

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**. Refer to the last page of this form for **PIM** example entries.

Inspection Report	Post Inspection Memorandum
Inspector/Submit Date: _____	Inspector/Submit Date: _____ Peer Review/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):	
OPS Representative(s):	AFO Days:	
Summary:		
Findings:		

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Name of Operator:		
H.Q. Address:	System/Unit Address:	
Co. Official:	Activity Record ID#:	
Phone No.:	Phone No.:	
Fax No.:	Fax No.:	
Emergency Phone No.:	Emergency Phone No.:	
Persons Interviewed	Titles	Phone No.
Company Construction Maps (copies for Region Files):		
Description of Construction <i>(not required if covered in the PIM):</i>		

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 For any item marked U, N/A, or N/C, there must be a note indicating why.

DESIGN & CONSTRUCTION							
.51	MATERIALS SPECIFICATIONS			S	U	N/A	N/C
	.55	Qualification of Pipe # 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: $P = (2St/D) \times F \times E \times T$					
	.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						
	.145	Does each valve meet minimum requirements, or the equivalent, of API 6A, API 6D, MSS SP70, MSS SP71, or MSS SP78?					
	.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?					
.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?					

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.163	DESIGN of COMPRESSOR STATION (Cont)	S	U	N/A	N/C
	.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? 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?				
	.221	WELDING			
.229 Were welders qualified by radiography and is there a qualification record available which meets the requirements of Section 6, API Std. 1104 ?					
.229(a) Are all welders on compressor station piping and components qualified by means other than nondestructive testing?					
.229(b) Has the welder welded with this same process and has a weld been tested and found acceptable within the last 6 months ?					
.231 Is the welding operation protected from the weather conditions that could impair the quality of the completed weld?					
.235 Are welding surfaces clean, free of foreign material, and aligned in accordance with the qualified welding procedure?					
.241 Are inspectors performing visual inspection to check for adherence to the welding procedure and the acceptability of welds as per Section 6, API Std. 1104, except for Subsection 6.9 for depth of undercutting adjacent to the root bead?					
2. If additional repairs are required, are they done in accordance with qualified written welding procedures to assure minimum mechanical properties are met?					

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		S	U	N/A	N/C
.221	WELDING (Cont)				
	.243(a) Is a detailed written NDT procedure established and qualified?				
	.243(b) Are there records to qualify procedures?				
	.243(c) Is the radiographer trained and qualified? (Level II or better)				
	.243(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. 100% in Class 3 and 4 locations, river crossings, within railroad or public highway (3) ROWs, tunnels, bridges, overhead road crossings: however, if impracticable may test not less than 90% . (4) 100% at pipeline tie-ins.				
	.243(f) Do the radiograph records and daily reports show: 1. Number of welds made. 2. Number of welds tested. 3. Number of welds rejected. 4. Disposition of rejected welds. 5. Is there a correlation of welds and radiographs to a bench mark? (Engineering station or survey marker)				
.245(a) 1. Are cracks longer than 8% of the weld length removed? 2. For each weld that is repaired, is the defect removed down to clean metal and is the pipe preheated if conditions demand it?					
.245(b) 1. Are the repairs inspected to insure acceptability? 2. If additional repairs are required, are they done in accordance with qualified written welding procedures to assure minimum mechanical properties are met?					
.301	CONSTRUCTION REQUIREMENTS				
	.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?				

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.301	CONSTRUCTION REQUIREMENTS (Cont)	S	U	N/A	N/C
	.461(c) Is the external protection coating inspected (by jeeping, etc.) prior to lowering the pipe into the ditch?				
	.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) <ol style="list-style-type: none"> 1. Is pipe in a Class 1 location installed with 30 inches of cover in normal soil, or 24 inches of cover in consolidated rock? 2. 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? 3. Does pipe installed in a river or harbor have 48 inches of cover in soil or 24 inches of cover in consolidated rock? 4. If the above cover cannot be attained, is additional protection provided to withstand anticipated external loads? 				
.451	CORROSION REQUIREMENTS				
	.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?					
.501	TESTING REQUIREMENTS				
	.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) <ol style="list-style-type: none"> 1. Is there a specified hydrostatic pressure testing procedure? 2. 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 Do the test records include the following:				
	(a) Operator's name, name of operator's employee responsible for making the test, and the name of the test company used. (b) Test medium used. (c) Test pressure. (d) Test duration. (e) Pressure recording charts, or other record of pressure readings. (f) Elevation variations, whenever significant for the particular test. (g) Leaks and failures noted and their disposition.				

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Discuss with operator:

Pipeline Safety Advisory Bulletin ADB-03-06, November 12, 2003

Corrosion Threat to Newly Constructed Gas Transmission and Hazardous Liquid Pipelines

(reference <http://www.gpoaccess.gov/fr/advanced.html> ; fr12no03N **Pipeline** Safety: Corrosion Threat to Newly Constructed Gas and Hazardous Liquid Pipelines).

PIM Entry Examples

POST INSPECTION MEMORANDUM (PIM)			
Name of Operator:	NoFail Pipeline Company	OPID #:	2314
Name of Unit(s):	Boardwalk and Parkplace	Unit # (s):	234, 278
Records Location:	Pipelineville, NC		
Unit Type & Commodity:	Interstate Natural Gas (A3) – Natural Gas		
Inspection Type:	Standard	Inspection Date(s):	12/24-27/03
OPS Representative(s):	John Brown	AFO Days:	4
Summary:			
<p>On December 24-27, I performed a standard inspection of the NoFail pipeline facilities contained in units 234 and 278. The evaluation report contains a component description of the two units. The inspection included a records and facilities review. A Joint O&M inspection was conducted in 2003 and no procedures were evaluated during this inspection. Pre-inspection preparation identified previous valve inspection violations: I reviewed all of the company's valve inspection records and five aboveground valve settings and did not identify any potential non-compliances. Right-of-way inspection and periodic cathodic protection checks were conducted between Chance, NC to Community Chest, NC and from Reading, SC to Ventnor, SC. The Mighty Big'nWet River crossing was evaluated for atmospheric corrosion.</p>			
Findings:			
<p>The pipeline facilities appeared to be well maintained and serious concerns were noted: surface rusting was observed at the Pipelineville compressor station. No pitting was observed. NoFail is in the process of repainting all of the aboveground piping at this facility.</p> <p>The following concerns were noted from the records review:</p> <ol style="list-style-type: none"> 1. The rectifiers in Unit 234 were inspected on 3 times in 2001, twice in 2002, and five times in 2003. Copies of the subject records were obtained. 2. The right-of-way in Unit 234 was densely overgrown such that aerial patrols would be ineffective. Pictures were taken of representative areas. 			