

PG&E Letter DCL-22-009

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

10 CFR 50.2

Diablo Canyon Units 1 and 2
Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Request for Approval of a Certified Fuel Handler Training and Retraining Program

References:

1. PG&E Letter DCL-18-096, "Certification of Permanent Cessation of Power Operations," dated November 27, 2018 (ML18331A553)
2. Entergy letter to NRC, "Request for Approval of a Certified Fuel Handler Training and Retraining Program," dated April 15, 2019 (ML19105A632)
3. NRC letter to Entergy, "Indian Point Nuclear Generating Unit Nos. 2 and 3 – Approval of Certified Fuel Handler Training and Retraining Program," dated December 18, 2019 (ML19333B868)

Dear Commissioners and Staff:

In Reference 1, Pacific Gas and Electric Company (PG&E) notified the NRC that the decision was made to permanently cease operations at Diablo Canyon Power Plant (DCPP) Units 1 and 2 upon expiration of the operating licenses. The Facility Operating License (FOL) for DCPP Unit 1 expires on November 2, 2024, and the FOL for DCPP Unit 2 expires on August 26, 2025.

In accordance with 10 CFR 50.2, PG&E requests NRC approval of the Certified Fuel Handler (CFH) Training and Retraining Program for DCPP Units 1 and 2. In 10 CFR 50.2, the definition of CFH is described as "a non-licensed operator who has qualified in accordance with a fuel handler training program approved by the Commission."

Upon docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessels for Units 1 and 2, in accordance with 10 CFR 50.82(a)(1)(i) and (ii), the 10 CFR 50 licenses will no longer authorize operation of the reactors or placement of fuel in the reactor vessels in accordance with 10 CFR 50.82(a)(2). As a result, licensed reactor operators will no longer be

required to support plant operating activities. Instead, approval of a CFH Training and Retraining Program is needed to facilitate activities associated with decommissioning and irradiated fuel handling and management.

A copy of the proposed CFH Training and Retraining Program is provided in the Enclosure to this letter. The DCPD Units 1 and 2 proposed program is patterned after the Indian Point Nuclear Generating Units 2 and 3 CFH Training and Retraining Program, which was previously submitted (Reference 2) and approved by the NRC (Reference 3). The CFH Training and Retraining Program will ensure that the qualifications of personnel are commensurate with the tasks to be performed and the potential conditions requiring response.

10 CFR 50.120, "Training and Qualification of Nuclear Power Plant Personnel," requires training programs to be established, implemented, maintained, and derived using a systematic approach to training (SAT) as defined in 10 CFR 55.4. The requirements of 10 CFR 50.120 apply to holders of operating licenses issued under 10 CFR Part 50. After permanent cessation of operations and certification of fuel removal, the licenses will no longer authorize operation for DCPD Units 1 and 2. The CFH Training and Retraining Program will nonetheless align with the provisions of 10 CFR 50.120. The CFH Training and Retraining Program provides adequate confidence that appropriate SAT based training of personnel who will perform CFH duties is conducted to ensure the facility is maintained in a safe and stable condition.

PG&E makes no new or revised regulatory commitments (as defined by NEI 99-04) in this submittal.

If you have any questions or require additional information, please contact Mr. Philippe Soenen at 805-459-3701.

Sincerely,



Maureen R. Zawalick
Vice President, Decommissioning and Technical Services

February 23, 2022

Date

Enclosure

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CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM

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1 Introduction

The Certified Fuel Handler (CFH) Training and Retraining Program contained herein describes the training program to be implemented at the Diablo Canyon Power Plant (DCPP) to ensure the monitoring, handling, storage, and cooling of spent nuclear fuel is performed in a manner consistent with ensuring the public health and safety.

The program describes the personnel to whom the program applies, the areas in which training is provided, what constitutes certification, how certification is maintained, and required qualifications (e.g., medical). The program shall comply with the DCPP Technical Specifications (TS) and be consistent with the level of hazard at the facility to ensure the facility is maintained in a safe and stable condition. Based on the permanently defueled status, as committed to under 10 Code of Federal Regulations (CFR) 50.82(a)(1), CFHs will not be trained as licensed operators; however, candidates in the training program shall meet minimum applicable operator experience requirements of the DCPP TS. Changes to this program may be made without prior U.S. Nuclear Regulatory Commission (NRC) approval provided the program continues to comply with the TS.

The CFH Training and Retraining Program will become effective upon:

- (1) approval of the CFH Training and Retraining Program by the NRC; and
- (2) implementation of the approved Permanently Defueled Technical Specifications License Amendment which eliminates the requirements for the NRC licensed Senior Reactor Operators and Reactor Operators, and the requirement for the associated 10 CFR 55 Training Program.

Training of personnel can be conducted prior to the CFH Training and Retraining Program being approved by the NRC or prior to the training program effective date. Training dates will be tracked to ensure any subsequent changes in the program after the initial training is conducted are appropriately addressed.

The CFH Training and Retraining Program is not accredited with the National Academy for Nuclear Training in accordance with ACAD 02-002, "The Process for Accreditation of Training in the Nuclear Power Industry." Although the program is not accredited, the CFH Training and Retraining Program will adhere to the guidelines of Revision 1 of NUREG-1220, "Training Review Criteria and Procedures," that are applicable to a permanently defueled facility and be based on a systematic approach to training (SAT) process.

The SAT process contains the following elements:

- (1) Systematic analysis of the jobs to be performed.
- (2) Learning objectives derived from the analysis which describe desired performance after training.

- (3) Training design and implementation based on the learning objectives.
- (4) Evaluation of trainee mastery of the objectives during training.
- (5) Evaluation and revision of the training based on the performance of trained personnel in the job setting.

The plant manager (or designee) may exempt an individual from a specific training requirement based upon the individual's depth of experience and previous training. Such exemptions, including the basis, shall be documented.

The CFH Training and Retraining Program consists of an initial training program and a requalification training program (or retraining program) as described below.

2 Terms and Definitions

- **Certified Fuel Handler:** As defined in 10 CFR 50.2, CFH means, for a nuclear power reactor facility, a non-licensed operator who has qualified in accordance with a fuel handler training program approved by the NRC.
- **Non-Licensed Operator:** An operator who works in the plant under the direction and supervision of control room and/or operations management personnel in support of plant operations. Non-licensed operators operate, control, and monitor plant equipment outside the Control Room and may also be assigned auxiliary duties such as fire brigade member, medical response team member, or radiological emergency team member.
- **Licensed Operator or NRC-Licensed Operator:** An individual who possesses an NRC-issued operator license or senior reactor operator license pursuant to 10 CFR 55, "Operators' Licenses" to manipulate the controls of a facility or to direct the licensed activities of licensed operators."

3 Initial Training Program

3.1 Eligibility Requirements

Candidates for enrollment in the CFH initial training program shall meet the applicable requirements of the DCPD TS.

For the purposes of the CFH Training Program, candidates shall also meet the definition of nuclear power plant experience listed in American National Standards Institute (ANSI) standards, as specified in the DCPD TS, amended to include nuclear power plant experience acquired at a defueled reactor site which has spent nuclear fuel stored in its spent fuel pool.

3.2 Fundamentals Training

The fundamental training phase of the CFH Training Program consists of lecture, and/or self-study of topics appropriate to the monitoring, handling, storage, and

cooling of nuclear fuel. The lecture method of instruction is the training of individual topics by classroom presentation. Self-study is training accomplished by the student through the independent study of texts, handouts, and other materials. Selection of topics will be based on a job analysis for the CFH tasks and functions. During initial development of the CFH Training Program, the job analysis will be performed by an individual holding a Senior Reactor Operator license at the facility. A Difficulty, Importance, and Frequency (DIF) rating will be assigned to each CFH task by a holder of a Senior Reactor Operator license who is familiar with the expected plant conditions during decommissioning. A review of the DIF ratings for each task will be performed by Operations and Training personnel and management. Learning objectives will be derived from the analysis to describe the desired performance after training. Training materials will be designed based on the learning objectives. Depending on an analysis of the candidate's background, self-study may be used for up to 100 percent of the course material. A comprehensive exam at the end of the course will provide assurance of mastery of the skills, knowledge, and abilities required for successful performance of CFH job and associated tasks.

Typically, the fundamental topics include thermodynamics, heat transfer, fluid mechanics, radiological safety principles and monitoring, electrical theory, mechanical components operation, facility/system design and function, and facility administrative and safety procedures, as appropriate for the current facility status.

The training plan will adhere to the guidelines of Revision 1 of NUREG-1220, "Training Review Criteria and Procedures," that are applicable to a permanently defueled facility and be developed utilizing the SAT process.

The following procedures provide specific guidance on training design and implementation, such as guidance on training program oversight, administration, analysis of training needs, development of lesson objectives and lesson plans, design and development of training materials, conduct of training, evaluation of training effectiveness, and record keeping:

- TQ2, Accredited Training Programs
- TQ2.ID1, Training Program Analysis
- TQ2.ID2, Training Program Design
- TQ2.ID3, Training Program Development
- TQ2.ID4, Training Program Implementation
- TQ2.ID5, Training Program Evaluation

3.3 On-the-Job Training (OJT)

The OJT phase of the CFH Training Program includes hands-on training of shift operations such as shift turnover, shift record keeping, removal from and return of

equipment to service, and specified watch-standing activities. Watch-standing activities include OJT in operation of systems/components used to provide handling, storage, cooling, and monitoring of the fuel; normal, abnormal, and emergency procedures; accident analysis; Emergency Plan; facility license; and the content, bases, and importance of TS. A minimum of 40 hours of on-shift watches under the instruction of a CFH must be completed as part of the qualification process.

3.4 Candidate Evaluation

3.4.1 Examination

A comprehensive final examination shall be administered at the end of the initial training program. The comprehensive examination shall include a written examination and an operating examination. Areas examined are described in Appendices A and B for the written and operating examinations, respectively. The written examination requires a minimum score of 80 percent to pass. The operating examination will consist of Job Performance Measures (JPMs). Passing criteria for an individual JPM is that the examinee successfully completes the assigned task in accordance with the governing procedure without missing any critical steps. Missed or incorrectly performed critical steps are the bases for JPM failure. Critical steps for a JPM will be pre-identified as defined in Revision 12 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors" or later revision. Each JPM will be scored on a pass/fail basis. The candidate must pass at least 80 percent of the administered JPMs to successfully pass the operating examination.

3.4.2 Examination Failures

An individual who fails to pass either the written or operating examination shall not perform CFH duties (other than those related to training) until he/she has completed a remedial training program and passes an appropriate re-examination. Only those portions of the original examination that were failed need to be re-examined (i.e., written or operating exam).

3.4.3 Exemption of Training Requirements

The plant manager (or designee) may exempt an individual from specific training requirements based upon the individual's depth of experience and previous training. Any exemptions granted shall be based on an evaluation of the candidate's training and/or work history to ensure that the intent of the exempted training objectives is satisfied. Such exemptions, including the basis, shall be documented. The requirement for a medical examination shall not be exempted.

Training of current DCPD Licensed Operators (i.e., individuals who hold a current NRC issued Reactor Operator or Senior Reactor Operator License) may be evaluated to determine if they satisfy all of the requirements of this training program, or if they only need to complete portions of this program to qualify as a CFH. This evaluation will focus on the differences between the requirements of a

CFH and a Licensed Operator to identify any additional training required to become a CFH. Examples may include an examination on TS, fuel handling, and administrative controls required to perform the CFH function. The CFH Training Program allows for the evaluation of other facility personnel to determine if portions of the required training have already been completed and therefore may be exempted. The evaluation will concentrate on required areas to determine if the level of previous training and examination were the same as that required for a CFH.

In general, the training of holders of NRC Senior Reactor Operator licenses who are also qualified as Fuel Handling Supervisors will meet the qualification requirements for CFH. However, it is expected that some additional training requirements may arise as the plant transitions to a permanently shutdown and defueled configuration. These additional training requirements may arise from changes to plant systems or procedures associated with spent fuel pool operations. Therefore, the training requirements for CFH will be specifically identified and enumerated using the SAT process prior to permanent defueling. The training history of each currently licensed Senior Reactor Operator who is identified as a candidate for CFH qualification will be separately evaluated to ensure that all the specific training requirements of the CFH Training Program are met.

Training to address any identified gaps between the individual's training history and the CFH Training Program requirements will be completed prior to certification as CFH.

The plant manager (or designee) shall approve the basis for evaluations qualifying an individual as a CFH.

3.5 Qualifications

All candidates shall satisfy the following requirements:

- (1) complete the CFH Training Program or have the requirement exempted;
- (2) score at least 80 percent on a written examination;
- (3) pass at least 80 percent of the administered JPMs on the operating examination; and
- (4) pass a medical examination by a physician to determine that the candidate's medical condition is not such that it might cause operational errors that could endanger other plant personnel or the public health and safety.

4 Retraining Program

4.1 Eligibility Requirement

Candidates for enrollment in the CFH Retraining program (also known as the

requalification training program) shall have successfully completed the initial CFH Training Program.

4.2 Retraining

All CFHs will participate in the retraining program. The CFH Retraining Program consists of lecture and/or self-study of topics appropriate to the monitoring, handling, storage, and cooling of nuclear fuel. The content of the retraining program will be based upon the tasks selected during program development for the retraining cycle. A retraining plan will be developed and will be approved by the plant manager (or designee). The training plan will adhere to the guidelines of Revision 1 of NUREG-1220, "Training Review Criteria and Procedures," that are applicable to a permanently defueled facility and be developed utilizing the SAT process. Retraining will typically include review of changes associated with the facility and procedures, as well as problem areas associated with the monitoring, handling, storage, and cooling of nuclear fuel, and selected topics from the initial training program.

4.3 Schedule

4.3.1 Course Schedule

The CFH Retraining Program shall be administered in a biennial training cycle. This cycle includes annual operating examinations and biennial written examination. Biennial and annual are as defined in Revision 12 of NUREG-1021 or later revision.

4.3.2 Missed Training

Any missed training or examination must be made up within 90 days of the missed training activity. If required training or evaluation is not completed within the specified makeup period, the CFH shall be suspended from CFH duties, pending successful completion of the missed training or evaluation.

4.4 Evaluation of Retraining

4.4.1 Examinations

Participants in the CFH Retraining Program must pass a biennial written examination and an annual operating examination to maintain their qualification. Areas examined are described in Appendices A and B for the written and operating examinations, respectively. The written examination requires a minimum score of 80 percent to pass. The operating examination will consist of JPMs and each JPM will be scored on a pass/fail basis. Passing criteria for an individual JPM is that the examinee successfully completes the assigned task in accordance with the governing procedure without missing any critical steps. Missed or incorrectly performed critical steps are the bases for JPM failure. Critical tasks for a JPM will be pre-identified as defined in Revision 12 of NUREG-1021 or later revision. The candidate must pass at least 80 percent of the administered JPMs to successfully pass the operating examination.

Periodic written and/or operating exams may be administered during the retraining cycle to assess student knowledge and training effectiveness.

4.4.2 Examination Failures

An individual who fails to pass either the comprehensive biennial written or annual operating examination shall not perform CFH duties until a remedial training program is completed and an appropriate re-examination is passed. Only those portions that were originally failed need to be successfully re-examined prior to restoring qualifications.

4.5 Maintenance of CFH Qualifications

4.5.1 Requirements to Maintain Qualification

To maintain the CFH qualification, the following requirements must be satisfied, or they may be exempted:

- (1) complete all required CFH Retraining;
- (2) score at least 80 percent on the biennial written examination;
- (3) pass at least 80 percent of the administered JPMs on the annual operating examination;
- (4) pass a biennial medical examination by a physician to determine that the CFH's medical condition is not such that it might cause operational errors that could endanger other plant personnel or the public health and safety; and
- (5) stand the designated CFH watch for a minimum of eight (8) hours per calendar quarter. A CFH who fails to meet this time requirement can regain qualified status by serving eight (8) hours of watch under the instruction of a qualified CFH. The time under instruction should include a review of the spent fuel pool cooling system and shift turnover procedures.

An individual who fails to meet any of the requirements for maintaining the CFH qualification shall be removed from all duties associated with that position until such time as the discrepancies can be resolved. The Operating Shifts shall be notified of the individual's removal and subsequent status.

4.5.2 Exemption of Maintenance of Qualification Requirements

The plant manager (or designee) may exempt an individual from a specific retraining requirement. Such exemptions, including the basis, shall be documented. The requirement for a biennial medical examination shall not be exempted. An individual shall not be exempted from the annual operating or biennial written examinations unless that individual prepared the examination. No individual may be exempted from any two consecutive annual operating exams. No individual may be exempted from any two consecutive biennial written examinations.

5 Program Evaluation

As part of the training process, routine assessments of the effectiveness and accuracy of training are conducted by appropriate management personnel during and at the end of each two (2) year training cycle. These routine assessments ensure that the DCPD CFH Training and Retraining Program:

- (1) contains the guidance necessary to ensure compliance with the requirements of the SAT process defined in 10 CFR 50.120(b)(3); and
- (2) is revised to incorporate changes to the program, as appropriate, to reflect industry experience, changes to the facility, procedures, regulations, and quality assurance requirements.

Evaluation results shall be reviewed by a station oversight board as defined in site procedures. The station oversight board will verify the resolution of any discrepancies identified by the evaluation. Any required changes to the program determined by the station oversight board, shall be incorporated into the program.

6 Records Retention

Quality records associated with the CFH Training and Retraining Program will be retained in retrievable format until there is no longer a need for the CFH position at the facility (i.e., all fuel permanently transferred to a dry fuel storage facility).

7 Evaluating Changes to the CFH Training and Retraining Program

Because the program is based on SAT, changes may be made to program elements without NRC approval as long as the program continues to comply with the DCPD TS.

Specifically, the CFH Training and Retraining Program will be revised to incorporate changes to the program, as appropriate, to reflect industry experience, changes to the facility, procedures, regulations, and quality assurance requirements.

Appendix A

WRITTEN EXAMINATION AREAS CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM

The written examination shall include a sample of the following aspects of the Certified Fuel Handler position:

- (1) Design, function, and operation of systems used in handling, storage, cooling, monitoring of nuclear fuel, and auxiliary support systems.
- (2) Purpose and operation of the radiation monitoring systems.
- (3) Radiological safety principles and procedures including radiation hazards that may arise during normal, maintenance, and abnormal activities.
- (4) Principles of heat transfer, thermodynamics, and fluid mechanics as they apply to fuel handling, storage, cooling, and monitoring.
- (5) Conditions and limitations of the facility license, including content, basis, and importance of Technical Specifications.
- (6) Assessment of facility condition and selection of appropriate procedures during normal, abnormal, and emergency situations.
- (7) Fuel handling facilities and procedures.

Appendix B

OPERATING EXAMINATION AREAS CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM

The operating examination will consist of Job Performance Measures and shall include a sample of the following aspects of the Certified Fuel Handler duties and tasks:

- (1) Evaluate annunciators; valve, pump, and breaker status indicators; and instrument readings as necessary to determine/perform appropriate remedial actions.
- (2) Evaluate the ability to manipulate the controls required to obtain desired operating results during normal, abnormal, and emergency conditions. This includes the spent fuel pool cooling system and those auxiliary and emergency systems that could affect the release of radioactive material to the environment.
- (3) Evaluate radiation monitoring system readings, including alarm conditions, to determine appropriate actions. Such actions may include setting an alarm setpoint to monitor a release or determine appropriate remedial actions for an alarm condition.
- (4) Evaluate abnormal or emergency conditions to determine if the emergency plan for the facility should be implemented and, if implemented, evaluate performance of duties as required by the emergency plan.