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SHIFFER, J. D. Pacific Gas & Electric Co.
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SUBJECT: Forwards util response to 870930 requests made by NRC consultant re long term seismic program empirical ground motion data base. Updated computer diskettes w/ground motion base & reflecting items discussed in encl will be provided.

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PG&E — 77 BEALE STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

JAMES D. SHIFFER
VICE PRESIDENT
NUCLEAR POWER GENERATION

November 6, 1987

PG&E Letter No.: DCL-87-266

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Re: Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Long Term Seismic Program - Response to NRC Staff's Request for Information on Ground Motions
(NRC RIDS Distribution Code D031)

Gentlemen:

Enclosed are the PG&E responses to information requests by Dr. Kenneth Campbell of the USGS, a consultant to the NRC, regarding the Long Term Seismic Program (LTSP) empirical ground motions data base. These information requests were forwarded to PG&E in an NRC letter dated September 30, 1987. In addition to this written response, updated computer diskettes containing the ground motion data base, and reflecting the items discussed in the enclosure are being provided to the NRC staff for use by Dr. Campbell.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

J. D. Shiffer

Enclosure

cc: E. G. Igne, ACRS (15)
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U.S. Geological Survey
Denver Federal Center
P. O. Box 25046, Mail Stop 966
Denver, CO 80225

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Denver Federal Center
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Structural Analysis Division
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Brookhaven National Laboratory
Upton, NY 11973

Dr. Jean B. Savy
Lawrence Livermore Laboratory
P. O. Box 808
Mail Stop L-196
Livermore, CA 94550

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Room 1-342
Mass. Inst. of Technology
Cambridge, MA 02139

Dr. Kenneth W. Campbell
U.S. Geological Survey
Denver Federal Center
P. O. Box 25046 Mail Stop 966
Denver, CO 80225

Dr. R. Fitzpatrick (3)
Brookhaven National Laboratory
Bldg. 130, 32 Lewis Avenue
Upton, NY 11973

Dr. Michael Bohn
6412
P. O. Box 5800
Albuqurque, NM 87185

1717S/0052K

ENCLOSURE

The following are the PG&E responses to information requests by Dr. Kenneth Campbell, an NRC Consultant, regarding the LTSP empirical ground motions data base. These requests were forwarded to PG&E in an NRC staff letter dated September 30, 1987. The NRC Staff's six requests are stated below, followed by PG&E's responses. Some of the requests refer to PG&E's draft progress report dated June 24, 1987, "Empirical Ground Motions Investigations for PG&E Diablo Canyon Power Plant Long Term Seismic Program," which was distributed prior to the July 15 and 16, 1987, NRC/PG&E Ground Motions Workshop. This document was referred to as "the Report" in the NRC requests, and is similarly referenced in PG&E's responses.

In addition to this written response, updated diskettes containing the ground motions data base, and reflecting the items discussed below are being provided to the NRC staff for use by Dr. Campbell.

Request No. 1

On page II-1 the Report indicates that the LTSP data are comprised of 157 sets of peak acceleration readings from 55 earthquakes. However, Tables II-2 and II-3 of the Report, as well as the computer file EQSA1.PRN provided earlier, list 47 earthquakes and 154 recordings. What is the correct number?

Response No. 1

The numbers of 55 earthquakes and 157 peak ground acceleration (PGA) sets were part of the original data base that we started with and included a number of early sensitivity studies. The numbers for which results were presented in the progress report of June 24, 1987, are 47 earthquakes and 154 recordings, and these are the correct numbers.

Request No. 2

Table II-3 of the Report lists peak acceleration data from USGS station number 108 for the 1970 Lytle Creek earthquake. Prior to 1975, this station was located on the crest of a dam and, therefore, is not a rock site for this particular earthquake. Why was this station included in your data base?

Response No. 2

Station 108 was on the crest of a dam as correctly stated in the request. It was inadvertently included in the preliminary analyses and has been removed from the data set.

Request No. 3

There are inconsistencies in the peak acceleration values reported in Table II-3 of the Report and those listed in the headers of the response spectra files provided earlier. These inconsistencies occured for the following four earthquakes:

Earthquake	Date	Station #
Oroville	750801	1051
Coalinga AS03	830509	61
		65
Coalinga AS12	830721	67
Morgan Hill	840424	1408

What are the correct peak accelerations for these recordings?

Response No. 3

The correct peak acceleration values for these recordings are those listed in Table II-3 and not in the header lines of the response spectral files. The header lines for these four recordings, however, have been corrected and are transmitted in the enclosed diskettes.

Request No. 4

Table II-3 of the Report lists peak acceleration data from three recording stations that are not listed in Table II-1. These stations are:

Earthquake	Date	Station #
Horse Canyon	800225	706
Livermore B	800126	18
Mammoth Lakes D	800527	46

Please provide instrument housing and site geology information for these three stations.

Response No. 4

The correct station numbers for these recordings are as follows:

Horse Canyon: Station #707
Livermore B Station #57T02

Both of these stations are listed in Table II-1 with their corresponding site conditions. The third recording, Mammoth Lakes D, was not used in the analyses and is not listed in Table II-3.

Request No. 5

Table II-3 of the Report and File EQSA1.PRN provided earlier list multiple recordings from station number 65 for four earthquakes. The earthquakes for which this occurs are:

Earthquake	Date
Coalinga AS10	830709
Coalinga AS13	830721
Coalinga AS14	830725
Coalinga AS16	830909

Please identify the specific stations labeled number 65 for each of these earthquakes so they can be associated with a specific entry in Table II-1.

Response No. 5

The first recording that appears in the listing for each event in Table II-3 corresponds to the free-field instrument, the second is that for the "pad". The "pad" instrument was bolted to a concrete pad used as a base for a lightweight hose-drying rack. The "free-field" instrument was placed 3 m away from the pad on natural ground and anchored in place by sandbags laid over the top of the instrument.

Request No. 6

In Table II-3 of the Report, the earthquake referred to as Mammoth Lakes B (800525) lists a recording from station number 54214. Which station is this? Is it the left abutment site or the central recorder site? The central recorder site is listed for other earthquakes, but in reviewing the CSMIP station data, there are multiple channels associated with the central recorder. Some are on the abutment and some are downstream. Which of these channels are being represented by this station?

Response No. 6

Station number 54214 for the Mammoth Lakes B (800525) event is that of the downstream instrument. For other earthquakes, the left abutment (LA) and downstream (CR) recordings are represented.