

January 4, 2010

Dear *Guide* Purchaser,

Enclosed is Addendum 2 to ANSI GPTC Z380, *Guide for Gas Transmission and Distribution Piping Systems*, 2009 Edition. Addenda are formatted to enable the replacement of pages in your *Guide* with the updated enclosed pages. Please follow the enclosed page replacement instructions.

On behalf of the Gas Piping Technology Committee and the American Gas Association, thank you for your purchase and interest in the *Guide*.

Sincerely



Secretary
GPTC/Z380

B L A N K

GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS

2009 EDITON

ADDENDUM 2, September 2009

The changes in this addendum are marked by wide vertical lines inserted to the left of modified text, overwriting the left border of most tables, and use of a block symbol (█) where needed. The Federal Regulations were updated by one amendment action that affected one section of the Guide, being §192.7. Seven (7) GPTC transactions affected 12 sections of the Guide.

Editorial updates include application of the Editorial Guidelines, updating reference titles, adjustments to page numbering, and adjustment of text on pages. Editorial updates affected 12 sections of the guide.

The following table shows the affected sections, the pages to be removed, and their replacement pages.

Copyright American Gas Association
Provided by IHS
No reproduction or networking permitted without license from IHS
Full document details: AGA Z380.1 ADD 2 2009

Amdt. or Docket Number: FS Amendment
 TR Number: New or Updated GM
 GMUR: GM Under Review note
 EU: Editorial Update

Guide Section	Reason For Change	Pages to be Removed	Replacement Pages
Title Page	EU	i/ii	i/ii
Table of Contents	EU	vii/viii, ix/x	vii/viii, ix/x
Historical Record of Amendments to Part 192	RIN 2137-AE42, DFR Confirmation	lv/lvi thru lxv/lxvi	lv/lvi thru lxv/lxvi
Membership List	EU		
Part 191 191.23	TR06-15	9/10	9/10
Subpart A 192.3	EU	17/18, 19/20	17/18, 19/20
192.7	EU, RIN 2137-AE42	27/28	27/28
Subpart B 192.53	EU (TR08-09)	41/42	41/42
192.55	GMUR (TR09-10)		
Subpart C 192.121	EU (TR09-05)	59/60, 61/62	59/60, 61/62
Subpart D 192.143	TR07-16	67/68	67/68
Subpart E 192.227	GMUR (TR09-11)	109/110 thru 113/114	109/110 thru 113/114
192.229	GMUR (TR09-11)		
192.241	GMUR (TR09-11)		
Subpart I 192.476	TR07-16	189/190 thru 193/194	189/190 thru 193/194
Subpart L 192.614	EU	231/232	231/232
192.617	TR06-15	249/250 thru 253/254	249/250 thru 253/254
Subpart O 192.933	TR04-48	357/358 thru 361/362	357/358 thru 361/362
192.947	TR07-13	375/376, 377/378	375/376, 377/378
192.949	TR04-48		
Guide Material Appendix G-192-1	TR07-16	419/420 thru 423/424, 430(a)/430(b)	419/420 thru 423/424, 430(a)/430(b)
G-192-13	TR06-16	551/552, 553/554	551/552, 553/554
G-192-17	TR07-13	569/570 thru 573/574	569/570 thru 573(b)/574

Guide for Gas Transmission and Distribution Piping Systems

2009 Edition

Addendum 2, September 2009

an American National Standard

Author:
Gas Piping Technology Committee (GPTC) Z380
Accredited by ANSI

Secretariat:
American Gas Association

Approved by
American National Standards Institute (ANSI)
December 2, 2009

ANSI/GPTC Z380.1-2009, Addendum No.2-2009
Catalog Number: Z3801092

PLEASE NOTE

Addenda to this Guide will also be issued periodically to enable users to keep the Guide up-to-date by replacing the pages that have been revised with the new pages. It is advisable, however, that pages which have been revised be retained so that the chronological development of the Federal Regulations and the Guide is maintained.

CAUTION

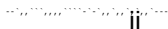
As part of document purchase, GPTC (using AGA as Secretariat) will try to keep purchasers informed on the current Federal Regulations as released by the Department of Transportation (DOT). This is done by periodically issuing addenda to update both the Federal Regulations and the guide material. It is the responsibility of the purchaser to obtain a copy of any addenda. Addenda are posted on the Committee's webpage at www.aga.org/gptc. The GPTC assumes no responsibility in the event the purchaser does not obtain addenda. The purchaser is reminded that the changes to the Regulations can be timely noted on the Federal Register's web site.

No part of this document may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the American Gas Association.

Participation by state and federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of the guide material in this Guide.

Conversions of figures to electronic format courtesy of ViaData Incorporated.

Copyright 2009
THE AMERICAN GAS ASSOCIATION
400 N. Capitol St., NW
Washington, DC 20001
All Rights Reserved
Printed in U.S.A.



192.459	External corrosion control: Examination of buried pipeline when exposed	173
192.461	External corrosion control: Protective coating	174
192.463	External corrosion control: Cathodic protection	175
192.465	External corrosion control: Monitoring	176
192.467	External corrosion control: Electrical isolation	181
192.469	External corrosion control: Test stations	184
192.471	External corrosion control: Test leads	184
192.473	External corrosion control: Interference currents	185
192.475	Internal corrosion control: General	186
192.476	Internal corrosion control: Design and construction of transmission line	189
192.477	Internal corrosion control: Monitoring	190(d)
192.479	Atmospheric corrosion control: General	191
192.481	Atmospheric corrosion control: Monitoring	192
192.483	Remedial measures: General	193
192.485	Remedial measures: Transmission lines	193
192.487	Remedial measures: Distribution lines other than cast iron or ductile iron lines	195
192.489	Remedial measures: Cast iron and ductile iron pipelines	196
192.490	Direct assessment	197
192.491	Corrosion control records	197
SUBPART J -- TEST REQUIREMENTS		199
192.501	Scope	199
192.503	General requirements	199
192.505	Strength test requirements for steel pipeline to operate at a hoop stress of 30 percent or more of SMYS	200
192.507	Test requirements for pipelines to operate at a hoop stress less than 30 percent of SMYS and at or above 100 p.s.i. (689 kPa) gage	203
192.509	Test requirements for pipelines to operate below 100 p.s.i. (689 kPa) gage	203
192.511	Test requirements for service lines	204
192.513	Test requirements for plastic pipelines	204
192.515	Environmental protection and safety requirements	205
192.517	Records	208
SUBPART K -- UPRATING		209
192.551	Scope	209
192.553	General requirements	209
192.555	Upgrading to a pressure that will produce a hoop stress of 30 percent or more of SMYS in steel pipelines	211
192.557	Upgrading: Steel pipelines to a pressure that will produce a hoop stress less than 30 percent of SMYS: plastic, cast iron, and ductile iron pipelines	213
SUBPART L -- OPERATIONS		217
192.601	Scope	217
192.603	General provisions	217
192.605	Procedural manual for operations, maintenance, and emergencies	218
192.607	(Removed and reserved)	226
192.609	Change in class location: Required study	226
192.611	Change in class location: Confirmation or revision of maximum allowable operating pressure	226

192.612	Underwater inspection and re-burial of pipelines in the Gulf of Mexico and its inlets	228
192.613	Continuing surveillance.....	229(a)
192.614	Damage prevention program.....	231
192.615	Emergency plans	237
192.616	Public awareness.....	247
192.617	Investigation of failures	250
192.619	Maximum allowable operating pressure: Steel or plastic pipelines	252
192.620	Alternative maximum allowable operating pressure for certain steel pipelines.....	254
192.621	Maximum allowable operating pressure: High-pressure distribution systems	262
192.623	Maximum and minimum allowable operating pressure: Low-pressure distribution systems	263
192.625	Odorization of gas.....	263
192.627	Tapping pipelines under pressure	266
192.629	Purging of pipelines	268
SUBPART M -- MAINTENANCE.....		269
192.701	Scope	269
192.703	General	269
192.705	Transmission lines: Patrolling	273
192.706	Transmission lines: Leakage surveys	274
192.707	Line markers for mains and transmission lines.....	275
192.709	Transmission lines: Record keeping	276
192.711	Transmission lines: General requirements for repair procedures	276
192.713	Transmission lines: Permanent field repair of imperfections and damages	277
192.715	Transmission lines: Permanent field repair of welds	279
192.717	Transmission lines: Permanent field repair of leaks	280
192.719	Transmission lines: Testing of repairs.....	280
192.721	Distribution systems: Patrolling.....	281
192.723	Distribution systems: Leakage surveys	282
192.725	Test requirements for reinstating service lines	284
192.727	Abandonment or deactivation of facilities.....	284
192.729	(Removed)	288
192.731	Compressor stations: Inspection and testing of relief devices.....	288
192.733	(Removed)	288
192.735	Compressor stations: Storage of combustible materials	288
192.736	Compressor stations: Gas detection	289
192.737	(Removed)	289
192.739	Pressure limiting and regulating stations: Inspection and testing	289
192.741	Pressure limiting and regulating stations: Telemetry or recording gauges	292
192.743	Pressure limiting and regulating stations: Capacity of relief devices	294
192.745	Valve maintenance: Transmission lines.....	295
192.747	Valve maintenance: Distribution systems	296
192.749	Vault maintenance	297
192.751	Prevention of accidental ignition.....	299
192.753	Caulked bell and spigot joints	302
192.755	Protecting cast-iron pipelines.....	303
192.761	(Removed)	303

SUBPART N -- QUALIFICATION OF PIPELINE PERSONNEL	305
192.801 Scope	305
192.803 Definitions	306
192.805 Qualification program.....	309
192.807 Recordkeeping.....	315
192.809 General	316
 SUBPART O – GAS TRANSMISSION PIPELINE INTEGRITY MANAGEMENT.....	 319
192.901 What do the regulations in this subpart cover?.....	319
192.903 What definitions apply to this subpart?.....	320
192.905 How does an operator identify a high consequence area?.....	323
192.907 What must an operator do to implement this subpart?.....	329
192.909 How can an operator change its integrity management program?.....	331
192.911 What are the elements of an integrity management program?	332
192.913 When may an operator deviate its program from certain requirements of this subpart?	335
192.915 What knowledge and training must personnel have to carry out an integrity management program?	336
192.917 How does an operator identify potential threats to pipeline integrity and use the threat identification in its integrity program?	338
192.919 What must be in the baseline assessment plan?	339
192.921 How is the baseline assessment to be conducted?	344
192.923 How is direct assessment used and for what threats?	345
192.925 What are the requirements for using External Corrosion Direct Assessment (ECDA)?	346
192.927 What are the requirements for using Internal Corrosion Direct Assessment (ICDA)?	353
192.929 What are the requirements for using Direct Assessment for Stress Corrosion Cracking (SCCDA)?	355
192.931 How may Confirmatory Direct Assessment (CDA) be used?	356
192.933 What actions must an operator take to address integrity issues?	357
192.935 What additional preventive and mitigative measures must an operator take?.....	359
192.937 What is a continual process of evaluation and assessment to maintain a pipeline's integrity?	364
192.939 What are the required reassessment intervals?	366
192.941 What is a low stress reassessment?.....	370
192.943 When can an operator deviate from these reassessment intervals?	372
192.945 What methods must an operator use to measure program effectiveness?.....	374
192.947 What records must an operator keep?	375
192.949 How does an operator notify PHMSA?.....	377
192.951 Where does an operator file a report?	378
 SUBPART P – GAS DISTRIBUTION PIPELINE INTEGRITY MANAGEMENT (IM)	 379
 APPENDICES TO PART 192	
Appendix A (Removed and reserved)	381
Appendix B Qualification of Pipe	383
Appendix C Qualification of Welders for Low Stress Level Pipe	387
Appendix D Criteria for Cathodic Protection and Determination of Measurements	391
Appendix E Guidance on Determining High Consequence Areas and on Carrying out Requirements in the Integrity Management Rule	393

GUIDE MATERIAL APPENDICES

Guide Material Appendix G-191-1	Telephonic notice worksheet	401
Guide Material Appendix G-191-2	Distribution system incident report.....	403
Guide Material Appendix G-191-3	Distribution system annual report	405
Guide Material Appendix G-191-4	Transmission and gathering systems incident report.....	407
Guide Material Appendix G-191-5	Transmission and gathering systems annual report	409
Guide Material Appendix G-191-6	Determination of reporting requirements for safety-related conditions	411
Guide Material Appendix G-191-7	Safety-related condition report to United States Department of Transportation.....	413
Guide Material Appendix G-192-1	Summary of references and related sources	415
Guide Material Appendix G-192-1A	Editions of material specifications, codes and standards previously incorporated by reference in the Regulations.....	439
Guide Material Appendix G-192-2	Specified minimum yield strengths	443
Guide Material Appendix G-192-3	Flexibility factor k and stress intensification factor i	447
Guide Material Appendix G-192-4	Rules for reinforcement of welded branch connections	451
Guide Material Appendix G-192-5	Pipe end preparation.....	461
Guide Material Appendix G-192-6	Substructure damage prevention guidelines for directional drilling and other trenchless technologies	467
Guide Material Appendix G-192-7	Large-scale distribution outage response and recovery.....	469
Guide Material Appendix G-192-8	Distribution Integrity Management Program (DIMP)	473
Guide Material Appendix G-192-9	Test conditions for pipelines other than service lines	501
Guide Material Appendix G-192-10	Test conditions for service lines.....	503
Guide Material Appendix G-192-11	Gas leakage control guidelines for natural gas systems	505
Guide Material Appendix G-192-11A	Gas leakage control guidelines for petroleum gas systems.....	527
Guide Material Appendix G-192-12	Planned shutdown.....	547
Guide Material Appendix G-192-13	Considerations to minimize damage by outside forces	551
Guide Material Appendix G-192-14	[Reserved]	555
Guide Material Appendix G-192-15	Design of uncased pipeline crossings of highways and railroads.....	557
Guide Material Appendix G-192-15A	Horizontal directional drilling (HDD) for steel pipelines.....	561
Guide Material Appendix G-192-15B	Horizontal directional drilling (HDD) for plastic pipe	564(a)
Guide Material Appendix G-192-16	Substructure damage prevention guidelines	565
Guide Material Appendix G-192-17	Explicit requirements for reports, inspections, tests, written procedures, records and similar actions.....	569
Guide Material Appendix G-192-18	Cast iron pipe	575

HISTORICAL RECORD OF AMENDMENTS TO PART 192

(Continued)

Amdt 192-	Subject	Vol FR Pg#	Published Date	Docket or RIN No.	Effective Date	Affected Sections 192.
[No Amdt No.]	Standards for Increasing the Maximum Allowable Operating Pressure for Gas Transmission Pipelines	73 FR 72737	12/01/08	RIN 2137- AE25 [Ref. as "Eff. date stayed"]	12/22/08	112, 328, 611, 619, 620
[No Amdt No.]	Polyamide-11 (PA-11) Plastic Pipe Design Pressures	73 FR 79002	12/24/08	RIN 2137- AE26	01/23/09	121, 123
[No Amdt No.]	Administrative Procedures, Address Updates, and Technical Amendments [Adopts interim final rule with modifications.]	74 FR 2889	01/16/09	RIN 2137- AE29 [Ref. as (#2)]	02/17/09	7, 727, 949, 951
[No Amdt No.]	Incorporated by Reference Update: American Petroleum Institute (API) Standards 5L and 1104*	74 FR 17099	04/14/09	RIN 2137- AE42	04/14/09	7

HISTORICAL RECORD OF AMENDMENTS TO PART 192

(Continued)

Amdt 192-	Subject	Vol FR Pg#	Published Date	Docket or RIN No.	Effective Date	Affected Sections 192.
[No Amdt No.]	DFR Confirmation	74 FR 30476	06/26/09	RIN 2137- AE42	04/14/09	7
* Issued as a Direct Final Rule (DFR) or Interim Final Rule.						

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Abraham, Richard A. Marathon Pipe Line LLC, Findlay, OH	X	X				X				X			
Affonso, Joaquin J. Consumers Energy, Jackson, MI	X			X		X	X						X
Amick, Patrick M. Marathon Oil Co., Houston, TX				X				X					
Armstrong, Glen F. EN Engineering, Woodridge, IL	X	Chair				X	X		X		X		
Ashcraft, Nicholas D. Mears Group, Columbus, OH		X					X						
Bateman, Stephen C. City of Long Beach – Gas & Oil Dept., Long Beach, CA		X											
Beaver, Brett Advantica, Mechanicsburg, PA		X			X		X						
Becken, Robert C. Energy Experts International, Pleasant Hill, CA	X			X	X			X					
Benedict, Andrew G. Opvantek, Inc., Newtown, PA		X						X					
Bennett, Frank M. PPL Interstate Energy Company, Pottstown, PA		X				X	Sec						

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Bervers, Bruce S. Williams Gas Pipeline, Houston, TX				X		X		X					
Blaney, Steven D. NY State Dept. of Public Service, Albany, NY	X	X				X	X			X			
Booth, Lloyd E. Telemark Solutions, Coppell, TX			X		X			X					
Boros, Stephen Plastics Pipe Institute, Irving, TX			X						X				
Breaux, David A. BROEN, Inc., Birmingham, AL			X		X			X					
Brown, Charles E. NTH Consultants, Ltd., Lansing, MI		X				X		X					
Bryce, Wayne CINA Corporation, Mahwah, NJ		X					X		X				
Bull, David E. ViaData LP, Noblesville, IN	X	X				Sec		X					X
Butler, John Equitable Resources, Charleston, WV				X	X		X						
Cabot, Paul W. American Gas Association, Washington, DC	Sec										Sec		

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Cadorin, Robert J. TransCanada Corp., Troy, MI	X			Sec				X					
Cardin, Jeanne L. Southwest Gas Corp., Las Vegas, NV				X			X						
Cary, Willard Energy Experts International, Neptune, NJ		X				X		X					
Carpenter, Robert Southern California Gas Co., San Diego, CA		X				X	X						
Chin, John S. TransCanada Corp., Troy, MI	X			X	X	X	Chair				X		
Clarke, Allan M. Spectra Energy Corp., Houston, TX				X	X	X	X						
Cody, Leo T. National Grid, Waltham, MA		X				X		X					
Craig, Jim M. McElroy Manufacturing, Inc., Tulsa, OK			X					X	X				
Del Buono, Amerigo J. Steel Forgings, Inc., League City, TX	X		X										
Dolezal, Denise L. Metropolitan Utilities District, Omaha, NE		X			X		X						

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Duncombe, Lauri Williams Gas Pipeline, Salt Lake City, UT				X	X		X						
Erickson, John P. American Public Gas Association, Washington, DC		X						X					
Faulkenberry, Michael J. Avista Corp., Spokane, WA		X			X			X					
Fleet, F. Roy F. Roy Fleet, Inc., Westmont, IL	X			X		X				X			
Frantz, John H. Consultant, Philadelphia, PA	X	X						X	X		X	Chair	
Frederick, Victor M., III Omega Tools, Allentown, PA			X					X	X				
Friend, Mary S. Columbia Gas Trmn. Corp., Charleston, WV	X			X		X		X					
Fuller, William R., Jr. Xcel Energy Inc., Denver, CO		X			X		X		X				
Galante, Julie CYCLA Corp., Oakton, VA		X					X						
Goble, Gregory H. R. W. Lyall & Co., Corona, CA	X		X		X				X				

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Groeber, Steven A. Philadelphia Gas Works, Philadelphia, PA		X				X		X	X	X			
Gunther, Karl M. NTSB, Washington, DC	X	X							X				
Hansen, James P. Elster Perfection Corp., Madison, OH			X				X						
Hart, Thomas L. NSTAR Electric & Gas Corp., Westwood, MA		X				X		X					
Hazelden, Glyn Hazelden Group, Oak Park, IL		X				X		X					
Heintz, James R. UGI Utilities, Inc., Reading, PA	1 st V Chair										Chair		
Hotinger, James M. VA State Corp. Comm., Richmond, VA		X				X	X						
Hurbanek, Stephen F. NC Utilities Commission, New Bern, NC		X				X							
Huriaux, Richard D. Consulting Engineer, Baltimore, MD	X			X			X						
Kottwitz, John D. MO Public Service Comm., Jefferson City, MO	X	X				Chair		X		X	X		

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1st V Chair Second Vice Chairperson: 2nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Koym, Brent L. CenterPoint Energy, Pearl, MS		X			X		X						
Krummert, Lawrence M. Columbia Gas of PA, Inc., New Castle, PA		X						X					
Lewis, Raymond D. H Rosen USA, Houston, TX				X			X						X
Loker, Jon O. Pipeline Safety Consultant, Saint Albans, WV	X			X						Chair	X		
Lomax, George S. Heath Consultants Inc., Houston, TX	X		X			X		X					
Lopez, Paul A. El Paso Corp., Colorado Springs, CO				X				X					
Lueders, John D. DTE Energy - MichCon, Grand Rapids, MI		X			X			X					
Mackay-Smith, Seth UMAC Inc., Malvern, PA	X		X		X	X							
Marek, Marti Southwest Gas Corp., Las Vegas, NV	Chair										X		
McKenzie, James E. Atmos Energy Corp., Jackson, MS		X			X		X						

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Miller, D. Lane PHMSA-OPS, Oklahoma City, OK	X	X					X		X	Sec			
Modha, Kirit S. Iroquois Gas Transmission System, Shelton, CT				X			X						
Myers, Clyde A. DOT-PHMSA, Washington, DC				X			X						
Naper, Robert C. Energy Experts International, Canton, MA	X	X				X							
Nichols, Danny Energy Transfer Company, Houston, TX				X		X	X						
Oleksa, Paul E. Oleksa & Assoc., Akron, OH	X	X			X		X			X			X
Palermo, Eugene F. Palermo Plastics Pipe Consulting, Friendsville, TN	X		X		X				X				
Peters, Kenneth C. El Paso Corporation, Birmingham, AL	X			Chair		X		Sec			X		
Peterson, Barry A. Performance Pipe, Concord, CA			X						X				
Pioli, Christopher A. Jacobs Consultancy, Pasadena, CA		X			X	X	X						

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Quezada, Leticia Nicor Gas, Naperville, IL	X	X				X			X		X		Chair
Reynolds, Donald Lee NiSource Corporate Services, Columbus, OH	X	X			Chair		X				X		
Schmidt, Robert A. Hackney Ladish Inc., Russellville, AR	X		Chair		X						X		
Schow, Boyd L. Williams Gas Pipeline, Salt Lake City, UT				X			X						
Schrunk, Rex Wilbros Engineers, Inc., Kansas City, MO				X	X		X						
Seamands, Patrick A. Laclede Gas Co., Saint Louis, MO		X				X			X	X			
Sher, Philip Philip Sher Consultants, Cheshire, CT	2 nd V Chair										X		
Siedlecki, Walter V. AEGIS Insurance Services, Inc., East Rutherford, NJ	X	X						X					
Slagle, Richard L. Vectren Energy Delivery, Evansville, IN	X	Sec				X			Chair		X		
Smallwood, Larry Southern Cross Corp., Norcross, GA		X						X					

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Themig, Jerome S. Ameren Illinois Utilities, Pawnee, IL		X				X		X					
Torbin, Robert N. Cutting Edge Solutions LLC, Framingham, MA		X					X						
Troch, Steven J. Baltimore Gas & Electric Co., Baltimore, MD		X					X					X	X
Ulanday, Alfredo S. Integrys Gas Group, Chicago, IL		X				X		X					
Veerapaneni, Ram DTE Energy – MichCon, Detroit, MI	X			X		X	X			X			X
Volgstadt, Frank R. Volgstadt & Associates, Madison, OH	X		Sec						Sec				
Weber, David E. Consultant Engineer, Barnstable, MA	X	X							X	X			X
Wells, William M. New Jersey Natural Gas, Wall, NJ		X				X		X					
White, Gary R. PI Confluence, Inc., Houston, TX		X					X						
Wilkes, Alfred L. Performance Pipe, Plano, TX			X		X				X				

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

Abbreviations: Chairperson: Chair First Vice Chairperson: 1 st V Chair Second Vice Chairperson: 2 nd V Chair Secretary: Sec Damage Prevention - Emergency Response: DP/ER Operation and Maintenance: O&M	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Wong, Anson Southern California Gas Company, Los Angeles, CA				X	X		X						
Yehle, Steve Excel Energy, St. Paul, MN		X							X				

directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent or more reduction in operating pressure or shutdown of operation of a pipeline or an LNG facility that contains or processes gas or LNG.

(b) A report is not required for any safety-related condition that-

- (1) Exists on a master meter system or a customer-owned service line;
- (2) Is an incident or results in an incident before the deadline for filing the safety-related condition report;
- (3) Exists on a pipeline (other than an LNG facility) that is more than 220 yards (200 meters) from any building intended for human occupancy or outdoor place of assembly, except that reports are required for conditions within the right-of-way of an active railroad, paved road, street, or highway; or
- (4) Is corrected by repair or replacement in accordance with applicable safety standards before the deadline for filing the safety-related condition report, except that reports are required for conditions under paragraph (a)(1) of this section other than localized corrosion pitting on an effectively coated and cathodically protected pipeline.

[Issued by Amdt. 191-6, 53 FR 24942, July 1, 1988 with Amdt. 191-6 Correction, 53 FR 26560, July 13, 1988; Amdt. 191-14, 63 FR 37500, July 13, 1998]

GUIDE MATERIAL

- (a) For the purpose of Safety-Related Condition Reports, "in-service facilities" are those that are pressurized with gas, regardless of flow conditions. Facilities that are not "in-service" are completely depressurized and isolated from all pressurized facilities by valves or physical separation.
- (b) See Guide Material Appendix G-191-6 for a chart useful in determining if reports must be filed.
- (c) See guide material under §192.617 for failure investigation, when applicable.

§191.25

Filing safety-related condition reports.

[Effective Date: 04/26/96]

(a) Each report of a safety-related condition under §191.23(a) must be filed (received by the Associate Administrator, OPS) in writing within five working days (not including Saturday, Sunday, or Federal holidays) after the day a representative of the operator first determines that the condition exists, but not later than 10 working days after the day a representative of the operator discovers the condition. Separate conditions may be described in a single report if they are closely related. Reports may be transmitted by facsimile at (202) 366-7128.

(b) The report must be headed "Safety-Related Condition Report" and provide the following information:

- (1) Name and principal address of operator.
- (2) Date of report.
- (3) Name, job title, and business telephone number of person submitting the report.
- (4) Name, job title, and business telephone number of person who determined that the condition exists.
- (5) Date condition was discovered and date condition was first determined to exist.
- (6) Location of condition, with reference to the state (and town, city, or county) or offshore site, and as appropriate, nearest street address, offshore platform, survey station number, milepost, landmark, or name of pipeline.
- (7) Description of the condition, including circumstances leading to its discovery, any significant effects of the condition on safety, and the name of the commodity transported or stored.

(8) The corrective action taken (including reduction of pressure or shutdown) before the report is submitted and the planned follow-up or future corrective action, including the anticipated schedule for starting and concluding such action.

[Issued by Amdt. 191-6, 53 FR 24942, July 1, 1988 with Amdt. 191-6 Correction, 53 FR 26560, July 13, 1988 and Amdt. 191-6 Correction, 53 FR 29800, Aug. 8, 1988; Amdt. 191-7, 54 FR 32342, Aug. 7, 1989; Amdt. 191-8, 54 FR 40878, Oct. 4, 1989; Amdt. 191-10, 61 FR 18512, Apr. 26, 1996]

GUIDE MATERIAL

- (a) The preamble to Amendment 191-7 ("Interpretation and Statement of Policy Regarding Discovery of Safety-Related Conditions by Smart Pigs and Instructions to Personnel") states:

"Discovery of a potentially reportable condition occurs when an operator's representative has adequate information from which to conclude the probable existence of a reportable condition. An operator would have adequate information for each anomaly that is physically examined. Absent physical examination, discovery may occur after the data are calibrated if the "adequate information" test is met. However, the adequacy of the information that pig data provide about anomalous conditions is contingent on a concurrent indication from a number of factors from which an operator could conclude the probable existence of a reportable condition. Among these are the sophistication of the pig being used, the reliability of the data, the accuracy of data interpretation, and any other factors known by the operator relative to the condition of the pipeline."

- (b) See Guide Material Appendix G-191-7 for a form useful for reporting a safety-related condition.
- (c) Additional state requirements may exist for intrastate facilities.

§191.27

Filing offshore pipeline condition reports.

[Effective Date: 02/17/09]

(a) Each operator shall, within 60 days after completion of the inspection of all its underwater pipelines subject to §192.612(a), report the following information:

- (1) Name and principal address of operator.
- (2) Date of report.
- (3) Name, job title, and business telephone number of person submitting the report.
- (4) Total length of pipeline inspected.
- (5) Length and date of installation of each exposed pipeline segment, and location, including, if available, the location according to the Minerals Management Service or state offshore area and block number tract.
- (6) Length and date of installation of each pipeline segment, if different from a pipeline segment identified under paragraph (a)(5) of this section, that is a hazard to navigation, and the location, including, if available, the location according to the Minerals Management Service or state offshore area and block number tract.

(b) The report shall be mailed to Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Information Resources Manager, PHP-10, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.

[Issued by Amdt. 191-9, 56 FR 63764, Dec. 5, 1991; Amdt. 191-14, 63 FR 37500, July 13, 1998; RIN 2137-AD77, 70 FR 11135, Mar. 8, 2005; RIN 2137-AE29, 73 FR 16562, Mar. 28, 2008; RIN 2137-AE29 (#2), 74 FR 2889, Jan. 16, 2009]

GUIDE MATERIAL

Glossary of Commonly Used Terms

(For Glossary of Commonly Used Abbreviations, see Table 192.3i below.)

Abandoned pipeline is a pipeline that is physically separated from its source of gas and is no longer maintained under Part 192.

Abandonment is the process of abandoning a pipeline.

Adhesive joint is a joint made in thermosetting plastic piping by the use of an adhesive substance that forms a bond between the mating surfaces without dissolving either one of them.

Ambient temperature is the temperature of the surrounding medium, usually used to refer to the temperature of the air in which a structure is situated or a device operates. See also *Ground Temperature and Temperature*.

Bell-welded pipe is furnace-welded pipe that has a longitudinal butt joint that is forge-welded by the mechanical pressure developed in drawing the furnace-heated skelp through a cone-shaped die. The die, commonly known as a "welding bell," serves as a combined forming and welding die. This type of pipe is produced in individual lengths from cut-length skelp. Typical specifications: ASTM A53, API Spec 5L. See also *Furnace-butt-welded pipe and Pipe manufacturing processes*.

Bottle is a gastight structure which is (1) completely fabricated by the manufacturer from pipe with integral drawn, forged, or spun end closures; and (2) tested in the manufacturer's plant. See also *Bottle-type holder*.

Bottle-type holder is any bottle or group of interconnected bottles installed in one location, and used for the sole purpose of storing gas. See also *Bottle*.

Carbon steel. By common custom, steel is considered to be carbon steel where (i) no minimum content is specified or required for aluminum, boron, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten, vanadium, zirconium, or any other element added to obtain a desired alloying effect; (ii) the specified minimum content for copper does not exceed 0.40 percent; or (iii) the specified maximum content does not exceed 1.65 percent for manganese, 0.60 percent for silicon or 0.60 percent for copper.

All carbon steels may contain small quantities of unspecified residual elements unavoidably retained from raw materials. These elements (copper, nickel, molybdenum, chromium, etc.) are considered incidental and are not normally determined or reported.

Cast iron. The unqualified term cast iron applies to gray-cast iron that is a cast ferrous material in which a major part of the carbon content occurs as free carbon in the form of flakes interspersed through the metal.

Cold-expanded pipe is seamless or welded pipe which is formed and then, expanded in the pipe mill while cold, so that the circumference is permanently increased by at least 0.50 percent.

Continuous-welded pipe is furnace-welded pipe which has a longitudinal butt joint that is forge-welded by the mechanical pressure developed in rolling the hot-formed skelp through a set of round pass welding rolls. It is produced in continuous lengths from coiled skelp and subsequently cut into individual lengths. Typical specifications: ASTM A53, API Spec 5L. See also *Furnace-butt-welded pipe and Pipe manufacturing processes*.

Control piping is pipe, valves, and fittings used to interconnect air, gas, or hydraulically operated control apparatus.

Curb valve is a type of service-line valve installed for the purpose of shutting off gas supply. It is typically installed below grade at or near the property line.

Deactivation (Inactivation) is the process of making the pipeline inactive.

District regulator station or district pressure regulating station is a pressure regulating station that controls pressure to a high- or low-pressure distribution main. It does not include pressure regulation whose sole function is to control pressure to a manifold serving multiple customers.

Double submerged-arc-welded pipe is a pipe having longitudinal or spiral butt joints. The joints are produced by at least two passes, including at least one each on the inside and on the outside of the pipe. Coalescence is produced by heating with an electric arc or arcs between the bare metal electrode or electrodes and the work. The welding is shielded by a blanket or granular, fusible material on the work. Pressure is not used and filler metal for the inside and outside welds is obtained from the electrode or electrodes. Typical specifications: ASTM A381, API Spec 5L. See also *Pipe manufacturing processes*.

Ductile iron (sometimes called nodular iron) is a cast ferrous material in which the free graphite present is in a spheroidal form rather than a flake form. The desirable properties of ductile iron are achieved by means of chemistry and a ferritizing heat treatment of the castings.

Electric-flash-welded pipe is pipe having a longitudinal butt joint wherein coalescence is produced, simultaneously over the entire area of abutting surfaces, by the heat obtained from resistance to the flow of electric current between the two surfaces, and by the application of pressure after heating is substantially completed. Flashing and upsetting are accompanied by the expulsion of metal from the joint. Typical specification: API Spec 5L. See also *Pipe manufacturing processes*.

Electric-fusion-welded pipe is pipe having a longitudinal butt joint wherein coalescence is produced in the preformed tube by manual or automatic electric-arc welding. The weld may be single or double and may be made with or without the use of filler metal. Typical specifications: ASTM A134, ASTM A139: Single or double weld is permitted with or without the use of filler metal. ASTM A671, ASTM A672, ASTM A691, and API Spec 5L: Requires both inside and outside welds and use of filler metal.

Spiral-welded pipe is also made by the electric-fusion-welded process with either a butt joint, a lap joint or a lock-seam joint. Typical specifications: ASTM A134, ASTM A139, and API Spec 5L: Butt joint. ASTM A211: Butt joint, lap joint, or lock-seam joint. See also *Pipe manufacturing processes*.

Electric-resistance-welded (ERW) pipe is pipe, which has a longitudinal butt joint wherein coalescence, is produced by the application of pressure and by the heat obtained from the resistance of the pipe to the flow of an electric current in a circuit of which the pipe is a part. It is produced in individual lengths or in continuous lengths from coiled skelp and subsequently cut into individual lengths. Typical specifications: ASTM A53, ASTM A135, and API Spec 5L. See also *Pipe manufacturing processes*.

Excess Flow Valve (EFV) is a device installed in a gas pipeline to automatically restrict or shut off the gas flow through the line when the flow exceeds a predetermined limit.

Excess Flow Valve-Bypass (EFVB) is an EFV that is designed to limit the flow of gas upon closure to a small, predetermined level. EFVBs reset automatically once the line downstream is made gastight and pressure is equalized across the valve.

Excess Flow Valve-Non-Bypass (EFVNB) is an EFV that is designed to stop the flow of gas upon closure. EFVNBs must be manually reset.

Furnace-butt-welded pipe. There are two such types of pipe defined in this glossary: *Bell-welded pipe* and *Continuous-welded pipe*. See also *Pipe manufacturing processes*.

Furnace-lap-welded pipe is pipe that has a longitudinal lap joint that is produced by the forge welding process. In this process, coalescence is produced by heating a preformed tube to welding temperature and then passing it over a mandrel. The mandrel is located between the two welding rolls that compress and weld the overlapping edges. Typical specification: API Spec 5L. The manufacture of this type of pipe was discontinued, and the process was deleted from API Spec 5L in 1962. See also *Pipe manufacturing processes*.

Gas control is a person or persons who acquire and maintain data to remotely monitor and direct the flow of gas to meet design and contractual obligations, and to assist in detecting pipeline emergencies and initiating response.

Ground temperature is the temperature of the earth at pipe depth. See also *Ambient temperature and Temperature*.

Heat-fusion joint is a joint made in thermoplastic piping by heating the parts sufficiently to permit fusion of the materials when the parts are pressed together.

Holiday is a coating imperfection that exposes the pipe surface to the environment.

Holiday detection is testing of a coating for holidays using an instrument that applies a voltage between the external surface of the coating and the pipe.

Hoop stress is the stress in a pipe wall, acting circumferentially in a plane perpendicular to the longitudinal axis of the pipe, produced by the pressure of the fluid in the pipe. In this Guide, hoop stress in steel pipe is calculated by the formula:

$$S_h = \frac{PD}{2t}$$

Where:

- S_h = hoop stress, psi
- P = internal pressure, psig
- D = nominal outside diameter of pipe, inches
- t = nominal wall thickness, inches

See also *Maximum allowable hoop stress*.

Hot taps are connections made to transmission lines, mains, or other facilities while they are in operation.

The connecting and tapping is done while the facility is under gas pressure.

Hydrostatic Design Basis (HDB) is one of a series of established stress values specified in ASTM D2837, "Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products," for a plastic compound, obtained by categorizing the long-term hydrostatic strength as determined in accordance with ASTM D2837.

Inactive pipeline is a pipeline that is being maintained under Part 192 but is not presently being used to transport gas.

Instrument piping is pipe, valves, and fittings used to connect instruments to main piping, to other instruments and apparatus, or to measuring equipment.

Iron. See *Cast iron*, *Ductile iron*, and *Malleable iron*.

Jeeping is a method of *Holiday detection*.

Joint. See *Length*.

Lateral line (transmission). See guide material under §192.625.

Leakage surveys are systematic inspections made for the purpose of finding leaks in a gas piping system.

The types of inspections commonly made are described in Guide Material Appendix G-192-11 "Gas Leakage Control Guidelines for Natural Gas Systems" and Guide Material Appendix G-192-11A "Gas Leakage Control Guidelines for Petroleum Gas Systems."

Length is a piece of pipe as delivered from the mill. Each piece is called a length regardless of its actual longitudinal dimension. While this is sometimes called a "joint," the term "length" is preferred.

Light surface oxide is a non-damaging form of corrosion.

Long-term hydrostatic strength (LTHS) of plastic pipe is the estimated hoop stress, in psi, that would result in a failure of the pipe if the pipe were subjected to 100,000 hours of hydrostatic pressure.

Lower Explosive Limit (LEL) is the lower limit of flammability for a gas expressed as a percent, by volume, of gas in air.

Malleable iron is a mixture of iron and carbon, including small amounts of silicon, manganese, phosphorous and sulfur which, after being cast, is converted structurally by heat treatment into primarily a matrix of ferrite containing nodules of tempered carbon.

Maximum allowable hoop stress is the maximum hoop stress permitted for the design of a piping system. It depends upon the material used, the class location of the pipe, and the operating conditions. See also *Hoop stress*.

Maximum allowable test pressure is the maximum internal fluid pressure permitted for testing, for the materials and class location involved.

Meters. See *Customer meter and Meter set assembly*.

Meter set assembly is that exposed portion of the service line extending from the service line riser valve to the connection of the customer's fuel line, including the meter, and (if present) the regulator and relief vent line. In the absence of a service line riser valve, the meter set assembly starts at the first exposed fitting. The meter set assembly does not include the customer's buried or exposed fuel line.

Monitoring regulator is a pressure regulator, set in series with another pressure regulator, for the purpose of providing automatic overpressure protection in the event of a malfunction of the primary regulator.

Nodular iron. See *Ductile iron*.

Nominal outside diameter (D) is the outside diameter, in inches, as listed in Table 192.105i for nominal pipe size 12 inches and less, and is the same as the nominal pipe size greater than 12 inches. It is used in the design formula for steel pipe in §192.105 and the calculation for hoop stress.

Nominal wall thickness (t) is the wall thickness, in inches, computed by, or used in, the design formula for steel pipe in §192.105. Pipe may be ordered to this computed wall thickness without adding an allowance to compensate for the under-thickness tolerances permitted in approved specifications.

Operating stress is the stress in a pipe or structural member under normal operating conditions.

Overpressure protection is the use of a device or equipment installed for the purpose of preventing pressure in a pipe system or other facility from exceeding a predetermined limit. See also *Pressure limiting station*, *Pressure regulating station*, *Pressure relief station*, and *Service regulator*.

Parallel encroachment pertains to that portion of the route of a transmission line or main that lies within, runs in a generally parallel direction to, and does not necessarily cross, the rights-of-way of a road, street, highway, or railroad.

Pipe. See *Bell-welded pipe*, *Cold-expanded pipe*, *Continuous-welded pipe*, *Control piping*, *Double-submerged-arc-welded pipe*, *Electric-flash-welded pipe*, *Electric-fusion-welded pipe*, *Electric-resistance-welded pipe*, *Furnace-butt-welded pipe*, *Furnace-lap-welded pipe*, *Instrument piping*, *Length*, *Pipe-container*, *Pipe manufacturing processes*, *Pipe-type holder*, *Sample piping*, and *Seamless pipe*.

Pipe-container is a gastight structure assembled from pipe and end closures. See also *Pipe-type holder*.

Pipe manufacturing processes. A reference is ASME I00396 "History of Line Pipe Manufacturing in North America." Types and names of welded joints are used herein as defined in the American Welding Society (AWS) Publication A3.0 "Standard Welding Terms and Definitions" except for the following terms which are defined in this glossary.

Bell-welded pipe

Continuous-welded pipe

Double-submerged-arc-welded pipe

Electric-flash-welded pipe

Electric-fusion-welded pipe

Electric-resistance-welded pipe

Furnace-butt-welded pipe

Furnace-lap-welded pipe

Seamless pipe

Pipe-type holder is any pipe-container or group of interconnected pipe-containers installed at one location for the sole purpose of storing gas. See also *Pipe-container*.

Plastic (noun) is a material that contains one or more organic polymeric substances of high molecular weight as an essential ingredient, is solid in its finished state, and can be shaped by flow at some stage of its manufacture or processing into finished articles. The two general types of plastic referred to in this Guide are thermoplastic and thermosetting. See also *Thermoplastic* and *Thermosetting plastic*.

Plastic pipe joints. See *Adhesive joint*, *Heat-fusion joint*, and *Solvent cement joint*.

Pressure (expressed in pounds per square inch above atmospheric pressure, i.e., gauge pressure (abbreviation: psig), unless otherwise stated). See also *Maximum allowable test pressure*, *Overpressure protection*, *Pressure limiting station*, *Pressure regulating station*, *Pressure relief station*, and *Standup pressure test*.

Pressure limiting station consists of apparatus which, under abnormal conditions, will act to reduce, restrict or shut off the supply of gas flowing into a transmission line, main, holder, pressure vessel or compressor station piping in order to prevent the gas pressure from exceeding a predetermined limit. While normal pressure conditions prevail, the pressure limiting station may exercise some degree of control of the flow of gas or may remain in the wide-open position. Included in the station are any enclosures and ventilating equipment, and any piping and auxiliary equipment, such as valves, control instruments, or control lines.

Source and name of referenced material (Continued)	49 CFR reference (Continued)
(5) ASME B31.8S-2004 "Supplement to B31.8 on Managing System Integrity of Gas Pipelines."	§§192.903(c); 192.907(b); 192.911, Introductory text; 192.911(i); 192.911(k); 192.911(l); 192.911(m); 192.913(a) Introductory text; 192.913(b)(1); 192.917(a) Introductory text; 192.917(b); 192.917(c); 192.917(e)(1); 192.917(e)(4); 192.921(a)(1); 192.923(b)(2); 192.923(b)(3); 192.925(b) Introductory text; 192.925(b)(1); 192.925(b)(2); 192.925(b)(3); 192.925(b)(4); 192.927(b); 192.927(c)(1)(i); 192.929(b)(1); 192.929(b)(2); 192.933(a); 192.933(d)(1); 192.933(d)(1)(i); 192.935(a); 192.935(b)(1)(iv); 192.937(c)(1); 192.939(a)(1)(i); 192.939(a)(1)(ii); 192.939(a)(3); 192.945(a).
(6) ASME Boiler and Pressure Vessel Code, Section I, "Rules for Construction of Power Boilers," (2004 edition, including addenda through July 1, 2005).	§192.153(a).
(7) ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, "Rules for Construction of Pressure Vessels," (2004 edition, including addenda through July 1, 2005).	§§192.153(a); 192.153(b); 192.153(d); 192.165(b)(3).
(8) ASME Boiler and Pressure Vessel Code, Section VIII, Division 2, "Rules for Construction of Pressure Vessels - Alternative Rules," (2004 edition, including addenda through July 1, 2005).	§§192.153(b); 192.165(b)(3).
(9) ASME Boiler and Pressure Vessel Code, Section IX, "Welding and Brazing Qualifications," (2004 edition, including addenda through July 1, 2005).	§§192.227(a); Item II, Appendix B.
E. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS):	
(1) MSS SP44-1996 (Reaffirmed; 2001) "Steel Pipe Line Flanges."	§192.147(a).
(2) [Reserved].	
F. National Fire Protection Association (NFPA):	
(1) NFPA 30 (2003) "Flammable and Combustible Liquids Code."	§192.735(b).
(2) NFPA 58 (2004) "Liquefied Petroleum Gas Code (LP-Gas Code)."	§§192.11(a); 192.11(b); 192.11(c).
(3) NFPA 59 (2004) "Utility LP-Gas Plant Code."	§§192.11(a); 192.11(b); 192.11(c).
(4) NFPA 70 (2005) "National Electrical Code."	§§192.163(e); 192.189(c).