



October 4, 2024

Via Electronic Submittal (E-File)

Frank L. Blackett, P.E., Regional Engineer
Federal Energy Regulatory Commission
Division of Dam Safety and Inspections
100 First Street, Suite 2300
San Francisco, CA 94105-3084

**RE: Mokelumne River Hydroelectric Project, FERC No. 137-CA
Lower Blue Lake Dam, NATDAM No. CA00380
Seepage Mitigation Project – Design PFMA Facilitator Nomination and
Extension of Time Request for Design Package**

Dear Frank L. Blackett:

This letter presents Pacific Gas and Electric Company's (PG&E) nomination request for Christopher Hunt, PhD, P.E., G.E., as facilitator to conduct the workshop for the design potential failure mode analysis (PFMA) and an extension of time request to provide a final design plan and schedule after the design PFMA workshop for the seepage mitigation project at Lower Blue Lake Dam, which is part of PG&E's Mokelumne River Hydroelectric Project, Federal Energy Regulatory Commission (FERC) No. 137. PG&E submitted its authorization request for the project in a letter to FERC dated February 6, 2023. FERC replied with comments in a letter dated January 19, 2024, and stated that a supplemental design PFMA should be performed to include design changes. PG&E submitted its original plan and schedule for updating the design package in a letter to your office dated March 4, 2024, and requested an extension of time on July 30, 2024.

Christopher Hunt's resume is provided in (Enclosure 1) for FERC review and acceptance. The resume is provided in accordance with Chapter 17 of FERC's engineering guidelines.

PG&E respectfully requests an extension of time to submit a final design plan and schedule with the design PFMA report 90 days after the end of the workshop, which we would like to schedule for January 2025, pending FERC approval of the moderator.

Should you have technical questions concerning this matter, please contact Matt Gessner, dam safety engineer for PG&E, at (925) 359-5247. For general questions, please contact Sonja Langan, senior license coordinator for PG&E, at (209) 419-0019.

Sincerely,

Christopher Raeburn, P.E.
Deputy Chief Dam Safety Engineer

Enclosure:

1. Christopher Hunt Resume

ENCLOSURE 1



CHRISTOPHER HUNT, PhD, PE, GE

**dam safety
geotechnical engineering analysis and design
earthquake engineering and seismic risk**

EDUCATION

PhD, Geotechnical Engineering, University of California, Berkeley, 2000

MS, Geotechnical Engineering, University of California, Berkeley, 1995

BS, Civil Engineering, University of California, Berkeley, 1993

REGISTRATIONS AND CERTIFICATIONS

Professional Civil Engineer (PE), California, Number C63283

Professional Civil Engineer (PE), Utah, Number 10085291-2202

Professional Geotechnical Engineer (GE), California, Number GE2821

DAM SAFETY TRAINING

USACE DLS-107 – Decomposing Potential Failure Modes and Constructing Event Trees (2022)

USSD Leveraging PFMA to Perform SQRA (2022)

USSD DLS-113 – Fundamentals of Facilitating a Semi-Quantitative Risk Analysis (2023)

USACE DLS-105 – Risk Tools and Calculations for Risk Assessments (2023)

CAREER SUMMARY

Christopher (Chris) Hunt has over 25 years of experience (24 with Geosyntec) managing and supporting a variety of geotechnical projects. His project portfolio includes dam safety reviews as well as seepage and stability evaluations for dams and levees, and he has facilitated Potential Failure Mode Analysis (PFMA) and Level 2 Risk Assessment (L2RA) workshops for numerous dams. He has analyzed and developed mitigation measures for landslides in bedrock, colluvium, and man-made fill, including probabilistic evaluation of landslide potential. Chris has performed geotechnical investigations and provided recommendations for facilities subject to liquefaction, lateral spreading, and other seismic hazards. He has participated in design optimization projects, feasibility studies, and peer review projects addressing issues related to the presence of peats, soft clays, loose sands, and waste. In addition, Dr. Hunt has been an active participant in state-of-the-art research in new methods of liquefaction mitigation using biological methods, including serving as founding member and past chair of the Industry Advisory Board for the National Science Foundation sponsored Center for Bio-mediated and Bio-inspired Geotechnics. At locations in

Canada, Mexico, Africa, Saudi Arabia, Turkey, and Guyana, Chris evaluated geotechnical aspects of the design and construction of large infrastructure projects, including refineries and airports, on soft compressible clays and other challenging soils. Examples of Chris's current and former dam safety assignments include the following projects:

2024 Part 12D Safety Review Comprehensive Assessment for Wishon and Courtright Dams, PG&E, Fresno County, California. [2024] Chris is currently serving as the facilitator for PFMA and L2RA workshops for the 2024 Part 12D safety review of Courtright and Wishon Dams, part of PG&E's Haas-Kings Project. The review includes dams, spillways, conveyance, penstocks and powerhouses associated with the project.

2023 Part 12D Safety Review for Thermalito Complex Dams, DWR, Butte County, California. [2023-2024] Chris served as a geotechnical subject matter expert for the 2023 Part 12D safety review of the Thermalito Forebay, Afterbay and Diversion Dams, and the Feather River Fish Barrier Dam. The forebay and afterbay dams were subject to FERC Comprehensive Assessments and the diversion and fish barrier dams were subject to Periodic Inspections. The work began in 2023 with inspections and PFMA and L2RA workshops, and reports were submitted to FERC in 2024.

2022 Director's Safety Review Board (DSRB), Upper Feather River Dams, DWR, Plumas County, California. [2022] Chris served as the geotechnical engineering member of the 2022 DSRB for DWR's Upper Feather River Dams, including Grizzly Valley Dam, Frenchman Dam, and Antelope Dam. The work included review of available design, construction, analysis and operations and maintenance documentation for the dams, participating in meetings with DWR and their technical staff, field inspections of each dam, and safety evaluation of the dams and their associated appurtenant structures. At the conclusion of the project, the DSRB submitted reports documenting their independent safety review of each dam.

Part 12D Safety Reviews for 13 Dams, Pacific Gas and Electric Company (PG&E), Drum-Spaulding Project, Haas-Kings Project, Potter Valley Project, Feather River Project, Pit River Project, McCloud-Pit Project, Spring Gap-Stanislaus Project, California. [2018-2022] Chris served as facilitator for the Part 12D Safety Inspections and PFMA workshops for Fordyce Dam, Blue Lake Dam, Rucker Lake Dam, and Fuller Lake Dam in 2018, which are part of PG&E's Drum Spaulding Project; Wishon Dam and Courtright Dam in 2019, which are part of PG&E's Haas-Kings Project; Scott Dam in 2019, which is part of PG&E's Potter Valley Project; Bucks Storage Dam in 2020, which is part of PG&E's Feather River Project; Pit 1 Forebay Dam in 2021, which is part of PG&E's Pit River Project, McCloud Dam and Iron Canyon Dam in 2021, which are part of PG&E's McCloud-Pit Project, and Relief Dam and Strawberry Dam in 2022, which are part of PG&E's Spring Gap-Stanislaus Project. The work includes field inspection and safety

evaluation of the dams and their associated appurtenant structures and conveyance facilities. The work also included facilitating PFMA workshops for each dam and preparation of the PFMA reports, as well as review of associated Part 12D and Supporting Technical Information Documents (STID) reports.

Dam Safety Program Support, Southern California Edison (SCE), California. [2017 – Present] Chris serves as Project Director for Geosyntec’s ongoing work supporting the dam safety group at SCE. The work includes updates to static and seismic stability of the dams based on available geotechnical and structural information on the dams and considering recent revisions to the seismic ground motions at these sites. Chris was the geotechnical lead for the seismic stability reevaluation of Lundy Dam, a soil and rockfill dam with a concrete core wall constructed over complex geology, and geotechnical reviewer for the seismic stability evaluations of Thompson Dam and Sabrina Dam. In addition, Chris served as Project Director and reviewer for the seismic structural analysis of the drum gates at Florence Lake Dam and was a panel member for the evaluation of fragilities associated with geohazards at several SCE powerplants.

Part 12D Safety Review for Oroville Dam Complex, Department of Water Resources (DWR), Butte County, California. [2018 – 2024] Chris served as Project Manager for Geosyntec’s work in support of the Tenth Part 12D safety review of the Oroville Dam complex.

Part 12D Safety Reviews for Roanoke Rapids and Gaston Dams, Dominion Energy, Halifax County, North Carolina. [2022] Chris served as facilitator for the Twelfth Part 12D Safety Inspections and PFMA workshops for Roanoke Rapids and Gaston Dams. The work included field inspection and safety evaluation of the dams and their associated appurtenant structures and facilitating PFMA workshops for each dam and preparation of the PFMA reports, as well as review of associated Part 12D and STID reports.

Nacimiento Dam Potential Failure Mode Analysis Facilitation, Monterey County Water Resources Agency, San Luis Obispo County, California. [2018] Chris served as the facilitator for the PFMA Workshop during the 7th Part 12D safety review in 2018. The work included participation in the site inspection, followed by facilitation of a three-day workshop to review existing potential failure modes (PFMs) and develop new ones for this 215-foot-high, 1,650-foot-long dam, originally constructed in 1957.

Leroy Anderson Dam Part 12D Sixth (2011), Seventh (2016) and Eighth (2021) Safety Inspections, Santa Clara Valley Water District, Morgan Hill, California. [2011-2012, 2016-2017, 2021-2022] Chris served as project manager and lead geotechnical engineer for the Sixth, Seventh and Eighth Part 12D Safety Inspections of Leroy Anderson Dam. He served as Facilitator for PFMA workshops during the Seventh and Eighth safety inspections. The work included

performing a dam safety inspection, preparing the Safety Inspection Report, updating the PFMA, and updating the STID, incorporating findings from both historical and recent investigations and analyses. All documents were submitted to the Federal Energy Regulatory Commission for review and approval.

Almaden, Calero, and Guadalupe Dam Safety Review Project, Santa Clara Valley Water District, Santa Clara County, California. [2011-2012] Chris served as project manager for the development of PFMA's and STID's for three Santa Clara Valley Water District Dams, all of which were concurrently undergoing seismic stability evaluations. Safety inspections and PFMA workshops were held for each of the dams, and PFMA reports and STID's incorporating findings from both historical and recent investigations and analyses were developed. The Santa Clara Valley Water District used the findings to formalize and prioritize the dam safety program for these dams.

Levee Vulnerability Study, Confidential Client, San Joaquin County, California. [2022 – 2023] Chris served as project director and senior geotechnical reviewer for a levee safety risk analysis for a 14-mile-long island perimeter levee protecting critical infrastructure in the Sacramento-San Joaquin Delta. The multidisciplinary effort included evaluation of hydrologic loading and climate change impacts, seismic hazard, and geotechnical conditions such as seepage and stability, and considered other factors affecting levee performance such as animal burrows and boat impacts. The team performed a semi-quantitative vulnerability assessment of potential failure modes, identified risk factors, and recommended broad mitigation measures to help reduce risk as well as further investigations and analyses to reduce uncertainty and support design of mitigation. Findings were organized by failure mode and contribution to annual probability of failure, with summaries developed to support the client's decision-making process in relation to protection of key assets.

Condition Assessment of Three Dams, Confidential Client, Sonoma County, California. As part of due diligence for a property transaction, Chris served as project manager for the condition assessment of three dams in Sonoma County. The scope of work included review of available historical information on the dams, a site visit to assess condition, and preparing a report documenting the condition of the dams and identifying key maintenance and potential future required investigations and analyses to support continued permitting with the California Division of Safety of Dams.

Sites Reservoir – Regulating Reservoir Feasibility Design, Jacobs, Colusa and Glenn Counties, California. The Sites Reservoir project is a planned \$3.5 billion water supply project in Northern California with a new 1.5 million-acre-foot main reservoir and new conveyance features. Geosyntec served as a subconsultant to Jacobs, leading feasibility-level configuration and design of two regulating reservoirs that allow for concurrent operational management of the canals and

of the pumping and power-generating plants that control flows in and out of the main reservoir. Chris served as the Geotechnical Discipline Lead, providing review and guidance to the project team during the feasibility level design of the regulating reservoirs, which included development of grading plans, estimation of construction quantities, and evaluation of the impact of topographical, environmental, and cultural considerations on proposed layouts.

Headworks West Reservoir Restoration Park, Los Angeles Department of Water and Power (LADWP), Los Angeles, California. Chris served as geotechnical engineer for initial design of a public park to be built over the recently completed concrete Headworks Reservoirs. The East and West Headworks Reservoirs located at a former LA River spreading ground near Griffith Park, store about 110-million gallons of potable water. The new park, which is currently planned for the roof of the West Reservoir and surrounding areas, totals approximately 18 acres adjacent to the LA River and will connect to the LA River Trail. As the West Reservoir is regulated by the CA Division of Safety of Dams (DSOD), the design is being developed to maintain static and seismic stability of the reservoir and allow for access to dam safety monitoring points and instrumentation while incorporating park features such as berms, trees and bridges over the top of the reservoir.

San Francisco Airport Shoreline Protection Program, San Francisco Airport (SFO), San Francisco, California. Chris is providing geotechnical review and engineering support to two teams working on design and environmental permitting associated with the SFO Shoreline Protection Program, which involves upgrades to the perimeter levees at the SFO airport to increase both short term and long term flood protection associated with current tidal and wave protection requirements and future conditions anticipated as a result of sea level rise.

Hamilton Field Levee Evaluation, City of Novato, Novato, California. The project began with a geotechnical review of sources of seepage through an existing levee at Hamilton Field. The levee was constructed over compressible soils in 1997 and was raised in 2007 to account for settlement since construction. Geosyntec's scope included development of recommendations for mitigating seepage, as well as review of the geotechnical design documents and construction observations associated with the filling program for the wetlands development outboard of the levee. Geosyntec subsequently prepared a geotechnical report for the City of Novato in support of recertification of the levee under revised Federal Emergency Management Agency (FEMA) flood elevations.

Corte Madera Levees Feasibility Study, A3GEO, Corte Madera, California. Chris was a technical reviewer for geotechnical evaluations and feasibility-level designs for a levee modification feasibility study. The levees, situated in an estuarine environment on the margins of San Francisco Bay, were being evaluated as part of a flood risk management project to improve protection for an urban area. Analyses included seepage, stability, settlement, erosion, and considered multiple water surface elevations, including accounting for sea level rise.