

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



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Application of Pacific Gas and Electric
Company in the 2018 Nuclear
Decommissioning Cost Triennial Proceeding

(U 39 E)

Application No. 18-12-____
(filed December 13, 2018)

**APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY
IN THE 2018 NUCLEAR DECOMMISSIONING COST
TRIENNIAL PROCEEDING (U 39 E)**

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Dated: December 13, 2018

Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric
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Application No. 18-12-____
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I. INTRODUCTION AND SUMMARY OF REQUEST

Pacific Gas and Electric Company's (PG&E) hereby submits its Application in this Nuclear Decommissioning Cost Triennial Proceeding (NDCTP) in accordance with Sections 8321 et seq. of the California Public Utilities Code, various California Public Utilities Commission (CPUC or Commission) decisions, and Article 2 of the Commission's Rules of Practice and Procedure.¹

This application presents and supports the first detailed, site specific decommissioning cost estimate (DCE) for Diablo Canyon Power Plant (DCPP) Unit 1 and Unit 2 presented to the Commission for review and approval after Commission approval of PG&E's decision to retire DCPP upon expiration of the current operating licenses. This application also presents for the Commission review and approval the DCE for the remaining decommissioning activities at Humboldt Bay Power Plant (HBPP) and the costs incurred to support HBPP decommissioning during 2012-2018. The successful HBPP decommissioning is entering its final phase.

In this Application, PG&E requests that the Commission:

(1) Authorize PG&E to establish the Diablo Canyon Decommissioning Balancing Account and to recover through the Nuclear Decommissioning Non-Bypassable Charge in CPUC-jurisdictional electric rates commencing January 1, 2020, a \$30.3 million annual, expense only revenue requirement for the 3-year period 2020 to 2022 and a \$44.0 million annual, expense

¹ This Application is for rates to be effective January 1, 2020.

only revenue requirement for the 2-year period 2023 to 2024 for funding pre-shutdown decommissioning planning activities.

(2) Authorize PG&E to collect through CPUC jurisdictional electric rates an annual revenue requirement commencing January 1, 2020, of \$383.7 million for funding the DCPD tax qualified trust, as adjusted by advice letter filing immediately following a final decision in this proceeding.

(3) Authorize PG&E to continue to collect through CPUC-jurisdictional electric rates an annual revenue requirement commencing January 1, 2020, of \$3.9 million for funding the HBPP tax qualified trust, as adjusted by advice letter filing immediately following a final decision in this proceeding.

(4) Find that the decommissioning cost estimates and associated trust contribution analyses are reasonable and present the most up-to-date information on the potential cost to decommission DCPD and HBPP.

(5) Approve PG&E's proposed Milestone Framework for tracking and reviewing decommissioning costs.

(6) Find that the \$400 million in costs incurred for completed decommissioning activities at HBPP are reasonable and prudently incurred.

(7) Find that the variances in actual versus forecast SAFSTOR expenses for 2016-2018 are reasonable.

(8) Find that PG&E's efforts to retain and utilize qualified personnel for physical decommissioning activities at HBPP are reasonable;

(9) Find that PG&E is in compliance with prior CPUC NDCTP decisions' requirements as identified in Section B.2. above.

(10) Authorize PG&E to update the nuclear decommissioning revenue requirements for adjustments to the cost of capital, Revenue Fees and Uncollectibles, and tax parameters as adopted in PG&E's 2019 Cost of Capital and 2020 GRC final decision.

(11) Authorize PG&E to implement the new revenue requirement through the next

available consolidated electric rate change following a final decision for this application.

II. THE COMMISSION SHOULD APPROVE THE DCPD DCE AND AUTHORIZE RECOVERY IN CUSTOMER RATES AS PROPOSED IN THIS APPLICATION

The purpose of this Nuclear Decommissioning Cost Triennial Proceeding (NDCTP) is to review Pacific Gas and Electric Company's (PG&E) updated nuclear decommissioning cost estimates and determine the necessary customer contributions to fully fund the nuclear decommissioning trusts to the level needed to decommission PG&E's nuclear plants.

A. The 2018 DCE for DCPD Presents the Costs of an Executable Decommissioning Plan

In its decision approving retirement of DCPD at the end of the current operating licenses, the Commission set forth its expectation that PG&E would file a detailed, site-specific DCE for DCPD in the 2018 Nuclear Decommissioning Cost Triennial Proceeding (NDCTP). As previously recognized by the Commission, in prior NDCTPs PG&E presented decommissioning cost studies based on industry-wide assumptions intended only to provide an estimate for financial planning purposes:

The decommissioning cost estimates are not meant to be the final decommissioning plans and are developed as a sort of snapshot for the first step in determining ratepayer-funded utility contributions. We expect them to use unit cost factors and to be a high-level estimate....

This DCE represents a fundamentally different cost estimate from the cost studies previously presented to the Commission. It was developed as a bottoms-up estimate, without reference to the unit cost factor methodology used in prior cost studies. It relies on cost-based and historical bid-based estimating, direct experience from 10 years of full scale decommissioning at HBPP, industry expertise, and benchmarking. It is a site specific DCE developed based on a realistic schedule and it provides a more accurate picture of the actual expected cost of decommissioning than previous cost studies. This DCE identifies the cost and schedule to complete: radiological decommissioning; termination of the Part 50 licenses; spent fuel management until Spent Nuclear Fuel (SNF) and Greater Than Class C (GTCC) waste are

transferred to an off-site storage facility; termination of the Diablo Canyon Independent Spent Fuel Storage Installation (ISFSI) license; and site restoration activities.²

The total DCE is \$4.8 billion (2017\$). This estimate assumes an immediate transition to decommissioning status upon plant shut down. To support this prompt transition to physical decommissioning, the DCE includes \$187.8 million (2017\$) of decommissioning planning activities costs to be performed before plant shut down in 2024 and 2025. Performing these activities over the next six years, rather than waiting to initiate planning activities until after plant shut down, reduces the overall cost of decommissioning significantly. Due to restrictions on access to the DCPN Nuclear Decommissioning Trust (NDT or ND Trust), PG&E's request in this application is to recover the pre-shutdown decommissioning planning costs from customers directly in retail rates through the Nuclear Decommissioning Non-Bypassable Charge. PG&E proposes to recover the remaining costs from customers through contributions to the NDT. PG&E presents these ratemaking proposals in Chapter 11.

B. Drivers of Increase Over 2015 Decommissioning Cost Estimate

The overall activities required to decommission a dual unit pressurized water nuclear reactor have not changed since PG&E submitted its 2015 NDCTP application. As noted above, the significant difference between the DCE presented in this application and cost study presented the 2015 NDCTP application is that the DCE does not rely on unit cost factors, but instead estimates the cost to decommission DCPN based on vendor bids, industry experience, and benchmarking. The \$4.8 billion DCE presented in this proceeding is \$721 million higher than that presented in the 2015 NDCTP. The primary drivers of that increase are:

- Waste/transportation/material management: Waste disposal costs are the largest contributor to the increase. These have more than doubled because of an increase

² The DCE will be provided along with the Prepared Testimony to interested parties. Portions of the DCE contain confidential information which, if publicly disclosed, could create a competitive disadvantage resulting in higher costs to PG&E's customers. The attached Declaration supports a finding that this information is confidential.

in both volumes and waste disposal rates, based on more accurate volume analysis and more defensible waste rates. The 2015 NDCTP did not, for example, delineate low activity radioactive waste which is estimated to be 5 million cubic feet of waste.

- Program Management, Oversight, and Fees: Water management costs, the costs to run the desalinization facility under contract with GE and later trucking in water after removal of the desalination plant, are notably higher. Staffing costs are higher due to more accurate analysis and an overall extended schedule. Emergency planning costs were updated to reflect commitments made to extend certain activities until license termination. Costs for permitting and fees have nearly doubled and property taxes have more than doubled. Consumables (including Radiation Protection calibration and RP consumables such as clothing, etc.) costs are significantly higher based on more accurate forecasting and experience from HBPP.

- Site Infrastructure: For this DCE, detailed planning based on an executable schedule identified site infrastructure needs that weren't included in prior estimates. These include construction of waste handling facilities, construction of an ISFSI security building, upgrades to the rail yard in Pismo beach, and other modifications.

C. High Bridge Associates Review of DCE

Not only did PG&E rely on external expertise to develop the DCE, once developed, PG&E subjected the DCE to additional review by an independent third party. PG&E identified High Bridge Associates (HBA), with its nuclear-specific project management expertise, as an excellent resource to perform an independent review of the DCE. PG&E asked HBA to review the overall decommissioning project execution schedule, which formed the basis of the DCE, as well as: security, waste disposal, reactor pressure vessel and internals segmentation schedule, building demolition plan, system and area closure plan, PG&E oversight structure, and contingency. This independent review largely confirmed and supported the assumptions and costs in the DCE. Overall, HBA found PG&E's decommissioning cost estimates accurate and

reasonable. In particular, HBA found the overall staffing plan includes reasonable levels of staff throughout the project and is based on detailed analysis. More specifically, HBA found security staffing estimates reasonable and the efforts to determine and confirm these security staffing levels exceeded the reviewers' expectations. Where assumptions and costs were challenged, PG&E responded, either by adjusting its assumptions, committing to further evaluate the issue, or by confirming its proposed activities and costs. After PG&E performs the recommended evaluations, PG&E will update the DCE and file supplemental testimony as necessary. The following table presents the major HBA findings and PG&E's response.

HIGH BRIDGE ASSOCIATES (HBA) STRENGTHS/FINDINGS and PG&E RESPONSE

Subject Area	Findings	PG&E Response
Schedule	<ul style="list-style-type: none"> • Overall decommissioning schedule duration is longer than industry norm. • Spent fuel pool cooling duration is longer than industry norm. • Critical path is not optimal as reactor pressure vessel (RPV) /internals segmentation and breakwater work should not be on critical path. • Duration to start of power block demolition is longer than industry norm. 	Project team will evaluate and supplement the NDCTP filing as necessary for: <ul style="list-style-type: none"> • Spent fuel pool cooling times. • Moving RPV/internals segmentation off of critical path. • Breakwater demolition plan and moving breakwater removal off of critical path.
Security	<ul style="list-style-type: none"> • Security staffing estimates are reasonable. • Due diligence in effort to determine and confirm security staffing levels exceeded expectations. • Reduction in spent fuel pool cooling duration will allow earlier security staffing reductions. • ISFSI only staffing levels should be evaluated for potential reductions. 	<ul style="list-style-type: none"> • Reduced security non-officer headcount during ISFSI only period and reduced security costs by \$42M, excluding contingency. • Project team will evaluate spent fuel pool cooling times.
Waste Disposal	<ul style="list-style-type: none"> • No weaknesses identified with waste disposal costs. 	N/A
RPV and Internals Segmentation	<ul style="list-style-type: none"> • RPV Internals segmentation durations are too short based on Zion operating experience. 	<ul style="list-style-type: none"> • Increased RPV Internals segmentation durations to match Zion's successful 2nd implementation and increased costs by \$14M excluding contingency.

Building Demolition / Breakwater Removal	<ul style="list-style-type: none"> • Building demolition schedule could be optimized to reduce mobilization costs. • Breakwater demolition plan (sea-based vs. land-based) is not optimal and significant cost savings could be achieved. 	<ul style="list-style-type: none"> • Project team will continue to refine building demolition strategies and scheduling for cost efficiencies. • Project team will evaluate alternate breakwater demolition plan.
Systems & Area Closure	<ul style="list-style-type: none"> • Material estimates for this scope of work appear to be 5% - 10% high. 	<ul style="list-style-type: none"> • Project team will review, and where appropriate, material expenses will be adjusted.
Project Staffing	<ul style="list-style-type: none"> • Overall staffing plan is reasonable. • Staffing analysis is detailed, flexible, and by department. • Sufficient staff estimated for licensing and permitting activities. • Minor staffing changes recommended including additional Engineering staff. 	<ul style="list-style-type: none"> • Incorporated majority of recommended staffing changes including additional Engineering staff. Increased costs by \$28M. excluding contingency.
Contingency	<ul style="list-style-type: none"> • Line by line contingency analysis should be performed and utilize probabilistic modeling techniques. 	<ul style="list-style-type: none"> • Implemented line-by-line analysis, resulting in a reduction of overall contingency from 25% to 20.6% and a reduction of \$175M. • Project team will evaluate the use of additional recommended contingency analysis.

D. Funding the DCPD ND Trust Now is Essential and in the Best Interest of Customers

Funding of the DCPD NDT beginning in 2020 is essential and in the best interest of customers. If the Commission does not approve the reasonable cost to decommission Diablo Canyon in this proceeding, the ultimate cost to customers for decommissioning will increase significantly. Firstly, delaying customer contributions to the NDT eliminates the benefits of compounded earnings. Secondly, under IRS regulations, contributions beyond 2025 must be to a non-qualified trust and must be grossed up for taxes, costing customers 38 percent more.

During 2003-2019, contributions to the NDT totaled \$32.4 million. As a result, there is large disconnect between the funds available in the NDT and the reasonable cost to decommission Diablo Canyon. Specifically, PG&E has nearly \$3.2 billion in the NDT for the work and needs approximately \$1.6 billion (\$2017) more to fully fund decommissioning

activities. PG&E proposes that customer contributions for decommissioning restart in 2020 and conclude at the end of 2025. This will ensure that those customers who benefit from the clean, reliable and affordable energy produced by DCPD will be responsible for supporting its decommissioning. It will also ensure compliance with California and federal laws requiring the reasonable costs of decommissioning be funded prior to the closure of a nuclear power plant.

As noted above, extending the funding period beyond 2025 would increase customer costs even further, as the tax benefits of contributing to a qualified trust may no longer be available to PG&E. Under U.S. Department of Treasury Regulations, the funding period for a qualified trust ends on the last day of the estimated useful life of a nuclear power plant that has been included in rate base for ratemaking purposes. Therefore, tax efficient contributions to a qualified trust may only be made until the plant is taken out of service and removed from rate base. To quantify the impacts to customers on an illustrative basis, for every \$1 of DCE cost that is disallowed or for which recovery is deferred beyond 2025 and then funded to a non-qualified trust, customers will pay \$1.62 or 62 percent more, representing a 38 percent increase from the loss of tax benefits and a 24 percent increase from the loss of six years of earnings, assuming average annual trust performance.

This filing describes for the Commission and stakeholders a DCE for DCPD that realistically presents what the actual decommissioning process and associated costs will be. Decommissioning of DCPD is imminent, and the NDT must be adequately funded to support timely decommissioning. The Commission should now adopt the requested revenue requirement to fund decommissioning planning over the next six years and a revenue requirement for trust contributions that ensures adequate funding to decommission DCPD. Timely action on these proposals is necessary to avoid higher costs to customers.

E. The Commission Should Approve the HBPP DCE and Find the Decommissioning Costs Presented in This Application Reasonable

The HBPP DCE covers the period from January 2019 through 2033, including: completion of final site restoration (FSR); HBPP radiological decommissioning; termination of

the HBPP Title 10 of the Code of Federal Regulations (10 CFR) Part 50 license; management of SNF/GTCC waste in the HBPP Independent Spent Fuel Storage Installation (ISFSI); HBPP ISFSI decommissioning after the SNF/GTCC waste has been moved to an off-site facility; and FSR and termination of the ISFSI 10 CFR Part 72 license.

The updated total HBPP decommissioning cost is \$1.1 billion (\$2018), with a cost to complete as of January 1, 2019 of \$182.5 million. This represents a \$16.1 million (\$2018) increase from the forecast approved in the 2015 NDCTP.

By the end of 2018, PG&E expects it will have successfully completed most of the Civil Works Phase, a major phase of HBPP decommissioning. Decommissioning HBPP has presented several challenges due to the unique design and construction of the plant; radiological activation and contamination left from the early operation of the facility; and difficult site conditions. PG&E is very proud to have completed this work safely, on schedule, within approved cost estimates, and without radiological incident. HBPP was awarded the annual Shermer L. Sibley Award six times, the most prestigious PG&E award an organization can earn in recognition of its safety achievements.

PG&E presents for review and approval \$400.2 million in actual costs for completed work performed between 2012 and 2018.

III. THIS APPLICATION IS CONSISTENT WITH THE OBJECTIVES OF THE CALIFORNIA NUCLEAR FACILITY DECOMMISSIONING ACT OF 1985 AND THE NDCTP

The Decommissioning Act requires the Commission to authorize the utilities “to collect sufficient revenues and rates to make the maximum contributions” to the NDT, to the maximum extent deductible for federal and state income tax purposes pursuant to Internal Revenue Code section 468A and applicable regulations, “and to otherwise recover the revenue requirements associated with reasonable and prudent decommissioning costs of the nuclear facilities for purposes of making contributions into other funds established pursuant to [the Decommissioning

Act].³

To accomplish these goals, the Decommissioning Act requires electric utilities that own or operate a nuclear facility in California to periodically revise their nuclear decommissioning cost estimates.⁴ These updated estimates are required to ensure that DCEs reflect changes in technology and regulation of nuclear decommissioning, the operating experience of each nuclear facility, and changes in the general economy.⁵ Decommissioning expenses are to be paid for with funds collected in the nuclear decommissioning trusts established consistent with Section 8325. If trust funds are insufficient to pay decommissioning costs, but costs incurred more than funds available are reasonable and prudently incurred, the Commission must authorize the utility to recover the costs from customers.⁶

The Commission implemented the Decommissioning Act through its decisions establishing investment guidelines for the utilities' nuclear decommissioning trusts and associated reporting requirements,⁷ reviewing and approving initial decommissioning cost estimates for the utilities⁸ and establishing a three-year interval for development and review of cost studies and ratepayer contribution analyses.⁹

PG&E filed its first NDCTP application in March 2002, and in three-year intervals thereafter, as required by the Decommissioning Act and the Commission. This 2018 NDCTP application provides the Commission the sixth update to the initial decommissioning cost estimates for DCP and HBPP.

³ Public Utilities Code section 8325(c).

⁴ Public Utilities Code section 8326.

⁵ Public Utilities Code section 8327.

⁶ Public Utilities Code section 8328.

⁷ See D.95-07-055.

⁸ See D.95-12-055.

⁹ See D.96-12-088 and D.05-05-028.

IV. OVERVIEW OF PREPARED TESTIMONY

PG&E’s prepared testimony accompanying this Application consists of one exhibit (PG&E-1), which includes the following chapters:

Chapter	Title
1	Introduction and Policy
2	Diablo Canyon Power Plant Preliminary Decommissioning Preparation
3	Diablo Canyon Power Plant Decommissioning Planning Activities
4	Diablo Canyon Power Plant Site-Specific Decommissioning Cost Estimate
5	Diablo Canyon Power Plant Lands and Related Matters
6	Spent Nuclear Fuel
7	Diablo Canyon Power Plant Completed Project Reasonableness Review Procedures
8	Humboldt Bay Power Plant Unit 3 Updated Nuclear Decommissioning Cost Estimate
9	Humboldt Bay Power Plant Completed Project Reasonableness Review Testimony
10	Contributions Funding the Nuclear Decommissioning Trust
11	Trust Contribution and Planning Activities Revenue Requirements

V. INFORMATION REQUIRED BY THE COMMISSION’S RULES OF PRACTICE AND PROCEDURE

A. Statutory and Other Authority (Rule 2.1)

PG&E files this Application pursuant to sections 451, 454, 701, and 8321 et seq. of the California Public Utilities Code, various Commission decisions, and Article 2 of the Commission’s Rules of Practice and Procedure.

B. Legal Name and Principal Place of Business (Rule 2.1(a))

The legal name of the Applicant is Pacific Gas and Electric Company. Since October 10, 1905, PG&E has been an operating public utility corporation, organized under California law. Its principal place of business is in San Francisco, California. Its Post Office address is P.O. Box 7442, San Francisco, CA 94120.

C. Correspondence and Communications Regarding this Application (Rule 2.1(b))

All correspondence, communications and service of papers regarding this Application should be addressed to:

Jennifer K. Post
Pacific Gas and Electric Company
Law Department B30A
Post Office Box 7442
77 Beale Street, Room 3065
San Francisco, CA 94120
Telephone: (415) 973-9809
E-mail: Jennifer.Post@pge.com

Kelsey Piro
Electric Proceedings
Pacific Gas and Electric Company
77 Beale Street, B5F
San Francisco, CA 94105
Telephone: (415) 973-3739
E-mail: Kelsey.Piro@pge.com

D. Categorization, Hearings, and Issues to be Considered (Rules 2.1(c))

1. Proposed Category

California Public Utilities Code section 1701.1(c)(3) defines ratesetting as “cases in which rates are established for a specific company, including, but not limited to, general rate cases, performance-based ratemaking, and other ratesetting mechanisms.” PG&E proposes that this Application be categorized as a rate-setting proceeding.

2. Need for Hearing

PG&E anticipates that hearings will be requested. PG&E’s proposed schedule is set forth below.

3. Issues to be Considered

The primary issues to be considered in this proceeding are the reasonableness of: (1) performing decommissioning planning pre-shutdown and the associated cost estimate and ratemaking for those planning activities; (2) the DCPD decommissioning cost estimate and proposed contributions to the DCPD NDT; (3) the HBPP decommissioning cost estimate and proposed contributions to the HBPP qualified trust; (4) costs incurred for decommissioning activities at HBPP; and (5) the Milestone Framework proposal.

4. Relevant Safety Considerations

In D.16-01-017, the Commission adopted an amendment to Rule 2.1(c) requiring utilities’ applications to clearly state the relevant safety considerations. The Commission has previously explained that the “safe and reliable provision of utilities at predictable rates promotes public safety.” (D.14-12-053, at pages 12-13.) Safety is a high priority for PG&E in all its activities. PG&E has considered safety in connection with developing each element of the decommissioning cost estimate. PG&E’s proposed schedule, activities and related cost all support safe execution of decommissioning. Moreover, the NRC regulations governing decommissioning – with which PG&E must comply throughout the decommissioning process - - require that all decommissioning activities be undertaken consistent with public health and safety.

5. Proposed Schedule

PG&E proposes the following schedule for processing this Application:

Date	Event
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December 13, 2018	PG&E files Application
December 17, 2018	Notice of Application Appears in Daily Calendar
January 16, 2019	Protests filed
January 26, 2019	Reply to Protests filed
February 2019	Workshop(s) to Discuss Development of DCE and Proposed Milestone Framework
February 2019	Prehearing Conference
1 st Quarter 2019	Site Tour Humboldt Bay Power Plant
May 1, 2019	ORA and Intervenor testimony served
May 31, 2019	Rebuttal testimony served
June 24, 2019	Hearings (if any)
July 25, 2019	Opening Briefs
August 27, 2019	Reply Briefs
	Proposed Decision
	Final Decision

E. Articles of Incorporation (Rule 2.2)

A certified copy of PG&E's Restated Articles of Incorporation, effective April 12, 2004, is on record before the Commission in connection with PG&E's Application 04-05-005, filed with the Commission on May 3, 2004. These Articles are incorporated herein by reference.

F. Balance Sheet and Income Statement (Rule 3.2(a)(1))

PG&E's most recent balance sheet and income statement for the period ending September 30, 2018, were filed with the Commission on November 20, 2018, in PG&E's Application 18-11-013, and are incorporated herein by reference.

G. Statement of Presently Effective/Proposed Rates (Rule 3.2(a)(2), (3))

The presently effective rates that PG&E proposes to modify were filed with the Commission on November 20, 2018 in Application 18-11-013 and are incorporated herein by reference. The revenue increase proposed in this application is approximately 511 percent. This equates to an increase to the average residential electric monthly bill of \$1.98.

H. General Description of PG&E's Electric Department Plant (Rule 3.2(a)(4))

A general description of PG&E's Electric Department properties, their original cost, and the depreciation reserve applicable to those properties was filed with the Commission on September 1, 2015, as Exhibit E to PG&E's 2017 GRC Phase I Application, A.15-09-001, and is incorporated herein by reference.

I. Summary of Earnings (Rules 3.2(a)(5) and (a)(6))

PG&E's revenues, expenses, rate bases, and rate of return for the recorded year 2017 were filed with the Commission on November 5, 2018 in A.18-11-003 and are incorporated herein by reference.

J. Statement of Election of Method of Computing Depreciation Deduction for Federal Income Tax (Rule 3.2(a)(7))

A statement of the method of computing depreciation deduction for federal income tax purposes was filed with the Commission on September 1, 2015, in A.15-09-001, and is incorporated herein by reference.

K. Most Recent Proxy Statement (Rule 3.2(a)(8))

PG&E's most recent proxy statement dated April 10, 2018, was filed with the

Commission on May 15, 2018, in A.18-05-014 and is incorporated herein by reference.

L. Type of Rate Change Requested (Rule 3.2(a) (10))

The proposed rate change sought in this Application reflects changes in PG&E's base revenues to reflect the increased costs to decommission the Humboldt Bay Power Plant and the Diablo Canyon Power Plant and associated facilities as described in this Application and the supporting testimony.

M. Service and Notice of Application (Rule 3.2(b-d))

A list of the cities and counties affected by the rate changes resulting from this Application is attached as Exhibit A. The State of California is also a customer of PG&E whose rates would be affected by the proposed changes. As provided in Rule 3.2(b), a notice describing in general terms the proposed revenue increases and rate changes will be mailed to the officials identified in Exhibit A. The notice will state that a copy of this Application and related attachments will be furnished by PG&E upon written request.

Within twenty days after the filing of this Application, PG&E will publish a notice of the proposed increases in rates in a newspaper of general circulation in each county in its service territory. That notice will state that a copy of this Application and related attachments may be examined at the Commission's offices and such offices of PG&E as specified in the notice. A similar notice will be included in the regular bills mailed to PG&E's customers within 45 days of the filing date of this Application.

As this is a new application, a service list has not yet been established. PG&E is serving this Application on the official service lists for A.18-07-013 and A. 16-03-006. PG&E is providing this Application and its Prepared Direct Testimony to the Chief Administrative Law Judge and the Division of Ratepayer Advocates. Other parties may request and will be provided testimony and workpapers by contacting Kelsey Piro at (415) 973-3739.

N. Compliance with Prior Commission Decisions

PG&E is submitting supporting testimony in Exhibit PG&E-1 demonstrating compliance

with prior decisions applicable to decommissioning, for example, the requirement to propose a milestone framework and to consult with state agencies regarding disposition of the breakwaters and California law governing disposal of waste from nuclear power plants. As demonstrated by this testimony, PG&E has fully complied with the requirements set forth in D.17-05-025.

O. Statement Regarding Extraordinary Financial Uncertainties Facing PG&E

PG&E adds the following caveat because it faces extraordinary uncertainties associated with wildfires that could significantly impact our ability to access capital on reasonable terms. These uncertainties have led and may continue to lead to credit rating downgrades and uncertain demand for PG&E Corporation and PG&E securities. These financial uncertainties could impact the amount of work PG&E can commit to financing. Should these financial uncertainties persist, or should PG&E become unable to access capital on reasonable terms, execution of discretionary, non-safety projects, including those in this filing, may need to be reconsidered.

VI. CONCLUSION

WHEREFORE, PG&E respectfully requests that the Commission issue an order granting the relief requested herein and any other relief the Commission deems just and reasonable.

Respectfully Submitted,

By: /s/Jon Franke

JON FRANKE

Vice President, Generation and Decommissioning

By: /s/Jennifer K. Post

JENNIFER K. POST

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Attorney for

PACIFIC GAS AND ELECTRIC COMPANY

Dated: December 13, 2018

VERIFICATION

I, undersigned, say:

I am an officer of PACIFIC GAS AND ELECTRIC COMPANY, a corporation, and am authorized to make this verification for that reason.

I have read the foregoing “Application of Pacific Gas and Electric Company in the 2018 Nuclear Decommissioning Cost Triennial Proceeding” and I am informed and believe the matters therein are true and on that ground I allege that the matters stated therein are true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at San Francisco, California this 13th day of December 2018.

By: /s/Jon Franke

JON FRANKE

Vice President, Generation and Decommissioning

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

**DECLARATION SUPPORTING CONFIDENTIAL DESIGNATION
ON BEHALF OF
PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)**

1. I, Jon Franke, am a/the Vice President (VP) of Safety Health and Claims and the Chief Safety Officer for PG&E of Pacific Gas and Electric Company (“PG&E”), a California corporation.

My business office is located at:

Pacific Gas and Electric Company
77 Beale Street, Mail Code 3243
San Francisco, CA 94105

2. PG&E will produce the information identified in paragraph 3 of this Declaration to the California Public Utilities Commission (“CPUC”) or departments within or contractors retained by the CPUC in response to a CPUC audit, data request, proceeding, or other CPUC request.

Name or Docket No. of CPUC Proceeding (if applicable):

3. Title and description of document(s): 2018 Nuclear Decommissioning Cost Triennial Proceeding, Chapter 4, Attachment A, Diablo Canyon Power Plant Detailed Cost Estimate
4. These documents contain confidential information that, based on my information and belief, has not been publicly disclosed. These documents have been marked as confidential, and the basis for confidential treatment and where the confidential information is located on the documents are identified on the following chart, with further detail provided in Appendix A, which is incorporated into this declaration:

Check	Basis for Confidential Treatment	Where Confidential Information is located on the documents
<input type="checkbox"/>	<p>Customer-specific data, which may include demand, loads, names, addresses, and billing data</p> <p>(Protected under PUC § 8380; Civ. Code §§ 1798 <i>et seq.</i>; Govt. Code § 6254; Public Util. Code § 8380; Decisions (D.) 14-05-016, 04-08-055, 06-12-029)</p>	
<input type="checkbox"/>	<p>Personal information that identifies or describes an individual (including employees), which may include home address or phone number; SSN, driver’s license, or passport numbers; education; financial matters; medical or employment history (not including PG&E job titles); and statements attributed to the individual</p> <p>(Protected under Civ. Code §§ 1798 <i>et seq.</i>; Govt. Code § 6254; 42 U.S.C. § 1320d-6; and General Order (G.O.) 77-M)</p>	
<input type="checkbox"/>	<p>Physical facility, cyber-security sensitive, or critical energy infrastructure data, including without limitation critical energy infrastructure information (CEII) as defined by the regulations of the Federal Energy Regulatory Commission at 18 C.F.R. § 388.113</p> <p>(Protected under Govt. Code § 6254(k), (ab); 6 U.S.C. § 131; 6 CFR § 29.2)</p>	
<input type="checkbox"/>	<p>Proprietary and trade secret information or other intellectual property and protected market sensitive/competitive data</p> <p>(Protected under Civ. Code §§3426 <i>et seq.</i>; Govt. Code §§ 6254, <i>et seq.</i>, e.g., 6254(e), 6254(k), 6254.15; Govt. Code § 6276.44; Evid. Code §1060; D.11-01-036)</p>	
<input type="checkbox"/>	<p>Corporate financial records</p> <p>(Protected under Govt. Code §§ 6254(k), 6254.15)</p>	
<input type="checkbox"/>	<p>Third-Party information subject to non-disclosure or confidentiality agreements or obligations</p> <p>(Protected under Govt. Code § 6254(k); see, e.g., CPUC D.11-01-036)</p>	

Check	Basis for Confidential Treatment	Where Confidential Information is located on the documents
<input checked="" type="checkbox"/>	Other categories where disclosure would be against the public interest (Govt. Code § 6255(a)): The information is rate information which if disclosed could undermine the competitive process used to select vendors to support decommissioning and, in turn, increase decommissioning costs to PG&E's customers.	

5. The importance of maintaining the confidentiality of this information outweighs any public interest in disclosure of this information. This information should be exempt from the public disclosure requirements under the Public Records Act and should be withheld from disclosure.

6. I declare under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge.

7. Executed on this ____ day of _____, 20__ at _____ [city], California.

By: /s/Jon Franke
 Jon Franke
 Vice President of Safety Health and Claims
 And Chief Safety Officer
 Pacific Gas and Electric Company

PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)
2018 NUCLEAR DECOMMISSIONING COST TRIENNIAL PROCEEDING
ATTACHMENT TO DECLARATION
DECEMBER 13, 2018

ATTACHMENT NAME	DOCUMENT NAME	CATEGORY OF CONFIDENTIALITY	LOCATION
Chapter 4, Attachment A	Diablo Canyon Power Plant Detailed Cost Estimate	Third-Party information subject to non-disclosure or confidentiality agreements or obligations	Chapter 4, Attachment A <ul style="list-style-type: none"> • Page 61, Table 3-9 Materials Disposal Costs: (Columns: Preferred Disposal / Recycle Facility, Transportation Cost, Disposal Cost, and Total T&D Cost) • Table 61, Table 3-9 Materials Disposal Costs: Class B and Class C (Columns: Waste Volume (ft³)) • Page 191, Table 4-8 DCP Waste Volume Totals for Unit 1 RPV and Internals: (Columns: Number of Packages and Burial Volume for A, B, C, and Total) • Page 191, Table 4-9 DCP Waste Volume Totals for Unit 2 RPV and Internals: (Columns: Number of Packages and Burial Volume for A, B, C, and Total)

ATTACHMENT NAME	DOCUMENT NAME	CATEGORY OF CONFIDENTIALITY	LOCATION
			<ul style="list-style-type: none"> • Page 206, Table 4-10 DCPD Volume Totals for Units 1 and 2 RPV and Miscellaneous Waste (Columns: Number of Packages and Burial Volume) • Page 206: text containing waste package details • Page 207: text cost estimate assumptions details • Page 269: text containing liquid radioactive waste and disposal details • Page 465: Table 6-1 DCPD Decommissioning Milestones (rows 3-3.05, 6-6.13, 7-7.07, and Grand Total for columns: Disposal, other, and Contingency)

EXHIBIT A

Pacific Gas and Electric Company
2018 Nuclear Decommissioning Cost Triennial Proceeding
Common Summary Format for Decommissioning Cost Estimate of
Pacific Gas and Electric Company
Diablo Canyon Units 1 and 2
Southern California Edison Company
San Onofre Nuclear Generating Station Units 2 and 3

**PACIFIC GAS AND ELECTRIC COMPANY
2018 NUCLEAR DECOMMISSIONING COST TRIENNIAL PROCEEDING**

**COMMON SUMMARY FORMAT FOR DECOMMISSIONING COST ESTIMATES FOR
PACIFIC GAS AND ELECTRIC COMPANY DIABLO CANYON UNITS 1 AND 2 AND
SOUTHERN CALIFORNIA EDISON COMPANY SAN ONOFRE NUCLEAR
GENERATING STATION UNITS 2 AND 3**

In accordance with Ordering Paragraph 2 of Decision 11-07-003, Pacific Gas and Electric Company provides in common format the information required by Attachment A to Decision 11-07-003:

Section 1 Assumptions and Results for Diablo Canyon Units 1 and 2 and Southern California Edison Company San Onofre Nuclear Generating Station Units 2 and 3

Section 2 Requested Revenue Requirements and Trust Fund Assumptions for Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company

Assumptions and Results

Assumption	DCPP Units 1 and 2	SONGS 2&3
DOE Performance (Common)	<p>The 2018 DCE assumes that DOE will start accepting spent fuel in 2031 (the 2015 NDCTP assumed 2028). Fuel pickup from Diablo Canyon is assumed to commence in 2038 and at a rate such that the last fuel is accepted in 2068 (30 years after shutdown of the last unit). The study further assumes that sealed canisters will be accepted without repackaging.</p>	<p>The 2017 DCE assumes that the DOE will start accepting spent fuel from the commercial nuclear industry in 2028 (4 years later than assumed in the 2014 DCE). The DOE will accept the first SONGS 2&3 spent fuel in 2034 and will accept all spent fuel from the ISFSI by 2049. It is assumed a dry transfer facility is not necessary to transfer the spent nuclear fuel canisters to DOE transport canisters.</p>
State Severance	<p>The estimate includes staff termination costs for displaced PG&E personnel after permanent cessation of operations, and after termination of decommissioning projects as required by PUC § 8330.</p> <p>The per-person estimated cost for PG&E Personnel is approximately \$135,780. These costs are based on average base salary, and years of service. The severance amount is incurred during each period as staffing is reduced.</p>	<p>The estimate includes staff termination costs for displaced SCE personnel after permanent cessation of operations, and after termination of decommissioning projects as required by PUC § 8330.</p> <p>The per-person estimated cost for SCE Personnel is approximately \$80,000 (2014\$) (307 persons). These costs are based on the 2013-2016 average severance paid per employee at SONGS. The severance amount is incurred during each period as staffing is reduced.</p>
State Site Restoration (Common)	<p>The 2018 study assumes that all site improvements located at an elevation higher than 3 feet below grade (both radioactive and non-radioactive) will be removed. Additionally, both units' Containment Structures, the Intake Structure, and the Discharge Structure will be fully removed, including all below grade foundations. The break water will be removed. All material that is expected to contain residual radioactivity (i.e., has activity above federal release limits) will be disposed of at a licensed LLRW facility.</p> <p>All decommissioned materials will be transported and disposed of at a licensed facility.</p> <p>The 500 kV switchyard and main and secondary access roads are excluded from the scope of decommissioning. However, the 230 kV switchyard is included in the scope of decommissioning.</p>	<p>The 2017 DCE assumes that the Navy will require all substructures below 3-feet below grade to be removed.</p> <p>All material that is expected to contain residual radioactivity (i.e., has activity above federal release limits) will be disposed of at a licensed LLRW facility.</p> <p>All non-radioactive materials will be transported and disposed of at an out-of-state Class III landfill.</p>
Alternatives and Pricing for Low Level Radioactive Waste Burial (Common)	<p>Rates for disposal are as follows (exclusive of taxes, unless otherwise noted):</p>	<p>Rates for disposal are as follows (exclusive of taxes, unless otherwise noted):</p>

Assumption	DCPP Units 1 and 2	SONGS 2&3
	<p>Class A, B and C Waste – Confidential</p> <p>GTCC Waste – \$3.0M per cask</p> <p>Mixed Waste – Not directly used in the estimate (closure costs provided)</p>	<p>Class A, B, and C LLRW During D&D: Disposal costs are covered by SDS fixed price contract.</p> <p>Class A Bulk LLRW During ISFSI D&D: \$66 (2014\$) per CF</p> <p>GTCC Waste: \$2.8 million (2014\$) per canister</p>
<p>Extent of Site and Building Contamination</p>	<p>In the reactor building the fuel canal liner and all of the concrete located inside the containment liner was assumed to be removed and disposed of as LLRW. This precluded the scabbling (or drill and spall) of concrete surfaces in this building.</p> <p>A fraction of the floor and wall concrete surfaces in radiologically contaminated buildings (penetration, fuel, auxiliary, radwaste storage) are assumed to be scabbled to an average depth of 0.5 inches. The fraction of floor area impacted was estimated to be approximately 25% of the concrete floor surface. The fraction of wall areas requiring scabbling were estimated as a fraction of the of the floor area impacted.</p> <p>No system or structure identified as contaminated upon final shutdown is assumed to become releasable due to decay during decommissioning.</p>	<p>The extent of contamination and removal technique are both incorporated in the SDS fix priced contract.</p> <p>The 2017 DCE assumes that the Navy will require all substructures below 3-feet below grade to be removed.</p>
<p>LLRW and Hazardous Waste on Site at Beginning of Decommissioning Including Large Components</p>	<p>The 2018 study includes a process to identify and determine the disposition of radioactive components and materials used to operate the DCPP site (including refueling tools).</p> <p>The study does include a cost allowance for closure of hazardous-only and mixed waste management units. The study provides the cost for implementing a site characterization plan. Specific quantities of materials were not provided as part of the study.</p> <p>The 2018 study includes the cost for removal of large components from previous operation that have been stored on site and must be dispositioned as part of decommissioning. These include 8 retired steam generators, and 2 retired reactor vessel closure heads. At the time of plant shutdown, there will be 16 retired steam generators, and 4 retired reactor vessel closure heads.</p>	<p>The disposal of all LLRW and hazardous waste on site at the beginning of decommissioning is included within the 2017 DCE.</p>

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LLRW Handled, and Removed from Site	<table border="1"> <thead> <tr> <th data-bbox="521 407 695 443"></th> <th data-bbox="695 407 867 443">Weight (lbs)</th> </tr> </thead> <tbody> <tr> <td data-bbox="521 443 695 506">Class A General</td> <td data-bbox="695 443 867 506">1,434,000</td> </tr> <tr> <td data-bbox="521 506 695 533">Class A Bulk</td> <td data-bbox="695 506 867 533">259,820,408</td> </tr> <tr> <td data-bbox="521 533 695 560">Class B/C</td> <td data-bbox="695 533 867 560">718,161</td> </tr> <tr> <td data-bbox="521 560 695 588">GTCC</td> <td data-bbox="695 560 867 588">103,034</td> </tr> </tbody> </table> <p data-bbox="451 625 889 680">All LRRW is assumed to be removed from the site</p>		Weight (lbs)	Class A General	1,434,000	Class A Bulk	259,820,408	Class B/C	718,161	GTCC	103,034	<table border="1"> <thead> <tr> <th data-bbox="971 407 1175 443">Waste Class</th> <th data-bbox="1175 407 1406 443">Quantity (lbs)</th> </tr> </thead> <tbody> <tr> <td data-bbox="971 443 1175 485">Class A</td> <td data-bbox="1175 443 1406 485">395,606,796</td> </tr> <tr> <td data-bbox="971 485 1175 512">Class B</td> <td data-bbox="1175 485 1406 512">69,320</td> </tr> <tr> <td data-bbox="971 512 1175 539">Class C</td> <td data-bbox="1175 512 1406 539">5,700</td> </tr> <tr> <td data-bbox="971 539 1175 567">GTCC</td> <td data-bbox="1175 539 1406 567">222,800</td> </tr> </tbody> </table>	Waste Class	Quantity (lbs)	Class A	395,606,796	Class B	69,320	Class C	5,700	GTCC	222,800
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SECTION 2
Revenue Requirements and Trust Fund Assumptions

REVENUE REQUIREMENT AND FUNDING CONTRIBUTIONS
(MILLIONS \$)

	Funding Requirements	Revenue Requirements
PG&E Diablo Canyon Units 1 and 2	\$377.9M	\$414M
PG&E Humboldt Unit 3	\$3.8M	\$3.9M
PG&E Humboldt Unit 3 SAFSTOR	\$0.00	\$0.00
SCE SONGS Unit 2	\$0.00	\$0.00
SCE SONGS Unit 3	\$0.00	\$0.00
SDG&E SONGS Units 2 & 3	\$0.00	\$0.00

TRUST FUND ASSUMPTIONS
BALANCES IN TRUST FUND AS OF JUNE 30, 2018
(MILLIONS \$)

PG&E	Qualified Diablo Canyon	\$3,146M
	Non-Qualified Diablo Canyon	\$0.00
	Qualified Humboldt	\$134.6M
	Non-Qualified Humboldt	\$0.362M
SCE	Qualified SONGS 2 and 3	\$2,456M
SDG&E	Qualified SDG&E SONGS	\$989M
	Non-Qualified SDG&E SONGS	\$33.43M

Asset Returns Pre and Post Tax	Equity Return (%)		Fixed Income Return (%)*	
	Pre Tax	After Tax	Pre Tax	Post Tax
SCE	5.82%		3.59%	
SDG&E	6.1%	4.5%	3.0%	2.5%
PG&E (for DCPD)	8.1%	7.2%	3.9%	3.0%
PG&E (for HBPP)	8.1%	7.3%	3.2%	2.4%

*Includes allocation to short duration.

Asset Returns After Tax – Pre and Post Retirement	Qualified Trust		Non-Qualified Trust	
	Pre-Retirement Rate %	Post Retirement Rate %	Pre-Retirement Rate %	Pre-Retirement Rate %
SCE	N/A	3.4%	N/A	N/A
SDG&E	N/A	3.4%	N/A	2.7%
PG&E (for DCPD)	5.5%	4.2% for 2025 and varies per glidepath thereafter	N/A	N/A
PG&E (for HBPP)	N/A	2.7%	N/A	N/A