

Rockfill Dams Over 50 Feet High

Decade ending	New dams	Total Dam-years	Number of failures	
1900	8	20010		
1910	17	19160		
1920	14	17533	1	
1930	23	16219	1	
1940	36	14425		Failures prior to 1940 are excluded (modern construction improvements)
1950	26	12024		
1960	75	10539	1	
1970	126	7103	1 (1)	(Hell Hole dam is excluded, pre-operational failure)
1980	60	2527		
1990	45	929		
2000	33	201		
	463		4	Total
			2	Since 1940

Failure Rate/dam-yr for rockfill dams over 50 feet high

2.00E-04
1.39E-04 (1940-2000)

All Rockfill Dams

1425 73806 7 9.48E-05

References:

National Inventory of Dams <http://crunch.tec.army.mil/nid/webpages/nid.cfm>

National Performance of Dams Program <http://npdp.stanford.edu/index.html>

Jocassee Dam Failure

Calculation results from Oconee IPEEE Rev 2 Section B.4.3, "Frequency of Dam failure":

Failures since 1940 to 1993 of >50 foot rockfill dams > 5 years old = 2

Dam years of operation since 1940 to 1993 of >50 foot rockfill dams = 154380

Result = **1.3E-05** failures per dam year for the Jocassee dam

The dam years of operation since 1940 to 1993 appear to be about 1 decade too high.

However, if all earthen and earthen-rockfill hybrid dams over 50' are included along with their post 1940 failures, then:

	Dams	Dam-years	Failures
Earthen dams over 50'	3373	123370	32
Rockfill dams over 50'	1425	14425	2
Earthen/Rockfill dams over 50'	295	1391	
Rockfill/Earthen dams over 50'	996	37739	
Total		176925	34

Proper Result = **1.92E-04** failures per dam year for the Jocassee dam