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| **Inspection Report** | | | | | | | **Post Inspection Memorandum** | | | | | | | | | |
| **Inspector/Submit Date:** | | |  | | | | **Inspector/Submit Date:**  **Compliance Reference**  **Supervisor approval date:** | | | |  | | | | | |
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|  | | | | | | | | | | | | | | | | |
| **Name of Operator:** | |  | | | | | | | | | | |  | |  | |
| **Name of Unit(s):** | |  | | | | | | | | | | |  | |  | |
| **Records Location:** | |  | | | | | | | | | | | | | | |
| **Commodity:** Natural Gas | | | |  | | | | | | | | | | | | |
| **Inspection Type:** *(records, field or records and field)* |  | | | | | | | **Inspection Date(s):** | | | |  | | | | |
| **PUC Representative(s):** | | |  | | | | | | **Field Days:** | | | | |  | | |
| **Persons Interviewed** | | | | | | **Titles** | | | | | **Phone No.** | | | | | |
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| **Construction plans reviewed?** : | | | | | | |  | | | | | | | | | |
| **PA One Call Information (**192.614 a & d, 192.13c) | | | | | | |  | | | | | | | | | |
| **One Call #:** | | | | | | |  | | | | | | | | | |

| **Summary of inspection** *include list of welder(s) and qual. dates; list company inspector(s) and engineer(s); list contractor(s)***:** |
| --- |
|  |

| **Comments and Findings** *include any**violations found, clarify all U, N/A and N/C checked***:** |
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| **Description of Construction** *include length of project (ft), number of valves, number of planned services, planned bores & casing locations; describe planned corrosion control system, etc* |
|  |

| **DESIGN REQUIREMENTS** | | | | | | | **S** | **U** | **N/A** | **N/C** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **.51** | **MATERIALS SPECIFICATIONS** | | | | | |  | | | |
|  |  |  |  | |  | |  | | | |
|  |  | .55 | Qualification of Pipe | | *Record pipe specifications* | |  | | | |
|  |  |  | **▪** | Manufacturer: |  |  |  | | | |
|  |  |  | **▪** | Manufacturing Standard: |  |  |  | | | |
|  |  |  | **▪** | Pipe Grade: |  |  |  | | | |
|  |  |  | **▪** | Outside Diameter (D): |  |  |  | | | |
|  |  |  | **▪** | Wall Thickness (t): |  |  |  | | | |
|  |  |  | **▪** | Type of Longitudinal Seam: |  |  |  | | | |
|  |  |  | **▪** | Specified Min.Yield Strength : |  |  |  | | | |
|  |  |  | **▪** | Joint Design – degree of Bevel: |  |  |  | | | |
|  |  |  | **▪** | External Coating: |  |  |  | | | |
|  |  |  | **▪** | Transmission, HP distr., or distribution: |  |  |  | | | |
|  |  |  | **▪** | Minimum distance between welds: |  |  |  | | | |
|  |  |  | **▪** | Calculate percent SMYS  Proposed MAOP  Proposed test pressure |  |  |  | | | |
|  |  |  |  |  |  |  |  | | | |
|  |  |  |  |  |  |  |  | | | |
|  |  | .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** | | | |  |  |  |  |
|  |  | .112 | If the pipeline is designed to the alternative MAOP standard in 192.620 (80% SMYS) does it meet the additional design requirements for:  General standards, fracture control, plate and seam quality control, mill hydrostatic testing, coating, fittings and flanges, and compressor stations? | | | |  |  |  |  |
|  |  | .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) | | | |  |  |  |  |

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| **.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? |  |  |  |  |
|  |  | .150 | §192.150 Passage of internal inspection devices  (a) Except as provided in paragraphs (b) and (c) of this section, each new transmission line and each replacement of line pipe, valve, fitting, or other line component in a transmission line must be designed and constructed to accommodate the passage of instrumented internal inspection devices. |  |  |  |  |
|  |  | .150 | (b) This section does not apply to:  (1) Manifolds;  (2) Station piping such as at compressor stations, meter stations, or regulator stations;  (3) Piping associated with storage facilities, other than a continuous run of transmission line between a compressor station and storage facilities;  (4) Cross-overs;  (5) Sizes of pipe for which an instrumented internal inspection device is not commercially available;  (6) Transmission lines, operated in conjunction with a distribution system which are installed in Class 4 locations;  (7) Offshore transmission lines, except transmission lines 10¾ inches (273 millimeters) or more in outside diameter on which construction begins after December 28, 2005, that run from platform to platform or platform to shore unless-  (i) Platform space or configuration is incompatible with launching or retrieving instrumented internal inspection devices; or  (ii) If the design includes taps for lateral connections, the operator can demonstrate, based on investigation or experience, that there is no reasonably practical alternative under the design circumstances to the use of a tap that will obstruct the passage of instrumented internal inspection devices; and  (8) Other piping that, under §190.9 of this chapter, the Administrator finds in a particular case would be impracticable to design and construct to accommodate the passage of instrumented internal inspection devices. |  |  |  |  |
|  |  | 0.150 | (c) An operator encountering emergencies, construction time constraints or other unforeseen construction problems need not construct a new or replacement segment of a transmission line to meet paragraph (a) of this section, if the operator determines and documents why an impracticability prohibits compliance with paragraph (a) of this section. Within 30 days after discovering the emergency or construction problem the operator must petition, under §190.9 of this chapter, for approval that design and construction to accommodate passage of instrumented internal inspection devices would be impracticable. If the petition is denied, within 1 year after the date of the notice of the denial, the operator must modify that segment to allow passage of instrumented internal inspection devices. |  |  |  |  |
|  |  | .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 71/2 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 21/2 miles of a valve |  |  |  |  |
|  |  | .199 | Are planned pressure relief and pressure limiting devices designed and installed correctly? |  |  |  |  |
|  |  | .201 |  |  |  |  |  |

| **Comments and Findings** *include any**violations found, clarify all U, N/A and N/C checked***:** |
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| **.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** (19th ed.1999,  10/31/01 errata) or **Section IX of** **ASME Boiler and Pressure Code** (2004 ed. Inc addenda through July 1, 2005) by destructive test. *(List how company welds pick 1)* api 1104 or ASME Boiler |  |  |  |  |
|  | (b) Are welding procedures recorded in detail, including results of the qualifying tests? |  |  |  |  |
|  | Note: Alternate welding procedures criteria are addressed in API 1104 Appendix A, section A.3. |  |  |  |  |
|  | .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? |  |  |  |  |
| 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?  Note: If the alternative acceptance criteria in API 1104 Appendix A are used, has the operator performed an Engineering Critical Assessment (ECA)? | |  |  |  |  |
| .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) |  |  |  |  |

| **Comments and Findings** *include any**violations found, clarify all U, N/A and N/C checked***:** |
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| **.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? | |  |  |  |  |
|  |  | .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? |  |  |  |  |
|  |  | .328 | If the pipeline will be operated at the alternative MAOP standard calculated under 192.620 (80% SMYS) does it meet the additional construction requirements for:  Quality assurance, Girth welds, depth of cover, initial strength testing, and interference currents? | |  |  |  |  |

| **Comments and Findings** *include any**violations found, clarify all U, N/A and N/C checked***:** |
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| **.451** | **CORROSION CONTROL REQUIREMENTS** | | | | **S** | **U** | **N/A** | **N/C** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | How was the type of CP design chosen?  Are there calculations and/or field measurements to justify? | | | |  |  |  |  |
|  |  | .455(a) | (1) | Does the pipeline have an effective external coating and does it meet the coating specifications? |  |  |  |  |
|  |  |  | (2) | Is a cathodic protection 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 *(applies to transmission line only)*  (a) New construction | |  |  |  |  |
|  |  |  | (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. |  |  |  |  |
|  |  |  | (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. |  |  |  |  |

| **Comments and Findings** *include any**violations found, clarify all U, N/A and N/C checked***:** |
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| **CONSTRUCTION PERFORMANCE and RECORDS** | | **S** | **U** | **N/A** | **N/C** |
| --- | --- | --- | --- | --- | --- |
| .225 | Test Results to Qualify Welding Procedures |  |  |  |  |
| .227 | Welder Qualification |  |  |  |  |
| .241 (a) | Visual Weld Inspector Training/Experience |  |  |  |  |
| .243 (b)(2) | Nondestructive Technician Qualification |  |  |  |  |
| (c) | NDT procedures |  |  |  |  |
| (f) | Total Number of Girth Welds |  |  |  |  |
| (f) | Number of Welds Inspected by NDT |  |  |  |  |
| (f) | Number of Welds Rejected |  |  |  |  |
| (f) | Disposition of each Weld Rejected |  |  |  |  |
| .303 | Construction Specifications |  |  |  |  |
| .325 | Underground Clearance |  |  |  |  |
| .327 | Amount, Location, Cover of each Size of Pipe Installed |  |  |  |  |
| .328 | If the pipeline will be operated at the alternative MAOP standard calculated under 192.620 (80% SMYS) does it meet the additional construction requirements for:  Quality assurance, Girth welds, depth of cover, initial strength testing, and interference currents? |  |  |  |  |
| .455 | Cathodic Protection |  |  |  |  |

| **OPERATIONS and MAINTENANCE PERFORMANCE and RECORDS** | | **S** | **U** | **N/A** | **N/C** |
| --- | --- | --- | --- | --- | --- |
| .603(b) | .751 Prevention of Accidental Ignition (hot work permits) |  |  |  |  |
| .603(b) | .225(b) Welding – Procedure |  |  |  |  |
| .603(b) | .227/.229 Welding – Welder Qualification |  |  |  |  |
| .603(b) | .243(b)(2) NDT – NDT Personnel Qualification |  |  |  |  |
| .709 | .243(f) NDT Records (**Pipeline Life**) |  |  |  |  |
| .709 | Repair: pipe (**Pipeline Life**); Other than pipe (**5 years**) |  |  |  |  |

| **.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 *(tapping crew, purging, starting up operation must be qualified).* |  |  |  |  |
| **.620** | If performance of a construction task associated with implementing the alternative MAOP standard in 192.620 can affect the integrity of the pipeline, the operator treats those tasks as “covered tasks” and implements the requirements of subpart N as appropriate. |  |  |  |  |

| **Comments and Findings** *include any**violations found, clarify all U, N/A and N/C checked***:** |
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Click icons to add photosand perform OQ Protocol 9 when fusion or other tasks are witnessed.