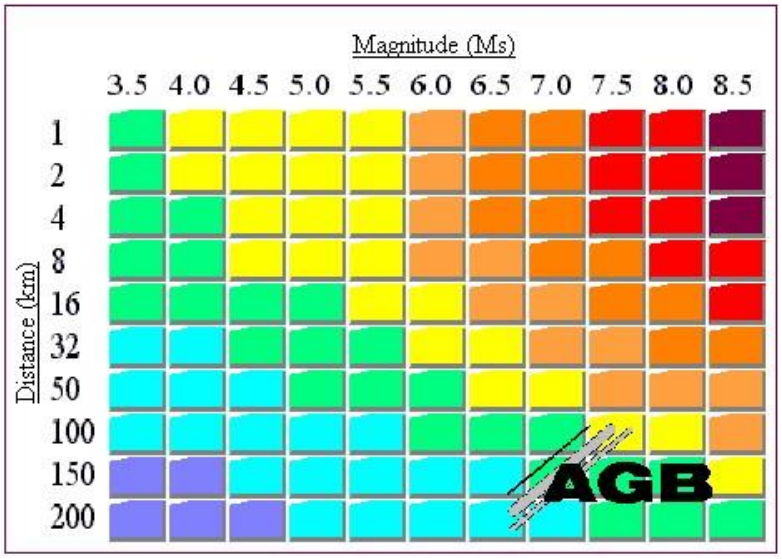
EXPERT CONSULTATION IN EARTHQUAKE INSTRUMENTATION

AGB's "SHAKE TABLE"



The range of severity of shaking represented in this table is from "Not Felt/Hardly Felt" in dark blue to "Objects Tossed Into The Air" in purple. The green and yellow represent anything from "Objects Disturbed" to "Objects Knocked Off Shelves". Generally speaking, events corresponding to the tiles to the left and below the yellow tiles will not likely cause industrial earthquake actuated shutoff systems (seismic monitors) to go into an alarm state. Events in the yellow, orange, red, dark red and purple tiles may, with increasing likelihood, result in a seismic alarm being generated. Refer to AGB's calibration data from the most recent inspection; compare your system's acceleration setpoint (in units of "g"; earth's gravity) against the table below. If your setpoints are higher than the value given in the look-up table, it decreases the PROBABILITY that your system will trigger. Conversely, if your system's setpoints are lower than the expected acceleration shown in the table, it increases the PROBABILITY of actuation. Actual peak ground acceleration may differ up to three-fold higher or lower than the projected values due to factors such as the fault rupture mechanism, fault orientation, fault geometry, regional geology, local soil conditions and more.

Distance (km)	Magnitude (Ms)											
	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.500	
1	0.084	0.108	0.139	0.178	0.229	0.294	0.378	0.485	0.623	0.800	1.027	*
1	0.064	0.088	0.122	0.168	0.231	0.318	0.438	0.603	0.831	1.144	1.575	**
1	0.074	0.098	0.130	0.173	0.230	0.306	0.408	0.544	0.727	0.972	1.301	***
2	0.080	0.103	0.132	0.170	0.218	0.280	0.359	0.461	0.592	0.761	0.977	*
2	0.061	0.084	0.116	0.160	0.220	0.303	0.417	0.574	0.791	1.089	1.500	**
2	0.071	0.094	0.124	0.165	0.219	0.291	0.388	0.518	0.692	0.925	1.238	***
4	0.073	0.094	0.120	0.154	0.198	0.255	0.327	0.420	0.539	0.692	0.889	*
4	0.056	0.077	0.106	0.145	0.200	0.276	0.380	0.523	0.721	0.992	1.367	**
4	0.064	0.085	0.113	0.150	0.199	0.265	0.353	0.472	0.630	0.842	1.128	***
8	0.062	0.079	0.101	0.130	0.167	0.215	0.276	0.354	0.455	0.584	0.749	*
8	0.047	0.065	0.089	0.123	0.169	0.233	0.321	0.442	0.609	0.839	1.155	**
8	0.054	0.072	0.095	0.127	0.168	0.224	0.298	0.398	0.532	0.711	0.952	***
16	0.046	0.059	0.076	0.098	0.126	0.161	0.207	0.266	0.341	0.438	0.563	*
16	0.036	0.049	0.067	0.093	0.128	0.176	0.242	0.334	0.459	0.633	0.871	**
16	0.041	0.054	0.072	0.095	0.127	0.169	0.225	0.300	0.400	0.535	0.717	***
32	0.030	0.038	0.049	0.063	0.081	0.104	0.134	0.172	0.221	0.284	0.364	*
32	0.023	0.032	0.044	0.060	0.083	0.115	0.158	0.217	0.299	0.412	0.568	**
32	0.027	0.035	0.047	0.062	0.082	0.109	0.146	0.195	0.260	0.348	0.466	***
50	0.021	0.027	0.034	0.044	0.057	0.073	0.093	0.120	0.154	0.197	0.254	*
50	0.016	0.022	0.031	0.042	0.058	0.080	0.110	0.152	0.210	0.289	0.397	**
50	0.019	0.025	0.033	0.043	0.057	0.076	0.102	0.136	0.182	0.243	0.325	***
100	0.011	0.014	0.017	0.022	0.029	0.037	0.048	0.061	0.078	0.101	0.129	*
100	0.008	0.011	0.016	0.022	0.030	0.041	0.057	0.078	0.108	0.149	0.205	**
100	0.009	0.013	0.017	0.022	0.029	0.039	0.052	0.070	0.093	0.125	0.167	***
150	0.007	0.009	0.011	0.014	0.018	0.024	0.030	0.039	0.050	0.065	0.083	*
150	0.005	0.007	0.010	0.014	0.019	0.027	0.037	0.051	0.070	0.096	0.132	**
150	0.006	0.008	0.011	0.014	0.019	0.025	0.034	0.045	0.060	0.080	0.107	***
200	0.005	0.006	0.008	0.010	0.013	0.017	0.022	0.028	0.036	0.046	0.059	*
200	0.004	0.005	0.007	0.010	0.014	0.019	0.026	0.036	0.050	0.069	0.095	**
	0.004	0.006	0.008	0.010	0.014	0.018	0.024	0.032	0.043	0.058	0.077	***
				acceleration (g)								
* Donovan (1973)												
** McGuire												

NOTE: *** entries in the table above are the average of the two calculated values.

Information obtained from prior generations of the Southern California Earthquake Center (SCEC) and USGS websites ca1999, Fundamentals of Earthquake Engineering, Newmark, N.M. and Rosenblueth, E. 1971, Prentice-Hall: 228-236.

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