UKOPA Process Safety Group

October 2011 Update

PSWG Work Programme

- Process Safety Self Assessment Tool
  - 2010 Process Safety SAT Report published
  - Resurvey planned for Nov 2012
- Sharing Workshop 30/3/2011
- Example Process Safety KPIs
- UKOPA Annual Process Safety Report

Process Safety

Performance Indicators & Monitoring Performance

- **UKOPA/11/0006 -** Best Practice guide developed and circulated for comment draft version 2
- Provides guidance on how the KPIs should be developed and used a well as examples KPIs
- UKOPA advises Pipeline Owners/Operators should develop KPIs
- To monitor the effectiveness of system used to control the risks associated with their pipeline operations
- KPIs reviewed by Directors and Senior Managers on a regular basis
- Plans should be developed to address areas of poor performance
- KPIs should be reviewed annually and updated to ensure effective
- Process should be audited on a regular basis to ensure the accuracy of data being used to collate the KPIs
- KPIs based on the 10 Risk Control Measures used in PSAT

- Seek approval to publish the Best Practice Guidance

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Performance Indicators & Monitoring Performance

Leadership

Leading	Leadership (Executive or Directors) visit / audits to operational sites are carried as per programme	Number of Leadership visits / audits – used to confirm the Leadership are familiar with the issue and concerns of operational staff
Leading	Audit of the management system and risk control measures carried as per plan	% of audits carried out per plan – used to confirm audits are being carried out
Leading	Number of recommendations from audits or investigations not completed by target date	Number of outstanding recommendations - used to confirm action are carried out as per plan

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Performance Indicators & Monitoring Performance

3rd Party Interference Management

Leading	Landowners / Tenants / Local Authorities contacted within last 12 months	% of contacts made with key stakeholders to confirm awareness programme is effective
Leading	Program of Pipeline marker post inspections complete	% of inspection programme carried out as per plan
Leading	Number of days to respond to a 3rd party enquiry – average period and longest length of time.	Average number of days to respond to an enquiry – Used to confirm the process is efficient, measure should also consider the longest period to respond to an enquiry
Leading	Aerial and Vantage surveys carried out as per plan	% of pipeline kms surveyed as per plan - Used to confirm surveys are carried out
Lagging	Number A1 infringements found in period	Number of infringements - Used as trend analysis to compare previous years identify whether the 3rd party enquiry process is effective
Lagging	Number of incidents where pipeline or coating damaged	Number of incidents - Used as trend analysis to compare previous years to identify whether the 3rd party enquiry process is effective

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Performance Indicators & Monitoring Performance

Integrity

Leading	Completion of integrity inspections as per plan e.g. Pressure System Safety Regulation inspections	% of inspections completed as per plan – Used to confirm of the inspections completed as per plan
Leading	Completion of In Line Inspections or alternative pipeline integrity surveys as per plan	% of inspections completed as per plan – Used to confirm of the inspections completed as per plan
Lagging	Number of features identified by survey	Number of features - Used as trend analysis to compare previous years identify whether the integrity management process is effective
Leading	Completion of the maintenance of product (gas / liquid) quality monitoring systems as per plan	% of maintenance completed as per plan – Used to confirm product monitoring equipment is functioning correctly
Lagging	Number of events where product quality does meet required standard	Number of events – Used to ensure product quality is appropriate and will not cause unexpected internal corrosion of the pipeline

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Performance Indicators & Monitoring Performance

Integrity

Leading	Completion of Cathodic Protection monitoring as per plan	% of maintenance completed as per plan – Used to confirm Cathodic protection systems are functioning
Leading	Completion of Cathodic Protection Surveys as per plan CIPS, DCVG etc	% of Surveys completed as per plan – Used to confirm Cathodic protection systems are effective
Lagging	Number or Km of pipeline not protected by Cathodic Protection	% or Km of pipeline network not protected by Cathodic Protection
Leading	Completion of above ground pipework corrosion inspections as per plan	% of surveys completed as per plan to confirm pipe work is inspected as per plan
Lagging	Number of integrity defects resulting in product loss or repair required to pipe wall caused by corrosion (internal or external)	Number of defects – Used to as trend analysis to compare previous years and identify whether the integrity management process is effective

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Performance Indicators & Monitoring Performance

Competency & Training

Leading	Number of employees and /or contractors where their Competency has not reviewed within defined period.	Number of employees contractors - Used to confirm Competency review process is effective
Leading	Training completed as per programme.	% of training complete as per plan – Used to confirm training programme is being delivered
Leading	Number of workplace inspections carried out to ensure the employee / contractor is competent and working to procedure as per defined standard	% of workplace inspections completed – Used to confirm inspection process is being delivered
Lagging	Number of incidents where lack of competence was identified as a root cause	Number of incidents - Used as trend analysis to compare previous years identify whether the competency management process is effective
Lagging	Number of workplace inspections where issues of competency and training have been identified	Number of issues - Used as trend analysis to compare previous years identify whether the competency management process is effective

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Performance Indicators & Monitoring Performance

Emergency Response

Leading	Number of Emergency Procedures not tested within 3 year period or as per operator policy	Number not tested – used to determine whether the emergency testing programme is being followed
Leading	Confirmation the emergency materials, equipment have been checked within the last five years or as per operator policy	Number of checks carried out - used to determine whether emergency equipment will be available

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Performance Indicators & Monitoring Performance

Modification & Repairs

Leading	Number of modifications completed in accordance with modification procedure within 12 months	Number of modifications- Used as trend analysis to compare previous years to identify if the process is capturing all modifications.
Lagging	Number of incidents where the root cause is failure to follow modification process	Number of incidents - Used as trend analysis to compare previous years to identify if the process is capturing all modifications

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Performance Indicators & Monitoring Performance

Maintenance of Equipment

Leading	Maintenance programme completed as per plan	% of maintenance carried out as per plan
Leading	Protective devices tested as per plan	% of Protective device test carried out as per plan
Lagging	Number of faults and defects found outside normal maintenance	Number of faults and defects – Used as trend analysis to compare previous years to determine the effectiveness of the maintenance policy
Lagging	Number of protective devices fail when tested or required to operate	Number faults –Used as trend analysis to compare previous years to determine the effectiveness of the protective device maintenance policy
Leading	Number of outstanding faults defects not completed as per required date	Number of outstanding faults and defects – Used to monitor the completion of defect rectification

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Performance Indicators & Monitoring Performance

Operating Procedures

Leading	Number of Operating Procedures not reviewed within last 5 years or updated following a process change	Number of procedures - Used to confirm operating procedures are current
Lagging	Number of incidents where poor or out of date operating procedure is identified as the root cause of the incident	Number of incidents - Used as trend analysis to compare previous years identify whether the review and update process is effective
Leading	Alarm management, number of instance Operator alarm response time exceeds defined standard (or operator policy?)	Number of occasions used to determine the effectiveness of the alarm management process
Lagging	Number of incidents where alarm handling is consider to be root cause	Number of incidents - Used as trend analysis to compare previous years identify whether the alarm management process is effective

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Performance Indicators & Monitoring Performance

Route Management

Leading	Completion of route survey as per Programme Examples of surveys IGEM/TD/1 Affirmation Survey, Line Walking Survey, River Crossing Surveys, Special Area Surveys	% of Surveys completed – Used to monitor progress.
Lagging	Route exceptions found as part of survey. Examples of exceptions - building proximity infringements , loss of cover, washout erosion etc.	Number of exception per km - Used as a trend analysis to compare with previous years.
Lagging	Infringements / exceptions where risk assessment or issues has not been closed out within 12 months of issue being identified	Number of outstanding actions from survey – Used to track progress.

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Performance Indicators & Monitoring Performance

Asset Records

PI Type	PI Description	Metric and purpose
Leading	Number of key operational drawings checked within the past 5 year Examples of Key Operational Drawings Hazardous Area drawing, Pressure System Safety Regulations drawings, Process and instrumentation drawings	% of drawings checked to demonstrate records are being monitored
Lagging	Number of Key drawings not available or require updating	Number of drawings - Use as a trend analysis to compare previous years to identify whether drawings are updated as part of change management process
Leading	Number of projects where the Asset Register has not been updated within 3 months of assets being commissioned or modification / change being made	Number projects where records have not been updated used to confirm Asset Register is updated

UKOPA Annual Process Safety Report

- Why
  - Demonstrate Pipeline Operators taking process safety seriously
  - Identify areas where UKOPA should focus on improvements
  - Inform UKOPA Strategy
- What
  - Considered measures for 8 risk control measures
  - Where possible utilise existing UKOPA reports infringement database and product loss / damage report
- 2009 Trial
  - Concern over measures / ideas for new measures
  - Definitions
  - Collation of data
  - Obtaining reports from all Operators
  - Reporting style
  - External / Internal Report ?

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Number	Risk Control	Indicator:-	Measure:-		Additi onal Data required:-	
1	Emergency Response	Emergency Testi ng	Number of emergency execises in year:-			
			Table top :-			
			Live exercise:-			
2	Competency and Training	Emergency Response Training	Number of staff trained at Fire Service College PERO or equivalent course in year:-			
3	Operati ng Procedures	Exceedances of Operati ng Pressure	Number of pipelines aff ected:-		Total number of pipelines operated:-	
			Safe Operati ng limit :-			
			Maximum (Allowable) Operati ng Pressure:-			
4	Route Management	Number of infringments	UKOPA Report To be supplied by Infringement Working Group			

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5	Surveillance	Pipelines surveyed by aerial or vantage point every 2 weeks (reference UKOPA best practice)	Kms surveyed in year:-		Total kms operated:-	
6	Integrity	Number of product loss reports in year:-	UKOPA Report To be supplied by Fault Data Management Group			
		Number of damage reports in year:-	To be supplied by Fault Data Management Group			
7	Maintenance	Number of protective devices tested in year (reference UKOPA best practice):-	Number tested in year :-		Number of devices :-	
8	Inspection	In-line inspection:-	Kms inspected in year:-		Kms which can/have been in-line inspected	
		External inspection:-	kms only inspected by external methods in year:-		Kms which can only be inspected externally:-	

UKOPA Annual Process Safety Report
Highlights from the 2009 Report

- Integrity Inspection
  - 88% of UKOPA pipelines are piggable - 7.3% (1287 km) of these pipelines were inspected in 2009
  - of the 12% (2,700km) of pipelines which are not piggable (562 km) 20% were inspected by over ground survey in 2009
- Pipeline Operating Pressure Limits
  - No events where the Safe Operating Level was exceeded
  - 155 events where Normal Operating levels were exceeded affecting 117 pipelines
- Protective Devices
  - 7,423 Protective devices were tested which represents 84.6% of the total
- Emergency Preparedness
  - 148 of Staff were trained as Pipeline Emergency Response Officers
  - 15 Joint Emergency Exercises with the Local Authority or Emergency Services to test the emergency plans
  - 28 internal exercises to test the Pipeline Operators plans and procedures

UKOPA Annual Process Safety Report

- Suggested additional measures

•No of corrosion damages requiring repair;.
•No of RIDDOR reports to the HSE.
•Numbers of excursions above the pipeline safe operating limits.
•Number of HSE interventions (improvement notices)
•Number of emergency plans not tested in line with plan

UKOPA Annual Process Safety Report
Next Steps

- Do we want to run a similar trial for 2010 data ?
- Do we use the same measures ?
- Report to include data and commentary ?
- Internal or External Report ?
- Collection of data via web ?

Support

- Requires input from all Operators
- Coordination with Infringement Report and Fault Report