



**Pacific Gas and
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February 11, 2014

PG&E Letter DCL-14-010

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

10 CFR 50.73

Docket No. 50-275, OL-DPR-80
Diablo Canyon Unit 1
Licensee Event Report 1-2013-009-00, Unanalyzed Condition Affecting
Unit 1 Emergency Diesel Generators

Dear Commissioners and Staff;

Pacific Gas and Electric Company (PG&E) submits the enclosed Licensee Event Report (LER) for an unanalyzed condition that affected the Unit 1 emergency diesel generators. PG&E is submitting this LER in accordance with 10 CFR 50.73(a)(2)(ii)(B) and 50.73(a)(2)(v)(D). PG&E will provide the cause of the event, and associated corrective actions, in a supplemental LER no later than May 15, 2014.

PG&E will implement corrective actions in accordance with the Diablo Canyon Power Plant Corrective Action Program. PG&E makes no new or revised regulatory commitments (as defined by NEI 99-04) in this report.

This event did not adversely affect the health and safety of the public.

Sincerely,

Barry S. Allen

SSZ1/4040/50599190

Enclosure

Cc/enc.: Marc L. Dapas, NRC Region IV Administrator
Thomas R. Hipschman, NRC Senior Resident Inspector
James S. Kim, NRR Project Manager
INPO
Diablo Distribution

**LICENSEE EVENT REPORT (LER)**

(See Page 2 for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME

Diablo Canyon Power Plant Unit 1

2. DOCKET NUMBER

05000 275

3. PAGE

1 OF 4

4. TITLE

Unanalyzed Condition Affecting Unit 1 Emergency Diesel Generators

5. EVENT DATEMONTH DAY YEAR
12 14 2013**6. LER NUMBER**YEAR SEQUENTIAL NUMBER REV NO.
2013 - 009 - 00**7. REPORT DATE**MONTH DAY YEAR
02 11 2014**8. OTHER FACILITIES INVOLVED**

FACILITY NAME	DOCKET NUMBER
	05000
FACILITY NAME	DOCKET NUMBER
	05000

9. OPERATING MODE**11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)**

10. POWER LEVEL	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input checked="" type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
10. POWER LEVEL	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Steven Zawalick, Senior Engineer, Regulatory Services	(805) 545-4040

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED☒ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☐ NO**15. EXPECTED SUBMISSION DATE**

MONTH	DAY	YEAR
05	15	2014

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On December 14, 2013, at 15:03 PST, with Diablo Canyon Power Plant (DCPP) Unit 1 operating in Mode 1 at approximately 100 percent power, engineers identified a vulnerability to extreme weather. A combination of sustained high winds over 60 miles per hour and ambient air temperatures exceeding 97°F could reduce cooling capacity such that the emergency diesel generators would exceed design limits, contrary to the requirements of General Design Criteria 2. On December 14, 2013, at 16:32 PST, DCPP made an 8-hour, non-emergency report to the NRC (reference NRC Event Notification Number 49634) per 10 CFR 50.72(b)(3)(ii)(B).

Upon identification of this condition, shift orders were issued that require, when conditions warrant, the implementation of existing procedural guidance to open plant doors. This will allow additional air flow, shown to provide adequate emergency diesel generator cooling to support continuous operation of the Unit 1 emergency diesel generators.

The cause and final corrective actions associated with this condition will be provided in a supplement to this document.

This event did not adversely affect the health or safety of the public.

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CONTINUATION SHEET**

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		2013	009	00	

NARRATIVE**I. Plant Conditions**

Unit 1 operated in Mode 1 (Power Operation) at approximately 100 percent reactor power with normal operating reactor coolant temperature and pressure throughout the event.

II. Problem Description**A. Background**

Diablo Canyon Power Plant (DCPP) Unit 1 has three emergency diesel generators (EDGs) [DG] that provide vital backup power to three electrical buses [BU] to mitigate the consequences of a design basis accident (DBA) whenever normal or offsite power sources [EK] are unavailable. DCPP EDGs are designed to function so that a single failure of any EDG will not jeopardize the capability of the remaining EDGs to start and provide power to operate the shutdown systems required to mitigate any DBA condition.

The DCPP EDGs are cooled using engine-driven fans [FAN] that provide cooling air to the diesel generator radiators [HX]. The radiator fan draws air through the radiator, maintaining jacket water temperature and, in turn, maintaining lubricating oil temperature. Jacket water to the aftercooler also affects combustion air temperature. The radiator fan also draws ambient air through the engine compartment to cool the equipment housed within it.

Inability to maintain adequate radiator air flow will result in a rise in EDG jacket water temperature, higher component temperatures in the engine compartments, derating of the engine due to increased combustion air temperature, higher lubricating oil temperatures, and high cylinder jacket temperatures. This could result in a failure of the EDGs to perform their safety function.

For this analysis, "sustained high winds" is being used as the average of Plant Process Computer (PPC) [PPC] data over a fifteen minute period.

B. Event Description

As reported in NRC Event Notification Number 49634, DCPP identified that if atmospheric conditions were to develop that had both sustained high winds exceeding 60 miles per hour from the northwest (NW) to north northeast (NNE) direction, and ambient air temperature exceeding 97°F, the combination of these conditions could result in inadequate heat removal to support continuous operation of the Unit 1 emergency diesel generators.

On Unit 1, the main EDG radiator fan discharge flow is directed from the radiator, vertically through the turbine building 107' elevation floor, horizontally toward the west, out of the building on the west wall, and vertically through the exhaust plenums [DUCT]. A second exhaust flow path, however, is available for Unit 1. This second path is directed north along the EDG exhaust silencers, then out of the north wall either through a small set of louvers at the 107 foot elevation or downward and out the north wall through louvers at the 85 foot elevation.

NRC FORM 366A		LICENSEE EVENT REPORT (LER)		U.S. NUCLEAR REGULATORY COMMISSION	
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Sustained high winds blowing from a direction between 304° to 33° (NW to NNE) would oppose the normal air flow and create a backpressure on the EDG 1-1, 1-2 and 1-3 radiator fans through the exhaust flow paths on the north side of the turbine building. This could prevent adequate air flow and cooling through the EDG radiators.

High winds from the west would not adversely impact the exhaust flow out of the west wall plenum. The EDG ventilation system is not impacted by winds from other directions because of the site layout.

At the time of discovery, all offsite and onsite power sources were operable.

C. Status of Inoperable Structure, Systems, or Components That Contributed to the Event

This issue is not currently impacting any plant equipment as winds are light and temperatures are mild. DCPD has no recorded evidence of sustained winds exceeding 55 miles per hour.

D. Other Systems or Secondary Functions Affected

A review of other systems, including the Unit 2 EDGs, concluded that design configurations preclude impacts from design basis winds and temperatures. Some of the systems reviewed had no safety or accident mitigation functions.

E. Method of Discovery

This was discovered during a review of the DCPD licensing basis by the Pacific Gas & Electric Company Licensing Basis Verification Project. They were investigating a concern brought to them by an outside agency.

F. Operator Actions

Operators verified that the EDGs were operable and issued shift orders that require, when conditions warrant, the implementation of existing procedural guidance to open plant doors. This will allow additional air flow, shown to provide adequate EDG cooling to support continuous operation of the Unit 1 EDGs.

G. Safety System Responses

None.

III. Cause of the Problem

The cause and final corrective actions associated with this condition will be provided in a supplement to this document.

IV. Assessment of Safety Consequences

DCPD performed a probabilistic risk assessment (PRA) and documented the results in a formal calculation (PRA Calculation SDP 13-07). The risk contribution of the as-found condition was below the low risk significance guidance, deemed a "green" risk.

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V. Corrective Actions

The cause and final corrective actions associated with this condition will be provided in a supplement to this document.

A. Immediate Corrective Actions

Operators verified that the EDGs were operable and issued shift orders that require, when conditions warrant, the implementation of existing procedural guidance to open plant doors. This will allow additional air flow, shown to provide adequate EDG cooling to support continuous operation of the Unit 1 EDGs.

A PPC alarm was established to warn operators of winds exceeding 60 miles per hour. If the plant is experiencing sustained winds exceeding 60 miles per hour from a direction between 304°(NW) and 33°(NNE), operators will implement procedure steps to supplement EDG cooling.

Operators performed a plant walkdown to verify that the instructions in the shift order were sufficient to physically implement the corrective actions.

B. Other Corrective Actions

An increased monitoring sheet has been implemented utilizing PPC points for primary met tower ambient air temperature and wind speed. Should the combination of high ambient air temperature and high wind speed approach the thresholds for operability in the parametric study, operators will contact engineering for evaluation.

VI. Additional Information

None.

A. Failed Components

None.

B. Previous Similar Events

None.

C. Industry Reports

None.