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PG&E Letter DCL-10-113

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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 August 3, 2010, Request for Additional Information
(Set 16) 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 August 3, 2010, the NRC staff requested additional information needed to continue their review of the Diablo Canyon 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.

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NRR



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

Executed on August 30, 2010.

Sincerely,


James R. Becker *for*
Site Vice President

pns/50333156

Enclosures

cc: Diablo Distribution

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

Nathanial B. Ferrer, NRC Project Manager, License Renewal

Kimberly J. Green, NRC Project Manager, License Renewal

Michael S. Peck, NRC Senior Resident Inspector

Alan B. Wang, NRC Project Manager, Office of Nuclear Reactor Regulation

**PG&E Response to NRC Letter dated August 3, 2010
Request for Additional Information (Set 16) for the
Diablo Canyon License Renewal Application**

RAI 3.2.2.3.4-1

The Generic Aging Lessons Learned (GALL) Report, under item VII.G-9, indicates that copper alloy piping, piping components and piping elements exposed to condensation (internal) results in a loss of material, pitting and crevice corrosion, and the applicant should implement a plant specific aging management program (AMP) to manage the aging effect.

The Diablo Canyon Nuclear Power Plant license renewal application (LRA) Table 3.2.2-4 indicates that the copper alloy heat exchanger tube components are exposed to plant indoor air (internal). LRA Table 3.2.2-4 also indicates that the copper alloy >15% Zn valve components are exposed to internal ventilation atmosphere and that the copper alloy >15% Zn valve components are exposed to internal plant indoor air. For each of the three component/environment scenarios, the LRA uses Note G, along with a plant-specific note that states "Condensation can occur but rarely. Component surfaces are normally dry." LRA Table 3.0-1 defines plant indoor air and ventilation atmosphere as "evaluated with the NUREG-1801 environment of condensation when the air contains significant amounts of moisture (enough to cause loss of material)." Since there is no AMP assigned to these components, it is not clear how the applicant will monitor to ensure that condensation does not form.

Provide additional information to indicate that the moisture level is being monitored in these systems to ensure that condensation does not form or provide prior historical evidence that would show that condensation does not occur with these components and environmental conditions.

PG&E Response to RAI 3.2.2.3.4-1

The plant system associated with Table 3.2.2-4 is containment heating, ventilation, and air conditioning. Except for immediately following a refueling outage, normally for a majority of the time, conditions inside containment are low humidity at elevated temperatures with containment coolers running; thereby, making condensation very unlikely as stated in the plant specific notes. Based on these conditions internal moisture monitoring is not considered necessary for the affected components.

RAI B.2.1.18-2

The LRA states that the Buried Piping and Tanks Inspection Program is a new program with two exceptions and no enhancements and is consistent with the program elements in GALL AMP XI.M34. This AMP addresses buried piping (i.e., piping in direct contact with soil). The LRA also states that the External Surfaces Monitoring Program is a new program with three exceptions and no enhancements and is consistent with the program elements in GALL AMP XI.M36. This AMP addresses aging management of the external surfaces of piping exposed to air, which would normally include underground inaccessible piping (i.e., piping not in direct contact with soil, but located below grade in a vault, pipe chase, or other structure where it is exposed to air and where access is limited).

There have been a number of recent industry events involving leakage from buried and underground piping and tanks.

In light of this recent industry operating experience (OE), the staff is concerned about the possible susceptibility to failure of buried and/or underground piping that are within the scope of license renewal and subject to an aging management review (AMR). In reviewing the AMPs cited above along with the applicable AMR items associated with them, the staff is not clear whether: (1) the components addressed by these AMPs clearly include both buried and underground piping (piping which is below grade and contained in a vault or other structure where it is exposed to air and where access is limited); and (2) whether such programs are being updated to incorporate lessons learned from these recent events as well as any OE from the applicant's own history.

- 1. Provide a discussion of how or whether the AMPs used in managing the aging of buried, underground, and limited access piping and tanks within the scope of license renewal will address recent industry OE as well as any OE from the applicant's own history.*
- 2. If there are proposed changes as a result of the review of recent industry OE related to buried pipe, state how many excavations will be conducted during the ten year period prior to extended operation and in the period following the period of extended operation and minimum length of piping that will be exposed. State what percentage of the total length of piping these excavations will reveal.*
- 3. If any proposed changes entail other methods of examining the pipe than excavations and direct visual inspection of the coating and/or piping surface, state what those methods will be and state what percentage of the total length of piping will be examined.*

4. *For the following in-scope systems, provide a discussion on whether cathodic protection will be provided for each and the extent of cathodic protection. Provide a discussion of the testing of the cathodic protection used since the pipe was first buried.*

<i>Saltwater & Chlorination</i>	<i>3.3.2-3</i>
<i>Make-up Water</i>	<i>3.3.2-5</i>
<i>Fire Protection</i>	<i>3.3.2-12</i>
<i>Diesel Fuel Oil</i>	<i>3.3.2-13</i>

PG&E Response to RAI B.2.1.18-2

1. As stated in the Diablo Canyon Power Plant (DCPP) License Renewal Application, Appendix B, B2.1.18 and B2.1.20, industry and plant specific operating experience will be evaluated and incorporated in the program as appropriate throughout the period of extended operation through the plant corrective action program.
2. Evaluation and appropriate changes to applicable programs as a result of recent operating experience are still ongoing both within PG&E and the industry. PG&E is committed to follow the EPRI 1016456, Recommendations for an Effective Program to Control the Degradation of Buried Pipe. The EPRI initiative addresses recent industry operating experience. PG&E programs, which will be modeled after the EPRI initiative, will also consider plant-specific operating experience. The EPRI initiative will set an inspection schedule for buried piping segments based on, among other things, pipe materials and locations. PG&E will develop an inspection plan for buried piping in accordance with NRC staff accepted industry guidelines that will provide the number of excavations, the minimum length of piping that will be exposed, and the percentage of the total length of piping that will be inspected.
3. At this time, PG&E does not plan to use any examination method other than excavation or visual inspection of buried piping. If PG&E decides to use methods of examination other than excavation and direct visual inspection, these methods will be submitted for NRC staff approval in accordance with NRC staff accepted buried piping and underground piping guidelines.

4. The cathodic protection (CP) for the saltwater and chlorination, make-up water, fire protection, and diesel fuel oil (DFO) systems is discussed below. The CP system is monitored on a regular basis and is included within the scope of DCP's program for implementing the Maintenance Rule. DCP's procedures assure that the CP system is operating and providing the required amount of current throughout the system. Based on a review of plant operating experience, the DCP CP system has been effective at protecting the equipment.

Saltwater and Chlorination

CP is used in portions of the auxiliary saltwater (ASW) piping and for the intake structure traveling screens, gates and guides, ASW pumps and screen wash pumps. PG&E procedures perform monthly monitoring of the rectifier output voltage and current for the CP system. An annual survey of the ASW pipe CP system includes monitoring rectifier output voltage and current, "ON/OFF" pipe to soil potentials, and individual anode currents. The recent annual survey results show that the ASW piping meet at least one of the specified CP criteria for CP, as established by the National Association of Corrosion Engineers International in their Standard SP0169-07, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems."

The CP for the ASW system was initially energized in 1996 after the completion of Phase 1 of the by-pass piping project.

Make-up Water System

There is no CP for the make-up water system components.

Fire Protection System

There is no CP for the fire protection system components.

Diesel Fuel Oil (DFO) System

The DFO tank has an outer and inner shell. Fuel oil is only on the inside of the inner tank shell. The space between the inner and outer shell is monitored for leakage and contains dry air and is not ventilated. The outer tank has a fiberglass coating that is in contact with the engineered backfill soil. The fiberglass coating would render any CP system ineffective. Degradation of the outer tank (nonpressure retaining) is not expected with the fiberglass coating; however, the inner tank would be protected as long as no water leakage is detected in the space between the inner and outer tank shells.

The remaining DFO system piping runs in air either in a conduit between the DFO tank and DFO transfer pump or in a concrete lined trench from the DFO transfer pumps to each diesel generator with no CP since the piping is not buried.

RAI B2.1.37-1

With respect to LRA Nickel-Alloy Aging Management Program element 5 "monitoring and trending," verify that volumetric and/or surface examinations will be performed in accordance with MRP-139 for reactor vessel inlet and outlet nozzles, as identified in the program description of this AMP.

PG&E Response to RAI B2.1.37-1

As stated in License Renewal Application, Section B2.1.37, Diablo Canyon Power Plant (DCPP) performs bare metal visual (BMV) examinations for reactor vessel inlet and outlet nozzles in accordance with appropriate requirements of Table 1 in ASME Code Case N 722, subject to the conditions listed in 10 CFR 50.55a(g)(6)(ii)(E)(2) through (4). DCPP also performs visual and/or surface examinations in accordance with MRP-139 for reactor vessel inlet and outlet nozzles.