UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 26, 2025

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SUBJECT: DIRECTOR'S DECISION REGARDING SEISMIC CORE DAMAGE FREQUENCY FOR DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2 (EPID L-2024-CRS-0000)

Dear Diane Curran, Hallie Templeton, and Caroline Leary:

By letter dated March 4, 2024, as supplemented on June 7, 2024; July 17, 2024; and October 30, 2024 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML24067A066, ML24162A079, ML24218A164, and ML24305A187, respectively), the San Luis Obispo Mothers for Peace, Friends of the Earth, and Environmental Working Group filed a petition requesting that the U.S. Nuclear Regulatory Commission (NRC) exercise its supervisory authority to order the immediate closure of Diablo Canyon Nuclear Power Plant, Units 1 and 2 (Diablo Canyon), due to "the unacceptable risk of a seismically induced severe accident." On March 12, 2024 (ML24072A529), the request was referred to the enforcement petition process under Title 10 of the *Code of Federal Regulations* (10 CFR) 2.206, "Requests for action under this subpart."

On August 27, 2024, as supplemented by letter dated December 5, 2024 (ML24205A066, ML24317A038), the NRC staff acknowledged receiving your petition and stated that, pursuant to 10 CFR 2.206, your petition was being referred to me for action and that it would be acted upon within a reasonable time. You were also told that the NRC staff determined that there is no imminent safety concern that warrants immediate shutdown of Diablo Canyon.

You met with the petition review board (PRB) on July 17, 2024, to clarify the bases for your petition. The transcript of that meeting (ML24218A164) is considered a supplement to the petition.

On October 24, 2024, Pacific Gas and Electric Company (PG&E) provided a voluntary submittal (ML24298A234) to the NRC related to the review of your petition, and the staff considered the provided information in its evaluation of the petition.

As explained in the proposed director's decision (ML24302A148), the PRB recommended denying your request to shut down Diablo Canyon because (1) the seismic models developed by PG&E do not neglect the potential for thrust or reverse faulting beneath Diablo Canyon, (2) the tectonic setting along central coastal California differs substantially from that for the Noto Peninsula, (3) the existence of a 70- to 100-kilometer-long "inferred" offshore thrust fault adjacent to Diablo Canyon with a slip rate greater than 2 millimeters per year is highly unlikely, and (4) the return period of 715 years for seismic core damage is not justified. Therefore, there is an insufficient basis on which to take enforcement action against PG&E.

The staff sent a copy of the proposed director's decision to you and to PG&E for comment on April 10, 2025 (ML24302A153, ML24302A154). You responded with comments on May 15, 2025 (ML25136A355), and the licensee did not provide any comments. The comments and the staff's response to your comments are included as an attachment to the director's decision.

For the reasons provided in the enclosed director's decision (DD-25-01),[1] I have determined that the actions requested in the petition will not be granted in whole or in part.

A copy of DD-25-01 will be filed with the Secretary of the Commission for review by the Commission in accordance with 10 CFR 2.206(c). As provided for by this regulation, the decision will constitute the final action of the Commission 25 days after the date of the decision unless the Commission, on its own motion, institutes a review of the decision within that time. The documents cited in the enclosed decision are available in ADAMS in the NRC's Library at http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS, who encounter problems in accessing the documents located in ADAMS, or who want to inspect publicly available documents at the NRC's Public Document Room at 11555 Rockville Pike, Rockville, MD 20852, should contact the NRC's Public Document Room reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by email to pdr.resource@nrc.gov.

The notice of "Issuance of the Director's Decision Under 10 CFR 2.206" will be filed with the Office of the *Federal Register* for publication.

[1] Due to their size, figures 1–9 referred to in the director's decision have been included in a separate attachment to this letter (ML25161A264).

I would like to acknowledge your efforts in bringing the issues to the attention of the NRC. Please feel free to contact Dennis J. Galvin, petition manager, at Dennis.Galvin@nrc.gov, or by telephone at 301-415-6256, to discuss any questions related to this petition.

Sincerely,

Michael X. Franovich

Digitally signed by Michael X. Franovich
Date: 2025.06.26 18:29:08 -04'00'

Michael X. Franovich, Deputy Director
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosure:
Director's Decision DD-25-01

Attachment:
Attachment to the Director's Decision: Figures 1–9

cc: Listserv

ENCLOSURE

DIRECTOR'S DECISION
ADAMS ACCESSION NO. ML25160A125

ATTACHMENT

ATTACHMENT TO THE DIRECTOR'S DECISION:
FIGURES 1–9
ADAMS ACCESSION NO. ML25161A264

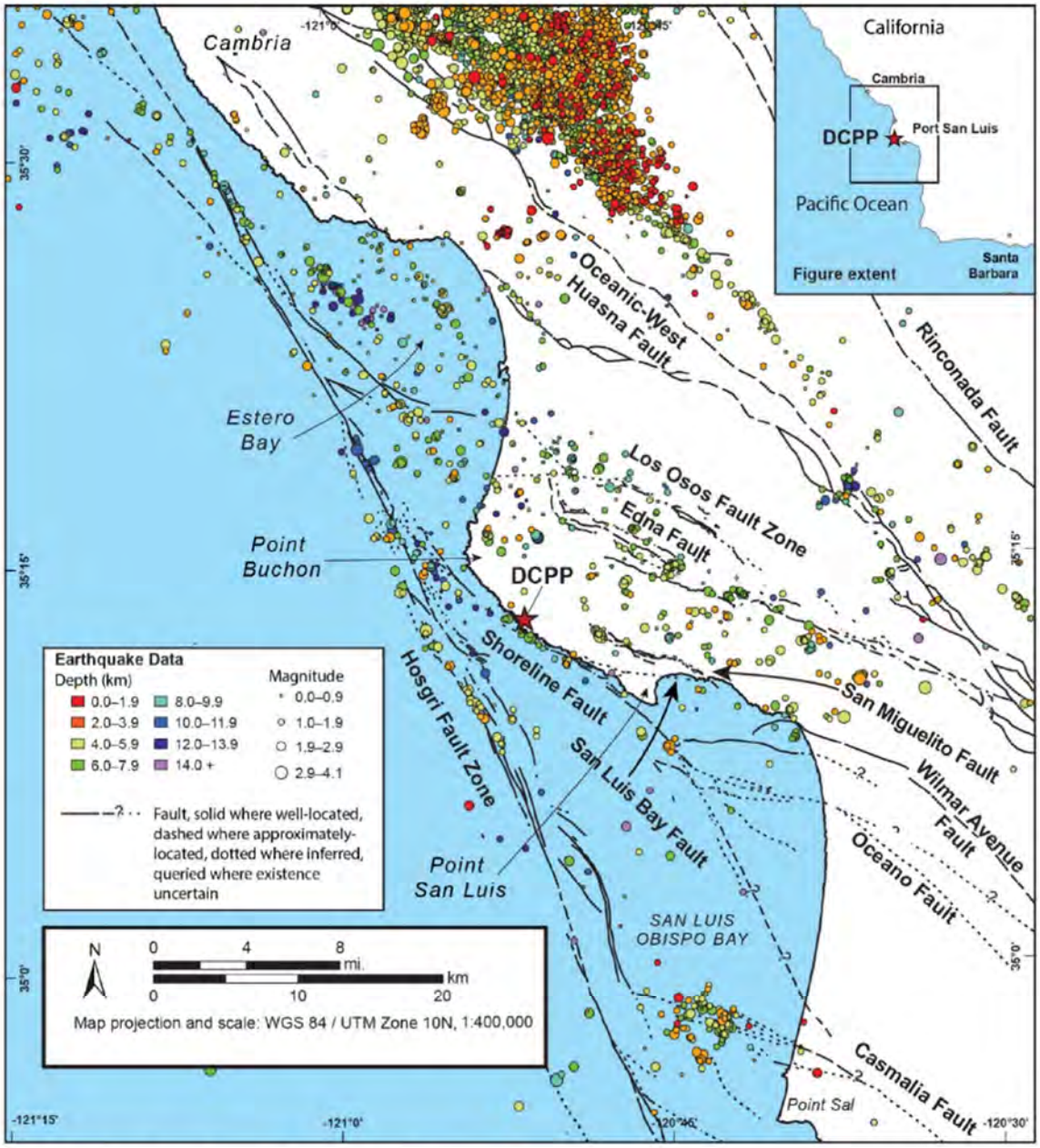

Figure 3.3-3 Regional Seismicity Patterns from Recorded Earthquakes Between 1987 and 2013 Relative to the Mapped Traces of Known Faults, Redrafted from Figure 5-16 in PG&E (2015b)

Figure 1 Location of Diablo Canyon relative to major regional active fault systems that contribute the most to the hazard. (NUREG/KM-017 (ML21344A126))

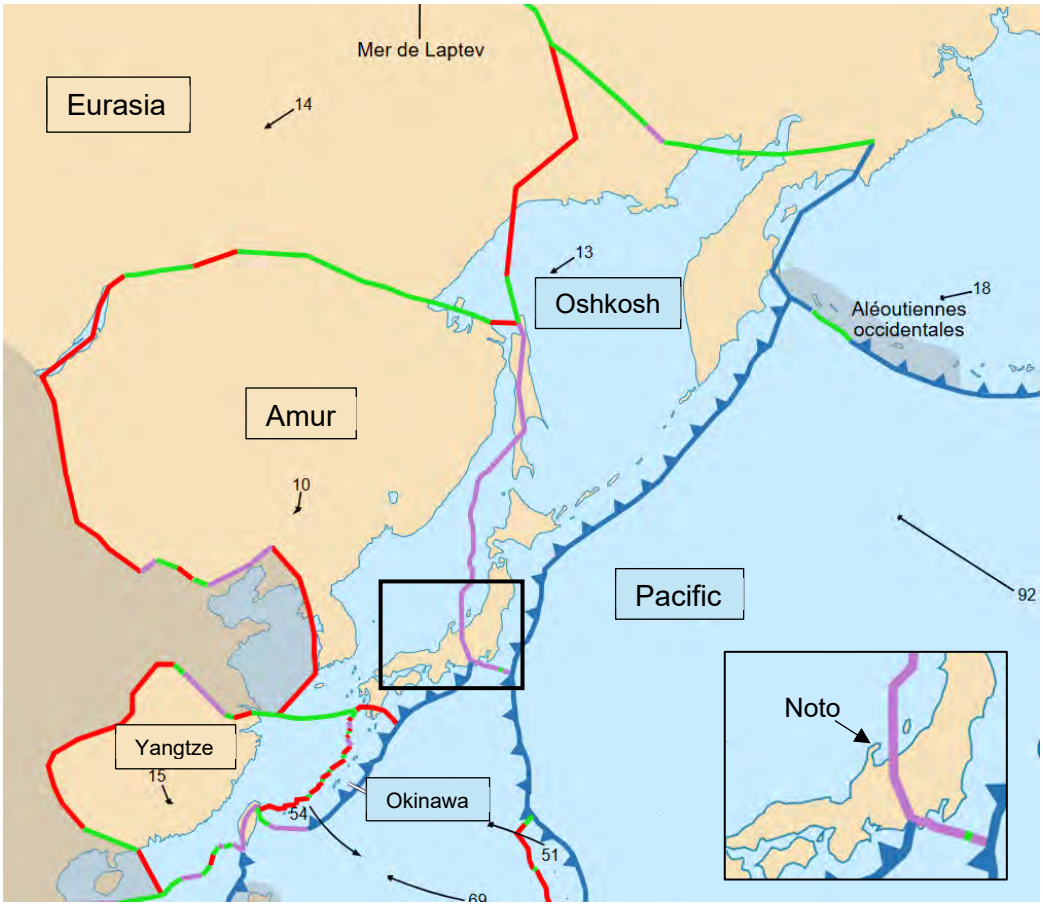

Figure 2 Location of the Noto Peninsula relative to the Amur and Oshkosh microplates. (Wikipedia commons: https://commons.wikimedia.org/wiki/File:Tectonic_plates_boundaries_detailed-en.svg)

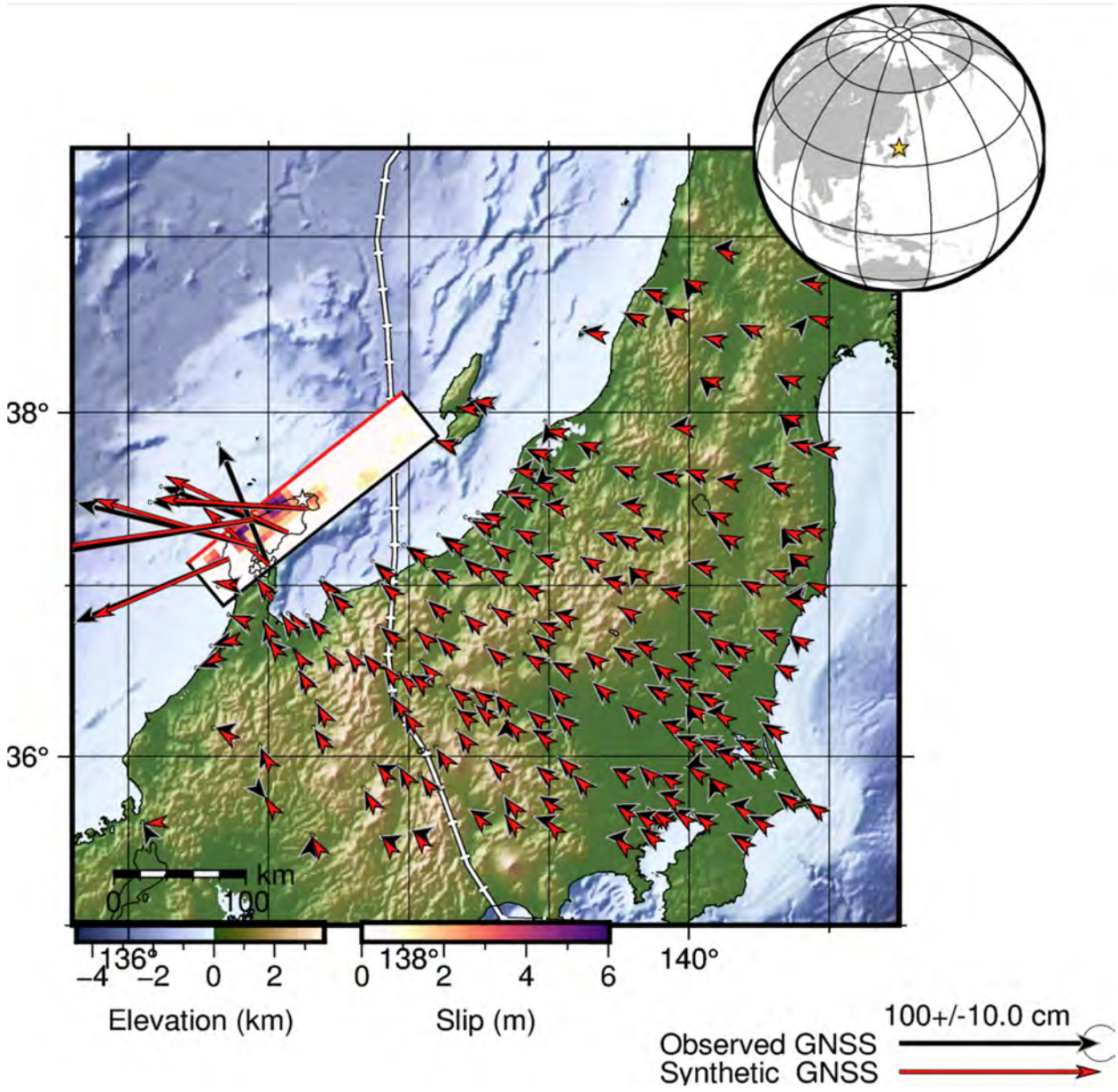

Figure 3 USGS modeled slip distribution for 2024 Noto earthquake (https://earthquake.usgs.gov/earthquakes/eventpage/us6000m0xl/finite-fault)

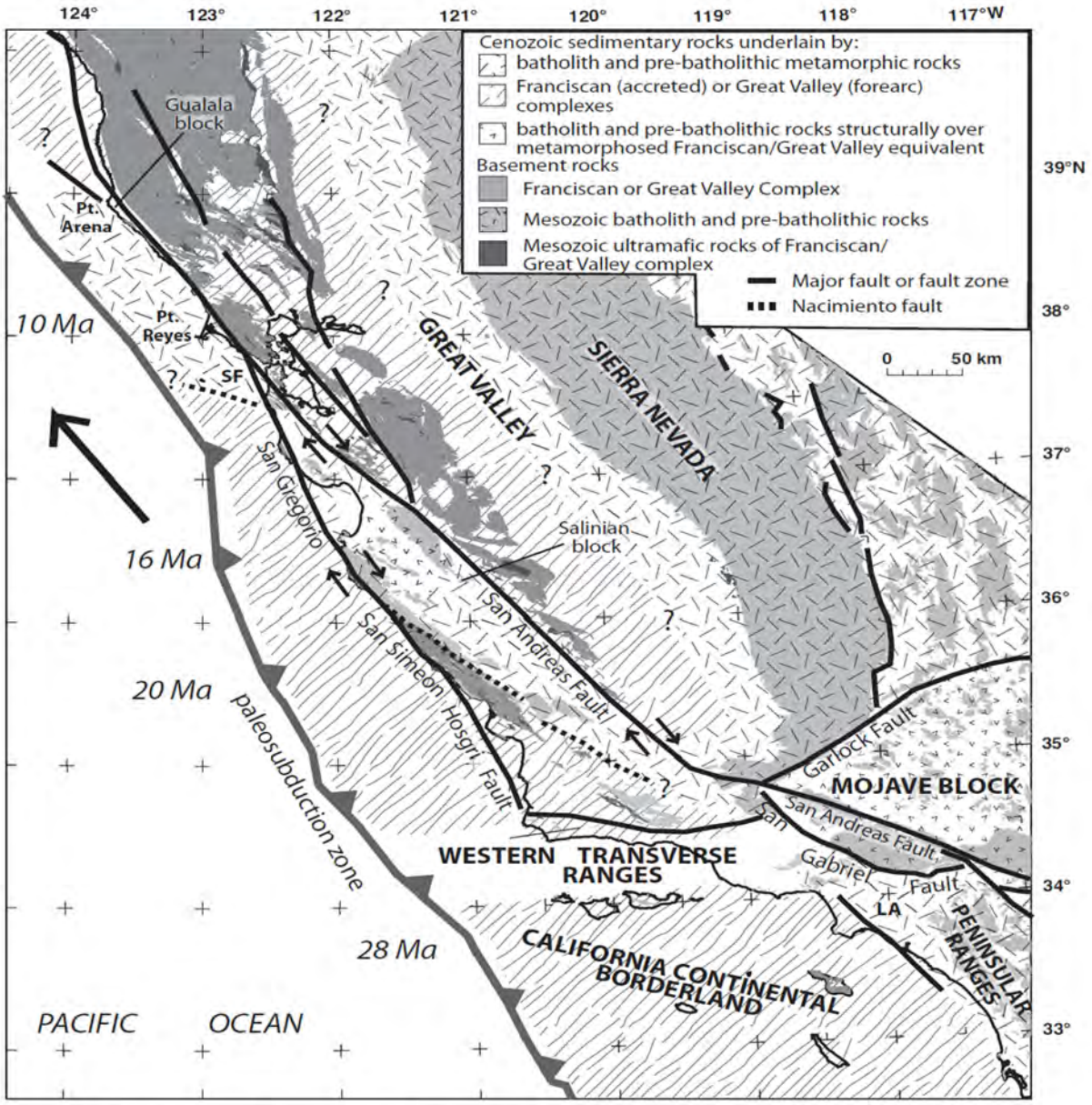

Figure 1. Index map of the central California Coast Ranges. LA—Los Angeles; SF—San Francisco. Arrow shows motion of the Pacific plate relative to the North American plate. Numbers in italics show the position of the edge of the subducting slab from Atwater and Stock (1998) that migrates northward and serves as a proxy for the development of the San Andreas transform margin.

Figure 4 Geologic map showing a triangular region bounding the California Coast Range with many NW striking faults that cut through Ceneozoic Era (66 Mya) sedimentary rocks that overlie older Mesozoic Era (252-66 Mya) basement rocks.*

* Langenheim, V. E., R. C. Jachens, R. W. Graymer, J. P. Colgan, C. M. Wentworth, and R. G. Stanley, “Fault geometry and cumulative offsets in the central Coast Ranges, California: Evidence for northward increasing slip along the San Gregorio–San Simeon–Hosgri fault,” Lithosphere, 5(1), 29-48, 2013.

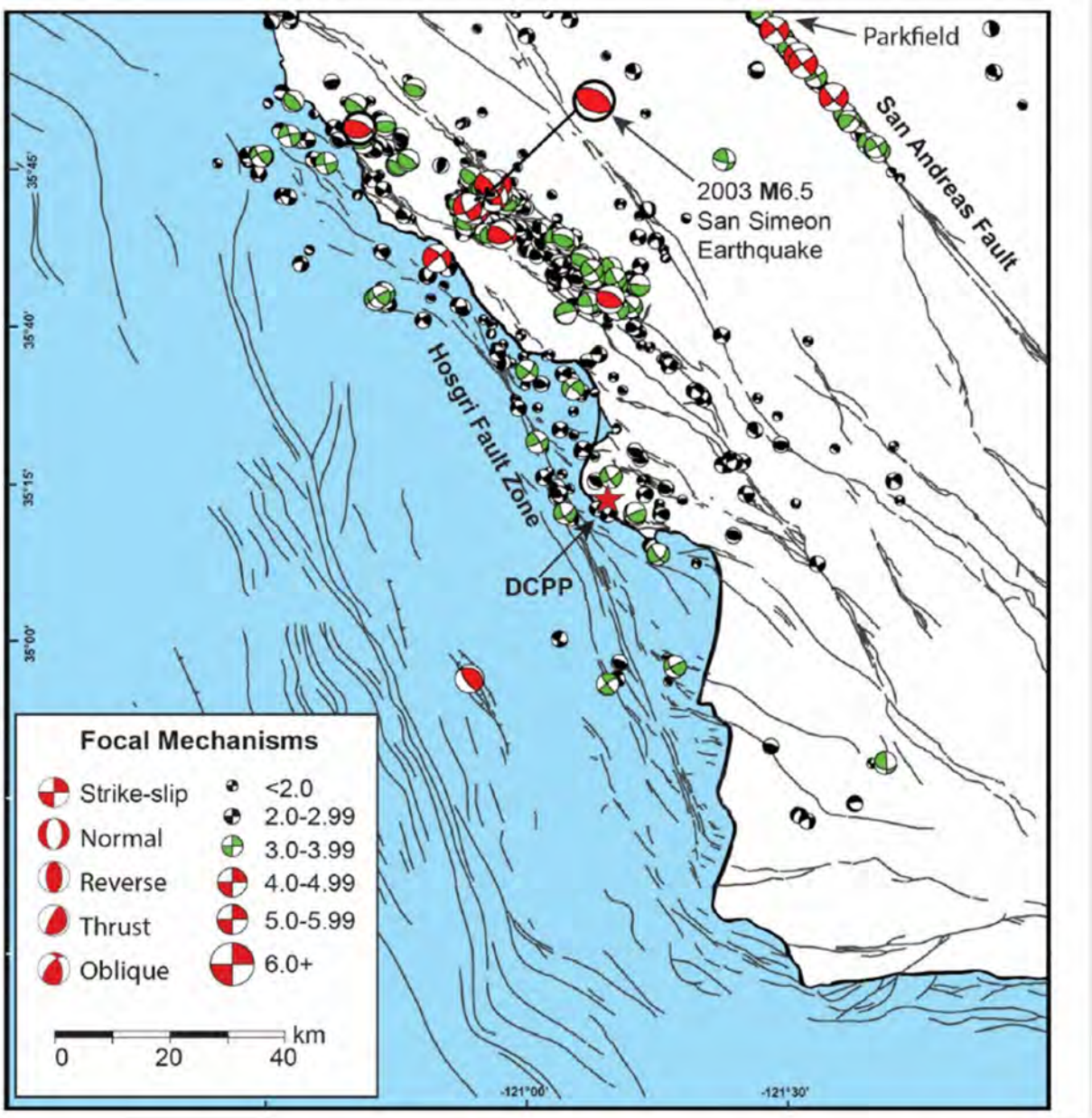

Figure 3.3-4 **Seismicity Patterns and Focal Mechanisms for the Central California Coastal Region Based on Hardebeck (2010) for Events Between 1987 and 2008. Redrafted from Figure 5-24 in PG&E (2015b)**

Figure 5 Focal mechanisms of earthquakes near Diablo Canyon (NUREG/KM-017 (ML21344A126))

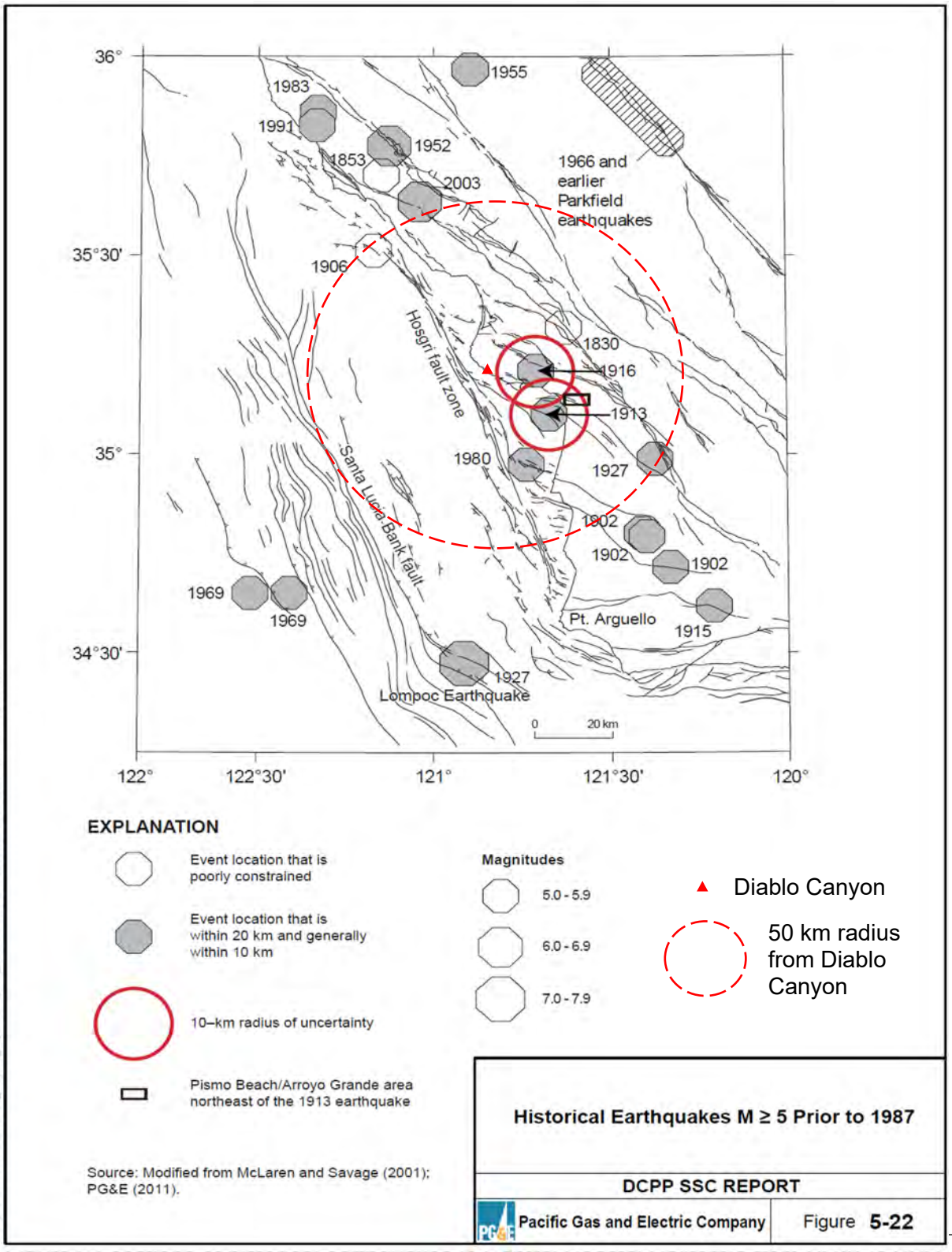

Figure 6 Locations of historical earthquakes in Central Coastal California from PG&E's SSC model SSHAC report. Modified to show location of Diablo Canyon site and 50 km radius. (ML15071A046)

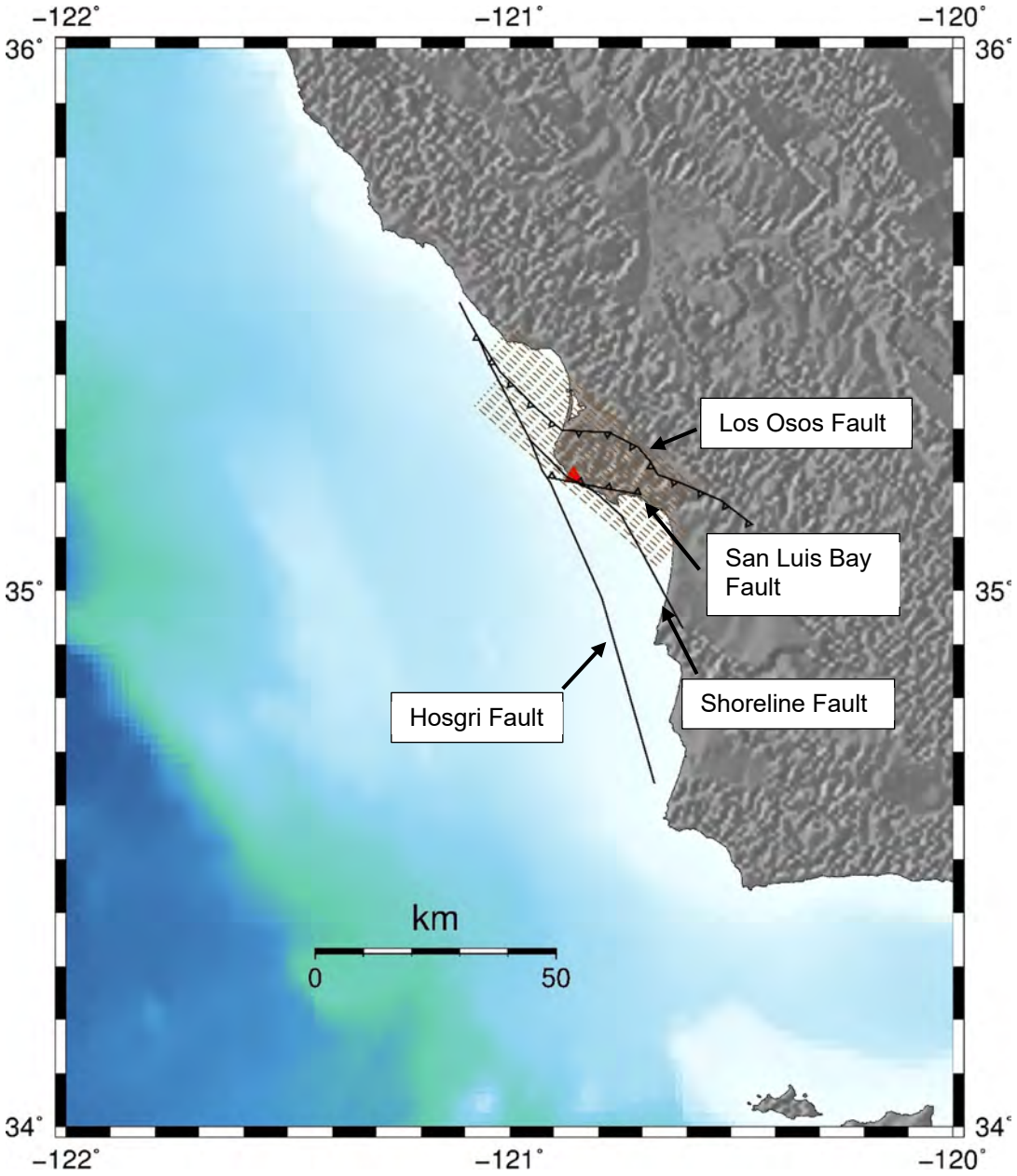

Figure 7 from the NRC staff's confirmatory analysis of PG&E's hazard models shows the Hosgri, Shoreline, Los Osos, San Luis Bay, and the 18 virtual faults as dashed lines (ML16341C057).

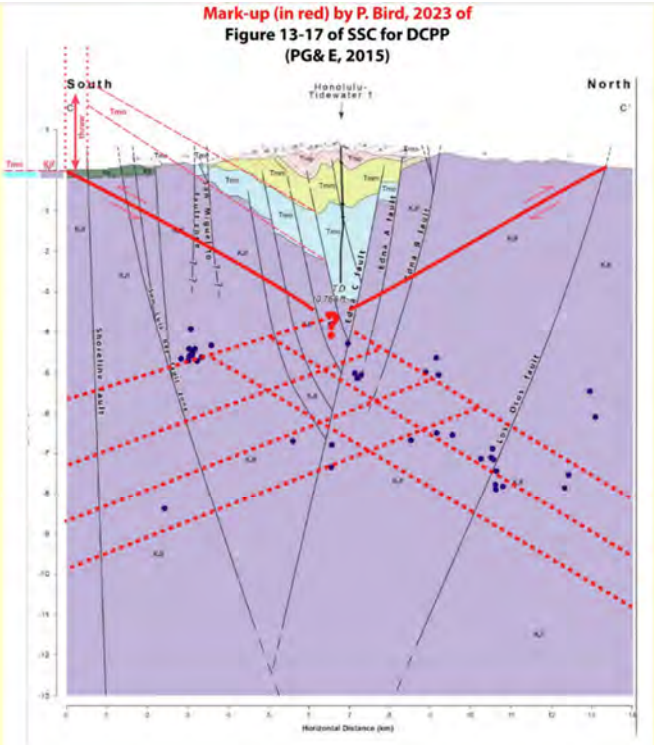

Figure 1. Revised geologic section through the Irish Hills near DCPP. The base for this figure is Figure 13-17 of the Seismic Source Characterization for DCPP (*PG&E*, 2015). Note that the fault dips suggested by black lines in their figure were not based on data, but were constrained by *PG&E*'s (2015) *a priori* assumption that only strike-slip tectonics is active in the area. In red, I have suggested more plausible 25° dips for the Los Osos thrust (at right/North) and the Inferred Coastline thrust (at left/South). The upper- left portion of this figure is also edited to show the throw (vertical offset) of map unit Tmo across the Inferred Coastline thrust, discussed in my text paragraph IV.B.25(b).

Figure 8 Petitioner modified PG&E cross section with petitioner's interpretation of subsurface fault geometry. Slide is from petitioner presentation (ML24198A105).

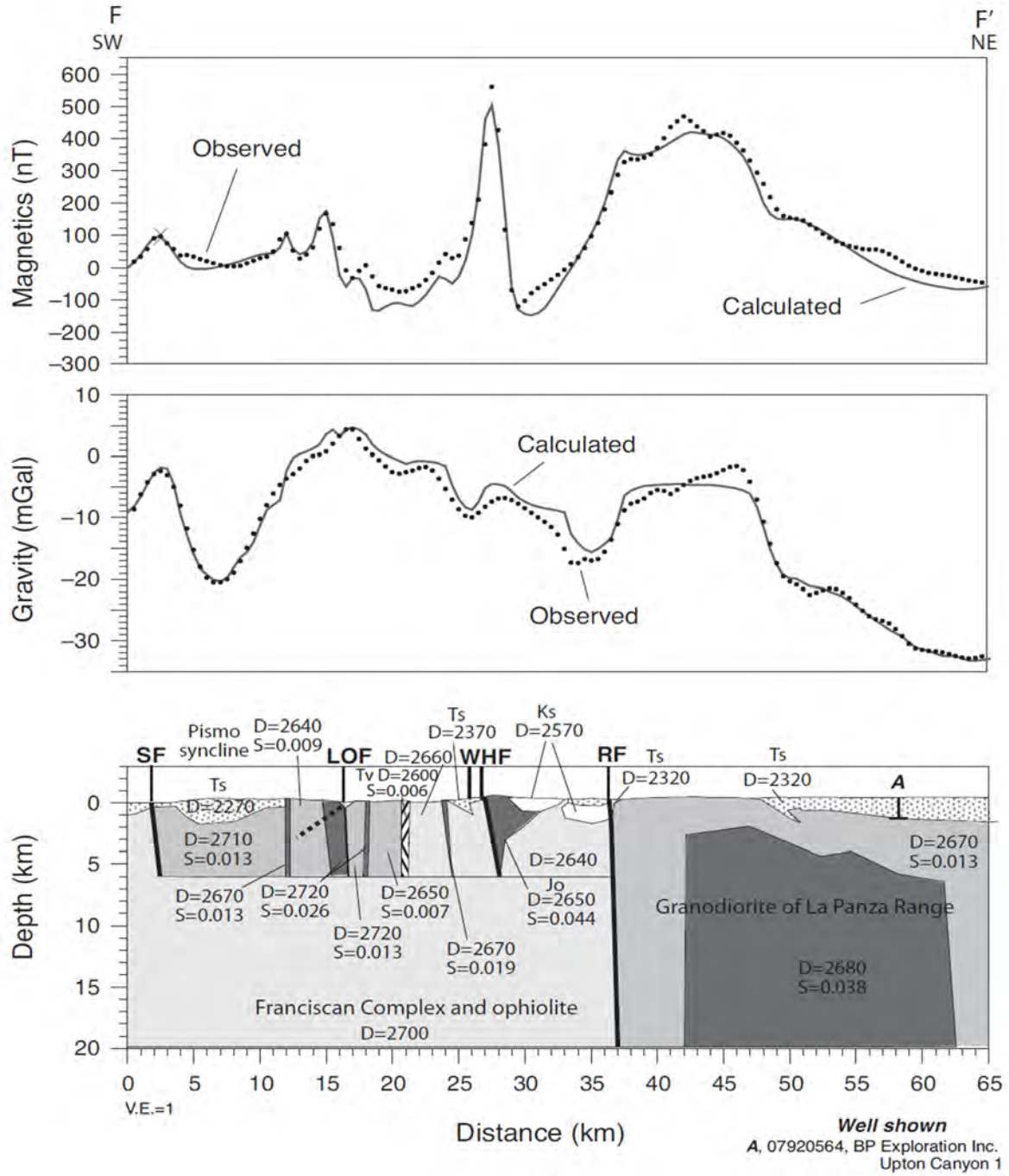

Figure 9. Profile taken from Langenheim et al.,* across the Irish Hills showing the magnetic and gravity data and model fits along with a geologic cross section that provides the modeled density and magnetic susceptibility values.

* Langenheim, V. E., R. C. Jachens, R. W. Graymer, J. P. Colgan, C. M. Wentworth, and R. G. Stanley, "Fault geometry and cumulative offsets in the central Coast Ranges, California: Evidence for northward increasing slip along the San Gregorio–San Simeon–Hosgri fault," Lithosphere, 5(1), 29-48, 2013.

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ADAMS Accession Nos.:
ML25160A132 (Package)
ML25160A124 (Letter)
ML25160A125 (Directors Decision)
ML25161A264 (Attachment) ***concurred by email**

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