United Kingdom Onshore Pipeline Operators' Association

UKOPA Process Safety

Process Safety Benchmarking

Report of the UKOPA **P**rocess **S**afety **W**orking **G**roup

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Process Safety Benchmarking

1 Summary

A methodology for the assessment of pipeline process safety has been developed by the UKOPA Process Safety Working Group (PSWG). A questionnaire based on this methodology has been developed to benchmark the implementation of process safety principles by UKOPA member companies. The questionnaire are has been completed by UKOPA members, and the results of the benchmarking are presented in this report. The areas which showed greatest variation in practice were Leadership, Competence and Training and Modifications and Repair Process. To improve understanding of how each member delivers process safety management and promote sharing the UKOPA members are holding a Process Safety Sharing Workshop focusing on the areas with there appears to be the greatest difference in practice.

2 Background

"Process Safety" is a collective name for the measures, systems, procedures or policies which prevent incidents and/or protect people/ environment from effects of Major Accidents.

Major Accidents are those which cause

- Multiple Fatalities
- Significant effect on the Environment
- Major media coverage
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In summary major accidents are high consequence – low frequency events (compared with occupational injuries which are low consequence, high frequency events). Recent major accidents which have drawn attention to the need for process safety are Texas City and Buncefield.

UKOPA is committed to minimising the possibility of a process safety incident on a pipeline in the UK and established a working group to focus on process safety and sharing learning across its members.

Following these incidents, a number of recommendations and initiatives relating to process safety have been made by regulators and major hazard industries, covering
Process safety requirements for

- Leadership
- Integrated And Comprehensive Management System
- Knowledge And Expertise
- Culture
- Clearly Defined Expectations And Accountabilities
- Support For Line Management
- Leading And Lagging performance Indicators
- Auditing and monitoring

The majority of published work relates to single, secure sites rather than distributed assets. On behalf of UKOPA, the Process Safety Working Group has identified the process safety requirements essential for safe pipeline management and operation, and identified the risk controls to be applied.

3 Process Safety Principles for Pipelines

The process safety principles for pipelines were derived from a thorough review of the operations and maintenance sections of the current UK pipelines codes:-

PD 8010 Part 1 2004 Section 13
IGE/TD/1 Edition 4 2001 Section 11

The key pipeline risk control performance indicators were identified from this review, together with a list of detailed topics to be assessed under each risk control area. The key risk controls and the associated topics are summarized in Table 1 below.

Table 1 Risk Control Performance Indicators and Topics for Assessment

Risk Control Performance Indicator	Topics for Assessment
1. Route Management	• Linewalk • Routing survey • Ground movement checks • Change of land use • Mineral extraction & mining operations • Soil erosion, washout • Ground condition (drainage, water logging) • River and all special crossings • Leak detection
2. Asset Records	• Design & construction • Maintenance records • Operating manuals • Operating records (pressure cycles, temperature, starts/stops) • Asset information (types, settings) • Availability/accessibility of critical information • Results and data – inspection data • Review and update
3. Operating Procedures	• Permit to work • Operating manuals • Manning levels

Risk Control Performance Indicator	Topics for Assessment
	• Roles & responsibilities • Pressure management • Control centre(s) • Interfaces with upstream & downstream • Isolation procedures • Alarm management • SCADA & leak detection
4. Competence and Training	• Resource assessment • Training plans • Contractor management and competence • Individual competency assessment • Human factors
5. Emergency Response	• Availability of emergency plan • Resources • Testing arrangements • Stakeholder liaison • Emergency response facilities • Emergency equipment and spares • Incident response equipment • Communications • Provision of information • PERO • Updating of procedures • Incident response management – pressure reduction etc
6. Leadership	• Audit • Action closeout • Incident investigation and review
7. 3rd Party Interference Management	• Aerial & vantage surveillance • Landowner & 3rd party liaison • Markers • 3rd party infringements • One call system • 3rd party works management • Land use planning & management
8. Modification & Repair Process	• Defect management process • Repair methods and procedures • New build – exceptions • Changes to design
9. Maintenance, Inspection, Other	• Valve station checks and maintenance • Security systems • Signage • Protective devices • Instrumentation, telemetry, isolation valve

Risk Control Performance Indicator	Topics for Assessment
	operation • DSEAR • Hazardous area assessments • Pig traps, filters, pressure vessels • Heaters • Electrical equipment - UPS
10. Integrity	• Pipe wall defects – dents, gouges, weld anomalies, cracks, laminations • Internal corrosion – - product management - pigging • External corrosion – - CP system monitoring - coating - AC corrosion - DC corrosion - SCC - MIC - sleeves • AG Pipework - - visual examination - insulation

4 Self Assessment Process Safety Questionnaire

A self assessment questionnaire was developed as a series of scored questions to assess and score process safety performance against the detailed topics associated with each risk control. The use of scoring allows operators to evaluate and establish datum levels for particular pipelines or networks, and analyse and compare various approaches on these assets. The purpose is to facilitate self assessment, and to allow focussed discussions between operators on specific areas of mutual interest.

4.1 Scoring Process - The maximum allocated score in each risk control area is not set as a target and must be considered with care, as the total points allocation may not apply to all pipelines; major accident hazard pipelines require additional duties and therefore different practices, some requirements and practices differ for gas and liquid pipelines, and the management of datum levels are affected by asset age. For these reasons, direct comparison of scores may not be relevant, and numerical ranking of scores may not represent ranking of performance. Some specific examples are:-

Route Management	Specific monitoring of land use and developments applies to MAHPs.

	Some issues covered are specific to certain environments.
Asset Records	Datum score is dependent upon age of assets.
Operational Procedures	Control room protocols and scopes of work vary. Upstream/downstream interactions are facility dependant. Implementation and use of leak detection varies between gas and liquid pipelines.
Emergency Response	Requirements vary between gas and liquid pipelines. Emergency plan information and testing is required for MAHPs. Access to (and requirement for) additional resources depends on size of the organisation and the specific operation.
Leadership	Area for relevant discussion and sharing of practice.
3rd party Interference	Consistency expected.
Modifications and repairs	Procedures likely depend upon scale of operation.
Maintenance, Inspection & Other	Some requirements may be dependent upon relevant legislation in addition to PSR (eg PSSR), and type of plant/equipment.
Integrity	Some aspects may vary with scale of operation, type of product, pipeline location etc.

The self assessment questionnaire is web-based, and can be downloaded for completion and use by UKOPA members.

5 UKOPA Process Safety Benchmarking

A benchmarking study has been carried by UKOPA using the self assessment questionnaire described above. The questionnaire was downloaded and completed by UKOPA members, and the results submitted for a confidential benchmarking assessment by the PSWG. The purpose of the study was to identify areas of variation where sharing of procedures and practices between UKOPA members would be of value.

Twelve UKOPA members submitted responses, three members submitted more than one response. The overall response is therefore a clear demonstration of process safety awareness from UK pipeline operators.

The results of the benchmarking are given in tables:-

Table 2 – all pipeline operators
Table 3 – gas pipeline operators
Table 4 – liquid pipeline operators

In considering the results, attention is drawn to the points raised in Section 3 above.

The results are also shown in figures:-

Figures 1 -3 – all pipeline operators
Figures 4 -6 – gas pipeline operators
Figures 7 -9 – liquid pipeline operators

Figures 1, 4 and 7 show the normalised maximum, minimum and average scores for each risk control area. From the results for all pipeline operators (Figure 1) it is observed that in most cases the average is half way between the max and min, with the exception of Leadership, Competency and Training and Modifications and Repair, where the average is biased towards the maximum score.

Figures 2, 5 and 8 show the normalised maximum and minimum scores for each risk control area. From the results for all pipeline operators (Figure 2) it is observed that Leadership, Competency and Training and Modification and Repair show the greatest difference between maximum and minimum scores.

Figures 3, 6 and 9 show the ranges between the normalised maximum and minimum scores. The results for all pipeline operators (Figure 3) demonstrate the above observations more clearly. A wider range between the maximum and minimum scores indicates there is potential to share learning and experience from the different practices in place.

PSWG considers this should be done through a series of industry workshops.

6 Discussion

The results obtained from the UKOPA pipeline process safety benchmarking study provide comprehensive demonstration of the awareness of proces safety issues in the UK pipeline industry.

The numerical results reported in Tables 2, 3 and 4 are interpreted and presented in Figures 1 – 9 above. The observations made are summarised as follows:-

- There is generally an even spread between the maximum and minimum scores
- Maximum range in scores occurs for:-
    - Leadership
    - Competence and Training
    - Modification and Repair Process

Risk Control areas have been prioritised for further consideration by the PSWG based on the lowest maximum score and the maximum score range in Table 5. The priorities are as follows;

Priority 1 Member workshop to discuss and share differences in procedures and practices

Priority 2 Review to identify specific areas for discussion and monitor trends

Priority 3 Monitor trends

7 Recommendations

Based on the assessment of results, the PSWG recommends that

i) A UKOPA Workshop is held to discuss, consider and make specific recommendations on the Priority 1 risk control areas:-
   a. Route Management
   b. Competence and Training
   c. Modifications and Repair

ii) Issues relating to Leadership are given specific consideration by the UKOPA Management Council.

iii) The benchmarking study is repeated at a two year interval to monitor pipeline process safety issues.

Table 2 Process Safety Benchmark Results – All Pipeline Operators

Risk Control	Max Points Scored	Min scored	Range	Mean	Ave Score	Normalised Scores		
						Max %	Ave %	Min %
Route Management	17.7	9	8.7	13.35	14.19	100.0	50.8	49.2
Asset Records	26.5	14.5	12	20.5	21.64	100.0	54.7	45.3
Operational Procedures	23.5	16.5	7	20	19.06	100.0	70.2	29.8
Competence & Training	15.75	7	8.75	11.375	13.56	100.0	44.4	55.6
Emergency Response	29	17	12	23	20.36	100.0	58.6	41.4
Leadership	12.5	5	7.5	8.75	10.19	100.0	40.0	60.0
3rd Party Interference	23.25	16	7.25	19.625	20.19	100.0	68.8	31.2
Modifications & Repairs Process	10.25	3.5	6.75	6.875	8.44	100.0	34.1	65.9
Maintenance, Inspection & Other	26.25	17.5	8.75	21.875	22.69	100.0	66.7	33.3
Integrity	18.75	12.25	6.5	15.5	16.09	100.0	65.3	34.7

Notes:- Mean arithmetic mean of max and min points scored
Ave score total score/number of questionnaires completed

Table 3 Process Safety Benchmark Results – Gas Pipeline Operators

Risk Control	Max Points Scored	Min scored	Range	Mean	Ave Score	Normalised Scores		
						Max %	Ave %	Min %
Route Management	17.75	10.5	7.25	14.125	14.19	100.0	59.2	40.8
Asset Records	25.25	16.2	9.05	20.725	21.64	100.0	64.2	35.8
Operational Procedures	22.5	17.5	5	20	19.06	100.0	77.8	22.2
Competence & Training	15.75	11.75	4	13.75	13.56	100.0	74.6	25.4
Emergency Response	24.5	17	7.5	20.75	20.36	100.0	69.4	30.6
Leadership	12.5	8	4.5	10.25	10.19	100.0	64.0	36.0
3rd Party Interference	23.25	16	7.25	19.625	20.19	100.0	68.8	31.2
Modifications & Repairs Process	10.25	6.5	3.75	8.375	8.44	100.0	63.4	36.6
Maintenance, Inspection & Other	26.25	17.75	8.5	22	22.69	100.0	67.6	32.4
Integrity	18.75	13.75	5	16.25	16.09	100.0	73.3	26.7

Notes:- Mean arithmetic mean of max and min points scored
Ave score total score/number of questionnaires completed

Table 4 Process Safety Benchmark Results – Liquid Pipeline Operators

Risk Control	Max Points Scored	Min scored	Range	Mean	Ave Score	Normalised Scores		
						Max %	Ave %	Min %
Route Management	17.25	9.00	8.25	13.13	13.33	100.0	52.2	47.8
Asset Records	26.50	14.55	11.95	20.53	20.78	100.0	54.9	45.1
Operational Procedures	23.50	16.50	7.00	20.00	18.92	100.0	70.2	29.8
Competence & Training	14.25	7.00	7.25	10.63	12.33	100.0	49.1	50.9
Emergency Response	29.00	20.50	8.50	24.75	24.38	100.0	70.7	29.3
Leadership	12.50	5.00	7.50	8.75	9.13	100.0	40.0	60.0
3rd Party Interference	22.50	16.25	6.25	19.38	20.00	100.0	72.2	27.8
Modifications & Repairs Process	10.25	3.50	6.75	6.88	7.08	100.0	34.1	65.9
Maintenance, Inspection & Other	26.25	17.50	8.75	21.88	21.67	100.0	66.7	33.3
Integrity	18.50	12.25	6.25	15.38	15.13	100.0	66.2	33.8

Notes:- Mean arithmetic mean of max and min points scored
Ave score total score/number of questionnaires completed

Table 5 Process Safety Benchmark Results – Prioritisation of Issues for Consideration

Risk Control	Comments	Prioritisation
Route Management	Low max score - opportunity to identify best practice	**1**
Asset Records	Influenced by age of asset	**2**
Operational Procedures	Reasonable variation, influenced by product	**3**
Competence & Training	Wide score range, key area, opportunity to identify best practice	**1**
Emergency Response	Influenced by product type (gas/oil)	**3**
Leadership	Wide score range, refer to Management Council	**1**
3rd Party Interference	Low score range, consistency in practice	**3**
Modifications & Repairs Process	Key area, low max score, opportunity to identify best practice	**1**
Maintenance, Inspection & Other	Reasonable score range, review	**2**
Integrity	Low score range, consistency in practice	**3**

Figure 1 –UKOPA Benchmarking Study - Maximum, Minimum and Average Normalised Scores – All Pipeline Operators

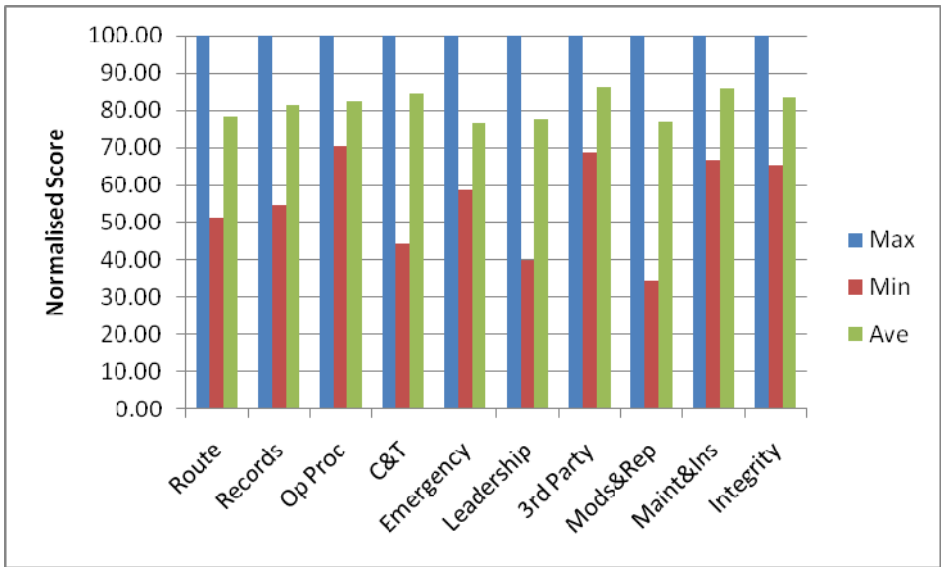


Figure 2 –UKOPA Benchmarking Study – Maximum and Minimum Normalised Scores - All Pipeline Operators

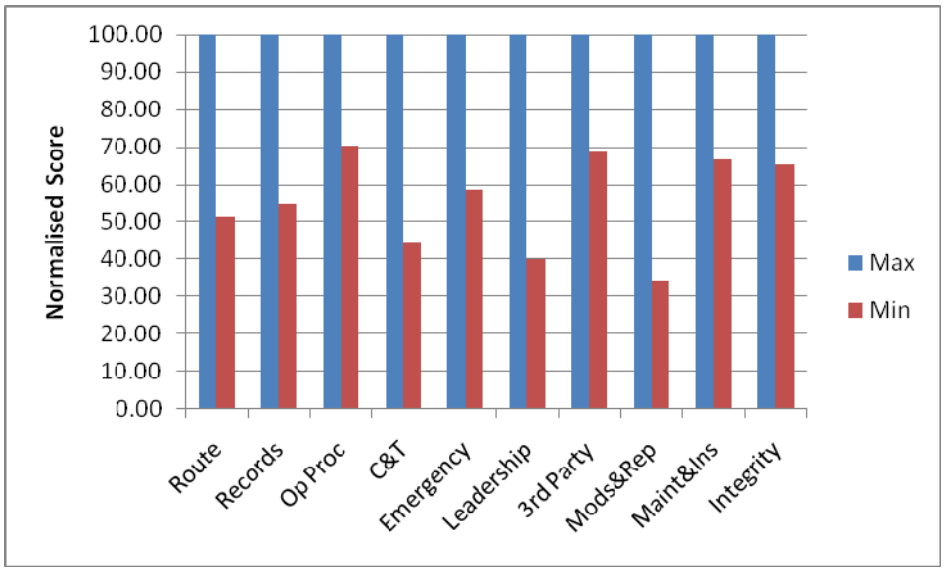


Figure 3 –UKOPA Benchmarking Study – Normalised Score Ranges – All Pipeline Operators

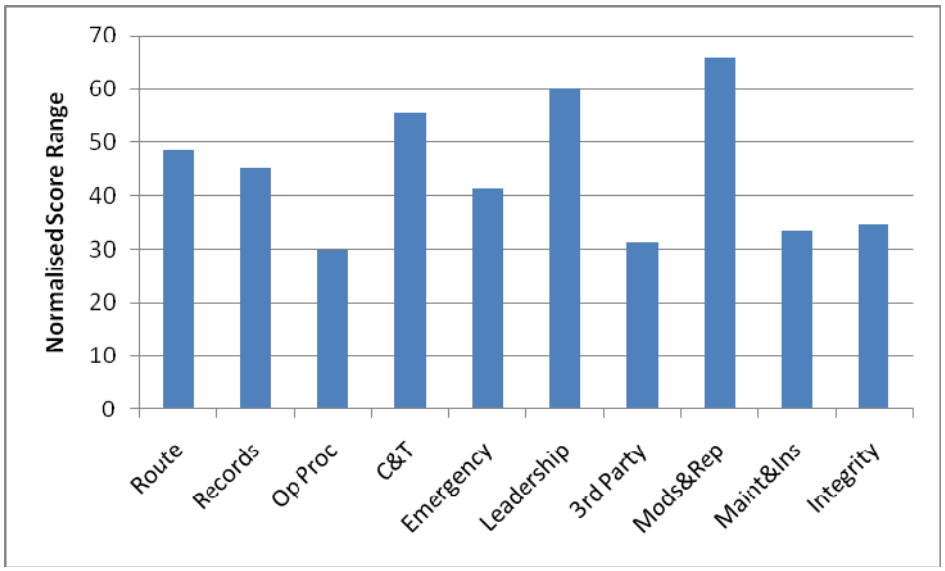


Figure 4 –UKOPA Benchmarking Study - Maximum, Minimum and Average Normalised Scores – Gas Pipeline Operators

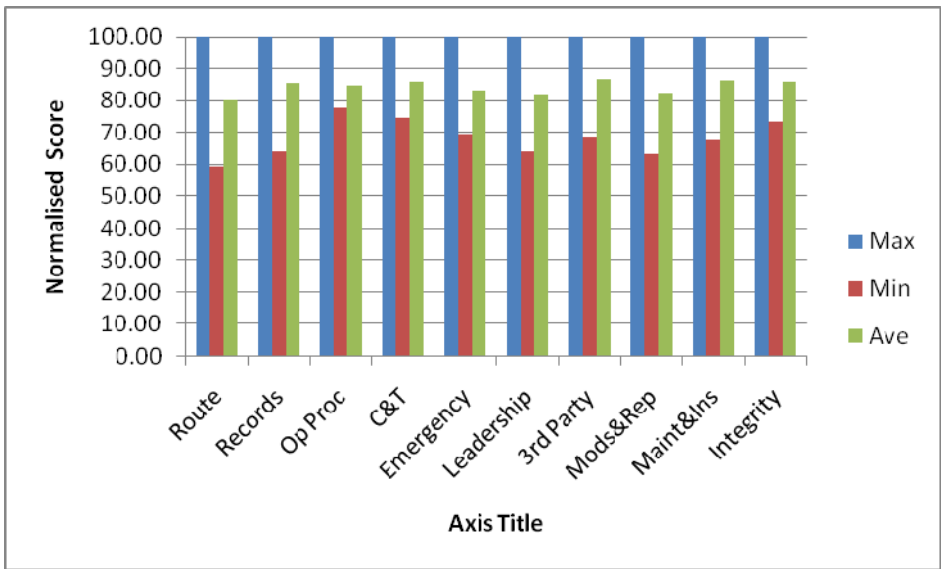


Figure 5 –UKOPA Benchmarking Study – Maximum and Minimum Normalised Scores - Gas Pipeline Operators

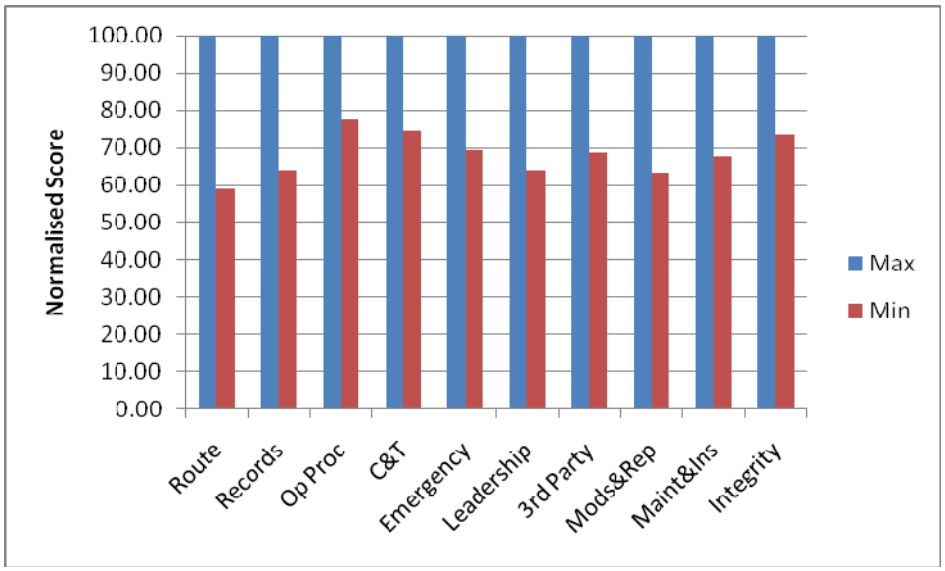


Figure 6 –UKOPA Benchmarking Study – Normalised Score Ranges – Gas Pipeline Operators

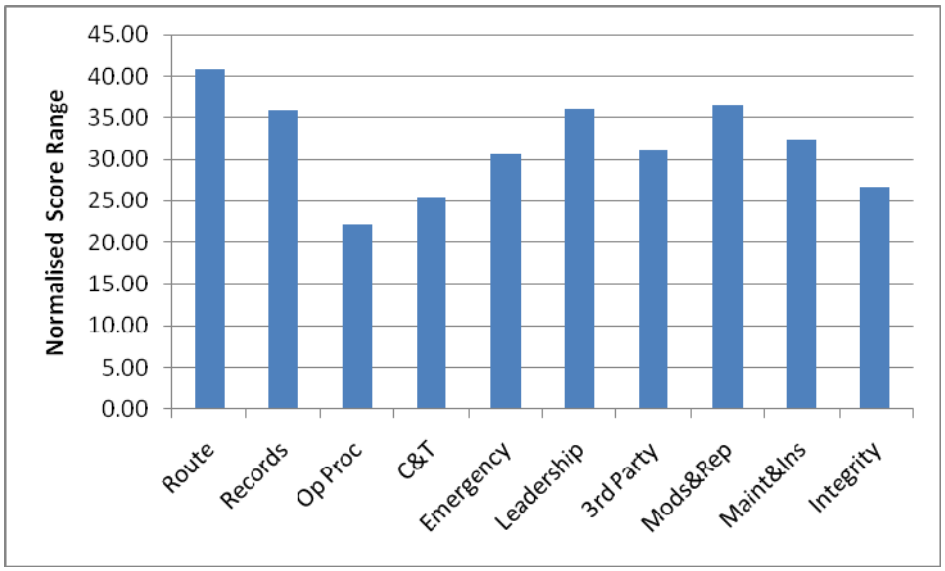


Figure 7 –UKOPA Benchmarking Study - Maximum, Minimum and Average Normalised Scores – Liquid Pipeline Operators

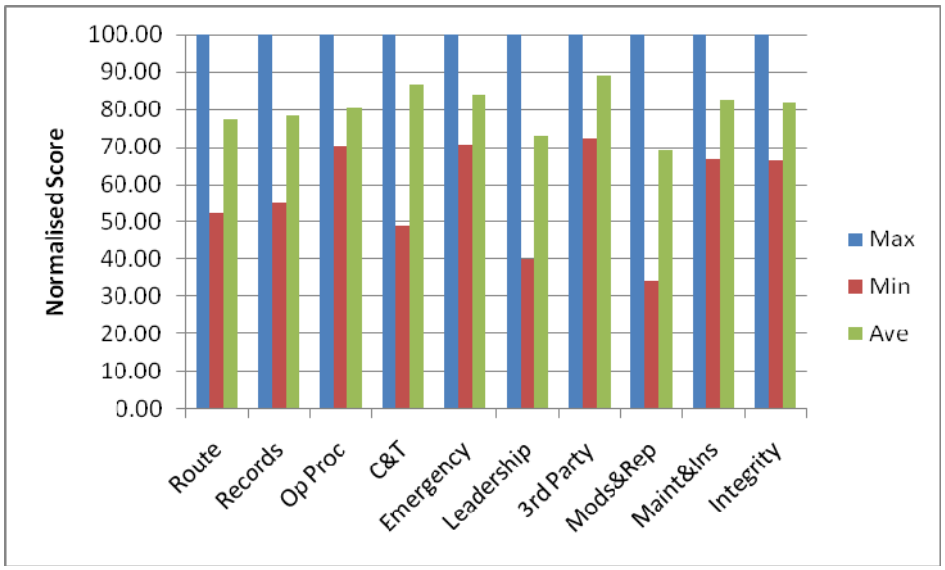


Figure 8 –UKOPA Benchmarking Study – Maximum and Minimum Normalised Scores - Liquid Pipeline Operators

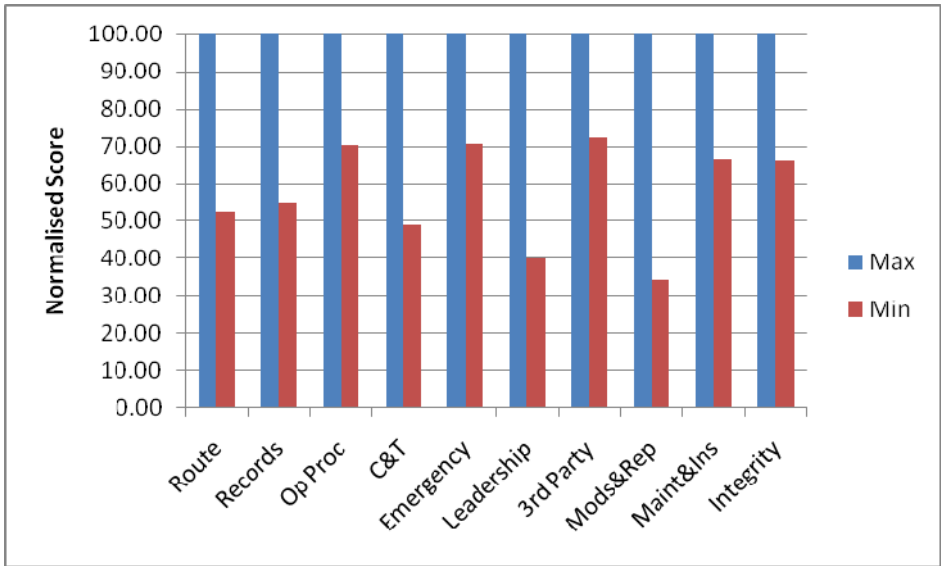
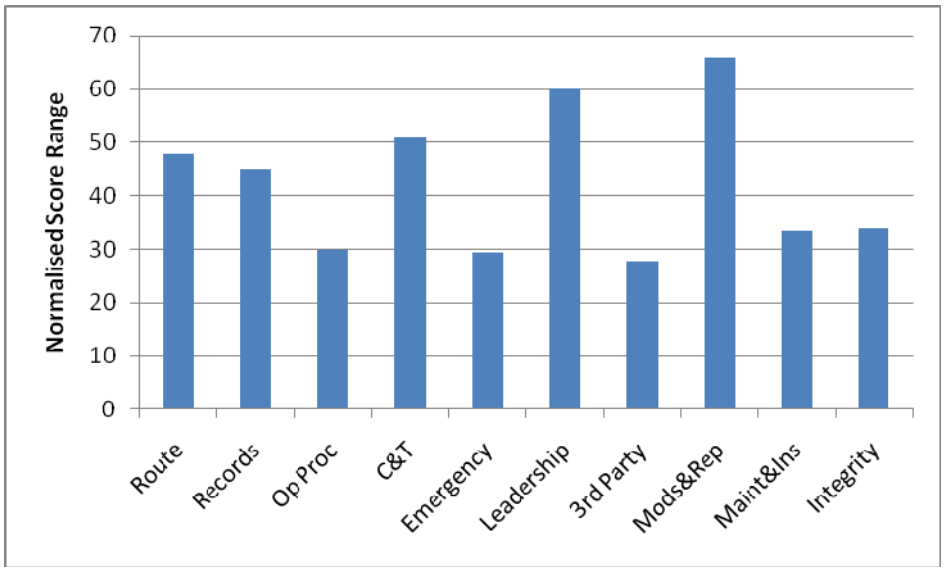


Figure 9 –UKOPA Benchmarking Study – Normalised Score Ranges – Liquid Pipeline Operators



Appendix 1 – Self Assessment Process Safety Questions

Question	Risk Control	Issue
Do you carry out line walks to assess markers posts ground conditions etc?	Route Management	Line Walk
Do you produce a report detailing required remedial works?	Route Management	Line Walk
Do you have a set period to complete remedial works?	Route Management	Line Walk
Do you have a company standard for vantage or aerial surveillance?	Route Management	Routing Survey
How often do you carry out aerial or vantage surveillance?	Route Management	Routing Survey
Do you use an automated system for capture of aerial / vantage siting reports?	Route Management	Routing Survey
Do you have a process in place to identify areas of potential ground movement along your pipeline routes?	Route Management	Ground Movement checks
On what basis do you survey or monitor areas of potential ground movement?	Route Management	Ground Movement checks
Do you risk assess the requirement for and timing of remedial works?	Route Management	Ground Movement checks
Do you monitor or input as required into the local authority area planning process?	Route Management	Change of land use
Do you have regular contact with local authority planning and development departments?	Route Management	Change of land use
Do you monitor local authority weekly planning and development lists?	Route Management	Change of land use
Do you have a procedure in place, for responding to developments and monitor work from planning to construction?	Route Management	Change of land use
Do you have a company standard or procedure for risk assessing the potential impact of mineral extraction and mining operations?	Route Management	Mineral extraction and mining operations
Do you carry out regular consultations with mineral extraction and mining operators in the vicinity of your pipelines?	Route Management	Mineral extraction and mining operations
Do you have a procedure in place for monitoring the ongoing impact of mineral extraction and mining operations in the vicinity of your pipelines?	Route Management	Mineral extraction and mining operations
Do you assess the potential risk posed by old mine works and landfill sites on your pipelines?	Route Management	Mineral extraction and mining operations
Do you have a company standard or procedure for risk assessing the potential	Route Management	Soil, Erosion, washout, marshland

Question	Risk Control	Issue
impact of soil erosion, washout and marshland on your pipeline?		
Do you carry out a detailed survey of these areas, at a fixed or risk based frequency?	Route Management	Soil, Erosion, washout, marshland
On what frequency do you produce reports and carry out remedial works if required?	Route Management	Soil, Erosion, washout, marshland
Do you monitor drainage, water logging and ground condition as part of your vantage / aerial surveillance or line walk?	Route Management	Ground Condition (Drainage, water logging)
Are the relevant obligations of the pipeline way leave agreement being complied with by the operator and the landowner?	Route Management	Ground Condition (Drainage, water logging)
Do you have a policy / procedure for assessing any requirements for works to address drainage, which sets the timescales for completion?	Route Management	Ground Condition (Drainage, water logging)
At what frequency do you carry out remedial works, to drainage systems in your pipeline wayleave, if required?	Route Management	Ground Condition (Drainage, water logging)
What percentage of detailed records / drawings / profiles of river / special crossings do you have on your pipeline routes?	Route Management	River and special crossings
How frequently do you carry out a detailed survey of river / special crossings?	Route Management	River and special crossings
Do you have a process to manage the close out of actions from the river surveys?	Route Management	River and special crossings
Do you assess the need to carry out physical detection of product leaks during the route survey based on risk assessment of locations along the pipeline?	Route Management	Leak Detection
Do you have a process to determine whether there are any leaks along the route of the pipeline?	Asset Records	Design & Construction
What percentage of As Built design & construction records for the plant equipment installation, including records, data sheets and operational limits / constraints?	Asset Records	Design & Construction
Do you hold this data in a secure, fire protected location that is accessible 24 hours / 7 days a week?	Asset Records	Design & Construction
Do you have access to the data on backed up computer based system or CD-Rom in a secure fire protected location?	Asset Records	Design & Construction
What percentage of the Engineering or Process & Instrumentation Diagram's do you have for the plant equipment being operated?	Asset Records	Maintenance & Operating Drawings

Question	Risk Control	Issue
Do you have a policy in place to keep these drawings and as-built records up to date?	Asset Records	Maintenance & Operating Drawings
What percentage of loop drawings do you have for the plant equipment being operated?	Asset Records	Maintenance & Operating Drawings
What percentage of Cause & Effect reports do you have for the plant equipment being operated?	Asset Records	Maintenance & Operating Drawings
Do you keep these as built via an electronic drawing office based system?	Asset Records	Maintenance & Operating Drawings
What percentage of the original Vendor Technical & Operating Manuals (TOM's) for the equipment do you have available?	Asset Records	Operating Manuals
What percentage of your Asset register is up to date with any modifications that you make to the existing equipment?	Asset Records	Operating Manuals
What percentage do you have up to date operating procedures for the plant and equipment?	Asset Records	Operating Manuals
Do you have operating & control philosophies for your plant and equipment?	Asset Records	Operating Manuals
What percentage of the critical plant design, maintenance and operating information for your existing plant available to your operators?	Asset Records	Availability / Accessibility of critical information
Do you have the critical plant design, maintenance and operating information in a single source to facilitate speed of access in case of emergency / incidents?	Asset Records	Availability / Accessibility of critical information
Do you keep your critical plant design, maintenance and operating information in an electronic format for ease of updating?	Asset Records	Availability / Accessibility of critical information
Do you have a process for holding and maintaining maintenance records and equipment history?	Asset Records	Maintenance Records
Do you keep detailed copies of your maintenance records and equipment history?	Asset Records	Maintenance Records
Do you record maintenance records and record equipment history on a computer based maintenance management system?	Asset Records	Maintenance Records
Do you keep detailed copies of maintenance records for a specific period of time and record them along with equipment history on a computer based maintenance management system that is backed up?	Asset Records	Maintenance Records
Do you have a procedure for identifying the asset equipment tag nomenclature, type and the information that should be held?	Asset Records	Asset Information
What percentage of asset record	Asset Records	Asset Information

Question	Risk Control	Issue
information / technical information do you have?		
Which type of information do you report?	Asset Records	Operating Records (Pressure Cycles, Temperature, start / stop)
Do you have some technical engineering review of the pressure or temperature cycles and start stop information to ensure it does not affect pipeline integrity?	Asset Records	Operating Records (Pressure Cycles, Temperature, start / stop)
Do you take action as appropriate if equipment is operated outwith limits, e.g. shutdown equipment, carry out inspection; carry out risk assessment before continuing or restarting plant equipment?	Asset Records	Operating Records (Pressure Cycles, Temperature, start / stop)
Do you keep copies of your inspection records?	Asset Records	Results and Data - Inspection Data
Do you record inspection checks and record equipment history on a computer based maintenance management system?	Asset Records	Results and Data - Inspection Data
How do you keep copies of your inspection records?	Asset Records	Results and Data - Inspection Data
Do you use electronic data recording, for example your NDT or CP results, to allow trending and forecasting of future maintenance requirements?	Asset Records	Results and Data - Inspection Data
As part of the maintenance process do the personnel carrying out the maintenance inspection check the technical data provided to them and report back if incorrect?	Asset Records	Review & Update
Do you carry out an audit of the maintenance task and results?	Asset Records	Review & Update
Is there an periodic audit of the completeness of maintenance records, equipment history updates and accuracy of technical information?	Asset Records	Review & Update
Do you have an up to date Geographical Information System (GIS) for all pipelines under your control?	Asset Records	Pipeline Records - GIS
Do you have all landowner details recorded on a system?	Asset Records	Pipeline Records - GIS
Do you record all work carried out on the pipeline, including drainage, integrity inspections and repair work on your asset management system?	Asset Records	Pipeline Records - GIS
Have you got a GPS or XYZ representation of the pipeline on the GIS?	Asset Records	Pipeline Records - GIS
Do you have a link between the GIS and an overview photographic record of the pipeline?	Asset Records	Pipeline Records - GIS

Question	Risk Control	Issue
What frequency do you update your GIS with new mapping information on a regular basis?	Asset Records	GIS
Can you demonstrate you have competent people to develop the system and maintain the system either within your team or as part of a contract?	Asset Records	GIS
Do you have all the relevant land marks, e.g. aerial markers, road crossings, Oil Spill Containment Sites (OSC) amongst others available as for search on the asset management system?	Asset Records	GIS
Do you operate a permit to work system (PTW) as part of your safety management systems?	Operating Procedures	Permit to work
Does your PTW system provide for the training and instructions in the use and issue of permits, for everybody involved in the PTW process?	Operating Procedures	Permit to work
Does your PTW system define clear roles and responsibilities, for everybody involved in the PTW process?	Operating Procedures	Permit to work
Does your PTW system provide for auditing, monitoring and review, to ensure the system operates as intended?	Operating Procedures	Permit to work
Do you have a detailed operating manual/procedure for each pipeline?	Operating Procedures	Operating Manuals
Are the manuals/procedures controlled documents and do all relevant personnel have access to a copy?	Operating Procedures	Operating Manuals
Is your operating manual/procedure reviewed and updated on a regular basis?	Operating Procedures	Operating Manuals
Is the competence of your control room / operating staff regularly assessed against the contents of your operating manuals/procedures?	Operating Procedures	Operating Manuals
Do you have sufficient manning levels to carry out routine, day to day operations and maintenance activities on your pipeline systems?	Operating Procedures	Manning levels
Do you have sufficient manning levels to carry out non-routine, operations and maintenance activities on your pipeline systems?	Operating Procedures	Manning levels
Do you have a procedure and resources in place to increase manning levels in an emergency and provide an effective emergency response / clean up / repair operation?	Operating Procedures	Manning levels
Do you have processes to demonstrate all	Operating Procedures	Manning levels

Question	Risk Control	Issue
personnel trained, assessed as competent?		
Do you have a company / department organisation diagram detailing all key sites?	Operating Procedures	Roles and Responsibilities
Does each member of staff, have a job description detailing their individual roles and responsibilities?	Operating Procedures	Roles and Responsibilities
Can each member of staff demonstrate they have received the appropriate level of training and have been assessed as competent for their particular role?	Operating Procedures	Roles and Responsibilities
Are individuals in safety critical roles re-assessed to ensure they have retained the appropriate level of competence for that particular role?	Operating Procedures	Roles and Responsibilities
What percentage of your pipelines always operate within their Maximum Operating Pressure / Temperature limits?	Operating Procedures	Pressure management
Do your pipelines have pressure protection devices installed (high/low) ?	Operating Procedures	Pressure management
Are your pressure / temperature protection devices checked and tested at least once per year?	Operating Procedures	Pressure management
Do you have procedures / guidelines in place for changing the Max Operating Pressure or Max Allowable Operating Pressure, should there be a change in operating conditions, structural integrity, land u	Operating Procedures	Pressure management
Do you have a control centre with a computer based control system which has either DCS or SCADA based system, operating and controlling pipeline operating conditions 24 hrs per day?	Operating Procedures	Control Centres
Are the operators of the SCADA / DCS system dedicated to the operation of the pipeline? (ie. is the pipeline part of their core role rather than in addition to it)	Operating Procedures	Control Centres
Are the SCADA / DCS equipped to carry out alarm handling and execute actions to control pipeline conditions and close all pipeline block valves / ESD valves?	Operating Procedures	Control Centres
Are the SCADA / DCS control system equipped with robust redundancy that covers the system itself, the UPS / power supplies and communications?	Operating Procedures	Control Centres
Do you have organisation charts / diagrams or some other method of illustrating interfaces with upstream and downstream?	Operating Procedures	Interfaces with upstream and Downstream

Question	Risk Control	Issue
Can all relevant personnel demonstrate their understanding of the interfaces with upstream and downstream?	Operating Procedures	Interfaces with upstream and Downstream
Do you have a clear hierarchical management structure in place to manage interfaces between upstream and downstream?	Operating Procedures	Interfaces with upstream and Downstream
Do you have robust communications systems in place to maintain upstream and downstream interfaces in all situations?	Operating Procedures	Interfaces with upstream and Downstream
Do you have a general isolation standard, eg. double block and bleed?	Operating Procedures	Isolation procedures
Do you have detailed isolation procedures for individual pieces of equipment, eg. valves, pumps, compressors, pig traps etc?	Operating Procedures	Isolation procedures
Do you have a computer based isolation selector tool, containing all your isolations, which is compatible with your PTW system?	Operating Procedures	Isolation procedures
Do you have a physical, sequential type isolation system (eg. Castell/Smith locks) installed on equipment with complex isolations, for eg. pig traps?	Operating Procedures	Isolation procedures
Do you have a trip and alarm schedule, which is reviewed and updated?	Operating Procedures	Alarm Management
Do you have a system for registering and logging alarms, trips and events that allows a historical review of abnormal situations / incidents?	Operating Procedures	Alarm Management
Is there an alarm handling review carried out on a regular basis?	Operating Procedures	Alarm Management
Do you have a periodic review of standing alarms and faulty alarms / trips and is remedial action taken to correct these alarms?	Operating Procedures	Alarm Management
Do you have an independent modern leak detection system (LDS) in operation on your pipeline systems?	Operating Procedures	Leak Detection system
Do you have a periodic (circa 3 months) review of the Leak Detection System by competent personnel, including review of false alarms and tuning to prevent future similar false alarms?	Operating Procedures	Leak Detection system
Is your LDS system tested on a periodic basis (annual or less) using known dummy leak data to confirm the correct operation of the system, identifying correct location and level of the indentified lea	Operating Procedures	Leak Detection system
Is your LDS tested by the physical simulation of a leak from the pipeline on a pre-determined basis (circa 5 years or	Operating Procedures	Leak Detection system

Question	Risk Control	Issue
less)?		
Does your organisation carry out a systematic analysis of skills, competency and resources required to deliver workload?	Competence & Training	Resource Assessment
Is the workload and competency review integrated with the financial business plan / budget development?	Competence & Training	Resource Assessment
Is your company resourced to deliver the key skill / competency area activities for the processes identified in your major accident prevention document or pipeline operation plans?	Competence & Training	Resource Assessment
What percentage of staff have a training review plan?	Competence & Training	Training plans
Are your training plans systematically linked to assessment of competence?	Competence & Training	Training plans
Waht frequency are your training plans based on:	Competence & Training	Training plans
In your resource assessment do you make specific provision for time to train staff?	Competence & Training	Training plans
Do you have a process in place to identify where contrcator competency assessments are required for working on your assets/equipment?	Competence & Training	Contractor management and Competence
Are their competency details held on the central database?	Competence & Training	Contractor management and Competence
Are training gaps identified?	Competence & Training	Contractor management and Competence
What frequency are contractor competences reviewed on?	Competence & Training	Contractor management and Competence
Is there any process for ensuring that contractors receive specific training for your requirements?	Competence & Training	Contractor management and Competence
Is there any audit plan in place to assess contractor's compliance to company's requirements?	Competence & Training	Contractor management and Competence
Are qualifications validated before carrying out work?	Competence & Training	Contractor management and Competence
How do you assess contractors:	Competence & Training	Contractor management and Competence
Do you have specific procedure or requirement for systematic assessment of individual's assessment?	Competence & Training	Individual competence Assessment
How is your competence assessment done?	Competence & Training	Individual competence Assessment
Is your competence done by:	Competence & Training	Individual competence Assessment

Question	Risk Control	Issue
Do your company have a policy that specifically addresses working hours, overtime which guards against fatigue for rota based shift workers?.	Competence & Training	Human factors
Are your staff (including contractors) consulted before implementing any change like teams merging, change of location etc?	Competence & Training	Human factors
Do you carry out human factor studies before implementing any changes to procedures or plants mods?	Competence & Training	Human factors
Do you have a systematic process to review your critical safety procedures for human factors?	Competence & Training	Human factors
Do you have a company pipeline or network emergency plan/procedure?	Emergency Response	Emergency Plan
Is this periodically reviewed	Emergency Response	Emergency Plan
How frequently is it tested?	Emergency Response	Emergency Plan
How frequent is the plan communicated to all stakeholders?	Emergency Response	Emergency Plan
Have you reviewed and tested the emergency plan/procedure to ensure you have sufficient trained on call and available staff to deal with a pipeline emergency?	Emergency Response	Resource
Do you have capability to call on additional staff available to carry out and monitor gas, leakage and noise levels in the event of a gas escape?	Emergency Response	Resource
Do you have a list of additional resources available for post incident management, clean up and repair?	Emergency Response	Resource
Do you have a programme for testing the emergency plans?	Emergency Response	Testing Arrangements
Does this include table top exercise?	Emergency Response	Testing Arrangements
Does this include full scale plan test with local authorities?	Emergency Response	Testing Arrangements
Are any tests carried out unannounced?	Emergency Response	Testing Arrangements
Are any tests externally audited?	Emergency Response	Testing Arrangements
Do you review and incorporate learning lessons from emergency tests into future plans and procedures?	Emergency Response	Testing Arrangements
Do you have a programme to maintain contact with local authority, emergency services and other relevant stakeholders with respect to emergency plans? LA, Police, Fire Service	Emergency Response	Stakeholder liaison
Do you supply training / awareness aids to other stakeholders?	Emergency Response	Stakeholder liaison
Are emergency plans jointly reviewed?	Emergency Response	Stakeholder liaison
Does this emergency plan integrate (where	Emergency Response	Stakeholder liaison

Question	Risk Control	Issue
necessary) with the local authority emergency plans?		
Do you have a designated emergency response room / centre?	Emergency Response	Emergency response facilities
Is this fully equipped with all necessary equipment to manage a major incident?	Emergency Response	Emergency response facilities
Is this equipment current and checked on a routine basis?	Emergency Response	Emergency response facilities
Do you have a back-up response room?	Emergency Response	Emergency response facilities
Do you have immediate access to appropriate plant, materials and expertise as is needed to undertake remedial action?	Emergency Response	Emergency equipment & spares
Do you have minimum response times for mobilising items?	Emergency Response	Emergency equipment & spares
Do you have an inventory of critical spares?	Emergency Response	Emergency equipment & spares
Are these held on stock and available?	Emergency Response	Emergency equipment & spares
Do company response vehicles contain the appropriate plant, equipment and documentation to deal with an emergency?	Emergency Response	Incident response equipment
Do you have sufficient portable gas, leakage and noise detectors to deal with a major incident?	Emergency Response	Incident response equipment
Do you have access to portable lighting towers / mobile generators or other equipment to manage emergency incidents?	Emergency Response	Incident response equipment
Do you have systems and equipment in place to manage and deal with liquid spills?	Emergency Response	Incident response equipment
Do you have a company communications procedure for dealing with emergencies including regularly tested contact list?	Emergency Response	Communications
Do you use mobile phones?	Emergency Response	Communications
Are mobile dead spots known and mapped?	Emergency Response	Communications
Do mobile phones have priority in the event of access overload?	Emergency Response	Communications
Do you utilise two way radios to assist in dealing with an emergency at the local area site?	Emergency Response	Communications
Do you utilise satellite phones or Airways?	Emergency Response	Communications
Do you have a detailed Q&A list to provide to emergency services and interested parties in an emergency situation?	Emergency Response	Provision of information
Do you have communication procedures and holding statements in place for dealing with media interest?	Emergency Response	Provision of information
Do you provide regular and prompt	Emergency Response	Provision of information

Question	Risk Control	Issue
response to enquiries from local authorities or other services?		
Do you have formal procedures in place for dealing with provision of information and support relating to any serious injury or fatalities as a result of pipeline incidents?	Emergency Response	Provision of information
Do you have trained on call and available P.E.R.O staff to deal with a pipeline emergency?	Emergency Response	P.E.R.O & Training
Is there a recognised company training plan with 3 yearly refresher courses?	Emergency Response	P.E.R.O & Training
Is there a detailed P.E.R.O checklist?	Emergency Response	P.E.R.O & Training
Does PERO training include detailed knowledge of company emergency procedures and site specific technical details?	Emergency Response	P.E.R.O & Training
Are there a company procedures detailing roles and responsibilities for incident response management?	Emergency Response	Incident response management
Do you have procedures and competent personnel in place to assess pipeline damage and calculate what effect the damage has on the pipeline integrity measured against defined categories?	Emergency Response	Incident response management
Are there procedures in place to apply and manage operation and pressure restrictions in the event of a pipeline incident?	Emergency Response	Incident response management
Is there a scheduled staff relief system in place for long term emergencies?	Emergency Response	Incident response management
Do you have approved and up to date oil spill containment (OSC) procedures?	Emergency Response	Oil spill containment procedures & testing
Do you have OSC on call personnel and a dedicated oil spill containment contractor 24 hours/ 7 days?	Emergency Response	Oil spill containment procedures & testing
Do you test your OSC procedures mobilisation to the various sites on a rotational basis and update your procedures with learning?	Emergency Response	Oil spill containment procedures & testing
Do you have your oil spill response locations and information available on your geographical information system (GIS)?	Emergency Response	Oil spill containment procedures & testing
Do you have a oil spill response trailer with all necessary oil spill containment equipment?	Emergency Response	Oil spill containment equipment & testing
Do you test the operation and condition of your OSC equipment as part of your rotational tests?	Emergency Response	Oil spill containment equipment & testing
Do you have a periodic inspection of your OSC equipment and a replacement policy?	Emergency Response	Oil spill containment equipment & testing

Question	Risk Control	Issue
Is the periodic inspection of your OSC equipment and replacement policy regularly reviewed and updated?	Emergency Response	Oil spill containment equipment & testing
Do you have a list of other sources where you may be able to obtain OSC equipment in the event of a spill (that may not be suitable for holding as part of your initial response)?	Emergency Response	Oil spill containment equipment & testing
Is there a clear communication strategy to support and promote Process safety?	Leadership	Leadership
Is your companies Vision or Policy statement for Process Safety independent from its Occupational Safety Policy?	Leadership	Leadership
Is at least one member of the Board is comfortable and knowledgeable about process safety? (For example, he or she is able to name the most significant hazards on the site and is able to understand pr	Leadership	Leadership
How frequent do your Directors and Senior management visit operation sites and discuss process safety management?	Leadership	Leadership
Process Safety KPIs have been developed for all key risk areas	Leadership	Performance Reporting
The KPIs include leading and lagging indicators (e.g. no. of pipeline damage events)	Leadership	Performance Reporting
The KPIs include leading indicators (maintenance complete as per policy) and lagging (incidents)	Leadership	Performance Reporting
What frequency are these KPIs reviewed by operational managers?	Leadership	Performance Reporting
Senior Management receive regular performance reports on process safety and action plans are developed to address issues	Leadership	Performance Reporting
Board, Executive and Senior Management receive regular performance reports on process safety	Leadership	Performance Reporting
A process Safety Culture survey has been carried out to understand the level of support and commitment the staff feel there is for process safety	Leadership	Performance Reporting
An action plan has been developed to address issues raised by process safety culture survey	Leadership	Performance Reporting
There is a clear definition of what a process safety related incident is and how they should be reported	Leadership	Learning Lessons Arrangements
A process is in place for investigating process safety incidents to ensure root	Leadership	Learning Lessons Arrangements

Question	Risk Control	Issue
causes are identified		
There is an effective process for sharing lessons learnt from incidents and near misses internal events	Leadership	Learning Lessons Arrangements
There is an effective process for sharing lessons learnt from incidents and near misses external events	Leadership	Learning Lessons Arrangements
There is a comprehensive process safety audit program based on risk to determine how effective the control systems are at managing these risks	Leadership	Learning Lessons Arrangements
Senior Management receive report on the progress of closing out of audit or incident investigation actions	Leadership	Learning Lessons Arrangements
There is a record of process safety incidents and lesson learnt	Leadership	Learning Lessons Arrangements
Is your standard depth of cover for cross country pipelines	3rd Party Interference	Depth of Cover
Do you have a process to investigate location specific depth of cover?	3rd Party Interference	Depth of Cover
Is there a company standard in place for marker post location and information?	3rd Party Interference	Markers
Does the procedure require that marker posts in either direction be seen from a single position?	3rd Party Interference	Markers
Is there a process in place to confirm marker post condition?	3rd Party Interference	Markers
Is there a replacement programme?	3rd Party Interference	Markers
Is there a process in place to manage vegetation to ensure maker post visibility at:	3rd Party Interference	Markers
Do you have a company standard for company vantage or aerial surveillance?	3rd Party Interference	Surveillance
How often do you carry out aerial or vantage surveillance?	3rd Party Interference	Surveillance
Do you use an automated system for capture of siting reports ?	3rd Party Interference	Surveillance
Do you have a company standard for identifying high risk locations?	3rd Party Interference	Management of High Risk Locations
Do you carry out surveillance of identified high risk locations ?	3rd Party Interference	Management of High Risk Locations
Do you have a register of landowners/occupiers?	3rd Party Interference	Land Owner / Occupier Liaison
Do you carry out mail shots?	3rd Party Interference	Land Owner / Occupier Liaison
Do you follow up mail shot with telephone contact?	3rd Party Interference	Land Owner / Occupier Liaison
Do you carry out face to face meetings with issue of safety information on annual basis?	3rd Party Interference	Land Owner / Occupier Liaison
Do you provide free of charge advice and consultation?	3rd Party Interference	Encroachments

Question	Risk Control	Issue
Do you have a document or procedure which describes the conditions and restrictions for work near your pipeline ?	3rd Party Interference	Encroachments
Do you provide operator presence on site during work?	3rd Party Interference	Encroachments
Do you operate a written works authorisation process?	3rd Party Interference	Encroachments
Do you have a permanently manned response for calls to company telephone number on marker posts ?	3rd Party Interference	Response to Enquiries
Specify the type of system:-	3rd Party Interference	Response to Enquiries
Do you have a database of stakeholders for regular contact?	3rd Party Interference	Stakeholder Management
Do you provide checklists/information as requested?	3rd Party Interference	Stakeholder Management
Do you have a process to identify and monitor frequent offenders?	3rd Party Interference	Stakeholder Management
Do you carry out training on safe working close to pipelines?	3rd Party Interference	Stakeholder Management
Do you have a process for managing major works?	3rd Party Interference	Management of Major Works
Do you carry out regular liaison meetings with major projects?	3rd Party Interference	Management of Major Works
Do you provide awareness/induction training for such projects?	3rd Party Interference	Management of Major Works
Do you provide signage and marking and carry out regular checking of these?	3rd Party Interference	Management of Major Works
Have you got a company system for monitoring infringements?	3rd Party Interference	Infringement data
Do you provide infringement data to the UKOPA IWG?	3rd Party Interference	Infringement data
Do review the data and act on it ?	3rd Party Interference	Infringement data
Do you have a programme for contacting local authority planners?	3rd Party Interference	Developments of Land use planning
Do you review development plans on a regular basis?	3rd Party Interference	Developments of Land use planning
Do you review specific planning applications?	3rd Party Interference	Developments of Land use planning
Do you have a process for tracking planning applications which have the potential to impact your pipelines?	3rd Party Interference	Developments of Land use planning
Is there a defined process / procedure for the management of all modifications / repairs?	Modification Repairs Process	Procedure
Does it Include a clear definition for like for like replacement?	Modification Repairs Process	Procedure
Is there a defined procedure for determining the appropriate repair for damage or defect on a pipeline or pressure vessel?	Modification Repairs Process	Procedure

Question	Risk Control	Issue
Does the repair assessment procedure take into consideration measures to ensure safety of staff and general public whilst a repair is carried out (e.g. restricting operating pressure etc.)?	Modification Repairs Process	Procedure
Is there a defined list of people (Technical Authority) permitted to assess pipeline damage and determine type of repair to be applied?	Modification Repairs Process	Procedure
Is there a clear process / procedure for the management of design of new installations?	Modification Repairs Process	Procedure
Is the Design Appraiser (Technical Authority) independent of the designer?	Modification Repairs Process	Procedure
Can the User or person who accepts the modification be the same person as the project initiator?	Modification Repairs Process	Procedure
Does the procedure/s clearly define the roles and responsibilities for the Project initiator?	Modification Repairs Process	Roles & Responsibilities
Does the procedure/s clearly define the roles and responsibilities for the Designer?	Modification Repairs Process	Roles & Responsibilities
Does the procedure/s clearly define the roles and responsibilities for the Design Appraiser?	Modification Repairs Process	Roles & Responsibilities
Does the procedure/s clearly define the roles and responsibilities for the User / person accepts modifications?	Modification Repairs Process	Roles & Responsibilities
Does the procedure/s clearly define the roles and responsibilities for the Installer / constructor modification?	Modification Repairs Process	Roles & Responsibilities
Does the procedure/s clearly define the roles and responsibilities for the Person who commissions the asset?	Modification Repairs Process	Roles & Responsibilities
Is there a register of all new designs, modifications and repairs?	Modification Repairs Process	Management of Change
Is there a clear process / procedure for updating asset records following the completion of a repair modification or new design?	Modification Repairs Process	Management of Change
Does the Audit programme include the auditing of the effectiveness of the modifications process?	Modification Repairs Process	Management of Change
How frequently do you visit each valve station or vulnerable area location as per site risk assessment?	Maintenance, Inspection & Other	Security systems
Do you have an external security fence to your valve station which would prevent access and stop interference with the assets?	Maintenance, Inspection & Other	Security systems

Question	Risk Control	Issue
What percentage of sites have a door entry alarm indicating, as determined by risk assessment, that the kiosk door has been opened?	Maintenance, Inspection & Other	Security systems
What percentage of sites have a real time camera available providing feedback to 24 hour manned control centre?	Maintenance, Inspection & Other	Security systems
How often do you carry out a visual check on all critical equipment?	Maintenance, Inspection & Other	Valve station checks & maintenance
Do you have a set of maintenance procedures?	Maintenance, Inspection & Other	Valve station checks & maintenance
Do you record the results of maintenance procedures?	Maintenance, Inspection & Other	Valve station checks & maintenance
Do you have a maintenance management system for reminding when the maintenance and valve station checks are due?	Maintenance, Inspection & Other	Valve station checks & maintenance
Do you have a maintenance management system for recording equipment history ?	Maintenance, Inspection & Other	Valve station checks & maintenance
Do you have a list of all your protective devices with the relevant settings?	Maintenance, Inspection & Other	Protective devices
Do you have all your protective devices on a test schedule ?	Maintenance, Inspection & Other	Protective devices
Do you record all these tests in a maintenance management system	Maintenance, Inspection & Other	Protective devices
Does your company have a policy on monitoring overdue checks and enforce a zero overdue position on protective device checks?	Maintenance, Inspection & Other	Protective devices
Do you have company / location identification with appropriate contact telephone numbers on signs at valve stations and appropriate locations?	Maintenance, Inspection & Other	Signage
Do you have personal, legislation and safety signs at valve stations and appropriate locations?	Maintenance, Inspection & Other	Signage
What % of your field equipment suitably labelled indicating tag number and equipment description	Maintenance, Inspection & Other	Signage
What percentage of all critical devices / equipment, e.g. ESD instrumentation, safety valves, bursting discs are appropriately labelled (including by colour code identification) and if required safety	Maintenance, Inspection & Other	Signage
How frequently do you visually inspect your instrumentation, telemetry and valves?	Maintenance, Inspection & Other	Instrumentation / Telemetry / Isolation Valve Operation
Do you fully test all instrumentation and valves on a fixed or risk based frequency back to the SCADA or Control system?	Maintenance, Inspection & Other	Instrumentation / Telemetry / Isolation Valve Operation

Question	Risk Control	Issue
Does the SCADA / control system continuously monitor instrumentation /valves and alarm on instrumentation & valve equipment failures, e.g. broken wire, blown fuses, fail to alarm, out of range, etc	Maintenance, Inspection & Other	Instrumentation / Telemetry / Isolation Valve Operation
Do you have a set of test procedures in place, record results from the tests and have a maintenance management system in place to schedule the tests and record equipment history?	Maintenance, Inspection & Other	Instrumentation / Telemetry / Isolation Valve Operation
Does your company have a procedure / policy in place to carry out regular hazardous area inspections?	Maintenance, Inspection & Other	Hazardous areas assessments
Does your company have a policy in place for management of DSEAR requirements?	Maintenance, Inspection & Other	Hazardous areas assessments
Do you have a test frequency in place to carry out hazardous area inspections?	Maintenance, Inspection & Other	Hazardous areas assessments
Do you carry out the hazardous area inspections at the scheduled frequency using appropriately trained and competent personnel?	Maintenance, Inspection & Other	Hazardous areas assessments
Do you review the results from the hazardous area inspections, to ensure the faults / actions are tracked and repaired?	Maintenance, Inspection & Other	Hazardous areas assessments
Is the statutory inspection equipment uniquely identified and tagged in the field and in your records system?	Maintenance, Inspection & Other	Pig traps, filters, pressure vessels
Is the equipment inspection scheduled, managed and recorded through a maintenance management system?	Maintenance, Inspection & Other	Pig traps, filters, pressure vessels
Is the equipment listed in an official pressure systems document?	Maintenance, Inspection & Other	Pig traps, filters, pressure vessels
Are the safe working limits of the equipment / vessels known?	Maintenance, Inspection & Other	Pig traps, filters, pressure vessels
Are the safe working limits of the equipment / vessels and excursions recorded and if required acted upon?	Maintenance, Inspection & Other	Pig traps, filters, pressure vessels
How often do you visually and electrically check the batteries and UPS equipment using trained and competent personnel?	Maintenance, Inspection & Other	Electrical Equipment - UPS
Do you carry out a discharge test on the UPS / batteries at an appropriate interval to provide required availability using a competent person?	Maintenance, Inspection & Other	Electrical Equipment - UPS
Do you have remote monitoring of the UPS equipment via SCADA / DCS that will flag up faults on the batteries and UPS equipment?	Maintenance, Inspection & Other	Electrical Equipment - UPS
Do you have a set of test procedures in place to record results from the tests?	Maintenance, Inspection & Other	Electrical Equipment - UPS

Question	Risk Control	Issue
Do you have a maintenance management system in place to schedule the set of test procedures and record equipment history ?	Maintenance, Inspection & Other	Electrical Equipment - UPS
How frequently do you visually inspect electrical equipment?	Maintenance, Inspection & Other	Electrical Equipment - Other
Do you test the operation of your electrical equipment using trained and competent personnel?	Maintenance, Inspection & Other	Electrical Equipment - Other
Do you have remote monitoring of the electrical equipment via SCADA / DCS that will flag up faults on the electrical equipment?	Maintenance, Inspection & Other	Electrical Equipment - Other
Do you have a set of test procedures in place to schedule the tests and record equipment history?	Maintenance, Inspection & Other	Electrical Equipment - Other
Do you record results from the tests and record equipment history?	Maintenance, Inspection & Other	Electrical Equipment - Other
Do you have a maintenance management system in place to schedule the tests and record equipment history?	Maintenance, Inspection & Other	Electrical Equipment - Other
Do you have arrangements in place for the inspection and assessment of damage?	Integrity	Damage Assessment
Do you have approved repair methods, equipment and materials?	Integrity	Damage Assessment
Is there a policy and procedure for in-line inspection in place which identifies the inspection requirements for:	Integrity	In Line Inspection
For ILI do you:	Integrity	In Line Inspection
How frequently do you carry out in-line inspection?	Integrity	In Line Inspection
Do you have procedures in place to assess non- in line inspectable pipeline sections	Integrity	In Line Inspection
What % of your cathodic protection systems are performing in accordance with code requirements?	Integrity	Corrosion Protection
Are faults/anomalies investigated and risk assessed for repair within	Integrity	Corrosion Protection
Are CIPS carried out in accordance with :	Integrity	Corrosion Protection
Is the adequacy of corrosion protection at features such as sleeves, crossings etc assessed?	Integrity	Corrosion Protection
In there a policy/procedure in place for monitoring coating condition?	Integrity	Corrosion Management - External
Are DCVG/Pearson Surveys carried out at assessed frequencies?	Integrity	Corrosion Management - External
Have any studies been carried out to identify location specific corrosion mechanisms such as	Integrity	Corrosion Management - External
Has the need to monitor location specific	Integrity	Corrosion Management -

Question	Risk Control	Issue
external corrosion rate been assessed?		External
Has an assessment of the potential for internal corrosion been carried out?	Integrity	Corrosion Management - Internal
Are identified mitigation measures in place and documented in accordance with code requirements?	Integrity	Corrosion Management - Internal
Has the need to monitor location specific internal corrosion rate been assessed?	Integrity	Corrosion Management - Internal
Do you have arrangements in place to review/assess the adequacy of internal corrosion management?	Integrity	Corrosion Management - Internal
Is visual examination of above ground pipework carried out every:	Integrity	Above Ground Pipework
Do procedures detail specific requirements to record evidence of :	Integrity	Above Ground Pipework
Is additional coating protection/coating quality specified for locations which are insulated and at the air to soil interface?	Integrity	Above Ground Pipework
Do procedures require any specific assessment of	Integrity	Above Ground Pipework
Is the integrity management process documented?	Integrity	Integrity Management
Are results from the integrity management process recorded?	Integrity	Integrity Management
Is integrity data related along the length of the pipeline to identify trends?	Integrity	Integrity Management
Is integrity data subject to authoritative review to assess the adequacy of the integrity management system?	Integrity	Integrity Management