

ACDS MHSC Working Group on Pipelines

Notes of the ACDS/MHSE Working Group on Pipelines Meeting with HSE MSDU on 21st April 2005 at Daniel House, HSE Offices, Bootle

Attendance:

G P Walker	Chairman	M Wilson, Head of MSDU
M Harrison	UKOPA/Huntsman	N Riley, Major Hazards Expert, MSDU
P Davis	UKOPA/BPA	
N Jackson	UKOPA/NGT	
R McConnell	Independent Consultant	
J Haswell	UKOPA/Secretary	

1. Introduction

G Walker outlined the proposed agenda for the meeting and stated that the key priority was to establish the future WGP / HSE interface for taking forward the WGP technical work programme. M Wilson welcomed the opportunity to hold the meeting. She stated that whilst MSDU had disengaged from industry due to resource constraints some time ago, although the resource constraints are still very significant, MSDU now wishes to restart the dialogue with industry.

M Wilson explained the reasons for this are, first, IFRLUP – under this project all of HSE's models in terms of business criticality and technical validity have been reviewed and prioritised for updating and/or revision. Through this process, specific models had been identified for revision, and MSDU were responsible for delivering this. As the pipeline program MISHAP is within the 6 top priorities identified, the justification and the finance for reviewing and revising is now available within HSE. There is therefore now the opportunity to identify what WGP/UKOPA considers is needed and to consider whether this can be addressed within HSE's priorities and requirements.

The second reason is PADHI. In the HSE PADHI rollout, HSE is transferring the work of giving safety advice for pipeline planning to Local Authorities. LA's are keen that the current arrangements, which are the provision of strip maps with associated zones given in spreadsheet format, are improved and that the information is provided in a better format for the Planning Authorities. HSE are handing this work to Local Authorities, so whilst HSE is promoting and facilitating the improvements, it cannot provide a better format.

2. Background to WGP

G Walker summarised the background and current position of WGP (NB, slides used to accompany items covered in the meeting are attached for information) as follows:

- WGP was formed in 2001 by HSE in response to a UKOPA lobby for a formal discussion form with HSE
- The primary objectives were risk assessment and the provision of LUP advice in the vicinity of pipelines and stakeholder agreement for the proposed amendments to PSR 96 relating to testing of pipeline emergency plans and the reclassification of gasoline pipelines as MAHPs.
- HSE (K Allars) formed WGP as a formal Working Group reporting to MHSC, and HSE were involved on behalf of MSDU (technical methodologies) Policy (implementation) and HID (application).
- The technical work was carried out by the Working Party (Risk Assessment) which comprised joint HSE/UKOPA membership.
- HSE withdrew due to resource constraints in February 2003.
- The interface with HSE MSDU was then via R McConnell's involvement with IFRLUP

- UKOPA undertook to deliver the technical agenda.

In reviewing the background to WGP, G Walker emphasised the success of the joint work which had been carried out with HSE MSDU prior to their withdrawal in February 2003. Since that time, the only interface with HSE MSDU that had been available to WGP had been via the IFRLUP Project. He emphasised that currently an important role for WGP is formal documentation of work completed for PSR. The key current issue however is how to address the outstanding technical workload, in particular that relating to risk assessment and land use planning. G Walker referred to the WGP Chairman's Paper presented to ACDS in November 2004 (Reference WGP-04-0029). He stated that ACDS had confirmed support for the principles presented in the paper, ie the work programme to be resourced by industry, WGP to provide governance, ensure peer review, and the work to be delivered as a methodology for agreement and application by key stakeholders. G Walker stated that while ACDS had supported these principles, they had emphasised that the resource constraint within HSE was real and could not be readily overcome.

3. Overview of UKOPA

M Harrison presented an overview of UKOPA, its constitution, terms of reference and current priorities. Topics covered (given in the attached presentation slides) included:

- Background to UKOPA
- Benefits to operators (sharing of experience, lessons learnt, best practice, provision of a consistent and recognised forum for discussions with industry and regulator)
- Terms of reference
- Membership
- Aims, objectives, and delivery of these via formal working groups with a wide scope of interest.

M Harrison drew attention to the fact that UKOPA membership represented Operator's of over 99% of the MAHP's in the UK and it is therefore a powerful forum for sharing and developing best practice, in particular for compliance with legislation. N Jackson drew attention to the NGT sell-off of gas Networks and noted that through this process, four new major members of UKOPA may be confirmed. M Harrison concluded by emphasising UKOPA's objective is that WGP, as the established, recognised forum for constructive and efficient dialogue with HSE is maintained.

4. WGP Technical Work Programme

R McConnell presented the technical work programme agreed and being undertaken by WGP, covering the following:

- WGP technical work programme, currently being progressed by UKOPA:-
 - Identification of land areas affected by ground movement, assignment of pipeline failure frequencies and application to LUP
 - Improved mechanical damage model
 - Assessment of mitigation models
 - LUP zones for ethylene pipelines
 - LUP zones for spiked crude and NGL pipelines
 - Risk assessment for gasoline pipelines
- Current WGP Actions
- Proposals for the development of code (BSI and IGEM) supplements for the application of pipeline risk assessment for LUP Advise to Local Planning Authorities.

R McConnell explained the background and how this was related to the introduction of land use planning zones for pipelines. He noted that while PSR 96 does not apply land use planning, under the requirements for notification, it became the norm for HSE to supply consultation zones for pipelines to Local Planning Authorities. This was particularly significant as at the same time, the Gas Act brought all Transco pipelines into the same process. In 1996, Transco undertook a joint programme of work with HSE to investigate the derivation of land use planning zones for gas pipelines. This work programme achieved considerable progress, but fell short of a re-evaluation of

land use planning zones. Transco shared the results of the joint programme of work with UKOPA, who undertook to progress the principles for all MAHPs.

Following a review of the details of the work, UKOPA commenced a programme of lobbying with HSE for a formal forum for discussion of the key technical areas relating to risk assessment. As a result of this, HSE (K Allars) proposed the creation of WGP as a formal work group reporting to MHSC. The required work program was agreed jointly between HSE and industry via WGP, which created a Working Party (Risk Assessment) incorporating HSE MSDU and Industry representatives to carry out the technical work required. However, as already covered, due to resource constraints, HSE withdrew from the Working Party and the work was not completed. Through this process, most of the Transco pipeline land use planning zones were re-evaluated, but there are still outstanding issues; firstly, alignment of the Transco FFREQ and HSE PIPIN models for third party interference damage, in particular relating to 'S' area pipelines, and secondly the assumptions relating to failure frequency due to ground movement.

Work to address both of these issues (development of an improved mechanical damage model and a work programme with BGS to identify areas of land affected by land movement, the associated pipeline failure frequencies associated with these areas and incorporation of this into land use planning advice) was agreed and commenced prior to HSE's withdrawal from the Working Party. R McConnell stated that both areas of work have been continued and the mechanical damage model is now complete and provides an obvious opportunity for HSE involvement. R McConnell asked if HSE would consider actioning Atkins to peer review the mechanical damage model and make recommendations to HSE. In response, M Wilson stated that in order for HSE to undertake such work, it would have to be on the HSE list of priorities (she noted in this case this was likely to be confirmed) and, in order to apply the results of such work, the independent peer review would need to confirm:

- i) HSE requirement to adopt a cautious approach can be demonstrated.
- ii) Technical validity (this requires full details of all background work).
- iii) Application/use of the work/model would make a significant difference to current predictions.
- iv) The work/model is readily usable by HSE.

N Jackson responded by confirming that the new mechanical damage model does make a difference, in particular relating to the significant variation in land use planning zones predicted by Transco compared to HSE. Regarding technical validity, full technical background and detail can be made available to HSE in order to review the work and, regarding HSE's use of a cautious approach, UKOPA / WGP recognises that HSE may wish to introduce factors to increase the level of conservatism within the model.

R McConnell stated that the current area being progressed under the WG technical work programme is the development of mitigation factors. He noted there is a specific link with the ALARP demonstration and there is a need for agreed and quantified factors for risk reduction. N Jackson commented that if mitigation is not available, the only alternative open to operators is pipeline diversion and it is in general reasonably practicable to do nothing in this case. M Wilson agreed and commented that this may be the case where different criteria should be applied for LUP versus ALARP.

G Walker picked up the issue relating to whether the work would make a difference and stated that there is a need to consider this in terms of the broader goals relating to best practice, use of good procedures and the relationship between HSE and Industry. M Wilson agreed this was a point for review and that HSE may need to split the question to cover its validity for an ALARP demonstration.

R McConnell stated that with regard to the IRFLUP products, revised methodologies would make a big difference to the current LUP zones. He also drew attention to the need to debate the use of UKOPA failure rate data for ethylene and spike crude pipelines. In this respect he asked whether the HSE software PRAM would be reviewed as part of the MISHAP work. M Wilson responded to both questions, stating that HSE recognised that PRAM was out of date but that HSE are looking at ethylene pipelines on a case-by-case basis. She also noted that this would need to be reviewed

with Steve Porter who has been developing the technical methodology for ethylene pipelines. She noted that in this respect, HSE may hold a different opinion to that held by UKOPA and stated the background would need to be discussed in detail.

R McConnell stated that in regard to spike crude, the current Scottish planning enquiry had made significant comment on the consequence modelling, in particular the radiation levels predicted by HSE which are extremely high based on very conservative modelling.

Finally, the risk assessment modelling of gasoline pipelines – this was originally on the work programme and although gasoline will now not be classified as a major accident hazard pipeline under PSR, it will probably be reclassified under the European Legislation due to the potential significant environmental impact.

With regard to these methodologies, R McConnell asked M Wilson to confirm the progress with IRFLUP P6. M Wilson stated that P6 was now complete and the outcomes had been transferred to MSDU for implementation, hence the importance of the current meeting.

R McConnell concluded his presentation by discussing the proposal for the WGP technical work programme to be published as supplements to the pipeline codes PD8010 and IGEM TD/1. He stated that this proposal represents a recognition by Industry for the need for land use planning and the associated consultation zones. He stated that separation between pipelines and the surrounding population is already included in the codes as part of the initial design and routing, and there is a need to incorporate an ongoing requirement for maintaining the limits on population growth during the lifetime of the pipeline as part of responsible operation, and land use planning zones are a significant tool in achieving this. However, the setting of land use planning zones should be a transparent process with understanding and participation of all stakeholders. In relation to this, he referred to land use planning discussions currently ongoing in Europe and the USA.

PD8010 (Annex E) and IGEM TD/1 (Appendix 3) already have protocols for safety evaluation and risk assessment. The proposed new supplements are intended to be a subset of the existing risk assessment processes to enable land use planning zones to be calculated on a site-specific basis during pipeline operation. The methodology will use established models and publish data for failure rate, release rates, ignition probabilities, consequence models and impact models for the exposed population. The objective of the work proposed by UKOPA is to use and codify methods which parallel HSE's published models to obtain similar results for land use planning zones. In this respect, the inner zone will be based on the building proximity distance and the middle and outer zones will be risk-based (and therefore dependant upon fireball modelling and population protection/escape assumptions).

The main benefits of the proposed supplements are that they will provide a process to maintain ongoing separation distances between high hazard pipelines and the population as part of code compliance requirements. The process will become better understood and transparent to all key stakeholders and should reduce the need for detailed, specialist assessments to specify land use planning zones in relation to particular planning enquiries. It is a key intention that the supplements will establish standards for mitigation methods and the associated risk reduction factors which can be used in risk assessments, and the incorporation of these issues in the codes allows developments and improvements in the knowledge base to be incorporated into risk assessment models, specifically better failure data, improved predictive modelling and a transparent understanding of products such as ethylene and spike crude.

In response to the discussion relating to the development of code supplements for the application of risk assessment to land use planning advice, M Wilson reserved judgement on the benefit to HSE but confirmed that MSDU would be interested in being involved in the development of these code supplements. J Haswell stated that a joint meeting between IGEM and the BSI work groups was scheduled for the 10th May at the IGEM Headquarters at Loughborough and HSE was being represented by Alan Thayne. As the industry and standards body representative, J Haswell is chairing the meeting, and she stated that MSDU would be most welcome at that meeting. M Wilson confirmed that N Riley would be the key contact but he would be unable to attend this meeting. N

Riley confirmed his interest in receiving the outcome to the meeting and would provide input as appropriate in future.

5. Current HSE MSDU Issues and Priorities

G Walker invited M Wilson to outline MSDU's issues and priorities, and asked whether there was any scope to add value to the work programme through joint initiatives with industry.

M Wilson stated that on behalf of MSDU, N Riley, was establishing the requirements for review and technical work needed for pipelines which would subsequently be delivered through the redevelopment of the pipeline models. In this respect, she stated that she was unable to comment on the possibility of joint initiatives at this stage, but confirmed MSDU would be keen to review the work carried out by UKOPA and WGP providing HSE were given full technical background.

M Wilson proposed that a single large meeting between HSE, WGP and UKOPA be held to go through all issues and consider how these may be progressed. At this meeting, it would be HSE's intention to involve key personnel and experts. M Wilson stated that in her view, in the majority of cases, HSE are likely to agree with WGP's priorities and therefore are likely to be looking to organise peer reviews. In terms of peer reviews, the key issue for HSE is independence. However, M Wilson stated that she felt it would be appropriate for WGP to see the terms of reference of the reviews proposed.

M Wilson stated that, depending on the results of any reviews undertaken, the results will be fed into the development of models being undertaken by MSDU. She noted however that in some cases these developments may involve some non-technical developments, for example model integrations. She noted also that further discussions will be required on ethylene and spike crude. Steve Porter of HSE would need to be involved as he has been progressing technical developments and some of these were currently in progress and it had yet to be decided whether to include this within MISHAP. When this work is finished, HSE will look at the timescales for review of land use planning zones. Once complete, for any new pipelines the zones will be set using the revalidated models.

G Walker requested whether HSE would require peer review of all work outlined on the WGP work programme, in particular as this would drain available resources. P Davis noted that as much work as possible should be done jointly to ensure that work is ready for peer review and that this process could be carried out quickly and efficiently.

N Jackson asked whether a timescale could be established for when LUP zones will be reviewed. M Wilson stated that the timescale should be dictated by model completion and HSE's operational priorities rather than review and revision of LUP zones. G Walker agreed as the roll-out of revised LUP zones could be complicated by issues such as supply of information and mapping etc.

G Walker asked whether the resource for peer review is the same resource that would be required for involvement in discussion and progression of technical development work. M Wilson stated that the majority of technical development/peer review work is now sub-contracted, but she emphasised that if the work is on the list of MSDU priorities, the resource will be found. She confirmed however that MSDU did provide the resource to set up, oversee and manage sub-contracted work and she therefore wanted to identify the scope and scale of technical developments as soon as possible.

G Walker asked whether there was any possibility of WGP adding value to HSE's work and in this respect, how much could Industry resource be used. He emphasised the need to find points where dialogue could occur and identify opportunities for joint work. M Wilson agreed with this principle but was unable to identify any specifics at this stage.

6. Actions

G Walker asked that actions were summarised and agreed. Following discussion, actions were agreed as:

- i) WGP to provide an information portfolio relating to technical work to Nigel Riley for review.

Action R McConnell/J Haswell

- ii) J Haswell to provide information regarding the output from the code supplement meeting to N Riley.

Action J Haswell

- iii) N Riley to co-ordinate HSE review and response to information provided.

Action N Riley

- iv) WGP to arrange a joint workshop with HSE MSDU at the end of September.

Action J Haswell/N Riley

7. Any Other Business

7.1 Mapping

G Walker asked whether there was any scope for Industry to provide maps with zones using the same protocol as exists for fixed sites. N Jackson stated that a meeting between UKOPA and HSE is arranged for the 4th May.

The industry position is that pipeline route vectors can be provided for overlay on OS maps, but the key concerns relate to differences required by different information systems and problems with data quality. He noted that NGT has concerns about providing electronic information relating to security and lack of control.

M Wilson stated that HSE have contacted the Security Services regarding the provision of information and concerns regarding terrorist attacks. The Security Services have confirmed that three zone maps are not a problem in this respect. P Davis stated that overlaying of information electronically does give problems, in particular in relation to information accuracy and errors.

G Walker stated that confusion existed as HSE considered that operators should provide maps to Local Authorities. It was agreed that once these are on GIS, interactive use will occur and this will generate a significant number of queries for operators. It was agreed this issue was in the early stages and further discussions may be required.

8. Conclusion

G Walker thanked M Wilson for the opportunity for the open and constructive discussion, and looked forward to future working with HSE MSDU.

M Wilson confirmed that HSE had found the meeting useful and timely, and confirmed her support for future interaction.

G Walker then closed the meeting and thanked everyone for attendance.