Welcome to our UKOPA 2015 Newsletter, where we share the results of our recent work and our future plans. I’d like to introduce myself: my name is Peter Davis and I was elected Chairman of UKOPA in February 2015. I am a Director and the General Manager of the British Pipeline Agency Limited with over 30 years’ experience in the pipeline industry. I have been an active member of UKOPA for more than 10 years and I was very proud to be asked to chair the Association.

UKOPA has an extensive work programme covering a wide range of pipeline safety and integrity management issues managed by the work groups Emergency Planning, Fault and Risk Assessment, Infringement, Pipeline Integrity and Process Safety. I’d like to personally thank the many people involved in these groups who are carrying out this important work.

This newsletter contains information on the work that has been, and continues to be, implemented. We’ve included an introduction to the UKOPA Good Practice Guides, information on the 2015 Technical Seminar and an article from the Health and Safety Laboratory on mapping Major Accident Hazard Pipelines for Land Use Planning Decision Making.

In February 2015, we embarked on a review of the UKOPA strategy, with the membership defining what the Association should look like in 2020 and what changes to our work should be implemented. We share the developments in this newsletter and we’d like to encourage your feedback. We can be contacted via email at secretary@ukopa.co.uk.

The risks and hazards of the pipeline industry continue to change, which was clearly seen in 2014 with a rise in criminal damage and product theft from oil product pipelines in the UK. UKOPA has provided a forum to share experiences and good practice with our members. By working together, we can reduce the risk of these hazardous events.

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.

Peter Davis
Chairman, UKOPA
CURRENT PROJECTS

UKOPA currently has five working groups actively delivering results:
1. The Emergency Planning Working Group (EPWG)
2. The Fault and Risk Assessment Working Group (FARWG)
3. The Infringement Working Group (IWG)
4. The Pipeline Integrity Working Group (PIWG)
5. The Process Safety Working Group (PSWG)

These cross-industry teams deliver work packages that include research and development projects. We take a look at some of the current work below.

DENT MANAGEMENT

Work commissioned by UKOPA to develop a strategy for the safe management of pipeline construction dents has been completed. What remains is to transpose the findings into a UKOPA guidance document and an assessment tool for use by member companies.

The practical significance of this work is that while dents could be a potential threat to integrity, shallow dents (generally less than 5% of the outside diameter) commonly occur during material handling at construction. Dents introduced at the construction stage of the pipeline life cycle tend to be shallow, as illustrated in the photograph. Post-construction they will be subject to the pipeline hydrotreat and in many cases are shown to be fit for purpose.

However, as these sorts of dents introduce a stress concentration, they may pose a fatigue problem especially if they are associated with a weld. Existing fitness for purpose assessment methodologies are conservative and predict that a relatively short fatigue cycle is allowable. The UKOPA dent management strategy provides a method for prioritising dent features for further investigation, and methods and criteria for the assessment of dents subject to static and cyclic loading, taking account of the location, depth, strain and its association with welds and other forms of damage such as corrosion. The rationale applied is that dents that cannot be assessed and sentenced must be investigated and repaired; otherwise dents are prioritised for investigation according to their association with metal loss, welds and circumferential location.

An Excel-based software dent management tool has been developed and tested, by the PIWG, which allows pipeline operators to apply the dent management process to pipeline dents identified by inline inspection.

LANDSLIDING

As part of the work carried out to update the pipeline risk standards BSI PD 8010-3 and IGEM/TD/2, UKOPA implemented an update to guidance on the inland failure rates due to natural occurring landslides. This work updated the original study carried out in 2005, which provides calculated rupture rates according to zones of differing landslide susceptibility provided by the British Geological Survey (BGS). The original rupture rates were based on typical pipeline survival potential according to weightings derived for diameter, wall thickness, material grade, operating pressure and girth weld quality for the UK pipeline population.

The update, completed in 2014, built on this work to identify failure rates due to ground movement according to failure mode (leak or rupture) girth weld quality and nominal pipeline wall thickness. The update includes the current five-tier GeoSure scheme now used by the BGS to assign landslide susceptibility. In addition, UKOPA consulted with the BGS to produce a simplified ranking in terms of low, moderate and significant potential for landsliding, together with the relative landslide incident rates. This guidance, which is included in the published updates of BSI PD 8010-3 and IGEM/TD/2, is summarised in Figure 1.

The hazards which seismic activity poses to pipelines are the strain induced in a pipeline by propagation of the seismic wave, and permanent ground movement caused by surface fault rupture, slope instability and liquefaction of the soil. The risk to pipelines and installations is then determined by the magnitude and intensity of the seismic event. This data is produced by the BGS, as shown in Figure 2 below.

EMERGENCY PLANNING HAZARD DISTANCES

Regulation 25 of the Pipeline Safety Regulations 1996 places duties on local authorities that have MAHP in its area to prepare a plan detailing how a possible major accident will be dealt with and that pipeline operators will provide the local authorities with information as it may reasonably require in preparing the plan. UKOPA members meet this requirement by providing local authorities with emergency planning distances for every MAHP that they operate. Work is almost completed on producing a UKOPA good practice guide on emergency planning distances. The guide identifies the recommended emergency planning distances for liquid hydrocarbon pipelines, ethylene pipelines and natural gas pipelines, all presented in one easy-to-use document.

Figure 1 Landslide potential in the UK

Figure 2 Seismic intensity in the UK
GOOD PRACTICE GUIDES

One of UKOPA’s principal objectives is to communicate good practice to its members, whether that’s through presentations at members’ meetings, through its working groups or through the annual technical seminar. UKOPA is also creating a series of ‘Good Practice Guides’ to support this work.

These guides include the output of technical work undertaken by UKOPA, and make this accessible to members. Future technical work undertaken by UKOPA will include a Good Practice Guide as one of the key outputs of the project.

A number of guides have already been completed and a number are being developed. These include:

- The management of pipelines with reduced cover
- The management of process safety indicators
- The inspection and maintenance of buried pipelines
- The management of pipeline dents
- The management of pipeline sleeves

Every guide will be made available to members via the members’ centre of the UKOPA website.

The Good Practice Guides will be published in a common format and will provide practical advice on what is considered by UKOPA to be agreed industry good practice for a range of pipeline asset management, maintenance and operational issues. The intention is that these guides sit alongside existing industry documents, including British Standards and Institution of Gas Engineers standards, providing practical advice related to the management of hazardous pipelines.

Peter Davis, Chairman of UKOPA, says, “This is an excellent way for UKOPA to share experience with its members. The documents will also prove essential in recording the outputs of technical work that UKOPA commissions.”

2014 PROCESS SAFETY ASSESSMENT TOOL

The UKOPA Process Safety Assessment Tool (PSAT) is a survey conducted every two years by UKOPA members as a benchmarking exercise. There are approximately 240 activity questions, split over 10 specific risk areas including Route Management, Third Party Interference, Integrity and Asset Records. By answering the questions and recording how they mitigate their risks, members can compare their performance against the standard and with other UKOPA members.

The PSAT results are broken down further into individual subject headings so members can compare their own score against the maximum possible and minimum level within UKOPA.

For example, the Route Management risk area can be broken down for Member “O” in the table below:

<table>
<thead>
<tr>
<th>Activities</th>
<th>O</th>
<th>Max possible score</th>
<th>Min</th>
<th>Ave</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leak detection</td>
<td>0.50</td>
<td>0.5</td>
<td>0.00</td>
<td>0.27</td>
<td>0.50</td>
</tr>
<tr>
<td>River and special crossings</td>
<td>2.50</td>
<td>2.5</td>
<td>0.25</td>
<td>1.93</td>
<td>2.50</td>
</tr>
<tr>
<td>Ground condition (drainage, water logging)</td>
<td>1.75</td>
<td>3</td>
<td>1.75</td>
<td>2.55</td>
<td>3.00</td>
</tr>
<tr>
<td>Soil, erosion, washout, marshland</td>
<td>2.50</td>
<td>2.5</td>
<td>0.00</td>
<td>2.12</td>
<td>2.50</td>
</tr>
<tr>
<td>Mineral extraction and mining operations</td>
<td>1.50</td>
<td>2</td>
<td>0.00</td>
<td>1.23</td>
<td>2.00</td>
</tr>
<tr>
<td>Change of land use</td>
<td>1.00</td>
<td>2</td>
<td>0.50</td>
<td>1.57</td>
<td>2.00</td>
</tr>
<tr>
<td>Ground movement checks</td>
<td>2.00</td>
<td>2</td>
<td>1.00</td>
<td>1.75</td>
<td>2.00</td>
</tr>
<tr>
<td>Routing survey</td>
<td>1.75</td>
<td>2</td>
<td>1.00</td>
<td>1.60</td>
<td>2.00</td>
</tr>
<tr>
<td>Line walk</td>
<td>1.75</td>
<td>2.5</td>
<td>1.50</td>
<td>2.12</td>
<td>2.50</td>
</tr>
<tr>
<td><strong>Route Management total</strong></td>
<td><strong>15.25</strong></td>
<td><strong>19</strong></td>
<td><strong>8.25</strong></td>
<td><strong>15.13</strong></td>
<td><strong>18.25</strong></td>
</tr>
</tbody>
</table>

UKOPA is developing guides in several current subject areas, including:

- Managing stress corrosion cracking
- Collecting and reporting fault data
- Managing encroaching development and societal risk around pipelines
- Decommissioning and abandoning pipelines
- Modelling third party damage
- Managing and mitigating the impacts of ground movement
- Managing seismic risks for pipelines
- Developing emergency planning distances for MAHP
- Managing the risk of third party thefts
- Monitoring and recording pipeline infringements

We want to encourage UKOPA members to both participate in developing these documents and provide suggestions for future projects. Any members not currently involved can do so by contacting the UKOPA secretariat: secretary@ukopa.co.uk

The output from the 2014 PSAT survey was used to identify areas to address at a Technical Seminar in May 2015.

The Technical Seminar was used to share good practice for Third Party Interference, Route Management, Asset Records and Emergency Response. Those with high PSAT scores were invited to present their ‘good practice’ methodologies. The presentations were followed by a round table discussion to build on the points addressed by the specific member company presentations.
UKOPA 2020

UKOPA was formed in 1997 to drive consistency among UK pipeline operators, following changes in the UK legislative framework. UKOPA exists to provide an authoritative view from UK onshore pipeline operators on strategic issues relating to the safety management, operations and integrity management of oil, gas and chemical pipelines. The Association seeks to effectively influence the development and implementation of pipeline-related legislation and standards for the mutual benefit of all stakeholders, and promote safety and good practice in the pipeline industry.

Like many organisations, UKOPA needs to ensure that it is current, relevant and serving its membership. As such, at the beginning of 2015 UKOPA undertook a strategic review with the aim of identifying what the Association should look like by 2020 and what support it should be providing to its members.

Member companies were asked to identify such things as what they valued most from involvement in UKOPA, whether they benefitted from the organisation’s various outputs (good practice documents, members’ meetings, working group involvement, etc.), identifying how UKOPA could support them better, and how those services could or should be provided moving forward.

The responses received were used as the basis for planning a ‘strategic review workshop’. The workshop took place in February 2015 in Newcastle.

Members were asked to identify the challenges faced by the industry over the next five to ten years, how things would change, and what UKOPA could do to assist in meeting these challenges in the following five key areas:

- Ageing pipelines inspection issues and techniques
- Succession planning and competency
- UKOPA’s position and role in the wider industry context
- Changes to pipeline operations and maintenance
- Third party protection / right of way management / security

Members then identified the areas they felt UKOPA should concentrate on first.

At the end of the workshop, a UKOPA member was chosen to champion each of the following five areas, which were identified as the initial focus for development:

- Communications / website development
- Competency framework / standards / training support
- Engineering governance / R&D collaboration / specialised support
- Non-piggable pipeline inspection / repairs / end of life assessment
- Local authority planners proactive liaison

Work is now on-going, either as part of a current UKOPA working group or newly created sub-groups, to drive each of these areas forward.

In addition, the UKOPA Board is currently working to identify the future structure of the organisation to ensure that it will actively support its membership, not only now, but in 2020 and beyond. The goal is to launch the UKOPA 2020 implementation programme at the October 2015 members’ meeting.

HEALTH AND SAFETY EXECUTIVE (HSE), HEALTH AND SAFETY LABORATORY (HSL) AND UKOPA MAPPING MAJOR ACCIDENT HAZARD PIPELINES FOR LAND USE PLANNING DECISION MAKING - BY PHIL SHEA, HSL

Knowing the locations of Major Accident Hazard Pipelines (MAHP) and their respective HSE Land Use Planning (LUP) consultation zones is vital for obtaining advice on the building of proposed developments in their vicinity. HSE, HSL and UKOPA have partnered to successfully map some 22,000 km of MAHP and LUP consultation zones within the UK, and are completing a single comprehensive database of all MAHP routes.

The Pipeline Safety Regulations 1996 (PSR) place duties on pipeline operators relating to the notification of MAHPs to HSE. PSR notifications provide the starting point for HSL. Geographical Information System (GIS) scientists liaise directly with UKOPA members and secure MAHP routing data in a variety of different formats.

Using GIS software, MAHP route maps are produced for verification by individual UKOPA members. Once HSL receives confirmation, individual UKOPA members are offered a memorandum of understanding which details how the supplied MAHP routing data can be used by the HSL.

The final mapping process involves merging all MAHP pipelines to create a single national dataset, which is used to determine the HSE LUP consultation zones.

Launching in 2015, a new HSE Planning Advice web app will provide developers, local authorities and decision makers with access to HSE LUP consultation zones for MAHP and Hazardous Installations. By creating an account, users will be able to access free and optional paid HSE advice regarding their proposed development before submitting a planning application.

To use the web app, developers log in and draw a site of interest for proposed developments of singular or mixed types. Once drawn the application assesses the site location and determines its proximity to HSE LUP consultation zones. The output of this process produces a PDF report detailing the MAHP operator and indicates whether the HSE can advise in favour of or against the proposed development.

Similarly, individual local authorities can access the web app, view the HSE LUP zones for MAHP pipelines in their own boundary / jurisdiction and also obtain advice on developments.

Further information on HSE’s role in the Land Use Planning process can be accessed via this web portal: http://www.hse.gov.uk/landuseplanning/ or by contacting Kathryn Deakin, HSL tel: 01298 218 159, e-mail: preapplicationadvice@hsl.gov.uk

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