

EXECUTIVE SUMMARY

Pacific Gas and Electric Company (PG&E) has completed its advanced seismic studies to further document the seismic characteristics of the fault zones in the region surrounding the Diablo Canyon Power Plant (DCPP) in San Luis Obispo County. These studies have given PG&E, as well as scientists and regulators, an unprecedented view into the earth's crust that significantly and fundamentally increases understanding of the seismic characteristics near the DCPP.

A significant reduction in uncertainty due to improved constraints on the rates of motion on the Hosgri and Shoreline faults, the overall length of the Shoreline fault, dip angles of faults and possible linkages between the San Simeon, Hosgri, and Shoreline faults, as well as the internal structure of the Irish Hills has been achieved through these seismic studies. Results from high- and low-energy 2D and 3D seismic reflection surveys as well as other geologic and geophysical studies have been combined with improved ground motion models to evaluate the seismic hazard at the DCPP site. The result is that the ground motions based on the new information from this effort remain bounded by the 1977 Hosgri design ground motions. This review demonstrates that the plant is designed to withstand the ground motions that would be produced by potential earthquakes from faults in the vicinity of the DCPP.

PG&E performed these studies following the recommendation of the California Energy Commission (CEC) in a report issued in response to state legislation (Assembly Bill 1632, or AB 1632). AB 1632 (Blakeslee, Chapter 722, Statutes of 2006) directed the CEC to assess the potential vulnerability of California's largest baseload power-generation facilities (1,700 megawatts or greater) to a major disruption due to a seismic event or plant aging. Upon completing that assessment, the CEC issued a report containing the recommendation that PG&E perform additional seismic studies to supplement the original and ongoing seismic studies performed as part of PG&E's Long Term Seismic Program (LTSP), and that those studies be conducted using advanced technologies such as three-dimensional (3D) seismic-reflection mapping.

PG&E conducted 2D/ 3D low- and high-energy (shallow and deep penetration) seismic surveys (LESS and HESS, respectively) onshore and low-energy seismic surveys offshore. The offshore 3D HESS permit was denied by the California Coastal Commission. PG&E has concluded that the offshore 3D HESS study is not necessary because other geophysical and seismicity data and analytical assumptions were used to address the objectives of the offshore 3D HESS studies.

The activities that PG&E performed in accordance with the CEC recommendation were part of the Central Coastal California Seismic Imaging Project (CCCSIP). This CCCSIP Report consists of a technical summary, an introduction, and 12 detailed technical reports of key regional seismic features and hazards. It also contains plots that illustrate the updated ground-motion values resulting from a seismic event on the key studied faults near the DCPP. In all cases, the research confirmed previous analyses that the plant and its major components are designed to withstand—and perform their safety functions during and after—a major seismic event.

PG&E has submitted these reports to the California Public Utilities Commission's (CPUC) Independent Peer Review Panel (IPRP) and to the U.S. Nuclear Regulatory Commission (NRC). The IPRP provided valuable input during the project, shaping the scope and focus of the seismic studies. PG&E expects to receive valuable feedback from the NRC and IPRP on these study results and will respond to that feedback and/or comments in a timely manner.

Additionally, these study results will support a new NRC-mandated seismic hazard risk assessment for the DCPD that is required of all nuclear power plants in the United States. PG&E is using the review process required by the NRC, known as the Senior Seismic Hazard Analysis Committee (SSHAC) process, to incorporate and evaluate existing and new seismic information to update the seismic hazard analysis for DCPD. The SSHAC process is a peer-reviewed evaluation that involves the use of independent experts. The seismic hazard analysis update is due March 2015.

In addition to the SSHAC process, PG&E is committed, through the LTSP, to continually studying advances in seismic knowledge and assessing the implications on the seismic hazard analysis to ensure that the DCPD is designed to withstand the largest potential ground motions produced by earthquakes from regional faults. That commitment extends beyond March of 2015 and will remain in effect throughout the operational life of the DCPD.

Finally, PG&E is making its studies widely available to the public, government, and academic communities. The final updated ground-motion values will be shared with local governments and other key infrastructure operators so that those entities may evaluate the designs of their facilities against the updated seismic hazard and their emergency plans. The study data will also be shared with interested stakeholders, including the scientific and academic communities, once the peer review process is complete.