

PECS Glossary of terms

ADC:

Analog to Digital Converter – converts a current signal (usually in the range of 4 – 20mA) to a digital signal.

AGA-3:

American Gas Association, Orifice Metering of Natural Gas Part 3: Natural Gas Applications (1992).

AGA-8:

American Gas Association, Report No. 8, Compressibility Factor of Natural Gas and Related Hydrocarbon Gases (1994).

AS 2885:

Australian Standard for Pipelines, Gas and Liquid Petroleum, consisting of 6 parts:

- AS 2885.0 – General Requirements
- AS 2885.1 – Design and Construction
- AS 2885.2 – Welding
- AS 2885.3 – Operations and Maintenance
- AS 2885.4 – Offshore Submarine Pipeline Systems
- AS 2885.5 – Field Pressure Testing

Charpy V-Notch:

A test of fracture toughness

HAZOP:

Control Hazards and Operability Analysis – a highly structured hazards identification tool for instrument control and computer systems.

CP unit:

Cathodic Protection Unit – a unit that supplies electrical current to maintain a small voltage on a pipeline as part of its cathodic protection system.

CTOD:

Crack tip opening displacement test – a method of assessing fracture toughness

DAC:

Digital to Analog Converter – converts a digital signal to a current (usually in the range of 4- 20 mA)

DCS:

Distributed Control System.

Electrochemistry:

That aspect of chemistry that relates to chemical reaction that involve a flow of electrical current.

ESD:

Emergency Shutdown – a system or part of a system designed to safely shut down equipment to preserve safety and/or reliability of the equipment that the system is part of.

FCV:

Flow Control valve

Foundation Fieldbus:

A control network typically used in the process control industries from the Fieldbus Foundation (FF). Using a distributed architecture where the control is in the devices themselves.

Galvanic reactions:

Reactions between two metals that occur when they are electrically connected and immersed or connected by an electrolyte.

HART:

(Highway **A**ddressable **R**emote **T**ransducer). Widely used extension to the 4-20 mA analogue signal used in sensor networks. HART superimposes a 1,200 bits/second digital signal onto the line that provides bi-directional communications with intelligent devices.

HAZOP:

Hazard and Operability study – a technique and process developed by ICI Engineering to systematically review the design of an industrial process from a safety and operability view point by asking a series of questions that enable engineering personnel to identify design issues. A HAZOP is usually undertaken by a team of engineers with different disciplines and includes operating staff as well as design engineers

HAZID:

Hazard Identification Study – A systematic process of identifying the major hazards of a process or pipeline installation at the early stages of design. For pipelines these apply to facilities as the Safety Management Study will cover the pipeline itself.

HF, VHF , UHF:

High Frequency, Very High Frequency and Ultra High Frequency.

Hot-tapping:

A technique of making a connection to a live pipeline.

Hydrotest:

Hydrostatic testing – Testing the strength and leak tightness of a pipeline by injecting water under pressure

Location classes:

A system of classification of the potential risk of encroachment and/or fire and explosion risk based on its general geographical and demographical characteristics as defined in AS 2885.1.

HIPPS:

High Integrity Pressure Protection System – a type of safety instrumented system (SIS) designed to prevent over-pressurisation of a plant.

HSE:

Health, Safety and Environment

Hydrotest:

Hydrostatic testing – Testing the strength and leak tightness of a pipeline by injecting water under pressure

ISO-5167:

Part of the *International Standards Organisation* suit of standards which deals specifically with measurement of fluid flow in circular cross-section conduits running full.

ISO-6974:

Part of the *International Standards Organisation* suit of standards which deals specifically the determination of gas composition with defined uncertainty by gas chromatograph.

ISO-6976:

Part of the *International Standards Organisation* suit of standards which deals specifically the calculation of calorific values, density, relative density and Wobbe index from composition.

ITP:

Inspection and Test Plans

LFI:

Low Frequency Induction.

MAOP:

Maximum allowable operating pressure.

MSDS:

Material Safety Data Sheet. Usually associated with chemicals, compounds or materials.

NDE:

Non-destructive examination.

OHS&E:

Occupational Health, Safety and Environment.

P, T, DP:

Pressure, temperature and pressure differential.

P&ID:

Piping and Instrumentation Diagram, a diagram that shows the interconnection of process equipment and the instrumentation used to control the process. The instrument symbols used in these drawings are generally based on Instrumentation, Systems, and Automation Society (ISA) Standard S5. 1.

PAS 55:

Publicly available Specification PAS 55-1:2008 – Specification for the optimized management of physical assets and PAS 55-2 – Guidelines for the application of PAS 55-1.

PCV:

Pressure Control Valve.

PSD:

Process Shutdowns.

PSV:

Pressure Safety Valve or Pressure Relief Valve

Profibus:

An industrial control network used for factory automation, process control, motion control and safety networks. Using a master/slave architecture.

p/V plot:

Plot of expected pressure versus added water volume that will form the basis of a pressure test, in particular a volume/strain controlled test

Purging:

Removing one gas from a pipeline by injecting and replacing it with another.

QA:

Quality Assurance

RF:

Radio Frequency.

RFI:

Request for Information

ROW:

Right-of-Way – the land within which a pipeline is constructed and operated.

RTU:

Remote telemetry unit – a field installation that transmits data to and receive control signals from a SCADA system.

Slamshut:

A valve designed to close very quickly when an emergency signal is triggered

SCADA:

System Control and Data Acquisition – computer based system use for control used of pipelines and gas an electricity networks and other geographical disparate infrastructure.

SIL:

Safety Integrity Level – a target level of risk reduction.

Steady state:

The state of being in equilibrium where flow into a pipeline equals the flow out and has been in this state for sufficient time that the pressure drop along the pipeline is not varying.

Sleeve:

A tube steel or coil of composite material that encircles the pipeline to support it as a repair for a damaged section of pipeline. A sleeve made out of steel may be mechanically applied as a temporary repair or welded as a permanent repair. A fibreglass/composite material sleeve is normally coiled and is wound tight around the pipe like a clock spring and locked in place.

SMS:

Safety Management Study – a systematic process for evaluating safety issues along the route of a pipeline required by AS 2885.1 and AS 2885.3.

SAOP:

Safety and Operating Plan – a systematic plan developed and updated for a pipeline to ensure the safe operation of a pipeline. It is required under AS 2885.3 and is based on the results of the Safety Management Study.

Transient (Noun):

A short term variation or deviation from steady state where changes in flow in a pipeline result in a sudden material changes in pressure.

Transmitter:

A device that converts a measurements such as temperature or pressure into an electronic signal to transmission to a measurement or control system.

Trunking radio:

A high efficiency radio system using a small number of frequencies to enable a large number of communicating groups.

UPS:

Uninterruptible Power Supply – a power supply system that maintains electricity supply to essential systems such as instrumentation and control in the event of an outage by the main power source usually the local electricity distributor