



## Fault and Risk Working Group (FARWG) Update

Members Meeting  
October 2019

Simon Joyce – FARWG Chair  
Engineering Policy Manager -  
SGN

# FARWG – Current Membership

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|------------------------------|-------------------------------|
| 1. Simon Joyce               | SGN (Chair)                   |
| 2. Nikki Barker              | PIE (Secretary)               |
| 3. Ryan Bentley              | Cadent                        |
| 4. Kristina Brazenaite       | Northern Gas Networks         |
| 5. Dave Brown                | Essar                         |
| 6. Graham Canty              | Gas Networks Ireland          |
| 7. Antonio Caraballo         | Ineos FPS                     |
| 8. Neil Clarke               | Valero                        |
| 9. Darren Cushen             | Wales & West Utilities        |
| 10. Stephen Humphrey         | CLH-PS                        |
| 11. Fridolin Jenny           | Swissgas                      |
| 12. Graham Pailor            | Sabir                         |
| 13. Steve Potts              | National Grid                 |
| 14. Richard Price            | BPA                           |
| 15. Nick Procter             | Wood Group PSN                |
| 16. <i>Mike Acton</i>        | <i>DNV GL</i>                 |
| 17. <i>Graham Goodfellow</i> | <i>PIE</i>                    |
| 18. <i>Rod McConnell</i>     | <i>Independent consultant</i> |

# 2019 Summary

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## ☐ 2019 Meetings:

- ☐ 19<sup>th</sup> March - DNV GL, Loughborough
- ☐ 10<sup>th</sup> September – HQS Wellington, London

## ☐ Key activities in 2019:

- ☐ Develop TBN/GPGs covering historic work from RAWG
- ☐ Update Fault Distributions & 3<sup>rd</sup> Party Failure Model
- ☐ Leak & Fault Database 2018 report
- ☐ Review FR1 process and form

# 2019 Work Programme

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- ❑ Collect fault data & issue Product Loss & Fault Report (1962-2018)
  - ❑ Operator data transfer issues
  - ❑ Inconsistent data entries – ongoing
- ❑ Review of database structure and data fault workshop (FR1)
- ❑ Continued review of Liquid Hydrocarbon Database.
- ❑ Completion of 5 GPGs and TBNs
- ❑ Development of 5 GPGs and TBNs
- ❑ Fault modelling report based on the 2018 IPC paper

# Good Practice Guides & TBNs Approved

Good Practice Guides		Complete	Progress
1	Application of Cost Benefit Analysis to demonstrate ALARP	100%	Completed 2019.

Technical Briefing Note		Complete	Progress
2	Managing Societal Risk in the vicinity of Gas Pipelines	100%	Completed 2019.
3	Managing Societal Risk in the vicinity of Ethylene Pipelines	100%	Completed 2019.
4	LUP Zones for Gasoline Pipelines	100%	Completed 2019.
5	History of Land Use Planning (incl. Event Tree & Ethylene Frequency)	100%	Completed 2019.

## Ongoing work – GPG, TBN, etc.

	Ongoing work	Complete	Progress
1	Collecting & Reporting Fault Data (incl.FR1 form)	50%	Data structure reviewed and fault collection seminar in 2019
2	Effect of Pipeline Surveillance on Risk	75%	Historic document on background to surveillance chart in IGEM/TD/2.
3	Oil Pipelines Drain Down Study	90%	Draft complete and due for review.
4	Managing Encroachment & Societal Risk for Oil Pipelines	10%	Draft to be written
5	Capturing & Monitoring Population Density	80%	TBN for release in late 2019
6	Development of Environmental CBA to demonstrate ALARP GPG	0%	GPG to be developed.

# Ongoing Agenda Items

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- Land Use Planning issues.
- FR1 review.
- Revised IGEM/TD/1 & IGEM/TD/2 for comment.

# Predictive Modelling of External Interference Failure Frequency

- ❑ Current UKOPA recommended methodology developed to support drafting IGEM/TD/2 and PD 8010-3:2009.
  - ❑ Reconstruction of the FFREQ model developed by BG.
- ❑ Report PIE/R/19/0406 reviews recommendations from the development of the AFFECT model, National Grid COOLTRANS project, and PDAM 2 and provides an update to the UKOPA guidance. Key areas:
  - ❑ Limit State Models;
  - ❑ Spring back and Re-rounding;
  - ❑ Leak-Rupture Boundary;
  - ❑ Dent Force Distribution;
  - ❑ Split Distributions for gouges inside and outside dents;
  - ❑ Damage Distribution Parameters; and,
  - ❑ Frequency of External Interference.

# Predictive Modelling of External Interference Failure Frequency

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- ❑ New spreadsheet failure frequency prediction model developed
  - ❑ Updated recommendations incorporated
  - ❑ Case studies undertaken to assess the impact of the changes
- ❑ Report concludes that given the changes to
  - ❑ Fault distributions
  - ❑ Use of dent force
  - ❑ Decrease in the frequency of external interference
- ❑ Prediction results from the new model are broadly consistent with those produced by FFREQ.
- ❑ Report PIE/R/19/0406 out for review within the FARWG.

# FR/1 Workshop

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## FR1 Workshop

- 19<sup>th</sup> June 2019 meeting.
- Database clean-up
  - Copy of database to be made and entries edited
  - Be prepared for follow up where it's not clear
- Review of FR/1 forms undertaken
- Guidance to be provided for FR1 capture.
  - For example, capturing data for multiple external defects is limited to 10 there could be more.
  - More external interference can provide better data for failure frequency prediction methodology.
- Reminder: FR1 forms are still required.

# Future Data

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‘The world’s most valuable resource is no longer oil, but data!’ – The Economist



Where does UKOPA FARWG fit into this new future?

## FARWG - Future

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- What help do you want from the FARWG in regards to data?
- Technology is advancing.
- Are you using data in your organisation in various ways that maybe useful for FARWG?
- Alternatively;
  - Video and online guides to the principles in assessing risk.
  - Simple guides to reporting and understanding faults/defects.
- Next meeting a chance for input from members.
- Terms of reference reminder.

# FARWG Meetings 2020

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- ❑ Tuesday 14<sup>th</sup> January – BPA Kingsbury
- ❑ Tuesday 5<sup>th</sup> May – DNV GL Loughborough
- ❑ Tuesday 8<sup>th</sup> September – CLH PS Saffron Waldon

# FARWG Update Summary

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- Thank you.
- Any questions?