Pipeline Process Safety and UKOPA Benchmarking

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www.ukopa.co.uk
• Who am I, Roger Ellis
• What is UKOPA
• UKOPA process safety benchmarking
• How the information has been used
• Future plans
United Kingdom Onshore Pipeline Operators' Association

Chairman

Management Council

UKOPA Committee

Technical Consultants
UKOPA STRATEGY

Safe Operation of Pipelines
Management of Risks Associated with pipelines
Sharing of experience and promoting best practice
Single Industry Body and influencing statutory legislation
Codification of best practice
UKOPA Working Groups

1. Fault Data Management
2. Risk Assessment
3. Emergency Planning
4. Process safety
5. Infringement
What is Process Safety?

Piper Alpha

July 1988

167 of the 228 people onboard were killed.
What is Process Safety

“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

What do we mean by Major Accidents?

- Multiple Fatalities
- Significant effect on the Environment
- Major news items

High consequence – low frequency events
What does Process Safety mean to UKOPA?

UKOPA Members
Operate 22,000+ km of major accident hazard pipelines

• World Wide - Increased focus
Belgium Gas Pipeline Failure 2004
  • 3rd Party Damage – 21 died
BP Texas City 2005
  • 15 died 180 injured
Buncefield Explosion 2005
  • 40 Injured
  • major environmental incident
Comparison – Occupational Safety and Process Safety

Frequency of Events

- Very Often
- Often
- Rare
- Extremely Rare

Consequence of Events

- First Aid Incidents
- Major Injuries
- Single Fatality
- Multiple Fatalities

Controlled by Occupational Safety Procedures
- Slips, Falls, PPE,

Controlled by Process Safety / Asset Management Procedures
- Asset failures
Measuring Process Safety Performance

Measure whether risk control barriers are in place and effective – dual assurance of leading and lagging indicators.
Pipeline Operators - Risk Control Areas

- **Leadership**
  - Size of the holes in Risk Control Procedures

- **Design Modifications & Repair**
- **Integrity Management**
- **Operating Procedures**
- **Competence & Training**
- **3rd Party Interference**
- **Route Management**
- **Maintenance Inspection**
- **Emergency Response**
- **Asset Records**
## Example - 3rd party damage for Pipelines

<table>
<thead>
<tr>
<th>Description</th>
<th>Leading KPI Indicator</th>
<th>Lagging KPI Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedures in place and implemented to avoid 3rd party damage</td>
<td>Km of aerial surveillance undertaken to schedule</td>
<td>Number of significant sightings (A1 &amp; B1)</td>
</tr>
<tr>
<td></td>
<td>Km of vantage point surveys undertaken to schedule</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. of landowner liaison letters dispatched on time and response followed up in 12 months</td>
<td>Number of third party interference damages to pipelines</td>
</tr>
<tr>
<td></td>
<td>No. of contacts with statutory bodies, local authorities etc. undertaken to schedule</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No of queries where response time to 3rd Party Enquiry &lt;5 Working days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No. of Marker Post replaced in period</td>
<td>No of Marker Post identified as missing through aerial survey and vantage</td>
</tr>
</tbody>
</table>
UKOPA Actions

Developed some example Leading and Lagging KPIs
KPI based on each members Control System
Control system varies

- Size of pipeline network
- Interface with upstream and downstream operators
- In house or out sourced management of the pipeline network

Unable to compare performance and effectiveness
Developed a Self Assessment Tool to allow members to assess their control measures and identify improvement areas.

Process Safety Assessment Tool (PSAT)
10 control areas apply to all pipeline operators
Questions require each Operator to evaluate their performance.
Comprehensive Assessment 324 Questions covering the 10 Areas

Route Management - 28
Asset Records - 40
Operating Procedures 40
Competence and Training -20
Emergency Response - 56
Leadership -19
3rd Party Interference Management – 37
Modification and Repair Process – 17
Maintenance and Inspection – 41
Integrity management -26
Line Walk

Do you carry out line walks to assess markers posts / ground conditions etc?
- Not at all
- Over 4 years
- Between 2-4 years
- Between 1 and 2 years
- Every year

Route Survey

How often do you carry out aerial or vantage surveillance?
- Not at all
- More than 4 weeks
- Between 2 and 4 weeks
- Less than 2 weeks
PSAT Example Report

[Bar chart titled "Emergency Response"
- Measurements: Max Possible, Min Scored, Max Scored.
]
UKOPA Process Safety Sharing

- Sharing Workshop
- Member companies presented their approach to managing the risk
- First workshop reviewed
  - Route Management
  - Modification and Design Process
  - Competence & Training
  - Leadership
UKOPA the way forward

• Improvements to the process and reporting
• Run Benchmarking in June-Aug 2010 (3 months to complete)
• Further best practice workshops Q4/10
• Consider additional participants.

Minimum number
Closing date
Cost
The Bottom line on Safety

“It is the sum of our contributions to safety management that determines whether the people we work with live or die . . . . . . . .”

Brian Appleton - Piper Alpha report
QUESTIONS

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