Row #	Column # / TCID Field Value	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
		Tank Shell Interior	Tank Shell Exterior	Tank Head Interior	Tank Head Exterior	Center Sill Web *(full all)*	Center Sill Flange *(full all)*	Center Sill Bath *(full all)*	Bolster Pad *(tank cradle, top cover plate, BCP)*	Inboard Tank Reinforcement Pad	UE (Sill) Web Wind of Bolster	Brake Support	Tank Bolster	Other	Stub Sill Web	Stub Sill Top Flange	Stub Sill Bottom Flange	Head Brace	Head Pad	Manway Nozzle	Safety Valve Nozzle	Top Fittings Nozzle	Manway Nozzle Reinforcement Pad	Safety Valve Nozzle Reinforcement Pad	Top Fitting Reinforcement Pad	Turnbuckle Brackets	Reinforcement Bars	Skid Attachment to Pad or Tank	Tank Anchor Pad *(full all cars)*	Tank Anchor Web *(full all cars)*	Miscellaneous Attachment Welds	Tank Stiffener Ham *(full all aluminum car)*	Bolster Web *(BWPM)*	Bolster Bottom Cover Plate *(BBPM)*	Bolster Web Stiffener *(MBSW)*	Splice Plates	Wing Bars	Sill Center Filler *(above center plate)*	Miscellaneous Tank Pad	BOV Skid	Sump	BOV Mounting Saddle	Wash Out	Fittings / Cover Plate
1	**Failure Type**																																											
2	Blister	X	X	X	X																																							
3	Buckle *(also Bent)*	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	
4	Corrosion - Bathtub Ring	X		X																																								
5	Corrosion - Girth Weld Seams	X	X	X	X																																							
6	Corrosion - Grouped Pits	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	Corrosion - Random Pits	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	Corrosion - Vertical Grooving	X		X																																								
9	Crack - Girth Seams / Butt Welds	X	X	X	X									X						X	X	X																						
10	Crack - Parent Metal	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	
11	Crack - Weld Not on Templates	X	X		X	X	X	X	X	X			X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	
12	Dent	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
13	Repairs to Fire Damaged tanks	X	X	X	X																																				X	X	X	
14	Scores and Gouges	X	X	X	X									X																															X
15	Wheel Burns		X		X																																							
16																																												
17	**Failure Cause**																																											
18	Corrosion	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19	Missing Weld					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20	Overstressed/Abused/RR Damage	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21	Unknown	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	Workmanship	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23																																												
24	**How Repaired Shell**																																											
25	Patch Plate Repair- AAR Tanks	X		X																																								
26	Weld Surfacing *(weld buildup)*	X	X	X	X															X	X	X																			X	X	X	X
27	Welded Inserts and Tank Sections	X	X	X	X																																							
28	Repairs to Tank Anchors																												X	X	X														
29	Reinforcing Plate Application per FM Rule 57					X	X	X							X	X	X																											
30	RIK - Replace in Kind Not Otherwise Listed in the Repair Codes			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
31	Welding with PWHT	X	X	X	X									X						X	X	X																			X	X	X	
32	Welding without PWHT or Pre-Heat	X	X	X	X									X						X	X	X																			X	X	X	
33	Welding with Pre-Heat	X	X	X	X									X						X	X	X																			X	X	X	
34	Pressing, or Jacking of Dents/Buckles of the Tank	X	X	X	X																																							
35	Straightening					X	X	X	X	X	X	X	X	X	X	X	X									X	X		X	X		X	X	X	X									
36	Grinding and Blending with no Weld Buildup	X	X	X	X									X																														X
37	Repair of Threaded or Non-threaded Holes													X															X														X	
38																																												
39	**Crack Length**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
40																																												
41	**Number of Cracks/Defects**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
42																																												
43	**Repair Location**																																											
44	A End	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X				X		X	X					X
45	B End	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X				X		X	X					X
46	C Center	X	X			X	X	X		X		X		X	X	X	X			X	X	X	X	X	X						X					X			X	X	X	X	X	X
47	AL Side					X	X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X		X	X	X	X	X		X					
48	AR Side					X	X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X		X	X	X	X	X		X					
49	BL Side					X	X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X		X	X	X	X	X		X					
50	BR Side					X	X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X		X	X	X	X	X		X					
51	CL - Center Left					X	X	X				X		X																										X	X	X	X	
52	CR - Center Right					X	X	X				X		X																										X	X	X	X	
53	ABH - A End Bottom Head			X	X																																							
54	ABS - A End Bottom Shell	X	X																																				X					
55	ALS - A End Left Shell	X	X																																									
56	ATH - A End Top Head			X	X																																							
57	ATS - A End Top Shell	X	X																																									
58	ARS - A End Right Shell	X	X																																									
59	BBH - B End Bottom Head			X	X																																							
60	BBS - B End Bottom Shell	X	X																																				X					
61	BLS - B End Left Shell	X	X																																									
62	BTH - B End Top Head			X	X																																							
63	BTS - B End Top Shell	X	X																																									
64	BRS - B End Right Shell	X	X																																									
65	CBS - Center Bottom Shell	X	X																																				X					
66	CLS - Center Left Shell	X	X																																									
67	CRS - Center Right Shell	X	X																																									
68	CTS - Center Top Shell	X	X																																									
69																																												
70	**Inspection Method / Techniques**																																											
71	[AE] Acoustical Emission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
72	[LT] Leak Test	X	X	X	X															X	X	X	X	X	X														X	X	X	X	X	X
73	[MT] Magnetic Particle	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X
74	[OT] Other	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
75	[PT] Liquid Penetrant	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
76	[RT] Radiographic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
77	[RVT] Remote Visual	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
78	[UT] Ultrasonic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
79	[UTT] Ultrasonic Thickness	X	X	X	X															X	X	X	X	X	X														X		X		X	X
80	[VT] Direct Visual	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

44 <end of columns>

81 <end of rows>