



C-ESR-G-00003 (Rev. 13)
Track #:10067/10080
Disposal Auth.: DOE/ADM 17-30.c
(1)/DOE/ADM 17.32.a
Retention: 5 Years, Destroy 5 years after
facility closure

October 26, 2015

SRS High Level Waste Tank Crack and Leak Information (Rev. 13)

WR West for R.S. Waltz, Jr. 10/27/15
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WR West 10/27/15

Technical Review: W. R. West

A.S. Plummer 10/27/15
Management Approval: A. S. Plummer

The location of known cracks and the estimated amount of leaked waste remaining on the annulus floor are the subject of this report. As new cracks or indications are found, this document will be revised to reflect those changes. The attached table reflects all known conditions as of 10/26/15.

This revision is being issued to include numbers for leaksites discovered in Tank 15.

SRS High Level Waste Tank Crack and Leak Information

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TANK NUMBER	TANK TYPE	NUMBER OF KNOWN LEAKSITES	DATE OF DISCOVERY	WASTE ON ANNULUS FLOOR	AMOUNT OF WASTE ON FLOOR (est.)	LOCATION [4]	ELEVATION FROM TANK BOTTOM	PERCENT OF TANK WALL INSPECTED	Acceptable Fitness for Service [3]
1	I	≥ 1	Feb. 1969	Yes	small deposits on floor	unknown; suspected to be in bottom	unknown	25%	Yes
4	I	4	Oct. 2011 Sept. 2013 Sept. 2013 Sept. 2013	No No No No	None None None None	South North North North	234 inches 234 inches 234 inches 234 inches	25%	Yes
5 Closed 2013	I	44	Crack data can be found in Rev. 11						
6 Closed 2013	I	11	Crack data can be found in Rev. 11						
9	I	≥ 4	Oct. 1957	Yes	8-10 inches	1 West 2 West 3 South 4 unknown	276 inches 271 inches 269 inches source of waste in pan unknown	13%	Yes
10	I	≥ 1	Jul. 1959	Yes	2 - 3 inches	unknown	unknown	19%	Yes
11	I	2	Apr. 1974 [3]1974 & 1982	Yes	nodules/waste on wall and trace amounts on annulus pan due to solids washing down wall	1 West 2 South	235 inches 189 inches	25%	
12	I	15	1984 May. 1974 Apr. 2004 Oct. 2005 Oct. 2005 [11] 2008 - 2012	Yes	Total of waste for leaksites 1 thru 4 on wall and floor 21 gall cup 3.4 gall	1 North 2 North 3 North 4 North 5 South 6 NE	93 inches 105 inches 95 inches 70 inches 129 inches 85 inches	25% (typical)	Yes
			July. 2012 July. 2012 July. 2012 July. 2012 July. 2012 July. 2012 July. 2012 July. 2012		nodule 0.25 gall cup cup cup nodule nodule 0.5 cup 0.5 cup	7 SW 8 SW 9 NW 10 NW 11 NW 12 NW 13 NW 14 SE 15 SE	129 inches 129 inches 129 inches 230 inches 230 inches 129 inches 129 inches 129 inches 129 inches	100% (2)	
13	II	3	Mar. 1977 May. 1980	Yes	nodules/waste on wall and trace amounts on annulus pan due to solids washing down wall	1 West 2 North	279 inches 269 inches	90%	Yes
			Oct. 2012			3 West	270 inches		
14	II	~ 50	May. 1959 thru 1974 Oct. 2012	Yes	12 - 13 inches	the majority are on the bottom weld	lowest 16 inches highest 288 inches	89%	Yes

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15	II	24	Apr. 1972 Apr. 1972 1973 1973 1973 1973 1973 1973 1973 1973 1973 1973 1997 1998 1997 2000 2000 2002 2005 2015 2015 2015 2015	Yes	nodules on tank wall with trails to annulus floor and small amount of waste on annulus floor waste on annulus floor observed during re-wetting activities in July 2015 was ~1-2" deep UT	1 -- 140 2 -- 144 3 -- 013 4 -- 115 5 -- 112 6 -- 105 7 -- 102 8 -- 171 9 -- 176 10 -- 173 11 -- 171 12 -- 136 13 -- 165 14 -- 207 15 -- 192 16 -- 053 17 -- 050 18 -- 205 19 -- 175 20 -- 211 21 -- 005 22 -- 205 23 -- 005 24 -- 171	34 inches 34 inches 150 inches 88 inches 30 inches 96 inches 30 inches 74 inches 30 inches 30 inches 150 inches 34 inches 150 inches 150 inches 200 inches 30 inches 30 inches 129 inches 31 inches 73 inches 100 inches 92 inches 126 inches	96%	Yes
16	II	~ 300 - 350							
19 Closed 2012	IV	4	Crack data can be found in Rev. 11						NA
20 Closed 1997	IV	4	Crack data can be found in Rev. 11						NA

[1] Percentage of tank normally inspected using traditional methods

[2] Percentage of tank inspected in 2001 using a magnetic crawler device

[3] The identified tank flaws have been evaluated against calculations - T-CLC-G-00159 and T-CLC-H-00639 and are acceptable for service.

[4] Circumferential feet from South riser clockwise

The leaksites detailed in this chart were documented by the presence of salt nodules or stains and marks. Additional leaksites may exist in areas that have not been inspected. One crack detected in 2002 in Tank 15 was located using UT techniques.