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June 17, 2013

PG&E Letter DIL-13-010

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

10 CFR 72.75

Materials License No. SNM-2511, Docket No. 72-26
Diablo Canyon Independent Spent Fuel Storage Installation
Licensee Event Report 1-2013-002: Independent Spent Fuel Storage Installation Casks Vent Path Isolation

Dear Commissioners and Staff;

Pacific Gas and Electric Company (PG&E) is submitting the enclosed licensee event report in accordance with 10 CFR 72.75(g) for placing the independent spent fuel storage installation multi-purpose canisters (MPCs) in an unanalyzed condition. This event occurred when Diablo Canyon Power Plant (DCPP) installed vent caps on the MPC vent ports according to an approved vendor procedure. This configuration removed the vent path and effectively disabled equipment important to safety while the MPCs contained spent fuel and an air/water mixture.

PG&E makes no new or revised regulatory commitments (as defined by NEI 99-04) in this report. All the corrective actions identified in this letter will be implemented in accordance with the DCPP Corrective Action Program.

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

Sincerely,

Barry S. Allen

dho6/50558245
Enclosure
cc/enc: Thomas R. Hipschman, NRC Senior Resident Inspector
Arthur T. Howell III, NRC Region IV
James T. Polickoski, NRR Project Manager
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)

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4. TITLE

Independent Spent Fuel Storage Installation Casks Vent Path Isolation

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
04	24	2013	2013	- 002 -	00	06	17	2013	FACILITY NAME	DOCKET NUMBER

9. OPERATING MODE

10. POWER LEVEL

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

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☑ OTHER
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 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)*
Dean Overland, Regulatory Services Senior Engineer	805-545-6038

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

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 April 24, 2013, at 09:02 PDT, Diablo Canyon Power Plant (DCPP) determined that the vendor procedure for loading the independent spent fuel storage installation (ISFSI) multi-purpose canisters (MPCs) placed the MPCs in an unanalyzed condition. The procedure contained steps to install vent caps on the MPC vents while the MPC contained spent fuel and an air/water mixture. This placed the MPC in an isolated condition without any relief path while water was in the MPC (a condition previously not analyzed in the DCPP ISFSI Updated Final Safety Analysis Report). This process was used for 23 casks, beginning in 2009. Subsequent analysis showed that no appreciable MPC pressure increase occurred, and that the integrity of the 23 previously loaded MPCs was not challenged at the DCPP ISFSI.

Inadequate DCPP review and approval of a vendor procedure allowed vents that prevent MPC overpressurization to be disabled with no alternative overpressure protection provided. Therefore, the condition is reportable under 10 CFR 72.75(d)(1) and (g). Corrective actions prohibited use of the MPC loading procedure until it is revised to prevent installing both vent caps at the same time. This condition did not adversely affect the health and safety of the public.

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NARRATIVE

I. Event Description

Pacific Gas and Electric Company (PG&E) used a procedure developed by Holtec International (Holtec) for use throughout the industry to load spent fuel into multi-purpose canisters (MPCs) in HI-STORM 100SA storage casks at Diablo Canyon Power Plant (DCPP). On June 9, 2009, DCPP personnel used Procedure TS3.ID2, "Licensing Basis Impact Evaluations," to review Holtec Procedure HPP 1073-300, "Procedure for Drying, Backfill, and Sealing the MPC at DCPP," Revision 4, in accordance with 10 CFR 72.48, and approved it for use at DCPP. Between 2009 and 2011, Holtec revised this procedure multiple times. DCPP reviewed the applicable revisions of this procedure in accordance with 10 CFR 72.48 prior to each use. However, DCPP personnel reviewing the procedure failed to identify that the procedure allowed a configuration that created a possibility for an accident of a different type than described in the Independent Spent Fuel Storage Installation (ISFSI) Updated Final Safety Analysis Report (UFSAR).

In December 2011, Holtec generated Holtec Information Bulletin 53 (HIB-53), which discussed a deficiency with its cask loading procedure. The procedure was found to contain instruction that allowed the MPC to be placed in an unanalyzed condition. Specifically, the procedure allowed both Removable Valve Operating Assemblies (RVOAs) to be installed on the MPC concurrently (in parallel). During RVOA installation, DCPP personnel installed both vent caps concurrently, which isolated the loaded canister while it contained an air/water mixture that could heat up and potentially overpressurize the MPC. This condition is not described or analyzed in the DCPP ISFSI UFSAR. At the time Holtec published HIB-53, DCPP was in the final stages of preparing for a spent fuel cask loading campaign and did not adequately consider HIB 53. DCPP consequently failed to change the procedure as specified by HIB-53 to prevent isolating the canister without a vent path.

On April 24, 2013, at 09:02 PDT, DCPP determined that all 23 MPCs loaded at DCPP between 2009 and 2012 were placed in an unanalyzed condition. As described in HIB-53, HPP-1073-300 (approved for use in 2009) contained steps that allowed the installation of both port caps on the MPC vents while the MPC contained spent fuel and an air/water mixture. This placed the MPC in an isolated condition (without any relief path) while water was in the MPC.

The MPC vents that prevent MPC overpressurization were disabled while the vent caps were installed with no alternative overpressurization protection provided, therefore, DCPP reported the condition as a 24-hour reportable event (see Event Notification 48965) under 10 CFR 72.75(d)(1). As such, this written report is being submitted in accordance with 10 CFR 72.75(g).

A. ISFSI Operating Conditions Before the Event

At the time of the event (MPC relief ports isolated), a dry fuel storage campaign that started on January 24, 2012, was in progress. Conditions were similar for previous cask loading campaigns.

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B. Status of Structures, Systems, or Components (SSCs) That Were Inoperable at the Start of the Event and That Contributed To the Event

None.

C. Cause of Each Component or System Failure or Personnel Error

DCPP determined that the failures to recognize the procedural error occurred because personnel reviewing the loading procedure incorrectly assumed that the vendor-supplied procedure complied with the requirements specified in the UFSAR, since the UFSAR described MPC configuration had been developed with vendor input. This un-validated assumption resulted in the failure to identify the possibility for an accident of a different type than described in the UFSAR.

Additionally, DCPP determined that used fuel storage project (UFSP) personnel failed to properly address vendor bulletins in accordance with DCPP Procedure CF7.ID4, "Processing of Documents Received from Suppliers." The procedure was not followed because USFP personnel had established an informal process based on the misperception that HIBs only provided informal operating experience to be considered for potential applicability. This misperception was formed because Holtec distributed its HIBs only to Holtec Users Group members rather than directly to licensees. HIBs made available after the initial cask loading campaign in 2009 were not entered into the CAP for formal evaluation due to the misperception of low significance attributed to the HIBs and failure to follow the CF7.ID4 requirements. The informal handling and review of the HIBs resulted in failure to identify and correct the procedural deficiency prior to the 2012 loading campaign.

D. List of Systems or Secondary Functions That Were Also Affected For Failures of Components with Multiple Functions

None.

E. Method of Discovery of Each Component or System Failure or Procedural Error

DCPP review of HIB-53 identified the deficiency with the cask loading procedure that had the potential to place the MPC in an unanalyzed condition.

F. Manufacturer and Model Number (or Other Identification) of Each Component That Failed During the Event

None.

G. Quantities and Chemical and Physical Forms of the Spent Fuel Involved In the Event

Each MPC contains 32 intact Westinghouse 17-inch by 17-inch pressurized water reactor fuel assemblies.

NARRATIVE

II. Assessment of Safety Consequences

The amount of time each cask was isolated was approximately 40 - 60 minutes. Subsequent analysis showed that minimal MPC pressure increase occurred during this period of time, since the MPCs contained an air void and the activity was performed expeditiously. Holtec Calculation 1073230, dated May 31, 2013, concluded that the total pressure inside the MPC after being isolated for three hours is 10.5 pounds per square inch gauge (psig). This value is well within the MPC design limit of 100 psig. Therefore, the integrity of the 23 previously loaded MPCs was not challenged at the DCPP ISFSI. Therefore, there were no safety consequences.

III. Corrective Actions

Corrective actions include the following

Holtec Calculation 1073230 was issued May 31, 2013, to confirm that MPC design pressure limits had not been challenged.

Procedure HPP-1073-300 was prohibited from further use until it is revised to addresses the concerns identified in HIB-53.

PG&E ISFSI project personnel were assigned to ensure all HIBs had been entered into the CAP to document applicability assessment and track any necessary actions prior to the next ISFSI loading campaign.

IV. Previous Similar Events at DCPP

None.

V. Extent of Exposure of Individuals to Radiation or to Radioactive Materials

No additional radiation exposure to personnel during the canister loading campaigns resulted from this event.