UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 27, 2017

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 1 – CLOSEOUT LETTER CONCERNING DISSIMILAR METAL BUTT WELD FLAW IN PRESSURIZER SAFETY RELIEF NOZZLE-TO-SAFE-END WELD (CAC NO. MF7409)

Dear Mr. Hanson:

By letter dated February 25, 2016 (Agencywide Documents Access and Management System Accession No. ML16057A002), Exelon Generation Company, LLC (the licensee) submitted a report in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(6)(ii)(F)(6) for the Calvert Cliffs Nuclear Power Plant, Unit 1 (CCNPP1). The report summarized the evaluation, along with inputs, methodologies, assumptions, and the preliminary causes for the identification of a change in size of a previous axial flaw in the pressurizer safety relief nozzle-to-safe-end dissimilar metal butt weld (ISI Weld 4-SR-1006-1) that was mitigated by the Mechanical Stress Improvement Process (MSIP®) in 2006.

Under 10 CFR 50.55a(g)(6)(ii)(F)(6), for any mitigated weld whose volumetric examination detects growth of existing flaws in the required examination volume that exceeds the previous IWB-3600 flaw evaluations or new flaws, a report summarizing the evaluation, along with inputs, methodologies, assumptions, and causes of the new flaw or flaw growth is required to be provided to the U.S. Nuclear Regulatory Commission (NRC) prior to the weld being placed in service other than modes 5 or 6.

The NRC staff has completed its assessment of the subject report and finds that it meets the regulatory requirements of 10 CFR 50.55a(g)(6)(ii)(F)(6), and no additional followup regulatory action is required at this time.

As stated in the report, during the February 2016 refueling outage (CC1R23), the licensee performed a full structural weld overlay of ISI Weld 4-SR-1006-1 to ensure future structural integrity of the weld for the remaining life of the plant. The licensee also examined all 27 dissimilar metal butt welds within the scope of the American Society of Mechanical Engineers (ASME) Code Case N-770-1 during the refueling outage. No other new flaws or changes in existing flaws were found. The NRC staff finds that the licensee's actions address any uncertainties concerning the leak-tightness or structural integrity of ISI Weld 4-SR-1006-1, and there are no immediate safety concerns regarding the subject weld or any other dissimilar metal butt welds under the scope of ASME Code Case N-770-1 at CCNPP1.

The NRC staff also reviewed the licensee's report for the generic impact of potential growth of an existing flaw in an MSIP® mitigated weld. The NRC staff evaluated both the stress effect of the applied MSIP® and the non-destructive examinations performed by the licensee in 2006,

2010, and 2016. Based on the non-destructive examination information provided to the NRC, the staff was unable to reach an independent conclusion regarding the change in the reported axial flaw through-wall extent from the licensee's data between 2006 and 2016. Additionally, the NRC identified an issue of generic interest regarding the modeling of post-MSIP® stresses; the NRC staff's continued assessment of this generic issue will be coordinated via the Electric Power Research Institute's Materials Reliability Program.

Based on the above, the NRC staff concludes that the regulatory requirements of 10 CFR 50.55a(g)(6)(ii)(F)(6) are satisfied, and no further action is requested from the licensee at this time. The NRC staff activities on the subject report have been concluded, and the associated Cost Activity Code MF7409 has been closed.

If you have any questions regarding this matter, please contact me at 301-415-1030 or Richard.Guzman@nrc.gov.

Sincerely,

Richard V. Guzman, Senior Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-317

cc: Distribution via Listserv

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