



January 23, 2009

PG&E Letter DCL-09-002

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Technical Justification for Deviation from EPRI MRP Bare Metal Visual
Examination Schedule - NEI 03-08 Mandatory Work Product Element –
For Information Only

Dear Commissioners and Staff:

Pacific Gas and Electric Company (PG&E) has identified a deviation from a mandatory work product element contained in EPRI Letter Materials Reliability Program (MRP) 2005-014, dated September 12, 2005. Diablo Canyon Power Plant (DCPP) Units 1 and 2 plant staff has discovered that EPRI Letter MRP 2005-014, specified a Bare Metal Visual (BMV) examination of the Alloy 82/182 dissimilar metal (DM) butt welds in the reactor pressure vessel cold leg nozzles in the first refueling outage (RFO) following completion of the initial ultrasonic (UT) examination. The UT examinations of the nozzles were initially completed in the thirteenth RFOs (Fall 2005 and Spring 2006, respectively), but BMV examinations were not performed in the fourteenth RFOs (Spring 2007 and Spring 2008, respectively). PG&E will perform BMV examination of the cold leg nozzles in the fifteenth RFOs, currently scheduled for the Spring and Fall of 2009, for Units 1 and 2 respectively.

Nuclear Energy Institute (NEI) document NEI 03-08, "Guideline for the Management of Materials Issues," allows deviations from mandatory work product elements with the appropriate justification and documentation.

Pursuant to NEI 03-08, Addendum E (Revision 3), June 2008, the enclosed technical justification for deviation is being submitted to the NRC for information. The technical justification does not require any NRC actions to be taken.

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Sincerely,



Kenneth J. Peters
Station Director

ddm1/469

Enclosure

cc: Elmo E. Collins, NRC Region IV
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NEI 03-08 Materials Guidelines Deviation Protocol

Nuclear Energy Institute (NEI) document NEI 03-08, "Guideline for the Management of Materials Issues," allows deviations from mandatory work product elements with the appropriate justification and documentation. From NEI 03-08, Addendum E (Revision 3), June 2008:

"Utilities shall notify the NRC of any approved deviations from Mandatory and Needed guideline elements. This notification is for information; NRC approval or other actions are not expected. The notification shall summarize:

- the guidance being deviated from,
- the justification for the deviation, and
- any actions undertaken in lieu of the guidance.

NRC notification should occur at about the same time as the justification for deviation is sent to the IP."

Summary

This letter describes the basis for a deviation from the implementation schedule for bare metal visual (BMV) examinations defined in EPRI Letter Materials Reliability Program (MRP) 2005-014 dated September 12, 2005. The BMV examination schedule is categorized as a mandatory work product element under NEI 03-08. Contrary to the requirement, BMV inspection of the Diablo Canyon Power Plant (DCPP) Units 1 and 2 Alloy 82/182 dissimilar metal (DM) butt welds associated with the reactor pressure vessel cold leg nozzles was not performed in Refueling Outages (RFOs) 1R14 and 2R14, which were the RFOs subsequent to the initial ultrasonic (UT) examination conducted in RFOs 1R13 and 2R13. The deviation is to defer the BMV inspections of these cold leg nozzles (4 in each unit) to the next scheduled RFOs in 1R15 and 2R15.

Guidance Being Deviated From

The specific source of the mandatory element that is the subject of the deviation is EPRI Letter MRP 2005-014 dated September 12, 2005. This letter transmitted document MRP-139 Revision 0, "Primary System Butt Weld Inspection and Evaluation Guideline." The letter states in part: "For each butt weld location, MRP-139 visual examinations will be performed during the next RFO following the successful completion of the initial ultrasonic examination as required by the implementation schedule of Section 1.2 of MRP-139."

Background

DCPP Units 1 and 2 are four-loop Westinghouse plants. Unit 1 is operating in Cycle 15. Unit 2 is operating in Cycle 15. DCPP Units 1 and 2 reactor pressure vessel hot leg and cold leg nozzles have Alloy 82/182 DM butt welds.

Pacific Gas and Electric Company (PG&E) performed ASME XI Appendix VIII-qualified volumetric inspections (UT) of the DCPD Units 1 and 2 reactor pressure vessel hot leg and cold leg DM welds in RFOs 1R13 (Fall 2005) and 2R13 (Spring 2006). No degradation was detected in these UT examinations. The examinations were conducted well in advance of the December 31, 2009 (hot leg), and December 31, 2010 (cold leg), volumetric examination deadlines of MRP-139 Section 1.2. The UT inspections were strategically performed early to coincide with the 10-year Inservice Inspection in RFOs 1R13 and 2R13 in which the reactor vessel core barrel was pulled. Removal of the core barrel permitted the UT inspections to be performed from the nozzle inside diameter (ID). Because the examinations satisfied MRP-139 Sections 6.10.2 and 6.11.2, a visual examination was credited for both the hot legs and the cold legs, thus satisfying the one time BMV examination requirements of Letter MRP 2004-05.

The qualified UT examinations were supplemented by eddy current (ET) examination of the ID surface of the welds and adjacent base material. Since ET is sensitive to very small surface breaking flaws, this complementary examination provides additional assurance that Primary Water Stress Corrosion Cracking (PWSCC) flaws will be detected.

In RFOs 1R14 and 2R14, BMV examinations of the hot leg DM welds were performed in accordance with the requirements of MRP-139 Section 6.10.2. BMV examinations of the cold leg DM welds were not conducted because PG&E believed they were not due based on the requirements of MRP-139 Section 6.11.2, which specifies BMV examination of the cold leg nozzles every 3 RFOs, not counting RFOs when the weld is examined volumetrically. Hence, PG&E believed that the next cold leg DM weld BMV examinations were due in RFOs 1R16 and 2R16.

In October 2008, DCPD plant staff discovered that EPRI Letter MRP 2005-014 dated September 12, 2005, specified a BMV in the first RFO following completion of the initial UT examination. PG&E had not been aware of this requirement because it was not contained in the actual MRP-139, Revision 0, document. Therefore, PG&E had not entered this requirement into the corrective action program for tracking and completion, and did not recognize that no cold leg BMV examinations in 2008 and 2009 would result in a deviation from MRP-139 requirements.

Technical Justification for the Deviation

Deferral of the BMV inspections of the DCPD Units 1 and 2 reactor vessel cold leg DM welds (4 in each unit) to the next scheduled RFOs in 1R15 and 2R15 is justified based on the following technical justification. For each unit, this represents a one-cycle extension from the implementation schedule, or approximately 20 months for Unit 1, and 18 months for Unit 2. The justification

provides the basis for determining that the proposed deviation meets the same objective and intent, or level of conservatism exhibited by MRP-139.

1. The UT and ET examinations of the cold leg nozzles performed in RFOs 1R13 and 2R13 verified that they are degradation-free.
2. The UT and ET examinations of the cold leg nozzles performed in RFOs 1R13 and 2R13 satisfy the objectives of performing a BMV examination in the RFO following the initial UT.
3. There were no visible signs of boric acid emanating from the insulation surrounding the cold leg DM welds in RFOs 1R14 and 2R14.
4. The degradation-free condition of the hot leg and cold leg DM welds at beginning of Cycle 14 (based on 1R13 and 2R13 UT/ET examinations) provides assurance that the cold leg DM welds will not have through-wall degradation at the end of Cycle 15.
5. The MRP 2005-014 BMV examination requirements are more restrictive than the recently issued 10CFR50.55a(g)(6)(ii)(E) BMV examination requirements. PG&E will be in compliance with the new 10CFR50.55a examination requirements upon completion of BMV inspections of the cold leg nozzles in RFOs 1R15 and 2R15.
6. DCP's ongoing injection of zinc to the primary coolant may mitigate PWSCC in reactor vessel hot leg and cold leg DM welds.

Any Actions Undertaken in Lieu of the Guidance

As discussed above, BMV inspections of the DCP Units 1 and 2 reactor vessel cold leg DM welds (4 in each unit) will be conducted in the next scheduled RFOs in 1R15 and 2R15. The technical justification does not require any additional actions to be taken.