Practice quiz: API 570 Piping Inspector

5 questions. The answer key is on page 2.

Name _____ Date _____

1. **Invented practice circuit C-301 is a small-bore line. A CML reads 0.250 in. today. Its pressure design thickness is 0.095 in., and the structural minimum thickness set for the line is 0.130 in. The governing corrosion rate is 0.006 in/yr. What is the remaining life?**
   A. 25.8 years
   B. 20.0 years
   C. 41.7 years
   D. 5.8 years

2. **A welder makes a pass at 24 volts and 200 amps with a travel speed of 8 in/min. Using the usual arc heat input formula with no efficiency factor, what is the heat input?**
   A. 0.6 kJ/in
   B. 4.8 kJ/in
   C. 36.0 kJ/in
   D. 288.0 kJ/in

3. **A B31.3 piping job in Normal Fluid Service uses random radiography. One weld picked from a lot made by a single welder shows a rejectable slag inclusion. Under B31.3's progressive sampling rules, what comes next?**
   A. Examine two more of that welder's welds, then repair the first
   B. Repair and reexamine it, then accept the rest of the lot as it stands
   C. Examine every weld in the lot that this welder made
   D. Stop the welder until the welder requalifies on a new test

4. **At a CML on a carbon steel circuit, the newest UT reading is 0.018 in. thicker than the reading taken at the same CML four years ago. Nothing has been added to the pipe. What should the inspector do with this reading?**
   A. Use it as is, giving a negative rate and a longer interval
   B. Average it with the earlier reading and use the mean
   C. Retire the CML, since its history is no longer usable
   D. Recheck the reading and its location before using it in a rate

5. **A pressure relief valve from a piping system arrives at the shop for its scheduled service. The shop tests its opening pressure before cleaning it or taking it apart. What is the main purpose of this first test?**
   A. To set the valve's new cold differential test pressure
   B. To show how it would have acted in service, guiding its interval
   C. To confirm the valve's rated relieving capacity
   D. To let the shop skip the internal inspection if the valve passes

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Answer key

API 570 Piping Inspector. One line of why for each answer.

1. **B** The required thickness is the greater of the pressure design thickness and the structural minimum, so here it is 0.130 in. Remaining life is (0.250 - 0.130) / 0.006 = 20.0 years.
2. **C** Heat input is volts times amps times 60, divided by travel speed in inches per minute: 24 x 200 x 60 / 8 = 36,000 J/in, or 36.0 kJ/in. 0.6 kJ/in leaves out the 60 seconds per minute.
3. **A** When a random examination finds a defect, B31.3 calls for two more samples of the same kind, for a weld made by the same welder, given the same examination.
4. **D** Steel pipe does not gain wall in service, so a thicker reading points to a measurement or location problem, such as a reading off the marked spot, a gauge set up for the wrong material or a coating read as metal.
5. **B** Testing the valve as received, before cleaning or repair, shows whether it would have opened near its set pressure in service, or stuck or opened high because of fouling or corrosion.

Full explanations

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