



**Pacific Gas and
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PG&E Letter DCL-10-138

U.S. Nuclear Regulatory Commission
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Washington, DC 20852

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Response to NRC Letter dated September 29, 2010, Request for Additional
Information (Set 27) for the Diablo Canyon License Renewal Application

Dear Commissioners and Staff:

By letter dated November 23, 2009, Pacific Gas and Electric Company (PG&E) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for the renewal of Facility Operating Licenses DPR-80 and DPR-82, for Diablo Canyon Power Plant (DCPP) Units 1 and 2, respectively. The application included the license renewal application (LRA), and Applicant's Environmental Report – Operating License Renewal Stage.

By letter dated September 29, 2010, the NRC staff requested additional information needed to continue their review of the DCPP LRA.

PG&E's response to the request for additional information is included in Enclosure 1.

PG&E makes no regulatory commitments (as defined in NEI 99-04) in this letter.

If you have any questions regarding this response, please contact Mr. Terence L. Grebel, License Renewal Project Manager, at (805) 545-4160.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 27, 2010.

Sincerely,

James R. Becker



tlg/50345719

Enclosure

cc: Diablo Distribution

cc/enc: Elmo E. Collins, NRC Region IV Regional Administrator

Nathanial Ferrer, NRC Project Manager, License Renewal

Kimberly J. Green, NRC Project Manager, License Renewal

Fred Lyon, NRC Project Manager, Office of Nuclear Reactor Regulation

Michael S. Peck, NRC Senior Resident Inspector

Alan B. Wang, NRC Project Manager, License Renewal

**PG&E Response to NRC Letter dated September 29, 2010,
Request for Additional Information (Set 27) for the
Diablo Canyon License Renewal Application**

RAI 3.3.2.3.3-1

For the following license renewal application (LRA) Tables and line items, no aging effect and no aging management program (AMP) is proposed when the components' external surface are exposed to indoor air:

| LRA Table | Component | Material |
|------------------|-------------------------------|-------------------------------|
| 3.3.2-3 | Pipe | PVC |
| 3.3.2-3 | Pump | Fiberglass reinforced plastic |
| 3.3.2-14 | Pump | PVC |
| 3.3.2-18 | Flow indicator, demineralizer | Plexiglas |
| 3.4.2-1 | Pipe | PVC |
| 3.4.2-5 | Tanks | Plexiglas |
| 3.4.2-2 | Tanks | Lexan |

Non-metallic components constructed of materials such as polyvinyl chloride (PVC), lexan, plexiglass, and fiberglass reinforced plastic exposed to an indoor air environment are susceptible to aging due to exposure to radiation, ozone, ultraviolet light, and/or other degrading effects (e.g., high temperatures, corrosive/harmful vapors or chemicals, etc.).

Clarify why radiation, ozone, and/or ultraviolet light levels, and/or other degrading effects in the vicinity of the above components would not lead to (or contribute to) aging effects during the period of extended operation.

PG&E Response to RAI 3.3.2.3.3-1

The components listed outside of the auxiliary building receive no radiation. In the general environment of nuclear plants, there is no measurable ozone. Substantial levels of UV would occur to piping in outdoor environments. The components listed above are indoors.

According to Final Safety Analysis Report, Section 9.4, the ambient indoor air temperatures for the buildings involved will be maintained below 104°F at all times, except the diesel generator compartments which are designed for 120°F during operation. Therefore, the subject components are not exposed to high temperature that would cause aging effects requiring aging management.

LRA Table 3.3.2-3:

The subject components of System 17, Saltwater and Chlorination System, associated with License Renewal Application (LRA) Table 3.3.2-3, are located in the intake structure and turbine building. These components in the indoor environment of the intake structure and turbine building are not exposed to the level of radiation, ozone, ultraviolet light, high temperature or corrosive chemicals that would cause significant aging effects requiring aging management.

LRA Table 3.3.2-14:

The subject components of System 21, Diesel Generator System, associated with LRA Table 3.3.2-14, are located in the diesel generator (DG) compartments of the turbine building. These subject components in the DG compartments of the turbine building are not exposed to the level of radiation, ozone, ultraviolet light, high temperature or corrosive chemicals that would cause significant aging effects requiring aging management.

The normal operating temperature in the DG compartments average 76°F while in standby. The design temperature of the DG compartments during operation is 120°F. Polyvinyl chloride has a continuous heat resistance of 150 to 175°F. During operation of the DGs, the compartment temperatures rise to approximately 75 to 90°F, depending on outdoor air temperatures.

LRA Table 3.3.2-18:

The subject components of System 28, Secondary Sampling System, and System 19, Liquid Radwaste System, associated with LRA Table 3.3.2-18, are located in the auxiliary building. The area where these components are located receives less than 0.2 mrem/hr. These subject components in the indoor environment of the auxiliary building, including radwaste areas, are not exposed to the level of radiation, ozone, ultraviolet light, high temperature or corrosive chemicals that would cause significant aging effects requiring aging management.

LRA Table 3.4.2-1:

The subject components of System 04, Turbine Steam Supply System, associated with LRA Table 3.4.2-1, are part of the steam generator blowdown demineralizer system and are located in the auxiliary building. The area where these components are located receives less than 0.2 mrem/hr. These subject components in the auxiliary building are not exposed to the level of radiation, ozone, ultraviolet light, high temperature or corrosive chemicals that would cause significant aging effects requiring aging management.

LRA Table 3.4.2-2:

The subject component of System 06, Auxiliary Steam System, associated with LRA Table 3.4.2-2, is the abandoned-in-place auxiliary hydrazine feed unit located in Unit 1 ventilation building as part of the auxiliary building. The area where these components are located receives less than 0.2 mrem/hr. It is not exposed to the level of radiation, ozone, ultraviolet light, high temperature or corrosive chemicals that would cause significant aging effects requiring aging management.

LRA Table 3.4.2-5:

The subject components of System 03, Auxiliary Feedwater System, associated with LRA Table 3.4.2-5, are the auxiliary feedwater hydrazine measuring tanks located in the auxiliary building. The area where these components are located receives less than 0.2 mrem/hr. It is not exposed to the level of radiation, ozone, ultraviolet light, high temperature or corrosive chemicals that would cause significant aging effects requiring aging management.

PG&E is adding the following components to this response as a result of additions made to LRA Table 3.3.2-5 in LRA amendment 13.

LRA Table 3.3.2-5:

The subject components of System 16, Makeup Water System, associated with LRA Table 3.3.2-5, are the eye wash sinks located in the auxiliary building battery rooms. The area where these components are located receives less than 0.2 mrem/hr. They are not exposed to the level of radiation, ozone, ultraviolet light, high temperature or corrosive chemicals that would cause significant aging effects requiring aging management.

RAI 3.3.2.3.12-1

In LRA Table 3.3.2-12, "Fire Protection," and Table 3.5.2-14, "Containments, Structures and Component Supports," the applicant stated that for PVC pipe and conduit exposed to soil (external) there are no aging effects thus no AMP is proposed.

The staff understands that buried PVC pipe and conduit can be damaged by exposure to backfill that contains large or sharp material during both installation and operation. The staff also understands that damage to PVC buried pipe and conduit during installation is not an aging management issue; however, during operation, large or sharp objects a short distance away can migrate to the outside surface of the pipe or conduit due to ground movement caused by normal seasonal changes or movement of heavy loads above the buried pipe. Once in contact with the exterior surface of the pipe, this movement can cause wear to the material.

Request:

- 1. Provide historical data on the quality of the backfill used in the vicinity of buried PVC pipe and conduit that would support the conclusion that aging will not occur due to large or sharp material contained in the backfill.*
- 2. For the buried PVC conduit, clarify whether the cable enclosed in the conduit is designed for direct burial.*

PG&E Response to RAI 3.3.2.3.12-1

1. PG&E Specification 8831-R, requires placement of all yard piping and electrical conduit runs, not concrete encased, in an envelope. This envelope shall extend 6 inches below and above pipe or conduit and for the entire width of the trench. Care is taken to prevent damage to exterior coatings of pipe. Backfill material consists of clean sand, slurry, or selected stone sieved to exclude all particles larger than ¼ inches. Backfill shall be clean and free of expansive material.

A comprehensive search of Diablo Canyon Power Plant records showed no occurrence of large or sharp material found within the backfill of polyvinyl chloride (PVC) pipe and conduit. There was a single event of foreign objects found in backfill during an excavation. In 1992, an excavation of the auxiliary saltwater (ASW) carbon steel annubar line found wood blocks and debris around the buried pipe. This finding was captured in the corrective action program. An investigative action was also taken to further excavate around all 4 of the main 24-inch diameter ASW pipes to inspect the flanges and bottom side of the pipe.

Based on plant-specific operating experience, interviews with plant staff familiar with placement and maintenance of buried piping, and the backfill used in the vicinity of buried PVC pipe and conduit, there is reasonable assurance that sharp or large objects have not caused damage to buried PVC pipes/conduits during original construction nor migrated over time (due to seasonal changes or ground movement) to cause damage to the PVC pipes/conduits.

2. The cable enclosed in buried PVC conduit is not designed for direct burial without conduit protection.