

**Final Environmental Impact Statement  
for the Civil Nuclear Credit Program Proposed  
Award of Credits to Pacific Gas and Electric  
Company for  
Diablo Canyon Power Plant  
San Luis Obispo County, California**

U.S. Atomic Energy Commission *Final Environmental Statement related to the Nuclear Generating Station Diablo Canyon Units 1 & 2*. May 1973. ADAMS Accession No. [ML15043A481](#) (AEC 1973);

U.S. Nuclear Regulatory Commission *Addendum to the Final Environmental Statement for the Operation of the Diablo Canyon Nuclear Power Plant Units 1 & 2* (NRC 1976);

U.S. Nuclear Regulatory Commission *Pacific Gas and Electric Company Diablo Canyon Nuclear Power Plant, Units 1 and 2 Notice of Issuance of Environmental Assessment and Finding of No Significant Impact*. ADAMS Accession No. [ML022340575](#) (NRC 1993);

U.S. Nuclear Regulatory Commission *Environmental Assessment Related to the Construction and Operation of the Diablo Canyon Independent Spent Fuel Storage Installation*. ADAMS Accession No. [ML032970370](#) (NRC 2003); and

U.S. Nuclear Regulatory Commission *Supplement to the Environmental Assessment and Final Finding of No Significant Impact Related to the Construction and Operation of the Diablo Canyon Independent Spent Fuel Storage Installation*. ADAMS Accession No. [ML072400511](#) (NRC 2007).

**Adopted as DOE/EIS-0555**

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**Lead Federal Agency:** U.S. Department of Energy

**Title:** Final Environmental Impact Statement for the Civil Nuclear Credit Program Proposed Award of Credits to Pacific Gas and Electric Company for Diablo Canyon Power Plant, San Luis Obispo County, California (Adopted) DOE/EIS-0555

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**1.0 Proposed Action:** The U.S. Department of Energy (DOE) is proposing to award credits to Pacific Gas and Electric Company (PG&E) under the Civil Nuclear Credit (CNC) Program for the continued operation of Diablo Canyon Power Plant Units 1 and 2 (DCPP) under their current U.S. Nuclear Regulatory Commission (NRC) licenses. DCPP is an existing commercial nuclear power plant located in San Luis Obispo County, California. If awarded credits, PG&E would then be eligible to receive payments from the Federal government in the amount of the credits awarded to PG&E for the four-year award period (2023-2026), subject to PG&E's satisfaction of the applicable payment terms.

**2.0 Background:** The CNC Program was established on November 15, 2021, when President Biden signed into law the Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58), also known as the Bipartisan Infrastructure Law. Section 40323 of the IIJA (42 USC 18753) provides \$6 billion to establish a program to award credits to nuclear reactors that meet the eligibility requirements and whose bid for credits is accepted by DOE. To be certified as eligible for an award of credits, PG&E had to meet certain requirements set out in Section 40323(c)(2)(A) of the IIJA, including, among other things, that DCPP is projected to cease operations due to economic factors and that air pollutants would increase if the nuclear reactor were to cease operations. Also, in accordance with Section 40323(c)(2)(A)(ii)(III) of the IIJA, the NRC provided its reasonable assurance that DCPP will continue to be operated in accordance with its current licensing basis, which includes PG&E's Environmental Protection Plan (EPP) described below and poses no significant safety hazards.

In 1967 and 1968, PG&E submitted license applications for the construction and operation of DCPP to the U.S. Atomic Energy Commission (AEC), the predecessor agency to the NRC. In 1973, the AEC issued a final Environmental Statement (ES) related to construction and operation of DCPP. An ES is the environmental document the AEC prepared pursuant to NEPA; and the document is the equivalent of what is now referred to as an environmental impact statement (EIS). The NRC updated some of the analyses and issued an addendum to the ES in 1976.<sup>1</sup> The NRC documents analyzed the potential environmental impacts associated with construction and operation of DCPP. In 1981, the Atomic Safety and Licensing Board Panel, an independent adjudicatory body of the NRC, authorized the issuance to PG&E of two NRC licenses, DPR-80 and DPR-82, for operation of DCPP. The issuance of the NRC operating licenses constitutes the Record of Decision (ROD) for the NRC EIS. Based on DOE's review of the NRC NEPA documents, subsequent documents as referenced in the Reviewed Documents section

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<sup>1</sup> For ease of reference, documents prepared by either the AEC or the NRC are referred to as NRC documents or the NRC NEPA documents, unless a specific AEC document is identified.

(including available licensing basis documents, the Safety Analysis Report (SAR), Federal and state permits, site reports and documents, and relevant public information), DOE has adopted the NRC NEPA documents as a single DOE EIS (DOE/EIS-0555), comprised of this cover document and the NRC NEPA documents as appendices.

By awarding credits to PG&E, DOE would not change the operational configuration of DCP. The actions for which DOE is considering awarding credits as part of the CNC Program, namely the continued operation of DCP under its current license, are substantially the same as those covered by the original environmental statements, assessments, and determinations finalized by the NRC to license the DCP.

**3.0 Public Involvement:** DOE did not participate as a cooperating agency in the preparation of the NRC NEPA documents. Therefore, in accordance with NEPA regulations (40 CFR 1506.3(b)(1)), DOE is republishing and adopting the NRC NEPA documents as a single final DOE EIS and filing the adopted EIS with the U.S. Environmental Protection Agency (EPA). In accordance with EPA's EIS filing guidance, EPA will publish a Notice of Availability in the *Federal Register* announcing that DOE has adopted the EIS and that this document will have a 30-day review period. DOE may issue a Record of Decision no sooner than 30 days after EPA publishes the Notice of Availability.

DOE's EIS is available at the following locations:

- DOE CNC website: <https://www.energy.gov/gdo/civil-nuclear-credit-program>
- DOE NEPA website: <http://nepa.energy.gov/>

#### 4.0 Reviewed Documents:

DOE reviewed the NRC NEPA documents for the purpose of determining whether DOE could adopt them pursuant to 40 CFR §1506.3 and 10 CFR §1021.200(d). As part of the review, DOE:

- a) Compared the proposed action of an award of credits under the CNC Program to an existing nuclear power reactor for continued operation under its current NRC license with the proposed action analyzed in the following NRC NEPA documents:
  - a. AEC (Atomic Energy Commission) 1973. *Final Environmental Statement related to the Nuclear Generation Station Diablo Canyon Units 1 & 2*. ADAMS Accession No. [ML15043A481](#) (hereinafter the "1973 ES");
  - b. NRC (Nuclear Regulatory Commission) 1976. *Addendum to the Final Environmental Statement for the Operation of the Diablo Canyon Nuclear Power Plant Units 1 & 2*. ADAMS Accession No. (hereinafter the "1976 ES Addendum");
  - c. NRC (Nuclear Regulatory Commission) 1993. *Pacific Gas and Electric Company Diablo Canyon Nuclear Power Plant, Units 1 and 2 Notice of Issuance of Environmental Assessment and Finding of No Significant Impact*. ADAMS Accession No. [ML022340575](#) (NRC 1993);
  - d. NRC (Nuclear Regulatory Commission) 2003. *Environmental Assessment Related to the Construction and Operation of the Diablo Canyon Independent Spent Full Storage Installation*. ADAMS Accession No. [ML032970370](#) (hereinafter the "2003 ISFSI EA"); and
  - e. U.S. Nuclear Regulatory Commission *Supplement to the Environmental Assessment and Final Finding of No Significant Impact Related to the Construction and Operation of the Diablo Canyon Independent Spent Fuel Storage Installation*. ADAMS Accession No. [ML072400511](#) (hereinafter the "2007 ISFSI EA Supplement").
- b) Considered other documents including<sup>2</sup>:
  - a. *NUREG-1437 Generic Environmental Impact Statement (GEIS) (NRC 1996)* (hereinafter the "1996 GEIS");

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<sup>2</sup> The documents listed in items c., d., and e. of this paragraph (b) were prepared by PG&E in connection with DCP's initial license renewal application for Units 1 and 2 submitted in 2009, which PG&E subsequently withdrew.

- b. *NUREG-1437 Generic Environmental Impact Statement (GEIS) Revision 1 (NRC 2013)* (hereinafter the “2013 GEIS”);
- c. *Applicant’s Environmental Report – Operating License Renewal Stage (PG&E 2009a)* (hereinafter the “2009 ER”);
- d. *Annual Update to the Diablo Canyon Power Plant License Renewal Application (LRA), Amendment 48 and LRA Appendix E, Applicant’s Environmental Report - Operating License Renewal Stage, Amendment 1 (PG&E 2014a)* (hereinafter the “2014 ER Amendment”);
- e. *Update to the Diablo Canyon Power Plant License Renewal Application (LRA), Amendment 49 and LRA Appendix E, Applicant’s Environmental Report - Operating License Renewal Stage, Amendment 2 (PG&E 2015a)* (hereinafter the “2015 ER Amendment 2”); and
- f. *Diablo Canyon Power Plant Units 1 and 2 Final Safety Analysis Report Update, Revision 26 (PG&E 2021a)* (hereinafter the “2021 SAR”).

- c) Performed additional reviews of available licensing basis documents, Federal and state permits, site reports and documents, and relevant public information. The additional documents reviewed are referenced in the evaluation section and a reference list is provided at the end of this EIS.

**5.0 Review of DOE’s Proposed Action:** Pursuant to 40 CFR 1506.3, DOE has determined that the proposed action, award of credits under the CNC Program for the continued operation of an existing nuclear power reactor under its NRC license, is substantially the same as the proposed action analyzed in NRC NEPA documents for the licensing of initial and continuing operation of a nuclear power reactor. In this instance, NRC has permitting (licensing) authority over the operation of DCP, and the DOE is proposing to provide financial support for the continued operation of DCP as NRC licensed commercial nuclear power reactors.<sup>3</sup> On this basis, DOE has determined that these actions are substantially the same for purposes of NEPA.

Consistent with 40 CFR 1506.3(a) and 10 CFR 1021.200(d), DOE has reviewed and considered the information presented in the NRC NEPA documents and has determined that the documents meet the standards for an adequate statement, assessment, or determination as applicable. In the interest of transparency, DOE has additionally provided below its reasoned analysis and basis for its decision-making. DOE’s review addresses only continued operation of DCP under its current NRC operating licenses. While DCP’s current NRC operating licenses are valid until November 2, 2024 (Unit 1) and August 26, 2025 (Unit 2), the operating licenses may remain in effect by operation of law beyond those dates in accordance with NRC rules and 5 USC 558(c).<sup>4</sup> DOE’s review and adoption of the NRC NEPA documents covers its proposed action, which are those actions within the period that DCP’s current NRC operating licenses remain in effect. DOE’s issuance or payment of any credits awarded to PG&E beyond the period that DCP’s current NRC operating licenses are in effect – that is, operations under a renewed license and not the current license - would be conditioned on PG&E’s compliance with NRC requirements applicable to license renewal. DOE would consider the need for further NEPA review prior

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<sup>3</sup> Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act, 85 Fed. Reg. 43304 (Jul. 7, 2020) (providing an example of “substantially the same” where “one agency’s action may be a funding decision for a proposed project, and another agency’s action is to consider a permit for the same project.”).

<sup>4</sup> The NRC has granted PG&E a one-time exemption for DCP from 10 CFR 2.109(b) to allow PG&E to submit a license renewal application for DCP less than 5 years prior to expiration of the current operating licenses, but no later than December 31, 2023. U.S. Nuclear Regulatory Commission, *Pacific Gas and Electric Company Diablo Canyon Power Plant, Units 1 and 2 Exemption*, ADAMS Accession No. ML 23026A109 (NRC 2023c). As the NRC explained, “[t]he decision to issue PG&E an exemption from 10 CFR 2.109(b) does not constitute approval of the license renewal application PG&E intends to submit by December 31, 2023. Rather, this exemption provides that if PG&E submits an application by December 31, 2023, and the application is sufficient for docketing, the licensee will receive timely renewal protection under 10 CFR 2.109(b) while the NRC evaluates that application.”

to deciding whether to issue any credits or make any payments during the period of operation under an NRC license renewal.

**6.0 NEPA Document Review Process:** DOE completed a thorough review of existing NEPA documentation for operation of DCPD under its current operating licenses to determine the adequacy of the statements, assessments, and determinations for DOE adoption in accordance with 40 CFR 1506.3. DOE also considered non-NEPA documents, such as available licensing basis documents, the 2021 SAR, Federal and state permits, site reports and documents, and relevant public information to satisfy its obligations under NEPA.

Pursuant to the IJA, DOE may only certify a nuclear reactor as being eligible to bid on CNC credits if DOE has received the “reasonable assurance” of NRC that the nuclear reactor will continue to be operated in accordance with the nuclear reactor’s current licensing basis and that the nuclear reactor poses no significant safety hazards. DOE has received confirmation of the required reasonable assurance from NRC with respect to DCPD. As a condition of the Environmental Protection Plan (EPP) which is part of the NRC licenses for operation of DCPD, PG&E is required to report “unreviewed environmental questions” which “may result in a significant increase in any adverse environmental impact previously evaluated in the final environmental statement.” (1985). Implementation of such changes are subject to prior approval by the NRC in the form of a license amendment incorporating the appropriate revision into the EPP. PG&E is required to submit an annual report identifying if any of these events occurred. For example, PG&E’s most recent report to the NRC with respect to DCPD, dated May 1, 2023, reported that there were no EPP noncompliances nor changes in plant design or operation, tests, or experiments involved an unreviewed environmental question during 2022. (2023b). These documents were included in DOE’s review and are consistent with the NRC NEPA documents.

**7.0 Evaluation Process – Summary of Specific Environmental Evaluations:** DOE used NRC’s 2013 GEIS (NUREG 1437, Revision 1) for guidance during this review. The 2013 GEIS examines the possible environmental impacts that could occur as a result of renewing licenses of individual nuclear power plants under 10 CFR Part 54. The GEIS, to the extent possible, establishes the bounds and significance of these potential impacts. While DOE’s proposed action does not cover license renewal of DCPD, the analyses in the GEIS encompass all operating light-water nuclear power reactors in the United States and provide a reasonable analytical structure for DOE’s review of its proposed action to provide financial support for continued operation of existing NRC licensed light-water nuclear power reactors. Based on DOE’s evaluation of available information and the discussion set forth below, DOE has determined the NRC NEPA documentation and other supporting documents adequately address the potential environmental impacts of continued operation under the current operating licenses.

The 2013 GEIS divides environmental impacts into 78 total issues, further delineated as Category 1 and Category 2 issues. Category 1 issues, of which there are 59, are issues that would have small impacts and do not require site-specific analyses. Category 2 issues, of which there are 19, require site-specific analysis. Of the 19 Category 2 issues two are uncategorized. As described in the 2013 GEIS, the two uncategorized issues (impacts of electromagnetic fields (EMFs)<sup>5</sup> and offsite radiological impacts of spent nuclear fuel disposal<sup>6</sup>) are not resolvable with site specific analysis. Of the 17 remaining Category 2 issues, five do not apply to DCPD. The five Category 2 issues identified in 2014 ER Amendment that do not apply to DCPD are listed below including a brief explanation as to why each is not applicable in italics.

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<sup>5</sup> As described in the 2013 GEIS, studies of 60-Hz EMFs have not uncovered consistent evidence linking harmful effects with field exposures. EMFs are unlike other agents that have a toxic effect (e.g., toxic chemicals and ionizing radiation) in that dramatic acute effects cannot be forced and longer-term effects, if real, are subtle. Because the state of the science is currently inadequate, no generic conclusion on human health impacts is possible.

<sup>6</sup> The impacts of commercial spent fuel disposal are outside the scope of DCPD operation and are not knowable at this time. The program for a geologic repository for spent nuclear fuel at Yucca Mountain, Nevada was terminated. Notwithstanding the decision to terminate the Yucca Mountain Nuclear Waste Repository Program, DOE remains committed to meeting its obligations to manage and, ultimately, dispose of spent nuclear fuel.

**#5 Air quality during refurbishment<sup>7</sup> (non-attainment and maintenance areas).** *No refurbishment planned.*

**#17 Water use conflicts (plants with cooling ponds or cooling towers using make-up water from a small river with low flow).** *DCPP does not use cooling ponds or cooling towers that withdraw makeup water from a small river.*

**#23 Groundwater use conflicts (plants using cooling towers withdrawing makeup water from a small river).** *DCPP does not use cooling towers that withdraw makeup water from a small river.*

**#26 Groundwater quality degradation (cooling ponds at inland sites).** *DCPP is not inland and does not use cooling ponds.*

**#60 Microbiological organisms (plants using lakes or canals, or cooling towers or cooling ponds that discharge to a small river).** *DCPP does not use cooling ponds, lakes, canals, or small rivers.*

As described above, DOE reviewed available DCPP NEPA documentation and other supporting documents to determine if they adequately address the potential environmental impacts of continued operation under the current operating licenses. As part of its review, DOE considered all issues from the 2013 GEIS, concentrating on the 12 Category 2 issues applicable to DCPP and any Category 1 issues deemed pertinent to the evaluation. The typical EIS resource areas, which may span Category 1 and 2 issues are discussed in the following subsections.

**7.1 Land Use & Visual Resources:** A review of recent documents and a Google Earth search did not identify any significant changes for land use or visual resources on or near the DCPP since the descriptions in the 1973 DCPP ES, 1976 ES Addendum, and 2003 ISFSI EA. The 2013 GEIS modified the definition of in-scope transmission lines to generally be those just onsite between the generating units and the onsite switchyard, as is applicable for DCPP. Farmland, grazing land, and rangeland remain the primary land uses, with urban growth concentrated in coastal areas and a few urban centers. The 2021 Annual Radiological Environmental Operating Report verifies that nearby off-site land use is still primarily grazing land (PG&E, 2022). While DCPP can be seen from the ocean, due to rugged terrain in the surrounding area, the plant is not visible from any urban centers. DOE did not identify newer information that would change findings in the existing NEPA analysis findings. Additionally, the 2013 GEIS concluded that impacts on land use and visual resources are small and are considered Category 1 issues that do not require site specific analyses. Therefore, DOE determined that the impact findings for land use and visual resources in the referenced NEPA documents remain adequate through the current operating licenses.

**7.2 Meteorology and Air Quality:** Relevant meteorology and air quality data can be found in the 2003 ISFSI EA and the 2021 SAR. The general climate is described and the annual mean number of days with severe weather such as tornadoes or ice storms is zero.<sup>8</sup> Updated meteorological information including climate and historical storm damage within San Luis Obispo County can be obtained from NOAA NCEI/NCDC.

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<sup>7</sup> Reactor refurbishment is defined as repair or replacement of reactor systems, structures, and components, such as turbines, steam generators, pressurizers, and recirculation piping systems.

<sup>8</sup> The current NCEI database contains data of significant or rare storm events for the period January 1950 to December 2022. Several strong wind and precipitation events were experienced in San Luis Obispo County from January through March 2023, with no known impacts on the safe operation of DCPP based on a review of the publicly available DCPP filings with the NRC. PG&E reported that, “[m]odest slumping of material” occurred beyond the low soldier-pile retaining wall constructed during 2018 in the west-central portion of the CA-SLO-2 archeological site and “an assessment is pending and will be addressed in the next annual report.” (2023b).

The region surrounding the DCPD currently attains all national ambient air quality standards but does not attain the California air quality standards for ozone and respirable particulates (PM<sub>10</sub>). DCPD operates under several San Luis Obispo County Air Pollution Control District Permits to Operate and submits Annual Air Emissions Reports that identify annual fuel usages for permitted sources. As described in the 2009 ER, since air emissions from DCPD are regulated by site-specific permits in order to be protective of the State's air quality standards, air quality impacts from continued operation are anticipated to be small.

DOE reviewed three independent studies (Stanford/Massachusetts Institute of Technology (2021), Union of Concerned Scientists (2021), and S&P Global (2022) examining the potential impact of DCPD's retirement. Each study indicates that while renewable and efficiency deployment would continue -- partially driven by existing state laws and policies -- natural gas generation and the associated CO<sub>2</sub> and NO<sub>x</sub> emissions would increase if DCPD were to cease operations. As explained in these studies, California Independent System Operator (CAISO) gas-fired generation units currently operate with low average capacity factors. All three studies project that a substantial proportion of DCPD's lost generation between 2024 and 2030 would be covered largely by increased utilization of gas-fired units rather than newly constructed renewable electric sources. DOE found nothing to refute that emissions would increase during the credit award period were DCPD to cease operations.

A review of the known permitted emission sources at DCPD<sup>9</sup> determined that the combined annual emissions of all current sources would be much less than the major source threshold of 100 tons per year of an air pollutant. Therefore, emissions from the continued operation of DCPD would be substantially less than the emissions estimated for natural gas-fired power generation.

Finally, if an alternative generating technology were to be constructed to replace generation as a result of DCPD ceasing operations, the construction process would be an additional source of air pollutant and greenhouse gas emissions from construction equipment and transportation vehicles.

In sum, the air quality impacts of continued operation of DCPD during the period the facility would be receiving credits through the CNC Program would be expected to be smaller than construction and operation of an equivalent electrical power generation facility or facilities.

Therefore, DOE determined that the impact findings for meteorology and air quality in the existing NEPA documentation remain adequate through the current operating licenses.

**7.3 Noise:** While sensitive receptors were not specifically identified in the context of noise, the 2009 ER and 2014 ER Amendment 1 detailed the human population, potential protected species and habitats, and historic or culturally significant places in the vicinity of DCPD. The area surrounding DCPD is generally considered rural, and land in the immediate vicinity is used for agriculture and livestock grazing. The 2021 SAR states that as in 1980, the nearest residence is about 1.5 miles north-northwest of the site and there are nine permanently inhabited dwellings, for about 17 residents, within 5 miles of the plant. Site-specific processes and equipment were not outlined for DCPD in previous NEPA documentation. However, the 2013 GEIS clearly describes relevant past noise studies and recommended noise thresholds associated with land use, hearing loss, etc. as well as typical nuclear power plant noise-generating processes (e.g., turbines, transformers, large pumps, and cooling water system motors) that have the potential to impact noise in the vicinity of DCPD. Ultimately, the 2009 ER, 2014 ER Amendment 1, and the 1996 and 2013 GEISs all determined that the impact of significant adverse impacts associated with noise is small (Category 1 issue) that does not require site specific analysis.

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<sup>9</sup> DCPD has few sources of air pollutant emissions. Heat for site buildings is supplied by steam from the reactors (no air emissions). The diesel-fired auxiliary (backup) steam boiler operates an average of 2 weeks per year (AEC 1973), and the seven emergency diesel-fired generators are tested an average of 4 to 8 hours per month (PG&E 2010a).

Therefore, the noise impact findings in the existing NEPA documentation remain adequate through the current operating licenses.

**7.4 *Geologic Environment:*** Sections 2.4.1 and 2.4.2 of the 1973 ES, and Section 4.6 of the 2003 ISFSI EA contain brief descriptions of geology and seismology. Nuclear power plants were originally sited, designed, and licensed in consideration of the geologic and seismic criteria set forth in 10 CFR Part 100.10(c)(1) and 10 CFR Part 100, Appendix A, and constructed in accordance with 10 CFR Part 50. Most of the potential environmental impacts to the geologic environment described in the DCPPE NEPA documents originated from construction activities. Operations activities typically result in little or no impacts to the geologic environment.

Although the 1996 GEIS provided an assessment of some related impacts, it did not specifically evaluate impacts on the geologic environment. The 2013 GEIS determined that geology and soils impacts are small and are Category 1 issues that do not require site specific analyses. Although geology and soils are not specifically analyzed in the 2014 and 2015 ER Amendments, a desktop review of U.S. Department of Agriculture online soil survey data and more recent available literature using online sources did not identify significant differences from the 1973 ES analysis and therefore the statements in the NEPA documents remain valid.<sup>10</sup>

As for environmental impacts from soil effects (e.g., erosion), the 2013 GEIS indicates that impacts of continued operations would be small, and PG&E's 2009 ER and the information in PG&E's 2014 ER Amendment supports this finding, stating "PG&E has reviewed the NRC Category 1 findings and has identified no new and significant information that would make the NRC findings inapplicable to DCPPE". As discussed in Section 3.2 of the 2014 ER Amendment, PG&E has no plans for refurbishment or other license renewal-related construction activities at DCPPE. Therefore, any incremental impacts on geology and soils would be small. In addition, other mitigating measures to control erosion, manage stormwater runoff and protect soils can be found in development and management permits, plans and procedures such as the Stormwater Pollution Prevention Plan, Spill Prevention, Control and Countermeasures Plan, and National Pollutant Discharge Elimination System (NPDES) permits.

As part of DCPPE's prior license renewal activities, PG&E provided to the NRC a significant amount of more recent geologic environment information that supplements the content in the 1973 ES and 1976 ES Addendum. Detailed information on seismic hazards is contained in the 2009 ER Attachment F, Severe Accident Mitigation Alternatives (SAMA). Chapter 5, Assessment of New and Significant Information, in the 2009 ER describes a potential new fault. This information was reviewed by the NRC and two NRC SAMA audits were completed. In 2013 the NRC established an Ad Hoc Review Panel in response to a Differing Public Opinion (DPO) raised by an NRC employee regarding the NRC's consideration of the new fault information near DCPPE. The Ad Hoc Review Panel additionally reviewed the new fault information and concluded that the "Los Osos, San Luis Bay, and the Shoreline faults do not exceed the level of ground motion already considered in the design and licensing of DCPPE," which was affirmed under the NRC's internal appeal procedures (2013d). In 2017, in response to a Petition to Intervene and Request for Hearing related to the new fault information, the NRC Director of Nuclear Reactor Regulation stated that, "the NRC Staff determines that DCPPE is safe to continue operating and is able to safely shut down following an earthquake caused by the Shoreline, San Luis Bay, or Los Osos faults" and that it "did not find that the continued operation of DCPPE would adversely affect public health and safety." (2017 at 142, 155). In 2020, NRC Staff sent a letter to PG&E concluding that PG&E "has implemented the NRC-mandated safety enhancements resulting from the lessons learned from the Fukushima Dai-ichi accident" which included a reevaluation of the seismic and flooding hazard at the plant site "using present-day NRC requirements and guidance" and that NRC staff "confirmed that the conclusions in the various staff

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<sup>10</sup> USDA NRCS, "Web Soil Survey," July 31, 2019, <https://archive.org/details/usda-soil-survey-of-san-luis-obispo-county-california-1984-coastal-part/page/22/mode/2up>.



assessments continue to support a determination that no further regulatory actions are required for Diablo Canyon.” (NRC 2020).

Section 2.5 of the 2021 SAR (PG&E 2021a) contains a substantial up to date description of geology and seismology to support the accident analysis. NRC states in its 2013 GEIS on pages 1-21 and 1-22 that, “The NRC’s assessment of seismic hazards for existing nuclear power plants is a separate and distinct process from license renewal reviews. Seismic hazard issues are being addressed by the NRC on an ongoing basis at all licensed nuclear facilities. Sections 3.4 and 4.4.1 of the GEIS explain that geologic and seismic conditions were considered in the original design of nuclear power plants and are part of the license bases for operating plants. Seismic conditions are attributes of the geologic environment that are not affected by continued plant operations and refurbishment and are not expected to change appreciably during the license renewal term for all nuclear power plants.”

The DCPD NEPA documents, together with later documents reviewed by DOE, have confirmed that impacts on the geologic environment from continued operations would be small. In this context, DOE determined that the analysis of seismological effects, soil effects, and other aspects of the geologic environment, which are contained in the existing NEPA documentation remain adequate through the current operating licenses. Other supplemental documentation confirms this conclusion.

**7.5 Water Resources:** Water resources information provided in the 1973 ES, 1976 ES Addendum, and 2003 ISFSI EA, as well as the 2009 ER, permits, and reports provide adequate detail about DCPD. DCPD utilizes a desalination system for potable water and a once-through cooling water system using Pacific Ocean water and therefore does not have some of the potential impacts associated with nuclear power plants using lakes or rivers for cooling water. Water discharges are regulated and monitored in accordance with the California Regional Water Quality Control Board – Central Coast Region, NPDES permit (No. CA0003751), the California State Water Resources Control Board Industrial Storm Water Permit for Discharges Associated with Industrial Activity (No. 2014-0057-DWQ), and the Storm Water Pollution Prevention Plan. Information on routine and effluent monitoring and the NPDES Receiving Water Monitoring Program are reported annually in the Nonradiological Environmental Operating Report required under DCPD’s Environmental Protection Plan (EPP). PG&E’s most recent report, dated May 1, 2023, reported that there were no EPP noncompliances nor changes in plant design or operation, tests, or experiments involved an unreviewed environmental question during 2022. (2023b).

Furthermore, as described in Table 2.1-1 of the 2013 GEIS (NRC 2013a), 14 of 19 water resource issues are Category 1 issues that do not require site-specific analyses and of the five Category 2 issues that apply to surface and groundwater resources, none are applicable to DCPD. In addition, information provided in the 2009 ER adequately addresses all Category 2 issues related to water quality. Based on review of the 2009 ER and amendments, continued operation of the DCPD would not result in any new or substantially different environmental impacts related to water resources that have not been assessed by previous NEPA documents. In addition, radionuclide monitoring in groundwater is routinely conducted and reported in the Diablo Canyon Annual Radiological Environmental Operating Reports and Diablo Canyon Power Plant Annual Radioactive Effluent Release Reports.

Therefore, DOE determined that the impact findings in the existing NEPA documentation remain adequate through the current operating licenses.

**7.6 Ecological Resources:** The 1973 ES and the 1976 ES Addendum describe potential impacts on ecological resources. Data collected and evaluated for DCPD following the 1973 ES and the 1976 ES Addendum are associated with specific projects (e.g., 2003 ISFSI EA) and are for a radius of up to 5 miles.

As described in Table 2.1-1 of the 2013 GEIS (NRC 2013a), 17 of 23 ecological resource issues are Category 1 issues with small impacts that do not require site-specific analyses, and only four of the six

Category 2 issues apply to DCP. These four Category 2 issues include the following: 1) impacts of impingement and entrainment of aquatic organisms at nuclear plants with once-through cooling systems or cooling ponds; 2) effects on terrestrial resources; 3) impacts on special status species and habitat; and 4) thermal impacts on aquatic organisms at nuclear plants with once-through cooling systems or cooling ponds. The two Category 2 issues that do not apply to DCP include 1) water use conflicts with aquatic resources for plants with cooling ponds or cooling towers using makeup water from a river, and 2) water use conflicts with terrestrial resources for plants with cooling ponds or cooling towers using makeup water from a river. Based on Section 4.1 of the 2009 ER, these issues do not apply because DCP does not use cooling ponds or cooling towers or withdraw water from a river. DCP uses a once-through cooling system that withdraws water from and discharges water to the Pacific Ocean.

Section 3.2 of the PG&E 2009 ER states that no refurbishments would be needed; refurbishment includes major facility modifications, including structures and components that would be replaced or modified (NRC 2013b). Therefore, continued operations would not involve new construction and emissions and impacts would be small and similar to current and past impacts. In addition, the PG&E 2009 ER states that under continued operations, impacts to species and habitat are small.

Section 4.2.6 of the PG&E 2009 ER states that based on evidence from the extensive ecological studies conducted during the initial operating license period, entrainment losses of marine organism larvae and/or eggs do not result in 1) observable population level impacts, and 2) subsequently observable detrimental impacts to the overall ecological system susceptible to influence by cooling system withdrawal. Therefore, entrainment impacts to marine fish and shellfish resources from operation of DCP's once-through cooling system during the then proposed 20-year period of extended operation (the 20-year period that the license renewal would have been good through) were projected by PG&E to be small. PG&E further concluded that impingement impacts to fish and shellfish resources from operation of the once-through cooling system during the then proposed 20-year period of extended operation, based on the determination of impacts during the current operating licenses, were projected to be small.

Section 4.3 of the 2009 ER states that PG&E completed an impingement assessment of the once-through cooling system in 1986. The yearlong study concluded that impingement of all marine organisms was very low, and further studies are not warranted.

In 2005, a Biological Assessment (BA) (NRC 2005) was prepared that addressed the effects of the continued operation of DCP on threatened and endangered marine species in accordance with Section 7 of the Endangered Species Act (ESA) under the jurisdiction of the National Marine Fisheries Service (NMFS). Based on this BA, the NRC determined that continued operation of DCP may adversely affect the green turtle, loggerhead turtle, leatherback turtle, and olive ridley turtle. There have been nine incidences of power plant intake structure impingement/trapping of threatened green sea turtles entrained in the cooling system of this facility between 1994 and 2009; all were released back into the ocean. (PG&E 2009a). The NRC also determined that continued operation of DCP would have no effect on the southern California or the southcentral coast stocks of steelhead, the Guadalupe fur seal, Steller sea lion, the blue whale, fin whale, Sei whale, sperm whale, or the humpback whale. No critical habitat for any of these species would be affected by the continued operation of DCP nor is any critical habitat present in the vicinity of DCP. Although the NRC has determined that individuals of the four species of sea turtles may be adversely affected by the continued operation of DCP, the NRC also determined that DCP does not contribute to the overall mortality of these species nor jeopardize the continued existence of any of these species.

Section 4.4 of the 2009 ER states during plant operations in the initial license period, actual effects of the thermal discharge were found to be only slightly greater in spatial extent than predicted but are largely confined to the shoreline and shallow areas of Diablo Cove. In general, pre-operational assessments have been confirmed by actual plant operations, and thermal discharge impacts are not significantly changing over time as a result of continued plant operations. According to Section 4.4 of the 2009 ER,

PG&E concluded that heat shock impacts to fish and shellfish resources from operation of the once-through cooling system during the then proposed 20-year period of extended operation were projected to be small.

In 2021, PG&E and the Central Coast Regional Water Quality Control Board (CCRWQCB) reached a settlement agreement to resolve alleged thermal discharge permit violations from 2003. A public review and comment period was completed in early 2021 for the settlement agreement, which had been negotiated between PG&E and CCRWQCB during 2020. The settlement agreement addressed impacts on receiving waters from past and ongoing power plant cooling water discharges. The legal settlement agreement between the parties was concluded following judicial review and approval by Consent Judgment for Case No. 21CV-0111 dated May 5, 2021, in the California Superior Court, County of San Luis Obispo (PG&E 2022b). The funds generated by the settlement are to be used for regional water quality projects. In addition to this settlement, PG&E has been making annual payments since 2015 to mitigate the potential impacts of its discharges, in accordance with the California State Water Board's Once-through Cooling Water Policy Requirements. Regardless of the thermal discharge impacts settlement resolution, the plant NPDES permit remains under administrative extension.

Environmental monitoring continues to be conducted at DCPD under the Receiving Water Monitoring Program (RWMP) and includes monitoring tasks such as temperature monitoring, State Mussel Watch activities, and intertidal and subtidal surveys (PG&E 2022b).

PG&E stated in the 2014 ER Amendment 1 that in almost 30 years of DCPD operation, PG&E did not identify any direct operational adverse impacts to terrestrial species and that operations would continue in an environmentally acceptable manner in accordance with their Environmental Protection Plan established by the 1973 ES and other NRC environmental impact assessments (PG&E 2014a). Therefore, continued operation is not expected to adversely affect special status terrestrial species. PG&E is currently making mitigation payments in compliance with the California State Water Board's Once-Through Cooling Water Policy requirements. These funds are earmarked specifically to support Marine Protected Areas (MPAs) on the Central Coast, as directed by the Ocean Protection Council's Once-Through Cooling Interim Mitigation Program.<sup>11</sup>

PG&E is required to comply with Federal, state, and local environmental regulations, agreements, and mechanisms (e.g., best management practices) that are in place to protect ecological resources. A DOE award under the CNC Program would not change the operating configuration or environmental impact of the DCPD facilities. Therefore, DOE determined that the existing NEPA documentation relative to ecological resources remains adequate through the current operating licenses.

**7.7 Historic and Cultural Resources:** Existing NEPA coverage for DCPD operations is based largely on a 1973 ES, 1976 ES Addendum, and 2003 ISFSI EA. As described in Table 2.1-1 of the 2013 GEIS, Historic and Cultural Resources is a Category 2 issue that requires site-specific analysis.

There are known historic properties on DCPD property, the most prominent being CA-SLO-2, an archaeological site that qualifies as a historic property. The site was adversely affected during the initial construction of DCPD. Excavations at CA-SLO-2 revealed a rich midden deposit and exposed a cemetery complex containing a total of 66 burials. The burials recovered from these excavations were turned over to a local Native American group and were reported to have been reburied. Although portions of the site have been destroyed, portions of the site have also been preserved and protected (PG&E 2009). PG&E developed an Archaeological Resources Management Plan in 1980 to protect and manage CA-SLO-2, and NRC incorporated the Archaeological Resources Management Plan into the DCPD Operating License. Updates on management activities are provided in the yearly Annual Nonradiological Environmental Operating Report for the facility. In particular, the report for 2020 summarizes various

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<sup>11</sup> California Ocean Protection Council, <https://www.opc.ca.gov/once-through-cooling-interim-mitigation-program>.

management activities that took place to address both potential direct effects from road repairs and pole replacements as well as potential indirect effects from soil erosion (PG&E 2021c). As stated in PG&E's 2022 Annual Nonradiological Environmental Operating Report, "All projects undertaken within site CA-SLO-2, or immediately adjacent, are reviewed to determine whether archaeological deposits associated with the site are present and, if so, an impact assessment is completed. PG&E would invoke the notification and mitigation procedures identified in the ARMP if a project-related impact were identified." (2023b).

As described in the 2005 Steam Generator Replacement Project Environmental Impact Report (California Public Utilities Commission 2005), 2009 ER, 2014 ER Amendment, 2015 ER Amendment 2, PG&E's December 2015 response to NRC with additional information for the ER (PG&E 2015b), and PG&E's March 2021 County of San Luis Obispo Development Plan/Coastal Development Permit and Conditional Use Permit Application Package (PG&E 2021g), there are other recorded historic properties on DCPD property in addition to CA-SLO-2, however, site location maps are not provided in these documents due to the sensitive nature of this information.

As described in the 2009 ER (and amendments), PG&E initiated National Historic Preservation Act (NHPA) Section 106 consultations with the State Historic Preservation Officer (SHPO) in 2008 regarding the potential impact of continued operation of DCPD and its transmission lines in connection with PG&E's prior license renewal application. In their letter to the SHPO (see Appendix D of the 2009 ER), PG&E noted that it does not expect continued DCPD operations and its transmission lines to adversely affect cultural resources. PG&E has no plans to alter current operations or disturb any land during license extension. As described in the 2013 GEIS (NRC 2013a), the likely determination for continued plant operations will be "historic properties are present, but not adversely affected." In addition, the SHPO commented that relicensing will require the development of a Programmatic Agreement and a Historic Properties Management Plan. Further, PG&E noted that for relicensing, outstanding issues that will need to be addressed include NRC's initiating government-to-government consultation with federally recognized Indian tribes and clearly defining the area of potential effects. DOE's proposed action would not add to or alter the undertaking (see 36 CFR §800.16(y) that would be subject to the Section 106 review process to be completed by NRC when applicable and required. Accordingly, DOE determined that the impact findings in the existing NEPA documentation remain adequate through the current operating licenses and DOE's Section 106 compliance requirements for the proposed credit allocation for the Project have been met.

**7.8 Socioeconomics:** Existing NEPA coverage for DCPD operations is based on information and analysis contained in the 1973 ES, 1976 ES Addendum, and 2003 ISFSI EA. For instance, the county of residence for permanent workers and details on plant outage workers were not identified in the 1973 ES. This socioeconomics resource data is provided in the 2014 ER Amendment. Further, the 2021 SAR states that approximately 16,760 persons resided within 10 miles of the site in 1980, approximately 22,200 persons in 1990, and approximately 23,661 persons in 2000 (PG&E 2021a).

The 2013 GEIS describes five socioeconomics issues that each address specific considerations with regards to the plant's influence on the surrounding community: 1) employment and income, recreation, and tourism; 2) tax revenues; 3) community services and education; 4) population and housing; and 5) transportation. Table 2.1-1 in the 2013 GEIS states that socioeconomics impacts of continued nuclear plant operations would be small and are considered Category 1 issues that do not require site specific analyses. DCPD would continue to operate at existing levels and is not anticipated to result in substantial changes to socioeconomics impacts that have already been evaluated. Therefore, DOE determined that the socioeconomic impact findings in the existing NEPA documentation remain adequate through the current operating licenses.

**7.9 *Human Health*:** Review of NEPA documentation for human health impacts included evaluation of human health issues under the following activities: normal operations, accidents, transportation, and intentional destructive acts.

Normal Operations:

The 1973 ES for DCPD provided estimates of chemical and radiological releases, doses to the public (individual and population) and a description of the waste and effluent management systems. Estimates of worker doses were not provided at that time but have been continuously monitored by the NRC since DCPD began operation, with the most recent 3-year average collective occupational dose per worker of 0.055 rem Total Effective Dose Equivalent (TEDE), well within the whole body 5,000 mrem TEDE established by NRC regulations.<sup>12</sup> (NRC 2022a, NRC 2023b). More recent information is available in several annual reports generated by PG&E and the NRC. The 2021 SAR contains waste management system descriptions. The Annual Nonradiological Environmental Operating Reports for years 2020, 2021, and 2022 and Quarterly Discharge Monitoring Reports submitted to the California Regional Water Quality Control Board contain information on nonradiological effluents. The Diablo Canyon Annual Radiological Environmental Operating Reports and Diablo Canyon Power Plant Annual Radioactive Effluent Reports contains information on radiological releases and doses to the public. The NRC's NUREG-0713 *Occupational Radiation Exposure at Commercial Nuclear Power Reactors and Other Facilities* (NRC 2022a,c) contains information on worker doses. Additionally, the 2009 ER, submitted with PG&E's license renewal application, references the 1996 GEIS which identifies public and worker dose as Category 1 issues (reaffirmed in the 2013 GEIS), with small impacts that do not require site specific analyses.

Microbiological hazards, chronic effects of electromagnetic fields, and electric shock hazards, while not analyzed in the 1973 ES, are Category 2 or uncategorized.

The Category 2 issue of microbiological hazards for plants with cooling ponds or canals or cooling towers that discharge to a river, is not applicable to DCPD because the plant does not discharge to a river.

In addition, as stated in the 2009 ER, applicants currently do not need to submit information on chronic effects from electromagnetic fields (10 CFR Part 51, Appendix B, Table B-1, Footnote 5). This issue is uncategorized with an impact determination of uncertain. As described in the 2013 GEIS, studies of 60-Hz EMFs have not uncovered consistent evidence linking harmful effects with field exposures. EMFs are unlike other agents that have a toxic effect (e.g., toxic chemicals and ionizing radiation) in that dramatic acute effects cannot be forced and longer-term effects, if real, are subtle.

Electric shock hazards are analyzed in the 2009 ER where it states: "Since the DCPD transmission lines are in compliance with the recommendations of the 5-mA rule, PG&E's assessment under 10 CFR Part 51 concludes that electric shock is of small significance for the DCPD transmission lines." However, the 2013 GEIS modified the definition of in-scope transmission lines to be only those onsite between the generating units and the onsite switchyard. While the electric shock hazard is not included the NEPA documents, there is information on DCPD compliance with the 5-mA rule as well as the revised definition of in-scope transmission lines in the 2013 GEIS and there is no change in DCPD operations proposed; therefore, DOE determined that the available NEPA documentation is adequate through the current operating licenses.

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<sup>12</sup> The NRC's "Standards for Protection Against Radiation" (10 CFR Part 20) establishes the dose limits for radiation workers. Although the limits vary depending on the affected part of the body, the annual TEDE for the whole body is 5,000 mrem. See [Information For Radiation Workers | NRC.gov](https://www.nrc.gov/information-for-radiation-workers).

#### Accidents:

Review of the accident analyses provided in the 1973 ES, 1976 ES Addendum, 2007 ISFSI EA Supplement, 2013 GEIS, 2009 ER, and 2014 and 2015 ER amendments, indicate that all NRC requirements for accident analyses have been met. The 1973 ES and the 2013 GEIS effectively demonstrate that both design-basis accidents and severe accidents meet the regulatory requirements. The 2013 GEIS analyses address recent changes in accident analysis techniques and assumptions. The site-specific probabilistic risk analyses for the SAMA have been completed and reported in the latest ERs including 2015 ER Amendment 2. In addition, the SARs are up to date (PG&E 2021a,d). Therefore, while the NEPA documentation does not address this topic inclusive of more recent requirements such as those ordered by the NRC following the Fukushima Dai-Ichi accident, the more recent information including the 2015 ER Amendment 2 and SAR updates (PG&E 2021a,d) address this and DOE determined that impact findings remain adequate through the current operating licenses.

#### Transportation:

The 1973 ES provides the details of transportation activities and transportation impacts in terms of expected radiological exposure to the public and the workers based on the guidance and historical experiences with actual transportation activities. These analyses concluded that the impacts associated with the transportation activities are small.

The 2009 ER (and 2014 and 2015 Amendments) provide an update of the transportation impacts per the guidance of the 1996 and 2013 GEISs, and consistent with the requirements as codified in the 10 CFR Part 51.53. The 2013 GEIS identifies the transportation impacts for the fuel cycle and radioactive solid wastes to be a Category 1 issue with small impacts requiring no site-specific analysis.

With regard to the transportation of spent nuclear fuel (SNF), the NRC issued the final rule on the environmental effects of continued storage of SNF (73 FR 59551) and the *Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel* (NRC 2014), hereafter referred to as the 2014 GEIS, and concluded that impacts from continued storage of SNF for 60 years, including the potential impacts of transporting the SNF to a final repository, would be small. Accordingly, while the NRC has not assigned a single level of significance for the impacts of SNF and high-level waste disposal, these issues are considered Category 1 by the NRC. Hence, no additional information is required as this issue is identified as a Category 1 issue by the NRC not requiring site specific analysis and DOE determined that this assessment remains valid for DCP.

The 1973 ES and 1976 ES Addendum adequately addressed this topic and the more recent information in the 2013 GEIS and the 2014 GEIS support the conclusions of the previous DCP NEPA documents. Therefore, DOE determined that the existing NEPA documentation for transportation remains adequate through the current operating licenses.

#### Intentional Destructive Acts:

The 1973 ES and the 1976 ES Addendum do not contain information about terrorist attacks or other intentional destructive acts. However, as stated in 10CFR 50.54 (p), as a condition of a Facility Operating License the NRC requires the licensee to prepare and maintain safeguards contingency plan procedures and submit them to the NRC for approval. The licensee may not make a change which would decrease the effectiveness of a physical security plan, guard training and qualification plan, or cyber security plan without prior written approval from the NRC. The physical protection requirements, as stated in 10 CFR Part 73, prescribe the requirements for establishment and maintenance of a physical protection system at a fixed site and contains the criteria used to design safeguards systems to protect against acts of radiological sabotage and prevent theft. The NRC has stated that NRC-regulated nuclear facilities are considered among the most secure of the nation's critical infrastructure and they require nuclear power plants to have significant security measures in place. While many of the details of the NRC's security requirements are not public to avoid assisting potential adversaries, general information about security at nuclear power plants is available to the public through the NRC Web site and a variety of NRC

publications.<sup>13</sup> To assist the NRC, experts from DOE laboratories used state-of-the-art experiments and structural and fire analyses. While the details are classified, the studies confirm the likelihood of a radioactive release affecting public health and safety is low. (NRC 2023a).

NRC prepared a 2007 ISFSI EA Supplement in response to the June 2006 decision by the United States Court of Appeals for the Ninth Circuit (*San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1028 (9th Cir. 2006)). This 2007 ISFSI EA Supplement addresses the environmental impacts from potential terrorist acts directed at the DCPD ISFSI.

In the 2007 ISFSI EA Supplement, NRC determined that the construction, operation, and decommissioning of the DCPD ISFSI, even when potential terrorist attacks on the facility are considered, would not result in a significant effect on the human environment. NRC security requirements, imposed through regulations and orders, and implemented through the licensee's security plans, in combination with the design requirements for dry cask storage systems, provide adequate protection against terrorist attacks on ISFSIs. Human health impacts from terrorist attacks or other intentional destructive acts were adequately addressed in the existing NEPA documents relative to the ISFSI and remains adequate for continued operation under the current operating licenses. Although the existing NRC NEPA documents do not include impact findings for this topic area for the balance of the plant, there is relevant information in the 2013 GEIS. As described in the 2013 GEIS, although the threat of sabotage events cannot be accurately quantified, the NRC believes that acts of sabotage are not reasonably expected. Nonetheless, if such events were to occur, the NRC would expect that resultant core damage and radiological releases would be no worse than those expected from internally initiated events.

Therefore, DOE determined that the existing NEPA documentation for intentional destructive acts remains adequate through the current operating licenses.

**7.10 *Environmental Justice*:** The EPA defines Environmental Justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.<sup>14</sup> As of April 2023, Executive Order (E.O.) 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, requires Federal agencies to identify, analyze, and address any disproportionate and adverse human or environmental effects of their activities on communities with environmental justice concerns. The history of the NRC's guidance for the assessment of Environmental Justice issues can be read in Appendix A of LIC -203 Rev 4. The NEPA document review noted information relative to environmental justice regarding consultations with Native American Tribes, minority, and low-income communities, subsistence populations and migrant worker populations within 50 miles of DCPD, consistent with E.O. 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, an earlier E.O. on environmental justice.

As described in *Response to NRC Letter dated November 5, 2015, "Request for Additional Information Related to the Environmental Review of the Diablo Canyon Power Plant, Units 1 and 2, License Renewal Application* (PG&E 2015b), PG&E's cultural resource specialist communicates and coordinates with Native American representatives in certain instances. This occurs when DCPD activities have the potential to adversely affect prehistoric archaeological sites, when archaeological excavation is undertaken within prehistoric archaeological sites boundaries, when a project requiring discretionary approval subject to the California Environmental Quality Act (CEQA) or Section 106 of the NHPA is undertaken, or when otherwise directed to do so by an agency pursuant to their oversight authority.

Minority and low-income populations were identified and presented in the 2009 ER and amendments. In the 2009 ER and amendments PG&E concluded that no disproportionately high or adverse impacts

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<sup>13</sup> See, e.g., [Backgrounder On Nuclear Security | NRC.gov](#).

<sup>14</sup> EPA, Learn About Environmental Justice (July 6, 2023), [Learn About Environmental Justice | US EPA](#).

on minority or low-income populations would occur from the proposed extension of operations via the license renewal action.

In addition, as described in Section 3.9, the 1973 ES and 1976 ES Addendum concluded that the impact from the estimated radiation dose to the public is not considered to be significant when compared to the natural background radiation doses. Ongoing monitoring, as summarized in the Annual Radiological Environmental Operating Reports, and in particular the latest report from 2022 (PG&E 2023c) have supported the original NEPA analyses by finding that “the ambient direct radiation levels in DCPD offsite environs did not change and were within the pre-operational background range. An evaluation of direct radiation measurements indicated all Federal EPA 40CFR190 criteria were conservatively met. Operation of DCPD continued to have no detectable offsite radiological impact. Samples analyzed from the offsite sampling stations continued to show no radiological contribution from plant operations.” No discernable human health impacts have been identified with continued operation. There is no human health impact pathway identified that would affect subsistence populations should they be identified.

Although existing DCPD NEPA documents on environmental justice are not up to date, DOE determined that applicable information is available that is adequate for continued operation through the period DCPD’s current NRC operating licenses remain in effect.

**7.11 Waste Management:** The 1973 ES describes waste management systems in the following sections: Section 3.4 (Radioactive Waste Systems), Section 3.4.1 (Liquid Wastes), Section 3.4.2 (Gaseous Waste), and Section 3.4.2 (Solid Wastes). The 2003 ISFSI EA includes a description of SNF handling and storage. The *Final Environmental Impact Report Diablo Canyon Power Plant Steam Generator Replacement Project* (California Public Utilities Commission 2005), hereafter referred to as the 2005 Environmental Impact Report, Section D.6, describes storage of the used steam generators. The Annual Radiological Environmental Operating and Radioactive Effluent Release Reports from 2005–2021 describe radiological releases and waste management activities, including on-site direct radiation sources, and SNF management, and any changes in circumstances for each year.

Table 2.1-1 in the 2013 GEIS states that waste management impacts of continued nuclear plant operations would be small for all plants and waste management issues are considered Category 1 issues that typically do not require site-specific analysis, except for offsite radiological impacts of SNF and high-level waste disposal which is at the time was listed as “uncertain impact” “pending the completion of a generic environmental impact statement on waste confidence.” The NRC issued the final rule on waste confidence and the environmental effects of continued storage of SNF (73 FR 59551) and the 2014 GEIS (NRC 2014) and concluded that impacts from continued storage of SNF for 60 years would be small. Accordingly, while NRC has not assigned a single level of significance for the impacts of SNF storage and disposal the NRC considers this issue a Category 1, not requiring plant specific analysis. Chapter 4 of the 2009 ER states: “Absent new and significant information, the NRC rules do not require analyses of Category 1 issues because the NRC resolved them using generic findings presented in 10 CFR Part 51, Appendix B, Table B-1. An applicant may reference the generic findings or 2013 GEIS analyses for Category 1 issues. PG&E has reviewed the NRC Category 1 findings and has identified no new and significant information that would make the findings inapplicable to DCPD. Therefore, PG&E adopts by reference the NRC findings for these Category 1 issues.” The NEPA documents adequately address waste management impacts in accordance with NRC regulations and are adequate for continued operation through the period DCPD’s current NRC operating licenses remain in effect.

**7.12 Cumulative Impacts:** Cumulative impacts are those impacts on the environment that result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. The cumulative impacts issue was codified as a Category 2 issue that a license renewal applicant was to assess in 2013 (10 CFR 51, Subpart A, Appendix B, Table B-1). PG&E



assessed cumulative impacts for DCPD in the 2009 ER and the information can be found in the 2014 ER Amendment 1.

The 2014 ER Amendment 1 evaluated cumulative impacts for all resources areas except Noise, Environmental Justice, Waste Management, and Global Climate Change. For the evaluated resources areas, PG&E found impacts to be small. As shown in Table 2.1-1 from the 2013 GEIS, noise and waste management (except SNF disposal) are Category 1 issues and therefore do not need to be analyzed. As described above in the waste management section, long-term away-from-reactor SNF storage and eventual disposal are issues for all commercial power reactors and are not the subject for impact analysis conducted by individual applicants. As described in the Environmental Justice section above, since no discernable health or environmental impacts have been identified, this action would have no disproportionate and adverse impacts on minority and/or low-income populations. Therefore, there would be no reason to evaluate cumulative Environmental Justice impacts. As described in the 1973 ES, 2009 ER (and amendments), the 2013 GEIS, and other information supplied by PG&E, greenhouse gas emissions are low for the amount of electricity generated. All reasonable alternatives for replacement power generation would result in the generation of more greenhouse gases than continued operation of DCPD. Therefore, a cumulative climate change impacts analysis is not warranted.

Cumulative impacts were not evaluated in the 1973 ES and the 1976 ES Addendum but were evaluated in the 2003 ISFSI EA and 2014 ER Amendment 1. Therefore, DOE has determined the NEPA documentation and other supporting documents adequately address cumulative impacts for continued operation through the period DCPD's current NRC licenses remain in effect.

DOE also considered whether license renewal is a reasonably foreseeable future action. While it seems likely that PG&E will apply for a license renewal from NRC, DOE cannot at this time reasonably ascertain the scope, duration, or terms of any license that PG&E might seek or that NRC might grant to PG&E in the future. Due to this uncertainty, DOE cannot meaningfully analyze the potential impacts of any license renewal application or grant without undue speculation. Further, if and when PG&E applies for a license renewal and NRC acts on that application, DOE would consider the need for further NEPA review prior to deciding whether to issue any credits or make any payments during the period of operation under an NRC license renewal.

**8.0 Conclusion:** Based on its review, DOE finds that despite the age of many of the NEPA documents, there is sufficient available information to complete DOE's analysis of the proposed action. In addition, DCPD complies with Federal, state, and local environmental regulations, requirements, and agreements, and operates using best management practices. Further, DOE determined that its proposed action, award of credits under the CNC Program to support funding for the continued operation of an already-operating nuclear power plant, is substantially the same as NRC's licensing action, including operations of the nuclear power plant, analyzed in the NRC NEPA documents. Based upon this, and that an award under the CNC Program does not change the existing operating configuration of DCPD facilities or result in significant new circumstances or information relevant to environmental concerns, DOE finds the NEPA documentation is adequate for continued operation during the period that DCPD's current operating licenses remain in effect.

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