Pipeline Infrastructure Management

The Hague March 9th
Presentation on:

- Pipeline Infrastructure Management by Gasunie
- Key Performance Indicators

The Hague, March 9th
Pipeline Management System
more than Integrity alone
Pipeline Management

- Safety of the Public, Employees, and the Environment
- Reliability for Customers and Suppliers
- Cost minimization while maintaining Safety and Reliability
Pipeline Management

PM Policy:

- Life Cycle Cost -based design, construction and maintenance
- **Cover all threats**
- **Deal with threats proactively**
- Maintain (national) risk standards
- Set performance targets
- Involvement in EU legislation & Normalisation
Pipeline Management

Threats (Technical)

Design & Construction:
- Design failures
- Delay in construction
- Material and/or construction failures

Operations:
- **Damage caused by third party**
  - Ageing in general
  - Coating degeneration
  - Defects/breakdowns
  - Corrosion and fatigue
  - (to) high insurance claims
  - (unnecessary) Re-routing
  - (to) high costs of maintenance

Abandonment:
- high costs
- environmental problems
Cause (percentage)

- EI: 74%
- EC: 6%
- IC: 2%
- GWD: 2%
- MD: 1%
- MUND: 1%
- OTHER: 5%
- NK: 9%
Pipeline Management

- Legislation
- Sensing
- Developing Policy
- Inventarisation
- Opportunities
- Threats
- Challenges
- Demands
- Means
- PM Policy
- GU policy
- Requirements of planning & sales
- Studies
- Standards
Implementation in 2 sub-processes:
4a. Construction & Modification
4b. Maintenance
  - Integrity management
  - Right of way management

- Integrity management
- Right of way management
Integrity Management:

Right of way
- Mobile inspections (walk, drive, fly)
- Supervision “Third party jobs” (KLIC)
- Preventive measures

Integrity
Corrosion prevention
- Cathodic Protection
- Coating (primary protection)
- Stray currents drainage

Inspections of condition
- Intelligent Pigging
- CP control measurements
- Coating inspections

Integrity Analysis
- (Direct) Assessment
Pipeline Management

- Marcogaz ➔ self regulation of the branch

- Normalization in CEN and ISO
  - EN 1594
  - TS 15173
  - TS 17174

- Marcogaz documents
  (website for information)
Developing KPI methodology

SMS presents in the European Gas Transmission Industry generally the same fundamental structure (Plan, Do, Check and Act).

Principles and the architecture philosophy followed for the SMS are described in a document issued by the IGU (2003) (reference)
In the global process an important role is played by the Performance Indicators that shall support the Operator in measuring and monitoring the implementation of environmental and safety policies on a regular basis in order to plan the achievement of safety objectives.
Bow tie model

THIRD PARTY INTERFERENCE