

QUESTIONS

- 1 Which of the fluid services does API 570 deem optional for inspection?
- 2 Which process stream is excluded from the scope of API 570?
- 3 API 570 applies to which of the following piping systems for process fluids?
- 4 Inspections of boiler feed water is considered optional per API 570?
- 5 What code provides guidance for Fitness for Service (FFS)?
- 6 What code provides guidance for Risk Based Inspection (RBI)?
- 7 What is the API recommended practice for "Fitness-For-Service".
- 8 What is the API recommended practice for "Risk-Based Inspection".
- 9 Which of the following shall be used for inspection and testing of valves?
- 10 Which ASME document is used for fitness for service?
- 11 An imperfection of a type or magnitude exceeding the acceptable criteria is;
- 12 If you were to replace a 4 NPS branch on a NPS 10 main line with another size, which unreinforced pipe size would not be an alteration?
- 13 What is the API 570 acceptable examination point for a 14" NPS pipe?
- 14 What is the greatest size that an examination point can be for a CML on a NPS 4 pipe?
- 15 Can the Examiner evaluate examinations?
- 16 Per API 570, the examiner is not required to be;
- 17 You want to add a 3/4" bleed valve without reinforcement. What type of work will you be performing?
- 18 According to API 570, auxiliary small-bore piping is defined as;
- 19 What size pipe is considered to be Small Bore Piping (SBP)?
- 20 What material(s) is/are easily worn by mechanical damage under high velocity conditions?
- 21 Who is responsible for developing, implementing, executing and assessing inspection systems and inspection procedures?
- 22 Who is responsible for implementing an effective MOC process?
- 23 Who is responsible to the owner/user for design, engineering review, rating, analysis or evaluation of piping systems?
- 24 Who is responsible to the owner/user for design, engineering review, rating, analysis or evaluation of piping systems?
- 25 Who is responsible to the owner/user for materials, equipment, quality control and workmanship necessary to repair/maintain piping systems?
- 26 During replacement of a 150' section of NPS 12" propylene piping system 100% material verification is required. PMI using portable x-ray fluorescence test method was used for material verification. Who is responsible for making sure this material meets the code/spec?
- 27 Who is responsible to the owner/user for determining requirements of API 570 for inspection, examination, quality assurance and testing are met.
- 28 Who is responsible for extending the scope of inspection where justified by inspection results?
- 29 Who is responsible for notifying owner/user of non-conformances and for making repair/other mitigation recommendations?
- 30 Who evaluates and/or accepts examination results?
- 31 What code provides guidance for NDE personnel qualification?
- 32 Who develops the inspection plan?

- 33 At what temperature should a Corrosion Specialist be consulted about the inspection plan?
- 34 What code provides guidance for Valve Inspection and Testing?
- 35 Who assesses preferential weld corrosion?
- 36 Who assesses crack-like flaws and/or environmental cracking?
- 37 Crack-like flaws and environmental cracking noted during in-service inspections must be assessed by?
- 38 Detection of interior surface (ID) breaking planar flaws when inspecting from the external surface (OD), the owner/user shall specify;
- 39 During inspection of flange connections, a fastener is considered to be acceptably engaged if ;
- 40 Fasteners for flanges should be fully engaged. If any should not be fully engaged, they are considered acceptably engaged if the lack of complete engagement is not more than;
- 41 Each owner/user organization_____ be audited periodically to determine if the authorized inspection agency is meeting the requirements of governing standards.
- 42 Who chooses to conduct a RBI assessment?
- 43 Safety precautions shall be included when preparing piping systems for inspection and maintenance activities to prevent all but:
- 44 When should all tools, equipment, and PPE used during piping work (i.e inspection, NDE, pressure testing, repairs and alterations.) be inspected for damage or operability.
- 45 Before starting any piping inspection, the inspector or examiner should obtain permission to work in the area from;
- 46 Who reviews inspection history, prior repairs, and current inspection plan prior to performing inspections?
- 47 Which type of inspection or surveillance is not covered in API 570?
- 48 A NPS 4" hydrogen piping system is being changed to propane service. What should the inspector do?
- 49 Piping internal inspections should be conducted as outlined in what code?
- 50 During in-service UT thickness examination, localized thinning is discovered adjacent to the weld on a 36 inch diameter furnace transfer line. What is the best inspection method to use to determine the extent of the deterioration during the next schedule inspection?
- 51 Internal visual inspections of piping components are;
- 52 Large bore piping should be inspected per;
- 53 Who performs On-Stream Inspections?
- 54 Who authorizes/approves work performed by an examiner?
- 55 Who authorizes and/or approves work performed by examiners?
- 56 Who obtains thickness measurements?
- 57 Who consults with a corrosion-specialist when short term corrosion-rates change significantly?
- 58 Who ensures individuals conducting thickness measurements are trained and qualified?
- 59 Who is responsible for obtaining thickness measurements.
- 60 Who should be consulted when you find the short term corrosion rate changed significantly?
- 61 Who performs external inspections?
- 62 Who is responsible for inspection record keeping and repair inspection?
- 63 Threaded components and other flanged spool pieces should be inspected carefully because?

- 64 When corrosion product buildup is noted at pipe support contact areas, it may be necessary to lift the pipe off such supports for inspection. Prior to lifting an in-service line, what should be done?
- 65 The inspector chooses to do a more extensive inspection on an injection point, inspection should be applied beginning _____ upstream and continuing _____ downstream of injection point.
- 66 When separating an injection point from a circuit the separate circuit should start _____ upstream, and continuing _____ downstream.
- 67 To insure that injection points are thoroughly inspected and on a regular schedule they should be.....
- 68 When performing a more extensive inspection of an injection point, the area inspected should begin _____ upstream of the injection nozzle and continuing for _____ downstream of the injection point.
- 69 When designating an injection point circuit for the puposes of inspection, the recommended upstream limit should extend _____ upstream of the injection point whichever is greater.
- 70 A refractory lining in a 48" furnace transfer line serves a insulation and erosion-resistant liner. What is the best inspection technique to detect failed/missing sections of liner?
- 71 CML's may be eliminated or the number reduced under which of the following conditions?
- 72 Multiple thickness measurements were taken at an examination point. The measurements recorded are as follows; 0.304 inch, 0.312 inch, 0.301 inch, 0.307 inch and 0.311 inch. Which of the these thicknesses should be used to calculate the corrosion-rate,
- 73 CML locations can be reduced for high temperature/low velocity sulfur process streams because the sulfur lines;
- 74 You need to select CML's on a line that is next to a highly populated area and runs at extremely high pressure. What considerations are needed when making this selection.
- 75 CML's can be eliminated when meeting all of the following characteristics, except.....
- 76 At what temperature should UT measurements be compensated for temperature?
- 77 Pipe size where UT is generally used for thickness measurements?
- 78 What inspection technique is preferred for a Class 2 piping system, NPS 1 that operates at 225 deg F?
- 79 Who approves lower pressures for a pressure test, when used as a tightness test?
- 80 What is the minimum flash point of hydrocarbons used for leak testing?
- 81 What materials must be leak tested with low chloride water and must be dried after hydrostatic testing?
- 82 What materials are subjected to polytheonic acid stress-corrosion cracking?
- 83 If using a flammable liquid during a leak test the flash point must be greater than _____.
- 84 Which pipe material should be hydrotested with potable water or steam condensate?
- 85 What is an alternative to hydrostatic testing a new piping systems due to temperature, structural or process limitations?
- 86 During a pressure test of a pipe that is greater than 2" thick, what must the metal temperature be to prevent brittle fracture?

- 87 During a pressure test of a pipe that is less than or equal to 2" thick, what must the metal temperature be to prevent brittle fracture?
- 88 What materials are subject to temper-embrittlement?
- 89 Who performs PMI testing?
- 90 Who verifies new materials are consistent with selected/specified requirements?
- 91 Who designates the need for further verification when an incorrect material fails (i.e. CS installed in a chrome circuit fails)?
- 92 Who determines the need for and extent of PMI for existing alloy systems?
- 93 What code provides guidance for material verification (PMI)?
- 94 Extent of material verification used for repairs or alterations of alloy piping systems is determined by;
- 95 Who is responsible for review/approval of RBI assessments?
- 96 Thickness Inspection interval was modified for a Class 1 piping system by RBI methods. The RBI should be reviewed and approved at intervals not to exceed?
- 97 Who is responsible for establishing inspection intervals?
- 98 Inspection intervals shall be reviewed and adjusted after?
- 99 A piping system is changing service, whose responsibility is it to determine the supplemental inspection interval for the new service?
- 100 Inspection of a Class 3 piping system revealed a thickness of .427 inch. The minimum required thickness of this piping system is .217 inch. Corrosion rate calculations indicated a 0.035 inch/yr corrosion-rate. When should the next thickness inspection be performed?
- 101 What is the maximum interval for thickness measurements of an injection point circuit?
- 102 Recent thickness measurements determined the actual thickness of a Class 2 piping circuit to be 0.422". This circuit has a minimum required thickness of 0.350" and corrosion-rate of 0.009". When should the next inspection be performed?
- 103 Owner/User's are required to maintain permanent and progressive records of piping systems. Which of the following is not required to be included in the piping records?
- 104 Who is responsible for establishing inspection intervals for thickness measurements?
- 105 Who maintains certification records for examiners?
- 106 Who maintains records of process piping fluids handled, including their classifications?
- 107 The piping classification systems used to determine the extent and frequency of inspections is based on which of the following?
- 108 What is the API 570 Classification for a piping system containing hydrocarbon that will slowly vaporize during release such as those operating below the flash point?
- 109 Per API 570, what pipe classification should be given to on-site hydrocarbons that will not vaporize when released?
- 110 Piping systems that are known to have a remaining life of over _____ or that are adequately protected against external corrosion need not be included for the NDE inspection recommended by API 570. However the insulation should be observed regularly.
- 111 Piping systems that are known to have a remaining life of over 10 years or are adequately protected against external corrosion need not be inspected by the inspector but the insulation covering should be inspected regularly by;
- 112 On a jacketed cryogenic piping system with a known remaining life of over 10 years, which type of inspection is the piping system exempt from?

- 113 On a jacketed cryogenic piping system with a known remaining life of over 10 years, which type of inspection is it exempt from?
- 114 What size piping is normally optional with respect to inspection in accordance with API 570?
- 115 Secondary SBP class 1 piping systems shall be inspected what interval?
- 116 A new Class 1 secondary process line is being installed. What should the external inspection interval be for this new line?
- 117 The inspection of SBP associated with instruments and machinery is;
- 118 What factors could make threaded connections be upgraded to welded components?
- 119 What code provides guidance for inspection, testing and maintenance of relief valves?
- 120 Who selects corrosion-rate that best reflects the current process stream?
- 121 Thicknesses of a 6" NPS fitting installed January 1992 in a Class 3 piping system with an initial thickness of .352" was found to be .331" thick August 1997 and .317 May 2002. What is the short term corrosion rate for this fitting?
- 122 How is the remaining life determined when the short-term and long-term corrosion rates are different?
- 123 When is it not possible to use statistical analysis of thickness data to assess corrosion-rates and remaining life?
- 124 Service conditions are changing for an existing system and there is no existing piping systems in similar service and no published data available to determine the corrosion-rate of this new service. How long after the change in service must new thickness be taken?
- 125 A new piping system is being installed that will have a process stream with unknown corrosion characteristics. How long should the line be in service before taking subsequent thickness readings to enable calculation of corrosion-rates?
- 126 If calculations indicate that an inaccurate corrosion-rate had been recorded in a previous inspection, what is the correct action to take?
- 127 Who approves inspection interval revision or deferrals?
- 128 When MAWP is recalculated for the continued use of piping systems, how is the thickness to be used in the calculation determined?
- 129 Recent thickness reading of .190" was found on a Standard Wall NPS 12 piping system of unknown material. The piping system operates at 500 degrees F. What is the current MAWP?
- 130 An existing piping system was inspected and found to have a remaining thickness of 0.173". No initial thickness readings were taken on this standard weight NPS 8 seamless piping system. Operating temperature is 300 deg F and allowable stress is 19000 p
- 131 Components subject to localized thickness loss can be evaluated using the principles of what code?
- 132 During external inspection of a concrete-to-air interface for a buried pipe that does not have cathodic protection it was noted that moisture was penetrating the failed seal at the concrete-to-air interface. Since this piping is 11 years old, what is the correct action by the inspector?
- 133 PMI test records should contain all of the following, except for;
- 134 Who maintains permanent and progressive records of piping systems and pressure-relieving devices?
- 135 An inspection record that documents future inspections and repairs should include data on areas of;
- 136 What types of failures must be reported to the owner/user?

- 137 Who authorizes repairs and alterations?
- 138 Who approves potential alterations?
- 139 Who approves potential alterations?
- 140 Who designates inspection hold points?
- 141 Who is responsible for designating all hold points during repair and alteration sequence?
- 142 Authorization for alteration work to a piping system may not be given without prior consultation with, and approval by the:
- 143 Who approves repair and alteration work at hold points?
- 144 Who approves repair and alteration work, after repairs and alterations are completed?
- 145 Who approves the use of welding to repair cracks?
- 146 Who approves all proposed methods of design, execution, materials, welding procedures, examination and testing?
- 147 Who approves repair and alteration work at hold points?
- 148 Who approves repair and alteration work, after repairs and alterations are completed?
- 149 Who approves welding repair of cracks?
- 150 Who approves on-stream welding?
- 151 Who approves leaving repairs (welded enclosures) in place for a longer time?
- 152 Whose responsibility is it to determine if longitudinal cracks will propagate?
- 153 Who approves leaving temporary repairs (welded enclosures) in place for a longer time?
- 154 Who determines wall thickness is adequate to perform weld repair of minor leaks?
- 155 What must the material for a temporary plate patch be, unless another material is approved by the engineer?
- 156 A temporary repair may be made by fillet welding a properly designed plate patch over the pitted area if;
- 157 Who must approve installation of a fillet welded plate patch over localized pitting?
- 158 Who approves the design of temporary repairs or enclosures?
- 159 Who approves the design of temporary repairs or enclosures?
- 160 When can flush insert patches be used to repair damaged or corroded areas?
- 161 Insert patches (flush patches) may be used to repair a Class 1 piping system, provided the following requirement are met, with the exception of;
- 162 Cracks may be repaired by welding and can be considered a permanent repair if;
- 163 Who approves leaving a temporary leak sealing device in place for a longer time?
- 164 Who reviews and/or accepts leak sealing procedures?
- 165 Who approves leaving clamps or fillet welded patches in place for a longer time?
- 166 What code provides guidance for welding on In-Service Piping?
- 167 Who maintains records of welding procedures and welder qualifications?
- 168 Records for the welding procedure (WPS & PQR) and qualification records (WPQ) for welders performing repairs shall be maintained by;
- 169 Who verifies minimum preheat temperature is measured and maintained when used in lieu of PWHT?
- 170 Who approves the preheat exception for temporary repairs?
- 171 Who must be consulted about preheat alternatives in lieu of PWHT for seal welds, weld material buildup and welding clips?
- 172 Who approves preheat exceptions for temporary repairs?

- 173 What is the minimum preheat temperature when performing preheat in lieu of PWHT?
- 174 Who approves PWHT exceptions (i.e. use of preheat in lieu of PWHT) for repairs or alterations?
- 175 Who approves and/or develops procedures for local PWHT in lieu of 360 degree banding type PWHT?
- 176 Who approves use of preheat in lieu of PWHT for repairs or alterations?
- 177 Local PWHT may be substituted for 360° banding on local repairs on all materials, provided the following precautions and requirement(s) are applied:
- 178 What is the minimum preheat temperature when performing local PWHT in lieu of full encirclement PWHT?
- 179 Local PWHT may be considered for local piping repairs, except when;
- 180 New connections may be installed on existing piping provided;
- 181 Per API 570, materials used in making repairs or alterations shall be;
- 182 What code provides guidance for NDE Procedures?
- 183 Unless otherwise specified in API 570, acceptance of welded repairs shall include NDE in accordance with;
- 184 Who approves substituting NDE for hydro test after completing repairs, rerate or alteration?
- 185 Who performs UT flaw detection of closure welds and weld repairs?
- 186 When can NDE be used as a substitute for pressure testing after an alteration, rerating or repair?
- 187 A pressure test shall be performed after repair welding is completed, if deemed necessary by;
- 188 Who determines when a pressure test is required following welding?
- 189 Who performs rerate calculations?
- 190 What is required when a piping system is re-rated to a design temperature below MDMT?
- 191 When a piping system is rerated by increasing the temperature rating, which of the following isn't required by API 570?
- 192 Who approves re-rating of a piping system?
- 193 What is a close-interval potential survey is sed for;
- 194 What inspection method can be used to detect coating defects on buried coated pipes?
- 195 What code provides guidance for Cathodic Protection?
- 196 If you were performing an inspection from the inside of the pipe (in-line inspection), what technique would commonly be used?
- 197 What should be used when performing an inspection inside of a deep excavation to prevent the trench from collapsing?
- 198 A deep trench is dug to enable thickness measurements to be taken on a buried pipe. What must be done prior to acquiring the thickness measurements?
- 199 Surveying the route of buried piping should be performed at what interval?
- 200 At what interval should an evaluation of soil corrosivity on buried piping with a length greater than 100 ft and not cathodically protected be performed?
- 201 Piping periodically inspected by excavation "shall" be inspected in lengths of _____ at one or more location.
- 202 When inspecting an underground pipe where a section of the pipe is contained inside a casing pipe, the inspector should verify;
- 203 The leak test of buried pipe should be maintained for a period of _____.
- 204 What is an alternative to visual inspection of buried piping?

- 205 “Actively engaged as an authorized piping inspector” shall be defined as:
- 206 Which electrode should be used when installing a fillet weld patch for A333 Gr 6 pipe at less than 32 deg F (0 deg C) with a 5/32" electrode?
- 207 A severely corroded section of a pipe that is in propylene service is being repaired by installing a flush patch with full-penetration welds. How should these welds be inspected?
- 208 What is the meaning of "shall" in API 570?
- 209 What is the meaning of "should" in API 570?
- 210 When does the Nov 9th 2009 Edition of API 570 become effective?
- 211 What does API 570 Cover?
- 213 What is the intent of API 570?
- 214 What is the intent of API 570, with respect to the Owner?
- 215 What industries was API 570 developed for?
- 216 What organizations is API 570 intended for?
- 217 What are the limits of API 570?
- 218 Which non-metallic materials are included in the scope of API 570?
- 219 What interval is recommended for performing an external inspection on a class 3 piping system?
- 220 What is the interval for an injection point for UT or RT thickness inspection?
- 221 At what interval should an external inspection be performed on an injection point?
- 222 What percentage of insulated Class 2 piping is required to have follow-up inspection?
- 223 In accordance with API 570, what percentage of follow-up examination is required to evaluate damaged insulation for 300 Series SS, Class 1 piping system operating at 150 def F?
- 224 What is the maximum permitted undercut for a girth weld in a 6" Sch 40 piping system designed for normal fluid service?

ANSWERS

- 1 Class D fluid services as defined by ASME B31.3
- 2 Nitrogen gas at 150 psig or less
- 3 raw, intermediate, and finished petro-chemical products
- 4 optional
- 5 API 579
- 6 API 580
- 7 API 579
- 8 API 580
- 9 API 598
- 10 ASME FFS-1, Fitness-for-service.
- 11 a defect
- 12 2 NPS
- 13 A circle having a diameter not greater than 3 inch
- 14 2"
- 15 Yes, If trained and authorized by the owner/user
- 16 an authorized inspector
- 17 Repair
- 18 small-bore secondary piping that can be isolated from the primary piping systems
- 19 ≤ 2 " NPS
- 20 Copper and Aluminum
- 21 Owner/User
- 22 Owner/User
- 23 Engineer
- 24 Engineer
- 25 Repair Organization
- 26 Repair Organization
- 27 Authorized Inspector
- 28 Authorized Inspector
- 29 Authorized Inspector
- 30 Authorized Inspector
- 31 ASNT SNT-TC-1A
- 32 Authorized Inspector and/or Engineer
- 33 Temps above 750 degF AND Temps below ductile-to-brittle temperature of the pipe
- 34 API 598
- 35 Authorized Inspector
- 36 Engineer

37 Engineer
38 UT inspection be performed by a industry-qualified ultrasonic UT shear wave examiner
39 no more than one thread is not engaged
40 bolt is not less than flush with the face of the nut by no more than one thread
41 Should
42 Owner/User
43 complications at time of inspection or maintenance job
44 Before each use
45 responsible operating personnel
46 Authorized Inspector
47 Inspection of pump frequency
48 get initial thickness readings after no more than 3 months
49 API 510
50 methods and procedures similar to those outlined in API 510 or API 574
51 not normally performed
52 methods and procedures similar to those outlined in API 510
53 Authorized Inspector or Examiner
54 Authorized Inspector
55 Authorized Inspector
56 Authorized Inspector or Examiner
57 Authorized Inspector
58 Owner/User
59 Examiner or inspector
60 The corrosion specialist
61 Authorized Inspector AND Qualified operations or maintenance personnel
62 Authorized Inspector
63 they have a higher potential for installation of incorrect materials
64 extra care should be excercised
65 12in, at least 10 pipe diameters
66 12" or 3 pipe diameters which ever is greater, and second change in flow or 25 ft passed the first
change in flow whichever is less.
67 Separated into a separate circuit
68 12" , 10 pipe diameters
69 12" or 3 pipe diameters
70 Thermography
71 clean non-corrosive hydrocarbon product streams
72 0.307 inch
73 suffer from uniform thinning, independent of location in the piping system
74 More CML's should be selected because of the potential for emergency in the event of a leak
75 relatively noncorrosive piping systems
76 ≥ 150 deg F
77 > 1 " NPS
78 Radiographic profile

79 Owner/User
80 120 deg F
81 Austenitic Stainless Steel
82 Austenitic Stainless Steel
83 120 deg F.
84 300 Series SS
85 Pneumatic or hydropneumatic pressure test
86 30 deg F above MDMT
87 10 deg F above MDMT
88 Low Chromes
89 Authorized Inspector or Examiner
90 Authorized Inspector
91 Authorized Inspector
92 Owner/User
93 API 578
94 Owner/User
95 Authorized Inspector and Engineer
96 5 years
97 Authorized Inspector or Owner/User
98 each inspection or significant change in operation conditions
99 Piping Inspector or Owner-User
100 3 years
101 lesser of 3 years or 1/2 the remaining life
102 Thickness measurement in 4.5 years
103 Name of original design organization
104 The inspector or Owner/User
105 Examiner's Employer
106 Owner/User
107 process stream and design pressure rating AND design temperature rating
108 Class 2
109 Class 3
110 10 years
111 Operating or other personnel
112 Thickness testing and CUI Inspection
113 Thickness and CUI Inspection
114 ≤ 2 " NPS
115 Every 5 years AND SAME as requirements as primary process piping.
116 5 years
117 optional
118 Threaded component subject to fatigue damage or associated with machinery
119 API 576
120 Authorized Inspector and Corrosion Specialist
121 .003"

122 corrosion-rate that best reflects the current process
123 Localized corrosion is unpredictable
124 3 months
125 3 months
126 corrosion-rate shall be adjusted to agree with the actual rate found
127 Authorized Inspector
128 remaining thickness minus twice the estimated corrosion allowance loss before the date of the
next inspection
129 232 psi
130 750 psi
131 may be evaluated using the principles in of API 579
132 inspect for corrosion beneath the surface before resealing the concrete-to-air joint
133 time test was performed
134 Owner/User
135 high corrosion rates
136 corrosion, cracking or mechanical damage
137 Authorized Inspector
138 Engineer
139 Engineer
140 Authorized Inspector
141 The Inspector.
142 The engineer
143 Authorized Inspector
144 Authorized Inspector
145 Engineer
146 Engineer or Authorized Inspector
147 Authorized Inspector
148 Authorized Inspector
149 Engineer
150 Owner/User
151 Engineer
152 Engineer
153 Engineer
154 Authorized Inspector
155 material that matches the base metal
156 FFS shows it is acceptable and SMYS of the pipe is not more than 40,000 psi
157 must be approved by the piping engineer
158 Engineer
159 Engineer
160 full-penetration groove welds are provided and patches may be any shape but shall have
rounded corners 1 in. minimum radius and The welds shall be 100 % radiographed or
ultrasonically tested using NDE procedures that are approved by the inspector(only for class 1
and 2 piping systems)

161 the SMYS of the patch is not more than 40,000 psi
(275,800 kPa),
162 if the welding groove completely removes the crack and then filling the groove with weld metal
deposit
163 Engineer
164 Authorized Inspector or Engineer
165 Engineer
166 API 2201
167 Repair Organization
168 Repair Organization
169 Authorized Inspector
170 Engineer
171 Engineer
172 Engineer
173 300 deg F
174 Engineer
175 Engineer
176 Engineer
177 A preheat of 300 deg F, or higher as specified by specific welding procedures, is maintained while
welding.
178 ≥ 300 deg F
179 PWHT is performed for environmental cracking resistance
180 they are designed and fabricated per the applicable code
181 of known weldable quality
182 ASME Section V
183 applicable code and the owner/user's specification
184 Authorized Inspector and Engineer
185 QUTE
186 may be done only after consultation with the inspector and piping engineer
187 Authorized Inspector
188 Authorized Inspector
189 Either A or C
190 Impact testing, if required by the applicable code
191 leak testing
192 Authorized Inspector or Engineer
193 locating active corrosion cells on bare and coated piping
194 holiday survey
195 API 651
196 Smart or Intelligent pigging
197 Shoring
198 the sides of the trench should be properly shored to prevent their collapse
199 6 months
200 5 years

201 6 ft to 8 ft.
202 if water and/or soil has entered the casing
203 8 hours
204 Leak testing at 1.1 times operating pressure
205 a minimum of 20 % of time spent performing inspection activities or supervision of inspection activities
206 Low-hydrogen
207 100% RT or UT, using procedures approved by the piping inspector
208 Minimum requirement
209 Recommendation
210 Six months after issue (May 2010)
211 inspection, repair, rerate, alteration of in-service, metallic and fiberglass piping and associated relief valves
213 Specify in-service and monitoring program to assure continued safe operation.
214 Assure owner responds to inspection results to assure safe operation
215 petroleum refining & chemical process industries, but can be used for any in-service piping.
216 Organization with access to authorized inspection agency, repair agency, qualified piping engineers, inspectors and examiners
217 Not designed for piping before being placed in service AND Shall not conflict with regulatory requirements AND API governs if more stringent than regulatory requirements
218 FRP and GRP
219 10 years
220 3 years
221 depends on the class of pipe
222 50% of damaged areas or 33% suspect areas
223 75%
224 .03125 inch