

PSWG Update (inc. Learning Brief sharing)

Martin Cook (WWU)
PSWG Chair





There has been 1 meetings in 2024

- (14th February via TEAMS),

Two further meetings are planned in 2024

- 30th April – NG Warwick
- 8th October – venue TBA



Focus areas include

- GPG on Human Factors
- Process Safety Leadership /Competence
- Learning Briefs
- 2023 PSAT



We have 11 Members (including Board rep) from 11 members companies. Plus consultant support



The Terms of Reference have been approved by the Board

Process Safety Work Areas

In 2019 members of PSWG each considered key process safety topics affecting their respective organisations and wider industry.

Process Safety Reviews

- GPG035 'Process Safety Reviews' has been completed and shared

Behavioural Safety / Human Factors

- GPG046 'Human Factors' has been completed

Safety Culture and Leadership

- Discussed at last meeting and strategy for first stage agreed

Management of Change

- Unlikely to start work before 2025

Process Safety KPI

- GPG003 'Pipeline Safety Monitoring' – strategy for review agreed

PSWG 2024 Key Outputs



Continue publication of Learning Bulletins / Safety Alerts – Learning Briefs



Review GPG003 'Pipeline Process Safety Performance Monitoring' and KPI considerations (Included as a key deliverable in 2024 workplan)



Commence work on Process Safety Leadership / Competence



Publish GPG046 Human Factors



Compile PSAT Questionnaire results, analyse & present findings (To date 26 returns, 1 decline, 3 no response). Data processing in progress for review at next PSWG meeting.



Carry out review of PSAT questions (Included as a key deliverable in 2024 workplan)

Process Safety Forum

PSWG represent UKOPA on the National PSF - There will be a brief overview of the PSF tomorrow

Process Safety

defined as a blend of engineering and management skills focused on preventing catastrophic accidents and near misses, particularly structural collapse, explosions, fires and toxic releases associated with loss of containment of energy or dangerous substances such as chemicals and petroleum products

Manging Process Safety

is essential and very often the issues that arise in one sector have direct relevance in other sectors. Useful general lessons can be learnt and principles adopted to promote a culture where good safety management is viewed as having a direct impact on the profitability and viability of any organisation be they large or small

Learning Briefs

Learning Briefs

- Safety Alerts / Learning Bulletins – These are now referred to as Learning Briefs
- These have been a key focus for PSWG as we offer a mechanism and opportunity for the sharing of important learning from across industry

Share Learnings

- The PSWG were concerned about the low volume being communicated
- Fifteen have been prepared in the last quarter of 2023 and published in the UKOPA Members Centre
- A reference list of all published SA/LB has been prepared – 283 in total
- Could all members please share both best practice and learnings from near misses / incidents

Process

- We use an external facilitator to prepare LBs and from Sept 2023 John Ferrari has been engaged
- Please forward any material to John and he will liaise with you to prepare the LB for review. (Anonymity can be retained)
- Following approval by the Operator, PSWG validate and publish.



What happened?

- A routine excavation was carried out to uncover a gas transmission pipeline in a road crossing.
- Following removal of the top cover a key-hole was opened and this revealed the pipeline to be within a void. The void was immediately filled with pea gravel to prevent trench collapse.
- Further investigation revealed the void to be approximately 7.5 x 1.0 x 0.8 m. Prior to reinstatement the void was filled with a lean cement/aggregate mix.
- A gas distribution pipeline was also found within the trench – this was unexpected as the records indicated this pipeline to be 3 metres away.

Findings and key learning points

- The pipelines were originally surrounded by sand. This is not good practice.
- The transmission pipeline runs in a straight line down a hill for 800 metres prior to the road crossing. Drainage issues are evident in the fields. It is assumed that the pipeline trench has acted as a land drain resulting in the sand at the road crossing being washed-out.
- The operator is carrying out further investigation with Ground Penetrating Radar and selective digs to identify any further voids and determine where the washed-out sand has gone.
- An In-Line Inspection is planned to check for any damage to the pipeline.



Recommendation

- Operators are advised to identify any pipelines laid in such a way that the trench could act as a land drain and be aware of the possibility of sand washout.
- Operators should be aware that pipelines may not be laid exactly where records indicate.



What happened?

- A high-pressure gas transmission pipeline was being excavated. The restricted nature of the excavation required the use of sheet piles and hydraulic trench supports (top photo)
- Whilst re-positioning a support, it dropped in an uncontrolled manner and made contact with the very edge of a buried ½" screwed valve assembly (bottom photo) which was attached to the pipeline behind the trench support
- The impact partially tore the screwed nipple attaching the valve to the pipeline, causing a leak sufficient to blow out a considerable quantity of material in the vicinity of the valve

Findings and key learning points

- As-built drawings (50+ years old) had been checked and the valve was shown. However, it was not located as indicated. The edge of the valve was much closer to the trench support than thought and was thus in 'the line-of-fire' of the dropped support
- The ½" assembly was attached to the pipeline with a screwed fitting. This legacy practice is no longer used. Current practice is that branches should be a minimum of 2" diameter and fully welded
- The contractor was not experienced in this type of work. The Method Statement was inadequate and not followed. The Risk Assessment did not consider the vulnerability of the small-bore assembly



Recommendation

- Operators are advised to be aware that buried pipelines may have vulnerable small-bore fittings attached to them and that records may not be accurate
- Contractors and Operators should take consider such fittings when preparing Method Statements and Risk Assessments

GAS LEAK DUE TO VALVE BEING DISLODGED BY VACUUM EXCAVATOR

Learning Brief



What happened?

- Excavation was taking place to allow the cutting and capping of a disused supply take-off from a buried gas pipeline requiring the construction valve to be excavated and used to isolate the connection
- The excavated material was being removed with a vacuum excavator truck
- The metal suction tube (see photo) on the vacuum excavator was being used to break up the soil
- A 1" sealant injection valve attached to the construction valve was sheared off resulting in a gas leak



Findings and key learning points

- It is suspected that the small-bore valve was dislodged by the vacuum excavator suction tube
- Despite extensive searches including of the contents of the truck, the valve was not found
- The sealant valve was supplied with the line valve but had not been used as the construction valve was cocooned once the original installation had been completed
- The sealant valve was screwed into the body of the main valve
- The potential for the vacuum excavator to dislodge small bore attachments was not anticipated

Recommendation

- Operators and contractors are to be made aware of the potential damage that can be caused by vacuum excavators and recommend only using vacuum excavators to remove (rather than dislodge and remove) spoil when excavating



Electric wire gate

Plastic handle

What happened?

- An operators survey team was working on farm-land.
- The presence of electric fences on the land (lower photo) was recognized.
- An electric coiled wire (acting as a gate) was in place across the farm-yard entrance. A plastic handle was in place to allow the 'gate' to be opened.
- When an operative touched the plastic handle, he received a near fatal electric shock and had to be taken to hospital. Recovery took several weeks during which time they were unable to work.

Findings and key learning points

- On investigation, the electrical feed control to the gate was found to be defective. The energy delivered during the high voltage pulse was far more than the safe maximum of 20 joules. Death occurs at 200 joules.
- Despite pursuing with regulatory authorities, there was no easy way to take action against the farmer.

Recommendation

- Operators should assume that all electric fences are unsafe.
- Operatives should wear suitable dry gloves to protect against a high voltage pulse and ensure that all arms/hands/legs are covered.





What happened?

- A survey team observed an excavator within the operator's pipeline easement
- The excavation contractor had not contacted the operator, and no-one was present at the site
- The survey team left a hand-written note instructing the contractor to contact the operator

Findings and key learning points

- On reviewing the incident, one outcome was to prepare a formal 'Warning Notice' form instructing contractors to contact the operator (upper picture)
- The operators' personnel now carry a supply of these forms in their vehicles
- When an un-notified excavation (or potential excavation) is observed, the 'Warning Notice' form is completed and attached to the excavator or barrier (lower photos) if no contractor is present.
- This has resulted in an increase in the number of contractors contacting the operator

Recommendation

- It is recommended that operators consider implementing a similar procedure
- The 'Warning Notice' template is available for other operators to use





Photo by [Aranxa Esteve](#) on [Unsplash](#)



Photo by [Aranxa Esteve](#) on [Unsplash](#)

What happened?

- A music festival organiser didn't consider the presence of pipelines
- The operator visited the site on a proactive basis
- Potential risks to the pipeline were from hammering in large marquee pegs and construction vehicle crossings
- The organiser cooperated with the operator to position marquees away from the pipelines and protecting the pipeline at vehicle crossing points

Findings and key learning points

- Music festivals can pose a risk to pipelines
- Organisers may not be aware of pipelines or the need to check with [LineSearchbeforeUdig \(LSBUD\)](#)

Recommendation

- Operators are advised to check for potential music festivals in the vicinity of their pipelines and to contact the organisers to advise them of the procedures regarding protection of pipelines



What happened?

- During routine pipeline surveillance, it was noted that a signpost had been installed directly above a high-pressure ethylene pipeline.
- The sign-post installer was tracked down via the local council and found to be a local community group.
- When contacted, the community group offered no explanation other than that the ground was easiest to dig in that location. They admitted that they had seen the pipeline marker but had chosen not to contact the operator.
- The signpost was not buried sufficiently deep to contact the pipeline.

Findings and key learning points

- The operator met with the community group to explain the serious nature of the incident, the potential hazard of striking a high-pressure ethylene pipeline and the correct procedure to follow in future, including the need to contact LinesearchbeforeUdig (LSBUD).
- The operator offered to relocate the signpost to a safe location.

Recommendation

- Operators should be aware that infringements can occur from 3rd Parties that are unlikely to be aware of LSBUD.
- Operatives should consider whether their marker posts are likely to convey the required message to those not routinely involved with buried pipelines or excavation.





What happened?

- During preparation for a CP survey, it was noted by the CP contractor that a fence had been installed directly above a high-pressure ethylene pipeline.
- The operator attended site and the fencing contractor that had erected the fence was located (working in an adjacent field). A discussion was held.
- Fortunately, the pipeline depth at this position is 2 metres – the fence posts were inserted to 0.6 metres.

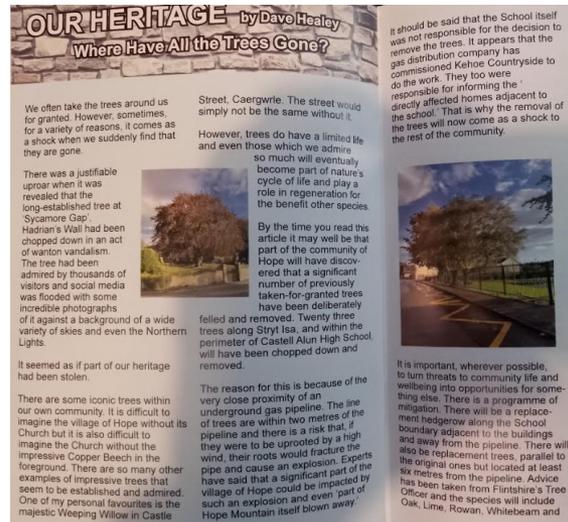
Findings and key learning points

- The fencing contractor (a small local company) advised that they had seen the pipeline marker but chose to ignore it because it referred to 'excavation'. They did not consider fencing work to be excavation.
- The land-owner was unaware of pipeline protocols.
- The operator explained to the contractor and the land-owner the serious nature of the incident, the potential hazard of striking a high-pressure ethylene pipeline and the correct procedure to follow in future, including the need to contact LinesearchbeforeUdig (LSBUD).
- Both the contractor and land-owner were receptive to the advice given.

Recommendation

- Operators should be aware that local small fencing contractors may not be aware of LSBUD and remain vigilant.
- Operatives should consider whether 'excavation' is the correct terminology to use on marker posts.





What happened?

- An operator identified that 23 mature trees were close to a pipeline.
- The trees are along a school boundary within the school fence-line.
- Removal of the trees is a sensitive issue particularly with the recent 'Sycamore Gap' incident

Findings and key learning points

- The operator engaged with the local community council regarding their plans to remove the trees.
- As a result of the engagement a balanced viewpoint was given in the local Parish Magazine (lower photo), setting out the reasons for removal of the trees and the action being taken by the operator to plant replacement trees.
- It is unclear why action had not been previously taken prior to the trees becoming large

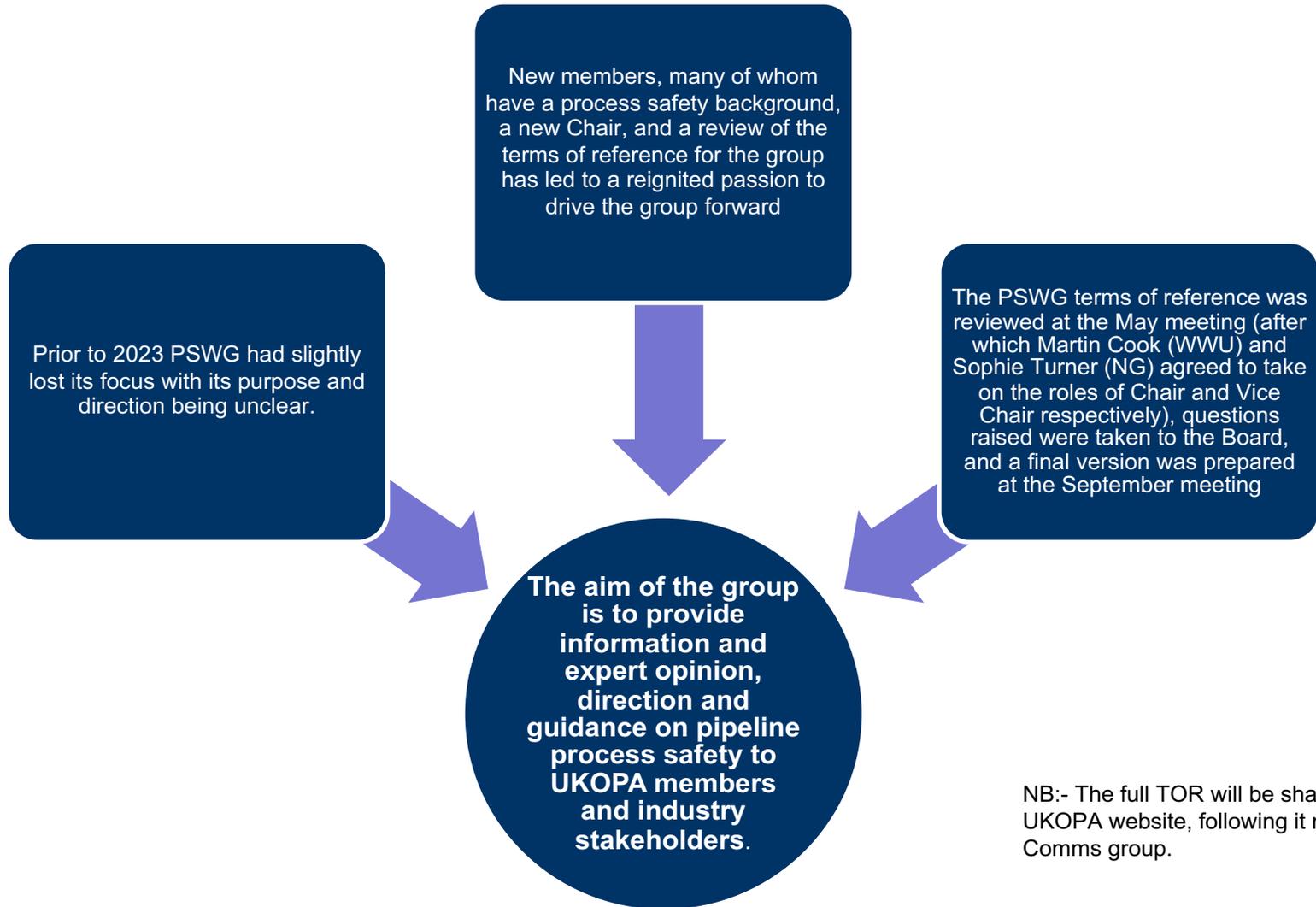
Recommendation

- Operators should endeavour to remove trees from easements before they grow to a large size.
- Where removal of mature trees is likely to create public interest, operators should engage with local community councils prior to undertaking the work.

Questions?



PSWG Terms of Reference



NB:- The full TOR will be shared via the UKOPA website, following its review by the Comms group.

PSWG – points raised at October 2022 Members meeting



Remit of PSWG not clear – **new TOR developed**

PSAT – **will take place after 2023 returns have been analysed**

Human Factors and Safety Critical Task Analysis – **GPG046**