Engineering Services LP
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DOT REPAIR REQUIRMENTS (.40 SMYS) PER RP 1111

In response to the following paragraph from 192 regarding repairs, WHAT IS THE MAOP BASED ON 40% OF SMYS

§ 192.713 Transmission lines: Permanent field repair of imperfections and damages.(a) Each imperfection or damage that impairs the serviceability of pipe in a steel transmission line operating at or above 40 percent of SMYS must be—(1) Removed by cutting out and replacing a cylindrical piece of pipe; or(2) Repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe.(b) Operating pressure must be at a safe level during repair operations

Calculated minimum Burst Pressure (Pb) of 18 inch x 0.875 wall API X60

Pb = 0.90*(S + U)*(t / (D-t)) (Equation 5 of API RP1111)

Pb = Specified minimum burst pressure (psi)
S = Specified minimum yield strength (psi)
U = Specified minimum ultimate strength (psi)
t = nominal wall thickness (inch)
D = Outside diameter of pipe.

Pb= 0.90*(60,000 +75,000)*(0.875”/(18”-0.875))
Pb= 0.90*(135,000)*(0.875”/(17.125))
Pb= 0.90*(135,000) * (0.051)
Pb= 6,208 psi

Therefore for: MAOP (pipe with wall thickness of .875 inches) =

- **.72 * Pb + *899 psi (hydrostatic head at 2,000 feet)**

  MAOP = 5,492 psi at .72

- **.40 * Pb + *899 psi (hydrostatic head at 2,000 feet)**

  MAOP = 3,382 psi at .40

SAMPLE

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