity management. The importance and added value arising from the involvement of key staff (technical authorities) in decision-making concerning degraded SCEs, or the deferral process, has been well recognised and accepted. There has also been an acknowledgement of the need for performance standards to be tested and confirmed for SCEs as part of the maintenance routine, and the importance of keeping and maintaining work order history records.

⁵ KP3 report, HSE, Nov 2007, p 11

Training: Understanding the major hazard control loop etc

36 The KP3 report said:

*'Good practices found in relation to maintenance of SCEs are: ... the offshore workforce in particular, including management, being provided with training in what functions SCEs have in preventing, controlling or mitigating MAH. This relates to hazard control elements rather than QRA aspects and makes clear the purpose of testing.'*⁶

37 An example of good practice is the Technician Training – 'TR HVAC', a 'good practice' guide for maintenance and testing HVAC dampers, which was developed and published in 2006 by an industry/HSE workgroup. This, together with in-company initiatives and increased training and awareness of appropriate technicians, has resulted in much enhanced understanding of HVAC (heating, ventilation and air conditioning) systems by offshore personnel. Some installation operators once again employ full-time HVAC technicians.

38 The KP3 report said:

*'There is evidence that the offshore workforce do not understand the link between the safety case, MAH analysis, identification of SCEs and development of their performance standards. The workforce is the last and critical line of defence against the occurrence of many incidents. Their full understanding of the role of the equipment they work with in providing barriers against MAH is therefore essential.'*⁷

*'SCEs are the major barriers to the realisation of MAHs. SCEs are developed from the safety case by analysing the major hazard scenarios, identifying the important controls and developing performance standards. The evidence from the programme is that this is not well appreciated or understood at all levels in the company. The whole workforce from offshore technician to CEO need to understand and commit to ensuring that this major hazard control loop is applied rigorously. Action is needed to address the lack of understanding and commitment at all levels.'*⁸

39 Specific areas of 'good practice' have been shared more widely through the Step Change Asset Integrity website and through participation in a number of forums, workshops and seminars, and also by contributing to integrity-related guidance.

2009 Offshore Workforce Survey

The level of agreement (95%) was very high for being fully aware of the major hazards in the workplace. However, only 50% were in strong agreement. Managers and supervisors were again the most positive group, 62% agreeing strongly with the statement.

40 Efforts to ensure that the whole workforce (from CEO down) understand the major hazard control loop, the barriers in place to prevent a major accident and the role that everyone can play in ensuring their integrity have been widespread. Within companies an important outcome has been greater consistency between assets and more consistent key performance indicator (KPI) reporting to senior management teams, leading to analytical evaluation of inspection and maintenance findings.

⁶ KP3 report, HSE, Nov.2007, p 21

⁷ KP3 report, HSE, Nov 2007, p 21

⁸ KP3 report, HSE, Nov 2007, p 28

41 Last year marked the 20th anniversary of the Piper Alpha disaster. Many of the younger generation in the industry were either not born or were too young to remember the disaster. During 2008 Oil & Gas UK organised a number of events to ensure the lessons learned from the disaster continue to be remembered. These included:

Lessons from Piper Alpha presentations – Four educational events were held for young people entering or new to the offshore industry. Presentations were held for young technicians and for graduate level entrants to the industry. The presentations covered the disaster itself, key lessons and their relevance to the responsibility everyone has for offshore safety today.

Lessons from Piper Alpha DVD – Building on the success of the educational presentations, Oil & Gas UK produced a DVD so that the key messages and lessons can be shared across the industry. The DVD has now been circulated widely across the UK oil and gas industry; worldwide over 1000 copies have been distributed to more than 16 countries.

Managing Directors' Presentations – At the May 2008 Step Change in Safety Industry Leadership Safety day, Oil & Gas UK gave a Piper Alpha presentation to remind MDs of the importance of leadership and maintaining corporate memory to ensure the lessons from the disaster continue to be learned and acted upon.

MP/MSP Briefings 17/18 June 2008 – Oil & Gas UK gave briefings to MPs and MSPs in London and Edinburgh on the Piper Alpha disaster, its aftermath, how far the industry has progressed since then and how the key lessons continue to be reinforced.

2009 Offshore Workforce Survey

The two most common ways of knowing about major hazards in the workplace and the measures and arrangements in place to prevent major accidents were:

- toolbox talks; and
- safety meetings.

Workforce morale

Specific asset integrity issues that undermine workforce engagement

42 The KP3 report said:

*'Declining standards in hardware are having an adverse impact on morale in the workforce.'*⁹

*'Some installations had extensive corrosion to tertiary structure, eg cable tray supports, and some safety-related kit, eg fire doors, gratings and bulkheads. As indicated above, this type of corrosion, whilst not of immediate safety concern, sends an undesirable message to the workforce on lack of investment and undermines efforts to engage the workforce in health and safety.'*¹⁰

'Good practice found ... Senior and executive management making regular visits to all of their assets, communicating company strategies and plans, listening to issues directly from the workforce, gaining an understanding of problems with SCEs, testing and verification leads to improved performance.'¹¹

⁹ KP3 report, HSE, Nov 2007, p 6

¹⁰ KP3 report, HSE, Nov 2007, p 15

¹¹ KP3 report, HSE, Nov 2007, p 31

43 Workforce engagement on asset integrity has increased at all levels – from CEO and the senior management team, through asset and installation management, through the engineering and technical authorities, and through the offshore workers generally. Most companies have undertaken a series of asset integrity, process safety and corrosion-related roll-out presentations to staff and workers. Examples of additional workforce engagement activities include:

- technical authorities visit the platform and discuss asset integrity issues;
- technician competence training on small bore tubing assembly;
- a company-wide safety initiative on personal responsibility for safety;
- focused asset integrity training for middle managers;
- participation of offshore workers in fabric maintenance inspections, operational risk assessments and diagonal slice maintenance workshops;
- corrosion awareness campaign following publication of the Oil & Gas UK Corrosion Handbook;
- integrity engineer presentations on safety-critical equipment to the offshore workforce;
- engagement with safety representatives through facilitated offsite workshops to address barriers to safe working and to seek input to the 2009 Safety Improvement Plan;
- maintenance and integrity forum with workshops, lunch and learn, bulletins and offshore visits;
- key members of the offshore workforce attend quarterly management review of asset integrity;
- major accident hazard awareness workshops for managers and supervisors at Spadeadam to observe live explosions under controlled conditions;
- programme to ‘re-energise’ safety representatives through a bespoke training package;
- TR HVAC awareness training (see paragraph 37 above).

2009 Offshore Workforce Survey

- There was very high agreement (98%) that it was **important for the workforce to be involved in health and safety** – 79% strongly agreed, including 93% of medics and 85% of both managers/supervisors and direct employees.
- A very large majority (92%) agreed that **senior managers value workforce involvement in health and safety**, although a rather smaller proportion (52%) agreed strongly with this statement. Managers/supervisors were the most positive group (with 68% in strong agreement) but scaffolders were more critical (including 17% who actually disagreed with the statement).
- There was almost identical agreement (93%) among contractors that their **employers valued workforce involvement**. Drillers (62%) and those with less than a year working on North Sea installations (64%) were most likely to be in strong agreement.
- The level of agreement (95%) was very high for being **fully aware of the major hazards in the workplace**. However, only 50% were in strong agreement. Managers and supervisors were again the most positive group, with 62% agreeing strongly with the statement.

Corrosion

44 In 2007 Oil & Gas UK set up a Corrosion Management Work Group in conjunction with HSE and the verification bodies, and were assisted by the Energy Institute. The Work Group brought together a number of experienced corrosion management specialists. They produced a comprehensive corrosion management guide covering all the various types of corrosion likely to be encountered on offshore installations.

45 A *Corrosion Threats Handbook* (see paragraph 61 below) was also produced to raise awareness of corrosion issues among those responsible for asset integrity

matters, but who were not themselves corrosion specialists. The corrosion guide and the threats handbook (see paragraph 61) have been used extensively in training programmes onshore and offshore. Over 700 copies of the threats handbook were given free to member companies. Further work is currently taking place to develop a guide for key performance indicators for the management of external corrosion.

The engineering function

46 The engineering and technical authorities in a company act as a backstop against continuing operations with degraded safety-critical equipment. This is an important strategic role, the importance of which has been recognised again and re-embedded within operating companies, and their resources significantly increased.

47 An 'Offshore Industry Engineering Function Workshop' was held in March 2008. There was a high degree of engagement by engineering and technical authorities from operating companies and contractors (including fabric maintenance contractors).

48 The objectives of the workshop were to raise awareness of HSE concerns on asset integrity, with a particular focus on the role and effectiveness of the engineering function, and to develop a broad industry consensus on the way forward.

49 Following the workshop, senior industry leaders were provided directly with important feedback from the event by personal letter from the Asset Integrity Steering Group Chairman. Key messages from this event were built into the asset integrity workshops for senior industry leaders.

Leadership

50 The level of understanding or appreciation by senior management of major hazard risk control, and in particular the major hazard risks posed by their own operations, has been enhanced through focused asset integrity workshops. Incidents such as Texas City provided another driver with individual company programmes flowing from their review of the lessons from the Baker Report.

51 The significant business risks that arise from operating an installation with degraded safety systems are now more widely understood by senior management teams than they have ever been before.

52 Business leaders are now better informed on a routine basis through receipt of understandable data from sophisticated performance monitoring arrangements. The enhanced visibility of asset integrity status is enabling business leaders to make informed decisions about resource prioritisation for their assets.

2009 Offshore Workforce Survey

- Nine out of ten respondents were very or fairly well involved in health and safety in their workplace, although only 41% said they were actually very well involved.
- Those most positive about this involvement were managers and supervisors (60% said very well involved). Other relatively high scores were recorded for those working in drilling (44% very well involved) or as deck crew (42%). Direct employees were also considerably more positive than contract workers (52% and 37% respectively). Unsurprisingly, safety representatives scored more highly (55%) than people who had never had this role (39%).
- The lowest figures for being very well involved were recorded for scaffolders (28%) and technicians (32%).

The role of Step Change in addressing KP3 issues

53 In 2004 asset integrity became a key part of the Step Change in Safety strategy to make the UK the safest place to work in the worldwide oil and gas industry. The industry set up an Installation Integrity Work Group as a direct response to the start of the KP3 programme. The group involved over 30 operator and contractor companies, together with representatives from the verification bodies.

54 Among other matters, the group developed an Asset Integrity Toolkit containing comprehensive guidance with reference to good industry practice documents for effective safety-critical plant and equipment maintenance management.

55 Following completion of this work and in recognition that sufficient tools were now available, a high-level strategic group was set up in 2007 – the Asset Integrity Steering Group. The remit of the group is to continue to work with HSE to secure continuing improvement in the management of asset integrity through the following priority areas:

- improved education and training on the management systems for ensuring asset integrity;
- more effective sharing of HSE and industry good practices and lessons learned, together with better communication of the good work and investment that is already being made to preserve asset integrity and safety and extend the life of upstream oil and gas facilities;
- a review of existing industry asset integrity key performance indicators; and
- engagement with engineering and technical authorities.

Asset integrity workshops

56 Step Change developed an asset integrity workshop aimed at raising senior management awareness and understanding of asset integrity management. During 2008 a total of 25 workshops were attended by over 400 senior managers from operating companies and contractors.

57 The workshop provided a one-day interactive work session for MDs and direct reports to ensure a good understanding of safety cases, verification of safety-critical elements, associated performance standards, Step Change toolkits, guidance etc. It was a unique opportunity for the industry leadership to work with their teams in a very interactive way to develop a better common understanding of what asset integrity is all about. It also enabled the team to collectively agree action plans to improve asset integrity management at all levels. The workshop is now recognised as world-class best practice. It has been 'exported', with several workshops taking place in the Middle East, and has even reached the attention of the Australian Regulator, who considers it to be an example of world-class best practice.

58 There will be an ongoing programme of asset integrity workshops in 2009 to cover remaining operators. There has also been a demand for a repackaging of the course with the aim of targeting and informing senior and middle managers; this is currently under development.

Asset integrity website

59 In January 2008, Step Change upgraded its website (www.stepchangeinsafety.net) to provide a dedicated area for more effective sharing of good practices and lessons learned within asset integrity. When a company or individual identifies an item worthy of sharing, a brief summary is sent to Step Change and it is posted on the website. The website sends updates to all registered users if they have selected asset integrity as an update topic. There are regular workforce website hits and comments.

Workshops and seminars

60 Throughout the KP3 programme, Oil & Gas UK (then UKOOA) worked closely with HSE to raise industry awareness and improve communication and understanding. A number of well-attended seminars and workshops have been held during and after the completion of the programme. These have included:

- maintenance workshop 2004;
- asset integrity seminar 2005;
- asset integrity seminar 2006;
- learning from major accidents 2007;
- asset integrity key performance indicators briefing 2009;
- process safety seminar (planned for July 2009).

Guidance

61 Various subgroups have produced comprehensive asset-integrity-related guidance:

- *Guidelines for the Management of Safety-Critical Elements* The Energy Institute ISBN 978 0 85293 462 3 – to provide guidance for the effective management of safety-critical systems
- *Guidelines for the Management of the Integrity of Bolted Joints for Pressurised Systems* – The Energy Institute ISBN 978 0 85293 461 6 – leaking joints are a main cause of hydrocarbon releases on UKCS. The guide provides a framework for management of bolted joints and assists companies to develop their own procedures
- *Guidelines for the Management, Design, Installations and Maintenance of Small Bore Tubing Systems* The Energy Institute ISBN 0 85293 275 8 – to provide a reference framework of management and technical controls and procedures necessary to ensure the continuing integrity of small bore tubing systems
- *Testing regime for offshore TR-HVAC fire dampers & TR pressurisation requirements* HSE offshore information sheet 1/2006: www.hse.gov.uk/offshore/trhvac.pdf – produced in conjunction with HSE
- *Hydrocarbon Release Reduction Toolkit* Oil & Gas UK ISBN 1 903003 34 9 – provides a central reference of good practices for managers, supervisors and the workforce (currently being revised/updated)
- *Asset Integrity Toolkit* Step Change (www.stepchangeinsafety.net) – provides a practical framework of ‘observed good practice’ checklists and tools to facilitate and enable review of asset integrity management
- *Guidance for Corrosion Management in Oil and Gas Producing and Processing* The Energy Institute UK ISBN 978 0 85293 497 5 – a good practice guide for the corrosion specialist
- *Corrosion Threats Handbook* The Energy Institute UK ISBN 978 0 85293 496 8 – a guide for integrity managers and the workforce more generally, especially those less familiar with corrosion matters

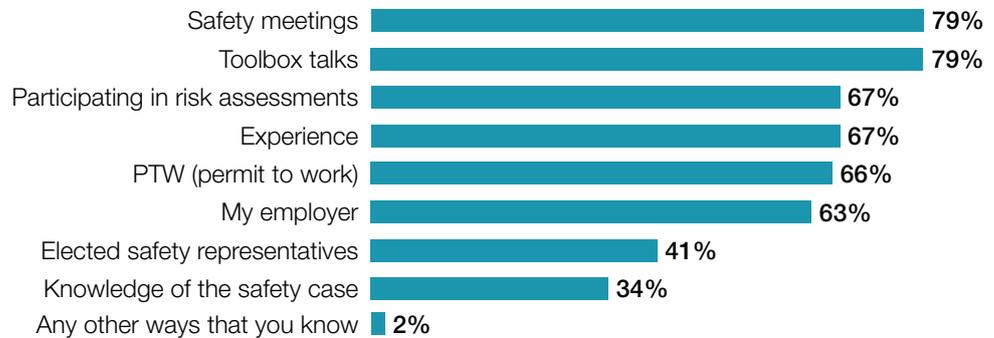
Other sources of information for offshore workers

62 When asked to identify the three main sources of health and safety information, the 2009 Offshore Workplace Survey showed that safety meetings were by far the most important single source of advice and information about health and safety, with 81% of participants citing them in the top three sources. Supervisors and safety representatives were also rated highly as sources.

63 In terms of learning about major hazards in their workplace, again participants rated safety meetings and toolbox talks highly.

2009 Offshore Workforce Survey

How do you know about the major hazards in your workplace and the measures and arrangements in place to prevent major accidents?



64 Printed material is available in the form of:

- booklets – distributed at the BOSIET, at inductions, by employers and on installations. These range from *Play your part* (see Further reading) to proprietary safety booklets on a range of topics. Companies may issue installation-specific handbooks explaining the safety case and hazards on the installation. HSE, Step Change, unions and the TUC publish information and guidance;
- HSE provides information through periodic newsletters such as *Tea-shack News* and makes information, publications, research and safety alerts available to everyone through its website (www.hse.gov.uk/offshore);
- Step Change also makes information and safety alerts available to its members via its website (www.stepchangeinsafety.net);
- the TUC publishes a range of information, research and documents to its members on its website (www.tuc.org.uk).

Part 3 Safety representatives and safety committees offshore

SI 971 overview

65 The role of safety committees and safety representatives was recognised among the recommendations of the Cullen Report. These included the following:¹²

- The regulatory body, operators and contractors should support and encourage the involvement of the offshore workforce in safety.
- The operator's procedures which are aimed at involving the workforce in safety should form part of the safety management system.
- Safety representatives should be protected against victimisation.
- The training of safety representatives should be determined and paid for by the operator.

66 The Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989 (SI 971) provide the statutory framework for the appointment of safety representatives and safety committees offshore. They were introduced by the Department of Energy after the Piper Alpha disaster.

¹² The Public Inquiry into the Piper Alpha Disaster, The Hon Lord Cullen, Vol 2, p 392, recommendations 27-29

67 They stipulate that there should be at least one safety representative per 40 workers, elected by the offshore workforce by ballot. These Regulations do not provide for trade-union-appointed safety representatives.

68 By comparison to offshore provisions, the original Regulations that applied to onshore workplaces – the Safety Representative and Safety Committee Regulations 1977 – provided for union-appointed safety representatives but made no additional provision for non-unionised workplaces. This meant that the UK could not fully comply with Council Directive 89/391 (on the measures to encourage improvements in the safety and health of workers at work) and this was later corrected with the introduction of the Health and Safety (Consultation with Employees) Regulations 1996, which are similar to the offshore Regulations but are less detailed about how safety representation is to be managed.

69 In summary, onshore Regulations mean that safety representatives can be either union-appointed or not, whereas offshore there is no provision for union-appointed safety representatives but a detailed framework about how safety representatives are elected.

70 SI 971 has been amended through five other legislative vehicles. More information about these can be found at Appendix 2. The main change was the introduction of the mandatory requirement for safety representatives to be consulted about the preparation of and subsequent amendment of installation safety cases, by the Offshore Installations (Safety Cases) Regulations 1992.

71 The guidance that currently accompanies SI 971 in HSE publication *A guide to the Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989* (L110) supersedes that originally issued by the Department of Energy in 1989 but it has not been revised since 1998. It is not an Approved Code of Practice but is designed to help people in the offshore industry understand what the Regulations require, and what they need to do to comply with them.

72 The stated purpose of SI 971 – at its enactment and now – is *'to ensure that the whole workforce is formally involved in promoting health and safety, through freely elected safety representatives and a safety committee'*.

73 The main regulatory provisions cover:

- election of safety representatives by the workforce – how the election process is to be organised and carried out;
- functions of safety representatives – investigation of incidents and complaints, representation, attendance of the safety committee, and consultation;
- powers of safety representatives – inspection either regularly or following an incident;
- entitlement of safety representatives to see documentation relating to health and safety, including safety cases or their revisions;
- the establishment, membership, meetings and functions of a safety committee;
- the duties of installations operators, owners and employers – facilitating safety committees and safety representatives, consultation of safety representatives including safety case consultation, health and safety information and training;
- paid time off for safety representatives – to perform functions as a safety representative and for training, as well as payment for this time;
- training of safety representatives and the payment of associated travel and subsistence costs.

74 SI 971 also contains three appendices, these detail:

- protection against victimisation on health and safety grounds – the existing statutory provisions which are outside of and separate to SI 971 and guidance about how these affect offshore workers;

- a summary of the steps in the election process for safety representatives and the establishment of a safety committee;
- the recommended procedures for the secret ballot which is part of the election process for safety representatives.

Background to SI 971

75 In 1978, when the regulation of the offshore industry lay with the Department of Energy, the Burgoyne Committee was established to ‘consider the nature, coverage and effectiveness of the Department of Energy’s offshore regulations’ – including those provisions relating to offshore safety. The committee reported in 1980 and the majority of members favoured a non-mandatory system of safety committees whose members were to be elected, appointed or co-opted. They would receive training and would have an additional right to draw the attention of the installation safety officer or OIM to any seemingly dangerous practice.

76 The two trade union representatives on the Burgoyne committee argued that the safety representatives and safety committees should be established on a statutory basis through the extension of the onshore Regulations (1977) to the offshore industry.¹³ They dissented from the majority view.

77 Both industry and the Government objected to the extension of the 1977 Regulations offshore, on the grounds that there were no recognised unions offshore and that no one union could represent the majority of the workforce.

78 It was 1987 before a compromise was reached between industry and the unions. Drafting of the new Regulations was not deemed to be a priority and work had not started when the Piper Alpha disaster occurred. Sadly, it provided the impetus. The Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989 (SI 971) were subsequently given priority and were completed and enacted within 14 months.

79 The Regulations made provision for the offshore workforce to elect safety representatives and, where safety representatives were elected, for a safety committee to be established. The model adopted for the election of safety representatives, the constituencies and election procedures was based on the Parliamentary system. While this was a step forward it was still at odds with the onshore provisions.

80 Following the public inquiry into Piper Alpha, Lord Cullen considered and rejected the idea of replacing the 1989 Regulations with an extension of the onshore Safety Representatives and Safety Committees Regulations 1977. He also did not consider it appropriate to recommend any changes to the offshore Regulations but endorsed the intention of the Department of Energy to review the Regulations after two years’ experience of their working.¹⁴ With the transfer of the offshore health and safety regulatory function from the Department of Energy to the Health and Safety Executive in 1991, the review of the 1989 Regulations fell to HSE.

The 1993 review of SI 971

81 HSE commissioned a review of SI 971 in 1992 from the University of Aberdeen Offshore Study Group. The report on the study was published the following spring. The review included a survey of views of the offshore workforce.

¹³ Dr JH Burgoyne (Chair), Offshore Safety: Report of the Committee, Cmnd. 7866, paras 5.96-5.97

¹⁴ The Public Inquiry into the Piper Alpha Disaster, The Hon Lord Cullen, Vol 2, p 392, recommendation 29

82 This review was generally positive about the implementation of SI 971 but observed that there was no statutory requirement to have safety representatives on offshore installations. To demonstrate compliance with the regulatory framework, there had been considerable pressure within the industry for owners and operators to ensure they had elected representatives on all installations.¹⁵

83 The study found that there was some confusion about the roles of safety representatives and also safety committees.

84 Tensions had arisen because lines of communication between safety representatives, line management, senior management and onshore safety departments were unclear.

85 Contacts between safety representatives and unions were infrequent. Contact with other safety representatives was confined largely to those working on the same installation. Co-ordination of safety representatives depended on management support, facilitation and participation but there was a lack of inter-company uniformity in defining the safety representative's role.

86 At that time safety representatives' training was unregulated, there was no standard or quality assurance although the Offshore Petroleum Industry Training Board (OPITB forerunner of OPITO) had designed a guideline syllabus to be used as a basis for training providers. This guide suggested that any such course 'could not reasonably last less than five days'.

87 The least-experienced safety representatives were most likely to feel adequately trained. Developmental and consolidation training were desired by safety representatives but these were taken up by few companies. A requirement for management and supervisory personnel to be trained in the operation of SI 971 was acknowledged.

88 Evidence of victimisation of safety representatives was found. A number of operators stated that they would act unequivocally against victimisation of any member of the workforce who raised a safety issue. However, victimisation was a concern for nearly half the safety representatives surveyed.

89 Lord Cullen had suggested that the review of the 1989 Regulations might consider the scope of improving the effectiveness of safety representatives, specifically putting the contentions the trade unions voiced during the public inquiry into Piper Alpha to the test. These included the appointment of safety representatives where a trade union had gained recognition and had a substantial membership on a particular installation.

90 The 1993 review concluded that union appointment of safety representatives was evenly supported and opposed. However, survey results indicated that the majority had a positive attitude towards some form of increased trade union involvement in the safety representatives system.¹⁶

91 The offshore industry had traditionally and actively resisted trade unionism and not surprisingly trade union membership was low. The unions that could identify potential members offshore adopted a competitive approach to recruitment. The independent union the Offshore Industry Liaison Committee (OILC), which had

¹⁵ M Spaven et al *The Effectiveness of Offshore Safety Representatives and Safety Committees: A Report to the Health and Safety Executive* Vol 1, 4.1.1

¹⁶ M Spaven et al *The Effectiveness of Offshore Safety Representatives and Safety Committees: A Report to the Health and Safety Executive* Vol 1, 4.6 pp 118-119

grown following Piper Alpha, was not affiliated to the TUC and the possibility of an Offshore Federation came to nothing as union leaders decided against a new structure.¹⁷

92 In 2007 Amicus and the Transport and General Workers Union merged to form UNITE. Amicus was created in 2001 by a merger of the Manufacturing, Science and Finance (MSF) Union and the Amalgamated Engineering and Electrical Union (AEEU), which had previously merged with the electrical union the EEPTU.

93 In May 2008 OILC became the offshore wing of the RMT, which is TUC-affiliated.

The role of the safety representative

94 Safety representatives have an important role in any organisation committed to an effective and evident safety culture. In SI 971 they provide the means, along with the safety committee, by which the whole workforce is formally involved in promoting health and safety. Of the 3813 offshore workers who took part in the 2009 survey, 5% of respondents said that they were currently safety representatives. This equates to one safety representative for 20 of the total participants.

95 Their contribution to successful health and safety management has been evidenced in numerous research studies. However, safety representatives cannot operate effectively without a clear and acknowledged need for training, support, facilities, resources, communication and recognition.

2009 Offshore Workforce Survey

- There was a high level of agreement (92%) that safety reps play an important part in health and safety in the workplace. Strong agreement was less marked among former safety reps (44%) than among those who currently had this role (63%). Some 13% of former reps actually disagreed, as did 11% of managers and 12% of medics.
- Of those surveyed, 5% said that they were currently an elected safety rep at the time of the survey, while another 12% had held this role in the past. Those presently operating as safety reps were most likely to be working in catering (10%). Technicians were least likely to have ever had this role.

96 Elected SI 971 representatives receive training to enable them to function effectively in the role. The dutyholder must ensure that safety representatives on their installation are provided with '*such training in aspects of the functions of a safety representative as are reasonable in all circumstances and that any costs associated with the training – including travel and subsistence – are not borne by the safety representative*' (regulation 27).

97 This obligation appears to fall short of the recommendation made by Lord Cullen, that:

'The Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989 should be modified to the effect that the training of safety representatives should be determined and paid for by the operator.' (para 21.87)¹⁸

¹⁷ See *Corporate Social Responsibility Failures*, ISBN 0895032937, Chapter 2, C Woolfson, Beck and Foster

¹⁸ The Public Inquiry into The Piper Alpha Disaster, the Hon Lord Cullen, Vol 2 page 392, recommendation 27

98 However, the guidance that accompanies the Regulations does make it clear that it is normally appropriate for training to be arranged and paid for by operators for their own employees and also contractors in some circumstances.

99 Whether or not the minimum provision of training is 'fit for purpose' remains an issue for debate. The lengthy guidance indicates that the effectiveness of any safety representative will depend to a large extent on the quality of the training received and although training expectations are outlined in terms of basic, developmental, functional and refresher, neither the length nor the content of training is prescribed.

100 The current guidance reflects some of the findings of the 1993 Review of SI 971: effectiveness depending on training soon after election; the value of safety representatives receiving developmental and consolidation training; and the need for managers, in particular OIMs, to be trained. But these are contained only in the guidance and are not mandatory.

101 Training standards are also not mandatory. Again, the guidance points to the two significant organisations concerned with training standards – OPITO and the TUC. However, training standards are voluntary and this may lead to variance of training course content. For instance, while the regulatory guidance gives prominence to an understanding of '*the law relating to installation workforce health and safety*', the revised OPITO training standard for offshore safety representatives – which sets out the minimum level of training that elected safety representatives should receive – does not.¹⁹ This does not mean that it is excluded by some training providers but it may not appear in the basic five-day training package for some safety representatives.

102 The 1993 review of SI 971 found similar variances in training. The basic five-day training package that existed then is still five days in 2009, despite the additional safety case consultation requirement that safety representatives should be engaged in. There is evidence to suggest that many safety representatives do not receive any additional external training to the five-day basic training.

103 Some companies offer 'in-house' training and this is obviously necessary for familiarisation with company health and safety policy, organisation and arrangement for carrying out that policy. But this is not subject to quality control or external auditing, apart from the regulatory options open to HSE inspectors who may seek to ensure that safety representatives are competent and adequately trained for their role.

104 While offshore safety representatives are not union-appointed, those who are elected by the workforce and are incidentally members of a union find that they have more resources, and may be better trained by virtue of TUC courses designed for safety representatives:

'Since its introduction the offshore system has been compared unfavourably in several respects with that applying onshore, including the adequacy of training for the employee safety representatives (Woolfson et al 1996). For example, in a survey undertaken shortly after the introduction of the regulations, researchers found representatives expressing concern about the quantity and quality of their training and the virtual exclusion of trade unions from its provision (Spaven and Wright 1993).'²⁰

¹⁹ http://www.opito.com/library/national_standards/safety_representatives_nos.pdf

²⁰ *The impact of trade union education and training in health and safety on the workplace activity of health and safety representatives* Prepared by the Centre for Industrial and Environmental Safety and Health for the Health and Safety Executive, Contract Research Report 321/2001, page 7

105 The public inquiry following the Piper Alpha disaster heard evidence about the role of unions in the offshore workplace, including a description of the Norwegian system:

*'In this regime it appears that trade unions receive automatic recognition. The extent of union membership has grown over the years. The regime provides for the appointment of safety delegates upon whom a number of important powers are conferred, including the right to halt dangerous work. Mr Ognedal considered that union back-up could be beneficial to the work of safety delegates.'*²¹

106 This was echoed by Mr John Rimington, the then Director General of the Health and Safety Executive:

*'Safety representatives could play a valuable part in the promotion of safety and in relation to inspections. For those who were appointed by the unions "the unions train them in quite a sophisticated way. They have the means of putting a great deal of power at the elbow of safety representatives where they care to do so." Where a union was weakly organised or not very strongly represented the usefulness of the safety representatives might be somewhat impaired.'*²²

107 Academic studies in the past 25 years have indicated that trade union safety representatives tend to be more effective than non-union safety representatives. Various studies have looked at workplaces onshore where recognised trade unions appoint safety representatives (in terms of SI 500, the onshore equivalent of SI 971) and in firms where there is no trade union. The evidence onshore is that trade union safety representatives are better trained, enjoy materially better support and are less likely to be intimidated.²³

108 The effectiveness of safety representatives depends on many factors and influences, from both within and outside of their work environment. In the 1993 review of SI 971, some safety representatives said that they felt isolated. Although it was acknowledged that safety representatives were an important source of knowledge for each other, contact was largely confined to those working on the same installation. This situation was, to some extent, addressed by the Step Change initiative and the setting up of the Step Change Safety Reps Network.

109 Launched in 1997, Step Change was met with some scepticism by the workforce but the offshore industry was keen to support this workforce involvement initiative and people were seconded from industry to work with and support Step Change, some on a full-time basis. Since 2007 this arrangement has gradually changed so that now all but one of the Step Change team is directly employed by Oil & Gas UK.

110 Being a wholly owned subsidiary of Oil & Gas UK since 2007, Step Change is now perceived by some as being closely aligned with the offshore industry and this re-alignment is seen as an opportunity for the offshore industry leaders to once again set the agenda for workforce involvement. For example, in 2008 when Oil & Gas UK organised a conference to discuss the urgent issue of evacuation provisions on installations on the UKCS, no offshore safety representatives were invited to attend and the delegate rate was prohibitively expensive for an individual

²¹ Piper Alpha Inquiry page 376, para 21.82 – Safety delegates in the Norwegian offshore safety regime

²² Piper Alpha Inquiry page 374, 21.75

²³ For example: Reilly, B, Paci, P and Holl, P (1995) 'Unions, safety committees and workplace injuries', British Journal of Industrial Relations, Vol 33, 273-88; HSE Research Report 581, HSE Better Backs 2006: Worker involvement evaluation, Research with UNITE Amicus safety representatives

who was not corporately funded. The Step Change Offshore Safety Reps Network in October 2008 omitted any mention of the evacuation issue from the agenda. Since HSE raised evacuation provision as an area in need of urgent attention and the safety representatives and their constituents needed to know about the issues, it seems that an opportunity was missed to gain the co-operation, insight and input of the workforce.

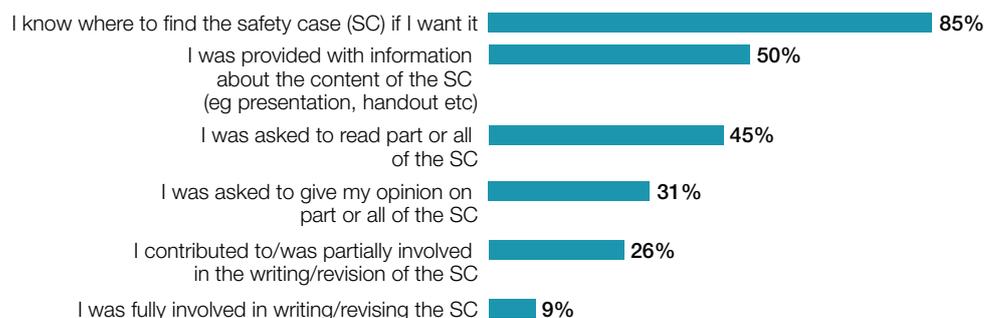
111 Alternative opportunities for the exchange of ideas, issues and best practice are limited. Workforce involvement events organised by the OIAC Workforce Involvement Group through HSE have attracted large numbers of delegates and received positive feedback with most participants favouring more in the future. These events focus on the major hazard work environment and provide an open forum for issues to be raised with HSE, unions and offshore industry representatives, as well as the sharing of experiences of incidents and lessons learned.

112 The 2009 Offshore Workforce Survey indicated that, despite the mandatory requirement for consultation about safety cases, only 30% knew where the safety case for their installation could be found. Of the 3813 asked, 70% said that they had not been consulted in any way. The minority of those who said they had been consulted had been involved in a range of different ways, some more substantive than others.

113 The role of the safety representative still appears to be unclear in some quarters. At a Step Change Safety Reps Network meeting in 2009, when asked about involvement in inspections or investigations, the vast majority of participants had not participated in either in the last year.

2009 Offshore Workforce Survey

Only 30% of respondents said that they had been consulted about their installation's safety case. They said this about their consultation:



This means that only 15% of all respondents were provided with information about their installation safety case or were involved to some degree in its preparation or revision.

Victimisation and 'not required back' (NRB)

114 Lord Cullen had recommended the introduction of measures to protect safety representatives from victimisation and in 1992 the Offshore Safety (Protection Against Victimisation) Act 1992 was introduced. In 1993, 47.7% of safety representatives surveyed feared some sort of disadvantage as a result of raising a safety issue.²⁴

²⁴ M Spaven et al *The Effectiveness of Offshore Safety Representatives and Safety Committees: A Report to the Health and Safety Executive* Vol 1, 4.5 p 111

115 While the 1992 Offshore Victimisation Act addressed the issue for safety representatives, the introduction of the Public Interest Disclosure Act 1998 (PIDA) partially extended protection to other employees. The fundamental purpose of PIDA is to encourage greater openness in the workplace by protecting workers against dismissal or other detrimental treatment for 'blowing the whistle' on wrongdoing in the workplace, including breaches of health and safety.

116 Actions under PIDA may only be brought against employers by employees, not against a third party. So unless their employer terminates their contract, this course of action is not available to workers employed by contractors who disclose unfavourable information about the workplace or company that is retaining the services of the contractor.

117 The practice of exclusion of contract staff from a particular installation or company, for whatever reason but allegedly on numerous occasions for raising safety concerns, became known as NRB (not required back). The offshore company tells a contractor that one or more of its staff are 'not required back' and although in most cases the contractor continues to employ the worker, alternative employment must be found for them which may be less lucrative.

118 The worker involved often discourages the trade unions from taking the matter up as there is a fear that a general 'blacklisting' may result, with the worker unable to secure offshore employment with possible reduction in remuneration or loss of employment.

119 NRB has been a longstanding issue in the offshore industry, where a high proportion of the workforce is employed by contractors. In 2009, Oil & Gas UK published guidance to its members setting out the principles and process to be followed in the event of permanent removal of contractor personnel from an offshore installation. The guidance was welcomed by the unions and will be reviewed jointly next year.

Structure and operation of safety committees

120 Lord Cullen described the safety committee as '*possibly the most visible instrument for the involvement of the workforce in safety...*'²⁵

121 On some installations, the safety committee truly is an effective adjunct to the safety management process with the interests of the workforce more than adequately represented. On others, the story may be quite different. Anecdotal evidence suggests that the effectiveness of a safety committee depends largely on the individuals involved, their motivation and the support they receive.

122 On larger production installations, among more established operators, safety representatives often meet regularly with others from across the oil company's operations. This has the effect of instilling a degree of confidence and provides greater knowledge to the individual safety representatives. However, on smaller operations and across many mobile drilling units, the safety representatives tend to play a less active role and safety committees are often little more than a 'meeting for a lecture by the safety committee chairman', the OIM.

123 Even where the system functions well, there occasionally arises an issue so broad, complex or downright contentious, such as NRB (not required back), that no individual offshore safety representative can, or should be expected to, deal with it in isolation.

²⁵ Piper Alpha Inquiry, para 18.48

124 SI 971 makes provision for the establishment of the safety committee and its membership, including the designation of the OIM to the role of Chair. This has obvious advantages and disadvantages. As Chair, the OIM is responsible for calling the first meeting of a newly established safety committee, and thereafter but at least every three months.

125 Safety committees are not bound by duties but their functions include:

- keeping measures to ensure the occupational health and safety of workers under review;
- ensuring adequate representation of the workforce;
- keeping the arrangements for training of safety representatives under review;
- considering representations from members about health and safety issues;
- considering the causes of incidents and cases of occupational ill health;
- considering any document, including the installation safety case, relating to the health and safety of the workforce;
- preparing and maintaining a record of meetings which must be kept on the installation for a year.

126 In most of these functions the safety committee may make representations to the dutyholder, normally the operator or owner of the installation.

127 The aim of these provisions, and indeed of the safety committee, is to promote co-operation on all occupational health matters affecting everyone on the installation and to seek to promote and develop measures to ensure the occupational health and safety of the workforce.

128 The 1993 review of SI 971 revealed concerns about the demarcation between 'welfare' and 'health and safety' issues; the role and sometimes conflicting interests of the OIM in the role of Chair – who may set the agenda and also take the minutes of meetings. It is uncertain to what extent, if any, these issues still exist. The 2009 Offshore Workforce Survey showed that nine out of ten of the 3813 participants agreed strongly or tended to agree that the safety committee plays an important role in workforce health and safety. Interestingly, 13% of former safety representatives disagreed (about 60 people out of 3813).

129 As with aspects of the safety representatives system, the operation of the safety committee may be wholly unaudited apart from inspections by HSE inspectors.

Part 4 Main findings of the 2009 Offshore Workforce Survey

Summary of the main findings

Sample profile

130 These results are based on 3813 questionnaires completed by offshore workers in March 2009.

131 About a sixth (18%) of the respondents had been working offshore in the North Sea for less than two years but most (59%) had been in this setting for over five years. Managers and supervisors (83%) were much more likely to have been working in the sector for a long time while one in six (17%) of the deck crew were in their first year in the North Sea.

132 Just over three-quarters of the sample (77%) were contractors, while the others (23%) were directly employed by oil or gas companies. Managers and supervisors were relatively more likely to be employees (35%) while almost all scaffolders and caterers (98% and 88% respectively) were contractors.

133 The single most common work role was as a technician (31%), followed by those working in management/supervision (20%), drilling (13%), catering (8%), as deck crew (5%) and as scaffolders (4%).

134 Two-thirds of respondents reported that they had worked most recently on a fixed installation, while much smaller numbers said their most recent work setting was either mobile offshore drilling unit (MODU) (15%) or floating production storage and offloading unit (FPSO) (17%).

135 Of the sample, 5% said that they were currently a safety representative at the time of the survey, while another 12% had held this role in the past. Those presently operating as safety representatives were most likely to be working in catering (10%). Technicians were least likely to have ever had this role.

Health and safety and HSE

136 Safety meetings were by far the most important single source of advice and information about health and safety – 81% of those answering put them in the top three sources. This view was consistent across work areas but was slightly less common among newer arrivals to the North Sea (72% of those in their first year) compared with longer-established workers (83% for those who had worked there for over five years).

137 The next most mentioned in the top three sources were supervisors (43%), although this is well behind the figure for safety meetings; these were most likely to be drillers and caterers (about half these). This figure was closely followed by that for elected safety reps (40% but mentioned by just over half of scaffolders and those working in catering).

138 Other commonly mentioned sources were inductions (35%), safety alerts (33%) and notice boards (30%). The HSE's own website had far fewer mentions (7%), perhaps reflecting the very limited access to the internet on most installations – the figure was notably higher for managers/supervisors (14%) and among the small sample of medics (19%).

139 When workers wanted information from the HSE, most of them (66%) would expect to get it from their safety rep, especially scaffolders (76%) and caterers (79%), although many would plan to get HSE information from a website (54% including 68% of managers and supervisors and 91% of medics). This website figure contrasts with the very modest numbers who placed online options in their top three sources actually used – the HSE question is more hypothetical. Beyond this, a minority (20%) would use telephone contact but this included 29% of current safety reps.

140 Respondents were asked to pick from a list of possible issues that the HSE might have raised over the previous year. Just over half (54%) mentioned the investigation of an incident, well ahead of the next most common responses, health (37%, including 77% of medics), worker involvement (also 37%, but with 51% of caterers) and hydrocarbon releases (35% including 49% of managers and supervisors and 45% of direct employees).

141 Recall was lower for Improvement or Prohibition Notices for an installation (26%), asset integrity (24% overall with 45% of managers and supervisors and 34% of direct employees), NRB (14%) and KP3 (10% but 26% of managers and supervisors). Generally speaking, it was more likely that past and present safety

reps would mention any of these issues when compared to their colleagues. Only 7% were unable to remember any issues raised by HSE in the last 12 months.

142 Workers were asked if they had ever read or used a number of HSE publications and, if so, how useful they had found each of them. Each of the four publications had been seen by at least 75% of offshore workers.

143 Each of the four publications was rated as being very or fairly useful by well over half of those who answered these questions. The highest rating for usefulness was for the HSE workforce involvement flyer (82%), followed by *Tea-shack News* and Guidance and Leaflet (both 78%). *Play your part* was rated as useful by 63% of the sample.

144 It is worth noting that the usefulness of these publications was somewhat qualified because about twice as many rated each of them as being fairly rather than very useful. Other than *Tea-shack News*, the more recent recruits to the North Sea tended to find each of the publications more useful than their more experienced colleagues.

145 When asked to pick the ways in which they would be interested in receiving HSE information, by far the most common selection was an offshore-worker-specific website (56% including 60% of managers and supervisors, 66% of current safety reps and 71% of medics). This reflects the quite high volume of mentions of online access to HSE information noted earlier.

146 Beyond that, there were more modest mentions for health and safety awareness seminars (25% including 47% of current safety reps, 41% of medics and 31% of managers and supervisors), an online safety forum (23% but 41% of medics and 39% of current safety reps) and an electronic bulletin (21% with 31% of managers and 39% of medics). There were much smaller numbers who picked news reader (8% but 16% of deck crew), podcasts and mobile text alerts (both 4%).

147 A fifth of the sample were not interested in any of the suggested sources. In relative terms, the lowest levels of interest in any HSE information were found among those working in drilling (26%), in catering (24%) or as marine crew (26%).

Hazards and accidents

148 The two most common ways of knowing about major hazards in the workplace and the measures and arrangements in place to prevent major accidents were toolbox talks and safety meetings (both identified by 79% of the sample). Medics and caterers were less likely to take part in toolbox talks but safety meetings were mentioned by consistently high numbers in all work areas.

149 Four sources of knowledge were each mentioned by about two-thirds of those completing the questionnaire – participation in risk assessment, experience, permit to work and via employers (but 70% for direct employees and 69% for both managers/supervisors and those working in drilling).

150 Relatively few people mentioned elected safety reps (41%) and their own knowledge of the installation's safety case (34%).

The safety case

151 A clear majority of the sample (70%) said that they had not been consulted on the safety case.

152 The highest levels of consultation were recorded for managers/supervisors (46%) and deck crew (40%), along with the small sample of medics (47%). Direct employees of oil and gas companies were far more likely to have been consulted (42%) than those working as contractors (26%). This was also the case for current and previous safety reps (50% and 43% respectively).

153 The minority who had been consulted had been involved in a range of different ways, some more substantive than others.

154 A large majority of consultees knew where the safety case was located on the installation (85%) while exactly half of this group said that they were provided with information about the case and nearly as many (45%) were asked to read at least part of the safety case.

155 Almost a third of those consulted (31%) were asked to give their own opinion on the safety case and a quarter (26%) made some contribution to the writing of the case.

156 Only a small number of those consulted said they were fully involved in the writing or revision of the safety case.

157 Half of consultees felt that a change was made to the installation's safety case as a result of workforce consultation. Managers (57%) and current safety reps (66%) were the most positive in this respect.

158 About a third (31%) of those consulted felt that the process had been very effective at gaining their input – a much larger proportion (59%) thought that it was only fairly effective although few of those involved (10%) rated it as being ineffective. Managers were the group who felt that the process was most effective.

Involvement in health and safety in the workplace

159 Nine out of ten respondents were very or fairly well involved in health and safety in their workplace, although only 41% said they were actually very well involved.

160 Those most positive about this involvement were managers and supervisors (60% said very well involved). Other relatively high scores were recorded for those working in drilling (44% very well involved) or as deck crew (42%). Direct employees were also considerably more positive than contract workers (52% and 37% respectively). Unsurprisingly, safety reps scored more highly (55%) than people who had never had this role (39%).

161 The lowest figures for being very well involved were recorded for scaffolders (28%) and technicians (32%).

Perceptions around the workplace, including hazards

162 A total of 16 statements were included on the questionnaire and workers were asked to show to what extent they agreed or disagreed with each one. While the lowest level of agreement with any of the statements was 73%, it is important to note that there was often qualified agreement ('tend to agree') and, in a few cases, a degree of disagreement.

163 There was very high agreement (98%) that it was important for the workforce to be involved in health and safety – 79% strongly agreed, including 93% of medics and 85% of both managers and supervisors and direct employees.

164 A very large majority (92%) agreed that senior managers value workforce involvement in health and safety, although a rather smaller proportion (52%) agreed strongly with this statement. Managers/supervisors were the most positive group (with 68% in strong agreement) but scaffolders were more critical (including 17% who actually disagreed with the statement).

165 There was almost identical agreement (93%) among contractors that their employers valued workforce involvement. Drillers (62%) and those with less than a year working on North Sea installations (64%) were most likely to be in strong agreement.

166 The level of agreement (95%) was very high for being fully aware of the major hazards in the workplace. However, only 50% were in strong agreement. Managers and supervisors were again the most positive group, with 62% agreeing strongly with the statement.

167 There was again a high level of agreement (92%) that safety reps play an important part in health and safety in the workplace. Strong agreement was less marked among former safety reps (44%) than among those who currently had this role (63%). Some 13% of former reps actually disagreed, as did 11% of managers and 12% of medics.

168 Nine in ten agreed that the safety committee played an important part in workforce health and safety – 44% were in strong agreement. Views were consistent across sample groups although 13% of former safety reps disagreed with the statement.

169 There was high agreement (86%) that the respondent was actively contributing to the management of health and safety issues – 39% agreed strongly. Managers and supervisors (61%) and medics (60%) were most likely to be in strong agreement. Contractors were less positive than workers directly employed by oil or gas companies (35% strongly agreeing compared with 51%).

170 Most people (76%) agreed to some extent that they would like to be more involved in health and safety issues, although only 20% were in strong agreement. Scaffolders (84% agreement) and decks crews (80%) were those most enthusiastic in this respect; technicians were the least engaged (21% disagreeing).

171 Almost everyone (99%) agreed that it was important for a company to have a strong health and safety culture – 80% strongly agreed with this statement, including 87% of managers.

172 Agreement was virtually as strong (99%) that training is important for people to be aware of health and safety, with 78% in strong agreement. Managers (82%) and marine crew (84%) gave the most positive responses, along with direct employees (84%).

173 Similarly, 99% also agreed that they understood their role in the prevention of major accidents, although strong agreement was lower at 71%. Relatively high scores for strong agreement were recorded for medics (81%), marine crew (80%) and managers/supervisors (79%).

174 Well over half of the sample (60%) strongly agreed that they were encouraged to raise health and safety concerns in their workplace and a further 35% tended to agree but this still left 5% who disagreed with the statement. Overall agreement was at least 90% for all work areas but was especially high for managers and those working in drilling. However, it should be noted that 10% of both scaffolders and marine crew disagreed with the statement, along with 25% of those who said they were not well involved in health and safety in the workplace.

175 Most people (58%) were in strong agreement that their job security would not be threatened if they stopped a job they thought was unsafe. Another 32% of the sample tended to agree, leaving one in ten of the workforce actually disagreeing with this idea, ie implying that their job might be at risk if they stopped work on safety grounds. Disagreement was most common among scaffolders and marine crew (both 15%).

176 Overall agreement was high (at 95%) that people were fully aware of the measures in place to prevent major accidents in the workplace. However, nearly

half of this agreement (45%) was qualified ('tend to agree'). Managers and supervisors were most likely to be in strong agreement (62% compared with 50% across the whole sample) while 7% of scaffolders disagreed with the statement.

177 Nine in ten (91%) of the sample agreed that they had received adequate training from their company to enable them to be fully involved in health and safety issues. Again, many people tended to agree (44%) rather than express strong agreement (47%) and a minority 9% actually disagreed with the statement. Drillers had the highest agreement across work areas (95%), while the lowest score (87%) was given by scaffolders. Agreement was stronger (55%) among direct employees than among contractors (45%).

178 Almost three-quarters of the sample agreed to some extent that they had received training from outside their company to enable them to be fully involved in health and safety issues. Just over a fifth disagreed, including 30% of marine crew, 25% of technicians and 24% of those who had worked offshore in the North Sea for over five years.

179 Of the respondents, 91% were recorded as agreeing to some extent that they were confident their health and safety concerns would be dealt with appropriately – just under half (47%) agreed strongly. Again, this left a majority of people not in strong agreement that concerns would be treated suitably. Managers/supervisors were the most confident (59% strong agreement) while scaffolders were the most pessimistic (13% disagreeing with the statement).

Survey methodology

Sampling

180 The two most practical ways of researching the views of offshore workers are by contacting them on installations or at embarkation points for the North Sea. Although some previous surveys of this population have successfully collected data on the installations, the timing and potential lack of control over the sample distribution meant that this particular survey of the offshore workforce involved fieldwork at the main departure location, Dyce Airport at Aberdeen, supplemented by some data captured at Norwich for workers flying out to the southern installations.

181 The evolving questionnaire was short enough to consider self-completion as an option and other surveys among this group have been carried out on that basis. While there is a loss of some data quality (mainly because of missing values or item non-response), a much greater volume of questionnaires would be completed on this basis than through an interviewer-administered approach.

182 At Aberdeen, interviewers split their time between the three separate buildings that housed the operations of the helicopter companies – the relative time in each location reflected the estimated daily volume of workers transported by each firm.

183 The fieldwork took place between 8.45 am and 2.45 pm, though the volume of workers tailed off sharply after late morning. Essentially, the interviewers' task involved distributing questionnaires and pens to as many workers as possible, after explaining the purpose of the survey and the confidentiality of the process – no personal information (such as names, addresses or telephone numbers) was collected, nor were installations or employers identified on the questionnaire. The only exclusion from the survey was for people who had never worked offshore in the North Sea before.

184 The introduction to the questionnaire noted the positive engagement of UNITE and the Offshore Wing of the RMT trade unions, as well as Oil & Gas UK, OCA, IADC North Sea Chapter and the individual members of the Worker Involvement Group.

Sample size

185 Thirty-six interviewing shifts were worked at Aberdeen, with four in Norwich, and this is reflected in the distribution of the achieved sample. In total, 3813 completed and usable questionnaires were collected by the interviewers and these formed the basis of the quantitative analysis. Altogether, 3664 questionnaires were returned from Aberdeen airport, with 149 from Norwich. The overall sample represents well over 10% of the workforce at North Sea installations – anecdotal reports from interviewers reflected a high level of co-operation among those approached to take part in the survey.

Fieldwork arrangements

186 All of the fieldworkers working on the study were fully trained members of the GfK NOP fieldforce and the process was subject to the criteria of the Market Research Society's Interviewer Quality Control Scheme. HSE facilitated access to all helicopter company sites. Interviewing was carried out between 4 and 20 March 2009.

Data analysis

187 Completed questionnaires were collected by interviewers and returned to the GfK NOP processing centre for booking-in, coding of verbatim responses and data entry. A tailored edit was applied to the raw data to remove errors, omissions and inconsistencies and the resulting clean data file was used to generate computer tables for each question, with response categories broken down by key variables. The tabulation bases for each of the questions aimed at all respondents were those who actually answered the relevant question.

Qualitative work

188 Although the questionnaire covered quite a lot of issues and collected a useful volume of data from each respondent, there was an agreed need for more depth of information in certain areas. Some qualitative interviewing was used to supplement the quantitative data with a view to identifying supporting verbatim responses and to cover some of the issues that could not be included in the main questionnaire.

Survey outputs

189 The initial output from the survey consisted of a verbal debrief on the emerging findings that was delivered on 20 March and based on two-thirds of the final sample of completed questionnaires. The debrief featured PowerPoint slides to illustrate the key findings and these were later updated to reflect the full data.

190 Computer tables were also produced to show the overall results broken down by key variables such as employee/contractor, work area, time offshore and involvement as a safety rep. These tables were used as the basis of summary and full survey reports – supporting quotes were taken from the qualitative work to back up the findings from the quantitative research.

Appendices

Appendix 1 OPITO – The Oil & Gas Academy

1 The Offshore Petroleum Industry Training Organisation (OPITO, now known as the 'Oil & Gas Academy') was launched in December 2007, having evolved through a number of guises emanating from the original Petroleum Industry Training Board, created in 1979. It is 'owned' by equal industry partners Oil & Gas UK, the International Association of Drilling Contractors (IADC) and IUOOC.

2 OPITO develops standards based on industry demand. These standards are not mandatory but are held to be examples of good practice advised by the offshore industry. The industry funds OPITO for the provision of services, it does not receive government funding.

Standard design, maintenance and change

3 Standards are maintained and designed through the involvement of industry workgroups which involve all relevant interested parties – employers, employees, technical specialists and HSE representatives. OPITO does not own any standards but acts as custodian on behalf of the industry.

4 The maintenance of training standards is managed through an industry body – the Standards and Approval Committee (SAC). This is a pan-industry body which includes representatives from various sectors of the industry by trade association, eg IADC, WSCA, OGUK and OCA IUOOC, and also representatives from the Training Providers Advisory Group. It is formally structured with stated terms of reference concerning consultation and chairmanship. The SAC reports directly to the OPITO Board who are the ultimate stewards of the industry (OPITO) standards, where it seeks ratification of changes or acceptance of new standards.

5 New standards or modification of existing ones are driven by emerging needs, changes to working practices, identification of hazards etc. The drivers must come from the employers and usually at the prompting of the workforce through inter-company or trade association consultation.

6 OPITO also develops UK National Occupational Standards (NOS) – again in consultation with industry. The awarding bodies in the UK then develop the assessment requirements for qualifications based on the NOS. There are 25 standard-setting bodies in the UK that develop specific industry occupational standards. One awarding body exists in Scotland, the Scottish Qualifications Authority (SQA), but there are many others elsewhere in the UK, eg City and Guilds. National occupational standards are highly controlled and regulated through government agencies. OPITO does not lead in this process but applies it on behalf of employees who wish to gain a National Qualification. OPITO does not own these standards, which are the property of the Crown.

OPITO-approved training centres

7 OPITO currently approves 35 centres within the UK to deliver training and assessment to OPITO standards. These are training centres that deliver training to OPITO standards in emergency response, hazardous activity (rigging, lifting etc) or occupational competence (national occupation standards for mechanical, instrumentation, electrical or hydrocarbon processing disciplines).

8 Approval is granted when compliance to the OPITO approval criteria is measured and accepted. Compliance is checked annually and unannounced audits are also initiated upon receipt of verifiable reports by employers/employees about unacceptable quality training delivery of safety issues.

Vantage

9 Each person trained to the OPITO standards has their personal training details recorded within the Vantage Central register, which is maintained by OPITO. A registration fee is charged for each registration, which funds the management of data, quality assurance of training provision, maintenance and development of standards.

10 The driver for the registration and quality assurance system emanated from Lord Cullen's recommendation for the industry to have an independent central registration system of all emergency response training.

OPITO international and other standard-setting bodies

11 OPITO does not have international standards but its standards are adopted in other countries as the choice of governments and employers. Employers' desire for common standards and consistency has resulted in the OPITO standards being adopted internationally.

12 OPITO has completed several benchmarking exercises over the years with other nations' standards. It is not unusual for OPITO standards to be subsequently adopted in preference to existing national standards. However, countries involved in the hydrocarbon industry usually have their own suite of emergency response standards, eg Norway, Netherlands and Denmark for the North Sea, as well as Australia, Thailand, Indonesia and USA etc.

13 OPITO has established employer forums and training provider advisory groups overseas, based on the UK model, to ensure that standards are created that are appropriate for the regional environment, laws and regulations, eg warm water survival training (BOSIET) for the Asian Pacific, Middle East and African regions.

14 OPITO will form alliances with industry or governmental bodies with the common aim of improving workforce safety and competence, eg the ECITB in the UK, and also with the Indonesian and Thai governments. OPITO also works closely with the International Transport Federation (ITF) to facilitate the adoption of OPITO standards by other hydrocarbon producing nations.

Modern apprenticeship

15 The Upstream Oil and Gas Industry Technician Training Scheme (UOGITTS) is the industry response to addressing the need for a competent, stable and flexible technician workforce. The need to replenish the workforce has never been greater as operators and contractors experience skills shortages. The four-year programme equips motivated incomers to the offshore industry with the skills and knowledge to work as process operations technicians or maintenance technicians in electrical, instrumentation and mechanical disciplines.

16 The scheme consists of a two-year training period at college, studying full-time, with a further two years on a worksite placement. This placement will either be at an offshore installation, floating production storage and offloading unit (FPSO) or onshore gas plant. This apprenticeship scheme is fully funded by industry, with employers paying around £75 000 per apprentice. Sponsoring companies have funded the scheme to the value of £65 million since it started in 2001.

17 This is the leading apprentice scheme in the UK, with a successful completion rate in excess of 90%. Average recruitment is around 120 per year. Quality is managed by OPITO from recruitment, interview, aptitude testing, college placement, welfare and workplace placement. To date, 960 apprentices have been recruited. Overarching stewardship is provided by an industry steering group.

Minimum Industry Safety Training Standard (MISTS)

18 Companies in the UK North Sea agreed to develop an introductory training programme, Minimum Industry Safety Training (MIST), that would introduce the key safety elements required by all employees offshore. Training for workers new to the offshore industry was launched on 1 April 2009, with the aim that the standard would be adopted across the offshore industry by the end of 2010 for all new entrants. Existing workers may choose an online learn and test tool including a diagnostic learning assessment which is designed to define any necessary training need.

19 All training/assessment records will be managed by OPITO and held in the Vantage Central register.

20 MIST was developed by an industry workgroup led by Step Change with OPITO drafting the standard, which has now been accepted by the OPITO Board. Driven by the outcomes of the Step Change initiative 'Boots on for Safety', the new standard seeks to apply common basic safety training across the whole industry in an effort to improve safety performance. MIST consists of nine core elements covering risk assessment, manual handling, COSHH, installation integrity, PTW, working at height, introduction to hazards offshore, safety observation systems, and working safely.

21 MIST incorporates many aspects of training provided by the larger companies in-house. It is envisaged that this new standard will achieve consistency in the training process, preventing duplication as the standard is adopted across industry.

22 Some employers will build the new standard training content into their induction programmes and this will also be approved by OPITO when compliance is verified.

Appendix 2 SI 971 provisions

1 The Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989 (SI 971) were introduced 20 years ago.

2 The Regulations apply to normally manned installations and are primarily concerned with the election of safety representatives, their functions and powers; the establishment and running of safety committees; the duties of installation owners, OIMs and employers. Regulation 26 deals specifically with time off for safety representatives and regulation 27 deals with training. HSE publication *A guide to the Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989* (L110), last published in 1998, contains guidance on the Regulations (see Further reading).

Safety representatives

The appointment of safety representatives

3 SI 971 provides for everyone on an installation, apart from the OIM, to elect safety representatives. It is the duty of the OIM to ensure that the system for electing safety representatives is in place and maintained. The election process is based on the parliamentary procedure and so each installation is divided into a number of constituencies. These may reflect natural divisions – people who work together in one particular part of the installation or who carry out the same functions, do the same type of work or are employed by the same contractor. Each constituency is limited to a maximum of 40 people but there should not be fewer than two constituencies on any installation. Introduced in 1989 by the Department of Energy, 18 years on, the SI 971 system of universal franchise is well embedded offshore.

4 The OIM is responsible for establishing and maintaining the system of constituencies, in consultation with a safety committee if there is one.

5 The Regulations are relatively prescriptive and detailed in describing the process that the OIM is required to follow in the establishment of the constituencies and also in communicating the process or changes to the workforce. Consultation is mandatory either with the workforce or with a safety committee where one is established. The OIM must also consult with an employer where a constituency is comprised of people from a single employer.

6 Everyone who is expected to be on an installation for more than 48 hours is assigned to a constituency and informed in writing of the details of their safety representative. Safety reps are similarly informed of new constituency members.

7 Elections of safety reps, held by secret ballot if there is more than one nomination, take place if a new constituency is set up, if a safety rep has been in office for two years (unless representative for a single employer constituency), or if a safety rep resigns, has their employment terminated or has been absent from the installation for 12 weeks. Elected safety reps remain in office unless one of these criteria applies.

8 SI 971 requires a candidate for the position of safety representative to be a member of a constituency, be willing to stand and be nominated and seconded by members of the same constituency. The OIM, if content that all of these criteria have been met, must make facilities available to the candidates to enable them to promote their campaigns. It is also the duty of the OIM to display a list of all nominated candidates or of vacancies where there are no nominations.

9 There may be occasions when no candidate is nominated as a safety representative, in which case the OIM must keep, update and display a list of potential candidates so that the workforce are reminded that an election can take place when someone is nominated.

10 The many duties placed on the OIM throughout the nomination and election process make this role pivotal to the appointment of safety representatives.

The role of the safety representative

11 Safety representatives have an important role in any organisation committed to an effective and evident safety culture. Their contribution to successful health and safety management may be welcomed at all levels but safety representatives often provide the shortest link between members of the workforce and the managers of the organisations that employ them.

12 SI 971 does not impose statutory duties on safety representatives but sets out a number of important and recognised functions, powers and entitlements.

13 'Functions' include the investigation of incidents including near misses and potential hazards; the investigation of complaints by constituency members; to make representation on behalf of constituency members to the OIM, employers and HSE inspectors; and also to attend meetings of an established safety committee.

14 To enable safety representatives to fulfil their functions they may exercise 'powers', defined in the Regulations. Powers entitle safety representatives to seek advice on anything arising from an investigation or representations made. They may also inspect any part of the installation or equipment once every three months, subject to notice in writing. More frequent inspections will require the express agreement of their employer or the dutyholder (in relation to the installation). Inspections may also form part of an investigation.

15 Safety representatives do not have any powers to 'stop a job'. They cannot stop any work even if they consider it to be dangerous and that someone might be injured or worse. Their power in this respect is limited to making representations to the dutyholder – the installation owner or the operator – which should then result in a report being sent from the OIM to the HSE. Safety representatives may also send their own report to HSE.

16 An additional listed 'power' assigned to safety representatives is that of receiving information from an HSE inspector which, under section 28(8) of the Health and Safety at Work Act 1974, the inspector is required to disclose to the workforce or their representatives.

17 Dutyholders, employers and OIMs are obliged to make information available to safety representatives. Any relevant document that relates to health and safety and is required to be kept on the installation should be made available to safety representatives by the OIM. This includes the installation safety case. The requirement for dutyholders to make the information contained in the safety case available was introduced by the Offshore Installations (Safety Case) Regulations 1992. These Regulations also amended SI 971 to include, at regulation 23, mandatory consultation with safety representatives over the preparation, revision and amendment of an installation safety case.

18 HSE guidance on regulation 23 'Duties of installation operators and owners, and employers' states:

'The importance of regulation 23 cannot be overemphasised. It places responsibilities on dutyholders and other employers to consult safety representatives on health and safety arrangements. This includes mandatory consultation of safety representatives over the preparation of installation safety cases or their subsequent amendment; and makes it possible for dutyholders to fulfil their statutory functions.'

19 The nature of 'consultation' is not defined.

Appendix 3 The Offshore Workforce Survey questionnaire



GfK NOP



Offshore Worker Health and Safety - HSE review

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This questionnaire has been compiled with the input and support of Unite and the offshore wing of RMT (formerly OILC) unions, also Oil & Gas UK, OCA, IADC North Sea Chapter, and the individual members of the OIAC Workforce Involvement Group.

The information gathered will contribute to the group's report on the involvement of the offshore workforce in major hazard health and safety issues. This will form part of the KP3 review. HSE is also interested in building up a picture of how H&S information reaches offshore workers.

An independent survey research agency, GfK NOP, has been commissioned to undertake this research on our behalf. To this end, we would be grateful if you would complete the questionnaire and return it to the GfK NOP interviewer or place it in the box provided

We are most grateful for your time and your contribution. Thank you.

1. How long have you spent working offshore in the North Sea? *PLEASE TICK ONE ONLY*

- Never been offshore before - sorry, you are not eligible to take part in the survey
- Less than a year
- 1 year, less than 2 years
- 2 years, less than 5 years
- 5 years or more

For the rest of the survey, please answer the questions by thinking about the **LAST INSTALLATION** you were on.

2. Which one of these is your main work area? *PLEASE TICK ONE ONLY*

- | | |
|--|--------------------------------------|
| Management/Supervisor <input type="checkbox"/> | Deck Crew <input type="checkbox"/> |
| Technician <input type="checkbox"/> | Catering <input type="checkbox"/> |
| Drilling <input type="checkbox"/> | Medic <input type="checkbox"/> |
| Scaffolder <input type="checkbox"/> | Marine Crew <input type="checkbox"/> |
| Another work area (<i>PLEASE TICK AND WRITE IN</i>) <input type="checkbox"/> | |

3. In which of these settings have you worked on most recently? *PLEASE TICK ONE ONLY*

- | | |
|--|-------------------------------|
| On a fixed installation <input type="checkbox"/> | FPSO <input type="checkbox"/> |
| MODU <input type="checkbox"/> | NUI <input type="checkbox"/> |

4. Do you work for a contractor?

- Yes, work for a contractor No, work for an oil/gas company

5. Are you currently or have you ever been, an elected safety representative? +

- Yes, currently an elected safety representative
- Yes, have been one in the past
- No, never been a safety representative

6. In order of importance, what are your **THREE** main sources for information and advice on health and safety? PLEASE WRITE 1 BY YOUR MOST IMPORTANT SOURCE, 2 BY THE SECOND AND 3 BY THE THIRD

- | | | |
|---|--|---|
| | Elected Safety Reps <input type="checkbox"/> | Inductions <input type="checkbox"/> |
| + | Colleagues <input type="checkbox"/> | HSE website <input type="checkbox"/> |
| | Supervisors <input type="checkbox"/> | Other website/Internet <input type="checkbox"/> |
| | Notice Boards <input type="checkbox"/> | Card in Room <input type="checkbox"/> |
| | Safety Meetings <input type="checkbox"/> | Safety Alerts <input type="checkbox"/> |

7. If you want information from the Health and Safety Executive (HSE), how would you get it? PLEASE TICK ALL THAT APPLY

- | | |
|----------------------------------|--|
| Phone <input type="checkbox"/> | Safety Reps <input type="checkbox"/> |
| Website <input type="checkbox"/> | Any other way? (PLEASE TICK AND WRITE IN) <input type="checkbox"/> |

8. Which of these issues have you been aware of HSE raising over the last year? PLEASE TICK ALL THAT APPLY

- | | |
|--|---|
| KP3 (Key Programme 3) <input type="checkbox"/> | Workforce Involvement <input type="checkbox"/> |
| Improvement/Prohibition Notice(s) for your installation <input type="checkbox"/> | Hydrocarbon Releases <input type="checkbox"/> |
| NRB (Not Required Back) <input type="checkbox"/> | Investigation of an Incident <input type="checkbox"/> |
| Asset Integrity <input type="checkbox"/> | Health <input type="checkbox"/> |

Any other issues? (PLEASE TICK AND WRITE IN)

None

9. How useful are each of these sources of information provided by HSE? PLEASE TICK ONE ANSWER ON EACH LINE

	Very useful <input type="checkbox"/>	Fairly useful <input type="checkbox"/>	Not very useful <input type="checkbox"/>	Not useful at all <input type="checkbox"/>	Never used/read <input type="checkbox"/>
Tea Shack News <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Play your Part <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HSE Leaflet <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guidance & Leaflet <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Would you like more information from HSE about what it is doing on offshore health and safety? IF YES, PLEASE WRITE IN WHAT YOU LIKE TO SEE PROVIDED BY HSE

11. Would you be interested in receiving information from HSE in any of these ways? PLEASE TICK ALL THAT APPLY

- | | |
|---|--|
| Health and Safety awareness seminars <input type="checkbox"/> | Electronic bulletin (ebulletin) <input type="checkbox"/> |
| Offshore worker specific website <input type="checkbox"/> | Mobile text alerts <input type="checkbox"/> |
| Online safety forum <input type="checkbox"/> | News reader (RSS) <input type="checkbox"/> |
| Podcasts <input type="checkbox"/> | None of these <input type="checkbox"/> |

12. How do you know about the major hazards in your workplace and the measures and arrangements in place to prevent major accidents? *PLEASE TICK ALL THAT APPLY*
- | | | | |
|-----------------------------------|--------------------------|------------------------------|--------------------------|
| My employer | <input type="checkbox"/> | Knowledge of the safety case | <input type="checkbox"/> |
| Elected Safety Reps | <input type="checkbox"/> | Tool Box Talks | <input type="checkbox"/> |
| Safety Meetings | <input type="checkbox"/> | PTW (Permit to Work) | <input type="checkbox"/> |
| Participating in Risk Assessments | <input type="checkbox"/> | Experience | <input type="checkbox"/> |
- Any other ways that you know? (*PLEASE TICK AND WRITE IN*)
-
13. Have you been consulted about your installation's safety case (SC)?
- Yes - please answer q14 and q15 No - please go straight to q17
14. In which of these ways have you been consulted about your installation's safety case (SC)? *PLEASE TICK ALL THAT APPLY*
- | | |
|--|--------------------------|
| I know where to find the SC if I want it | <input type="checkbox"/> |
| I was provided with information about the content of the SC (e.g. presentation, handout etc) | <input type="checkbox"/> |
| I was asked to read part or all of the SC | <input type="checkbox"/> |
| I was asked to give my opinion on part or all of the SC | <input type="checkbox"/> |
| I contributed to/was partially involved in the writing/revision of the SC | <input type="checkbox"/> |
| I was fully involved in writing/revision of the SC | <input type="checkbox"/> |
15. Are you aware of any change made to the SC as a result of workforce consultation?
- Yes No
16. If you were consulted about your installation's safety case, how effective do you feel the consultation was in gaining your input? *PLEASE TICK ONE ONLY*
- | | | | |
|------------------|--------------------------|----------------------|--------------------------|
| Very effective | <input type="checkbox"/> | Not very effective | <input type="checkbox"/> |
| Fairly effective | <input type="checkbox"/> | Not at all effective | <input type="checkbox"/> |
17. How well involved do you feel in health and safety in your workplace? *PLEASE TICK ONE ONLY*
- | | | | |
|------------------------|--------------------------|---|--------------------------|
| Very well involved | <input type="checkbox"/> | Not involved at all | <input type="checkbox"/> |
| Fairly well involved | <input type="checkbox"/> | I do not want to be involved in health and safety | <input type="checkbox"/> |
| Not very well involved | <input type="checkbox"/> | | |
18. For each of these statements please tick the answer which best applies to you and your workplace, particularly connected with the major hazards. For each one, please show how much you agree or disagree. *PLEASE TICK ONE ANSWER ON EACH LINE*
- | | Agree strongly | Tend to agree | Tend to disagree | Disagree strongly | Not applicable |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| It is important for the workforce to be involved in H&S issues | <input type="checkbox"/> |
| I am active in contributing to the management of H&S issues | <input type="checkbox"/> |
| The senior managers of my workplace value workforce involvement in H&S | <input type="checkbox"/> |
| As a contractor, my employer values workforce involvement in H&S | <input type="checkbox"/> |
| Safety representatives play an important role in workplace H&S | <input type="checkbox"/> |
| The safety committee plays an important role in workplace H&S | <input type="checkbox"/> |
| I would like to be more involved in H&S issues | <input type="checkbox"/> |
| I feel that I am fully aware of the major hazards in my workplace | <input type="checkbox"/> |

19. For each of the following statements particularly connected with major hazards, please show how much you agree or disagree with each *PLEASE TICK ONE ANSWER ON EACH LINE*

+	Agree strongly	Tend to agree	Tend to disagree	Disagree strongly	Not applicable
I feel that I am fully aware of the measures and arrangements that are in place to prevent major accidents in my workplace	<input type="checkbox"/>				
It is important for a company to have a strong H&S culture	<input type="checkbox"/>				
I understand my role in the prevention of major accidents	<input type="checkbox"/>				
Training is important for people to be aware of H&S	<input type="checkbox"/>				
I have received adequate training from my company to enable me to be fully involved in H&S issues	<input type="checkbox"/>				
I have received training from outside my company to enable me to be fully involved in H&S issues	<input type="checkbox"/>				
I am encouraged to raise H&S concerns in my workplace	<input type="checkbox"/>				
I am confident that my H&S concerns will be dealt with appropriately	<input type="checkbox"/>				
My job security will NOT be threatened if I stop a job I think is unsafe	<input type="checkbox"/>				

20. If you raise health and safety concerns about your workplace where would you take your concerns? *PLEASE TICK ALL THAT APPLY*

- | | | | |
|---------------------------|--------------------------|-------------------------------|--------------------------|
| Directly to your employer | <input type="checkbox"/> | To your safety representative | <input type="checkbox"/> |
| To the OIM | <input type="checkbox"/> | Directly to HSE | <input type="checkbox"/> |
| To your supervisor | <input type="checkbox"/> | | |

21. What is your overall impression of health and safety management of your workplace? *PLEASE TICK ONE ONLY*

- | | |
|---------------|--------------------------|
| Very good | <input type="checkbox"/> |
| Good | <input type="checkbox"/> |
| About average | <input type="checkbox"/> |
| Poor | <input type="checkbox"/> |
| Very poor | <input type="checkbox"/> |

22. Is there anything else you would like to say about workforce involvement and/or health and safety in the North Sea? *IF YES, PLEASE WRITE IN THE BOX BELOW*

THANK YOU FOR COMPLETING THIS CONFIDENTIAL QUESTIONNAIRE. PLEASE HAND BACK YOUR QUESTIONNAIRE TO THE GFK NOP INTERVIEWER OR INTO THE BOX SUPPLIED

If you do have any queries about the research, or about GfK NOP, please contact the project manager at GfK NOP, Claire Bhaumik, email - claire.bhaumik@gfk.com or tel. +44(0) 20 7890 9717

Alternatively, you can contact Julie Voce, Chair of the Workforce Involvement Group, Offshore Division, Health & Safety Executive about the research or the Workforce Involvement Group email - julie.voce@hse.gsi.gov.uk or tel. +44(0) 151 951 3439

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Further reading

Key Programme 3 Asset Integrity Programme. A report by the Offshore Division of HSE's Hazardous Installations Directorate HSE 2007 www.hse.gov.uk/offshore/kp3.pdf

KP3 Review project report on workforce involvement The Offshore Industry Advisory Committee (OIAC) Workforce Involvement Group HSE 2009 www.hse.gov.uk/offshore/kp3workforceinvolvement.pdf

Asset Integrity: An industry progress report Oil & Gas UK 2009
www.oilandgasuk.co.uk/issues/health/kp3.pdf

Guidance for Corrosion Management in Oil and Gas Production and Processing
Energy Institute ISBN 978 0 85293 497 5

Corrosion Threats Handbook Energy Institute 978 0 85293 496 8

A guide to the Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989. Guidance on Regulations L110 (Second edition)
HSE Books 1998 ISBN 978 0 7176 1549 0

Play your part! How offshore workers can improve health and safety Booklet
INDG421 HSE Books 2008 (single copy free or priced packs of 10
ISBN 978 0 7176 6286 9) www.hse.gov.uk/pubns/indg421.pdf

Tea-shack News HSE newsletter for offshore workers: www.hse.gov.uk/offshore/teashack.htm

Further information

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For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

This report can be found at: www.hse.gov.uk/offshore/kp3review.pdf.

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