

Figure 1. Map of the Pajarito Fault System and Embudo Fault System – Southwestern Section in Northern New Mexico. **Source:** Figure 5-4 in LANL 2007 PSHA Report.

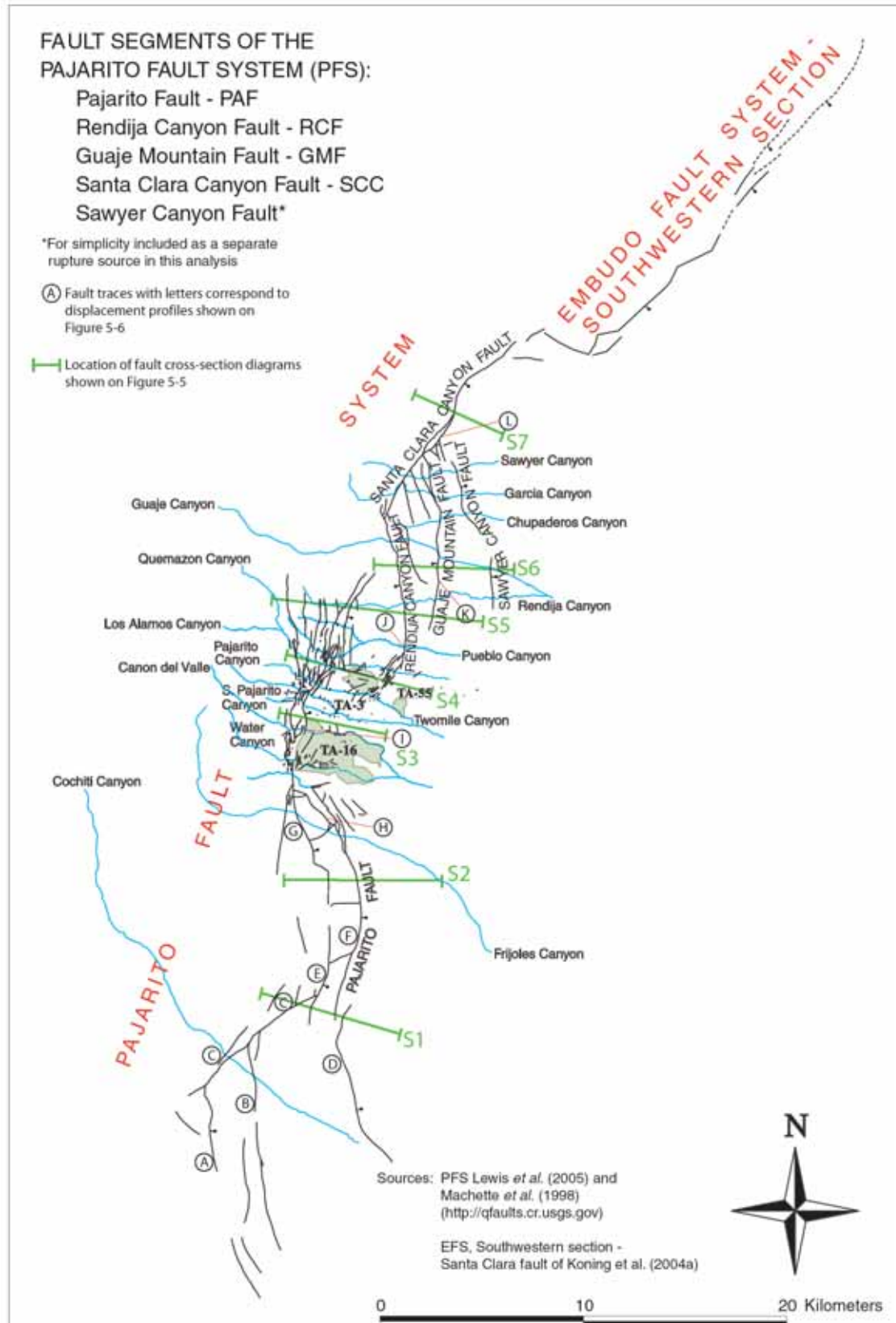
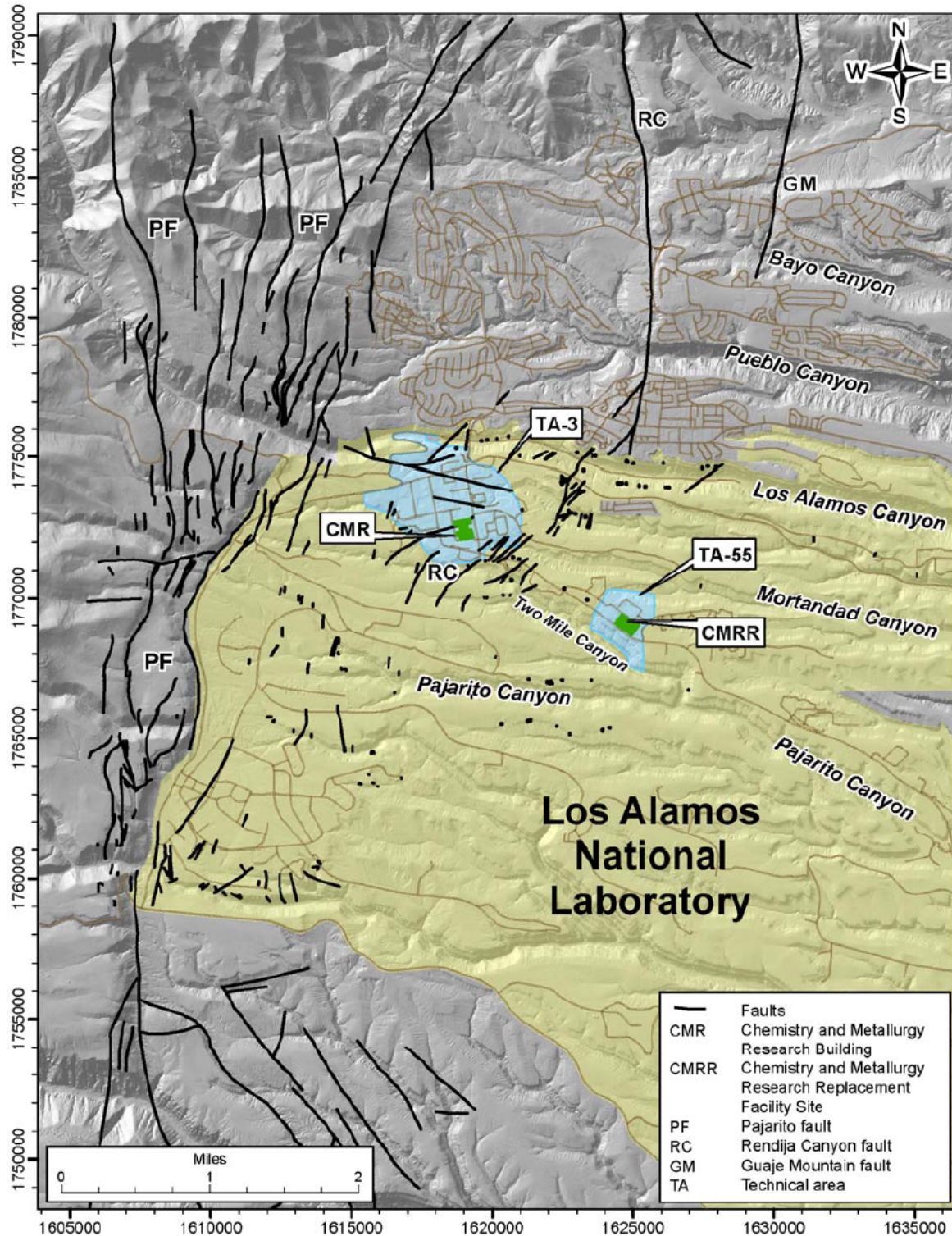


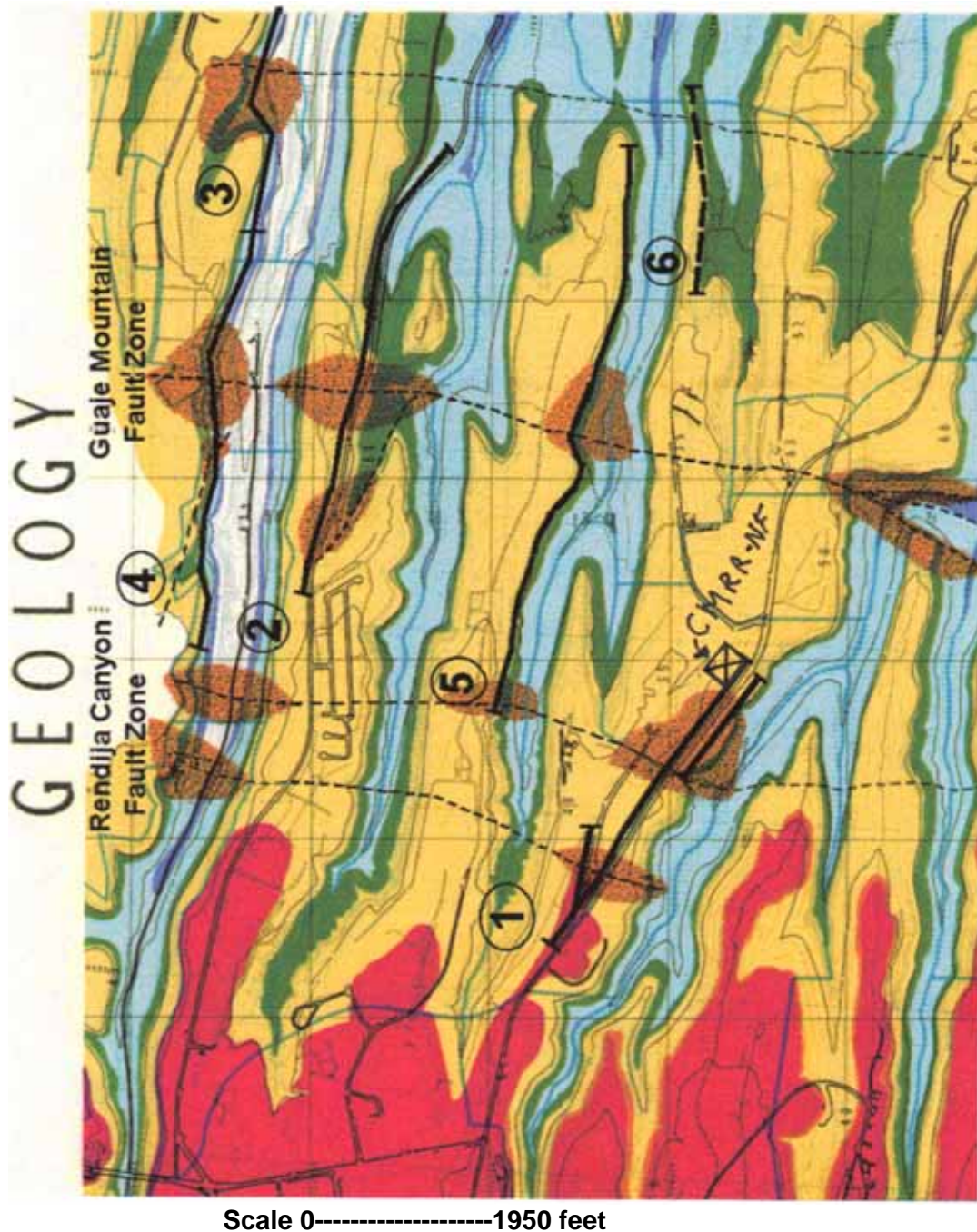
Figure 2. Mapped Faults in the Los Alamos National Laboratory Area.

Please Note. The detailed mapping to determine the southward extent of the GM Fault (Guaje Mountain Fault) toward and possibly close to the location of the proposed CMRR Nuclear Weapons Facility has not been performed.



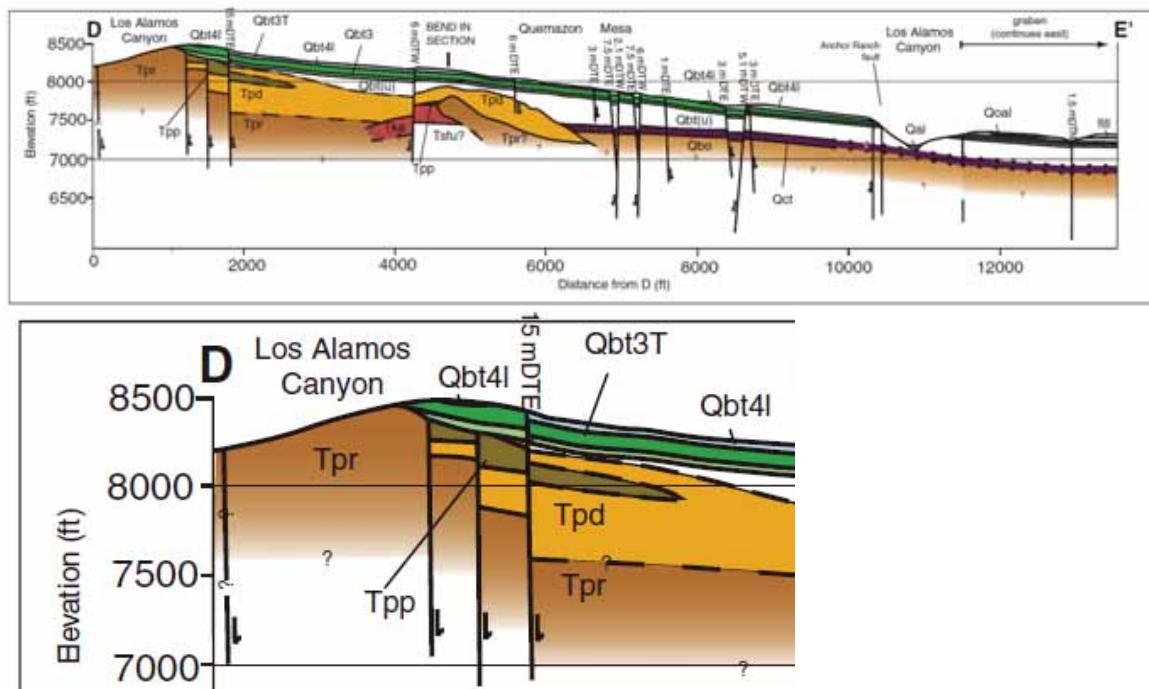
Source: Figure 3-5 in the DOE 2011 SEIS

Figure 3. Map in 2004 LANL Report by Wohletz showing proposed location of Rendija Canyon Fault along the western boundary of LANL TA-55 and Guaje Mountain Fault 2500 feet east of the eastern boundary of TA-55.
Source: Figure 14 in Wohletz, 2004 (LA-UR-04-8337)



- Black X inside rectangle is location of proposed CMRR-NF
- Dashed black lines show trend of inferred faults - - - - -
- Brown patches along dashed black lines are zones of intense fractures
- Circled numbers 1 to 6 have no relation to intense fracture zones.

Figure 4. West to East Cross-Section D-E' on page 263 in Lewis et al., 2009.



Note. The vertical arrows show the side of the discrete faults where displacement is downward. 15mDTE means the vertical displacement is 15 meters (49 feet) downward to the east.

An additional important factor is that the youthful PFS is currently at a growth stage where the interaction between the primary Pajarito Fault (PF or PAF) and the subsidiary Rendija Canyon Fault (RCF) and Guaje Mountain Fault (GMF) often results in multiple ground-breaking ruptures from two of the three faults (Lewis et al., 2009). The powerful multiple surface-rupturing earthquakes are described on page 3-25 in the DOE 2011 draft SEIS as follows:

New paleoseismic data argue for three Holocene (past 11,000 years) surface-rupturing earthquakes, including an earthquake on the Pajarito Fault, approximately 1,400 years ago; an earthquake on the Pajarito Fault approximately 5,000 to 6,000 years ago, which is consistent with an event during the same general time frame on the Guaje Mountain Fault; and a third earthquake on both the Pajarito and the Rendija Canyon Faults, approximately 9,000 years ago. This paleoseismic event chronology demonstrates that the Pajarito Fault often ruptures alone, but sometimes ruptures either with the Rendija Canyon Fault or Guaje Mountain Fault. When this occurs, the resultant seismic moment and, therefore, the earthquake magnitude are larger than when the main Pajarito Fault ruptures alone. Given the evidence for youthful movement on the Pajarito Fault system, future ruptures should be expected.