



CSA Z662:23
National Standard of Canada



Oil and gas pipeline systems



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N. Koosmann	BC Oil & Gas Commission, Victoria, British Columbia, Canada <i>Category: Government and/or Regulatory Authority</i>	
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K. Manouchehri	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada <i>Category: Government and/or Regulatory Authority</i>	
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G. F. Palermo	Palermo Plastics Pipe Consulting, Evans, Georgia, USA <i>Category: Supplier/Fabricator/Contractor</i>	
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T. J. Pesta	Pesta Consulting Ltd., Calgary, Alberta, Canada	<i>Non-voting</i>
S. Piché	Énergir, Montréal, Québec, Canada <i>Category: User Distribution</i>	
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A. B. Rothwell	Brian Rothwell Consulting Inc., Calgary, Alberta, Canada	<i>Non-voting</i>
C. Skocdopole	Aluminum Pipe Systems, Eckville, Alberta, Canada <i>Category: Supplier/Fabricator/Contractor</i>	
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D. Srnic	ABSA, Edmonton, Alberta, Canada <i>Category: Government and/or Regulatory Authority</i>	
T. D. Starodub	Manitoba Hydro, Winnipeg, Manitoba, Canada <i>Category: User Distribution</i>	
J. Sutherland	Baker Hughes, Calgary, Alberta, Canada <i>Category: Supplier/Fabricator/Contractor</i>	
D. J. Tchir	ATCO, Edmonton, Alberta, Canada <i>Category: User Distribution</i>	

T. Teed Martin	Enbridge Gas Inc., North York, Ontario, Canada	<i>Non-voting</i>
H. Tetteh-Wayoe	Edmonton, Alberta, Canada	<i>Non-voting</i>
S. Tracy	Natural Resources Canada/Government of Canada, Calgary, Alberta, Canada	<i>Non-voting</i>
A. Van Der Veen	TC Energy, Calgary, Alberta, Canada	<i>Non-voting</i>
M. Wagle	Enbridge Gas Inc., Toronto, Ontario, Canada <i>Category: User Distribution</i>	
K. Walsh	Cenovus Energy, Calgary, Alberta, Canada <i>Category: Producer Interest</i>	
B. Wilson	Acuren Group Inc., Calgary, Alberta, Canada <i>Category: Supplier/Fabricator/Contractor</i>	
L. Wojtanowski	Mississauga, Ontario, Canada	<i>Non-voting</i>
K. Zhang	Plains Midstream Canada, Calgary, Alberta, Canada	<i>Non-voting</i>
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>
P. Fernandez Marchi	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

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J. Zhou	TC Energy, Calgary, Alberta, Canada	<i>Chair</i>
H. Wallace	HPW Consulting, Calgary, Alberta, Canada	<i>Vice-Chair</i>
J. K. Steeves	Wood, Calgary, Alberta, Canada	<i>Vice-Chair</i>
W. A. Simpson	North American Standards Assessment Corp., Sherwood Park, Alberta, Canada	<i>Vice-Chair</i>
A. J. Afaganis	EVRAZ Inc. NA, Calgary, Alberta, Canada	<i>Vice-Chair</i>
A. Bhatia	ROSEN Canada Ltd., Calgary, Alberta, Canada	
D. Carnes	Canadian Natural Resources Limited, Calgary, Alberta, Canada	
J. A. Fournell	QAi Quality Assurance Inc., Edmonton, Alberta, Canada	
G. Juarez	Enbridge Gas Distribution, Toronto, Ontario, Canada	
F. Myschuk	Enbridge Inc., Edmonton, Alberta, Canada	
C. Skocdopole	Aluminum Pipe Systems, Eckville, Alberta, Canada	
R. Sporns	Enbridge Pipelines Inc., Edmonton, Alberta, Canada	

A. Van Der Veen	TC Energy, Calgary, Alberta, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>
P. Fernandez Marchi	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Aluminum Pipeline Systems

C. Skocdopole	Aluminum Pipe Systems, Eckville, Alberta, Canada	<i>Chair</i>
M. Amirault	R.V. Anderson Associates Limited, Moncton, New Brunswick, Canada	
S. R. Andriuk	Altime Engineering Ltd., St. Albert, Alberta, Canada	
K. Bella	Apex Utilities Inc., Leduc, Alberta, Canada	
D. Coleman	Manitoba Hydro, Winnipeg, Manitoba, Canada	
G. Firth	Firth Corrosion Engineering Inc., Edmonton, Alberta, Canada	
D. L. Hames	Hames Engineering, Edmonton, Alberta, Canada	
C. Hetherington	Alberta Energy Regulator, Calgary, Alberta, Canada	
D. F. Lesik	Edmonton, Alberta, Canada	
H. Tetteh-Wayoe	Edmonton, Alberta, Canada	
P. Fernandez Marchi	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Coatings

A. Van Der Veen	TC Energy, Calgary, Alberta, Canada	<i>Chair</i>
K. Crichton	Ram River Pipeline Outfitters, Olds, Alberta, Canada	<i>Vice-Chair</i>
S. Adams	Norpoint Sandblasting & Painting Ltd., Edmonton, Alberta, Canada	
M. Alliston	Corrcoat Services Inc., Surrey, British Columbia, Canada	
S. Attaguile	3M Company, Austin, Texas, USA	
D. Brossart	Evraz Wasco Pipe Protection Corp, Regina, Saskatchewan, Canada	
C. Cer	AkzoNobel Powder Coatings GmbH, Reutlingen, Baden-Württemberg, Germany	
T. Chahl	Keymay Industries Ltd., Sherwood Park, Alberta, Canada	
D. D'Ambrosio	Polyguard Products, Inc., Houston, Texas, USA	
A. Geiger	Seal for Life Canusa-CPS, Edmonton, Alberta, Canada	
G. Grundberg	Denso North America Inc., Edmonton, Alberta, Canada	
C. Hehir	Arrow Construction Products Limited, Dartmouth, Nova Scotia, Canada	
J. John	Canada Energy Regulator, Calgary, Alberta, Canada	
J. Kraft	Jedco Energy Services, Red Deer, Alberta, Canada	

C. Lam	Shawcor Ltd., Toronto, Ontario, Canada
H. Li	TC Energy, Calgary, Alberta, Canada
P. Lucas	BS Coatings, Aubevoye, LeVal D'Hazey, France
G. Matocha	Enbridge Gas Transmission, Houston, Texas, USA
D. McCallum	Robert B. Somerville Co. Ltd., King City, Ontario, Canada
F. Oruna	Énergir, Montréal, Québec, Canada
S. Papavinasam	CorrMagnet Consulting Inc., Cochrane, Alberta, Canada
B. Planzer	Specialty Polymer Coatings, Delta, British Columbia, Canada
P. Roberts	International Paint (a div of AkzoNobel), New Westminster, British Columbia, Canada
J. Rogozinski	Sherwin Williams, Minneapolis, Minnesota, USA
S. Salehpour	Seal For Life, Toronto, Ontario, Canada
M. Saric	Canadian Natural Resources Limited, Calgary, Alberta, Canada
H. Tsaprailis	Enbridge Inc., Edmonton, Alberta, Canada
G. Van Boven	TC Energy, Calgary, Alberta, Canada
M. William	Ram River Pipeline Outfitters Ltd., Olds, Alberta, Canada

S. Zahabi Trans-Northern Pipelines Inc.,
Richmond Hill, Ontario, Canada

P. Fernandez Marchi CSA Group, *Project Manager*
Toronto, Ontario, Canada

Subcommittee on Construction

H. Wallace	HPW Consulting, Calgary, Alberta, Canada	<i>Chair</i>
W. A. Simpson	North American Standards Assessment Corp., Sherwood Park, Alberta, Canada	<i>Vice-Chair</i>
K. Walker	FortisBC, Nanaimo, British Columbia, Canada	<i>Vice-Chair</i>
J. Althouse	TC Energy, Calgary, Alberta, Canada	
D. R. Fedoration	DONNF Enterprises Inc., Calgary, Alberta, Canada	
M. Gallant	Enbridge Gas Inc., Toronto, Ontario, Canada	
R. Hogg	Ian Martin Group, Sherwood Park, Alberta, Canada	
R. M. Huntley	RMH Welding Consulting Inc., Calgary, Alberta, Canada	
M. Hylton	Hylton Project Management Inc., Calgary, Alberta, Canada	
M. A. Kereliuk	Qualimet Inc., Edmonton, Alberta, Canada	
L. Ludwig	CRC-Evans, Edmonton, Alberta, Canada	
T. Madigan	SA Energy Group, Calgary, Alberta, Canada	
R. Ostrom	Pipeline Welding Solutions Inc., Edmonton, Alberta, Canada	
R. Peters	R. Peters Enterprises Inc., Sherwood Park, Alberta, Canada	

K. Thorn	CWB Group, Milton, Ontario, Canada	
W. Westlin	Enbridge, Edmonton, Alberta, Canada	
E. B. Willett	TC Energy, Calgary, Alberta, Canada	
B. Wilson	Acuren Group Inc., Calgary, Alberta, Canada	
C. Y. Zorrilla	Applus, Edmonton, Alberta, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Design

J. K. Steeves	Wood, Calgary, Alberta, Canada	<i>Chair</i>
D. W. King	Tridyne Projects Corporation, Calgary, Alberta, Canada	<i>Vice-Chair</i>
K. Adams	TC Energy, Calgary, Alberta, Canada	
S. Adeeb	University of Alberta, Edmonton, Alberta, Canada	
P. Bain	ATCO, Edmonton, Alberta, Canada	
D. Bradac	Bristek Inc., Calgary, Alberta, Canada	
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D. M. Duan	C&C PetroGas Engineering, Calgary, Alberta, Canada	
K. Farrow	Stress Engineering Services Canada, Calgary, Alberta, Canada	
J. Fish	Enbridge Gas Inc., Toronto, Ontario, Canada	
D. Fufezan	Enbridge, Edmonton, Alberta, Canada	
J. Hambrook	Pembina Pipeline Corp., Calgary, Alberta, Canada	
G. A. Kanzaki	FortisBC Energy Inc. (FEI), Surrey, British Columbia, Canada	
B. Kavelaars	FortisBC Energy Inc., Surrey, British Columbia, Canada	

P. Kormann	Kormann & Associates Inc., Calgary, Alberta, Canada
C. Lang	Government of Saskatchewan, Regina, Saskatchewan, Canada
H. Li	TC Energy, Calgary, Alberta, Canada
T. Mah-Paulson	Pembina Pipeline Corp., Sherwood Park, Alberta, Canada
M. A. Nessim	Maher Nessim Engineering, Edmonton, Alberta, Canada
M. L. Rew	Canadian Natural Resources Limited (CNRL), Calgary, Alberta, Canada
M. Rieder	Inter Pipeline Ltd., Calgary, Alberta, Canada
K. Roy	DNV Canada Ltd., Calgary, Alberta, Canada
T. Senadheera	Canada Energy Regulator, Calgary, Alberta, Canada
N. Sharma	Alberta Energy Regulator, Calgary, Alberta, Canada
C. Soriano Vazquez	Enbridge, Calgary, Alberta, Canada
R. Sterling	Enbridge Gas Inc., Chatham, Ontario, Canada
J. S. van de Panne	Calgary, Alberta, Canada
K. Walsh	Cenovus Energy, Calgary, Alberta, Canada
R. H. Wartlik	TrueWest Consulting Group Inc., Coquitlam, British Columbia, Canada

K. Waters	Enbridge Inc., Chatham, Ontario, Canada	
J. Wilson	BC Oil and Gas Commission, Kelowna, British Columbia, Canada	
T. Zimmerman	TJE Zimmerman Consulting Ltd., Victoria, British Columbia, Canada	
P. Fernandez Marchi	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Distribution

G. Juarez	Enbridge Gas Distribution, Toronto, Ontario, Canada	<i>Chair</i>
R. Brandvold	SaskEnergy Inc., White City, Saskatchewan, Canada	<i>Vice-Chair</i>
A. Coffin	Heritage Gas Limited, Dartmouth, Nova Scotia, Canada	<i>Vice-Chair</i>
M. Amirault	R.V. Anderson Associates Limited, Moncton, New Brunswick, Canada	
O. Beauchemin	Energir, Montréal, Québec, Canada	
G. Blazek	Manitoba Hydro, Winnipeg, Manitoba, Canada	
N. Boskovic	FortisBC Energy Inc., Surrey, British Columbia, Canada	
G. Butson	Robert B. Somerville Co. Ltd., King City, Ontario, Canada	
J. Cathcart	Government of Alberta, Agriculture and Forestry, Edmonton, Alberta, Canada	
R. Knapp	Plastics Pipe Institute, Chapel Hill, North Carolina, USA	
K. Manouchehri	Technical Standards & Safety Authority (TSSA), Toronto, Ontario, Canada	
D. McConkey	Canadian Gas Association, Ottawa, Ontario, Canada	
K. E. Mills	Energy Consultants International Inc., Winnipeg, Manitoba, Canada	
J. Nazareth	BC Oil and Gas Commission, Kelowna, British Columbia, Canada	

G. F. Palermo	Palermo Plastics Pipe Consulting, Evans, Georgia, USA	
H. Tetteh-Wayoe	Edmonton, Alberta, Canada	
B. Weller	Shawcor CPS, Calgary, Alberta, Canada	
C. J. Windhorst	EMB Management, Port Moody, British Columbia, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Editorial

J. D. Mackenzie	Kiefner and Associates, Inc., Bellingham, Washington, USA	<i>Chair</i>
W. A. Simpson	North American Standards Assessment Corp., Sherwood Park, Alberta, Canada	<i>Vice-Chair</i>
B. Balmer	FortisBC Energy Inc (FEI), Surrey, British Columbia, Canada	
K. E. Mills	Energy Consultants International Inc., Winnipeg, Manitoba, Canada	
S. Papavinasam	CorrMagnet Consulting Inc., Cochrane, Alberta, Canada	
A. Reczka	Cenovus Energy, Calgary, Alberta, Canada	
D. Storrow	Horn River Engineering Ltd., Calgary, Alberta, Canada	
B. Waheed	BC Oil and Gas Commission, Kelowna, British Columbia, Canada	
B. Wilson	Acuren Group Inc., Calgary, Alberta, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Management Systems

A. Bhatia	ROSEN Canada Ltd., Calgary, Alberta, Canada	<i>Chair</i>
H. Wallace	HPW Consulting, Calgary, Alberta, Canada	<i>Vice-Chair</i>
C. Bradley	Canada Energy Regulator, Calgary, Alberta, Canada	<i>Vice-Chair</i>
C. Ngo	TC Energy, Calgary, Alberta, Canada	<i>Vice-Chair</i>
T. Adair	CNRL, Calgary, Alberta, Canada	
R. Bacic	Enbridge Gas Inc., Chatham, Ontario, Canada	
B. Balmer	FortisBC Energy Inc (FEI), Surrey, British Columbia, Canada	
M. Banack	Enbridge Pipelines Inc., Edmonton, Alberta, Canada	
T. B. DeLong	Enbridge Gas Transmission and Midstream, Calgary, Alberta, Canada	
L. W. Hunt	Hunt Integrity Services, West Vancouver, British Columbia, Canada	
A. Paunescu	Énergir, Montréal, Québec, Canada	
M. T. Reed	Port Alberni, British Columbia, Canada	
D. Samek	Kingston Midstream, Calgary, Alberta, Canada	
W. A. Simpson	North American Standards Assessment Corp., Sherwood Park, Alberta, Canada	

B. Waheed	BC Oil and Gas Commission, Kelowna, British Columbia, Canada	
M. Zhou	Gibson Energy, Calgary, Alberta, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Materials

F. Myschuk	Enbridge Inc., Edmonton, Alberta, Canada	<i>Chair</i>
A. J. Afaganis	EVRAZ Inc. NA, Calgary, Alberta, Canada	
C. Affleck	International Flow Control, Calgary, Alberta, Canada	
S. Ben-Abdallah	4Sight Engineering Inc., Calgary, Alberta, Canada	
D. G. Crone	EVRAZ Inc., Regina, Saskatchewan, Canada	
D. M. Duan	C&C PetroGas Engineering, Calgary, Alberta, Canada	
K. Durand	Canadoil Forge Ltd., Bécancour, Québec, Canada	
T. Gorrell	Allied Group, Houston, Texas, USA	
C. Guan	TC Energy, Calgary, Alberta, Canada	
R. Habedus	Widescope Services Inc., Calgary, Alberta, Canada	
G. Khiani	GAPV Inc., Calgary, Alberta, Canada	
A. Koksai	MEG Energy Inc., Calgary, Alberta, Canada	
T. Mah-Paulson	Pembina Pipeline Corp., Sherwood Park, Alberta, Canada	
J. Matepa	MRC Global (Canada) ULC, Nisku, Alberta, Canada	

S. Matsuno	Marubeni-Itochu Tubulars Canada Ltd., Calgary, Alberta, Canada
G. McShane	Comco Pipe & Supply Company, Edmonton, Alberta, Canada
G. T. Melnychuk	Stream-Flo Industries Ltd., Edmonton, Alberta, Canada
H. Mirabolghasemi	Prooftest Consulting Inc., Calgary, Alberta, Canada
D. P. Ochitwa	Canada Energy Regulator, Calgary, Alberta, Canada
H. R. Ramay	WorleyParsons, Calgary, Alberta, Canada
A. Reczka	Cenovus Energy, Calgary, Alberta, Canada
M. Saric	Canadian Natural Resources Limited, Calgary, Alberta, Canada
R. Schmidt	Canadoil, Russellville, Arkansas, USA
V. Shah	Shell Canada, Calgary, Alberta, Canada
W. Tang	Solaris Management Consultants Inc., Surrey, British Columbia, Canada
M. Tropp	Triple D Bending, Calgary, Alberta, Canada
E. Warnock	Enbridge Gas Inc., Chatham, Ontario, Canada
E. B. Willett	TC Energy, Calgary, Alberta, Canada
B. Wray	Galperti Canada, Edmonton, Alberta, Canada

S. Xu CanmetMATERIALS Natural Resources Canada,
Hamilton, Ontario, Canada

K. Zhang Plains Midstream Canada,
Calgary, Alberta, Canada

P. Fernandez Marchi CSA Group, *Project Manager*
Toronto, Ontario, Canada

Subcommittee on Operations and Systems Integrity

R. Sporns	Enbridge Pipelines Inc., Edmonton, Alberta, Canada	<i>Chair</i>
H. Wallace	HPW Consulting, Calgary, Alberta, Canada	<i>Vice-Chair</i>
W. A. Simpson	North American Standards Assessment Corp., Sherwood Park, Alberta, Canada	<i>Vice-Chair</i>
C. Billinton	FortisBC Energy Inc., Kelowna, British Columbia, Canada	
M. Brimacombe	Pembina Pipeline Corp, Calgary, Alberta, Canada	
A. Bruneau	Energir, Montréal, Québec, Canada	
D. Carnes	Canadian Natural Resources Limited, Calgary, Alberta, Canada	
P. Chan	Trans Mountain Corporation, Calgary, Alberta, Canada	
K. Cisar	Acuren Group Inc., Edmonton, Alberta, Canada	
G. Fredine	Keyera Corporation, Calgary, Alberta, Canada	
C. Gorrill	AIC Asset Integrity Consulting Inc., Regina, Saskatchewan, Canada	
S. Gosse	Ovintiv, Calgary, Alberta, Canada	
A. W. Hobbins	Cenovus Energy Inc., Grande Prairie, Alberta, Canada	

L. W. Hunt	Hunt Integrity Services, West Vancouver, British Columbia, Canada	
S. Jehlicka	Enbridge Gas Inc., Toronto, Ontario, Canada	
A. Murasan	Canada Energy Regulator, Calgary, Alberta, Canada	
D. Skibinsky	Fulcrum Technical Consulting Inc., Calgary, Alberta, Canada	
S. Steinhubl	BC Oil & Gas Commission, Kelowna, British Columbia, Canada	
A. C. Tong	FortisBC, Surrey, British Columbia, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Subcommittee on Production

D. Carnes	Canadian Natural Resources Limited, Calgary, Alberta, Canada	<i>Chair</i>
D. Storrow	Horn River Engineering Ltd., Calgary, Alberta, Canada	<i>Vice-Chair</i>
M. Akteruzzaman	Acero Engineering, Calgary, Alberta, Canada	
J. I. Andersson	Independent Consultant, Calgary, Alberta, Canada	
J. J. Baron	J. Baron Project Services Inc., High River, Alberta, Canada	
J. Been	Canada Energy Regulator, Calgary, Alberta, Canada	
M. Copithorne	Steel Reef Infrastructure Corp., Calgary, Alberta, Canada	
C. Deng	TRC Companies, Houston, Texas, USA	
B. Fallbacher	Equinox Engineering Ltd., Calgary, Alberta, Canada	
D. Foley	Group 10 Engineering Ltd., Calgary, Alberta, Canada	
J. Gladysz	BC Oil and Gas Commission, Kelowna, British Columbia, Canada	
D. W. Grzyb	Alberta Energy Regulator, Calgary, Alberta, Canada	
M. Kadyshovich	ConocoPhillips, Calgary, Alberta, Canada	
A. Lee	Sinopec Canada Energy Ltd., Calgary, Alberta, Canada	

K. E. Letendre	Cenovus Energy Inc., Calgary, Alberta, Canada	
C. Marian	Enerplus Corporation, Calgary, Alberta, Canada	
B. McFadyen	Enbridge Pipelines Inc., Calgary, Alberta, Canada	
J. McIver	The Alberta Energy Regulator, Calgary, Alberta, Canada	
P. K. Mishra	Arya Engineering and Consulting Inc., Calgary, Alberta, Canada	
J. Paez	Pembina Pipeline Corporation, Calgary, Alberta, Canada	
L. Petrusevski	ABSA (Alberta Boilers Safety Authority), Edmonton, Alberta, Canada	
A. Reczka	Cenovus Energy, Calgary, Alberta, Canada	
M. Saleh	Crescent Point Energy, Calgary, Alberta, Canada	
B. Watts	Baytex Energy Ltd., Calgary, Alberta, Canada	
M. A. Whitehouse	Imperial Oil, Calgary, Alberta, Canada	
B. Wilson	Acuren Group Inc., Calgary, Alberta, Canada	
P. Fernandez Marchi	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Task Force on Class Location

G. Van Boven	TC Energy, Calgary, Alberta	<i>Chair</i>
J. Abes	DNV GL, Calgary, Alberta, Canada	
K. Adams	TC Energy, Calgary, Alberta, Canada	
R. Adianto	CFER, Edmonton, Alberta, Canada	
F. Bahramian	BC OGC, Kelowna, British Columbia, Canada	
T. Briggs	Enbridge Liquids, Regina, Saskatchewan, Canada	
L. Cala-Phillips	TransMountain, Calgary, Alberta, Canada	
P. Chan	TransMountain, Calgary, Alberta, Canada	
D. Carnes	CNRL, Calgary, Alberta, Canada	
I. Colquhoun	CER, Calgary, Alberta, Canada	
C. Dubeau	Enbridge Gas, Chatham, Ontario, Canada	
J. Fish	Enbridge, Calgary, Alberta, Canada	
N. Hay	Keyera, Calgary, Alberta, Canada	
Y. Ireland	TransMountain, Calgary, Alberta	

B. Johnson	Pembina, Calgary, Alberta, Canada	
A. Kanzaki	FortisBC, Surrey, British Columbia, Canada	
D. Lu	TC Energy, Calgary, Alberta, Canada	
K. Maddin	TC Energy, Calgary, Alberta, Canada	
R. Mora	Aramco, Calgary, Alberta, Canada	
J. Nesbitt	CER, Calgary, Alberta, Canada	
M. Nessim	CFER, Edmonton, Alberta, Canada	
B. Rothwell	Calgary, Alberta, Canada	
D. Skibinsky	Fulcrum, Calgary, Alberta, Canada	
M. Stephens	CFER, Edmonton, Alberta, Canada	
H. Wallace	Calgary, Alberta, Canada	
K. Walsh	Husky, Calgary, Alberta, Canada	
H. Wu	Dynamic Risk, Calgary, Alberta, Canada	
T. Zimmerman	TJE Zimmerman Consulting Ltd., Victoria, British Columbia, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Task Force on Hydrogen and Renewable Gas

J. Steeves	Wood, Calgary, Alberta, Canada	<i>Chair</i>
H. Wallace	Calgary, Alberta, Canada	<i>Vice-Chair</i>
J. Abes	DNV GL, Calgary, Alberta, Canada	
P. Bain	ATCO, Edmonton, Alberta, Canada	
C. Blackwell	TC Energy, Calgary, Alberta, Canada	
D. Carnes	Canadian Natural Resources Limited, Calgary, Alberta, Canada	
V. Chou	FortisBC, Vancouver, British Columbia, Canada	
D. Gajonera	Enbridge Gas, Toronto, Ontario, Canada	
M. Hoorfar	UBC Okanagan, Kelowna, British Columbia, Canada	
F. Myschuk	Enbridge, Edmonton, Alberta, Canada	
J. Quinn	FortisBC, Vancouver, British Columbia, Canada	
H. Ramay	Worley, Calgary, Alberta, Canada	
T. Senadheera	CER — Canada Energy Regulator, Calgary, Alberta, Canada	

B. Simpson	North American Standards Assessment Corp., Sherwood Park, Alberta, Canada	
H. Tetteh-Wayoe	Sherwood Park, Alberta, Canada	
S. Tracy	CanmetMATERIALS, Calgary, Alberta, Canada	
B. Weinkauf	CSA Group, Calgary, Alberta, Canada	<i>Project Manager</i>

Risk Management Task Force

M. Nessim	CFER, Edmonton, Alberta, Canada	<i>Chair</i>
R. Beylot	Énergir, Montréal, Québec, Canada	
A. Bhatia	ROSEN Canada Ltd., Calgary, Alberta, Canada	
C. Billinton	FortisBC Energy Inc., Kelowna, British Columbia, Canada	
M. Brimacombe	Pembina Pipelines Corp., Calgary, Alberta, Canada	
L. Cala Phillips	TransMountain, Calgary, Alberta, Canada	
D. Ferguson	Enbridge Pipelines Inc., Edmonton, Alberta, Canada	
R. Goodfellow	IRISNDT, Okotoks, Alberta, Canada	
S. Hassanien	Enbridge Pipelines Inc., Houston, Texas, United States	
N. Hay	Canadian Natural Resources Ltd., Calgary, Alberta, Canada	
S. Kariyawasam	TC Energy, Calgary, Alberta, Canada	
R. Korolnek	DNV, Calgary, Alberta, Canada	
K. Leewis	Leewis & Associates, Calgary, Alberta, Canada	
K. Lien	Canada Energy Regulator, Calgary, Alberta, Canada	

S. Mathews	BC Oil and Gas Commission, Victoria, British Columbia, Canada	
R. Read	RSRead Consulting Inc., Okotoks, Alberta, Canada	
M. Stephens	CFER, Edmonton, Alberta, Canada	
M. Thompson	Enbridge Pipelines Inc., Calgary, Alberta, Canada	
H. Wallace	HPW Consulting Inc., Calgary, Alberta, Canada	
H. Wang	Canada Energy Regulator, Calgary, Alberta, Canada	
D. Williams	Dynamic Risk, Calgary, Alberta, Canada	
W. Zhou	University of Western Ontario, London, Ontario, Canada	
T. Zimmerman	TJE Zimmerman Consulting Ltd., Victoria, British Columbia, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

Heat Affected Zone Task Force

H. Wallace	HPW Consulting Inc., Calgary, Alberta, Canada	<i>Chair</i>
A. Afaganis	EVRAZ Inc. North America, Calgary, Alberta, Canada	
D. Carnes	Canadian Natural Resources Ltd., Calgary, Alberta, Canada	
B. Huntly	RMH Welding Consultant Inc., Calgary, Alberta, Canada	
M. Kereliuk	Qualimet Inc., Edmonton, Alberta, Canada	
R. Peters	R. Peters Enterprise Inc., Sherwood Park, Alberta, Canada	
J. Steeves	Wood, Calgary, Alberta, Canada	
E. Willett	TC Energy, Calgary, Alberta, Canada	
B. Wilson	Acuren Group Inc., Calgary, Alberta, Canada	
S. Capper	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

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.