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L-13-404

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject:
Davis-Besse Nuclear Power Station
Docket No. 50-346, License No. NPF-3
Supplemental Information Related to Steam Generator Inventory Change
(TAC No. MF0536)

By letter dated January 18, 2013 (Agencywide Documents Access and Management System Accession No. ML13018A350), FirstEnergy Nuclear Operating Company (FENOC) submitted an application for amendment of Operating License NPF-3 for the Davis-Besse Nuclear Power Station. The proposed amendment would revise Technical Specifications in support of the steam generator replacement scheduled for the DBNPS spring 2014 refueling outage.

By telephone conversation with the Nuclear Regulatory Commission (NRC) staff on December 18, 2013, FENOC provided additional clarification regarding analyses performed to provide predictions of once through steam generator performance. Additional information in support of that clarification is attached.

There are no regulatory commitments contained in this letter. If there are any questions, or if additional information is required, please contact Mr. Thomas A. Lentz, Manager - Fleet Licensing, at 330-315-6810.

I declare under penalty of perjury that the foregoing is true and correct. Executed on January 10th, 2014.

Sincerely,

Raymond A. Lieb

Attachment: Supplemental Information Related to Steam Generator Inventory Change

cc: Regional Administrator - NRC Region III
NRC Project Manager
NRC Resident Inspector
Executive Director - Ohio Emergency Management Agency,
State of Ohio (NRC Liaison)
Utility Radiological Safety Board

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Predictions of once-through-steam-generator (OTSG) performance were provided using a one-dimensional computer code that was developed to solve thermal-hydraulic equations in the tube bundle region.

The secondary side of the OTSG is divided into a set of nodes that extend from the upper face of the lower tubesheet to the secondary face of the upper tubesheet. The thermal hydraulic conditions are predicted for each of these nodes. The overall heat transfer coefficient is determined using the appropriate thermal-hydraulic conditions for both the primary and secondary sides of the tubes. The overall heat transfer coefficient accounts for the heat transfer coefficient on the primary and secondary side and the conductivity through the tube wall. The analysis uses appropriate heat transfer, pressure drop, and two-phase correlations to calculate output results at each node, including velocity, temperature, density, steam quality, and pressure drop.

For use in determining inventory, the density results for each grid node in the bundle region are multiplied by the secondary side flow area and the height of the control volume corresponding to the grid node. The total inventory within the bundle region is the sum of all control volume inventories.

The steam annulus inventory is calculated by multiplying the tube bundle outlet density and the steam annulus total volume. The downcomer inventory is determined based on the saturation densities and specified Operating Range water level.