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CSA Z662:23

National Standard of Canada

Oil and gas pipeline systems

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Δ Preface

This is the ninth edition of CSA Z662, *Oil and gas pipeline systems*. It supersedes the previous editions published in 2019, 2015, 2011, 2007, 2003, 1999, 1996, and 1994.

The following are the significant changes to this edition:

a) Clause 3 and Annex A have been revised to provide a common framework for audits;
b) Clauses 4 and 7 have been revised to address concerns with gross girth weld strength under-matching and heat affected zone softening, when welding high strength line pipe for a stress-based design pipeline;
c) Clause 17, on composite reinforced steel pipelines, has been deleted. A new Clause 17, on hydrogen and hydrogen blend pipeline systems, has been added.
d) For hydrogen and renewable gas:
    i) the scope has been updated to
        1) confirm hydrogen and hydrogen blends are included in the standard;
        2) confirm that renewable gas is equivalent to wellsite produced gas; and
        3) clarify that other gas sources and processes, not just wellsites, can produce hydrogen and renewable gas;
    ii) a new Clause 17 had been added to formally integrate hydrogen requirements into this Standard; and
    iii) changes have been made throughout this Standard to aid with handling unique design, material, construction, and operational requirements for pipelines containing hydrogen.
e) For safety class:
    i) changes have been made in Clauses 4 and 10 to permit pressure design in accordance with Annex C;
    ii) Annex C has been revised to include a safety class designation approach for a selection of service fluids. Where Annex C is used for pressure design, safety class is used instead of class location, as a basis for defining the maximum allowable hoop stress;
    iii) Annex C has been revised to include a table that maps the safety class determined according to the Annex onto a class location. The class location derived from this table is used as a basis for identifying the applicable requirements in all other class-location-dependent clauses of this Standard.
f) Clause 7.7.4.3 and Table 7.4 have been revised to allow the use of volumetric NDE to replace nick breaks for welding procedure qualification and welder qualification and expand the allowable limits of porosity in nick breaks;
g) New content has been added to Clause 10 provide more clarity for the necessary right-of-way activities to continuously address potential hazards to the pipeline system.
h) Clause 12.5.7 has been aligned to Clause 5.7.1 in regard to a more prescriptive requirement for records retention to include retention of material test reports for all steel pipe and components.
i) Additional content has been added to Clause 12 to address cross bore mitigation.
j) Annex B has been revised to include more detailed requirements for performing a risk assessment and quantitative acceptance criteria for safety and environmental risks.
k) Annex N has been revised to align with the Annex B revisions.
l) Revisions have been made to the requirements for the design pressure and design wall thickness of field cold bends made from steel pipe, where the longitudinal axis is not deflected more than 1.5° in any length along the axis equal to the outside diameter of the pipe.
m) A new requirement has been introduced to obtain and retain material test reports for pipe and components.