

UKOPA 2017

United Kingdom Onshore Pipeline Operators' Association

NEWSLETTER

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Having been appointed Chairman of UKOPA in February 2017 the first thing I should do is to introduce myself: my name is Grant Rogers and I've spent the last 23 years working in the gas industry, joining just before British Gas started to break up into separate businesses. I now work for Wales & West Utilities Ltd; one of the gas distribution businesses formed in 2005 after the network sales process. I am WWU's Asset Integrity Manager responsible for all of our transmission and storage assets, including pipelines and have been an active member of UKOPA for 9 years. I am proud to be chairing the Association for the next two years.

Welcome to our 2017 Newsletter, an update on our recent work and our future plans which are

being delivered by the UKOPA working groups: Emergency Planning; Fault and Risk Assessment; Infringement; Pipeline Integrity; and Process Safety. We continue to have an extensive work programme covering a wide range of pipeline safety and integrity management issues and I'd like to personally thank the many people involved in these groups who are carrying out this important work.

We continue to deliver the programme we started in 2015, when we reviewed the UKOPA strategy with a view to making the Association fit for 2020 and beyond. As always we welcome your feedback, please contact us by email at secretary@ukopa.co.uk.

One of the notable successes this year has been the Technical Seminar, held in Derby at the end of May, which was attended by 65 representatives from member companies as well as colleagues from the HSE. We listened to presentations on the latest set of Good Practice Guidance (GPG) documents which have been developed to assist Operators manage their pipeline assets. The seminar is a great opportunity for members to network with each other to share issues and learn about good practice. On a sadder note we learnt that Neil Jackson who had recently retired from National Grid Gas has passed away. Neil has been an active member of UKOPA since the early days and a past chairman, I am grateful to have known him and to have benefitted from his contribution, he will be missed.

Please do visit our website www.ukopa.co.uk where you will find further information, as well as publications, papers and good practice guides prepared by UKOPA members.

Grant Rogers
Chairman, UKOPA

Board of Directors and Chairman



Grant Rogers
(Chairman)



Barry Mackay



Barry Dalus



Graeme Pailor



Gurvinder
Badesha



Peter Davis
(Vice Chairman)

Current Board Members



Emergency Planning Working Group (EPWG)

Who are we?

The development of efficient pipeline emergency plans requires specialist information on pipeline operation, hazards that may affect the pipeline, the safety consequences of an accidental release of fluid and the required emergency response.

The Emergency Planning Working Group (EPWG) provides information and expert opinion on pipeline emergency planning and responses for UKOPA in relation to safety, security of supply and environmental incidents. The group reviews learning from Emergency Exercises and disseminates the information to members for them to take back to their own companies.

EPWG is made up of member organisations and currently has representatives from BP Exploration, CLH-PS, Essar, ExxonMobil, National Grid, Northern Gas Networks, Penspen, Sabic UK, SGN, Shell and Wood Group PSN and meet 3-4 times per year.

Pipeline Emergency Response Officers training

Working in partnership with industry experts and The Fire Service College in Moreton-in-Marsh, the EPWG provides all the learning material for the scenario-based, interactive, two-day UKOPA Pipeline Emergency Response Officers (PERO) training course. A PERO is a generic role agreed by UKOPA members to ensure industry consistency in operator response to pipeline emergency incidents in the UK. The course equips every PERO with the skills to respond to pipeline emergencies on behalf of operators.

In 2017, the course material was updated to include scenarios relating to recent worldwide pipeline incidents. The first 4 courses for 2017 have taken place and a further 3 are planned for September, October and November. Course are only open to staff (and their contractors) of member organisations and are run at cost for the benefit of members.

Emergency Plan and Testing Guidance

In 2013, the EPWG developed 3 documents aimed at assisting Local Authority Emergency Planners to not only develop, but also test their emergency plans. In 2017, these documents have been updated and reissued and are currently being sent to all Local Authority Planning Department, explaining their use and encouraging departments to share their learning with UKOPA. Copies of: UKOPA/GPG/010 – Major Accident Hazard Pipeline Emergency Response Plan, Guidance on Testing, UKOPA/GPG/011 – MAHP Emergency Response Plan, Emergency Plan Template and UKOPA/GPG/012, Testing and Exercising Pro-forma can be found on the UKOPA website and members (along with others in the Pipeline sector) are asked to encourage LAs to use these document and templates moving forward.

Pipeline Hazard Distance Guidance

In 2017, after much discussion with member organisations, the EPWG produced UKOPA/GPG/016 Good Practice Guide for Pipeline Hazard Distances. The guidance identifies the initial emergency hazard distances for pipelines: that is the distance that the inner cordon should be set in an emergency situation if a pipeline ruptures. The distance varies depending upon the fluid that is being conveyed in the pipeline and thus the hazards associated with it. If no other information is available, then first responders should use the figures quoted in the document. However, once an operative from the pipeline company arrives on site, the situation will be fully assessed and further advice given to the first responder on site.



Infringement Working Group (IWG)

Who are we?

The IWG monitors and reports the number of infringements on pipelines operated by member companies and uses this data to develop ways to reduce the number of incidents and risks. UKOPA member companies operate approximately 95% of the oil, petrochemical and gas pipelines in the UK. As a result, the data collected provides an accurate picture of the level of third party threat to hazardous pipelines in the UK. Third party activities are the single biggest cause of damage to the pipeline network and is the sole focus of the IWG's activities. IWG provides information and expert opinion, and leads activities and initiatives to raise pipeline safety awareness to UKOPA members, Industry Stakeholders and those working in the vicinity of UKOPA member pipelines. IWG is made up of member organisations and currently has representatives from BP, BPA, Cadent, CATS (Woodgroup), CHL-PS, Essar, ExxonMobil, Ineos, National Grid, Northern Gas Networks, Penspen, Perenco, Sabic UK, Scotia Gas Networks, Shell and Wales & West Utilities (with an invited member from the HSE) and meet 3 times per year.

UKOPA Infringement Report

On an annual basis, the IWG produces a report from the UKOPA infringement database. At the time of publication, data for 2016 is still being collated, but the 2015 report saw a slight increase in the overall number of infringements reported in 2015 compared with 2014, 870 compared with 745. The data continued to identify infringements in farmland as the most prevalent. The IWG has therefore started to engage with such organisation as the National Farmers Union and the HSEs agricultural sector to further raise awareness of the dangers of working near pipelines and the precautions required. The 2016 report will be published on the UKOPA website towards the end of October 2017.

IWG is currently preparing a 'Working in the Vicinity of High Pressure Pipelines' document in a similar format to the HSE Agriculture Information Sheet 9 – Working Safely near Overhead Electricity Power Lines, which aims to assist this process.

Current and Future Work Programme

The IWG produced two of the UKOPA GPGs published during 2017: UKOPA/GPG/013 Requirements for the Siting and Installation of Wind Turbine Installations in the Vicinity of Buried Pipelines and UKOPA/GPG/014 Requirements for the Siting and Installation of Solar Photovoltaic (PV) Installations in the Vicinity of Buried Pipelines. These documents are aimed at providing wind turbine and / or solar photovoltaic developers / contracts with information and guidance when siting these installations near members' pipelines. Work has also started on a GPG for Local Authority Planners, identifying the information LA Planners should be aware of with regards to pipeline risks.

Fault and Risk Working Group (FARWG)

Who are we?

The FARWG was established in 2015 following the reorganisation of the Risk Assessment & Integrity and Fault Data Management Working Groups to form this and the Pipeline Integrity Working Group (PIWG).

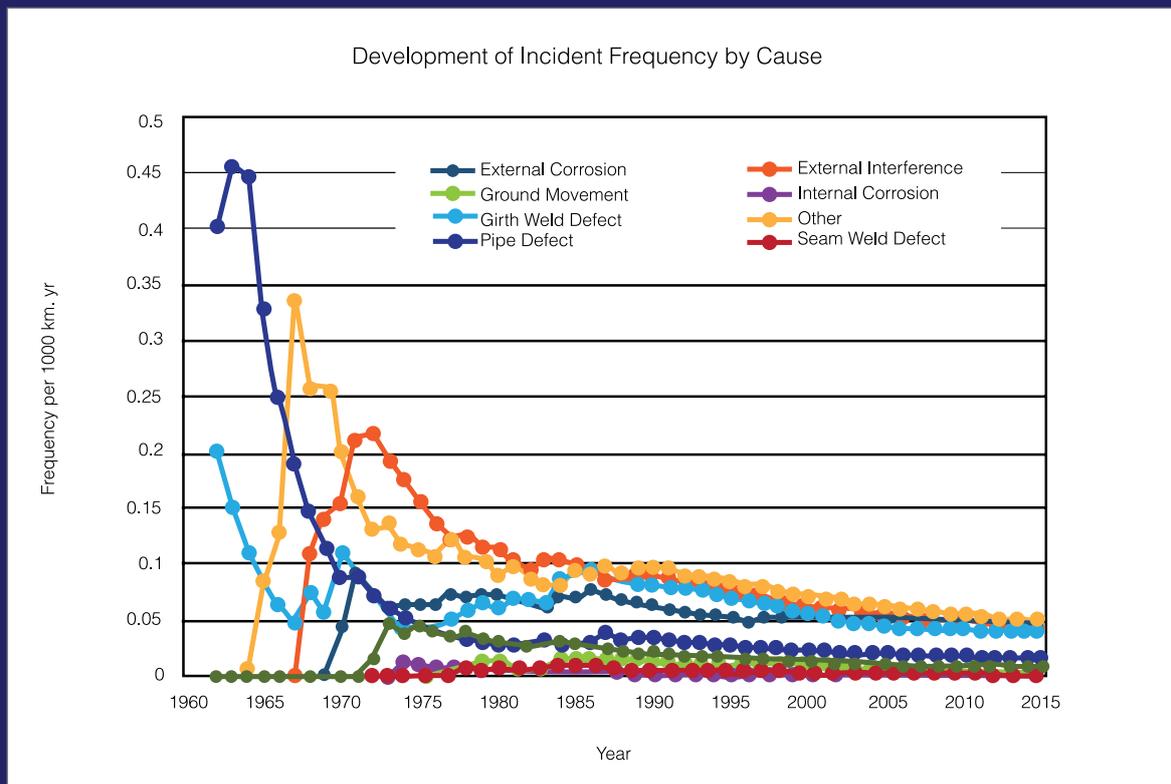
FARWG acts as the expert body on pipeline risk assessment and pipeline fault data issues on behalf of all UKOPA members. FARWG supports the development, and acceptance, of appropriate pipeline risk assessment methodologies and collects pipeline product loss and fault data for the population of Major Accident Hazard Pipelines (MAHPs) operated by members. The group also provides a formal UKOPA interface with HSE for discussions related to the collection of pipeline fault data; the development of pipeline risk assessment methodologies, the definition of risk criteria and land use planning issues.

The group annually produces the Pipeline Product Loss Incidents and Faults Report for MAHPs as well as producing appropriate Good Practice Guides and technical notes.

FARWG currently has representatives from the following member organisations: BP Exploration, BPA, Cadent, CLH-PS, Essar, ExxonMobil, Gas Networks Ireland (UK), National Grid, Northern Gas Networks, Perenco, Sabic UK, SGN, Swissgas, Total, Valero, Wales & West Utilities and Wood Group PSN (with support from independent consultants) and meet 3 times per year.

UKOPA Pipeline Fault Database

The UKOPA Pipeline Fault Database records pipeline population and product loss incidents and faults on onshore MAHPs operated by members and covers operating experience back to 1962. The FARWG produces an annual Pipeline Product Loss Incidents and Faults Report which is available on the UKOPA website. The long term downwards trend in product loss incidents, for all causes of failure, can be seen in the figure below.



In addition to the product loss incidents data, the annual report also presents the distributions of parameters of dents and gouges derived from the fault data which can be used to predict the failure frequency from external interference damage.

During 2017, FARWG are reviewing the current data and report format, and auditing pipeline information per member company, to suggest ways of reducing the number of 'unknown' data fields and look for ways to present the data in a more 'user-friendly' format.

If you use the current report, FARWG would be delighted to receive your comments.

Current and Future Work Programme

As well as improving the Product Loss and Fault Database report, during 2017 FARWG will continue the development of a liquid hydrocarbon database (i.e. those lines operated by UKOPA members that are not MAHPs).

Other work for the year will include an update to 3rd Party Failure modelling recommendations and the creation of TBNs and GPGs from historical work carried out by UKOPA, this will include: The Application of Cost Benefit Analysis to Demonstrate ALARP; Capturing and Monitoring Population Density; History of Land Use Planning; and, Managing Encroachment and Societal Risk.

Pipeline Integrity Working Group (PIWG)

Who are we?

In 2013 the UKOPA Risk Assessment Working Group evolved into the Risk Assessment and Integrity Working Group in recognition of the fact that the group had started to address a number of pipeline integrity issues. Through 2014 it became clear that the group's workload was becoming unmanageable and the decision was taken to split the workload into two new working groups, viz. the Fault and Risk Working Group (FARWG) and the Pipeline Integrity Working Group (PIWG).

PIWG aims to act as the expert body on pipeline integrity and defect assessment issues for member companies. The group supports the development of appropriate good practice guides and technical notes as well as interfacing with external expert bodies and technical specialist organisations, including universities, on integrity issues.

PIWG is made up of member organisations and currently has representatives from BP, BPA, Cadent, CLH-PS, Essar, ExxonMobil, Gas Networks Ireland, National Grid, Northern Gas Networks, Penspen, Perenco, SABIC UK, SGN, Swissgas, Total, Valero, Wales & West Utilities and Wood Group PSN and meets 3-4 times per year.

Good Practice Guides and Technical Briefing Notes

Since 2015, PIWG have been focused on developing a number of Good Practice Guides (GPGs) and Technical Briefing Notes (TBNs) aligned with UKOPA's strategy. These include a GPG for Line Walking (due for issue in 2017), a Signpost document for Pipeline Integrity Management and a TBN on Ethylene Decomposition in Pipelines.

Further work is ongoing to develop GPGs on AC Corrosion Management, Management of Seismic Risks and In-Line-Inspection. These documents are produced using member input as well as technical experts in each field.

Weld Quality Project

One of the major research projects conducted by the group over the last two years has been the Weld Quality Project. The scope of this project was developed due to the availability of a number of 'vintage' (pre-1972) girth weld samples which were being excavated and removed by member companies during 2015.

The quality of girth welds of this age is of interest to operators as it pre-dates the requirement for 100% radiography during construction, so when assessing defects the Operator must often replace the welds as a matter of course, which can entail significant expense. The scope of work included visual inspection, both non-destructive and destructive testing and metallurgical analysis of a number of samples. The results indicate that whilst some of the welds tested contained flaws, the majority would pass the testing standards for modern welds. Whilst these results are exciting, at this stage they are not statistically significant enough to draw representative conclusions about the pre-1972 weld population which is still in service.

However the work has already spawned a number of follow-on activities, including augmenting the test results with data from similar pipework in North America, as well as proposals for two MSc studies at Universities in the UK. These pieces of additional work will not only add further weight to the existing results, but will also help to develop UKOPA's existing strategy for managing pipeline dents and, it is hoped, lead to further insights into how Operators may deal with vintage welds in cost effective ways in the future.

Other work

The work programme of the PIWG is constantly developing in line with UKOPA Members' requirements. Further work in the scoping stage includes practical guidance for determining pipeline life extension, advice on managing DC corrosion and a procedure for specification of epoxy-grouted repair sleeves.

Process Safety Working Group (PSWG)

Who are we?

Process Safety is a collective term for the measures, systems, procedures or policies that are implemented to prevent incidents and / or project people and the environment from the effects of major accidents. The PSWG is the newest of the UKOPA working groups and was established to improve the understanding of process safety management within the pipeline industry.

PSWG is made up of member organisations and currently has representatives from BP Exploration, Cadent Gas, CLH-PS, Essar, ExxonMobil, Ineos, National Grid, Northern Gas Networks, SGN, Shell, Wales & West Utilities and Wood Group PSN and meet 3 times per year.

PSWG Annual Report

On an annual basis, the PSWG produces a report based on the responses of member organisations to a questionnaire (which are a small subset of the Process Safety Assessment Tool questions – see separate article). Members are asked about such things as: whether their pipelines were operated outside of the safe operating limits, the length of pipeline that was internally inspected, how long it takes to respond to enquiries, etc. The findings are published on the UKOPA website for use by all members. Information identified is used to assist the UKOPA working groups in developing the work-plans for future years.

Current and Future Work Programme

PSWG represent UKOPA on the Process Safety Forum (PSF) www.p-s-f.org.uk. The PSF was established in 2009 and was industries response to the Major Incident Investigation Board (MIIB) which investigated the Buncefield incident in 2005.

The MIIB recommended that 'The sector should put in place arrangements to ensure that good practice in these areas, incorporating experience from other high hazard sectors, is shared openly between organisations.' And stated that good leadership should include 'Sharing best practices across industry sectors, and learning and implementing lessons from relevant incidents in other organisations, are important to maintain the currency of corporate knowledge and competence'. PSF now has over 14 member organisation and sharing of information is becoming the norm. Information from the PSF is made available to all UKOPA member companies.



UKOPA Technical Seminar 10th May 2017

Tribute to Neil Jackson

The 2017 UKOPA Technical Seminar took place in Derby on 10th May 2017. Grant Rogers, opened the seminar by initially paying a fitting tribute to our friend and colleague, Neil Jackson, who had very suddenly passed away just two days earlier. Whilst working for National Grid, Neil had been a chairman and board member of UKOPA and for the last 2 years had provided technical secretarial support to the FARWG and PIWG. He worked on numerous technical papers during his involvement with UKOPA and also led the development of a number of recent Good Practice Guides. Neil will be remembered for his dedication and commitment to the pipeline industry, in particular, the gas sector, also for his support to those he worked with, and of course, his sense of humour. The seminar then continued as everyone knew that that is what Neil would have wanted.

Update on Current Projects

Graeme Pailor, Kirsty McDermott (National Grid Transmission) and Tim Rudd (Valero) provided an informative and insightful overview of the testing phase of the Weld Project – one of the major projects being carried out by PIWG. More information is provided in the PIWG update on page 2.

John Ferrari (Essar Oil) enlightened the attendees on the results of the 2016 PSAT survey, having first provided a safety analogy regarding a large number of beers, an elk and a long drive in Wyoming! John explained how Essar make use of many of the PSAT scores and some internal process safety requirements to produce actions and a tracking sheet for improving performance in these areas. He encouraged members do similar, if they were not already.

2018

For the last 2 years, UKOPA has used its technical seminar to roll out a number of Good Practice Guides all of which can be obtained from the members' centre if not on the public UKOPA website. A decision needs to be made as to whether the 2018 should continue in a similar format, or whether members would like to see something different.

Please give us your suggestions by contacting secretary@ukopa.co.uk.



Good Practice Guides

Grant Rogers and Phil Taylor (BPA), Chairman of IWG, presented 3 GPGs that had been developed by the IWG. The Requirements for the Siting of Wind Turbine Installations in the Vicinity of Buried Pipelines and The Requirements for the Siting of Solar Photovoltaic (PV) Installations in the Vicinity of Buried Pipelines have been developed to provide Local Authority Planners, Installation developers and pipeline operators with advice and guidance with regards to siting installations near buried pipelines. From information that should be considered at the initial planning stage to the requirement for pipeline operators to be on site, in some circumstances during construction, the GPGs provide a step by step approach.

In Great Britain, the control of risks arising from third party damage to pipelines is addressed by Regulation 15 (for people) and Regulation 16 (for pipeline operators) of the Pipeline Safety Regulations 1996. The Managing Pipeline Infringements GPG provides pipeline operators with industry good practice, to enable them to meet these requirements. Phil explained to the audience that the HSE had identified the need for such guidance, how the document had been developed and who was involved in the process; he also suggested that feedback would be welcomed for future updates to any of the GPGs produced by UKOPA.

Graeme Pailor (Sabic), Chairman of PIWG, provided attendees with an overview of the Line Walking GPG and the Signpost for Pipeline Integrity document both of which had been produced by the PIWG. The line walking document provides guidance on equipment needed and what should be looked for during a walk. The final updates are currently being developed to include a Risk Assessment tool to identify how often sections of pipeline should be walked, following which the document will be published. Barry MacKay (SGN) supported the presentation with an overview of an incident recently experienced in Scotland. If the pipeline section had been walked, it might have identified potential issues that may have helped to prevent the pipeline damage.

The Signpost for Pipeline Integrity document is intended to be a 'one stop shop' to identify legislation, regulations, standards, support documentation and other areas of advice that pipeline operators may find useful with regards to pipeline integrity issues. This information will be made available for members and will be a 'live' document that can be updated easily as required.

Andy Fuller (Penspen) and Nikki Barker (UKOPA Secretariat) presented documents developed by the Emergency Planning Working Group: The GPG for Emergency Hazard Distances provides initial inner cordon distances (Emergency Hazard Distance) that should be established in a first response to in an emergency situation where there is pipeline damage.

The document identifies the distances for:

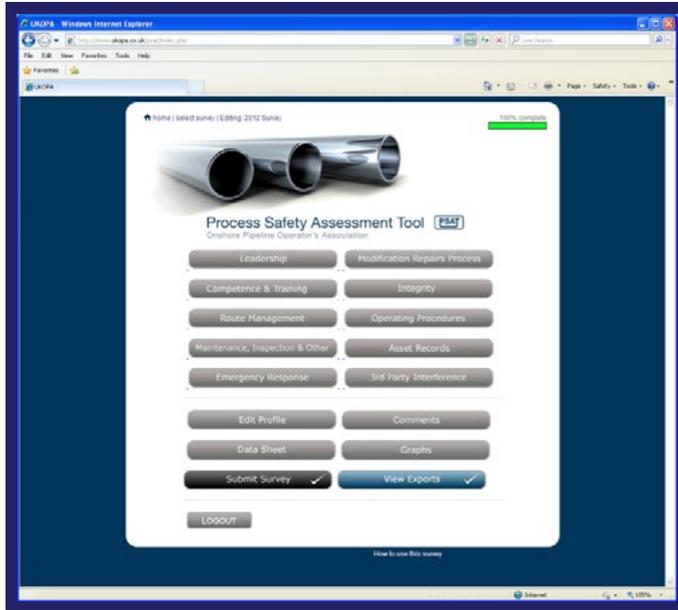
- natural gas pipelines at different diameters and pressures
- for ethylene pipelines
- liquid hydrocarbon pipelines depending upon whether they are Major Accident Hazard Pipelines or not.

The figures quoted in the documents are intended to be initial distances for first responders, until a pipeline operator representative arrives on site and can further assess the situation.

EPWG have updated the Emergency Plan suite of documents, which provide guidance to local authority emergency planners on preparing, testing and carrying out emergency plan tests, to take account of current good practice, updated guidance and regulations since they were initially produced in 2012. These documents are once again to be circulated to all local authority emergency planning departments and UKOPA members are encouraged to ask about them during their company meetings with local authorities.

UKOPA – 2016 Process Safety Assessment Tool

The UKOPA Process Safety Assessment Tool (PSAT), is a survey conducted on a biennial basis by UKOPA members as a benchmarking exercise. There are approximately 240 activity questions, split over 10 specific risk areas including, Route Management, 3rd Party Interference, Integrity and Asset Records. By answering the questions and recoding how they control the risks members are able to compare their performance against the standard and with other UKOPA members.



The results are broken down further to individual subject headings and each member can compare its own level against the max possible score and minimum level within UKOPA.

For Example –
Route Management Risk Area can be broken down as follows for Member “O”

Activities	0	Max Possible Score	Min	Ave	Max
Leak Detection	0.50	0.5	0.00	0.27	0.50
River and Special Crossings	2.50	2.5	0.25	1.93	2.50
Ground Condition (Drainage, water logging)	1.75	3	1.75	2.55	3.00
Soil, Erosion, Washout, Marshland	2.50	2.5	0.00	2.12	2.50
Mineral Extraction and Mining Operations	1.50	2	0.00	1.23	2.00
Change of Land use	1.00	2	0.50	1.57	2.00
Ground Movement Checks	2.00	2	1.00	1.75	2.00
Routing Survey	1.75	2	1.00	1.60	2.00
Line Walk	1.75	2.5	1.50	2.12	2.50
Route Management Total	15.25	19	8.25	15.13	18.25

The UKOPA suggested approach for using the output from the PSAT tool is as follows:

- ▶ Members review risk areas which are red or amber
- ▶ Consider whether there is actually a real gap (for example some activities are specific to different pipeline operator and therefore the gap may not be relevant)
- ▶ Decide whether the risk level warrants an improvement to a process or procedure
- ▶ Document (for audit process) the decisions taken
- ▶ Develop an action plan for the areas requiring improvement
- ▶ Monitor the action plan

In 2016, 22 members completed the assessment – more than ever before. Individual member companies have been given their own scores and should be in the process of reviewing and developing their action plans.

The Process Safety Working Group, will be producing an overview report that will be published on the UKOPA website later in the year.

