

Barry S. Allen Site Vice President Diablo Canyon Power Plant Mail Code 104/6 P. O. Box 56 Avila Beach, CA 93424

805.545.4888 Internal: 691.4888 Fax: 805.545.6445

January 24, 2013

PG&E Letter DCL-13-004

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

<u>Licensee Event Report 1-2011-008-01, Control Room Ventilation System Design Vulnerability</u>

Dear Commissioners and Staff:

Pacific Gas and Electric Company (PG&E) submits the enclosed Licensee Event Report (LER) supplement regarding control room envelope (CRE) in-leakage testing. Both Units 1 and 2 are affected by this issue. PG&E is submitting this LER supplement in accordance with 10 CFR 50.73(a)(2)(i)(B) and 10 CFR 50.73(a)(2)(ii)(B). This supplement includes PG&E's actions following the NRC's review of Diablo Canyon's CRE testing documented in NRC Task Interface Agreement 2012-08. It also includes additional cause and corrective actions.

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. Állen

wrl8/50428146 Enclosure

cc/enc:

Elmo E. Collins, NRC Region IV

Thomas R. Hipschman, NRC Senior Resident Inspector Joseph M. Sebrosky, NRR Senior Project Manager

INPO

Diablo Distribution

| | RM 366 | õ | U.S | . NUCLE | AR REGULA | TORY (| COMMIS | SION A | PPROVE | D BY OMB: NO. | 3150-0104 | | EXPIRES | : 10/31/2013 |
|---|---|--|---|--|--|--|--|--|--|---|--|--|--|---|
| LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block) | | | | | | li e C ii a E c n | 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 burdestimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulato Commission, Washington, DC 20555-0001, or by internet e-mail infocollects.resource@nrc.gov, and to the Desk Officer, Office of Informaticand Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management all Budget, Washington, DC 20503. If a means used to impose an informatic collection does not display a currently valid OMB control number, the NRC mot conduct or sponsor, and a person is not required to respond to, the information collection. | | | | | | | |
| 1. FACI | LITY NA | ME | | | | er of conflooring productions | | 2 | . DOCK | ET NUMBER | 3. | PAGE | | |
| Diab | lo Car | nyon Po | wer Pl | ant, Un | it 1 | | | | | 05000-275 | į. | 1 (| OF 7 | |
| 4. TITLE | | | | | | | | L | | | | | | |
| | | om Ver | ntilatio | n Syste | m Design | Vuln | erabil | itv | | | | | | |
| | VENT D | | | LER NUM | | , | EPORT | | T | 8 OT | HED EACH I | TIES INVOL | VED | |
| 3. E | VENIL | AIE | | T | | | | DATE | 8. OTHER FACILITIES INVOLVED FACILITY NAME DOCKET NUMBE | | | | | |
| MONTH | MONTH DAY YEAR YEAR SEQUENTIAL REV MON | | | MONTH | DAY | YEAR | Dia | blo Canyon | , Unit 2 | | 0500 | 0-323 | | |
| 11 | 03 | 2011 | 2011 | - 008 | - 01 | 01 | 24 | 2013 | FACILI | TY NAME | | | DOCKET | NUMBER |
| 9. OPE | RATING | MODE | 11. | THIS RE | PORT IS SU | BMITTE | D PURS | UANT T | O THE I | REQUIREMENT | TS OF 10 CF | R §: (Check | all that | apply) |
| | | | 2 0. | 2201(b) | | 20. | 2203(a)(| 3)(i) | | 50.73(a)(2)(| i)(C) | 50.73(| a)(2)(vii) | |
| | 1 | | | 2201(d) | | 20.5 | 2203(a)(| 3)(ii) | | 50.73(a)(2)(i | ii)(A) | 50.73(| a)(2)(viii |)(A) |
| | | | | 2203(a)(1 | | | 2203(a)(| | Ļ | 50.73(a)(2)(| | | a)(2)(viii | |
| 10. POV | VEDIE | VEI | | 2203(a)(2) | | | 36(c)(1)(36(c)(1)(| | F | 50.73(a)(2)(50.73(a)(2)(| | h-manyand | a)(2)(ix) a)(2)(x) | (A) |
| 10. PO | VEK LE | VEL | | 2203(a)(2 2203(a)(2 | | | 36(c)(1)(36(c)(2) | 11)(/~) | F | 50.73(a)(2)(50.73(a)(2)(| | 73.71 | | |
| | 100 | | | 2203(a)(2 | | | 46(a)(3)(| ii) | ħ | 50.73(a)(2)(| | 73.71 | | |
| | 100 | | 2 0. | 2203(a)(2 |)(v) | 50. | 73(a)(2)(| i)(A) | [| 50.73(a)(2)(| v)(C) | OTHE | | |
| | | | <u> </u> | 2203(a)(2 |)(vi) | √ 50. | 73(a)(2)(| i)(B) | | 50.73(a)(2)(| v)(D) | | in Abstra RC Form | |
| | | | | | 12. | LICENS | EE CON | TACT F | OR THIS | LER | | | | |
| FACILITY Wilbe | | Landre | th, Re | gulator | y Service | s Engi | ineer | | | | 1 | one number) 545-698 | • | rea Code) |
| | | | 13. COM | PLETE O | NE LINE FO | R EACH | COMP | ONENT F | AILURI | DESCRIBED | IN THIS RE | PORT | | |
| CAUSE | | SYSTEM | сом | PONENT | MANU- FACTURER | | RTABLE | CA | USE | SYSTEM | COMPONEN | IT MANU | | EPORTABLE TO EPIX |
| CAU | SE | | | | | | | | | | | | | |
| CAU | SE | | | | | | | | | | | | | |
| CAU | SE | 14. | SUPPLE | MENTAL | REPORT E | (PECTE | :D | | | 15. EXI | PECTED | MONTH | DAY | YEAR |
| | | | | | | | | l no | | SUBM | ISSION | MONTH | DAY | YEAR |
| ☐ YI | ES (If yo | es, comple | te 15. EX | PECTED : | REPORT E. SUBMISSIO | N DATE |) [| | | SUBM | | MONTH | DAY | YEAR |
| ☐ YI ABSTRA | ES (If yo | es, comple it to 1400 sp | te 15. EX | PECTED | SUBMISSIO | N DATE | ewritten lii | nes) | Diablo | SUBM | ISSION ATE | | | |
| ☐ YI ABSTRA | ES (If you | es, comple it to 1400 sp | te 15. EX aces, i.e., a | PECTED approximate | SUBMISSIO | N DATE | ewritten lii | nes) hat the | | SUBM DA | ission ATE Ver Plant (I | OCPP) cor | ntrol ro | om |
| YI ABSTRA On 1 | ES (If you | es, comple it to 1400 sp lber 3, 20 system (| te 15. EX aces, i.e., a 11, at 1: CRVS) | PECTED approximate 550 PDT had a de | SUBMISSIO | N DATE | ewritten lined to where | nes) hat the by unfi | ltered a | SUBM DA Canyon Pow | ver Plant (I | OCPP) cor rol room (0 | ntrol ro | om ıld |
| ABSTRA On 1 vent | ES (If your CT (Lim.) Novem illation led the | es, comple it to 1400 sp ber 3, 20 system (flowrate | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in | approximate 550 PDT had a de the lice | SUBMISSIO ely 15 single-si , operator esign vulne ensing-bas | N DATE paced typ s deterr rability s analy | ewritten lined to where vsis of co | hat the by unfi lesign b | ltered a basis ac | SUBM DA Canyon Powair supplied to | ver Plant (In the control of the control quences. | OCPP) con ol room (CPacific Ga | ntrol ro | om ıld |
| On it | ES (If your CT (Lim. Novem ilation led the apany (| es, comple it to 1400 sp ber 3, 20 system (flowrate (PG&E) (| te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover | approximate 550 PDT had a de the lice red this v | SUBMISSIO ely 15 single-s r, operator esign vulne ensing-basi | oaced types deterrability s analy | ewritten lined to where wis of cong perfections. | hat the by unfi lesign b | ltered a pasis ac e of CF | Canyon Powair supplied to cident conse | ver Plant (I o the contraquences. I esting requ | OCPP) cor ol room (O Pacific Ga uired by T | ntrol ro CR) con s and E | om uld lectric |
| ABSTRA On 1 vent exce Com | ES (If your CT (Lim.) Novem illation the ded the apany (cification) | es, comple it to 1400 sp ber 3, 20 system (flowrate (PG&E) con (TS) S | te 15. EX aces, i.e., at 11, at 1: CRVS) s used in discover | approximate 550 PDT had a den the lice red this vance Req | SUBMISSIO ely 15 single-s T, operator esign vulne ensing-basi vulnerabilit quirement (| N DATE paced typ s deterr rability s analy y durir SR) 3. | ewritten lined to where visis of cong perfect, 10.5. | hat the by unfi lesign bormance Theref | ltered a pasis ac e of CF fore, PC | Canyon Powair supplied to cident conse | ver Plant (I to the contrapped the contrapped the cesting required this even | OCPP) con ol room (C Pacific Ga uired by T t as an una | atrol ro CR) con s and E echnica | om uld lectric |
| On it vent exce | ES (If your CT (Lim.) Novem illation led the apany (cification. | es, comple it to 1400 sp ber 3, 20 system (flowrate (PG&E) on (TS) S Plant sta | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff establ | PECTED approximate 550 PDT had a den the lice red this wance Requisibled collished col | SUBMISSIO ely 15 single-si C, operator esign vulne ensing-basi vulnerabilit quirement (onfiguratio | N DATE Description S determination S analy y during SR) 3.1 | ewritten like mined to where was of congression of congression of the | hat the by unfi lesign b ormance Theref nsure t | ltered a basis ac e of CF Fore, PC wo CR | Canyon Powair supplied to cident consect in-leakage to G&E reported | ver Plant (In the control of the con | OCPP) con ol room (O Pacific Ga nired by T t as an una n available | ntrol ro CR) con s and E echnica nalyze and | om ald lectric |
| ABSTRA On 1 vent exce Com Spec conc com as a | CT (Lim. Novem ilation ed the apany (cification. pleted condit | ber 3, 20 system (flowrate. (PG&E) con (TS) Separate the in-leading prohibits. | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff establakage te bited by | approximate 550 PDT had a de the lice red this vance Req lished co sting usi | SUBMISSIO Fly 15 single-sp Fly operator resign vulne resign-basic rulnerabilit guirement (onfiguratio ing both tra | on DATE paced typ s deterring the state of | ewritten III mined t where vsis of c ng perfc 7.10.5. ols to e G&E is | hat the by unfi lesign to ormance Theref nsure to | Itered a pasis ac e of CF Fore, PC wo CR tting th | Canyon Pownir supplied to cident consect in-leakage to G&E reported VS trains wo | ver Plant (I to the contrapped the contrapped this even uld remain tal report | OCPP) cor ol room (O Pacific Ga nired by T t as an una n available to identify | ntrol ro CR) cons s and E echnica analyze and this co | om ald lectric |
| ABSTRA On 1 vent exce Com Spec conc com as a | CT (Lim. Novem ilation ed the apany (cification. pleted condit | es, comple it to 1400 sp ber 3, 20 system (flowrate (PG&E) (on (TS) S Plant sta the in-lea | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff establakage te bited by | approximate 550 PDT had a de the lice red this vance Req lished co sting usi | SUBMISSIO Fly 15 single-sp Fly operator resign vulne resign-basic rulnerabilit guirement (onfiguratio ing both tra | on DATE paced typ s deterring the state of | ewritten III mined t where vsis of c ng perfc 7.10.5. ols to e G&E is | hat the by unfi lesign to ormance Theref nsure to | Itered a pasis ac e of CF Fore, PC wo CR tting th | Canyon Powair supplied to cident conset in-leakage to G&E reported VS trains wo is supplement | ver Plant (I to the contrapped the contrapped this even uld remain tal report | OCPP) cor ol room (O Pacific Ga nired by T t as an una n available to identify | ntrol ro CR) cons s and E echnica analyze and this co | om ald lectric |
| On it vent exce Com Spect come as a requirement. | Novem illation ed the apany (cification) pleted conditiremen | es, comple it to 1400 sp lber 3, 20 system (flowrate (PG&E) of on (TS) S Plant sta the in-lea ion prohi | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff estab- akage te bited by 3.7.10.5 | approximate 550 PDT had a de the lice red this venue Requished consting usi to TS, follows | SUBMISSIO ely 15 single-sign vulnersing-basic culnerabilit quirement (onfiguratio ing both tra lowing cla | on DATE, salve types determined the salve types analyty during SR) 3. for contrains. Perification | ewritten lined to where visis of congression from the congression from t | hat the by unfi lesign bormance Theref nsure to subminate NI | Itered a pasis ace of CF Fore, PC wo CR tting th RC that | Canyon Pownir supplied to cident consect in-leakage to G&E reported VS trains wo is supplement the complete | ver Plant (I to the contraguences. I this even uld remain tal reported testing of | OCPP) con ol room (O Pacific Ga- nired by T t as an una n available to identify did not me | ntrol ro CR) con s and E echnica malyze and this co et the | om uld electric al d |
| On Noventi exce Come Special Come as a requirement of the control | Novem ilation red the apany (cification pleted condition iremer | es, comple it to 1400 sp ber 3, 20 system (flowrate (PG&E) con (TS) S Plant sta the in-leadion prohints of SR | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff estable akage te bited by 3.7.10.5 | per | SUBMISSIO Ply 15 single-sp To operator resign vulne resign-basic rulnerabilit quirement (ponfiguratio fing both tra lowing cla Technical I | N DATE Description Section Sec | ewritten limined to where wiss of congression from Group | hat the by unfi lesign bormance Theref nsure to s submit the NI | Itered a pasis ace of CF Fore, PC wo CR tting th RC that | Canyon Powair supplied to cident consect in-leakage to G&E reported VS trains wo is supplement the complete the design vul | ver Plant (I to the contri quences. I esting requiled this even uld remain tal report ed testing of | OCPP) cor ol room (O Pacific Ga uired by T t as an una a available to identify did not me | ntrol ro CR) cons and E echnica analyze and this co et the | om uld electric ul d oncern |
| ABSTRA On N vent exce Com Spec com com as a requ Hum of th | ES (If your CT (Lim. Novem illation ed the apany (cification littion. pleted condit iremer an errais issu | ber 3, 20 system (flowrate. (PG&E) of on (TS) S Plant stathe in-leading prohints of SR or on the e. PG&E | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff establakage te bited by 3.7.10.5 part of E has im | approximate 550 PDT had a den the lice red this vance Requished consting using TS, follows | SUBMISSIO ely 15 single-si F, operator esign vulne ensing-basi vulnerabilit quirement (onfiguratio ing both tra lowing cla | on DATE paced types determined the second types analy y during SR) 3. In contraints. Perification detections | ewritten lined to where visis of cong perfect. 7.10.5. ols to e G&E is on from Group to elim | hat the by unfilesign bormance Therefore the Submit the NE | Itered a pasis ace of CF Fore, PC wo CR tting th RC that inate the | Canyon Pownir supplied to cident consect in-leakage to G&E reported VS trains wo is supplement the complete the complete the design vulgar vulnerability. | ver Plant (I of the control quences. I esting required this even uld remain tall report ed testing of the testi | OCPP) cor ol room (C Pacific Ga uired by T t as an una a available to identify did not me | ntrol ro CR) cor s and E echnica analyze and this co et the | om uld lectric al d oncern cause |
| On it vent exce cond com as a required the envelopment. | Novem illation led the apany (cification lition. pleted condit iremer han errors is issuelope to | es, comple it to 1400 sp ber 3, 20 system (flowrate (PG&E) of on (TS) S Plant sta the in-leadion prohints of SR or on the e. PG&F | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff establakage te bited by 3.7.10.5 part of E has im ng a sin | pected approximate 550 PDT had a den the lice red this wance Requished constingusing TS, follows. | SUBMISSIO ely 15 single-sign vulnersign vulnerability quirement (onfiguration of the company o | s deterrability s analy y during SR) 3. In contrains. Perification determines at the contrains at the contrains at the contrains at the contrains the contrains at the contrains at the contraction of the | ewritten line where vsis of cong performance. Group to elimorrect c | hat the by unfilesign bormance. Therefore the Submin the NE to eliminate thouclusi | Itered a pasis ace of CF Fore, PC wo CR tting th RC that inate the e designon that | Canyon Pownir supplied to cident consect in-leakage to G&E reported VS trains wo is supplement the complete the design vuluerability testing with | ver Plant (1 to the control quences. It this even uld remain tal report ed testing of the testing to the testin | OCPP) con ol room (O Pacific Ga- nired by T t as an una navailable to identify did not me was the ap eccessfully as met SR 3 | ntrol ro CR) cons s and E echnica malyze and this co et the | om uld electric al d oncern cause eted CR was |
| On I vent exce Com Spec conc com as a requ | Novem ilation ed the apany (cification lition. pleted condit iremer han errais issuelope to to uncl | ber 3, 20 system (flowrate (PG&E) of on (TS) Separate (TS) | te 15. EX aces, i.e., a 11, at 1: CRVS) s used in discover Surveilla ff establakage te bited by 3.7.10.5 part of E has im ng a sin 7.10.5 | approximate 550 PDT had a de the lice red this venue Requished consting usi to TS, follow a 1991 To a 1991 To applement tigle CRV bases. P | SUBMISSIO ely 15 single-sign vulnersign vulnerability quirement (onfiguration of the company o | on DATE on Control s determination s analy y during SR) 3. n control cification Review ations he incorrevise | ewritten limined to where visis of car performance. The contraction of | hat the by unfilesign bormance. Therefore the Submin the NE to eliminate thouclusi | Itered a pasis ace of CF Fore, PC wo CR tting th RC that inate the e designon that | Canyon Pownir supplied to cident consect in-leakage to G&E reported VS trains wo is supplement the complete the complete the design vulgar vulnerability. | ver Plant (1 to the control quences. It this even uld remain tal report ed testing of the testing to the testin | OCPP) con ol room (O Pacific Ga- nired by T t as an una navailable to identify did not me was the ap eccessfully as met SR 3 | ntrol ro CR) cons s and E echnica malyze and this co et the | om uld electric al d oncern cause eted CR was |

LICENSEE EVENT REPORT (LER) U.S. NUCLEAR REGULATORY COMMISSION CONTINUATION SHEET

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | | 3. PAGE | | |
|-----------------------------------|-----------|---------------|----------------------|------------|---|---------|---|--|
| Diablo Canyon Power Plant, Unit 1 | 05000 255 | YEAR | SEQUENTIAL NUMBER | REV NO. | | OE | 7 | |
| | 05000-275 | 2011 | - 008 - | 01 | 2 | OF | , | |

NARRATIVE

I. Plant Conditions

At the time of discovery, Units 1 and 2 were in Mode 1 (Power Operation) at 100 percent power.

II. Description of Problem

A. Background

The Unit 1 and 2 common control room ventilation system (CRVS) provides a protected environment from which operators can control the units from the common control room following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The CRVS consists of two trains (one CRVS train from each unit) that recirculate and filter the air in the common control room envelope (CRE), and a CRE boundary that limits the in-leakage of unfiltered air. A CRVS train is operable when the associated:

- a. main supply fan [FAN] (one), filter booster fan (one) and pressurization fan (one) are operable;
- b. high-efficiency particulate-air (HEPA) filters [FLT] and charcoal adsorbers [ADS] are not excessively restricting flow, and are capable of performing their filtration functions; and
- c. ductwork [DUCT], valves [V], and dampers [DMP] are operable, and air circulation can be maintained.

Each train is comprised of two redundant, full-capacity, active components so that each train is composed of two subtrains. Technical Specification (TS) 3.7.10, "Control Room Ventilation System," for the CRVS pertains to the two CRVS trains rather than the four subtrains. Either of the two redundant subtrains are manually selected via a switch in the control room, with either subtrain in each unit capable of satisfying the CRVS train operability requirement (see page 7 for system diagram).

The CRVS is an emergency system, parts of which may also operate during normal unit operations. Upon receipt of an actuating signal, the normal air supply to the CRE is isolated, and the stream of outside ventilation air from the pressurization system and recirculated control room air is passed through a system filter. The pressurization system draws outside air from either the north end or the south end of the turbine building [NM]. The prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The CRVS is designed to maintain a habitable environment in the Units 1 and 2 common CRE for the duration of the most severe design basis accident (DBA) without exceeding 5-rem whole body dose or its equivalent to any part of the body (calculated over 30 days).

In NRC letter dated December 23, 2008, the NRC issued License Amendments 201 and 202 to Diablo Canyon Power Plant (DCPP) Units 1 and 2, respectively. These amendments revised the required action and surveillance requirements in TS 3.7.10, consistent with Technical Specification Task Force (TSTF) Traveler-448, "Control Room Habitability," Revision 3, establishing surveillance requirement (SR) 3.7.10.5 to test CR in-leakage.

LICENSEE EVENT REPORT (LER) U.S. NUCLEAR REGULATORY COMMISSION CONTINUATION SHEET

| 1. FACILITY NAME | 2. DOCKET | (| . LER NUMBER | | 3. PAGE | | | |
|-----------------------------------|--------------|------|----------------------|------------|---------|----|----|--|
| Diablo Canyon Power Plant, Unit 1 | 0.5000 0.555 | YEAR | SEQUENTIAL NUMBER | REV NO. | 2 | OF | 77 | |
| | 05000-275 | 2011 | - 008 - | 01 | 3 | OF | 1 | |

NARRATIVE

B. Event Description

On November 3, 2011, at 1550 PDT, operators determined that the DCPP CRVS had a design vulnerability whereby control room pressurization airflow could bypass the supply filter if neither CRVS booster fan in the train was operating. This would allow as much as 800 cubic feet per minute of unfiltered air to be delivered to the control room following an accident that resulted in initiation of the CRVS pressurization mode. Operators would have corrected this condition within 30 minutes after initiation of a safety injection by manually selecting and starting the train's redundant subtrain in accordance with existing, proceduralized actions specified in DCPP Emergency Operating Procedure (EOP) E-0, "Reactor Trip or Safety Injection," Appendix E, "ESF Auto Actions, Secondary and Auxiliaries Status."

Pacific Gas and Electric Company (PG&E) had not previously included this 30 minutes of unfiltered air supply to the control room in the analysis of record. This design vulnerability could have potentially resulted in operator dose greater than analyzed. Plant staff verified that all components and redundant components in each ventilation train were operable, and established configuration controls to ensure operator dose would continue to meet regulatory limits as a compensatory measure to restore operability. These compensatory measures assured both trains would remain available to operators even in the event of a single failure of an operating train. At 2051 PDT on November 3, 2011, PG&E made an 8-hour non-emergency report (see NRC Event Notification 47414) under 10 CFR 50.72(b)(3)(ii)(B).

PG&E noted that SR 3.7.10.5 TS bases stated "Temporary analytical methods may also be used as compensatory measures to restore operability. Options for restoring the CRE boundary to operable status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions." On December 1, 2011, PG&E declared the CRE operable after implementing compensatory measures and performing surveillance testing in the most limiting configuration permitted with the compensatory measures in place, demonstrating the capability of the compensated CRE boundary to ensure operator doses remain below regulatory limits.

On October 1, 2012, PG&E declared the CRE inoperable to modify the CRVS to eliminate the design vulnerability. On November 28, 2012, PG&E received the NRC's TIA 2012-08, "Final Response to Task Interface Agreement 2012-08, Diablo Canyon Power Plant, Unit 1 and 2 – Request Office of Nuclear Reactor Regulation's Review of Operability Issues Associated with Technical Specification 3.7.10, 'Control Room Ventilation System,'" dated November 20, 2012. The TIA concluded that DCPP's CRE had not been restored to operable status because PG&E "has not changed the licensing basis DBA or repaired the CRE boundary or performed a combination of these...Further, SR 3.7.10.5 requires testing the CRE in-leakage with the CRVS in the design basis accident configuration to verify the operability of the CRE boundary. Operation of CRVS equipment from both trains is not credited in the current licensing basis as part of the design basis configuration. Performing the in-leakage test with CRVS equipment from the opposite train in operation does not satisfy the requirements for performing SR 3.7.10.5." PG&E subsequently concluded that because the inleakage was performed with both trains operating, the SR had not been performed as required, nor had it ever been performed as required. Therefore, DCPP had been in violation of this TS since the issuance of License Amendments 201 and 202 for DCPP Units 1 and 2, regardless of the in-leakage flow rates obtained.

(10-2010)

LICENSEE EVENT REPORT (LER) U.S. NUCLEAR REGULATORY COMMISSION CONTINUATION SHEET

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | | 3. PAGE | | |
|-----------------------------------|-----------|-----------------------------|---------|----|---|---------|---|--|
| Dialia Carras Danie Dia 4 II 441 | 05000 355 | YEAR SEQUENTIAL RE NUMBER N | | | | OF | 7 | |
| Diablo Canyon Power Plant, Unit 1 | 05000-275 | 2011 | - 008 - | 01 |] | OF | 1 | |

NARRATIVE

In December 2012, after modifying the CRVS, PG&E satisfactorily completed inleakage testing on the CRVS using a single CRVS train, successfully demonstrating acceptable inleakage in the most limiting configuration with a single CRVS train operating. Operators declared the CRE operable on December 20, 2012.

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

None.

D. Other Systems or Secondary Functions Affected

This situation applies to both Units 1 and 2 when the CRVS pressurization mode is required. However, the CRVS trains remained capable of performing their normal ventilation functions.

E. Method of Discovery

PG&E discovered this design vulnerability during performance of Surveillance Test Procedure (STP) M-57, "Control Room Ventilation System Tracer Gas Test," to satisfy TS SR 3.7.10.5.

On November 28, 2012, PG&E received the NRC's TIA 2012-08, which clarified the compensatory measures acceptable to the NRC that would allow declaration of operability following in-leakage test failure. Consequently, PG&E recognized that the CRE had been incorrectly declared operable, contrary to the requirements of TS 3.7.10.

F. Operator Actions

Plant staff verified that all components and redundant components in each ventilation train were operable, and established configuration controls to ensure operator dose would continue to meet regulatory limits. Operations issued an Operations Standing Order instructing operators to enter TS 3.7.10.A any time a CRVS supply fan or a booster fan is not available as a compensatory measure to restore and maintain operability. PG&E had also previously revised STP M-87, "Operational Leak Inventory of ECCS Systems Outside Containment Likely to Contain Highly Radioactive Fluids Following an Accident," to limit post-loss-of-coolant-accident emergency core cooling system (ECCS) leakage. These actions ensured operator doses would be maintained less than the Final Safety Analysis Report accident analysis results for the highest unfiltered air inleakage rate reported in STP M-57 as well as mitigating the consequences of a potential 800 scfm of filter bypass flow.

G. Safety System Responses

None.

III. Cause of the Problem

PG&E first identified and documented this design vulnerability in 1991 in a nonconformance report. Human error on the part of a Technical Review Group (root cause evaluation team) in 1991 to eliminate the design vulnerability

(10-2010)

LICENSEE EVENT REPORT (LER) U.S. NUCLEAR REGULATORY COMMISSION CONTINUATION SHEET

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | | 3. PAGE | | |
|-----------------------------------|-----------|---------------|----------------------|------------|---|---------|---|--|
| Diablo Canyon Power Plant, Unit 1 | 05000 355 | YEAR | SEQUENTIAL NUMBER | REV NO. | 5 | OF | 7 | |
| | 05000-275 | 2011 | - 008 - | 01 | 3 | OF | , | |

NARRATIVE

was the apparent cause of this issue in that the team focused on managing the consequences of the design vulnerability rather than eliminating it (see Section VI.B, "Previous Similar Events," of this licensee event report).

The cause of incorrectly declaring the CRVS operable was that the bases for SR 3.7.10.5 were unclear and subject to multiple interpretations that PG&E clarified via consulting industry experts versus requesting that NRC clarify the intent.

IV. Assessment of Safety Consequences

PG&E modeled the potential dose to control room operators using the as-found condition of 800 scfm bypass flow, measured CRE unfiltered in-leakage of 51 scfm and ECCS leakage of 0.42 gallons per minute, and concluded that the dose to control room operators would not have exceeded 5-rem whole body dose or its equivalent to any part of the body (calculated over 30 days) if one subtrain in each train was started within 30 minutes. ECCS leakage over the past 3 years has remained less than 0.14 gpm. PG&E's review of CRVS configuration for the past 3 years confirmed that at least one subtrain in each CRVS train was functional and available to operators at all times.

This event did not result in failure of equipment or a radiological release to plant personnel or the public. Therefore, this event did not adversely affect the health and safety of the public.

V. Corrective Actions

PG&E implemented modifications to eliminate the design vulnerability.

PG&E performed testing of the CRVS in an alignment as clarified by the NRC's TIA 2012-08 following CRVS modification. Control room operators exited TS 3.7.10, Condition B, on December 20, 2012.

PG&E will revise the SR 3.7.10.5 bases, and the in-leakage test to address the NRC's clarification in its TIA 2012-08. PG&E revised the DCPP Current Licensing Basis Determination procedure to provide guidance to seek NRC clarification on issues that may involve difference in NRC and industry perspective.

VI. Additional Information

A. Failed Components

None

B. Previous Similar Events

PG&E first identified and documented this design vulnerability in 1991 in Nonconformance Report DC0-91-EN-N028. A PG&E Technical Review Group determined that a postulated single, active failure of one of the redundant booster fans or booster fan dampers in the CRVS could potentially cause the CRVS to be outside its

LICENSEE EVENT REPORT (LER) U.S. NUCLEAR REGULATORY COMMISSION CONTINUATION SHEET

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | | 3. PAGE | | |
|-----------------------------------|-----------|---------------|----------------------|------------|---|---------|---|--|
| Diablo Canyon Power Plant, Unit 1 | 05000 375 | YEAR | SEQUENTIAL NUMBER | REV NO. | 6 | OF | | |
| | 05000-275 | 2011 | - 008 - | 01 | U | OF | , | |

NARRATIVE

design basis, as there was neither an alarm to notify control room operators of the failure nor an automatic switchover to the unaffected redundant CRVS train. In this situation, the potential existed for an undetected failure of a booster fan or damper during the pressurization Mode 4, resulting in infiltration of unfiltered airborne radioactivity into the control room. To correct the deficiency, PG&E installed ribbon-type streamers on the CRVS booster fan recirculation duct registers in the control room to enable control room operators to diagnose booster fan or its inlet damper status. Procedural guidance was provided in EOP E-0 to instruct the operators how to use the streamers to verify the proper operation of the booster fans while CRVS was in Mode 4.

C. Industry Reports

None

NRC FORM 366A (10-2010)

LICENSEE EVENT REPORT (LER) U.S. NUCLEAR REGULATORY COMMISSION CONTINUATION SHEET

| 1. FACILITY NAME | 2. DOCKET | 6. LER NUMBER | | | | 3. PAGE | | |
|-----------------------------------|-------------|---------------|---------------------|------------|---|---------|---|--|
| Diablo Canyon Power Plant, Unit 1 | 0.5000 0.55 | YEAR S | EQUENTIAL NUMBER | REV NO. | 7 | 05 | Ħ | |
| | 05000-275 | 2011 - | 008 - | 01 | 7 | OF | ′ | |

NARRATIVE

CRVS Diagram

