



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 111 TO FACILITY OPERATING LICENSE NO. DPR-80

PACIFIC GAS AND ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-275

1.0 INTRODUCTION

By application dated January 18, 1996, Pacific Gas and Electric Company (or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. DPR-80) for the Diablo Canyon Nuclear Power Plant, Unit 1. The proposed changes requested a Technical Specification (TS) change to revise the allowed outage time (AOT) in TS 3/4.8.1.1, Electrical Power Systems. The request is made to allow operation of Unit 1 in Mode 3 (Hot Standby) during replacement of non-safety-related auxiliary transformer 1-1, for a one-time extension of up to 48 hours beyond the 72 hours allowed by TS 3.8.1.1, Action Statement (a). The installation of auxiliary transformer 1-1 causes the delayed offsite power circuit to be inoperable during the time period of the transformer replacement. After a preliminary review, the licensee was requested to clarify the availability of other ac power circuits and the time available for their connection during the proposed installation of the transformer. By telecon on February 1, 1996, the licensee provided the requested clarification. In addition, the licensee confirmed the staff's interpretation of compensatory commitments documented in their January 18, 1996, letter that are to be in effect during the installation of the transformer.

2.0 BACKGROUND

On October 21, 1995, a ground fault on non-safety-related auxiliary transformer 1-1 caused the failure of the transformer. A safety evaluation determined that Diablo Canyon Nuclear Power Plant (DCNPP) Unit 1 could be safely operated without the auxiliary transformer 1-1 until a replacement could be found. The replacement transformer will restore Unit 1 to its original design configuration. However, the installation of the replacement transformer will cause the 500 kV system (delayed offsite power source) to be inoperable during the time period of the transformer connection. The licensee states that the scheduled installation time for the replacement transformer is 79 hours. Thus, the requested 120-hour time period is based upon the planned installation time plus an additional margin for contingency.

### 3.0 EVALUATION

The staff's evaluation of the licensee's proposed change to the technical specifications follows:

Action Statement (a) of Limiting Condition for Operation (LCO) 3.8.1.1 addresses requirements when one of two offsite circuits becomes inoperable due to unplanned reasons while operating the plant in Modes 1, 2, 3, and 4. When one of two offsite circuits become inoperable, action statement (a) currently requires:

- (1) the operability of the remaining offsite circuit to be demonstrated by performing Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter;
- (2) the operability of the onsite standby diesel generators to be demonstrated by performing Specification 4.8.1.1.2a) for each diesel generator within 24 hours if the diesel generator has not been successfully tested within the past 24 hours; and
- (3) the inoperable offsite circuit to be returned to operable status within 72 hours or the plant must be brought to hot shutdown conditions within the following 6 hours and cold shutdown conditions within the following 30 hours.

For Cycle 8 operation of DCNPP Unit 1, the licensee has proposed to add a footnote to 3.8.1.1.a that will permit an offsite circuit to be inoperable for up to 120 hours from its current 72 hours. The proposed change is to be on a one time basis. In addition, the licensee in its January 18, 1996 letter committed to the following compensatory measures during the proposed 120 hours:

- (1) The plant will be operated in Mode 3 (Hot Standby).
- (2) A reduced transfer of DCNPP nonvital loads will be implemented for DCNPP Unit 2 should Morro Bay Units 3 and 4 become unavailable to prevent a reduction of 230 kV system voltage.
- (3) Activities at the 230 kV and 500 kV switchyards will be coordinated to prevent damage or interference that could impact operability of the 230 kV and 500 kV systems.
- (4) Operation and maintenance activities and their impact on the 230 kV system will be communicated and discussed with the DCNPP operational staff, transmission system planning staff, and transmission network system operational staff.
- (5) Twelve kV auxiliary house loads normally aligned to Unit 1 will be aligned to Unit 2.

- (6) The shift supervisor at DCNPP will call, at the start of each shift, the transmission network system operational staff to verify the operability of the 230 kV system.
- (7) No elective testing or maintenance which can affect operability of Unit 1 safety systems will be conducted. Testing of the onsite standby diesel generators will be conducted prior to the planned outage of the offsite circuit.
- (8) Operating procedures have been revised for natural circulation cooldown, loss of offsite power, and the proper control of the secondary plant. Operator training for these revised operating procedures will be completed prior to the planned outage of the offsite circuit.

### 3.1 Licensee's Basis for Change

An evaluation of the impact of the extended AOT on the DCNPP probabilistic risk assessment (PRA) was conducted by the licensee. The PRA evaluation concluded that the increase in core damage probability for the total 120-hour AOT was approximately  $1.2 \text{ E-}07$ . According to EPRI/NEI TR-105396, "PSA Applications Guide," August 1995, an increase in core damage probability of less than  $1\text{E-}6$  is considered non-risk significant.

### 3.2 Staff Evaluation

DCNPP Unit 1 is supplied with offsite power from the 500 kV and 230 kV systems. During normal operation, the main generator supplies power to the safety buses through auxiliary transformer 1-2. When the unit is not operating, the main generator can be disconnected from the system by a motor-operated disconnecting link and power to the safety loads and the auxiliary loads can be supplied through auxiliary transformer 1-2 by backfeeding from the 500 kV system through the main transformer. This circuit is designated as a delayed offsite power source.

On a plant trip, safety buses as well as non-safety buses are automatically fast transferred to the 230 kV system. The 230 kV system provides an immediate source of offsite power to the safety loads through startup transformers 1-1 and 1-2. If the 230 kV system is not available, the emergency diesel generators provide power to the safety buses.

During the 120-hour transformer installation period, the plant would be in Mode 3, and the class 1E divisions will be directly powered from the 230 kV transmission network through startup transformers 1-1 and 1-2. In addition, each of the Class 1E divisions has its own onsite standby diesel generator available with sufficient capacity and capability for safe shutdown of DCNPP. The standby diesel generators will be tested before the planned outage of the delayed offsite power source to assure their operability. Thus, in the event of the loss of the immediate access offsite circuit, there will be assurance that sufficient onsite ac power will be available from standby diesel generators in the event that a single failure of one division occurs, thereby permitting safe shutdown of DCNPP with the remaining division. Also it should

be noted that if loss of the 230 kV offsite circuit should occur during this proposed 120-hour AOT and be accompanied by the loss of all three onsite standby diesel generators (Station Blackout), power from DCNPP Unit 2 can be made available to meet the safe shutdown requirements for Unit 1.

Based on compensatory commitments documented in the licensee's January 18, 1996, letter, the staff concludes that there is reasonable assurance that sufficient power will be available to permit safe shutdown of DCNPP. Therefore, the proposed extension to the AOT from 72 to 120 hours is acceptable.

#### 4.0 STATE CONSULTATION

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

#### 5.0 ENVIRONMENTAL CONSIDERATION

These amendments change a requirement with respect to the installation or use of a facility component 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, and there has been no public comment on such finding (61 FR 3737). 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) 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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