UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 23, 2022

Ms. Paula Gerfen
Senior Vice President, Generation
and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 56, Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 240 and 241 RE: REVISION TO TECHNICAL SPECIFICATION 3.8.1, "AC SOURCES – OPERATING," TO SUPPORT DIESEL FUEL OIL TRANSFER SYSTEM COMPONENT PLANNED MAINTENANCE (EPID L-2021-LLA-0056)

Dear Ms. Gerfen:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 240 to Facility Operating License No. DPR-80 and Amendment No. 241 to Facility Operating License No. DPR-82 for the Diablo Canyon Nuclear Power Plant, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated March 29, 2021, as supplemented by letter dated September 14, 2021.

The amendments revise TS 3.8.1, "AC [Alternating Current] Sources – Operating," Condition F Completion Time to allow a separate one-time Completion Time of 7 days during the planned maintenance for each diesel fuel oil transfer pump (DFOTP) 0-1 and 0-2, with the portable DFOTP staged and available. The one-time Completion Time of 7 days for DFOTP 0-1 and 0-2 supports planned maintenance to maintain high reliability of the DFOTPs.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

/RA/

Samson S. Lee, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-275 and 50-323

Enclosures:
1. Amendment No. 240 to DPR-80
2. Amendment No. 241 to DPR-82
3. Safety Evaluation

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PACIFIC GAS AND ELECTRIC COMPANY

DOCKET NO. 50-275

DIABLO CANYON NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 240
License No. DPR-80

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Pacific Gas and Electric Company (the licensee), dated March 29, 2021, as supplemented by letter dated September 14, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-80 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 240 are hereby incorporated in the license. Pacific Gas & Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jennifer L. Dixon-Herrity

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Date: 2022.03.23 10:21:24 -04'00'

Jennifer L. Dixon-Herrity, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Facility Operating License No. DPR-80 and the Technical Specifications

Date of Issuance: March 23, 2022

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

PACIFIC GAS AND ELECTRIC COMPANY

DOCKET NO. 50-323

DIABLO CANYON NUCLEAR POWER PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 241
License No. DPR-82

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Pacific Gas and Electric Company (the licensee), dated March 29, 2021, as supplemented by letter dated September 14, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-82 is hereby amended to read as follows:

(2) Technical Specifications (SSER 32, Section 8)* and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 241, are hereby incorporated in the license. Pacific Gas & Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jennifer L. Dixon-Herrity

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Jennifer L. Dixon-Herrity, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Facility Operating License No. DPR-82 and the Technical Specifications

Date of Issuance: March 23, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 240

TO FACILITY OPERATING LICENSE NO. DPR-80

AND LICENSE AMENDMENT NO. 241 TO FACILITY OPERATING LICENSE NO. DPR-82

DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-275 AND 50-323

Replace the following pages of Facility Operating License Nos. DPR-80 and DPR-82, and the Appendix A, Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License No. DPR-80

REMOVE	INSERT
-3-	-3-

Facility Operating License No. DPR-82

REMOVE	INSERT
-3-	-3-

Technical Specifications

REMOVE	INSERT
3.8-3	3.8-3
3.8-3a	3.8-3a

(4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This License shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Pacific Gas and Electric Company is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100% rated power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 240 are hereby incorporated in the license. Pacific Gas & Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

(3) Initial Test Program

The Pacific Gas and Electric Company shall conduct the post-fuel-loading initial test program (set forth in Section 14 of Pacific Gas and Electric Company's Final Safety Analysis Report, as amended), without making any major modifications of this program unless modifications have been identified and have received prior NRC approval. Major modifications are defined as:

a. Elimination of any test identified in Section 14 of PG&E's Final Safety Analysis Report as amended as being essential;

(4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This License shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Pacific Gas and Electric Company is authorized to operate the facility at reactor core power levels not in excess of 3411 megawatts thermal (100% rated power) in accordance with the conditions specified herein.

(2) Technical Specifications (SSER 32, Section 8)* and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 241, are hereby incorporated in the license. Pacific Gas & Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan, except where otherwise stated in specific license conditions.

(3) Initial Test Program (SSER 31, Section 4.4.1)

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

*The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. Two required offsite circuits inoperable.	C.1	Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features.
	AND		
	C.2	Restore one required offsite circuit to OPERABLE status.	24 hours
D. One required offsite circuit inoperable.	D.1	Restore required offsite circuit to OPERABLE status.	12 hours
AND	OR		
One DG inoperable.	D.2	Restore DG to OPERABLE status.	12 hours
E. Two or more DGs inoperable.	E.1	Ensure at least two DGs are OPERABLE.	2 hours
F. One supply train of the DFO transfer system inoperable.			----------NOTE---------- A separate one-time use only Completion Time of 7 days is allowed during planned maintenance of each DFO transfer system pump 0-1 and 0-2 in 2022 with the Portable DFO transfer pump staged and available. ----------
	F.1	Restore the DFO transfer system to OPERABLE status.	72 hours
G. Two supply trains of the DFO transfer system inoperable.	G.1	Restore one train of the DFO transfer system to OPERABLE status.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H. Required Action and associated Completion Time of Condition A, B, C, D, E, F or G not met.	H.1 Be in MODE 3. AND H.2 ----------NOTE---------- LCO 3.0.4.a is not applicable when entering MODE 4. ---------- Be in MODE 4.	6 hours 12 hours
I. Two or more DGs inoperable. AND One or more required offsite circuits inoperable.	I.1 Enter LCO 3.0.3.	Immediately
J. One or more DGs inoperable. AND Two required offsite circuits inoperable.	J.1 Enter LCO 3.0.3.	Immediately

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 240 TO FACILITY OPERATING LICENSE NO. DPR-80

AND AMENDMENT NO. 241 TO FACILITY OPERATING LICENSE NO. DPR-82

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2

DOCKET NOS. 50-275 AND 50-323

1.0 INTRODUCTION

By application dated March 29, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21088A437), as supplemented by letter dated September 14, 2021 (ADAMS Accession No. ML21257A137), Pacific Gas and Electric Company (the licensee) requested changes to the Technical Specifications (TSs) for the Diablo Canyon Nuclear Power Plant, Units 1 and 2 (DCPP, Diablo Canyon).

The proposed amendments would revise TS 3.8.1, "AC [Alternating Current] Sources – Operating," Condition F Completion Time (CT) to allow a separate one-time CT of 7 days during the planned maintenance for each diesel fuel oil (DFO) transfer pump (DFOTP) 0-1 and 0-2, with the portable DFOTP (PDFOTP) staged and available. The one-time CT change from 72 hours to 7 days for each DFOTP (DFOTP 0-1 and 0-2) supports planned maintenance to maintain high reliability of the DFOTPs.

The supplemental letter dated September 14, 2021, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC, the Commission) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on June 15, 2021 (86 FR 31743).

2.0 REGULATORY EVALUATION

2.1 Diesel Generator Fuel Oil Storage and Transfer System Description

The diesel generator (DG) DFO system maintains adequate storage of DFO and supplies it to the six DGs. The DG fuel oil storage and transfer system is discussed in Section 9.5.4, "Diesel Generator Fuel Oil Storage and Transfer System," of the Diablo Canyon Updated Final Safety Analysis Report (UFSAR) (ADAMS Package Accession No. ML21306A142). The system consists of two underground DFO storage tanks, two DFOTPs, and two DFO supply headers. The DFO system is provided to supply diesel oil to the DGs for Units 1 and 2. Safety of the

reactor facilities is not impaired by the sharing of the fuel oil systems as any combination of one storage tank and one pump is capable of serving all six day tanks.

The licensee provided the following description of the DFO system operation in Section 2, "Detailed Description," of the Enclosure to the LAR dated March 29, 2021:

> Each DG is equipped with a skid-mounted fuel oil tank (referred to as a day tank) that has a capacity of 550 gallons, which provides about 2 1/2 hours of full load operation before fuel oil must be transferred from the underground storage tanks. Each day tank has two separate, redundant DFOTP start/stop level switches. Upon low level in a day tank, each level switch automatically starts a DFOTP and opens the supply header solenoid valve corresponding to the respective DFOTP, 0-1 or 0-2. Fuel is transferred to each DG day tank via two level control valves (LCVs) (and two associated upstream isolation valves) per DG. Each of the two LCVs and associated upstream isolation valves on each DG is associated with a separate DFO transfer system train.

The licensee also provided the following description of capabilities to address component failures in Section 2 of the Enclosure to the LAR:

> The DFO system transfer components and power sources are redundant up to and including fill valves and connections on the DG engine day tanks, so that a single malfunction will not prevent the transfer of fuel oil. In the unlikely event of malfunctions in both redundant fuel oil headers, such as a pump failure in one and piping blockage in the other, low level will be alarmed when sufficient fuel oil remains in the base-mounted day tank for a nominal one-hour period of operation of the engine at full load. This nominal one-hour period is adequate for an operator (a) to correct a malfunction on one of the two redundant transfer headers, or (b) to line up manually the valves of the two headers into one path that will transfer fuel oil. All the valves necessary for this action are readily accessible in the compartments for the DFOTPs.
>
> The ability to connect a PDFOTP has been incorporated into the DFO storage and transfer system to enhance the overall reliability of the system and the DGs. The PDFOTP is for postulated beyond design basis scenarios and is part of the DCPP licensing basis.

2.2 Licensee-Proposed Changes

The licensee requested to revise TS 3.8.1 Condition F CT to add the following note to the current 72-hour CT:

> *A separate one-time Completion Time of 7 days is allowed during planned maintenance of each DFO transfer system pump 0-1 and 0-2 in 2022 with the Portable DFO transfer pump staged and available.

2.3 Reason for Proposed Changes

In Section 2 of the Enclosure to the LAR, the licensee stated, in part:

> The one-time Completion Time of 7 days for each DFOTP 0-1 and 0-2 supports planned maintenance to proactively preclude a failure in service of either DFOTP due to being near the end of its component design life. The proposed one-time 7 day Completion Time reasonably avoids a potential dual-unit shutdown as a result of the current 72-hour Completion Time of TS 3.8.1 Condition F being exceeded during either of the DFOTP 0-1 and 0-2 planned maintenance outages.

2.4 Regulatory Requirements

The regulation at Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(c)(2), "Limiting conditions for operation," requires that TSs contain limiting conditions for operation (LCOs), which "are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met." Typically, the TSs require restoration of equipment in a timeframe commensurate with its safety significance, along with other engineering considerations.

Criterion V, "Instructions, Procedures, and Drawings" of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 requires, in part, that "[a]ctivities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances."

The NRC staff evaluated the following Diablo Canyon licensing basis General Design Criterion that is relevant to this license amendment request (LAR):

Section 3.1.5.6 of the Diablo Canyon UFSAR, Criterion 24, "Emergency Power for Protection Systems (Category B)," 1967 states:

> In the event of loss of all offsite power, sufficient alternate sources of power shall be provided to permit the required functioning of the protection systems.

2.5 Regulatory Guidance

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP).

- Chapter 18, "Human Factors Engineering," Revision 3, dated December 2016 (ADAMS Accession No. ML16125A114).

NUREG-1764, "Guidance for the Review of Changes to Human Actions," Revision 1, dated September 2007 (ADAMS Accession No. ML072640413) provides guidance for determining the appropriate level of human factors review and the criteria to be considered for proposed changes to human actions.

3.0 TECHNICAL EVALUATION

3.1 Electrical Engineering

In Section 2 of the Enclosure to the LAR, the licensee described the normal operation of the DFOTPs and how improper operation or component failures would be identified (e.g., alarms indicating low day tank level at DFO inventories that would support about 1-hour of operation at full load) and corrected (e.g., by valve operations or connection of a backup DFOTP). The licensee stated, in part, that during the planned outage, any event that requires the DGs coincident with the loss of the operable DFOTP would likely be accommodated by the PDFOTP. The licensee also stated that the PDFOTP will be pre-staged prior to the planned DFOTP outage times.

The NRC staff issued requests for additional information (RAIs) including a request to clarify the PDFOTP type of pump, pump capacity, and an estimate of time to start pumping (ADAMS Accession No. ML21215A343). In its response to the RAIs in the supplemental letter dated September 14, 2021, the licensee stated that the PDFOTP is a positive displacement gear type pump that delivers approximately 50 gallons per minute (gpm) at a discharge pressure of 105 pounds per square inch gauge (psig). The licensee also stated that the expected time to start pumping with the PDFOTP staged on location is less than 1 hour. The NRC staff reviewed the Diablo Canyon UFSAR, the licensee's LAR and the RAI responses. Because the PDFOTP has the capacity to fill the day tanks that support all six DGs and can begin pumping in less than 1 hour from its staged location, the NRC staff finds that there is reasonable assurance that the PDFOTP will mitigate the loss of the ability to fill the day tanks during the proposed outage times in accordance with the Diablo Canyon UFSAR, Section 3.1.5.6, Criterion 24.

3.2 Diesel Fuel Oil Transfer Pumps

During the upcoming maintenance for each DFOTP, the licensee proposes to stage the PDFOTP near the DFOTP that is out of service for maintenance, and it is available to be connected to supply DFO to the six DGs. The PDFOTP starts by either a battery-powered electric start or by hand cranking. Also, a second flexible and diverse (FLEX) PDFOTP (PDFOTP2) is available to be connected and supply DFO to the six DGs. This pump would be used if the staged DFOTP becomes inoperable.

In its September 14, 2021, response to an RAI, the licensee stated that the performance of the PDFOTP has been determined by routine surveillance testing. Each DG consumes less than 4 gpm of DFO at peak accident load levels, for a total of 24 gpm for all six DGs, which is within the PDFOTP capabilities. The licensee stated that the PDFOTP and necessary supporting equipment will be staged prior to and while one of the normal DFO transfer system trains is out of service for the planned maintenance. The PDFOTP will be staged in accordance with the routine quarterly surveillance procedure such that it is as close as practical to the DFO storage tank suction connection. The NRC staff finds that the PDFOTP will provide adequate DFO to the six DGs of Units 1 and 2 at peak accident load levels.

In its September 14, 2021, response to an RAI requesting information on FLEX PDFOTP2, the licensee stated that the FLEX PDFOTP2 is a centrifugal pump that delivers 40 gpm at a discharge pressure of 35.5 psig under design basis conditions requiring 20 feet of suction lift, and the FLEX PDFOTP2 is powered by its own non-1E portable diesel engine. Each DG consumes less than 4 gpm of diesel fuel at peak accident load levels, for a total of 24 gpm for all six DGs, which is within the FLEX PDFOTP2 capabilities.

The NRC staff determined that the FLEX PDFOTP2 will provide adequate DFO to the six DGs of Units 1 and 2 at peak accident load levels if the planned PDFOTP is not operable.

The NRC staff determined that the proposed change to TS 3.8.1 Condition F CT does not impact the DFO supply to the DGs.

3.3 Human Factor Engineering (HFE)

The NRC staff determined the licensee's risk mitigating action (RMA) of staging the PDFOTP, which is to be incorporated as a condition within the requested change to TS 3.8.1, constitutes a change to the human actions relied upon to restore system operability during a beyond-design-basis event within the facility licensing basis. Specifically, the initial conditions for this trained operator action (i.e., the location of the requisite equipment when the action is initiated) will be changed from the usual conditions.

Chapter 18 of the SRP indicates that, for requests associated with changes to important human actions, applicable acceptance criteria are contained in NUREG-1764.

3.3.1 Initial HFE Estimate of the Warranted HFE Review Level

The NRC staff determined that the human action being considered was associated with the potentially risk-important human action to recover emergency AC or offsite power, listed in Group 2, "PWR [Pressurized Water Reactor] Potentially Risk-Important Human Actions," of Table A.2, "Generic PWR Human Actions that are Risk-Important," in NUREG-1764. The NRC staff concluded that, while the staging and installation of the PDFOTP is a potentially risk-important human action, the secondary nature of the pump when considering defense-in-depth of the units, along with the overall low risk significance of the licensee's requested TS change as discussed in Section 3.4 of this safety evaluation, warranted an initially-estimated assignment of a Level-II review for the licensee's submittal.

3.3.2 Qualitative Assessment of Human Action Safety-Significance

In accordance with Section 2.3.5.1, "Factors Used in the Qualitative Assessments," of NUREG-1764, the NRC staff determined that the licensee's submittal warranted a qualitative assessment of (1) personnel functions and tasks and (2) design support for task performance. In conducting this assessment, the NRC staff considered changes in tasks, performance context, procedures, and training.

Task and Performance Context Considerations

Regarding task and performance considerations, the NRC staff determined that the staging of the PDFOTP does not constitute a change of the task itself (e.g., the act of installing and aligning the pump to provide supply to the fuel oil system), but rather a change in the context of performing the task. Specifically, the staging of the pump introduces two changes to the context:

- When conducting the task, the initial conditions (i.e., location of the pump) are different from the usual conditions. Specifically, the pump will be staged at a different location than it would be initially during normal conduct/training of the task.

- Operators are expected to have more time to complete the task than they would under usual circumstances. Because the pump will be staged, the time required to prepare the pump for installation will be reduced.

Procedure and Training Considerations

The NRC staff considered the significance of any changes to procedures or training associated with the staging of the pump, and whether these procedures would serve to ensure that operators were aware of the change in performance context (i.e., the pump being at a different location than its usual storage location).

In particular, NRC staff considered the possibility that an operator, if unaware of the change in pump location due to a lack of instruction/training indicating that the pump has been staged, could potentially experience a challenge if they had to spend unanticipated time identifying that the pump was not in the normally expected storage location, and thereafter having to track down its staged location. This is especially a potential concern when considering that fact that operators only have a nominal 1-hour time allotment to perform the critical task of restoring the system to an operable state.

In its September 14, 2021, response to an RAI, the licensee stated that the staging of the PDFOTP will be addressed in documented instructions, which will include a shift order, operations department turnover notes, and indication on the abnormal status boards in the control rooms for both units. This documentation/indication is intended to ensure that operators who may be responsible for pump use, if needed, can maintain awareness of the pump location, such that staging of the pump will not inadvertently have a negative impact on operators' ability to perform the task within the allotted time period. Furthermore, the licensee stated that additional operator training will not be necessary because the location where the pump will be staged is the same location at which operators are currently trained to stage the pump for installation and operation during postulated design basis scenarios that require its use, and it is also the same location where the pump is staged during quarterly testing of the pump.

NRC Staff Determinations

The NRC staff considered the licensee's planned utilization of a shift order, turnover notes, and indication in the control rooms to ensure that operators responsible for performing the action of installing the PDFOTP maintain awareness of its staged location. Based on these measures, the NRC staff determined that any potential adverse effects from the change in performance context for the task are expected to be adequately addressed through the implementation of documented instructions, which will be developed to be appropriate to the circumstances in accordance with the site Quality Assurance Program and Criterion V of Appendix B to 10 CFR Part 50.

Furthermore, the NRC staff determined that the documented instructions to be used are not expected to constitute a significant change to the already-existing instructions for use of the PDFOTP contained in site Operating Procedure OP J-6C:V, "Diesel Fuel Oil Transfer System - Use of Portable FOTP and DFO Day Tank LCVs," as discussed in Section 2 of the Enclosure to the LAR. Additionally, because the pump will be staged in a location where operators are already trained to temporarily install it for use, the NRC staff determined that the planned staging of the pump is already addressed through the licensee's existing training program.

Additionally, because the change in performance context is such that operators would be expected to have more time to complete the tasks of installing and operating the pump, with the pump already staged, the NRC staff concluded that the proposed plan to stage the pump is expected to be overall beneficial to the operators' ability to perform the tasks within the allotted 1-hour nominal timeframe.

3.3.3 Integrated Assessment

In accordance with Section 2.4.5, "Integrated Assessment of Human Action Safety-Significance for Non-Risk-Informed Requests," of NUREG-1764, based on the determinations from the qualitative assessment (discussed above), NRC staff considered whether the licensee's request warranted either an elevation or reduction of the level of the HFE review.

Because, as discussed in the preceding section of this safety evaluation; (1) the proposed staging of the pump is expected to be beneficial to the performance of the action of installing the PDFOTP; and (2) the staging is not considered to constitute a significant change to the task itself, nor will it require a significant change to the associated instructions/procedures; the NRC staff determined that the qualitative factors considered warranted a reduction from the initially-estimated level of the HFE review (Level-II). Therefore, the NRC staff proceeded with a Level-III review.

3.3.4 General Deterministic Review

In accordance with Section 2.5, "Level of Human Factors Engineering Review for Human Actions," of NUREG-1764, as part of the NRC staff's Level-III review, the NRC staff verified that current regulations will still be met with the proposed change in place. As discussed in Section 2.0 of this safety evaluation, 10 CFR 50.36(c)(2) requires, in part, that "[w}hen a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the [LCO] can be met." Based on the NRC staff's determination that the controls established by the licensee will ensure that, with the PDFOTP staged, operators will still be able to effectively perform the actions necessary to maintain the functional capability of the DFO transfer system, the NRC staff determined that the proposed change to TS 3.8.1 and the resulting impacts on associated operator actions will not negatively impact the licensee's compliance with the requirements listed in 10 CFR 50.36(c)(2).

3.3.5 HFE Conclusion

The NRC staff determined that the proposed staging of the PDFOTP, established as a condition for the proposed TS change, will not constitute a significant change to the task, nor will implementation of the change entail a significant change to associated procedures or training. Furthermore, controls established by the licensee will ensure that, with the PDFOTP staged, operators will still be able to effectively perform the actions necessary within the nominal allotted time period. Based on this determination, along with the fact that the procedures governing staging of the pump will still be controlled in accordance with the licensee's quality assurance program and the requirements listed in 10 CFR, Part 50, Appendix B, the NRC staff concluded that the human factors aspects of the proposed TS change will not have a negative impact on the affected TS LCOs reflecting the lowest functional capability or performance levels of equipment required for safe operation of the facility, in accordance with 10 CFR 50.36(c)(2). Based on the determination that the human factors aspects of the licensee's proposed change

will not adversely impact compliance with the applicable regulatory requirements, the NRC staff finds the proposed license amendments to be acceptable.

3.4 Risk Insights

The licensee stated in Section 3, "Technical Evaluation," of the Enclosure to the LAR that this is not a risk-informed LAR (i.e., not formally submitted using the guidance in Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 3). Therefore, the NRC staff did not review detailed aspects of the licensee's Probabilistic Risk Assessment (PRA) models to assess the acceptability of the proposed change. The NRC staff's review of the PRA was limited to an assessment of how the PRA was used to develop and inform RMAs that support the proposed TS CT extension.

3.4.1 Risk Mitigating Actions

The NRC staff's review of the proposed change focused primarily on the licensee's qualitative risk insights and associated RMAs described in Section 3 of the Enclosure to the LAR. As noted above, the RMAs were developed based on insights from the licensee's PRA. The proposed RMAs are reflective of the risk-significance of the DFOTPs relative to their use in mitigating the consequences of plant events, such as a loss of offsite power (LOOP), that require DG operation. The licensee's proposed RMAs are summarized below:

- Staging the PDFOTP prior to entering TS LCO 3.8.1 Condition F until the condition has been exited;

- Protecting offsite AC circuits while the units are in TS LCO 3.8.1 Condition F; and

- Protecting the turbine driven auxiliary feedwater pump train on each unit while each unit is in TS LCO 3.8.1 Condition F.

In its September 14, 2021, response to RAIs, the licensee confirmed that the in-service DFOTP train and its supporting structures, systems, and components (SSCs) (e.g., normal and alternate power supply breakers) would also be protected during maintenance activities on the out-of-service train. In response to RAIs regarding the PRA modeling assumptions used to develop the proposed RMAs, the licensee stated that average levels of maintenance unavailability on plant systems and equipment were assumed during development of its quantitative risk insights. Consistent with this assumption, the licensee stated that administrative controls will be used to ensure that any additional testing and maintenance activities performed during the extended DFOTP maintenance windows (i.e., testing and maintenance on other SSCs) will be assessed against applicable risk acceptance criteria. These controls provide assurance that additional testing and maintenance activities beyond those associated with the DFOTPs will be conducted in a manner that minimizes the aggregate risk to the station.

The NRC staff issued RAIs to the licensee regarding staging and deployment of the PDFOTP due to the significance of this RMA in mitigating the risks associated with the proposed TS CT extension. In its September 14, 2021, response to an RAI regarding operator proficiency with the PDFOTP, the licensee stated that on-the-job training and task performance evaluations during the operator qualification process are used to ensure that operators are adequately trained to operate this equipment. Further, the licensee stated that quarterly testing of the

PDFOTP provides opportunities for operators to maintain a high degree of proficiency with this task.

Further, in its September 14, 2021, response to RAIs regarding the human reliability assumptions used in the PRA for deployment and operation of the PDFOTP, the licensee stated that the Human Error Probability model for this task uses conservative shaping factors when compared to the proposed configuration supporting the proposed CT extension. Specifically, pre-staging of the PDFOTP reduces the workload, timing and stress associated with this task since the licensee's PRA model does not credit pre-staging of the PDFOTP. The remaining steps for aligning and operating the PDFOTP would require less time for successful operation of the equipment than that assumed in the PRA. Therefore, the risk insights derived from the licensee's PRA for the proposed change are conservative with respect to the configuration that will be employed to support the DFOTP maintenance windows.

Based upon its review of the licensee's submittals, the NRC staff finds that the combination of these factors provide assurance that operators will be capable of aligning and operating the PDFOTP in a timely manner.

3.4.2 FLEX Strategies

The licensee noted in Section 3 of the LAR that an additional PDFOTP (PDFOTP2) is available to support the Diablo Canyon DGs if the pre-staged PDFOTP were to fail. The additional PDFOTP is used to support implementation of FLEX strategies for mitigating beyond design basis events. The licensee did not credit the use of PDFOTP2 as part of its justification for the requested CT extension and indicated that it will not be pre-staged during the DFOTP maintenance windows. Regardless, the availability of PDFOTP2 provides an additional layer of defense-in-depth in that it can be deployed, if necessary, to support DG operation.

3.4.3 Independent Risk Assessment

In addition to the risk insights presented by the licensee, the NRC staff used the NRC's Standardized Plant Analysis Risk (SPAR) model for Diablo Canyon to independently evaluate the risk insights and risk contribution from the proposed change. Specifically, the NRC staff performed a quantitative risk assessment of the proposed change using the Diablo Canyon SPAR model by considering two cases:

1. One DFOTP out of service for 8 days with no credit for additional, temporary equipment or RMAs with average testing and maintenance activities.

2. One DFOTP out of service for 8 days with credit for implementation of FLEX strategies with average testing and maintenance activities.

The results of the SPAR model risk assessments found that the increase in core damage probability (CDP) was sufficiently small in both cases, when compared to the NRC staff's guidance for one-time TS CT extensions and maintenance activities with RMAs in place (i.e., increase in CDP (ΔCDP) less than 1×10^{-5}). The NRC staff's independent assessment also determined that the overall increase in CDP resulting from the DFOTP maintenance windows was largely due to increased CDP resulting from LOOP events (e.g., grid-related LOOP, weather-related LOOP). Implementation of RMAs that assist in mitigating the risks associated with LOOP events therefore provides greater assurance that the risks associated with the proposed CT extension can be appropriately mitigated.

3.4.4 Risk Insights Conclusion

The NRC staff concludes that the available risk insights related to the proposed TS CT extension are acceptable for the purposes of supporting the deterministic evaluation. This conclusion is based on the following considerations:

- The licensee will implement robust RMAs to support the proposed CT extension. These RMAs include deployment, staging, and operation of a PDFOTP if required, and protecting redundant and risk-significant equipment.

- Existing administrative controls provide assurance that other planned and emergent testing and maintenance activities will be conducted in a manner that minimizes the overall risk to the station.

- Training and routine testing activities provide assurance that plant personnel are proficient in operating the PDFOTP, if the pump is required to support DG operation during the DFOTP maintenance windows.

- Independent risk assessments performed by the NRC staff using the Diablo Canyon SPAR model determined that the ΔCDP associated with an out-of-service DFOTP is sufficiently low when compared to NRC staff guidance for one-time TS CT extensions and maintenance activities supported by RMAs.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendments on November 16, 2021. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, published in the *Federal Register* on June 15, 2021 (86 FR 31743), and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Date: March 23, 2022

SUBJECT: DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 240 and 241 RE: REVISION TO TECHNICAL SPECIFICATION 3.8.1, "AC SOURCES – OPERATING," TO SUPPORT DIESEL FUEL OIL TRANSFER SYSTEM COMPONENT PLANNED MAINTENANCE (EPID L-2021-LLA-0056) DATED MARCH 23, 2022

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