



UKOPA PIWG

GPG/26 Verification of features
identified by ILI

Verification of features identified by ILI – GPG 26

GPG 26 developed to support GPG 21 – In Line Inspection of Pipelines

☐ is based on:

- ☐ PD 8010-4 Code of practice for integrity management of pipelines
- ☐ NACE International Standard Practice SP0102 – ILI of pipelines
- ☐ Pipeline Operators Forum Guidance – Field verification procedures for ILI
- ☐ PDAM

☐ Includes guidance on:

- ☐ ILI through the pipeline life
- ☐ Actions following ILI
- ☐ Selection of features for investigation
- ☐ Recommendations for field investigation procedures

Purpose of field verification of ILI features

Purpose is to:

- ☐ Confirm ILI tool feature sizing accuracy
- ☐ Confirm the reported features can be used to assess the condition of the pipeline
- ☐ Provide information on tool performance for use at locations where field verification is not possible

ILI through pipeline life

- ☐ Fingerprint at commissioning to obtain base material/construction feature signature
- ☐ First operating inspection to identify time dependent damage
- ☐ Subsequent operational inspections to monitor damage
- ☐ Inspections carried out at change in operating conditions

Actions following ILI

- ❑ Review results, identify size, location and severity of identified features, evaluate against limits
- ❑ Select features for investigation –
 - ❑ First ILI – verify tool accuracy
 - ❑ Operational ILI – compare location and size of features with previous inspections

Note – where features in first ILI are not significant or when those identified in repeat ILIs are consistent with previous measurements, field investigation is unnecessary

Prioritisation of features for field investigation

- ☐ Features posing immediate threat based on consideration of the Estimated Repair Factor (ERF)
- ☐ Features that cannot be accurately identified and accounted for
- ☐ Dents meeting the criteria in UKOPA GPG/06
- ☐ Any feature that represents an integrity threat within two ILI inspection intervals, based on the assessed degradation progress rate
- ☐ Consideration of and comparison with previous ILI results or investigations carried out by the operator
- ☐ Any other criteria identified by the operator.

Estimated Repair Factor - ERF

- ❑ ERF defined as:

$$\text{ERF} = \text{MOP} / P_{\text{safe}}$$

- ❑ P_{safe} is the safe operating pressure calculated using an agreed assessment
- ❑ Where ERF is the ratio of the pipeline design pressure to the 'safe maximum pressure' as determined by an analysis criterion. (e.g. ASME B31G, modified ASME B31G, RSTRENG, DNV-RP-F101, PDAM)
- ❑ Features with $\text{ERF} > 1.0$ must be prioritised for investigation

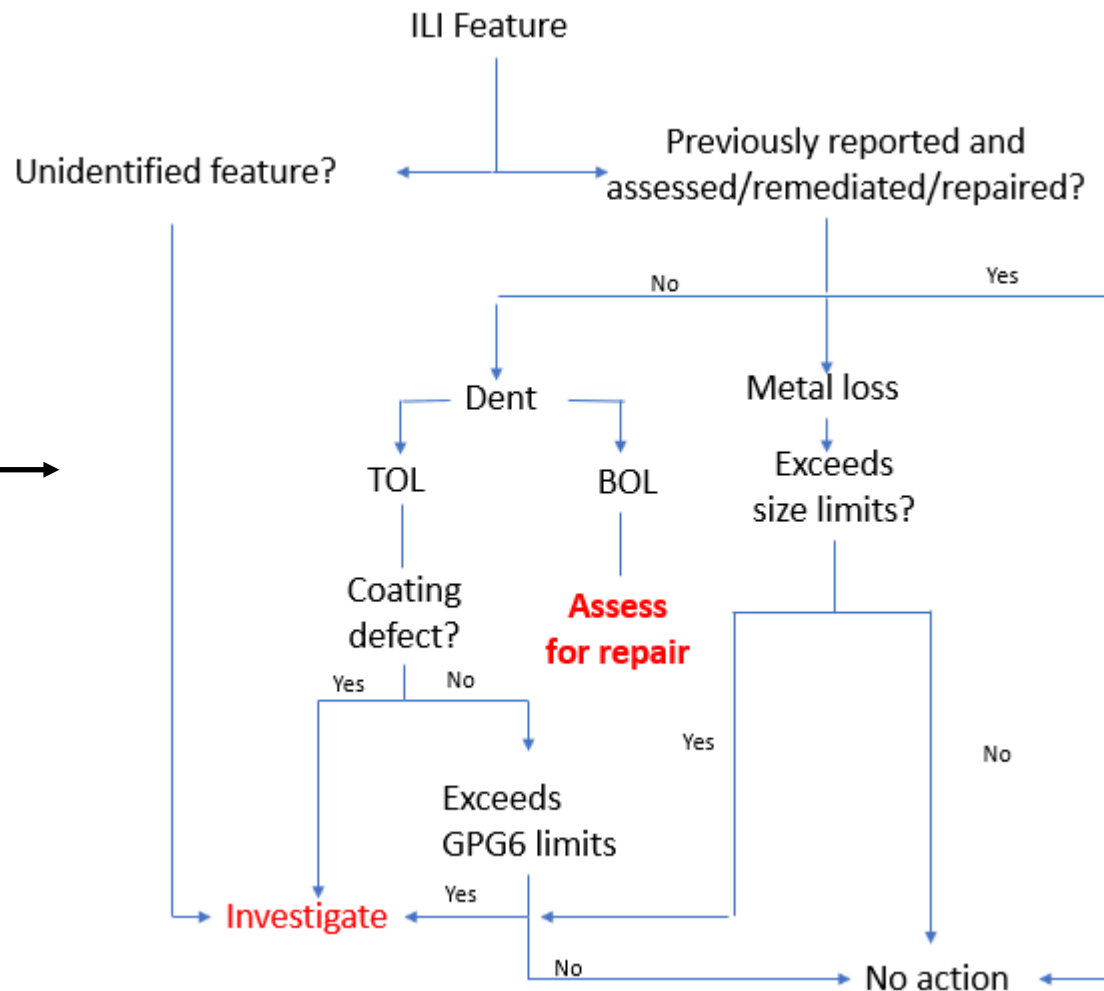
Guidance on Selection of Features

Type of damage	Guidance	Action	
General corrosion	Includes clusters	$D \leq 20\%$ NWT, monitor	$D > 20\%$ NWT, Inspect, assess & repair as required
Pitting corrosion		$D \leq 50\%$ NWT monitor	$D > 50\%$ NWT, Inspect, assess & repair
Corrosion associated with weld	Corrosion associated with a seam or girth weld is coincident with welding defects, repair	As for general or pitting corrosion	
Crack	Not acceptable	Inspect & repair ASAP	
Kinked dent	Not acceptable	Inspect & repair ASAP	
Dent, TOL	If new feature, may be due to external interference, carry out DCVG	Assess and rank using UKOPA/GPG/06 Inspect, assess and plan to repair if required	
Dent, BOL	Do not excavate, monitor, carry out static and fatigue assessment assess as unconstrained	Assess and rank using UKOPA/GPG/06 Excavate to repair only (failure may occur when constraint is released)	
Dent associated with weld	If pipeline is pressure cycled, carry out fatigue assessment. Assess weld quality in accordance with UKOPA/GPG/06	If weld is poor quality, repair. Otherwise, if $D \leq 2\%$ monitor	$D > 2\%$ OD Inspect and repair if subject to fatigue
Dent associated with metal loss	If feature is due to external interference, repair	Dent depth $\leq 6\%$ OD and metal loss due to corrosion $\leq 20\%$ NWT, monitor	Dent depth $> 6\%$ OD or metal loss due to corrosion $> 20\%$ NWT, inspect and repair

Use of GPG 26

GPG 26 is not prescriptive

Operators can use guidance to develop specific ILI feature verification decision algorithms – eg



Procedure for field investigation

- ☐ Arrange land access, work and reinstatement criteria
- ☐ Establish the exclusion zone
- ☐ Establish pressure control requirements
- ☐ Design trench stability and egress
- ☐ Excavate damage location in accordance with relevant safe working procedure.
- ☐ Monitor trench stability.
- ☐ Restrict access within exclusion zone and into trench.
- ☐ Inspect and categorise feature.
- ☐ If feature size exceeds limiting criteria, reduce pressure and carry out repair.
- ☐ Record all data in accordance with the UKOPA FR1 form and log in operator and UKOPA databases.
- ☐ Reinstatement and full records of inspection activities and repair.

Questions?
