

EVALUATION REPORT OF GAS PIPELINE & COMPRESSOR STATION CONSTRUCTION

A completed **Standard Inspection Report** is to be submitted to the Director within 60 days from completion of the inspection. A **Post Inspection Memorandum (PIM)** is to be completed and submitted to the Director within 30 days from the completion of the inspection, or series of inspections, and is to be filed as part of the **Standard Inspection Report**.

Inspection Report		Post Inspection Memorandum	
Inspector/Submit Date: _____	Inspector/Submit Date: _____	Peer Review/Date: _____	Peer Review/Date: _____
		Director Approval/Date: _____	Director Approval/Date: _____
POST INSPECTION MEMORANDUM (PIM)			
Name of Operator:		OPID #:	
Name of Unit(s):		Unit #(s):	
Records Location:			
Unit Type & Commodity:			
Inspection Type:		Inspection Date(s):	
PHMSA Representative(s):		AFO Days:	

Summary:

Findings:

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Name of Operator:		
OP ID No. ⁽¹⁾	Unit ID No. ⁽¹⁾	
H.Q. Address:	System/Unit Name & Address: ⁽¹⁾	
Co. Official:	Activity Record ID#:	
Phone No.:	Phone No.:	
Fax No.:	Fax No.:	
Emergency Phone No.:	Emergency Phone No.:	
Persons Interviewed	Titles	Phone No.
PHMSA Representative(s) ⁽¹⁾		Inspection Date(s) ⁽¹⁾
Company Construction Maps (copies for Region Files):		
Description of Construction ⁽¹⁾		

¹ Information not required if included on page 1.

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DESIGN REQUIREMENTS		S	U	N/A	N/C
.51	MATERIALS SPECIFICATIONS				
	.55 Qualification of Pipe <ul style="list-style-type: none"> ■ Manufacturer: ■ Manufacturing Standard: ■ Pipe Grade: ■ Outside Diameter (D): ■ Wall Thickness (t): ■ Type of Longitudinal Seam: ■ Specified Min. Yield Strength: ■ Joint Design - Bevel: ■ External Coating: ■ Internal Coating: ■ Minimum Joint Length: ■ Footage or Miles: 				
	.55 Does the steel pipe meet one of the API or ASTM listed specifications?				
	.63(a) Are pipe, valves, and fittings properly marked for identification?				
	.63(c) Were pipe, valves, and fittings marked with other than field die stamping?				
.101	PIPE DESIGN				
	.105(a) Was the pipeline designed in accordance with this formula: P = (2St/D) x F x E x T				
	.113 Is the longitudinal joint factor (E) for steel pipe equal to 1 ? (See table)				
	.115 Is the temperature derating factor (T) for steel pipe equal to 1 ? (See table)				
.141	DESIGN of PIPELINE COMPONENTS				
	.143(b) The design and installation of pipeline components and facilities must meet applicable requirements for corrosion control found in subpart I of this part.				
	.145 Does each valve meet minimum requirements of API 6D or a national or international standard that provides an equivalent performance level?				
	.147 Does each flange or flange accessory meet the minimum requirements of ASME/ANSI 16.5 , MSS SP44 , or ASME/ANSI B16.25 , or equivalent?				
	.149 Are steel butt welded fittings rated at or above the pressure and temperature as the pipe?				
	.159 Is the pipeline designed with enough flexibility to prevent thermal expansion or contraction from causing excessive stresses in the pipe or component?				
	.161(d) For a pipeline to operate at 50% of SMYS, are structural supports not welded directly to the pipe, but to a member that completely encircles the pipe?				
	.161(e) Is each underground pipeline that is connected to a relatively unyielding line or fixed object provided with enough flexibility to allow for possible movement, or is it anchored?				
.179 Are transmission line valves spaced properly Each point in a Class 1 location within 10 miles of a valve Each point in a Class 2 location within 7 1/2 miles of a valve Each point in a Class 3 location within 4 miles of a valve Each point in a Class 4 location with 2 1/2 miles of a valve					
.199 Are pressure relief and pressure limiting devices designed and installed correctly?					
.201 Do pressure relief and pressure limiting devices have adequate capacity?					
.163	DESIGN of COMPRESSOR STATION				
	.163(a) Is each compressor building located on property under the control of the operator?				
	Is the distance to adjacent property far enough to prevent the spread of fire?				
	Is there enough space around compressor buildings to allow free movement of fire fighting equipment?				
	.168(b) Are buildings constructed with non-combustible material?				
	.163(c) Are there two separate and unobstructed exits on each operating floor of each compressor building?				
	Do doors swing outward?				
.163(d) Does each fence around a compressor station have at least two gates?					

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DESIGN REQUIREMENTS		S	U	N/A	N/C
	Does each gate located within 200 feet of a building open outwardly and when occupied must be operated from the inside without a key?				
.163(e)	Is electrical equipment and wiring installed per ANSI/NFPA 70?				
.165(a)	Are compressors protected from liquids?				
.165(b)	Do liquid separators have a manual drain and if slugs of liquid could be carried into the compressor, automatic liquid removal, compressor shutdown, or high liquid level alarm?				
	Are liquid separators manufactured in accordance with Section VIII of the ASME Boiler and Pressure Vessel Code or a design factor less than or equal to 0.4 if constructed of pipe and fittings with no internal welding?				
.167(a)	Does the compressor station have an emergency shutdown system?				
	Is the ESD able to isolate station and blowdown station piping?				
	Is discharge of gas from the blowdown piping at a location where the gas will not create a hazard?				
	Will ESD shutdown compressor, gas fired equipment and electrical facilities (except emergency lighting and circuits needed to protect equipment)?				
	Are there at least two ESD stations outside gas area near exits gates or emergency exists?				
.169(a)	Does compressor station have overpressure protection devices of sufficient capacity to prevent pressure greater than 110% MAOP?				
.169(b)	Do relief valves vent in safe location?				
.171(c)	Are there slots or holes in baffles of gas engine mufflers?				
.173	Are buildings ventilated to prevent the accumulation of gas?				
.735(b)	Are aboveground oil or gasoline storage tanks protected per NFPA No. 30? (Dikes)				
.736(a)	Does the compressor building have a fixed gas detection and alarm system?				

.13(c)	WELDING AND WELD DEFECT REPAIR/REMOVAL REQUIREMENTS	S	U	N/A	N/C
.225	(a) Are welding procedures qualified under Section 5 of API 1104 (19 th ed.1999, 10/31/01 errata) or Section IX of ASME Boiler and Pressure Code (2004 ed. Including addenda through July 1, 2005) by destructive test.				
	(b) Are welding procedures recorded in detail, including results of the qualifying tests?				
.227	(a) Are welders qualified according to Section 6, API Std. 1104 or Section IX, ASME Boiler and Pressure Vessel Code ? (Welders qualified under an earlier edition may weld but may not requalify under earlier edition)				
	(b) Welders may be qualified under section I of Appendix C to weld on lines that operate at < 20% SMYS .				
.229	(a) Are all welders on compressor station piping and components qualified by means other than nondestructive testing?				
	(b)&(c) Has the welder welded with this same process and has a weld been tested and found acceptable according to Section 6 or 9, API Std. 1104 at least twice each calendar year not to exceed 7 ½ months? (Welders qualified under an earlier edition may weld but may not requalify under earlier edition). For “low stress” welder requalification requirements, references 192.229(d).				
.231	Is the welding operation protected from the weather conditions that could impair the quality of the completed weld?				
.233	Miter joints (consider pipe alignment)				
.235	Are welding surfaces clean, free of foreign material, and aligned in accordance with the qualified welding procedure?				
Repair and Removal of Weld Defects					
.245	(a) Are cracks longer than 8% of the weld length removed? For each weld that is repaired, is the defect removed down to clean metal and is the pipe preheated if conditions demand it?				
	(b) Are the repairs inspected to insure acceptability?				

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.13(c)	WELDING AND WELD DEFECT REPAIR/REMOVAL REQUIREMENTS	S	U	N/A	N/C
	If additional repairs are required, are they done in accordance with qualified written welding procedures to assure minimum mechanical properties are met?				
	(c) Repair of a crack or any other defect in a previously repaired area must be in accordance with a written weld repair procedure, qualified under §192.225				

.13(c)	WELD INSPECTIONS and NONDESTRUCTIVE TESTING REQUIREMENTS	S	U	N/A	N/C
.241	Are inspectors performing visual inspection to check for adherence to the welding procedure and the acceptability of welds as per Section 9, API Std. 1104, except for Subsection 9.7 for depth of undercutting adjacent to the root bead?				
.243	(a) Is a detailed written NDT procedure established and qualified?				
	(b) Are there records to qualify procedures?				
	(c) Is the radiographer trained and qualified? (Level II or better)				
	(d) Are the following percentages of each days field butt welds nondestructively tested:				
	(1) 10% in Class 1 locations.				
	(2) 15% in Class 2 locations				
	(3) 100% in Class 3 and 4 locations, river crossings, within railroad or public highway ROWs, tunnels, bridges, overhead road crossings: however, if impracticable may test not less than 90% .				
	(4) 100% at pipeline tie-ins.				
	(e) Is a sample of each welder's work for each day nondestructively tested? (see code for exceptions)				
	(f) Do the radiograph records and daily reports show:				
	- Number of welds made.				
	- Number of welds tested.				
	- Number of welds rejected.				
	- Disposition of rejected welds.				
	- Is there a correlation of welds and radiographs to a bench mark? (Engineering station or survey marker)				

.301	CONSTRUCTION REQUIREMENTS	S	U	N/A	N/C
.303	Are comprehensive written construction specifications available and adhered to?				
.305	Are inspections performed to check adherence to the construction specifications?				
.307	Is material being visually inspected at the site of installation to insure against damage that could impair its serviceability?				
.309(a)	Are any defects or damage that impairs the serviceability of a length of steel pipe such as a gouge, dent, groove, or arc burn repaired or removed?				
.309(c)	If repairs are made by grinding, is the remaining wall thickness in conformance with the tolerances in the pipe manufacturing specifications or the nominal wall thickness required for the design pressure of the pipe?				
.313(b)	If a circumferential weld is permanently deformed during bending, is the weld nondestructively tested?				
.319(a)	When pipe is placed in the ditch, is it installed so as to fit the ditch, minimize stresses, and protect the pipe coating from damage?				
.319(b)	Does backfill provide firm support under the pipe and is the ditch backfilled in a manner that prevents damage to the pipe and coating from equipment or the backfill material?				
.461(c)	Is the external protection coating inspected (by jeeping, etc.) prior to lowering the pipe into the ditch?				

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.301	CONSTRUCTION REQUIREMENTS	S	U	N/A	N/C
.325(a)	Is there 12 inches clearance between the pipeline and any other underground structure? If 12 inches cannot be attained, are adequate provisions made to protect the pipeline from damage that could result from the proximity of the other structure?				
.327(a)	- Is pipe in a Class 1 location installed with 30 inches of cover in normal soil , or 24 inches of cover in consolidated rock ?				
	- Is pipe in Class 2, 3, and 4 locations, drainage ditches of public roads and railroad crossings, installed with 36 inches of cover in normal soil or 24 inches of cover in consolidated rock?				
	- Does pipe installed in a river or harbor have 48 inches of cover in soil or 24 inches of cover in consolidated rock ?				
	- If the above cover cannot be attained, is additional protection provided to withstand anticipated external loads?				

.451	CORROSION REQUIREMENTS	S	U	N/A	N/C
.455(a)	(1) Does the pipeline have an effective external coating and does it meet the coating specifications?				
	(2) Is a cathodic protect. system installed or being provided for? (refer. ADB note below)				
.471(a)	Are test leads mechanically secure and electrically conductive?				
.417(b)	Are test leads attached to the pipe by cadwelding or other process so as to minimize stress concentration on the pipe?				
.471(c)	Are bare test lead and the connection to the pipe coated?				
.476	Systems designed to reduce internal corrosion				
	(a) <u>New construction</u>				
	(b) Exceptions – offshore pipeline and systems replaced before 5/23/07				
	(c) Evaluate changes to existing systems				

.501	TESTING REQUIREMENTS	S	U	N/A	N/C
.503(a)	(1) Is a hydrostatic pressure test planned to substantiate the MAOP?				
	(2) If the pipeline has been hydrostatically tested, have all potentially hazardous leaks been located and eliminated?				
.505(a)	- Is there a specified hydrostatic pressure testing procedure?				
	- Is the specified test pressure equal to: 1.1 x MAOP for Class 1 locations, 1.25 x MAOP for Class 2 locations, and 1.5 x MAOP for Class 3 and 4 locations?				
.505(c)	For pipelines which operate at 30% of more of SMYS , is the minimum test duration for the pipeline at least 8 hours? (Strength Test)				
.505(e)	Is the minimum test duration for pretested fabricated units and short sections of pipe at least 4 hours?				
.515(a)	Does the operator take every reasonable precaution to protect the general public and all personnel during the test?				
.515(b)	Does the operator insure that the test medium is disposed of in a manner that will minimize damage to the environment?				
.517 (a)	Do the test records include the following:				
	(1) Operator's name, name of operator's employee responsible for making the test, and the name of the test company used.				
	(2) Test medium used.				
	(3) Test pressure.				

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.501	TESTING REQUIREMENTS	S	U	N/A	N/C
	(4) Test duration.				
	(5) Pressure recording charts, or other record of pressure readings.				
	(6) Elevation variations, whenever significant for the particular test.				
	(7) Leaks and failures noted and their disposition.				

.801 - .809	OPERATOR QUALIFICATION FIELD VERIFICATION	S	U	N/A	N/C
	Operator Qualification - Use PHMSA Form 15 Operator Qualification Field Inspection Protocol Form if applicable to the project.				

Leave this list with the operator.

Recent Applicable PHMSA Advisory Bulletins (Last 2 years)

<u>Number</u>	<u>Date</u>	<u>Subject</u>
ADB-06-01	January 17, 2006	Pipeline Safety: Notice to Operators of Natural Gas and Hazardous Liquid Pipelines To Integrate Operator Qualification Regulations into Excavation Activities
ADB-06-03	November 22, 2006	Pipeline Safety-Notice to Operators of Natural Gas and Hazardous Liquid Pipelines to Accurately Locate and Mark Underground Pipelines Before Construction-Related Excavation Activities Commence Near the Pipelines
ADB-07-01	April 27, 2007	Pipeline Safety: Senior Executive Signature and Certification of Integrity Management Program Performance Reports
ADB-07-02	September 6, 2007	Pipeline Safety: Updated Notification of the Susceptibility to Premature Brittle-Like Cracking of Older Plastic Pipe
ADB-08-02	February 28, 2008	Identifying Issues with Mechanical Couplings that Could Lead to Failure

For more PHMSA Advisory Bulletins, go to <http://ops.dot.gov/regs/advise.htm>