



SMUD

SACRAMENTO MUNICIPAL UTILITY DISTRICT □ 6201 S Street, Box 15830, Sacramento, California 95813; (916) 452-3211

October 28, 1980

Mr. R. H. Engelken, Director
Region V Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
1990 North California Boulevard
Walnut Creek Plaza, Suite 202
Walnut Creek, CA 94936

Re: Operating License DPR-54
Docket No. 50-312
Reportable Occurrence 80-42

Dear Mr. Engelken:

In accordance with Technical Specifications for Rancho Seco Nuclear Generating Station, Appendix B, Section 5.6.2c, the Sacramento Municipal Utility District hereby submits a followup report to Reportable Occurrence 80-42 which was initially reported to Mr. H. North of your office on October 10, 1980. Mr. North was again contacted on October 24, 1980, and informed that additional information concerning this occurrence had been obtained, thereby delaying this report. At that time an extension to the normal 10-day reporting requirement was requested.

TLD badges are installed at eight onsite and 11 offsite locations to measure integrated background radiation levels. Six of the 19 environmental TLD badges indicated total dose rates greater than 10 mr/quarter above natural background for the third quarter of 1980. The badge locations and approximate mr/quarter above natural background are as follows:

<u>Location</u>	<u>mr/Quarter above Natural Background</u>
West Perimeter Fence	12.1
Visitor's Center	18.5
S.W. of Site (17 miles) Lodi	11.3
West of Site (1.5 miles) Clay	14.4
S.W. of Site (9 miles) Borges Dairy	26.2
S.E. of Site (1 mile) Rancho Seco Park	14.6

Initially it was assumed that two of the locations indicating higher-than-normal readings could be related to activities at the site. These two locations were the West perimeter fence, due to the location of the radioactive materials storage area, and the Visitor's Center, due to the solidification operation performed during the third quarter of 1980. The West perimeter fence reading is still considered valid since increased surveillance in that area, resulting from commitments made in LER 80-33, substantiates the readings. Preliminary calculations indicate that the visitor's center may

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have received 5 to 10 mr/quarter in excess of natural background due to the solidification operation. Therefore, it is feasible that the notification level of 10 mr/quarter in excess of natural background may have been reached. However, whether the total indicated 18.5 mr above background is entirely valid is questionable.

In an effort to substantiate or determine the cause of the abnormal readings, the District collected and read additional environmental badges. In addition to the 19 locations required by Appendix B of the Technical Specifications, the District places an additional 40 environmental TLD badges in the sample area. Although these locations do not have preoperational data to establish natural background levels, they did not indicate as high absolute values as any of the reportable values.

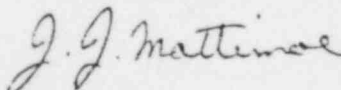
The NRC maintains a wide network of TLD's around Rancho Seco. Four of the NRC monitors corresponded identically to the locations of the SMUD reportable TLD locations while many other NRC monitors were located from one-half mile to 25 miles distant from Rancho Seco. One of the NRC monitoring devices received in excess of 22 mr in the quarter. These absolute values did not come under the reportable levels for any of the Rancho Seco locations.

The State of California also utilizes a total of 10 TLD badges in the vicinity of Rancho Seco. The results of the State-owned badges indicated no significant increase above background except for the West Fenceline location

As a result, some informal testing of the TLD badges was performed. Tests to determine if the badges were light-sensitive when in direct sunlight, as well as a harsher environment such as in the vicinity of arc welding, indicated negligible effects on the TLD readout. However, determination that the TLD badges had passed through the Security X-ray machine when brought on site prompted testing in that area. A representative sample of "zeroed" TLD badges was packaged similarly to those we had collected. The sample was then passed through the X-ray machine. The resultant readout of the badges indicated that while some were unaffected, others indicated exposures from 8 to 35 mr. Based on these results, it was concluded that with the exception of the West perimeter fence, and possibly the Visitor's Center, the remaining abnormal readings can be attributed to passing the TLD badges through the X-ray machine. To preclude a similar occurrence in the future, those individuals collecting the TLD badges will be instructed to allow security personnel to unpackage and visually inspect the TLDs, rather than pass them through the X-ray machine.

There were no plant transients nor power reductions associated with this event.

Respectfully submitted,



J. J. Mattimoe
Assistant General Manager
and Chief Engineer