

Click below to access the results tables:

Pass / Fail Summary

Stress Results

Fatigue Results

SIFs

Flexibilities

Pipe Element Forces

Pipe Element Stresses

Job Description	Location	ASME Category	Stress	Allowable Stress	Percent of Allowable
1 Job Name = rtop	Nozzle 1 Next to Shell	Pi+Pb < 1.5(k)Smh [Pb=0]	105.05	206.84	51
2	Nozzle 1 Next to Shell	Ob < (3.0)Smh	46.97	413.69	11
3	Nozzle 1	Pi+Pb < 1.5(k)Smh [Pb=0]	28.93	206.84	14
4	Nozzle 1	Ob < (3.0)Smh	34.32	413.69	8
5	Shell Next to Nozzle 1	Pi+Pb < 1.5(k)Smh [Pb=0]	111.41	176.85	63
6	Shell Next to Nozzle 1	Ob < (3.0)Smh	123.33	353.7	35
7	Shell In Nozzle 1 Vicinity	Pi+Pb < 1.5(k)Smh [Pb=0]	88.55	176.85	50
8	Shell In Nozzle 1 Vicinity	Ob < (3.0)Smh	39.62	353.7	11
9	Nozzle 1 Next to Shell	Pi+Pb+O < 3(k)Smavg	137.77	413.69	33
10	Nozzle 1 Next to Shell	Pi+Pb+O < 3(k)Smavg	143.11	413.69	35
11	Nozzle 1	Pi+Pb+O < 3(k)Smavg	48.32	413.69	12
12	Nozzle 1	Pi+Pb+O < 3(k)Smavg	50.14	413.69	12
13	Shell Next to Nozzle 1	Pi+Pb+O < 3(k)Smavg	181.93	353.7	51
14	Shell Next to Nozzle 1	Pi+Pb+O < 3(k)Smavg	194.02	353.7	55
15	Shell In Nozzle 1 Vicinity	Pi+Pb+O < 3(k)Smavg	118.62	353.7	34
16	Shell In Nozzle 1 Vicinity	Pi+Pb+O < 3(k)Smavg	120.62	353.7	34
17	Nozzle 1 Next to Shell	Pi+Pb+O+F < Sa	96.6	285.69	34
18	Nozzle 1	Pi+Pb+O+F < Sa	25.07	285.69	9
19	Shell Next to Nozzle 1	Pi+Pb+O+F < Sa	130.97	285.69	46
20	Shell In Nozzle 1 Vicinity	Pi+Pb+O+F < Sa	60.31	285.69	21
21					

Highest Fatigue Stress Ratio

Shell Next to Nozzle 1

P_i+P_b+Q+F Sa Primary+Secondary+Peak (Inner) Load Case 4
 131 286 Stress Concentration Factor = 1.350
 MPa MPa Strain Concentration Factor = 1.000
 45% Cycles Allowed for this Stress = 104,468.
 "B31" Fatigue Stress Allowable = 294.7
 Max1 Fatigue Stress Allowable = 287.5
 WRC 474 Mean Cycles to Failure = 864,289.
 WRC 474 99% Probability Cycles = 200,775.
 WRC 474 95% Probability Cycles = 278,751.
 BS5500 Allowed Cycles(Curve F) = 98,898.
 Membrane-to-Bending Ratio = 0.744
 Bending-to- P_i+P_b+Q Ratio = 0.573
 Sect VIII Ref: 4-112(1)(2),Fig.4-130.1.4-135
 Plot Reference:
 15) $P_i+P_b+Q+F < S_a$ (EXP,Inside) Case 4

Nozzle 1 Next to Shell

P_i+P_b+Q+F Sa Primary+Secondary+Peak (Inner) Load Case 4
 97 286 Stress Concentration Factor = 1.350
 MPa MPa Strain Concentration Factor = 1.000
 33% Cycles Allowed for this Stress = 362,000.
 "B31" Fatigue Stress Allowable = 244.7
 Max1 Fatigue Stress Allowable = 237.5
 WRC 474 Mean Cycles to Failure = 1,755,502.
 WRC 474 99% Probability Cycles = 407,819.
 WRC 474 95% Probability Cycles = 566,205.
 BS5500 Allowed Cycles(Curve F) = 246,481.
 Membrane-to-Bending Ratio = 1.898
 Bending-to- P_i+P_b+Q Ratio = 0.345
 Sect VIII Ref: 4-112(1)(2),Fig.4-130.1.4-135

