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AUTH.NAME AUTHOR AFFILIATION
* Affiliation Unknown
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Southern California Edison Co.

SUBJECT: Package of 11 strip charts of 780916 Tabas earthquake.

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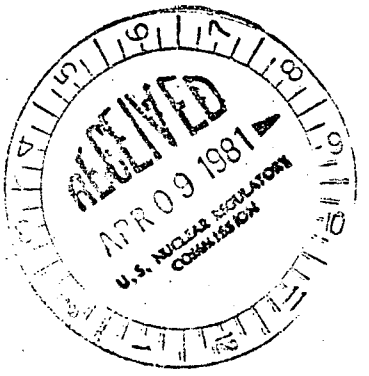
Southern California Edison Company

P. O BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

K. P. BASKIN
MANAGER OF NUCLEAR ENGINEERING,
SAFETY, AND LICENSING

TELEPHONE
(213) 572-1401

April 1, 1981



Director, Office of Nuclear Reactor Regulation
Attention: Mr. Frank Miraglia, Branch Chief
Licensing Branch No. 3
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket Nos. 50-361 and 50-362
San Onofre Nuclear Generating Station
Units 2 and 3

The purpose of this letter is to address the following data sources to facilitate NRC staff preparation for the forthcoming San Onofre Units 2&3 Atomic Safety and Licensing Board Hearings:

1. Tabas Earthquake of September 16, 1978

Enclosed are seven copies (NRC mail code B024) of the Tabas earthquake time histories and response spectra and a photograph of the original time history on which they were based.

This record was initially hand-digitized in March, 1979, but due to the poor quality of the real-time record, confidence in the digitized version was low. Subsequently, the real-time record was reprocessed photographically and redigitized in March, 1981. It was determined at that time that the vertical component was sufficiently obscured by the adjacent horizontal components that redigitization was considered essentially impossible. (This nullifies the value of the original, digitized vertical component.) The horizontal traces now have a higher degree of confidence associated with them and tend to serve as an adequate framework in which to view the strong ground motion of the Tabas earthquake.

NEED 2 Rcds
B001 J2
S
1/1

Drawings
B024
S
1/7

It should be noted that the Tabas, 1978 earthquake was a moderate depth (24 km), thrust, intra-plate event and as such is not directly comparable to the San Onofre 2 and 3 DBE. In addition, the recorder was on the down-thrown block within 4 km of the fault rupture, and probably experienced some localized disturbance during the event. The Applicants have not viewed and do not view this event as appropriate to use in the data base for San Onofre 2 and 3. Nevertheless, we have considered this data in regression analyses (Tera, 1980).

Reference

TERA Corp, 1980, Evaluation of Peak Horizontal Ground Acceleration Associated with the Offshore Zone of Deformation at San Onofre Nuclear Generating Station, prepared for Southern California Edison Company.

2. Oil Well Drilling in the Capistrano Embayment, 1978-1981

The following three exploratory holes have been drilled in the Capistrano Embayment during the last three years:

1. Arriba de La Estrella "J. W. Ficklin No. 1"
   Date: 12/5/78 - 12/29/78. Abandoned
   Total Depth: 3856 feet
   Location: 1390 feet S, 220 feet E., NW Corner
   Section: 24, T6S, R7W

Based on the Geologic map in West (1979) this hole is completely within the Cretaceous bedrock, east of the Cristianitos fault.

2. Santa Fe Energy "Reed-Krum No. 1"
   Date: 5/15/80 - 12/80. Abandoned
   Total Depth: 6609 feet
   Location: 2900 feet N, 450 feet E from SW Corner
   Section: 9, T8S, R7W

Based on West (1979), this hole lies well west of the Cristianitos and does not penetrate the fault.

3. Texaco Incorporated "O'Neill No. 3"
   Date: 10/27/80, tested 2/27/81
   Total Depth: 4500 feet
   Location: 1700 feet S, 125 feet W from NW Corner
   Section: 23, T8S, R7W

Based on West (1979), this hole is within tens of feet east of Oneill No. 1 and confirms the westward dip of the Cristianitos fault.

Reference

West, J.C., 1979, Supplement to the Generalized Subsurface Geological and Geophysical Study, Capistrano Area, Orange, California, prepared for Southern California Edison Company, January, 1979.

3. Offshore Geophysical Data - Eco-Systems, Inc.

Enclosed are seven copies (NRC Mail Code B024) of the nine geophysical track lines recorded near San Onofre in June, 1980 as speculation data. Also enclosed are seven copies (NRC Mail Code B024) of an assessment of this data by Dr. David G. Moore. The results of this assessment are that the Eco-Systems data is of low quality and that no significant structure is indicated by the data.

If you have any questions concerning this information, please contact me.

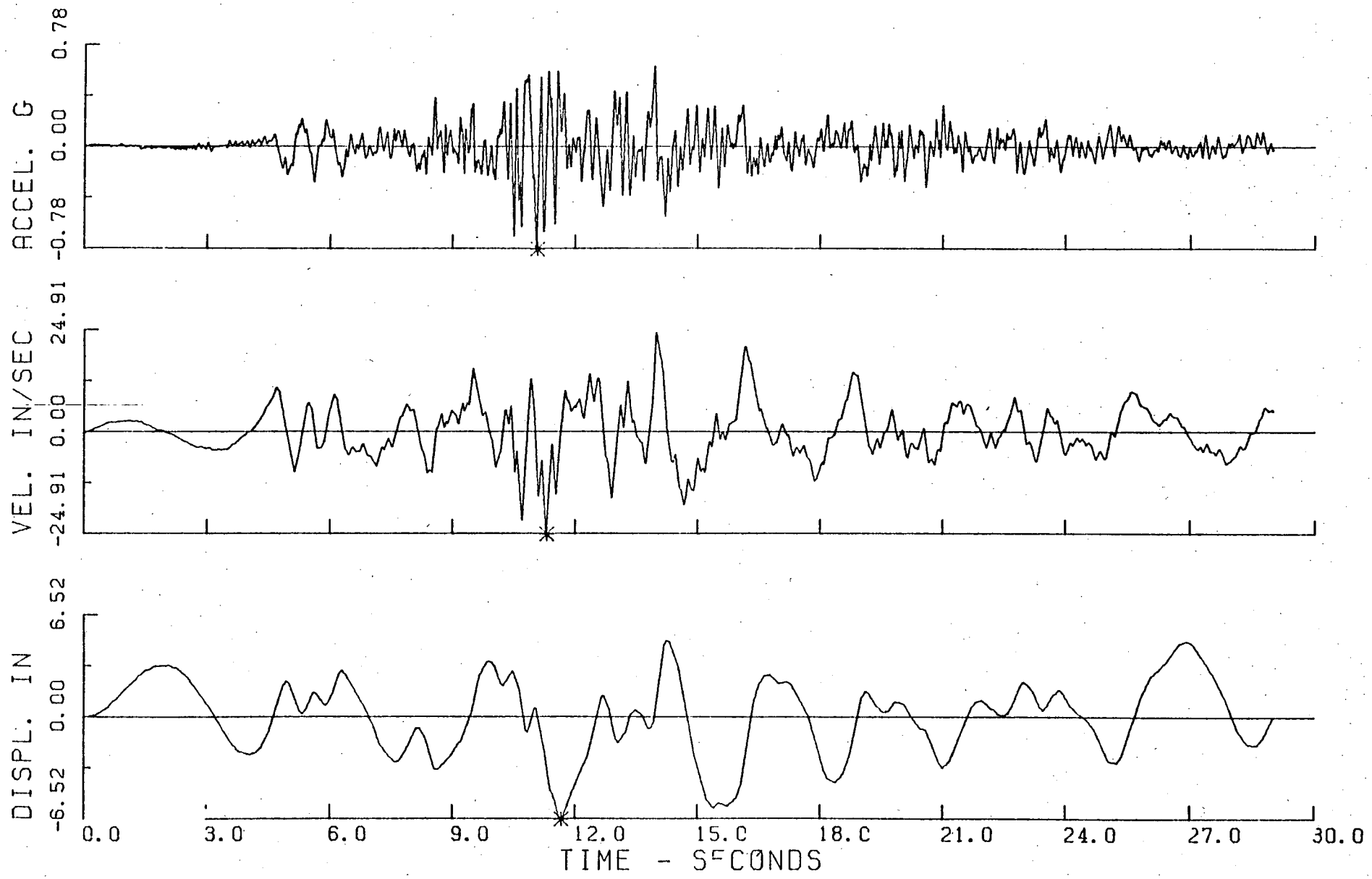
Very truly yours,

K P Bunker

Enclosures

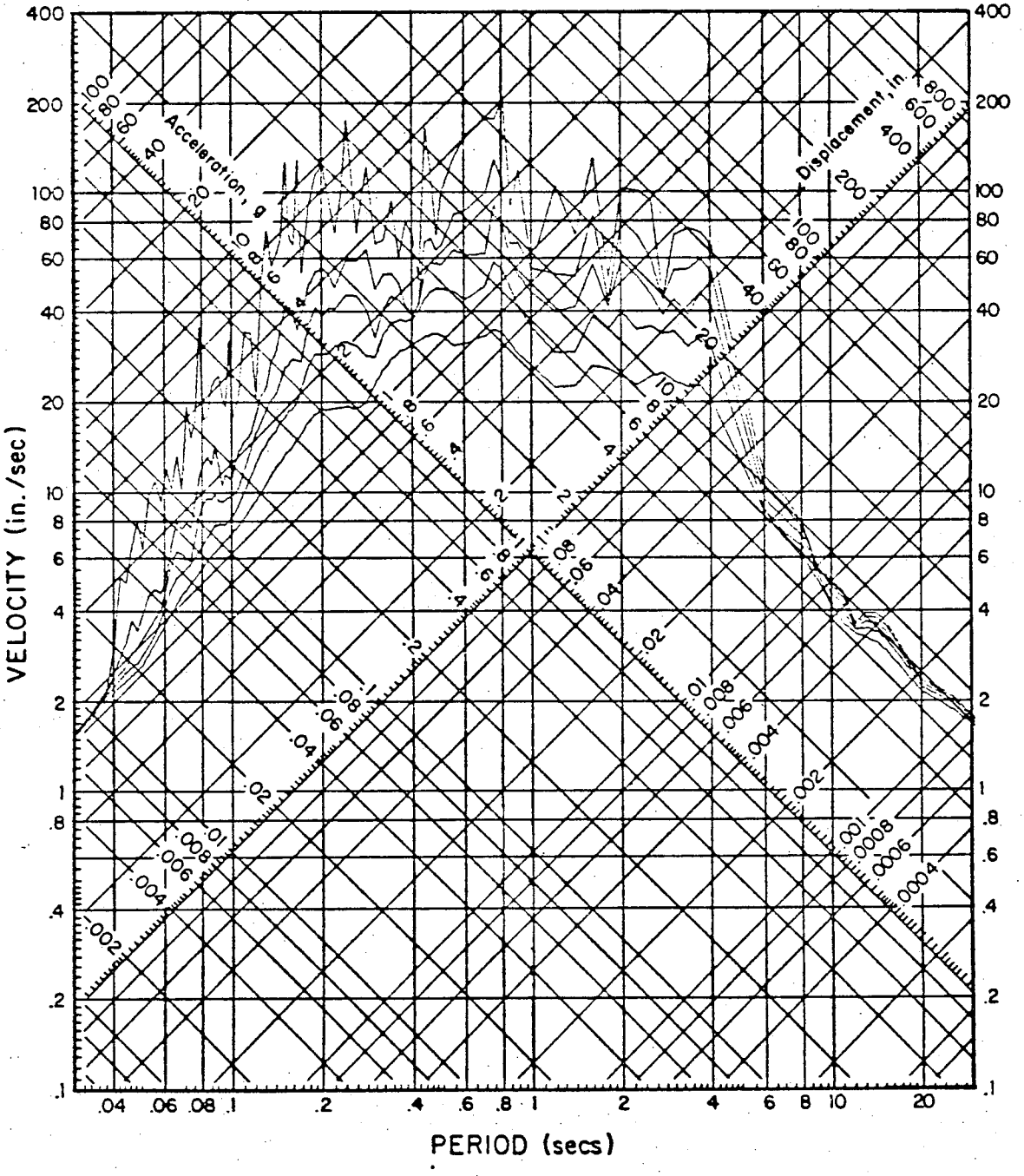
cc: USGS, Menlo Park, CA (Dr. J. Andrews)
USGS, Reston, VA (J. F. Devine)
California Division of Mines and Geology
(P. Amimoto)
D. B. Slemmons

Tabas Earthquake, Tran. Component, Sept. 16, 1978
* PEAK VALUES, ACCEL = -0.78 G VEL --24.91 IN/SEC DISPL = -6.52 IN



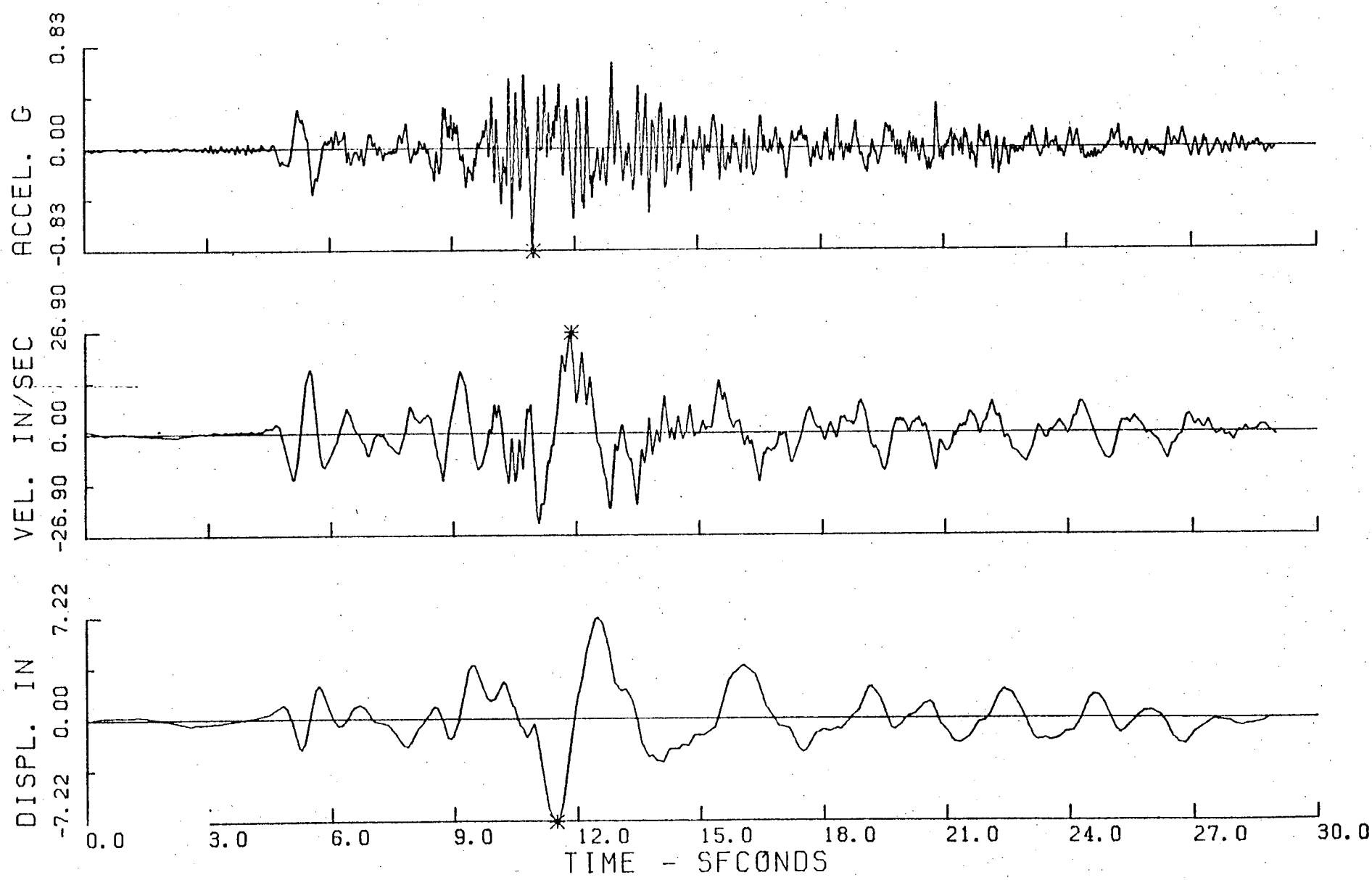
RESPONSE SPECTRUM

Tabas Earthquake, Tran. Component, Sept. 16, 1978



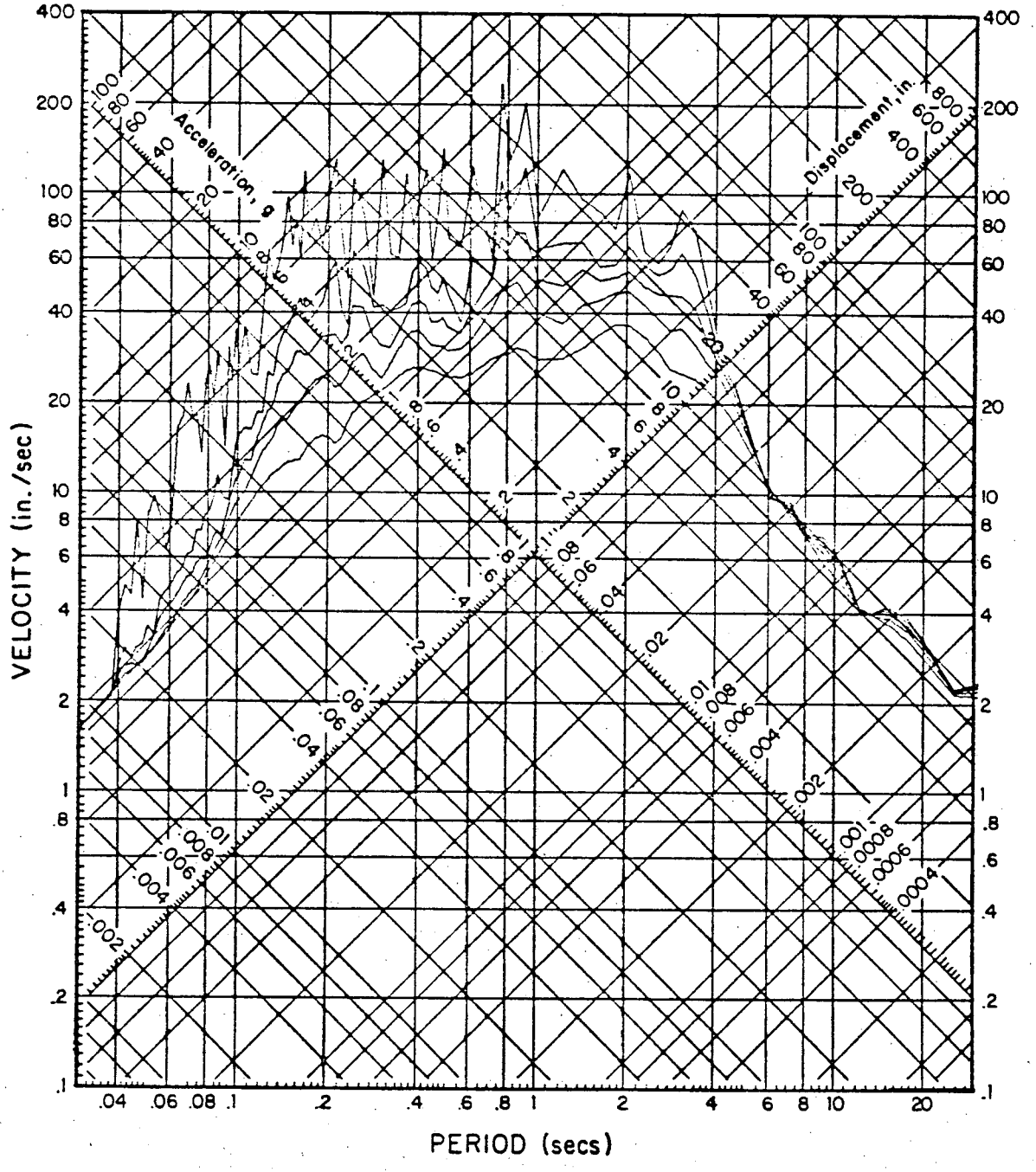
Tabas Earthquake, Long. Component, Sept. 16, 1978

* PEAK VALUES, ACCEL = -0.83 G VEL =26.90 IN/SEC DISPL = -7.22 IN



RESPONSE SPECTRUM

Tabas Earthquake, Long. Component, Sept. 16, 1978



9440 La Jolla Shores Drive
La Jolla, CA 92037
Wednesday, 11 March, 1981

Mr. H. Gene Hawkins
Southern California Edison Co.
P.O. Box 800
2244 Walnut Grove Av.
Rosemead, CA 91770

Dear Mr. Hawkins:

As per your verbal request of yesterday, I have reviewed the set of seismic reflection records made by ECO Systems Management Co. in June 1980.

I will comment on these 1 KJ Boomer records line by line, but preface my remarks with the conclusion that the records are of very poor quality and do not add any new information to the structural map we have already prepared using the much better quality Woodward-Clyde and Marine Advisors' data.

The following comments on the records start with line 9, nearest to the shoreline, and work seaward to line 1. All but one of these lines are oriented to cross approximately normal to a seaward projection of the onshore Cristianitos Fault. Line 9, the exception, is nearest to shore and was traversed approximately parellel to the shoreline. As we know from our previous interpretations of available data, this is nearly along the strike of the gently Westward dipping strata of that area. The records as a result of this along-strike orientation do not define any legible structure, but show random down-dip side echoes. Lines 7, 6 and 5 are of such poor quality that no useable coherent reflectors are recorded. Line 4 shows a small anticline at about shot points 11 and 12 that must be quite local as it is not defined on adjacent W/C records. It does not show a syncline that could be projected into shot point 1.5 from the W/C data to the southeast. I conclude that this syncline probably has died out before reaching the position of this transect. Line 3 is essentially worthless.

Line T is the best quality of the suite. It does show the anticlinal and synclinal structures at about the correct places, as previously mapped, although penetration below the sea floor is limited to about 94 milliseconds or approximately 75 meters at water velocity. At the outer end of line T probable faulting is shown in close proximity to that of earlier data. This is the only faulting delineated by the ECO Systems data.

Line 2 shows a broad anticline nearest to shore on this transect at the position mapped earlier. It does not define the syncline which should be further seaward or the zone of deformation near its outer end as mapped from the W/C data. Line 1 shows a broad gentle anticline that should be expected from earlier mapping. No other structure is legible.

Mr. H. Gene Hawkins
Southern California Edison Co.

In summary, the records of this survey are poor by modern standards (about vintage 1957). There is no significant structure shown by the data that was not known from previous studies. Faulting is defined only at the seaward end of line T at a locality previously mapped as deformed.

Sincerely yours,

David G. Moore
Registered California
Geologist & Geophysicist