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Z662-03

Oil and Gas Pipeline Systems

and

Special Publication

Z662.1-03

**Commentary on CSA Standard
Z662-03, Oil and Gas Pipeline
Systems**

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Preface

This is the fourth edition of CSA Z662, *Oil and Gas Pipeline Systems*. It supersedes the previous editions published in 1999, 1996, and 1994.

The following are the most significant changes, relative to the previous edition:

- a) In **Clause 1**, a reference to ASTM E 29 has been added to provide a rounding method to be used for observed and calculated values in the determination of conformance with the specified requirements.
- b) In **Clause 3**, definitions have been added for *class location end boundary*, *direct deposition welding*, *fabricated assembly*, *indication*, *steel compression reinforcement repair sleeve*, and *undeveloped class location assessment area*; and the definitions for *class location assessment area*, *company*, *high-vapour-pressure (HVP) pipeline system*, *low-vapour-pressure (LVP) pipeline system*, *maximum operating pressure (MOP)*, *pressure*, and *trenchless installation* have been modified.
- c) In **Clause 4**, requirements have been added concerning the selection of coatings and the effect of pipeline operating temperatures on the environment; and the requirements for class location designations, class location end boundaries, components, valve spacing, and limitations on the use of continuous welded pipe have been modified.
- d) In **Clause 5**, the requirements for the qualification of materials, the use of cast iron, and cement-mortar linings have been modified.
- e) In **Clause 7**, the requirements for the qualification of welding procedure specifications, nondestructive and visual inspection of production welds, the use of line-up clamps, stress relieving of welds, the reference reflector for ultrasonic inspection, and coupling loss in ultrasonic inspection have been modified.
- f) In **Clause 8**, requirements have been added concerning the pressure testing of instrument piping and control piping; and the requirements for test-head assemblies and the determination of maximum operating pressure have been revised.
- g) In **Clause 9**, requirements have been added concerning protective coatings and their application.
- h) In **Clause 10**, requirements have been added concerning emergency response plans, leak detection for gas pipeline systems, the inspection of pipe used for underground storage, steel compression reinforcement repair sleeves, and direct deposition welding; and the requirements for signs, grinding repairs, the repair of underground tanks, the inspection frequency for pressure-relieving systems, the assessment of corrosion imperfections, and the assessment of dents have been modified.
- i) In **Clause 12**, requirements have been added concerning polyethylene piping on bridges and test-head assemblies; and the requirements for design temperature for polyethylene pipe and tubing, cast iron pipe, the qualification of welders, and the squeezing of polyethylene piping have been modified.
- j) In **Clause 13**, requirements have been added concerning fibre-reinforced composite pipelines and thermoplastic-lined pipelines; and the requirements for polyethylene pipelines have been modified.
- k) In **Clause 15**, the requirements for the qualification of joining procedure specifications and the visual inspection, nondestructive inspection, and pressure testing of test joints for the qualification of joining procedure specifications and personnel have been modified.
- l) **Annex H** has been added to provide a dictionary of common terminology for the recording of pipeline attribute and incident information in electronic database form.
- m) In **Annex K**, the requirements for plastic failure analysis have been modified.
- n) **Annex L** has been added to provide a guide for testing methods that are suitable for the evaluation of coating properties.

The requirements of this Standard are considered to be adequate under conditions normally encountered in the oil and natural gas industry. Specific requirements for abnormal or unusual conditions are not prescribed, nor are all details related to engineering and construction prescribed. It is intended that all work performed within the scope of this Standard meet the standards of safety and integrity expressed or implied herein, and that the requirements of this Standard be applied with due

regard to the protection of the environment, which includes land, water, plant life, and animal life. Detailed requirements concerning the protection of the environment are not prescribed.

It is expected that changes will be made from time to time, based upon new experience and technology. Where necessary, amendments and supplements will be made by the Technical Committee and published in accordance with CSA practices.

This Standard was prepared by the Technical Committee on Oil and Gas Industry Pipeline Systems, under the jurisdiction of the Strategic Steering Committee on Oil and Gas Industry Systems and Materials, and has been formally approved by the Technical Committee. It will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

June 2003

Notes:

(1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.

(2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

(3) This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.

(4) CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.

(5) All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, 5060 Spectrum Way, Suite 100, Mississauga, Ontario, Canada L4W 5N6.

Requests for interpretation should

(a) define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;

(b) provide an explanation of circumstances surrounding the actual field condition; and

(c) be phrased where possible to permit a specific “yes” or “no” answer.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are published in CSA’s periodical Info Update, which is available on the CSA Web site at www.csa.ca.