REPORT ON THE ANALYSIS OF THE SHORELINE FAULT ZONE, CENTRAL COASTAL CALIFORNIA

Report to the U.S. Nuclear Regulatory Commission
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Pacific Gas and Electric Company

Diablo Canyon Power Plant

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GLOSSARY OF ACRONYMS AND TECHNICAL TERMS

ACRONYMS

ASW	auxiliary salt water
CCSN	Central Coast Seismic Network
CDF	core damage frequency
CRADA	Cooperative Research and Development Agreement
DCPP	Diablo Canyon Power Plant
DSHA	deterministic seismic hazard analysis
FSAR	final safety analysis report
GMPE	ground motion prediction equation
GPS	global positioning system
ISFSI	independent spent fuel storage installation
LGM	Last Glacial Maximum
LiDAR	light detection and ranging
LOSM	Los Osos–Santa Maria
LTSP	Long Term Seismic Program
MBES	multibeam echo sounding
MIS	marine oxygen isotope stage
MLLW	mean lower low water
NEHRP	National Earthquake Hazards Reduction Program
NGA	Next Generation Attenuation
NRC	U. S. Nuclear Regulatory Commission
OBS	ocean bottom seismometer
PG&E	Pacific Gas and Electric Company
PSHA	probabilistic seismic hazard analysis
RMS	root mean square
USGS	U. S. Geological Survey

TECHNICAL TERMS

Coastline – A broad region in the vicinity of a shoreline that includes coastal landforms, such as beaches, wave-cut platforms, sea cliffs, marine terraces, and seaward-facing hill slopes.

DCPP – Diablo Canyon Power Plant The area includes the power block where the reactors and generators are located, and the adjacent support facilities.

High Stand – a still stand of sea level caused when glaciers reach temporary equilibrium between accumulating snow/ice and melting snow/ice causing rising sea level to stop before falling.

Islay shelf – The rocky portion of the inner continental shelf that lies offshore of Point Buchon. It extends from the coastline to the continental slope on the west and from Estero Bay on the north to the general latitude of the DCPP on the south. It is generally characterized by wide, gently sloping subsea exposures of rock, but also includes limited areas of thin late Quaternary marine deposits and mobile sand sheet deposits.

Low Stand – a still stand of sea level caused when glaciers reach temporary equilibrium between melting snow/ice and accumulating snow/ice causing falling sea level to stop before rising.

Mean sea level (MSL) – Sea level measured at the mean of all tides in the region. This is approximately coincident with NAVD 88, the reference datum for project topographic surveys. In this study we reference all maps to NAD 83_1983_UTM Zone _10N.

Mean lower-low water (MLLW) – Sea level measured at the mean of the low tides, 2.6 feet (0.8 m) below MSL in the DCPP area.

Mean higher-high water (MHHW) – Sea level measured at the mean of the high tides, 2.5 feet (0.77 m) above MSL in the DCPP area.

Paleoshoreline – A preserved remnant of an ancient shoreline. In the DCPP area, these are discontinuous features related to sea-level highstands onshore and high- and lowstands offshore. Paleoshorelines are typically associated with wave-cut platforms and paleosea cliffs and/or paleobeaches. In the DCPP area, about 10 paleoshorelines of different ages are preserved onshore and at least 10 offshore; locally, multiple closely spaced strandlines are grouped with a single paleoshoreline.

San Luis Bay fault zone – The northern group of faults in the Southwest Boundary fault zone. These consist of the San Luis Bay, Rattlesnake, and Olson faults.

Santa Rosa Reef shelf – The rocky portion of the inner continental shelf that lies offshore of Point San Luis. It extends from the coastline to the continental slope on the west and from the general latitude of the DCPP on the north to the limit of bedrock outcrops south and southeast of Point San Luis. It is generally characterized by the wide, gently sloping and flat subsea exposures of rock, but also includes limited areas of thin late Quaternary marine deposits and mobile sand sheet deposits.

Shoreline – The location where the sea surface meets the land. It includes the entire tidal range.

Shoreline angle – The point (typically in profile) where a wave-cut platform meets a sea cliff. Because of natural variation in wave-cut platform surfaces, shoreline angles can be formed at a variety of elevations with respect to the tidal range, ranging from as low as MSL (approximately elevation 0 relative to NAVD 88) to a few meters above MSL. In the DCPP area, the most common elevation of shoreline angles on the modern coastline is 2 m, approximately coincident with MHHW. An ancient shoreline angle provides an approximate record of the relative sea level at the time the paleoshoreline formed.

Shoreline fault zone – The geologic structure interpreted to have produced the seismicity lineament as recognized by Hardebeck (2010).

Still Stand – Sea level remains at remains at a constant elevation (level) for a period of a few thousand or more years during the Quaternary Period. This occurs when glacier melt and snow accumulation maintain equilibrium.

Strandline – The two-dimensional geomorphic record of sea level. On an erosional coastline (such as the Irish Hills coastline), it is marked by the intersection of a sea cliff and wave-cut platform. On a depositional coastline, it is marked (less precisely) by a beach berm. As with shoreline angles, modern strandlines in the DCPP area typically occur about 2 m above MSL, but may range from MSL to a few meters above MSL. An ancient strandline provides an approximate record of the relative sea level at the time the paleoshoreline formed.

Wave-cut platform – A broad bedrock platform that slopes gently seaward from a sea cliff. Wave-cut platforms are carved predominantly by wave erosion; however, other processes may contribute to their genesis, such as chemical and salt weathering, bio-erosion, and expansion-contraction of clays and ice.