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The Honorable Ivan Selin  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Chairman Selin:

SUBJECT: DIABLO CANYON NUCLEAR POWER PLANT LONG TERM SEISMIC  
PROGRAM

During the 378th meeting of the Advisory Committee on Reactor Safeguards, October 10-12, 1991, we reviewed the NRC staff's evaluation of the Long Term Seismic Program (LTSP) carried out by the Pacific Gas and Electric Company (licensee) in connection with its Diablo Canyon Nuclear Power Plant, Units 1 and 2. This evaluation is included in Supplement No. 34 to NUREG-0675, the staff's Safety Evaluation Report for the operation of these plants. The background for the LTSP is described below.

The ACRS provided reports on construction permit applications for Diablo Canyon, Unit 1, in December 1967, and for Unit 2 in October 1969. In both instances, no particular concern was expressed about the seismic design basis, which was 0.2g for the Design Earthquake and 0.4g for what was called the Double Design Earthquake.

In 1971, the Hosgri Fault was discovered and the seismic design bases were reviewed and revised over the next few years. During this period, the ACRS and its consultants in the areas of geology, seismology, and earthquake engineering were involved to a significant extent in the efforts of the staff and the licensee to arrive at new seismic design bases. During this period, the ACRS held ten subcommittee meetings, seven of which related to seismic matters. Three of these seven meetings were held in San Luis Obispo, California, near the site; two in Los Angeles, California; and two in Washington, D.C.

The ACRS review of the operating license application for Diablo Canyon was completed with two subcommittee meetings and a meeting of the full ACRS in June and July 1978. The ACRS report endorsing an operating license was issued on July 14, 1978. This report included extensive discussion of the revised seismic design bases for the plant and reasons for finding them acceptable, and concluded with the following statement:

"The ACRS notes that, for distances less than 10 km from the earthquake source, there are currently no strong motion data for shocks larger than magnitude 6 and few reliable data for shocks of magnitude 5 and 6. Also, the theory and analyses of earthquake and seismic wave generation, of seismic wave transmission and attenuation, and of soil-structure interaction are in a state of active development. The Committee recommends that the seismic design of Diablo Canyon be reevaluated in about

ten years taking into account applicable new information."

As a result of this recommendation by the ACRS, the NRC included in the operating license for Diablo Canyon a license condition requiring what became known as the Long Term Seismic Program. The Committee reviewed this license condition at subcommittee and full committee meetings in May and June 1984, and indicated its agreement in a report dated June 20, 1984. The operating license was issued in November of that same year.

The licensee and the NRC staff spent the next year developing and reviewing a plan for the conduct of the LTSP. The ACRS reviewed the proposed plan and indicated its agreement in a report dated July 17, 1985. The LTSP was begun in July 1985 and completed in July 1988 -- three years as required by the license condition. During that period, the Committee reviewed progress on the program at subcommittee meetings in November 1986 and February 1988. In addition, the Committee's consultants in the areas of geology and seismology attended numerous meetings at which the results from the program were presented and discussed by the licensee, the NRC staff, and other interested and knowledgeable persons.

The staff's Safety Evaluation Report covering the LTSP was issued in June 1991, after a substantial period of review of the licensee's report and requests for, and submittal of, additional information. Our final review involved a subcommittee meeting in San Luis Obispo on September 16-17, 1991, and review by the full ACRS during its 378th meeting.

At our subcommittee meeting on September 16, 1991, several members of the public expressed the view that the United States Geological Survey (USGS) should be retained by the NRC to perform an independent seismic study of the Diablo Canyon area. We see no need for such a study. The USGS was retained by the staff as a consultant on geologic and seismologic matters, as were other competent consultants. During progress in the program and in our review of the final report and safety evaluation, we, with the help of our consultants in these areas, have given special attention to the activities of the licensee and the staff relating to geology and seismology. We are satisfied that these programs have been carried out in a competent and professional manner. Those geologic and seismologic characteristics of the area that are significant to the seismic safety of the plant are not at issue among the large number of experts and consultants associated with the licensee, the staff, and the ACRS.

We agree with the staff's conclusion that, subject to resolution of some minor confirmatory items, the License Condition has been met. We believe further that the seismic margins for the plant are adequate and quite comparable to those for other plants in the United States. The results of the probabilistic risk assessment show no significant seismic vulnerabilities. We continue to believe that the Diablo Canyon Nuclear Power Plant can be operated without undue risk to the health and safety of the public.

Mr. James C. Carroll did not participate in the Committee's

deliberations regarding this matter.

Sincerely,

David A. Ward  
Chairman

References:

1. U.S. Nuclear Regulatory Commission, NUREG-0675, "Safety Evaluation Report Related to the Operation of Diablo Canyon Nuclear Power Plant, Units 1 and 2, Supplement 34," June 1991
2. Pacific Gas and Electric Company, "Final Report of the Diablo Canyon Long Term Seismic Program," July 1988, and addenda through May 29, 1991