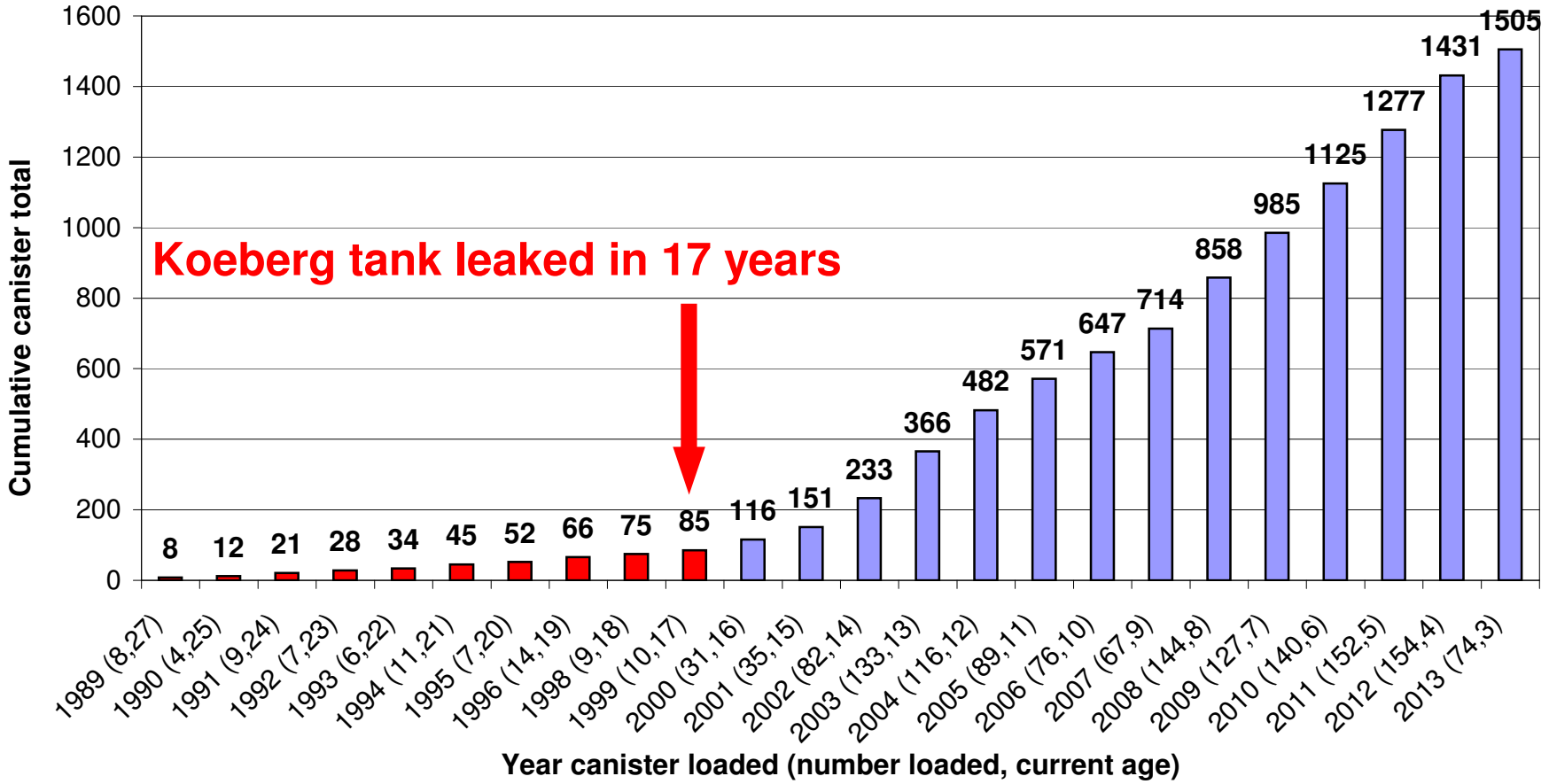
Most U.S. thin-wall (1/2") nuclear waste canisters in use less than 10 years*



*Majority of thin-wall welded stainless steel spent nuclear fuel canisters in use less than 10 years. Canisters cannot be inspected, even on the outside, once filled with highly radioactive nuclear fuel waste and are susceptible to cracking. Once cracks start they can grow through canister walls undetected. The **Koeberg nuclear plant had a similar container (a waste water tank) leak in only 17 years with cracks up to 0.61" deep**. The majority of U.S. thin-walled canisters have only 1/2" (0.50") stainless steel walls. Koeberg cracks were caused by the ocean environment, but many other factors can cause canisters to crack, such as air pollution (sulfites). San Onofre 5/8" (0.625") thin-wall canisters are included in this chart. 2013 includes only 6 months of 2013. Chart excludes 249 U.S. thick-walled (10" to 14") bolted-lid casks. Unlike thin-walled canisters, bolted-lid thick casks provide monitored retrievable storage and transport. They can be inspected inside and out, monitored, maintained, repaired, and have systems in place to avoid radiation leaks. Thin-wall canisters don't meet these requirements. Sources: DOE EIA 6/30/2013 ISFSI inventory, NRC.gov ML12319A440, ML14258A082, ML14258A081. Additional government/scientific sources at **SanOnofreSafety.org**

6/26/2016

Most U.S. thin-walled welded canisters in use less than 10 years

Age, number and location of canisters

Year canister loaded (number, current age)	Cumulative canister total	Location Bold indicates first year loaded in that state. Waste is still in these states.
1989 (8,27)	8	**SC**
1990 (4,25)	12	SC
1991 (9,24)	21	SC
1992 (7,23)	28	SC
1993 (6,22)	34	**MD,SC**
1994 (11,21)	45	MD,SC
1995 (7,20)	52	MD,SC
1996 (14,19)	66	**MD,OH,SC**
1998 (9,18)	75	MD
1999 (10,17)	**85**	**PA**,SC,**TN** ***(Koeberg tank in South Africa leaked in 17 years)***
2000 (31,16)	116	**GA,IL,MD**,SC,TN
2001 (35,15)	151	**CA**,GA.IL,SC,TN
2002 (82,14)	233	CA,GA,IL,**MA**,MD,**ME**,**MI**,**NJ,NY**,SC,TN,**WA**
2003 (133,13)	366	**AR,AZ**,CA,GA,**IA**,IL,MA,MD,ME,MI,NJ,**OR**,SC
2004 (116,12)	482	AR,AZ,CA,**CT**,GA,IL,ME,MI,**NC**,**ND**,NJ,PA,SC,TN,WA,**WI**
2005 (89,11)	571	**AL**,AR,AZ,CA,CT,GA,IL,**LA**,MD,MI,NY,NC,NJ,SC,TN
2006 (76,10)	647	AL,AR,AZ,CT,**DE**,GA,IL,LA,MD,**MS**,NC,**NE**,SC,TN,WI
2007 (67,9)	714	AL,AR,AZ,CA,CT,DE,GA,IL,LA,MD,SC,TN,**VA**
2008 (144,8)	858	AL,AZ,CA,DE,**FL**,GA,IL,LA,MD,MI,MN,MS,NC,**NH**,NY,PA,SC,TN,VA,**VT**,WA
2009 (127,7)	985	AL,AR,AZ,CA,CT,GA,IL,MD,ME,MS,NC,NE,NY,PA,SC,TN,VA,WI
2010 (140,6)	1125	AL,AR,AZ,CA,CT,DE,FL,GA,IL,LA,MD,NE,NJ,NY,PA,SC,TN,VA,WI
2011 (152,5)	1277	AL,AZ,CA,DE,FL,GA,IA,IL,LA,MD,MI,MS,NE,NY,PA,SC,TN,VA,VT,WI
2012 (154,4)	1431	AL,AZ,CA,CT,DE,GA,IL,LA,MD,MI,NJ,NY,OH,PA,SC,TN,TX,VA,VT,WI
2013 (74,3)	**1505**	AZ,DE,FL,GA,IL,MS,NY,PA,SC,TN,VA

Majority of canisters have thin (1/2") walls. San Onofre has 5/8" thin wall canisters. 2013 total includes only first 6 months of 2013. Majority of these thin canisters have been in use less than 10 years. These thin wall stainless steel canisters cannot be inspected, repaired, maintained and are not designed for retrievability or inspection of spent fuel waste. Thin canisters cannot be transported with partial cracks per NRC regulations. Nuclear Waste Policy Act requires monitored retrievable storage. Thin canisters do not meet that requirement. Only thick bolt-ed lid casks (10" to almost 20" thick) do. Chart excludes 249 U.S. thick walled (10" to 14") bolted-lid casks. Sources: DOE EIA 6/30/2013 ISFSI inventory, NRC.gov ML12319A440, ML14258A082, ML14258A081, SanOnofreSafety.org 6/26/2016