



Pipeline MSc Projects

October 2015

UKOPA Interests

- ❑ UKOPA has established link with the Newcastle University Pipeline MSc
- ❑ At the Strategy Workshops, Members stated that student projects should be progressed
- ❑ A list of topics was extracted from the Workshop Output, and discussed with the Pipeline MSc Course Leaders

Topics developed from Workshop Output 1 of 3

- ❑ Pipeline design life, life assessment and life extension with inspection interval
- ❑ Methods for estimating pressure cycling and dealing with unknown cycle history
- ❑ Revalidation – what is required, is this product specific, including non-piggable pipelines
- ❑ Pipeline repairs – life assessment & fitness for purpose
- ❑ Methods to deal with unknown “Cathodic Protection” history
- ❑ Methods for coating rehabilitation
- ❑ Valve life, degradation, repair, refurbishment

Topics developed from Workshop Output 2 of 3

- ❑ Ageing pipelines and decommissioning pipelines
- ❑ **Assessment of construction stress, residual stress and stress relief**
- ❑ Evaluation of weld quality standards and material properties on integrity and strength
- ❑ State of the art review – changes in ILI technology
- ❑ What inspection tools for damage types, requirements for revalidation
- ❑ 3rd party damage – protection and ROW management
- ❑ **New concepts of pipeline protections**
- ❑ Shallow depth of cover – risks and management
- ❑ **Trends in excavating/agricultural machinery**

(those in red are for further development (initially) with the university)

Topics developed from Workshop Output 3 of 3

- ❑ Pipeline theft –
 - ❑ review/identify key features (machinery, locations, timing, volume taken),
 - ❑ Detection & repair methods,
 - ❑ leaks/spray modelling,
 - ❑ impact on safety/environment, prevention,
 - ❑ impact on life cycle costs

Topics proposed by Newcastle University Academics

- Multiphase flow-induced vibration of pipeline
- Pipeline behaviour with damage and leakage
- Upheaval buckling of pipelines
- Pipeline walking
- CO₂ pipeline transport (hydraulic/transient modelling)
- Heat transfer through pipelines

UKOPA Pipeline MSc Projects

- Course leaders are interested in organising:
 - Individual projects and/or
 - Group projects
- Operator data will provide a great advantage
- MSc Projects for the current academic year must be finalised by mid November