



# SLOVENSKI STANDARD SIST-TS CEN/TS 15399:2008

01-januar-2008

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## Sistemi oskrbe s plinom - Smernice za sisteme upravljanja distribucijskih plinovodnih omrežij

Gas Supply Systems - Guidelines for Management systems for Gas Distribution Network

Gasversorgungssysteme - Leitlinien für Managementsysteme für Gasverteilungsnetze

Systemes d'alimentation en gaz - Lignes directrices pour les systemes de management des réseaux de distribution de gaz

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TECHNICAL SPECIFICATION  
SPÉCIFICATION TECHNIQUE  
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**CEN/TS 15399**

June 2007

ICS 91.140.40

English Version

**Gas Supply Systems - Guidelines for Management systems for  
Gas Distribution Network**

Systèmes d'alimentation en gaz - Lignes directrices pour  
les systèmes de management des réseaux de distribution  
de gaz

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Managementsysteme für Gasverteilungsnetze

This Technical Specification (CEN/TS) was approved by CEN on 4 December 2006 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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**CEN/TS 15399:2007 (E)****Foreword**

This document (CEN/TS 15399:2007) has been prepared by Technical Committee CEN/TC 234 "Gas Supply Systems", the secretariat of which is held by DIN.

There is a complete suite of functional standards prepared by CEN/TC 234 "Gas supply" to cover all parts of the gas infrastructure system from the input of gas to the distribution network starting at the boundary of the delivery station on the premises of the Gas Distribution System Operator (GDSO), up to the point of delivery of the customers, whether domestic, commercial or industrial.

In preparing this Technical Specification, a basic understanding of Management Systems and gas distribution networks by the user has been assumed.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Introduction

This Technical Specification deals with the design, construction, commissioning, operation, maintenance and abandonment of a distribution network, all in order to provide an efficient gas distribution network for the safe and secure distribution of gas.

It is written in accordance with European Directive 2003/55/EC of 26 June 2003, concerning common rules for the internal market in natural gas.

The provisions refer to a general organisational scheme in which:

- safety,
- security,
- reliability, and
- efficiency,

of gas distribution activity are highlighted.

This Technical Specification could be an appropriate tool supporting a GDSO in the implementation of a management system, for example in conjunction with the ISO certification procedure, which needs to be translated into specialized processes; it could also be used in case of assessment or certification by a third party.

The use of this Technical Specification is first targeted at all technical operations and processes performed by a GDSO including those activities carried out by outsourced contractors.

This Technical Specification also deals with the matter of the required competences for technical people involved in gas distribution activities. In this context, competences should not be confused with "qualification".

The structure of this Technical Specification is based on the documents EN ISO 9001, *Quality management system – Requirements (ISO 9001:2000)* and EN ISO 14001, *Environmental management systems – Requirements with guidance for use (ISO 14001:2004)* and the technical contents are mainly taken from EN 12007 (all parts), Gas supply systems-Pipelines for maximum operating pressure up to and including 16 bar.

In addition and regarding environmental requirements, the Sector Forum Gas Infrastructure guide should be taken into account.

Further important reference has been the document written by Study Group SG4.2 of IGU/WOC4 entitled "Frame of reference regarding Pipeline Integrity Management System", and parts of the internal Procedures written by distribution Companies.

**CEN/TS 15399:2007 (E)****1 Scope**

The field of application of this Technical Specification is the new and existing gas grid starting at the boundary of the delivery station on the premises of the GDSO up to the point of delivery of the customers that can be at a means of isolation (e.g. at the outlet of a LPG storage vessel or at the meter outlet connection) typically nominated by the GDSO and may be defined in national regulations or standards.

For existing installations this Technical Specification does not apply to design, construction, testing and commissioning.

The main objectives of this Technical Specification can be summarized by the following:

- Provide guidance about the minimum necessary requirements to be included in a management system related to safety, security, reliability and efficiency of technical activities (design, construction, testing and commissioning/decommissioning, operation and maintenance).
- Demonstrate that the competencies required in the activities mentioned above concretely find their expression in practice on the plants/installations of the gas distribution networks (e.g. for operations in distribution: odourisation, emergency service, cathodic protection, leak survey, maintenance activities on pressure reduction plants, mains and service lines).

**2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12007-1:2000, *Gas supply systems - Pipelines for maximum operating pressure up to and including 16 bar - Part 1: General functional recommendations*

EN 12007-4, *Gas supply systems - Pipelines for maximum operating pressure up to and including 16 bar - Part 4: Specific functional recommendations for renovation*

EN 12186, *Gas supply systems - Gas pressure regulating stations for transmission and distribution. - Functional requirements*

EN 12327, *Gas supply systems - Pressure testing, commissioning and decommissioning procedures - Functional requirements*

EN ISO 9001, *Quality management systems – Requirements (ISO 9001:2000)*

EN ISO 14001, *Environmental management systems - Requirements with guidance for use (ISO 14001:2004)*

**3 Management system**

This Technical Specification is intended for use by a GDSO who has a basic appreciation of quality, environmental, health and safety (H + S) management and distribution network maintenance and integrity.

The Management System introduced in this Technical Specification refers to gas distribution networks as defined in the scope and introduction.

It is at the GDSO discretion to include other objects and structures in their own management system.

This Technical Specification is a general framework that applies to all activities of a GDSO including safety aspects of distribution networks management (i.e. public safety, pipeline monitoring, etc.).



If there are preferences over either topics included or the structure of this Technical Specification then, it is at the discretion GDSO to make necessary adjustments according to their individual needs.

#### 4 Management policy, objectives and targets

The GDSO is responsible for the adoption of a policy with respect to the pipeline design, construction, commissioning, operation, maintenance and abandonment.

The objective of this policy is to ensure that the system distributes the gas safely and economically while minimizing service interruptions.

The GDSO should establish and maintain in writing environmental and safety objectives and targets.

In order to meet the above policy objective all necessary precautions and provisions shall be incorporated into the management system to:

- ensure safe operation of the distribution network;
- monitor its condition;
- ensure maintenance safely and effectively;
- deal effectively and responsibly with incidents and emergencies;
- develop and maintain all required competencies.

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#### 5 Management planning (standards.iteh.ai)

The management planning shall include objectives by establishing performance measurement indicators and monitoring the implementation of Environmental and Safety Policy on a regular basis, coming to a Performance Measurement framework to demonstrate effective safety and environmental performance according to:

- incidents and emergencies that may occur;
- severity of consequences;
- operations control (i.e. emissions to air, patrolling).

#### 6 Legal and other requirements

The GDSO shall establish and maintain a procedure in writing, to identify and have access to legal and other requirements.

#### 7 Implementation of a Management System

For implementing a Management System the methodology explained in the EN ISO 9001, Introduction can be used as a guideline.

A well established methodology to analyse the whole activity of an industrial operator consists of the adoption of a **process approach**, methodology promoted in particular by the EN ISO 9001 standard.

Practically, this means to single out the main activities that characterize the operator business.

An activity using resources, and managed in order to enable the transformation of inputs into outputs, can be considered as a process.

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When used within a management system, such an approach emphasises the importance of:

- a) understanding and meeting requirements,
- b) need to consider processes in terms of added value,
- c) obtaining results of process performance and effectiveness, and
- d) continual improvement of processes based on objective measurements.

NOTE In addition, the methodology known as "Plan-Do-Check-Act" (PDCA), can be applied to all processes. PDCA can be briefly described as follows:

PLAN: Establish the objectives and processes necessary to deliver results in accordance with customer requirements and the organisation's policies.

DO: Implement the processes.

CHECK: Monitor and measure processes and product against policies, objectives and requirements for the product and report the results.

ACT: Take actions to continually improve process performance.

Roles, responsibility and authorities shall be defined, documented and communicated in order to facilitate effective environmental and safety management.

Management shall provide resources essential to the implementation and control of the environmental and safety management system. Resources include human resources and specialized skills, technology and financial resources.

The organisation's top management shall appoint (a) specific management representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibilities and authority for:

- ensuring environmental and safety management system requirements are established, implemented and maintained in accordance with this Technical Specification; <https://standards.iteh.ai/catalog/standards/sist/f119f5e-cc1e-4919-950a-33913501419153992008>
- reporting on the performance of the environmental and safety management system to top management for review and as a basis for improvement of the environmental and safety management system.

## 8 Training, awareness and competence

On the basis of a thorough analysis of the working processes, the GDSO shall determine the necessary amount of economic and human resources needed to carry out all the activities.

The GDSO must also assure that trained, aware and competent human resources are involved in the execution of each working activity.

In particular the GDSO must take care that people involved in activities with health risks are suitable for the task, adequately trained and aware of all the risks involved in the activities.

To demonstrate the competence of their personnel the GDSO must:

- a) identify the competences and the skills necessary to carry out each working activity;
- b) set up general and/or specific training programmes;
- c) keep records of the professional training curriculum of each employee, with the indication of all the courses attended.

It is required also that all personnel whose work may create a significant impact upon the environment have received appropriate training.

It shall establish and maintain procedures to make its employees or members at each relevant function and level aware of:

- importance of conformance with the environmental and safety policy and procedures and with the

requirements of the environmental and safety management system;

- significant environmental and safety impacts, actual or potential, of their work activities and the benefits of improved personal performance;
- their roles and responsibilities in achieving conformance with the environmental and safety policy and procedures and with the requirements of the management system, including emergency preparedness and response requirements;
- potential consequences of departure from specified operating procedures.

Personnel performing the tasks which can cause significant environmental and safety impacts shall be competent on the basis of appropriate education, training and/or experience.

The competences of the persons involved in the design, construction, commissioning, operation, maintenance and abandonment of a gas distribution network, or parts of it, shall be in accordance with the characteristics of the gas distribution network they are working on. These characteristics include, but are not limited to the following:

- a) family of gas;
- b) local conditions;
- c) design or operating pressure;
- d) materials used in the system;
- e) jointing techniques;
- f) emergency procedures.

All personnel involved in technical activities (employees of the GDSO, but also of the subcontractors) should be selected, trained and developed to carry out their respective technical duties in a safe and efficient manner.

In addition, the operator may define and set up procedures to ensure that its employees working at each level are aware of:

- importance of conformance to the GDSO policy, and to the requirements of the management system;
- their roles and responsibilities in achieving conformance to the GDSO policy, the procedures and the requirements of the management system.

The GDSO should undertake actions in order to maintain high technical knowledge and to introduce them when necessary to the technical development.

Examples concerning the development of technology are:

- a) communication;
- b) cathodic Protection;
- c) inspection methods;
- d) pressure regulation;
- e) gas measurement and odourisation;
- f) pipe coating;
- g) construction methodology;
- h) geographical Information System (GIS);
- i) destructive and non-destructive testing.