
From: Evan Vokes
Sent: Wednesday, May 25, 2011 3:31 PM
To: Gerard Lalonde; Ken Pigeau
Cc: Rick Ostrom; Robert Lazor; Chris Penniston
Subject: RE: 19.5 to 9.5mm transitions

A phone call from Ken occurred this afternoon
We cant shoot this weld with any certainty and it has a large LOF.

From: Gerard Lalonde
Sent: Wednesday, May 25, 2011 3:28 PM
To: Evan Vokes; Ken Pigeau
Cc: Rick Ostrom; Robert Lazor; Chris Penniston
Subject: RE: 19.5 to 9.5mm transitions

Do you have the background to this request?

From: Evan Vokes
Sent: Wednesday, May 25, 2011 3:03 PM
To: Ken Pigeau
Cc: Rick Ostrom; Robert Lazor; Gerard Lalonde; Chris Penniston
Subject: 19.5 to 9.5mm transitions

Hello Ken

I don't have time to make nice sentences with your rush request but the joint design you have reported is high risk of having a hydrotest failure.
The primary reason is large wall thickness changes are extremely hard to gain any resolution on film during radiography.

I will not delve into several technical problems that occur during this process but the result is low sensitivity which does not allow us to fully resolve planar defects, only volumetric.
The problem is compounded as the radiographer must shoot the weld from the thin side but the welder had to direct the heat from the consumable to the thick side with a high probability of a LOF on the thin side. These diagonal shots do not give enough defect thickness to the LOF or cracks to be detected. If your radiography has shown 5 inches of LOF in the root it is probable that you have much more that has not been detected. I don't understand how we would get acceptable film sensitivity with that joint design, DWSI shots and our RT spec but I have to trust the field inspection staff. I could do this with plate penetrameters but t wires are very hard to see.

An additional consideration is that we have seen light areas in the film next to failed cracks in these situations which were a result of the high low being ground off to mask a welding alignment problem and then the hydrotest head welds failed while the guys were standing there. When you weld very thick pipe to very thin pipe it is functionally difficult to align the pipe with an external clamp. This is why pipe should be similar wall thicknesses when welding if you cannot backweld. With the extreme pressures during hydrotesting this is very risky as the temporary welds are exposed to humans. The welds might be temporary but an accident is permanent and we can't turn the clock backwards.

When we back weld a pup on we can shoot the transition with SWSI as an internal shot which ups our probability of detection of injurious flaws.
The correct solution is always to counterbore a thick pup to line pipe size and backweld the thick pup to the head. Even if you back bevel an 12or 13 mm pup to match the line pipe and back weld the heavy part to the 19mm it is much more reasonable than the current setup

Story on the attachment:

There was a hydrotest failure but the inspector ground the root out before we laid our hands on the weld but the result of this one was obvious.

Notice the wall thickness difference and it passed RT.

Making new mistakes is progress but repeating old mistakes is silly.

If you cut it out, MT on the root will worry you.

Thank you

Evan