

APPENDIX A

Central Coastal California Seismic Imaging Project— Environmental Review, Permitting, and Baseline Monitoring

INTRODUCTION

As part of the response to the AB 1632 Report recommendation to use “three-dimensional [3D] geophysical seismic-reflection mapping and other advanced techniques to explore fault zones near Diablo Canyon,” the Pacific Gas and Electric Company (PG&E) applied for permits to conduct 3D high-energy seismic survey (HESS) investigations offshore of the Diablo Canyon Power Plant (DCPP) in 2011. PG&E applied for the necessary permits and approvals for the proposed HESS investigation in accordance with the procedures contained in the 1999 *High Energy Seismic Survey Review Process and Interim Operational Guidelines for Marine Surveys Offshore Southern California* (High Energy Seismic Survey Team, 1999), referred to herein as the “HESS Guidelines.” The proposed survey area overlapped state and federal waters and thus required coordination with multiple agencies to comply with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) reviews of the project as well as the Federal Endangered Species Act, Marine Mammal Protection Act, Coastal Zone Management Act, California Endangered Species Act, California Fish and Game Code and California Coastal Act. This appendix describes the permits and approvals that were sought from federal, state, and local agencies to conduct the HESS investigations, and discusses some of the key issues that were encountered during the permitting and approval process.

The scope and duration of the proposed HESS investigation was reduced after input from the California Public Utility Commission’s Independent Peer Review Panel (IPRP; 2012a, 2012b) and concerns by environmental agencies and groups about the potential impacts of the project on fish, marine invertebrates, and marine mammals. The California State Lands Commission (CSLC) certified the Final Environmental Impact Report (FEIR) and issued a Marine Geophysical Survey Permit to PG&E in August 2012 for a maximum of three survey areas (Boxes 1, 2, and 4 on Figure 1-11 of Chapter 6). The surveys were to be conducted during the winter hiatus of whale migration along the Central California coast, from October 15 through December 31. The California Coastal Commission (CCC) considered a modified scope for the project, which consisted of one survey area in Estero Bay (Box 4 on Figure 1-11) in order to evaluate the likelihood of successful seismic imaging and the effectiveness of the proposed comprehensive environmental monitoring and mitigation program. The CCC ultimately denied the PG&E’s Coastal Development Permit (CDP) in November 2012, citing concerns about the potential environmental impact of using air guns in shallow coastal waters.

REQUIRED PERMITS AND APPROVALS

Permits and approvals were required at the federal, state, and local levels, as listed below.

Federal Permits/ Approvals

- **National Science Foundation (NSF)**—Filing of Finding of No Significant Impact (FONSI) pursuant to NEPA, and Contract Approval for use of the R/V *Marcus Langseth* survey vessel.
- **National Marine Fisheries Service (NMFS)**—Incidental Harassment Authorization (IHA) for potential harassment of marine mammals (e.g., whales, dolphins, seals, sea lions, and harbor porpoises) pursuant to the Marine Mammal Protection Act.
- **U.S. Fish and Wildlife Service (USFWS)**—IHA for potential harassment of marine mammals (sea otters) pursuant to Section 7 of the Endangered Species Act of 1973.
- **U.S. Army Corps of Engineers (USACE)**—Nationwide Permit #5 pursuant to Section 404 of the Clean Water Act.
- **U.S. Coast Guard** - Notice to Mariners.

State Permits/ Approvals

- **CSLC**—Certification of FEIR pursuant to CEQA, and High-Energy Geophysical Survey Permit.
- **CCC**—Coastal Development Permit (CDP)/ Federal Consistency Certification (FCC).
- **California Department of Parks and Recreation (State Parks)**—Right-of-Entry Permit (ROE) Agreement. State Parks would not issue the ROE until the CCC provided its consent.
- **California Department of Fish and Wildlife (CDFW)**—Scientific Collecting Permit (SCP). CDFW would not issue the SCP until the CCC provided its consent.

Local Permits/ Approvals

- **Port San Luis Harbor District (PSLHD)**—Use Permit.
- **City of Morro Bay**—Use Permit. City of Morro Bay would not issue a Use Permit until the CCC provided its consent.
- **San Luis Obispo Air Pollution Control District**—Approval of Air Quality Emissions Reduction Plan.

PERMITTING PROCESS AND TIMELINE

The HESS Guidelines describe a coordinated process for the review of HESS permit applications for the study area, a geographic area from Monterey Bay National Marine Sanctuary south to the Mexican border in state and federal waters.

A project schedule was developed to allow for the completion of the permitting process, including the required CEQA/ NEPA review for the 3D seismic survey project, in time

for starting field operations in the fall of 2012. Milestones were developed based on anticipated agency staff CEQA/ NEPA review periods, as well as established public review time frames; these are presented in Table A-1.

Table A-1. Key Agency Permit Predicted Schedule

Activity	Date
State Lands Commission CEQA Review and Project Approval	
Submission of 3D application to CSLC	April 29, 2011
CSLC Completeness Review (30 days from application submission)	May 31, 2011
CSLC hearing to request authorization to solicit bids to prepare EIR	June 23, 2011
Submission of application package to CSLC (including detailed project description, supporting environmental documentation, and procedural plans in response to CSLC comments), NMFS, and U.S. Army Corps of Engineers (USACE)	July 1, 2011
Request for Proposal (RFP) and selection of EIR consultant. Based on Statement of Interest release by July 15 with 3-month selection process.	September 16, 2011
EIR consultant submits project description and alternatives for EIR for review (CSLC and PG&E team review)	September 30, 2011
CSLC and PG&E staff comments to EIR consultant	October 14, 2011
Draft EIR (DEIR) released for public and agency review	January 6, 2012
Public review period ends (45 days)	February 20, 2012
FEIR completed	April 16, 2012
CSLC FEIR certification hearing	May or June 2012
CCC hearing on CDP (assumes 1–2 months following CSLC hearing) and possible federal consistency hearing	July or August 2012
Federal Agency NEPA Review and Approval	
Submission of Application Package to NMFS and USACE	July 1, 2011
Application completeness review (30 days)	August 30, 2011
Prepare and submit requested information (30 days)	September 30, 2011
Preparation of separate draft environmental assessments (EAs) by USACE and NMFS (3 months)	December 23, 2011
Release draft EA and draft IHA for public and agencies' review (including Federal Register Notice)	January 2, 2012
Close of public comment period	February 1, 2012
Develop final EA and permit approvals (Section 10 Permit/ IHA). Assume 3 months	April 25, 2012
Issue IHA and USACE permit (issued 3 months prior to project start date)	June 2012

Included below is the actual timeline for the permitting process that was carried out for the HESS investigation.

- **April 29, 2011:** PG&E submits High-Energy Geophysical Survey Permit application with the CSLC. Application included detailed project description, biological assessment, Essential Fish Assessment, Marine Biological Resource and Habitat Reports, Air Emissions Calculations, Marine Wildlife Contingency Plan, Fisheries Plan, Oil Spill Contingency Plan, Marine Operations Health and Safety Plan, and Equipment Specifications.
- **June 2011:** CSLC releases Notice of Preparation (NOP) for preparation of an EIR for the Central Coastal California Seismic Imaging Project.
- **July 2011:** CSLC holds scoping meeting. NOP comment period closes.
- **March 16, 2012:** CSLC releases DEIR.
- **April 2012**
 - April 12: PG&E submit Nationwide 5 404 Permit Application to USACE. PG&E submits CDP application to the CCC (CCC would not accept an application until the DEIR was released).
 - April 24: PG&E submits SCP application to CDFW.
 - April 25: PG&E submits IHA/ biological assessment documentation to USFWS.
 - April 29: CSLC holds public hearings on the DEIR.
- **May 2012**
 - May 3: PG&E submits comment letter on DEIR.
 - May 8: NSF Director decides to allow use of vessel and authorizes initiation of federal environmental review process pursuant to the NEPA.
 - May 17: NSF and Columbia University submit IHA and federal Endangered Species Act applications to NMFS and USFWS.
 - May 21: PG&E submits “Larval Fish Mortality Resulting from High Energy Seismic Surveys in State Waters Offshore from San Luis Obispo County” to CDFW as part of the SCP application.
 - May 29: PG&E submits FCC application to CCC.
- **June 6, 2012:** PG&E attends California Fish and Game Commission (CFGC) hearing, whereby the commission requests PG&E to develop and carry out study to assess potential impacts to fish that may result from the HESS investigation.
- **July 2012:** PG&E develops fish monitoring program in coordination with CCC, CDFW, CSLC, The Nature Conservancy, Marine Applied Research & Exploration (MARE), and Cal Poly under the direction of the CFGC.
 - July 9: PG&E submits information to CCC per their request.
 - July 24, 2012 PG&E submits Use Permit application to PSLHD.
 - July 27: PG&E submits to CCC a detailed summary of the discussions with the Commercial Fishers. CSLC releases FEIR.
- **August 2012:**
 - August 6: PG&E submits ROE permit application to State Parks.

- August 9: PG&E attends CFGC hearing and receives feedback to expand fish monitoring program to include remotely operated vehicle (ROV) surveys to monitor invertebrates and seafloor habitat.
- August 14: CSLC certifies FEIR.
- August 16: PG&E submits additional information to CCC pursuant to its request.
- August 20: CSLC certifies FEIR and approves Geophysical Survey Permit.
- August 27: PSLHD issues Use Permit to PG&E.
- August 30: PG&E submits Draft Communications Plan to CSLC.
- **September 2012:** PG&E receives repeated feedback from NMFS and USFWS that (1) the potential take of harbor porpoise and sea otter will exceed allowable limits per the Marine Mammal Protection Act, and (2) IHAs will be issued only if PG&E agrees to fund marine mammal aerial surveys, stranding monitoring/response, adaptive management, C-POD unit deployment, and sea otter monitoring.
 - September 10: County of San Luis Obispo submits CDP coordinated processing request to CCC.
 - September 12: PG&E submits revised SCP application to CDFW pursuant to its request.
 - September 20: PG&E submits additional information to CCC.
 - September 21: PG&E agrees with NMFS and USFWS to fund baseline components of aerial surveys (including C-POD deployment), stranding monitoring and response, and sea otter monitoring.
 - September 24: PG&E attends CFGC hearing, affirms its fish monitoring commitments, and explains marine mammal monitoring commitments.
- **October 2012**
 - October 2: NMFS initiates aerial surveys, harbor porpoise monitoring program, C-POD deployment, and stranding monitoring. PG&E notifies NMFS in writing that CCC hearing will take place on November 14, 2012. PG&E submits revised CDP/ FCC application to CCC (Box 1 only). PG&E submits revised IHA application to NMFS (Box 1 only). CDFW, U.S. Geological Survey (USGS), and USFWS initiate sea otter monitoring program.
 - October 5: PG&E submits revised Draft Communication Plan to CSLC. NMFS deploys C-PODs as part of the harbor porpoise monitoring program.
 - October 10: PG&E agrees with Cal Poly to fund three years (2012, 2013, and 2014) of the California Collaborative Fisheries Research Program (CCFRP). If the survey does not go forward in 2012, PG&E will only fund baseline survey phase in 2012.
 - October 11: PG&E finalizes fish monitoring program with CDFW.
 - October 26: MARE initiates ROV surveys.
 - October 29: State Historic Preservation Officer concurs with NSF finding of no adverse effect to historic properties.

- October 31: Cal Poly initiates hook-and-line and commercial trap fish surveys. PG&E submits additional information to CCC pursuant to their request.
- **November 2012**
 - November 2: PG&E submits Draft Environmental Compliance Management Plan to CSLC. PG&E submits Air Emissions Reduction plan to CSLC and SLO APCD.
 - November 6: State Parks submits revised draft ROE permit to PG&E.
 - November 14: CCC hearing. Commission votes 10–0 to deny issuance of a CDP and FCC. All of the following remaining permits and approvals were contingent upon approval from CCC: NSF FONSI, NMFS IHA, USFWS IHA, USACE Nationwide 5, State Parks ROE, CDFW SCP, City of Morro Bay Use Permit.
 - November 15: PG&E informs lead/ responsible agencies that high-energy seismic surveys will not take place in 2012. PG&E directs NMFS, MARE, and Cal Poly to close out baseline monitoring programs.

KEY PERMITTING ISSUES

EIR. The FEIR that was certified by the CSLC provided two separate methodologies for assessing potential impacts (disturbance or harm) to marine mammals. The FEIR used an extremely conservative methodology for modeling noise levels that was inconsistent with the HESS Guidelines. As a result, the FEIR overestimated the potential noise radii associated with the proposed project. Noise modeling used in the development of the project description provided in PG&E’s Geophysical Survey Permit application was consistent with the stated methodologies requested by the NMFS and in the HESS Guidelines. The mitigation measures outlined in the PG&E project application, including the IHA application, were consistent with (and in some cases exceeded) those required by the NMFS for protecting marine mammals from high-energy seismic surveys.

Impacts to Marine Wildlife. Several federal agencies, including the NMFS (and NMFS staff representing the Monterey Bay National Marine Sanctuary) and USFWS, CDFW, CFGC, and CCC) expressed concerns about potential impacts from the project on fish, invertebrates, and marine mammals. These agencies recognized the general lack of scientific understanding of the potential impacts of high-energy offshore seismic surveys on such marine life, as well as the potential to exceed the maximum regulated take of harbor porpoises, sea otters, and adult fish. Several environmental groups, including the Natural Resources Defense Council and Greenpeace, also expressed concerns about the seismic survey.

As a result, the scope and allowed duration of the survey for 2012 was reduced. In August 2012, the CSLC approved issuance of a Geophysical Survey Permit for a seismic survey consisting of a maximum of three survey areas (reduced from four) and an allowed survey period from 15 October through 31 December 2012 (reduced from September to December 2012). The Geophysical Survey Permit stated that if the survey

was not completed in 2012, survey activities could resume in 2013, from 15 October through 31 December.

Following additional agency coordination, the CDP/ FCC hearing by the CCC considered a survey scope of only one survey area with the understanding that extensive baseline monitoring and adaptive management procedures would be carried out.

Baseline Monitoring/ Adaptive Management. PG&E was asked to fund a comprehensive monitoring program to assess potential impacts to harbor porpoises, sea otters, marine invertebrates, and adult fish during and after the project. The baseline monitoring program would enable an adaptive management program to be carried out so that impacts to marine mammals could be assessed on a real-time basis during the survey. If the results of the monitoring showed that the harassment to marine mammals was approaching the maximum amount allowed in a single year, survey operations were to be stopped.

The monitoring program was to include the following components:

- Cetacean monitoring, including aerial surveys, stranding response monitoring, and deployment of passive acoustic monitoring devices.
- Sea otter monitoring.
- ROV surveys for fish, invertebrates, and seafloor habitat.
- CCFRP catch-per-unit effort and commercial trap sampling.

In addition, CDFW staff wanted trained fish observers from NMFS to be on the ROV survey vessel and on a scout vessel during the seismic survey.

Assessment of impacts via this comprehensive monitoring program was to include collecting baseline data before the project, monitoring during the project, and collecting data after the project. This would enable making a comparison of conditions before the survey began with conditions during the survey and afterwards. The agencies informed PG&E that for them to continue processing the permits and approvals for the project, PG&E had to agree to fund purchase of the necessary equipment and cover costs associated with the baseline monitoring regardless of whether the project was carried out in 2012. In addition, PG&E was required to fund the sea otter monitoring program for a full year following the capture, testing, and release of the sea otters.

REFERENCES

High Energy Seismic Survey Team, 1999. *High Energy Seismic Survey Review Process and Interim Operational Guidelines for Marine Surveys Offshore Southern California*, California State Lands Commission and U.S. Minerals Management Service, 98 pp.

Independent Peer Review Panel, IPRP, 2012a. *Comments on PG&E's Enhanced Seismic Study Progress Presentation for Diablo Canyon Power Plant*, Report No. 3, 6 April.

Independent Peer Review Panel, IPRP, 2012b. *Comments on PG&E's Enhanced Seismic Study Progress Presentation for Diablo Canyon Power Plant*, Report No. 4, 25 September.

LIST OF ACRONYMS

CCC	California Coastal Commission
CCFRP	California Collaborative Fisheries Research Program
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Commission
CSLC	California State Lands Commission
DCPP	Diablo Canyon Power Plant
DEIR	draft environmental impact report
EA	environmental assessment
EIR	environmental impact report
FCC	Federal Consistency Certification
FEIR	final environmental impact report
FONSI	Finding of No Significant Impact
HESS	high-energy seismic survey
IHA	Incidental Harassment Authorization
MARE	Marine Applied Research and Exploration
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
NSF	National Science Foundation
PG&E	Pacific Gas and Electric
PSLHD	Port San Luis Harbor District
RFP	request for proposal
ROE	right of entry
ROV	remotely operated vehicle
SCP	Scientific Collecting Permit
SOI	Statement of Interest
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey