



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

December 8, 2020

Mr. James M. Welsch
Senior Vice President, Generation
and Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Nuclear Power Plant
P.O. Box 56, Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON NUCLEAR POWER PLANT, UNIT 2 – REVIEW OF THE
FALL 2019 STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT
(EPID L-2020-LRO-0026)

Dear Mr. Welsch:

By letter dated May 13, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20134J139), as supplemented by letter dated October 16, 2020 (ADAMS Accession No. ML20290A929), Pacific Gas and Electric Company (the licensee), submitted information summarizing the results of its fall 2019 steam generator (SG) tube inservice inspections performed at Diablo Canyon Nuclear Power Plant, Unit 2. These inspections were performed during refueling outage 21. The SG tube inspection report was submitted in accordance with Technical Specification 5.6.10, "Steam Generator (SG) Tube Inspection Report."

Based on its review, the U.S. Nuclear Regulatory Commission (NRC) staff concludes that the licensee has provided the information required by Technical Specification 5.6.10, and that no followup is required at this time. A summary of the NRC staff's review is enclosed.

If you have any questions, please contact me at 301-415-3168 or via e-mail at Samson.Lee@nrc.gov.

Sincerely,

/RA/

Samson S. Lee, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-323

Enclosure:
Review of the Steam Generator
Tube Inspection Report

cc: Listserv

REVIEW OF THE FALL 2019 REFUELING OUTAGE 21
STEAM GENERATOR TUBE INSERVICE INSPECTION REPORT
PACIFIC GAS AND ELECTRIC COMPANY
DIABLO CANYON NUCLEAR POWER PLANT, UNIT 2
DOCKET NO. 50-323

By letter dated May 13, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20134J139), as supplemented by letter dated October 16, 2020 (ADAMS Accession No. ML20290A929), Pacific Gas and Electric Company (the licensee), submitted information summarizing the results of its fall 2019 steam generator (SG) tube inservice inspections performed at Diablo Canyon Nuclear Power Plant (Diablo Canyon), Unit 2. These inspections were performed during refueling outage 21.

Diablo Canyon, Unit 2 has four Westinghouse Model D54 SGs, each of which contains 4,444 thermally-treated Alloy 690 tubes. Each tube has a nominal outside diameter of 0.750 inches and nominal thickness of 0.043 inch, except for Row 1 and Row 2, which have a nominal thickness of 0.044 inch. During SG fabrication, the tubes were hydraulically expanded over the full depth of the tubesheet. The ends of each tube were tack-expanded using a urethane plug expansion process prior to making an autogenous seal weld on the primary side of the tubesheet. The tubes are arranged on a triangular pitch with 1.144-inch spacing. The tubes in Rows 1 through 16 received full-length thermal stress relief following bending. Eight Type 405 stainless steel support plates, which have broached trefoil-shaped holes, support the vertical section of the tubes. In the U-bend section, the tubes are supported by three sets of "V" shaped, rectangular stainless steel Type 405 anti-vibration bars.

The licensee provided the scope, extent, methods, and results of its SG tube inspections in the documents referenced above. In addition, the licensee described corrective actions (e.g., tube plugging) if any were taken in response to the inspection findings. The licensee also stated its intention to request a license amendment to allow operation of the SGs until plant retirement at the end of cycle 25 without additional tube inspections (four operating cycles). The plant technical specifications currently limit the plant to no more than three operating cycles between inspections. To support these plans, the licensee performed its forward-looking operational assessment for four operating cycles.

Based on the review of the information provided, the U.S. Nuclear Regulatory Commission (NRC) staff has the following observations:

- The licensee's October 16, 2020, letter responded to NRC staff questions about assessment of foreign objects and a secondary-side inspection during the remaining refueling outages. Foreign objects have been found in the Diablo Canyon, Unit 2 SGs, but no degradation has been detected. The response described the results of foreign object search and retrieval operations, and some of the inputs and assumptions used to perform the operational assessment in order to meet the tube integrity requirements in the technical specification. Based on its assessment, the licensee concluded no additional secondary-side inspections are required before plant retirement at the end of cycle 25.

- With respect to the licensee's plans to request a change to the SG inspection interval, the NRC staff will review the licensee's technical justification at that time, including supporting documents such as the operational assessment described above.

Based on the review of the information provided, the NRC staff concludes that the licensee provided the information required by its technical specifications. In addition, the NRC staff concludes that there are no technical issues that warrant followup action currently, since the inspections appear to be consistent with the objective of detecting potential tube degradation and the inspection results appear to be consistent with industry operating experience at similarly designed and operated units.

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(EPID L-2020-LRO-0026) DATED DECEMBER 8, 2020

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