UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of PACIFIC GAS AND ELECTRIC COMPANY (Diablo Canyon Nuclear Power Plant, Units 1 and 2)	)	Docket Nos. 50-275 O.L. 50-323 O.L.

ANSWER OF PACIFIC GAS AND ELECTRIC COMPANY IN OPPOSITION TO JOINT INTERVENORS' MOTION TO REOPEN THE RECORD ON SEISMIC ISSUES

I

INTRODUCTION

Following contested hearings held intermittently over a period of three months, the Atomic Safety and Licensing Board in this proceeding issued a Partial Initial Decision which held that the Diablo Canyon facility can withstand any earthquake that reasonably could be expected to occur at the site. 10 NRC 453 (September 27, 1979.) The Joint Intervenors appealed that decision to the Atomic Safety and Licensing Appeal Board. Before the Appeal Board could decide that appeal, Joint Intervenors moved to reopen the record to hear new evidence including that derived from

the 1979 Imperial Valley earthquake. The Appeal Board granted the motion (ALAB-598, 11 NRC 876 (June 24, 1980)), heard the evidence itself during October, 1980, and issued a decision which covered the earlier appeal and the reopened hearing. ALAB-644, 13 NRC 903 (June 16, 1981.) That decision was appealed by the Joint Intervenors and Govenor Brown to the Nuclear Regulatory Commission which, on March 18, 1982, declined to grant the petitions for review. An appeal from the Commission's decision was taken by Governor Brown to the United States Court of Appeals for the District of Columbia Circuit where it is being held in abeyance pending final NRC action on the full power license.

On July 16, 1984, Joint Intervenors filed a motion before the Appeal Board to reopen the record to receive what the Joint Intervenors allege is "significant new information directly relevant to the seismic safety of the Diablo Canyon Nuclear Power Plant." This pleading is Pacific Gas and Electric Company's (PGandE's) answer in opposition to the Joint Intervenors' motion.

II

JURISDICTION

It is respectfully submitted that this Board does not have jurisdiction to entertain the instant motion. Joint Intervenors have moved to reopen this proceeding more than two years after the Commission elected not to review ALAB-644. The Commission's election not to review ALAB-644

represents the agency's final action and this Board's authority over the seismic portion of the case is ended. Public Service Company of Indiana Inc. (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-530, 9 NRC 261, 262 (1979). Jurisdiction is lacking even though the Board has before it other matters for adjudication. Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-513, 8 NRC 694, 695 (1978). Where the Board lacks jurisdiction, as it does in this case, the proper recourse is for the Joint Intervenors to petition the director of nuclear reactor regulation pursuant to 10 CFR § 2.206 for consideration of their concerns. Since the Board lacks jurisdiction of the seismic issue the motion to reopen should be summarily dismissed.

III

ARGUMENT

A. Standards For Reopening A Closed Record And Admitting Late Filed Contentions

It is well established that a party seeking to reopen the record in a licensing proceeding carries "a heavy burden." Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit No. 1), ALAB-462, 7 NRC 320, 338 (1978). Just last month this Board reiterated the test for reopening a closed record in connection with Joint Intervenors' previous motions to reopen the record in design and construction quality assurance observing that:

> "[T]he motion must be both timely presented and addressed to a significant safety or environmental issue. Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station), ALAB-138, AEC 520, 523 (1973); . . . Georgia Power Company (Alvin W. Vogtle Nuclear Power Plant, Units 1 and 2), ALAB-291, 2 NRC 404, 409 (1975). Beyond that, it must be established that "a different result would have been reached initially had [the material submitted in support of the motion] been considered. Northern Indiana Public Service Cmpany (Bailley Generating Station, Nuclear-1), ALAB-227, 8 AEC 416, 418 (1974)." In the Matter of Pacific Gas and Electric Company (Diablo Canyon Nuclear Power Plant Units 1 and 2) ALAB-775, 18 NRC ___, (slip opinion at 6 (June 28, 1984).

In the instant motion the Joint Intervenors reference the standard (Motion at 2) and then proceed to ignore it other than to state the obvious that recent earthquakes and recent publications are "new" and then to argue that the motion is timely. (Motion at 17-18.) What the motion fails to argue is how the "new evidence" is significant or would have changed the previous result reached by this Board. Indeed, while data presented in the motion is new, it is neither significant nor would it have lead this Board to a different conclusion. In fact, as shown infra, the same arguments have been previously proffered to this Board with either the same data or data which is not significantly different from that which was previously available to the Board.

We respectfully submit that for the reasons set forth herein and the attached affidavits of Drs. Smith, White, and Hamilton the Motion to Reopen should be denied. 1/

B. The 1984 Morgan Hill Earthquake.

Joint Intervenors argue that the record should be reopened "in order to receive new information material to the resolution of the critical seismic issues in this proceeding." (Motion at 19.) The motion and the Brune affidavit make great weight of the 1.29g horizontal acceleration from the Coyote Dam recording of the Morgan Hill earthquake of April 24, 1984. Not only do they emphasize, literally, that this is the highest ever recorded horizontal acceleration, but they repeatedly compare it to the .75g anchored design spectra used for design at Diablo Canyon as if they were making a legitimate comparison. In fact they are obviously and deliberately misleading. Dr. Brune and Joint Intervenors know full well that the .75g anchored design spectra used at Diablo Canyon was derived

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1/ The attached affidavits of Dr. Stewart Smith, Dr. William White, and Dr. Douglas Hamilton are incorporated herein by reference. The professional qualifications of Dr. Smith, a geophysicist and Dr. Hamilton, a geologist, have previously been submitted to this Board in connection with the October, 1980, seismic hearings. The qualifications of Dr. White, a structural engineer, were submitted in connection with the design quality assurance hearings before this Board in 1983 where Dr. White was a witness.

from the 1.25g Pacoima Dam record 2/ and the 1.15g of USGS Circular 672. Given the fact that the Coyote Dam record is only 3% higher than the Pacoima Dam record (1.29g v. 1.25g) one can hardly herald the Coyote Dam record as "significant new evidence" which would lead this Board to a different result. (Smith aff. at 5-6) The Pacoima Dam record was testified and argued about, and considered exhaustively by both the Licensing and Appeal Boards in this case. Joint Intervenors offer nothing in either their motion or the Brune affidavit regarding the Coyote Dam record which could change the Board's prior decision. In fact, all of the spectra referred to by Dr. Brune, when appropriately modified to consider the effective acceleration concepts used for design purposes, are controlled by the Diablo Canyon design bases. (White aff. at 2-3.)

C. The 1980 Mexicali Valley Earthquake.

Dr. Brune's latest affidavit discusses at length the Victoria record of the Mexicali Valley earthquake of June 9, 1980 (MV80). (Brune aff. at 12 et seq.) The thrust of Brune's argument regarding MV80 is that the recording is

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2/ The Pacoima Dam record from the 1971 San Fernando Valley earthquake was used at Diablo Canyon as the basis for the redesign response spectrum. (13 NRC 903, 943) Dr. Brune, in a very recently published paper, states the peak acceleration of the Pacoima Dam record was 1.25g, just 3% lower than the Coyote Dam record of 1.29g. Brune, J.N. (1984) "Preliminary results on topographic seismic amplification effect on a foam rubber model of the topography near Pacoima Dam."

typical of the 1979 Imperial Valley earthquake (IV79) and that the Bond's Corners record from IV79 was a valid record. He states MV80 had an M_L of 6.1 and an M_s of 6.4 and the Victoria record gave a horizontal acceleration of .98g and exceeded 1g at several time points in the vertical direction. (Brune aff. at 13.) The Motion of Joint Intervenors takes this data from the Brune affidavit and calls it "new data," or "recent calculations" and states that it shows this Board's characterization of the Bond's Corner record was incorrect. (Motion at 8.) Both Dr. Brune and Joint Intervenors attempt to mislead this Board. This is not "new data" or "recent calculations." These very arguments were put forth by Dr. Brune at the 1980 ALAB seismic hearings. At that time, Dr. Brune testified:

> Yes. The recent Victoria, Mexico earthquake of January 9, 1980, magnitude 6.2 in nearly the same tectonic environment as the Imperial Valley '79 earthquake recorded peak horizontal accelerations at a station approximately 11 kilometers from one epicenter of 0.5g on one horizontal component and 0.92g on the other horizontal component and vertical accelerations of over 1g.
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> Clipping the dynamic range of the kinemetric 1g instrument several times, this tends to confirm that the level of horizontal acceleration recorded for Imperial Valley 1979, for example, at Bonds Corner and the high vertical accelerations over 1g are not unusual for a magnitude 6.2 earthquake in this tectonic environment.
>
> Unfortunately, parts of the record are unreliable or missing. Even higher

> accelerations may have occurred. At the present time an accurate epicenter is not available. There was no surface fault slip observed. (Transcript, p. 663, Dr. Brune testifying on direct examination, October 22, 1980.) 3/

Similarly, Dr. Brune made the same argument regarding the modeling work done by Dr. Frazier (hearing Tr. 628 et. seq.) that he now makes in his current affidavit.

Clearly the data from the MV80 earthquake is not new evidence, the arguments set forth by Dr. Brune and Joint Intervenors based on that data are not new and, as this Board has already considered the evidence and arguments, a different result would, and indeed could, not be reached.

C. The Location and Subsurface Geometry of the Hogri Fault

Dr. Brune neatly picks and chooses quotations from papers by Crouch et al., Eaton, and others to make the seemingly alarming statement that it is possible that the Hosgri fault could be less than 3 km beneath the Diablo Canyon site. Dr. Brune is not a geologist, he has wandered from his area of expertise, and, more importantly he is wrong. The Hosgri fault is not any closer than approximately 8 to 10 km beneath the site. (Hamilton aff. at 2) In his selective pickings from the work of others,

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3/ The transcript indicates MV80 occurred on January 9, 1980 as opposed to June 9, 1980. It is not known whether Dr. Brune misspoke or the "January" is a transcription error, but the correct date of MV80 was June 9, 1980.

Dr. Brune has ignored the essential facts which show him to be wrong. He totally ignores those portions of Crouch et al. and Eaton which make it clear that as one moves north along the Hosgri from its southern reaches, the fault changes from thrust or reverse faulting to right lateral strike slip. (Hamilton aff. at 2-6) Dr. Brune's use of Eaton's thrust mechanism solutions for earthquakes considerably south of the Diablo Canyon site, while ignoring Eaton's strike-slip solutions for those north of the site (while, incidentially, using all of Eaton's earthquakes to opine the site is one of "high" seismicity) to allow him to use Crouch et al.'s "worst" thrust fault plane to get the Hosgri fault 3 km under the site is, at best, less than intellectually forthright.

As set forth in the attached affidavits of Dr. Smith and Dr. Hamilton, the so-called "new evidence" proffered by Dr. Brune is certainly new to Joint Intervenors' experts who, as this Board undoubtedly recalls, were of the opinion during previous hearings that the Hosgri was a gigantic strike-slip fault several hundreds of kilometers in length, acting as a plate boundary, and having in excess of 100 km of strike slip motion over the past several million years. All of the above opinions have certainly been cast in grave doubt by the Crouch et al. paper and other recent work. What Dr. Brune and Joint Intervenors fail to point out to this Board is that it was the Applicant's experts such as

Drs. Smith, Jahns, Hamilton, Blume, Bolt, Seed, and others who informed the Licensing Board in 1978 that the Hosgri had a component of reverse faulting. (Hamilton aff. at 4). Indeed, Figure 36 from the Hamilton/Jahns direct testimony of 1978, which is affixed to the Hamilton affidavit attached hereto, shows diagramatically almost precisely the fault plane which would be predicted by the Crouch et al. and Eaton work. (Hamilton aff. at 4) Similarly, the "new" amounts of offset or movement found by Crouch et al. and others, is indeed drastically different than that previously hypothesized by Joint Intervenors' experts. It is in fact even less than what was testified to as most probable by Applicant's witnesses in 1978. (Hamilton aff. at 6-9) The "new" evidence supports clearly the previous testimony before this Board that little displacement, either thrust or strike slip, has occurred along the Hosgri during at least the last 7 million years. (Hamilton aff. at 9)

D. The Diablo Canyon Site Is Not One of Active Folds

Dr. Brune, again wandering onto unfamiliar ground, points to the Coalinga earthquake of 1983 as an example of how a major earthquake fault can be hidden, citing geologic authority, and then postulating that such could happen at Diablo Canyon because "folds" exist at the Diablo Canyon site, again citing geologic authority. (Brune aff. at 19-20) As Dr. Brune has ventured into an area which he

admits is out of his expertise, it is not clear whether he misleads through misunderstanding or otherwise, but it is abundantly clear that Diablo Canyon is not a candidate for a hidden Coalinga type earthquake as he postulates. It is important in the context of Brune's comment that "there is no known reason why concealed thrust faulting of the type observed for the Coalinga earthquake could not occur near the Diablo Canyon site" to note that Stein and King (cited by Brune) are referring specifically to <u>active</u> folds and that topographically conspicuous folds are present at the locations of all of the examples they cite. Furthermore, they show that rapid surface deformation of one to several meters vertical extent occurred in connection with each example. This is highly significant in that it shows that <u>active</u> folds are manifested by readily detectable evidence of deformation of the ground surface (including the sea floor). Conversely folds that are not "active" (or for which the rate of deformation, hence internal fault slip, is so low as to not create deformation of a surface datum), do not have surface expression other than possibly, through differential erosion. (Hamilton aff. at 11.)

With regard to the region of the Hosgri fault, detailed study (e.g. Diablo Canyon FSAR Appendix D, 1974, and Appendix E, 1975) has shown that folds associated with the Hosgri fault lie within the rock section that has been bevelled by erosion some 10,000-15,000 years ago, and that

this datum is not itself folded. Hence such folds, including those cited by Brune as having been shown on Plate 2, USGS Open-File Report 74-252 by H. C. Wagner, are not active. In contrast, the fold identified as the offshore Lompoc anticline and fault, located 13 km west of the Hosgri fault and 40 km south of Diablo Canyon, is an obvious example of an active fold. This feature has previously been identified as a likely source of the M7.3 Lompoc earthquake of 1927 (e.g. ASLB testimony by Hamilton and Jahns, p. 127 (1978) and by Smith, p. 25, (1978), and ALAB testimony by Hamilton, p. IX 1-5 (1980). (Hamilton aff. at 11-12.)

IV

CONCLUSION

Joint Intervenors have filed yet another motion in a series of last minute efforts to stop the operation of Diablo Canyon. The motion does not meet the burden established by Wolf Creek, supra, and must be denied. Joint Intervenors have once again failed to bring forth significant new evidence relating to safety matters which

would cause this Board to decide any differently than it already has on the seismic issues in this matter.

Respectfully submitted,

ROBERT OHLBACH
PHILIP A. CRANE, JR.
RICHARD F. LOCKE
DAN G. LUBBOCK
Pacific Gas and Electric Company
P. O. Box 7442
San Francisco, CA 94120
(415) 781-4211

ARTHUR C. GEHR
Snell & Wilmer
3100 Valley Bank Center
Phoenix, AZ 85073
(602) 257-7288

BRUCE NORTON
THOMAS A. SCARDUZIO, JR.
Norton, Burke, Berry & French, P.C.
P. O. Box 10569
Phoenix, AZ 85064
(602) 955-2446

Attorneys for
Pacific Gas and Electric Company

By Bruce Norton
Bruce Norton

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