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U.S. Nuclear Regulatory Commission
ATTN: Deborah A. DeMarco
Office of Nuclear Material Safety and Safeguards
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Washington, DC 20555

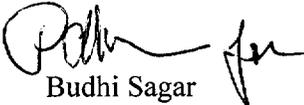
Subject: Submittal of Abstract: The Carrara Fault: The Northeastern Edge of the Walker Lane in South Central Nevada

Dear Mrs. DeMarco:

Attached is an abstract for presentation at the 2000 National Geological Society of America Meeting. This abstract is based on work done by Peter La Femina, John Stamatakos, and Chuck Connor of the CNWRA. The abstract describes the CNWRA's current interpretation of magnetic and gravity anomalies, and geologic mapping southwest of Bare Mountain. Following programmatic acceptance by the NRC, this abstract will be submitted to the GSA Meeting organizing committee for presentation at the National meeting.

If you have any questions please contact Mr. Peter La Femina at (210) 522-6837 or me at (210) 522-5252.

Sincerely,



Budhi Sagar
Technical Director

rae

Attachment

cc: J. Linehan	J. Greeves	D. Brooks	CNWRA Dirs	J. Stamatakos
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THE CARRARA FAULT: THE NORTHEASTERN EDGE OF THE WALKER LANE IN SOUTH CENTRAL NEVADA.

LA FEMINA, Peter (plafemina@swri.edu), STAMATAKOS, J. A., and CONNOR, C.B., Center for Nuclear Waste Regulatory Analyses, Southwest Research Institute, San Antonio, TX 78238.

Recent geological and geophysical mapping in southeastern Nevada reveal an active strike-slip or transfer fault (named the Carrara fault) within the northwestern arm of the Amargosa Desert in southwestern Nevada. The fault is recognized from the northwesterly alignment of surficial features in Quaternary alluvium, including possible fault scarps, push-up ridges, truncated alluvial fans, and fault-parallel folds. Detailed geophysical surveys also show a pattern of anomalies indicative of both dextral strike-slip and down-to-the-southwest dip-slip faulting that is consistent with the surficial features. Total offset is presently unknown, but preliminary values based on a 2.5 mgal. anomaly across the fault and offset magnetic anomalies suggest a minimum of 300 m vertical and 3 km horizontal displacement. Best geophysical definition of its subsurface configuration is in an 8 km² area of the Amargosa Desert, where the Carrara fault truncates two north-south curvilinear magnetic anomalies. These curvilinear anomalies appear to be edges of a faulted block of magnetic buried Miocene silicic tuffs or porphyry flows associated with a pull-apart basin along a releasing bend in the fault. In a regional context, the Carrara fault separates regions dominated by active extensional faulting (to the northeast) from regions with both extensional and strike-slip faulting (to the southwest). The fault also separates regions with little evidence for strike-slip related vertical-axis rotations, based on paleomagnetic observations from areas with large (> 30 degrees) vertical-axis rotations. Based on these observations, we hypothesize that the Carrara fault forms the boundary in southwestern Nevada between the Walker Lane and Basin and Range tectonic provinces. [Work supported by the U.S. NRC (Contract NRC-02-97-009). This work is an independent product of the CNWRA and does not necessarily reflect the views or regulatory position of the NRC].