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December 18, 2013

PG&E Letter DCL-13-121
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

10 CFR 50.55a

Docket No. 50-323, OL-DPR-82
Diablo Canyon Power Plant (DCPP) Unit 2
ASME Code Section XI Inservice Inspection Program Request for Alternative
NDE-SFW-I3 to Allow Use of Alternate Examination Requirements

Dear Commissioners and Staff:

Pursuant to 10 CFR 50.55a(a)(3)(i), Pacific Gas and Electric Company (PG&E) hereby requests NRC approval of Inservice Inspection (ISI) Request for Alternative NDE-SFW-I3 for the Diablo Canyon Power Plant Unit 1 and Unit 2 third ISI intervals.

An alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code is requested for examination of reactor vessel shell-to-flange welds. The details of the proposed request are enclosed.

PG&E requests approval of NDE-SFW-I3 by December 23, 2014.

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

If you have any questions regarding the information enclosed, or other ISI program activities, please contact Mr. Tom Baldwin at (805) 545-4720.

Sincerely,

Barry S. Allen

rnrt/4231/SAPN 50033145-84

Enclosure

cc: Diablo Distribution
cc/enc: Brian J. Benney, NRR Project Manager
Marc L. Dapas, NRC Region IV Administrator
Thomas R. Hipschman, NRC Senior Resident Inspector
State of California, Pressure Vessel Unit

Enclosure
PG&E Letter DCL-13-121

10 CFR 50.55a Request for Alternative NDE-SFW-I3

**Proposed Alternative
in Accordance with 10 CFR 50.55a(a)(3)(i)**

10 CFR 50.55a Request for Alternative NDE-SFW-I3

**Proposed Alternative
in Accordance with 10 CFR 50.55a(a)(3)(i)**

--Alternative Provides Acceptable Level of Quality and Safety--

1. ASME Code Component(s) Affected

The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Class 1, Diablo Canyon Power Plant (DCPP), Units 1 and 2, reactor vessel shell-to-flange welds:

Code Cat/Item	Description	Weld Number
B-A/B1.30	Shell-to-Flange Weld	7-442 (Unit 1)
B-A/B1.30	Shell-to-Flange Weld	7-201 (Unit 2)

2. Applicable Code Edition and Addenda

The DCPP Units 1 and 2 third interval Inservice Inspection (ISI) Program Plan is based on the ASME Section XI, 2001 Edition with 2003 Addenda. ASME Code Section XI, 2001 Edition without Addenda applies to ultrasonic (UT) examinations performed per ASME Code Section XI, Appendix VIII requirements.

3. Applicable Code Requirements

ASME Code Section XI, Table IWB-2500-1, Category B-A, Item B1.30, requires that reactor vessel shell-to-flange welds be volumetrically examined once during each ISI interval. ASME CODE Section XI, Subsection IWA-2232, requires that the UT examination of reactor pressure vessel (RPV) shell-to-flange welds to be performed per the requirements of ASME Code, Section V, Article 4, as supplemented by Appendix I of Section XI. The examination volume extent is identified in the ASME Code, Section XI, Figure IWB-2500-4, "Shell-To-Flange Weld Joint."

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(a)(3)(i), an alternative is requested to the requirements of Subsection IWA-2232 since the vendor performing the inspection has qualified their equipment, procedures and personnel per the Performance Demonstration Initiative (PDI) implementation of ASME Code, Section XI, Appendix VIII, Supplements 4 and 6, as amended by 10 CFR 50.55a. ASME Code Section XI, Appendix VIII requirements apply to all DCCP reactor vessel shell welds with the exception of the shell-to-flange weld.

Performing the shell-to-flange weld examination in accordance with the requirements of ASME Code, Section XI, IWA-2232 would require the examination vendor to use a different procedure and process than that used for all other shell welds in the reactor vessel. Reactor vessel examination processes qualified to Appendix VIII have been demonstrated to be effective in detecting and sizing flaws.

Background

Both DCCP Units 1 and 2 reactor vessel shell-to-flange welds have received two previous ISIs, with the second examination on each unit performed per the PDI implementation of ASME Code, Section XI, Appendix VIII rules (Precedent 2). No service related flaws have been detected in either weld.

The upper shell course material in both DCCP reactors is A-533 Grade B, Class 1, while the flanges are A-508-64 material. The sections are joined with a narrow groove weld with a fit-up opening of approximately 1.375 inches. A general outline of the weld configuration is shown in Figure 1.

5. Proposed Alternative and Basis for Use

Pursuant to 10 CFR 50.55a(a)(3)(i), PG&E requests authorization to use the alternate requirements of ASME Code Section XI, 2001 Edition with no Addenda, Appendix VIII, Supplements 4 and 6, as amended by 10 CFR 50.55a and implemented by the PDI for examination of the shell-to-flange weld when examined from the vessel shell. The Appendix VIII requirements will be implemented in lieu of ASME Code, Section XI, IWA-2232 that requires UT examination of the RPV shell-to-flange weld to be in accordance with ASME Code, Section V, Article 4, as supplemented by Appendix I of Section XI.

The proposed alternate ASME Code Section XI, Appendix VIII requirements were established to improve the effectiveness of UT examinations by means of a rigorous, item specific, performance demonstration. The performance demonstration process verifies the capability of personnel, procedures, and equipment to detect and characterize flaws that could be detrimental to the

structural integrity of the RPV. Since implementation, this process has shown improved performance as compared to the prescriptive requirements of ASME Code, Section V, Article 4.

As stated in Reference 1, "There is clear evidence that the performance demonstration requirements adopted by Section XI of the ASME Code for Boiler and Pressure Vessels has resulted in a positive impact on the reliability of ultrasonic examinations that are performed on piping and pressure vessels."

Although an ASME Code, Section XI, Appendix VIII qualified exam process is not required for the examination of the reactor vessel shell-to-flange welds, the use of Appendix VIII, Supplements 4 and 6 process for detection and sizing of flaws in this weld has been shown to exceed the performance of the ASME Code Section V, Article 4 prescriptive examination process. Therefore, the use of the proposed alternative will continue to provide an acceptable level of quality and safety, and approval is requested pursuant to 10 CFR 50.55a(a)(3)(i).

6. Duration of Proposed Alternative

The proposed alternative will apply through the end of the DCPD third ISI interval for each unit. The Unit 1 third interval began on January 1, 2006, and is nominally scheduled to end on May 6, 2015. The Unit 2 third interval began on July 1, 2006, and is nominally scheduled to end March 12, 2016.

7. Precedents

Similar requests have been previously approved:

1. Indian Point Unit 2; NRC letter dated April 25, 2011 (ADAMS Accession No. ML11109A016).
2. Diablo Canyon Units 1 and 2; NRC letter dated October 26, 2005 (ADAMS Accession No. ML052660331)

8. References

1. NUREG/CR-7165, PNNL-19014, Revision 2, "The Technical Basis Supporting ASME Code, Section XI, Appendix VIII: Performance Demonstration for Ultrasonic Examination Systems."

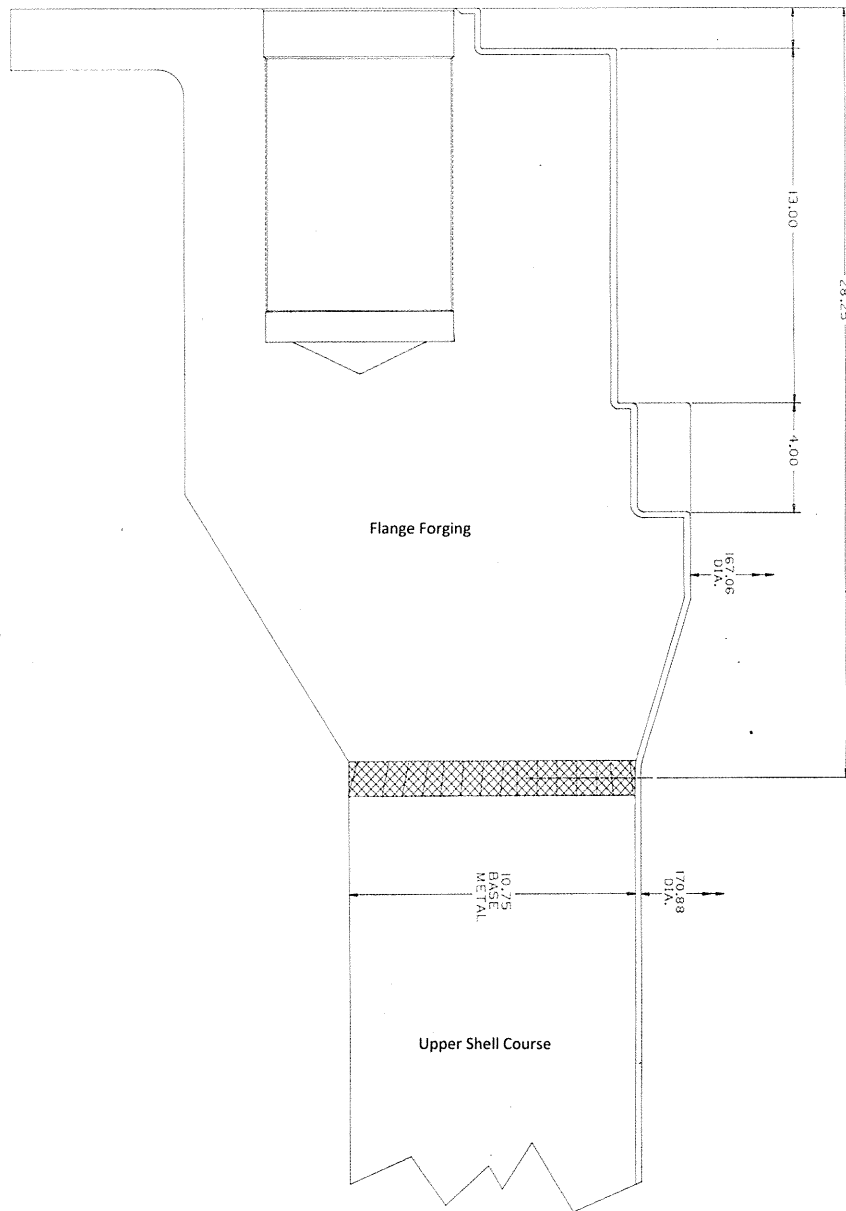


Figure 1
Sketch of DCPP Unit 1 and Unit 2 RPV Flange Weld Configuration