

Arabasz et al. (1987) provide a comprehensive evaluation of the University of Utah earthquake data base with particular application to an area at the north end of the Cedar Mountains, west of Skull Valley. They conclude that the threshold of earthquake detection is  $M_L$  approximately 2.0 or less in an area that includes the PFSF site.

Figure 2.6-15 is a map of all earthquakes within 160 km (100 miles) of the PFSF site of magnitude 3.0 or greater from the University of Utah Seismograph Station catalog. Table 2.6-4 is a chronological listing and description of those events. Only one earthquake greater than magnitude 3.0 has been reported within 50 km of the PFSF site. This event occurred on August 11, 1915 at an assumed location north of Deseret Peak in the Stansbury Mountains. It was reported at Iosepa, a settlement on the western foothill of the Stansbury Mountains. The University of Utah catalog indicates a magnitude 4.3, based on conversion of MM intensity V from the felt report (Arabasz et al., 1987). Stover et al. (1986) list an intensity VI for this event. However, Stover and Coffman (1993) do not list this event in their catalog, which has a threshold magnitude of 4.5. The earthquake was not reported in Tooele, less than 20 miles from Iosepa (Everitt and Kaliser, 1980), nor in Salt Lake City, about 43 miles to the east (Arabasz et al., 1987).

The largest historic earthquakes to occur within 160 km (100 mi.) of the PFSF site occurred in the Hansel Valley at the northern end of Great Salt Lake. A magnitude 6.6 earthquake occurred on March 12, 1934 and produced the only surface offset associated with an historic earthquake in Utah. The event occurred beneath an alluvium-filled valley and resulted in 50 cm of vertical ground surface displacement in a zone 12 km long. Some lateral displacement may also have occurred. Liquefaction and land subsidence occurred locally (Smith, 1978). Slight damage was reported in Grantsville and Tooele with MM intensity V experienced at Tooele (Everitt and Kaliser, 1980). Oaks (1987) reports MM intensity VIII in Salt Lake City caused buildings to sway and a 2-ton clock

TABLE 2.6-4  
(Page 2 of 14)

EARTHQUAKES: MAGNITUDE 3.0 AND GREATER, 1850—1996  
160KM RADIUS AROUND 40° 24.50'N AND 112°47.50'W  
1850—July 1962

Year	Date	Origin Time	Latitude	Longitude	Mag	Int	Comments
1915	730	1850	41° 44.66 '	112° 9.72 '	4.3 I	5	ASSGN GARLAND,UT (1)
1915	811	1020	40° 30.00 '	112° 39.00 '	4.3 I	5	INT=5-8,LOC ASSUMED (1)
1915	920	0128	39° 59.58 '	111° 29.40 '	3.0 I	3	TWO SHOCKS (1)
1915	1003	0150	40° 44.94 '	111° 50.95 '	3.0 I	3	(1)
1915	1005	0800	40° 6.00 '	114° 0.00 '	4.3 I	5	INT=5-7,LOC FROM (4)
1916	205	0625	39° 58.37 '	111° 46.87 '	4.3 I	5	ASSGN SANTAQUIN,UT (1,3)
1919	507	2230	39° 31.64 '	111° 34.89 '	3.7 I	4	
1920	918	2010	41° 30.61 '	112° 0.95 '	4.3 I	5	INT=5-6
1920	919	1350	41° 30.61 '	112° 0.95 '	4.3 I	5	INT=5-6
1920	1120	0435	41° 30.61 '	112° 0.95 '	4.3 I	5	INT=5-6
1920	1217	0955	41° 30.61 '	112° 0.95 '	3.7 I	4	A'SHOCK? (1)
1923	607	0415	41° 44.26 '	111° 49.85 '	4.3 I	5	
1925	1201	0730	40° 44.94 '	111° 50.95 '	3.0 I	3	
1926	1219	0330	39° 57.00 '	111° 57.60 '	3.7 I	4	
1932	1111	1000	40° 31.04 '	111° 28.27 '	3.7 I	4	
1932	1221	0613	40° 44.94 '	111° 50.95 '	3.0 I	3	
1934	130	2021	40° 44.94 '	111° 50.95 '	3.0 I	3	
1934	312	1505	41° 42.00 '	112° 48.00 '	6.6 M	9	INT=8-9,PAS (5,8,9)
1934	312	1820	41° 42.00 '	112° 48.00 '	6.1 N	7	A'SHOCK,PAS (5,8,9)
1934	315	1202	41° 42.00 '	112° 48.00 '	5.1 N	6	INT ASSUMED,A'SHOCK (5)
1934	315	1347	41° 42.00 '	112° 48.00 '	4.8 N	5	INT ASSUMED,A'SHOCK (5)
1934	317	2240	41° 46.50 '	112° 5.70 '	3.0 I	3	
1934	414	2126	41° 30.00 '	112° 30.00 '	5.6 N	7	A'SHOCK (1,5,6,8,9)
1934	506	0809	41° 42.00 '	112° 48.00 '	5.6 N	6	A'SHOCK,PAS (5,8,9)
1935	709	1059	40° 44.94 '	111° 50.95 '	3.7 I	4	INT=4-5
1938	318		39° 59.58 '	111° 29.40 '	3.0 I	3	
1938	630	1337	40° 44.94 '	111° 50.95 '	4.3 I	5	SALT LK VALLEY? (1)
1939	331	0640	40° 44.94 '	111° 50.95 '	3.7 I	4	
1940	1123	1300	39° 15.83 '	111° 38.23 '	3.7 I	4	
1940	1125	1425	39° 15.83 '	111° 38.23 '	3.7 I	4	A'SHOCK?
1941	620	1520	41° 44.26 '	111° 49.85 '	3.0 I	3	
1942	418	0545	41° 30.00 '	112° 18.00 '	4.3 I	5	HANSEL VALLEY? (1,6,8)
1942	604	2204	39° 34.80 '	111° 39.00 '	4.3 I	5	TWO SHOCKS (1)
1943	222	1420	40° 42.00 '	112° 4.80 '	5.0 I	6	W. SALT LK VALLEY (1,6,8)
1943	312	1245	39° 21.67 '	111° 35.26 '	3.7 I	4	

3

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Docket No. \_\_\_\_\_ Official Exh. No. 183  
In the matter of PFS  
Staff \_\_\_\_\_ IDENTIFIED ✓  
Applicant \_\_\_\_\_ RECEIVED ✓  
Intervenor ✓ REJECTED \_\_\_\_\_  
Other \_\_\_\_\_ WITHDRAWN \_\_\_\_\_  
DATE 5/13/02 Witness \_\_\_\_\_  
Clerk pol