

GPTC GUIDE FOR GAS TRANSMISSION AND DISTRIBUTION PIPING SYSTEMS

2003 EDITON

ADDENDUM NO. 9, September 2007

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 (ψ) where needed. The Federal Regulations were changed by one amendment action that affected two sections of the Guide. Seven transactions affected 13 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. While only significant editorial updates are marked, all affected pages carry the current addendum footnote. Editorial updates affected 28 sections of the Guide.

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

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

Guide Section	Reason For Change	Pages to be Removed	Replacement Pages
Title Page	EU	i/ii	i/ii
Contents	EU	iii/iv, vii/viii, ix/x	iii/iv, vii/viii, ix/x
Historical Reconstruction of Part 192	EU, Amdt 192-104	xxiii/xxiv thru xxvii/xxviii, xxx(a)/xxx(b)	xxiii/xxiv thru xxvii/xxviii, xxx(a)/xxx(b)
Historical Record of Amdts to Part 192	EU, Amdt 192-104	xlxi/l thru lix/lx	xlxi/l thru lix/lx
GPTC Membership	EU		
Subpart B 192.53	EU	29/30	29/30
192.55	EU		
Subpart D 192.143	EU	49/50	49/50
192.145	TR 06-30	51/52	51/52
192.197	EU	83/84	83/84
Subpart E 192.241	TR 04-17	93/94	93/94
Subpart F 192.281	EU	103/104	103/104
Subpart G 192.309	TR 00-05	111/112	111/112
Subpart I 192.455	EU	144(a)/144(b) & 145/146	144(a)/144(b) & 145/146
192.461	EU	151/152	151/152
192.476	EU	161/162	161/162
192.485	TR 00-05	165/166 thru	165/166 thru
192.487	TR 00-05	166(c)/166(d)	166(c)/166(d)
Subpart L 192.605	TR 06-23	193/194	193/194
192.613	EU	197/197(a) thru 221/222	197/197(a) thru 221/222
192.614	EU, TR 05-12, TR 05-13, TR 06-23		
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192.617	EU		
192.623	EU		
192.625	EU		
192.627	EU		
192.629	EU		
Subpart M 192.703	EU, TR 00-05	223/224	223/224
192.713	EU, TR 00-05	231/232 and 233/234	231/232 and 233/234
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Subpart N 192.805	EU, TR 06-23	262(c)/262(d)	262(c)/262(d)
Subpart O 192.933	Amdt 192-104	262(ae)/262(af)	262(ae)/262(af)
Appendix B	TR 04-23	266(a)/266(b)	266(a)/266(b)
GMA G-192-1	EU, TR 05-12, TR 05-13, TR 06-23, TR 06-30	315/316, 321/322 thru 326(d-1)/326(d-2)	315/316, 321/322 thru 326(e)/326(f)

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PLEASE NOTE

Addenda to this Guide will also be issued in loose-leaf format so that users will be able 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.

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Part 192 Subpart	Part 192 Section	Effective Date of Original Version if other than 11/12/70	Amendments (if any)
SUBPART O – PIPELINE INTEGRITY MANAGEMENT	Header	2/14/04	192-95, 192-103
	192.901	2/14/04	192-95
	192.903	2/14/04	192-95, 192-103
	192.905	2/14/04	192-95
	192.907	2/14/04	192-95, 192-103
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	192.929	2/14/04	192-95, 192-103
	192.931	2/14/04	192-95, 192-103
	192.933	2/14/04	192-95, 192-103, 192-104
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	192.947	2/14/04	192-95
	192.949	2/14/04	192-95, RIN 2137-AD77, 192-103
	192.951	2/14/04	192-95, RIN 2137-AD77, 192-103

HISTORICAL RECONSTRUCTION OF PART 192

(Continued)

Part 192 Subpart	Part 192 Section	Effective Date of Original Version if other than 11/12/70	Amendments (if any)
FEDERAL APPENDICES	[App. A]		192-3, 192-10, 192-12, 192-17, 192-18, 192-19, 192-22, 192-32, 192-34 + Ext., 192-37, 192-41, 192-42, 192-51, 192-61, 192-62, 192-64, 192-65, 192-68, 192-76, 192-78, 192-84, 192-95, 192-94 (removed and reserved)
	App. B		192-3, 192-12, 192-19, 192-22, 192-32, 192-37, 192-41, 192-51, 192-61, 192-62, 192-65, 192-68, 192-76, 192-85, 192-94, 192-103
	App. C		192-85, 192-94
	App. D	08/01/71	192-4
	App. E	12/15/03	192-95

HISTORICAL RECORD OF AMENDMENTS TO PART 192

(Continued)

Amdt 192-	Subject	Vol FR Pg#	Published Date	Docket No.	Effective Date	Affected Sections 192.
102	Gas Gathering Line Definition	71 FR 13289	03/15/06	RIN 2137- AB15	04/14/06	1, 7, 8, 9, 13, 452, 619
103	Update of Regulatory References to Technical Standards	71 FR 33402	06/09/06	RIN 2138- AD68	07/10/06	7, 121, 123, 145, 225, 227, 229, 241, 283, 616, 619, Header before 761, Subpart O Header, 903, 907, 911, 913, 917, 921, 923, 925, 927, 929, 931, 933, 935, 937, 939, 945, App. B
103 [Amended]	Update of Regulatory References to Technical Standards [Amending that published [06/09/06]	72 FR 4655	02/01/07	RIN 2137- AD68	03/05/07	1, 7, 227, 727, 903, 949, 951
[No Amdt No.]	Design and Construction Standards to Reduce Internal Corrosion in Gas Transmission Pipelines	72 FR 20055	04/23/07	RIN 2137- AE09	05/23/07	143, 476

HISTORICAL RECORD OF AMENDMENTS TO PART 192

(Continued)

Amdt 192-	Subject	Vol FR Pg#	Published Date	Docket No.	Effective Date	Affected Sections 192.
104	Integrity Management Program Modifications and Clarifications	72 FR 39012	07/17/07	RIN 2137- AE07	08/16/07	933
* Issued as a Direct Final Rule (DFR).						

GPTC GUIDE FOR GAS TRANSMISSION AND
 DISTRIBUTION PIPING SYSTEMS: 2003 Edition

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
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													
Abraham, Richard A. National Grid USA, Providence, RI	X	X				X				X			
Affonso, Joaquin J. Consumers Energy, Jackson, MI	X			X		X	X						
Alexander, Thomas D. Willbros Engineers, Inc., Tulsa, OK	X			X	X								
Arita, Richard T. Pacific Gas & Electric Co., Walnut Creek, CA		X			X			X					
Armstrong, Glen F. EN Engineering, Woodridge, IL	X	Chair				X	X		X		X		X
Ashcraft, Nicholas D. Kiefner & Associates, Worthington, OH		X					X						
Barkei, David E. We Engeries, Milwaukee, WI		X			X		X						
Batten, Charles H. Batten & Associates., Inc., Locust Grove, VA	X	X				X		X					
Beaver, Brett Advantica, Mechanicsburg, PA		X			X		X						
Becken, Robert C. Energy Experts International, Pleasant Hill, CA	X			X	X			X		X			
Benedict, Andrew G. Opvantek, Inc., Newtown, PA		X						X					
Bennett, Frank M. PPL Gas Utilities Corp., Lancaster, PA		X				X	X						

Addendum No. 9, September 2007

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

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Bevers, 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. Southern Cross Corp., Coppell, TX			X		X			X					
Boros, Stephen Plastics Pipe Institute, Irving, TX			X						X				
Borski, Lawrence W. Williams Gas Pipeline, Houston, TX				X				X					
Breaux, David A. Broen, Inc., Birmingham, AL			X		X			X					
Brown, Charles E. NTH Consultants, Ltd., Lansing, MI		X				X		X					
Bull, David E. ViaData LP, Tobyhanna, PA	X	X				SEC		X					
Cabot, Paul W. American Gas Association, Washington, DC	SEC										Sec		
Cadorin, Robert J. TransCanada Corp., Troy, MI	X			SEC				X					

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

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Cardin, Jeanne L. Southwest Gas Corp., Las Vegas, NV				X			X						
Carey, Willard S. Public Service Elec. & Gas Co., Newark, NJ	X	X				X		Chair			X		
Chin, John S. TransCanada Corp., Farmington Hills, MI	X			X	X	X	Chair				X		X
Clarke, Allan M. Spectra Energy Corp., Houston, TX				X	X	X	X						
Cody, Leo T. KeySpan Energy Delivery, 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										
DeVore, James C. Consultant, Green Valley, AZ	X		X		X		X		X				
Dockweiler, Kenneth D. SourceGas Distribution LLC, Casper, WY	X			X		X		X					
Dolezal, Denise L. Metropolitan Utilities District, Omaha, NE		X			X		X						
Duncombe, Lauri Williams Gas Pipeline, Salt Lake City, UT				X	X			X					

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
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													
Erickson, John P. American Public Gas Association, Washington, DC		X						X					
Fleet, F. Roy F. Roy Fleet, Inc., Westmont, IL	X			X		X				X			
Frantz, John H. Consultant, Philadelphia, PA	X										X	Chair	
Frederick, Victor M., III Utility Line Services, Conshohocken, PA		X						X	X				
Friend, Mary S. Columbia Gas Trmn. Corp., Charleston, WV				X		X		X					
Fuller, William R. Xcel Energy Inc., Denver, CO	X	X			X		X		X				
Galante, Julie Washington Gas Light Co., Springfield, VA		X					X						
Gilchrist, Hart Intermountain Gas Co., Boise, ID		X						X					
Goble, Gregory H. R. W. Lyall & Co., Corona, CA			X		X				X				
Groeber, Steve A. Philadelphia Gas Works, Philadelphia, PA		X				X		X	X	X			
Gunther, Karl M. NTSB, Washington, DC	X	X							X				

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		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Hansen, James P. Elster Perfection Corp., Madison, OH			X				X						
Hart, Thomas L. NSTAR Electric & Gas Corp., Westwood, MA		X				X		X					
Hazelden, Glyn Gas Technology Institute, Des Plaines, IL		X				X		X					
Heintz, James R. UGI Utilities, Inc., Reading, PA	X	X				X	X		X		Chair		X
Henningsgaard, David R. CenterPoint Energy, Minneapolis, MN		X			X	X		X					
Henry, Jill A. Ohio PUC, Columbus, OH	X	X				X			X				
Hotinger, James M. VA State Corp. Comm., Richmond, VA		X				X	X						
Humes, Dennis W. Mueller Co.- Gas Products Div., Decatur, IL	X		X										X
Hurbanek, Stephen F. Pennsylvania PUC, Harrisburg, PA		X				X							
Huriaux, Richard D. PHMSA - OPS, Washington, DC	X			X			X						
Kottwitz, John D. MO Public Service Comm., Jefferson City, MO	X	X				Chair		X		X	X		

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		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Krummert, Lawrence M. Columbia Gas of PA, Inc., New Castle, PA		X						X					
Lathrap, Philip A. Consultant, Lafayette, CA	X	X			X	X		X					
Lewis, Raymond D. 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., Montoursville, PA	X		X			X		X					
Lopez, Paul 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						
Miller, D. Lane Transportation Safety Inst., Oklahoma City, OK	X	X					X		X	Sec			

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

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		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Naper, Robert C. KeySpan Energy Delivery, Waltham, MA		X				X							
Oleksa, Paul E. Oleksa & Assoc., Akron, OH	X	X			X		X			X			
Palermo, Eugene F. Palermo Plastics Pipe Consulting, Friendsville, TN	X		X		X				X				
Peters, Kenneth C. El Paso Corp. Pipeline Group, Birmingham, AL	X			Chair		X		SEC			X		
Pioli, Christopher A. Jacobs Consultancy, Pasadena, CA		X			X	X	X						
Quezada, Leticia Nicor Gas, Naperville, IL	X	X				X			X		X		Chair
Reynolds, Donald Lee NiSource Corporate Services, Columbus, OH		X			Chair		X				X		
Robertson, Joseph P. Williams Gas Pipeline-NW, Salt Lake City, UT				X		X	X						
Schmidt, Robert A. Hackney Ladish Inc., Russellville, AR	X		Chair		X						X		
Scott, Edward W. AmerenIP, Pawnee, IL		X					X		X				
Seamands, Patrick A. Laclede Gas Co., Saint Louis, MO		X				X			X	X			

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

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		Distribution	Manufacturers	Transmission	Design	DP/ER	IMP/Corrosion	O&M/OQ	Plastic Pipe	Editorial	Executive	Liaison	Regulations
Sher, Philip CT Dept. Public Utility Control, New Britain, CT	2 nd V Chair										X		
Siedlecki, Walter AEGIS Insurance Services, Inc., East Rutherford, NJ		X						X					
Slagle, Richard Vectren Energy Delivery, Evansville, IN	X	SEC				X			Chair				
Sprenger, Roger W. San Diego Gas & Elec. Co., San Diego, CA		X				X		X					
Themig, Jerome S. Ameren Services Co., 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						
Ulanday, Alfredo S. Integrys Gas, Chicago, IL		X				X		X					
Veerapaneni, Ram DTE Energy – MichCon, Detroit, MI				X		X	X			X			
Vetter, Daniel J. GTI – Gas Technology Institute, Des Plaines, IL		X				X		X					
Volgstadt, Frank R. Volgstadt & Associates, Madison, OH	X		SEC						SEC				

GAS PIPING TECHNOLOGY COMMITTEE MEMBERSHIP LIST

(Continued)

	Main Body	DIVISIONS			TASK GROUPS					SECTIONS			
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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													
Weber, David E. Consultant Engineer, Barnstable, MA	X	X							X	X			
White, Gary R. PI Confluence, Inc., Houston, TX		X					X						
Wilkes, Alfred L. Performance Pipe, Plano, TX			X		X				X				
Zapalac, Daniel P. R.W. Lyall & Co., Inc., Corona, CA			X						X				

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SUBPART B

MATERIALS

§192.51

Scope.

[Effective Date: 11-12-70]

This subpart prescribes minimum requirements for the selection and qualification of pipe and components for use in pipelines.

GUIDE MATERIAL

No guide material necessary.

§192.53

General.

[Effective Date: 11-12-70]

Materials for pipe and components must be --

- (a) Able to maintain the structural integrity of the pipeline under temperature and other environmental conditions that may be anticipated;
- (b) Chemically compatible with any gas that they transport and with any other material in the pipeline with which they are in contact; and
- (c) Qualified in accordance with the applicable requirements of this subpart.

GUIDE MATERIAL

1 FRACTURE TOUGHNESS REQUIREMENTS

- (a) Seam-welded steel pipe, 20 inches and larger in diameter and with SMYS of 52,000 psi or higher to be installed in transmission lines to operate at 40 percent or more of SMYS and at operating pipe temperature less than 60 °F, should exhibit sufficient notch ductility at the operating pipe temperature. Compliance with either the Charpy impact or drop weight test criteria specified in SR5 or SR6 of API Spec 5L is sufficient evidence of such ductility when impact tests are made at or below the design pipe temperature.
- (b) For special installations (e.g., compressor station piping and small replacement sections), the notch ductility should be determined by appropriate criteria, which may include those specified in SR5 or SR6.
- (c) Notch ductility tests are not necessary on pipe for small special installations (e.g., new highway crossings and extensions of compressor station headers) where pipe to be installed (i) is on hand from earlier purchases to specifications at least equal to those applicable at the time of the original installation, or (ii) is a short portion of a larger order that exhibited adequate notch ductility.

2 SOUR GAS COMPATIBILITY

- (a) See guide material under §192.475 for internal corrosion considerations.
- (b) NACE MR0175 contains guidelines for selecting materials for valves used in sour gas service. The use of controlled hardness techniques and the use of alternate materials, as described in NACE MR0175, may be effective for other components in controlling sulfide stress cracking. The use of controlled hardness techniques should not be considered a solution to other problems involving H₂S.

§192.55

Steel pipe.

[Effective Date: 7-13-98]

- (a) New steel pipe is qualified for use under this part if --
 - (1) It was manufactured in accordance with a listed specification;
 - (2) It meets the requirements of --
 - (i) Section II of Appendix B to this part; or
 - (ii) If it was manufactured before November 12, 1970, either section II or III of Appendix B to this part; or
 - (3) It is used in accordance with paragraph (c) or (d) of this section.
- (b) Used steel pipe is qualified for use under this part if --
 - (1) It was manufactured in accordance with a listed specification and it meets the requirements of paragraph II-C of Appendix B to this part;
 - (2) It meets the requirements of --
 - (i) Section II of Appendix B to this part; or
 - (ii) If it was manufactured before November 12, 1970, either section II or III of Appendix B to this part;
 - (3) It has been used in an existing line of the same or higher pressure and meets the requirements of paragraph II-C of Appendix B to this part; or
 - (4) It is used in accordance with paragraph (c) of this section.
- (c) New or used steel pipe may be used at a pressure resulting in a hoop stress of less than 6,000 p.s.i. (41 MPa) where no close coiling or close bending is to be done, if visual examination indicates that the pipe is in good condition and that it is free of split seams and other defects that would cause leakage. If it is to be welded, steel pipe that has not been manufactured to a listed specification must also pass the weldability tests prescribed in paragraph II-B of Appendix B to this part.
- (d) Steel pipe that has not been previously used may be used as replacement pipe in a segment of pipeline if it has been manufactured prior to November 12, 1970, in accordance with the same specification as the pipe used in constructing that segment of pipeline.
- (e) New steel pipe that has been cold expanded must comply with the mandatory provisions of API Specification 5L.

[Amdt. 192-3, 35 FR 17659, Nov. 17, 1970; Amdt. 192-12, 38 FR 4760, Feb. 22, 1973; Amdt. 192-51, 51 FR 15333, Apr. 23, 1986; Amdt. 192-68, 58 FR 14519, Mar. 18, 1993; Amdt. 192-85, 63 FR 37500, July 13, 1998]

GUIDE MATERIAL

Listed specifications are shown in Section I of Appendix B. The user is cautioned that there may be more recent editions of some of these specifications than those approved and listed in Section I of Appendix B.

SUBPART D DESIGN OF PIPELINE COMPONENTS

§192.141

Scope.

[Effective Date: 11-12-70]

This subpart prescribes minimum requirements for the design and installation of pipeline components and facilities. In addition, it prescribes requirements relating to protection against accidental overpressuring.

GUIDE MATERIAL

Useful industry references for design and construction of auxiliary piping for compressor stations or other similar installations (other than gas piping) are listed in Table 192.141i. Federal, state and local requirements may also apply.

Piping System	Fluid	Design Code
Power piping (boiler external piping)	Air, steam, water, oil, gas, steam condensate	ASME B31.1
Power piping (non-boiler external piping)	Air, steam, water, oil, gas, steam condensate	ASME B31.3
Utility, auxiliary, process, air injection	Air, steam, water, oil, steam condensate, glycol, natural gas liquids	ASME B31.3
Process	Hydrocarbons, chemicals	ASME B31.3
Refrigeration	Refrigerant (e.g., propane)	ASME B31.3 or B31.5
Fire protection	Water	NFPA 14 and 24
Drinking and domestic supply	Water	AWWA Standards; Uniform Plumbing Code
Plumbing and drains	Sanitary and waste water	Uniform Plumbing Code

TABLE 192.141i

§192.143

General requirements.

¶ *[Effective Date: 5-23-07]*

(a) Each component of a pipeline must be able to withstand operating pressures and other anticipated loadings without impairment of its serviceability with unit stresses equivalent to those allowed for comparable material in pipe in the same location and kind of service. However, if design based upon unit stresses is impractical for a particular component, design may be based upon a pressure rating established by the manufacturer by pressure testing that component or a prototype of the component.

(b) The design and installation of pipeline components and facilities must meet applicable requirements for corrosion control found in subpart I of this part.

[Amdt. 192-48, 49 FR 19823, May 10, 1984; RIN 2137-AE09, 72 FR 20055, April 23, 2007]

GUIDE MATERIAL

This guide material is under review following Amendment 192-104.

The designer should select components that will withstand the field test pressure to which they will be subjected without failure or leakage and without impairment to their serviceability. Consideration should also be given to pulsation-induced vibrations that could produce excessive cyclic stresses.

See Guide Material Appendix G-192-9 and Guide Material Appendix G-192-10.

§192.144

Qualifying Metallic Components.

[Effective Date: 7-14-04]

Notwithstanding any requirement of this subpart which incorporates by reference an edition of a document listed in §192.7 or Appendix B of this part, a metallic component manufactured in accordance with any other edition of that document is qualified for use under this part if --

(a) It can be shown through visual inspection of the cleaned component that no defect exists which might impair the strength or tightness of the component; and

(b) The edition of the document under which the component was manufactured has equal or more stringent requirements for the following as an edition of that document currently or previously listed in §192.7 or appendix B of this part:

- (1) Pressure testing;
- (2) Materials; and
- (3) Pressure and temperature ratings.

[Issued by Amdt. 192-45, 48 FR 30637, July 5, 1983; Amdt. 192-94, 69 FR 32886, June 14, 2004]

GUIDE MATERIAL

See Guide Material Appendix G-192-1A for documents previously incorporated by reference in the Regulations. Current documents incorporated by reference that were listed in Appendix A prior to Amendment 192-94, published June 14, 2004, are now found in §192.7.

If the edition of the document under which the component was manufactured was neither previously listed nor currently listed in §192.7, and was not previously listed in Appendix A, then requirements under §192.144(b) should be reviewed to determine if the metallic component is qualified for use under Part 192.

§192.145

Valves.

[Effective Date: 7-10-06]

(a) Except for cast iron and plastic valves, each valve must meet the minimum requirements of API 6D (incorporated by reference, see §192.7), or to a national or international standard that provides an equivalent performance level. A valve may not be used under operating conditions that exceed the applicable pressure-temperature ratings contained in those requirements.

(b) Each cast iron and plastic valve must comply with the following:

(1) The valve must have a maximum service pressure rating for temperatures that equal or exceed the maximum service temperature.

(2) The valve must be tested as part of the manufacturing, as follows:

(i) With the valve in the fully open position, the shell must be tested with no leakage to a pressure at least 1.5 times the maximum service rating.

(ii) After the shell test, the seat must be tested to a pressure not less than 1.5 times the maximum service pressure rating. Except for swing check valves, test pressure during the seat test must be applied successively on each side of the closed valve with the opposite side open. No visible leakage is permitted.

(iii) After the last pressure test is completed, the valve must be operated through its full travel to demonstrate freedom from interference.

(c) Each valve must be able to meet the anticipated operating conditions.

(d) No valve having shell components made of ductile iron may be used at pressures exceeding 80 percent of the pressure ratings for comparable steel valves at their listed temperature. However, a valve having shell components made of ductile iron may be used at pressures up to 80 percent of the pressure ratings for comparable steel valves at their listed temperature, if --

(1) The temperature-adjusted service pressure does not exceed 1,000 p.s.i (7MPa) gage;
and

(2) Welding is not used on any ductile iron component in the fabrication of the valve shells or their assembly.

(e) No valve having pressure-containing parts made of ductile iron may be used in the gas pipe components of compressor stations.

[Amdt. 192-3, 35 FR 17659, Nov. 17, 1970; Amdt. 192-22, 41 FR 13589, Mar. 31, 1976; Amdt. 192-37, 46 FR 10157, Feb. 2, 1981; Amdt. 192-62, 54 FR 5625, Feb. 6, 1989; Amdt. 192-85, 63 FR 37500, July 13, 1998; Amdt. 192-94, 69 FR 32886, June 14, 2004; Amdt. 192-103, 71 FR 33402, June 9, 2006]

GUIDE MATERIAL

1 FLANGED CAST IRON VALVES IN STEEL PIPELINES

Consideration should be given to the effect of secondary stresses (e.g., resulting from earth movement, expansion and contraction or other external forces) which could affect the structural integrity of flanged cast iron valves in steel pipelines. Adequate support, compression couplings, or other means may be used.

2 EQUIVALENT STANDARDS FOR STEEL VALVES

2.1 Equivalent standards.

Valve standards API Spec 6A, API Std 600, ASME B16.33, ASME B16.34, and ASME B16.38 provide an equivalent performance level to API Spec 6D for gas application purposes.

2.2 Valves not listed in API Spec 6D.

Although all valve sizes (such as those smaller than 2 inches) are not listed in API Spec 6D, manufacturers may design, build and test non-listed sizes in accordance with all applicable