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October 17, 2013

PG&E Letter DCL-13-101

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

10 CFR 50.73

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Licensee Event Report 1-2013-003-01, Actuation of Six Emergency Diesel Generators due to Loss of Offsite Power

Dear Commissioners and Staff;

Pacific Gas and Electric Company (PG&E) submits the enclosed Licensee Event Report (LER) supplement for the valid actuation of all six safety-related emergency diesel generators due to loss of 230 kV offsite power. Both Units 1 and 2 were impacted by this event. PG&E is submitting this LER supplement in accordance with 10 CFR 50.73(a)(2)(iv)(A). All systems operated as designed with no problems observed.

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

ssz1/4040/50570450
Enclosure
cc: Thomas R. Hipschman, NRC Senior Resident Inspector
Jennivine K. Rankin, NRR Project Manager
Steven A. Reynolds, NRC Region IV
INPO
Diablo Distribution

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

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 Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.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.

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Diablo Canyon Power Plant, Unit 1	05000-275	1 OF 4

4. TITLE

Actuation of Six Emergency Diesel Generators due to Loss of Offsite Power

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									Diablo Canyon Unit 2	05000-323
06	23	2013	2013	- 003 -	01	10	17	2013	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE

1

10. POWER LEVEL

100

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

- ☐ 20.2201(b)
- ☐ 20.2201(d)
- ☐ 20.2203(a)(1)
- ☐ 20.2203(a)(2)(i)
- ☐ 20.2203(a)(2)(ii)
- ☐ 20.2203(a)(2)(iii)
- ☐ 20.2203(a)(2)(iv)
- ☐ 20.2203(a)(2)(v)
- ☐ 20.2203(a)(2)(vi)
- ☐ 20.2203(a)(3)(i)
- ☐ 20.2203(a)(3)(ii)
- ☐ 20.2203(a)(4)
- ☐ 50.36(c)(1)(i)(A)
- ☐ 50.36(c)(1)(ii)(A)
- ☐ 50.36(c)(2)
- ☐ 50.46(a)(3)(ii)
- ☐ 50.73(a)(2)(i)(A)
- ☐ 50.73(a)(2)(i)(B)
- ☐ 50.73(a)(2)(i)(C)
- ☐ 50.73(a)(2)(ii)(A)
- ☐ 50.73(a)(2)(ii)(B)
- ☐ 50.73(a)(2)(iii)
- ☑ 50.73(a)(2)(iv)(A)
- ☐ 50.73(a)(2)(v)(A)
- ☐ 50.73(a)(2)(v)(B)
- ☐ 50.73(a)(2)(v)(C)
- ☐ 50.73(a)(2)(v)(D)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(ix)(A)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(a)(4)
- ☐ 73.71(a)(5)
- ☐ OTHER

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	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
C	EK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☑ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

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

On June 23, 2013, at 21:20 PDT, Pacific Gas and Electric Company (PG&E) lost its 230 kV offsite power source at the Diablo Canyon Power Plant (DCPP) when an offsite transmission system relay actuated. This resulted in the valid start of all Unit 1 and 2 emergency diesel generators (EDGs), three per unit. All EDGs successfully started, but did not load since all associated buses remained energized by auxiliary power. All systems operated as designed with no problems observed. The 230 kV offsite power source is the only offsite power system designed to be immediately available following an accident. However, the safety-related onsite EDGs would have provided power to mitigate the consequences of an accident while the 230 kV system was unavailable. On June 24, 2013, at 01:35 PDT, PG&E made an 8-hour nonemergency report to the NRC.

PG&E completed a root cause evaluation and determined that insulation, contamination, and weather issues at a grid substation located 11 miles North of DCPP caused the event.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Diablo Canyon Power Plant, Unit 1	05000-275	2013	- 003	- 01	2 OF 4

NARRATIVE

I. Plant Conditions

Just prior to, and following, the event, Units 1 and 2 operated in Mode 1 (Power Operation) at approximately 100 percent reactor power with normal operating reactor coolant temperature and pressure.

II. Problem Description

A. Background

The Diablo Canyon Power Plant (DCPP) electrical systems are designed to ensure an adequate supply of electrical power to all essential auxiliary equipment during normal operation and under accident conditions. Nonvital 4 kV alternating current (AC) auxiliary buses [BU] are energized by either offsite power or power from the main generator. Vital AC buses [EA] have an additional available source, which includes onsite power delivered by emergency diesel generators (EDGs) [DG]. The electrical systems are designed so that failure of any one electrical device will not prevent operation of the minimum required engineered safety feature (ESF) equipment.

DCPP offsite power is supplied by two systems that are physically and electrically separated and independent of each other: (1) a 230 kV system [EK] and (2) a 500 kV system [EK]. The 230 kV system provides offsite startup and standby power, and provides an immediately available source of offsite power to the 4 kV system. To make power available to the vital 4 kV buses, the 230 kV system provides power to Startup Transformers (SUT)[EA] [XFMR] 1-1 and 2-1 (230 kV to 12 kV), which then feeds SUT 1-2 and 2-2 (12 kV to 4 kV). The 500 kV system provides for transmission of the plant's power output, and is also available as a delayed access source of offsite power after the main generator is disconnected.

To produce onsite power, each unit has three EDGs[EK][DG], which supply power to the 4 kV vital AC buses when power is unavailable or voltage degrades below a point at which required ESF loads would be operable. The EDGs start in standby mode on loss of 230 kV startup power. After the EDGs start they supply power to their respective vital bus if the buses are deenergized. If the vital buses are not deenergized, the EDGs continue to run in standby mode, ready to provide power if required.

B. Event Description

On June 23, 2013, at 21:20 PDT, Pacific Gas and Electric Company (PG&E) lost its offsite 230 kV offsite power source at DCPP due to an offsite transmission system relay actuation, resulting in the valid anticipatory start of all Unit 1 and 2 EDGs, three per unit. This is reportable, in accordance with 10 CFR 50.73(a)(2)(iv)(A), as an event that resulted in the valid actuation of EDGs. All EDGs successfully started, but did not load since all associated buses remained energized by auxiliary power. All systems operated as designed with no problems observed. However, the safety-related onsite EDGs would have provided power to mitigate the consequences of an accident while the 230 kV system was unavailable. On June 24, 2013, at 01:35 PDT, PG&E made an 8-hour nonemergency report to the NRC (Reference NRC Event Notification Number 49143, updated on August 21, 2013).

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Diablo Canyon Power Plant, Unit 1	05000-275	2013	- 003	- 01	3 OF 4

NARRATIVE

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

None.

D. Other Systems or Secondary Functions Affected

None.

E. Method of Discovery

Licensed plant operators immediately recognized the event by alarms and indications received in the control room.

F. Operator Actions

On June 23, 2013, operators restored the Unit 1 and Unit 2 EDGs, respectively, to standby service. The 230 kV system was declared operable on June 24, 2013, at 02:00 PDT.

G. Safety System Responses

All Unit 1 and Unit 2 EDGs started as designed with no problems observed.

III. Cause of the Problem

A. Immediate Cause

PG&E determined that on June 23, 2013, starting at 19:09 PDT, several insulator flashovers at Morro Bay Power Plant (MBPP) Switchyard resulted in a wide-spread outage to the greater San Luis Obispo, California area. Heavy fog and precipitation in the area caused insulator flashovers on 115 kV and 230 kV circuit breaker disconnect switches. This caused the sustained loss of key transmission facilities which led to the loss of the 230 kV offsite power source to DCPP.

B. Cause

Degraded insulation, contamination, and weather issues caused the insulation flash-over.

IV. Assessment of Safety Consequences

The 230 kV startup power is a standby system and its loss was due to a degraded condition at an offsite switchyard. This event did not create a transient at the plant. A Significance Determination Process evaluation allows taking credit for the actual plant configuration at the time of an event. With the successful start of all EDGs

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Diablo Canyon Power Plant, Unit 1	05000-275	2013	- 003	- 01	4 OF 4

NARRATIVE

upon the loss of startup power, the vital AC power supply to all emergency core cooling system loads would have been maintained. A bounding analysis was performed and resulted in an incremental core damage and incremental large early release probabilities that were well below their respective acceptance criteria.

V. Corrective Actions

A. Immediate Corrective Actions

The adverse weather cleared and the system restored to service, restoring the 230 kV system.

B. Other Corrective Actions

Equipment external to DCPP caused the event. Therefore, DCPP has no other corrective actions related to the cause.

VI. Additional Information

A. Failed Components

None.

B. Previous Similar Events

On May 12, 2007, at 10:25 PDT, during a refueling outage at DCPP, with Unit 1 in no Mode (core offloaded to the spent fuel pool) and Unit 2 in Mode 1 at approximately 100 percent power, an EDG system actuation was initiated on loss of 230 kV startup power supply due to an offsite transmission system non-ceramic insulator failure resulting in a phase to phase short and unanticipated protective relay response. Two Unit 1 EDGs started and loaded to provide onsite power. Unit 1 had one EDG and auxiliary offsite power cleared for maintenance. All three Unit 2 EDGs started as required but did not load since all associated buses remained energized by auxiliary power. At 14:30 PDT, Operators restored startup power to the site. At 15:09 PDT, operators made a nonemergency event notification (EN 43360) in accordance with 10 CFR 50.72(b)(3)(iv)(A). Corrective actions included the resetting of the startup power protection relays to establish a time delay and replacing non-ceramic insulators in the 230 kV supply to DCPP.

C. Industry Reports

None.