PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

September 6, 2023

Annde Ewertsen, Executive Director
California Seismic Safety Commission
2945 Ramco St Ste 195, West Sacramento, CA 95691

SUBJECT: AB 100 Requirements

Dear Annde Ewertsen,

Pursuant to your letter dated December 12, 2022, and in compliance with Assembly Bill 100 (Committee on Budget), enacted as Chapter 20 of the Statutes of 2020 establishing an annual reporting requirement of the Seismic Safety Commission (SSC) to provide a consistent policy framework to track and monitor key activities and responsibilities related to seismic safety, please find attached to this letter the California Public Utilities Commission (CPUC) report identifying the CPUC's responsibilities in the fields of earthquake preparedness and seismic safety.

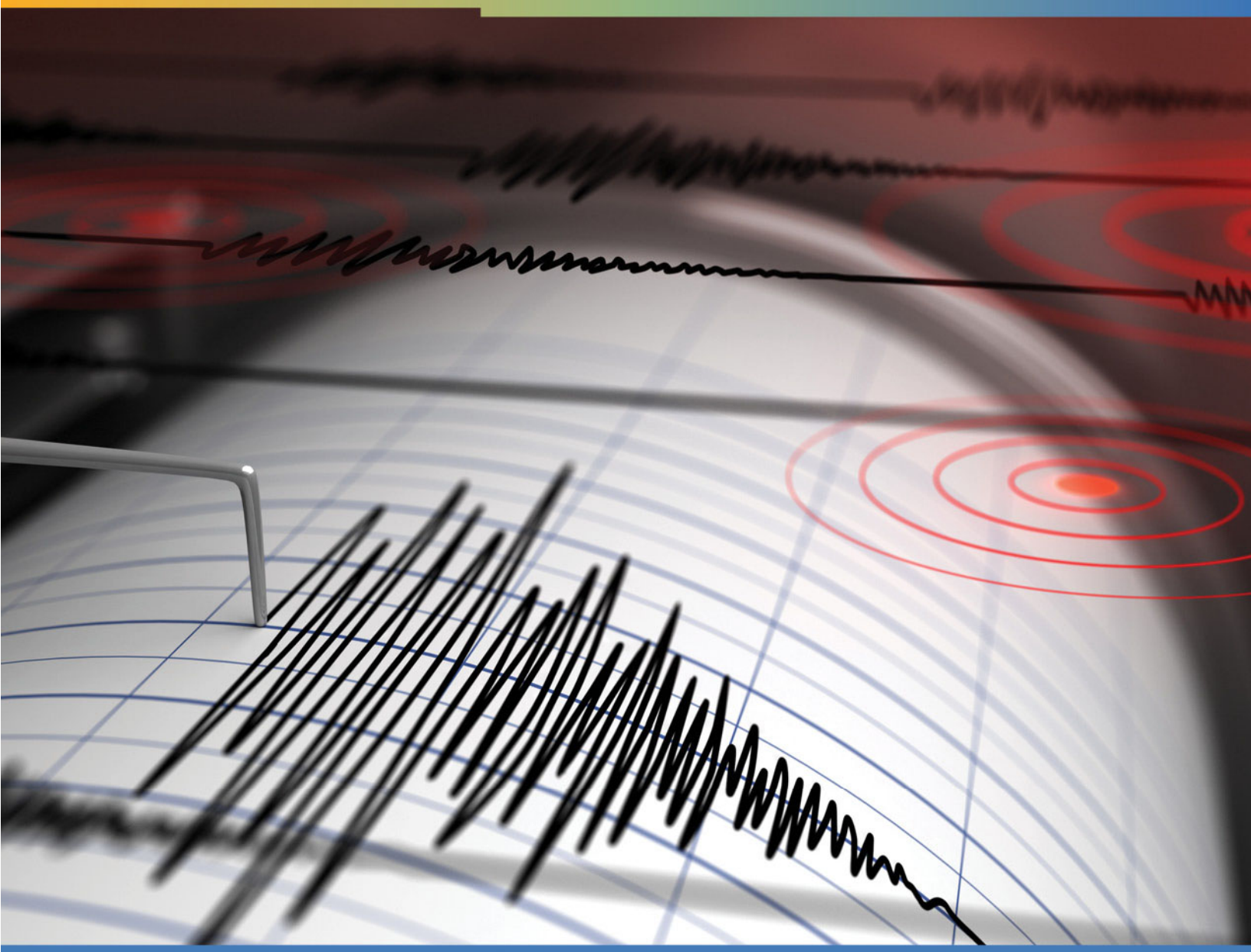
We look forward to providing a presentation to the SSC at their October 2023 meeting.

If you have any questions regarding this report, please contact my office, or your staff may contact Danjel Bout, Director of the Safety Policy Division, at 916-628-2294.

Sincerely,

Rachel Peterson

Rachel Peterson
Executive Director



SEISMIC COMPLIANCE REPORT

OCTOBER 2023

California Public
Utilities Commission

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California Public Utilities Commission – Seismic Report

About the Commission

The California Public Utilities Commission (CPUC) is the largest state utility regulator in the nation, with five Commissioners appointed by the Governor to six-year, staggered terms, subject to confirmation by the state Senate. With its headquarters in San Francisco and offices in Sacramento and Los Angeles, the CPUC regulates various critical and essential services. Those include investor-owned communications, electric, natural gas, water, railroad safety, rail transit, passenger transportation carriers, transportation network companies, and autonomous vehicle passenger services. As the only unit of state government charged with regulating investor-owned utility customers, CPUC's core missions include safeguarding the environment and assuring Californians' access to safe and reliable utility infrastructure and services.

In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, the Commission's regulatory authority to include natural gas, electric, telephone, water companies, railroads, and marine transportation companies. The Public Utilities Act established safety as one of the core missions of the CPUC.

Purpose and Objectives

The CPUC integrates an all-hazards approach into the monitoring and regulatory requirements and activities the Commission establishes for Investor-Owned Electric Utilities (IOUs). These regulatory requirements are established through the CPUC's General Orders and the Commission Decisions process and work in tandem with a wide array of local, state, and Federal agency policies that regulate the construction and operation of utility infrastructure related to seismic safety. The General Orders and Decisions that govern safety and emergency planning create an all-hazards approach to emergency response and safety that includes earthquakes as one of the hazards to be addressed by the investor-owned utilities through their emergency management and safety programs.

Electric Industry

Emergency Planning and Preparedness

Investor-Owned Electric Utilities and Small Municipal Jurisdictional Utilities (SMJU) are required to comply with General Order 166, Standards for Operation, Reliability, and Safety During Emergencies and Disasters (GO 166), which mandates IOUs and Small Municipal Jurisdictional Utilities emergency response requirements. Through the standards set by GO 166, CPUC ensures that investor-owned electric utilities prepare to respond to emergencies and disasters, thereby minimizing infrastructure damage and mitigating risk to the public that may occur due to electric system failures, significant outages, or hazards posed by damage to electric facilities. These standards define operations, including public information, government coordination, damage assessment, and mutual assistance. On May 21, 2021, the CPUC enhanced GO 166 through Decision D.21-05-019, which required IOUs to conform with the Standardized Emergency Management System (SEMS) established by the California Office of Emergency Services (CalOES). SEMS is the cornerstone of California's emergency response system and the fundamental structure for emergency management programs. The system unifies all elements of California's emergency management community into one integrated system by standardizing language, providing a framework for operational organization, and guiding planning and preparedness activities. IOUs and SMJUs are required to report to the CPUC annually on their activities related to all-hazard emergency preparedness, and the CPUC actively monitors their progress throughout the year.

All-Hazards Emergency Response Plans

As part of GO 166, the IOUs and SMJUs must establish and maintain an All-Hazards Emergency Response Plan. The All-Hazard Emergency Response Plan covers the operations spectrum, including Alert and Warning, Situational Awareness, Damage Assessment, Scenario Planning, Mutual Aid, and Resource Prioritization. In developing their All-Hazards Emergency Response Plans, the IOUs must follow planning requirements established by SEMS and the Federal National Incident Management System (NIMS). Each utility also uses the Incident Command System (ICS), the national standard that emergency management organizations use to establish command, control, and coordination during disasters, including earthquakes. By using ICS, their plans and operations are interoperable with local, state, and Federal organizations. This planning process requires an all-hazards approach to emergency response that encourages effective and consistent response to any condition, emergency, disaster, or catastrophe, regardless of the cause. IOUs conduct a threat and hazard analysis to inform their planning priorities and efforts. Through these requirements and risk-informed planning process, each IOU and SMJU has identified earthquakes as one of the top hazards that could disrupt and damage their infrastructure.

Earthquake Annex

To address the risk of an earthquake, the three IOUs have established an Earthquake Annex to the All-Hazards Emergency Response Plan, which outlines seismic mitigation and preparedness measures taken before an earthquake and emergency response and recovery actions following an earthquake.

Southern California Edison (SCE), San Diego Gas and Electric (SDG&E), and Pacific Gas and Electric (PG&E) have analyzed earthquake models and historical data that have significantly impacted communities in their service territory. These models were used to estimate the impacts of earthquakes, the potential damage to their infrastructure, and the resources that may be needed to restore service. Through their All-Hazards Emergency Response Plans and Earthquake Annex, they pre-plan their coordination and operations with local, county, state, tribe, Federal, and private sector partners. These plan Annexes also follow guidance provided by CalOES and the Federal Emergency Management Agency's (FEMA) risk-informed planning processes.

Below is a brief overview of the seismic-related activities identified in the All-Hazards Emergency Response Plans and Earthquake Annex for the three IOUs in California:

Modeling, Alert, and Warning

SCE, SDG&E, and PG&E have programs to monitor data from the US Geological Survey (USGS) and have established a process for analyzing and disseminating this information. All three IOUs leverage USGS and California Geological Survey scenarios to guide their development of planning scenarios. Each of the IOUs have established online portals to share outage information with emergency management partners and the public that can be used following an earthquake.

Examples of tools:

- SCE receives notification of seismic events through the receipt of automatic notifications from the US Geological Survey (USGS), including ShakeCast reports and the MyShake mobile applications. SCE monitors and analyzes each report to determine the level of response needed.
- SDG&E uses *ShakeReadySD* as an early warning tool embedded in the San Diego County Emergency Mobile App and powered by the USGS *ShakeAlert* system. SDG&E monitors this tool and coordinates information to respond to and coordinate actions with counties, state, and tribes.
- PG&E utilizes The Dynamic Automated Seismic Hazard (DASH) system as an automated earthquake reporting system that generates rapid, facility-specific damage estimates to prioritize initial inspections. DASH capabilities provide situational awareness as subscribers receive the best estimates of the impact on PG&E facilities and automatically prioritize affected facilities based on customer impact and critical services.

Mitigation Measures

Based on their seismic analysis, the IOUs have implemented mitigation measures in accordance with international, state, and local codes. Mitigation projects include structural retrofits of buildings owned by the IOUS, non-structural mitigation measures (such as ceiling tiles and lighting and securing computer equipment racks), increasing building system resiliency (such as mechanical electrical, plumbing, and HVAC/air circulation systems), installing and upgrading of electric distribution equipment to meet risks posed due to systemic activity, and established processes and procedures for post-earthquake assessments.

Examples:

- SDG&E has used seismic standards for construction, gas shutdown capability and assessments, facility risk assessments/upgrade reinforcements, and safety inspections.
- PG&E has a Geosciences Department with engineers and seismologists dedicated to earthquake and geotechnical risk mitigation. Seismic mitigation actions include Active Fault Crossing Mitigations and Gas Pipe Replacements, Equipment Anchoring, Redundant Circuits, Dam Structural Retrofit, Non-Structural Hardening, IT – Equipment Anchoring, and older equipment replacement with new equipment that meets upgraded current seismic standards.

Nuclear Power Plants – Diablo Canyon

In 2006, the California legislature enacted Assembly Bill 1632 (AB 1632), which directed the California Energy Commission (CEC) to assess the potential vulnerability of the State's nuclear plants to major disruptions, including seismic events. The CEC's resulting AB 1632 report recommended that the utilities perform enhanced seismic studies with two- and three-dimensional seismic surveys of the Diablo Canyon Power Plant (DCPP). In D.10-08-003, the CPUC approved funding for DCPP seismic studies and established the Independent Peer Review Panel (IPRP) to review them. The IPRP is comprised of technical experts from state and local agencies -- The California Coastal Commission, California Geological Survey, California Energy Commission, California Seismic Safety Commission, Governor's Office of Emergency Services, California Public Utilities Commission, and the County of San Luis Obispo. The members of IPRP provide expertise to the CPUC while assuring the public that the studies are performed thoroughly and transparently. The passage of AB 361 in October 2015 extended funding for the IPRP through 2025, the last year of the current operating licenses.

The IPRP includes technical experts from the CEC, California Geological Survey, California Coastal Commission, California Seismic Safety Commission, and the County of San Luis Obispo. PG&E submits its seismic studies to the IPRP for review, the most recent of which was its Central Coastal California Seismic Imaging Project (CCCSIP) report, introduced in September 2014. Following the submission of these studies, the IPRP convenes for public meetings to review and discuss the results and ultimately submits an IPRP Report. IPRP has issued a total of 13 reports to date. Reports are available at this link: Diablo Canyon Independent Peer Review Panel.

Natural Gas Industry

CPUC's Gas Safety and Reliability Branch (GSRB) in the Safety Enforcement Division conducts audits, construction inspections, program reviews, and investigations to ensure gas operators' compliance with General Order 112-F, State of California Rules Governing Design, Construction, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems (GO 112-F). Under GO 112-F, operators must (1) consider seismicity when identifying and evaluating threats to its integrity program and (2) include seismicity when evaluating outside force damage and for additional preventive and mitigative measures.

GSRB enforces Title 49 Code of Federal Regulation Part 192 – Transportation of Natural and Other Gas by Pipeline: Minimum Safety Standards, including the requirements for Transmission Integrity Management Program (TIMP) and Distribution Integrity Management Program (DIMP). These programs establish an Integrity Management (IM) program for gas transmission pipelines and distribution pipelines, respectively. In these programs, operators are required to mitigate the potential risks associated with earthquakes. Federal regulations require gas operators of transmission pipelines to install rupture mitigation valves on transmission line segments that meet certain criteria to improve safety and protect the environment. Following an extreme weather event or disaster, such as an earthquake, an operator must inspect all potentially affected onshore transmission pipeline facilities to detect conditions that could adversely affect the safe operation of that pipeline.

Transportation Industry

The CPUC oversees the safety of railroads and rail transit systems, for-hire passenger carriers (limousines, airport shuttles, charter, and scheduled bus operators), autonomous vehicle passenger services, and Transportation Network Companies. CPUC's specific authorities related to seismic oversee safety operations for railroads through our Rail Safety Division (RSD).

CPUC's RSD performs follow-up activities after earthquakes over 5.0 magnitude. Most railroads use this seismic magnitude as a benchmark for stopping operations close to the epicenter and conducting a thorough inspection of tracks and structures (bridges, culverts, etc.) utilizing all available resources. RSD focuses on railroad operations, tracks, signals, rail cars, locomotives, and hazmat shipments by rail. RSD monitors the railroads and rail transit agencies and inspects identified infrastructure damaged by the quake. Each railroad owns Track Maintenance and Engineering Standards and adopts its own standards that comply with all applicable Federal Railroad Administration (FRA) regulations. These standards include post-earthquake inspection. If a railroad fails to follow its own operating and safety rules, CPUC/FRA can issue citations. In the past five years, the Rail Safety Division has not had to issue any citations related to failure to inspect tracks post-earthquake based on a railroad's Track Maintenance and Engineering Standards.

Communications Industry

CPUC approved two decisions, D.20-07-011 and D.21-02-029, requiring California's facilities-based wireless and wireline providers to develop emergency operations plans and comprehensive resiliency strategies to prepare for catastrophic disasters and power outages. Together, these decisions establish better coordination between wireline and wireless providers and Public Safety partners before, during, and after disasters and provide six resiliency strategies for wireless and wireline communication service providers.

Annually, wireline and wireless providers are required to share their emergency plans with the CPUC, CalOES, and local emergency managers in their service territories. By submitting the emergency operations plan, the wireline providers agree that all relevant operating personnel are familiar with the contents of the emergency operations plan and that personnel are committed to carrying out the plans in the event of a system-wide or local emergency that arises from natural or manmade disasters.

Additionally, in efforts to enhance resiliency, wireline and wireless providers are required to submit Communications Resiliency Plans to the Commission that detail their ability to maintain a minimum level of service and coverage during a disaster or a commercial power grid outage.

To guide the Communications providers' annual development of these Communications Resiliency Plans, the CPUC has given telecommunications service providers the flexibility to decide how to implement the following six strategies for resilience: (1) Implement backup power for up to the duration of 72 hours to support all essential communications equipment and minimum service levels for the public; (2) Build and maintain redundant communication networks; (3) Harden communication networks to withstand damage; (4) Use temporary facilities (e.g., mobile cell sites, mobile satellite, and microwave backhaul, etc.) to restore service damaged or destroyed facilities; (5) Establish communication and coordination processes with first responders, other public utilities, the CPUC, and the general public; (6) Establish preparedness planning for employees and ensure sufficient staffing levels.

Water Industry

The CPUC and the State Water Resources Control Board (SWRCB) share water quality and safety regulations and monitoring over California's water utilities. Together, the CPUC works in tandem with the SWRCB to manage enforcement activities over the 89 investor-owned water utilities. In coordination with SWRCB and CalOES, CPUC requires each investor-owned water utility to have an Emergency Response Plan through General Order 103-A: Rules Governing Water Service, Including Minimum Standards for Operation, Maintenance, Design and Construction (GO 103-A), California Government Code Section 8607.2, and SWRCB Emergency Response Plan Guidance for Public Drinking Water Systems. These requirements are in line with the Federal requirements set by the US Environmental Protection Agency (EPA) established by America's Water Infrastructure Act of 2018 (AWIA) Section 2013(b).

Under CPUC GO 103-A Section II.3.A(1), investor-owned water utilities are required to develop an all-hazard, risk-informed emergency response plan. The CPUC requires investor-owned water utilities to have adequate redundancy for all critical water facilities, including backup generation, to maintain system reliability. These planning requirements are also coordinated and required by the SWRCB and CalOES which provide planning guidelines and requirements related to earthquakes that include analyzing historical earthquake models, resiliency of water infrastructure, emergency power, and potential damage to roadways and other infrastructure.

Through D.07.05.062, the CPUC reviews investor-owned water utilities' Emergency Response Plans as part of the General Rate Case process. The investor-owned water utilities are divided into four classes: Class A have more than 10,000 connections, Class B have more than 2,000 connections, Class C have more than 500 connections, and Class D have 500 connections or less. D.07.05.062 requires Class A water utilities to confirm compliance with EPA Vulnerability Assessments and Emergency Response Plan review by the SWRCB through their triennial General Rate Cases. For Class B-D water utilities, Water Division staff may review the utility's Emergency Response Plan for compliance with CPUC and SWRCB requirements as part of their General Rate Case analysis. The Water Division may take enforcement action against the utility for any non-compliance with these requirements.

CPUC Seismic Activities and Value to California

CPUC regulates a broad scope of investor-owned utilities that include communications, electric, natural gas, water, railroad safety, rail transit, passenger transportation carriers, transportation network companies, and autonomous vehicle passenger services. In aggregate, these utilities are the lifeline of California's Economy and everyday life. Disruption and damage to their infrastructure and operations by wildfire, earthquake, or other natural disasters could have significant impacts on Californians.

California faces a wide range of hazards, including earthquakes. CPUC integrates an all-hazards approach into its monitoring and regulatory activities and coordinates with numerous Federal and state agencies. Where appropriate, across the industries that the CPUC regulates, the CPUC has established and enforces regulatory requirements and monitors areas of preparedness, response, recovery, and resiliency of these critical community lifelines. These requirements prevent additional hazards during a disaster, planning for response and recovery operations for restoration, damage inspection requirements for the safe operation of infrastructure and actions needed to make the infrastructure and services they provide more resilient.

CPUC's seismic-related activities detailed in this report are integral and part of CPUC's core missions of safeguarding the environment and assuring Californians' access to safe and reliable utility infrastructure and services.

Moving forward, CPUC is working to ensure regulated utilities evolve and enhance their activities for all-hazard preparedness and seismic, continue to coordinate with our regulatory partners to ensure we are unified in our shared oversight of investor-owned utilities, and reinforce that investor-owned utilities are using the best available information on earthquake risks in their efforts before, during and after an earthquake.