



A Centenor Energy Company

Docket Number 50-346

License Number NPF-3

Serial Number 1671

June 2, 1989

DONALD C. SHELTON
Vice President—Nuclear
(419) 248-2300

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: Toledo Edison's (TE) Response to Paragraph 1.b of Nuclear Regulatory Commission (NRC) Bulletin Number 88-11 and Justification for Continued Operation (TAC Number 72128)

Gentlemen:

Toledo Edison's initial response (Serial Number 1633 dated March 3, 1989) to NRC Bulletin Number 88-11, "Pressurizer Surge Line Thermal Stratification," provided the results of a visual inspection as requested in Paragraph 1.a. of the Bulletin. In addition, the results of a program that had been developed and implemented to assess whether (based on an evaluation of the condition of the surge line) Davis-Besse could be safely returned to power were presented. Based upon these efforts, TE concluded that, in the short-term, the integrity of the surge line was not a concern.

Since the initial response, a number of preliminary analyses have been performed for the purpose of demonstrating that Davis-Besse's surge line meets the applicable design codes, and other Updated Safety Analyses Report (USAR) and regulatory commitments for the licensed life of the plant. The results of these analyses, which included fatigue and stress evaluations, are documented in Attachment Number 1 and 2 (Davis-Besse Pressurizer Surge Line Thermal Stratification, Phase I Program, dated May 3, 1989 and Babcock & Wilcox Owners Group Pressurizer Surge Line Submittal for Nuclear Regulatory Commission Bulletin Number 88-11, "Pressurizer Surge Line Thermal Stratification", dated May 1989, respectively).

While preliminary analyses indicate that the surge line may not meet the applicable design codes for the licensed life of the plant, the fatigue calculations demonstrate that the Davis-Besse surge line is capable of operating for 3.5 more years, even at a conservatively assumed rate of six heatups and cooldowns per year, without exceeding ASME Code Limits. It is noted that over the past 12 years Davis-Besse has averaged three heatups and cooldowns per year (see Attachment 2, page 5-6). Thermal stratification effects are calculated to result in a fatigue usage factor of 0.704 (of the possible 1.0) assuming a total of 40 heatup and cooldown cycles through the sixth refueling outage, which is presently planned for February 1990.

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Thermal striping is approximated to add 0.10 to the fatigue usage factor for the surge line over the design life of the plant. A more detailed evaluation is currently in progress to more accurately quantify the effect of thermal striping on fatigue usage. The results of this evaluation are scheduled to be submitted to the NRC by October 31, 1989.

Paragraph 1.b. of NRC Bulletin Number 88-11 requires that a justification for continued operation (JCO) be prepared and submitted if analyses show that the surge line will not meet the design code requirements or licensing commitments for the licensed life of the plant. To meet this requirement, TE has prepared a JCO covering the period through January 2, 1991 (i.e., two years from receipt of the bulletin). By the end of this two year period, Toledo Edison will have updated the surge lines stress and fatigue analyses to ensure compliance with applicable codes or will submit a future JCO and a description of proposed corrective actions to effect a long term resolution.

The scope of the present JCO includes not only the surge line and its terminal end nozzles, supports, and whip restraints, but also the surge line drain connection and its supports/restraints. A calculation (Calculation Number 99c, Revision C2, dated May 1, 1989) was performed to evaluate the effects of stratification induced movements on the integrity of the drain line and its supports/restraints. No concerns were identified as a result of this effort. Both the drain line and its supports/restraints continue to meet the original design basis limits.

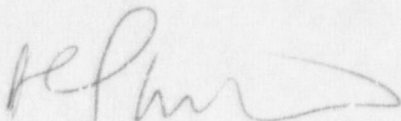
The methodology used to prepare the following JCO was to evaluate, and then document, whether the continued operation (through January 2, 1991) of the surge and drain lines and their associated components would involve any unreviewed safety questions as defined in 10CFR50.59(a)(2). Based upon the evaluation performed to date, Toledo Edison has concluded that there is adequate justification for continued operation of Davis-Besse through January 2, 1991 because:

- Use of the Surge Line through January 2, 1991 will not increase the probability of an accident previously evaluated in the USAR because analyses have shown that the pressure boundary and structural integrity of the Surge Line and its associated components will not exceed code limits as a result of stratification or striping during this period.
- Use of the Surge Line through January 2, 1991 will not increase the consequence of an accident previously evaluated in the USAR because no new failure modes are introduced, nor will previously postulated accidents be affected, during this period.
- Use of the Surge Line through January 2, 1991 will not increase the probability of a malfunction of equipment important to safety because fatigue usage of the nozzles at the equipment connections (Pressurizer, Hot Leg, and drain connection) will remain below a limit of 1.0 and no other equipment important to safety is affected.

- Use of the Surge Line through January 2, 1991 will not increase the consequences of a malfunction of equipment important to safety because no new equipment malfunctions are postulated, nor are previously postulated equipment malfunctions adversely affected, during this period.
- Use of the Surge Line through January 2, 1991 will not create a possibility of an accident, of a different type than any previously evaluated in the USAR, because no new failure modes have been introduced. Further, operation of the plant will be maintained within the limits analyzed in the USAR.
- Use of the Surge Line through January 2, 1991 will not create a possibility of a malfunction of equipment different than any previously evaluated in the USAR because no different or additional equipment will be added nor is the configuration of applicable existing equipment scheduled to be changed during this period.
- Use of the Surge Line through January 2, 1991 will not reduce the margin of safety as defined in the basis for any Technical Specification because the structural and pressure boundary integrity of the Surge Line, and its thermal end nozzles, supports/restraints, whip restraints, and drain line and supports have been shown not to exceed any code limits during this time period.

Please contact Mr. R. W. Schrauder, Nuclear Licensing Manager, at (419) 249-2366 if there are any questions.

Very truly yours,



CFM/dlm

Enclosures

cc: P. M. Byron, DB-1 NRC Senior Resident Inspector
A. B. Davis, Regional Administrator, NRC Region III
T. V. Wambach, DB-1 NRC Senior Project Manager

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RESPONSE TO PARAGRAPH 1.B OF NRC BULLETIN 88-11,

"PRESSURIZER SURGE LINE THERMAL STRATIFICATION"

AND JUSTIFICATION FOR CONTINUED OPERATION,

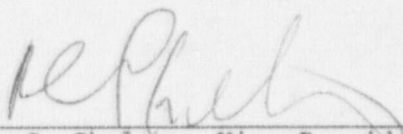
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DAVIS-BESSE NUCLEAR POWER STATION

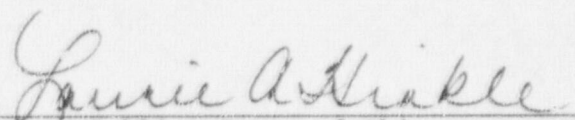
UNIT NO. 1

This letter is submitted in conformance with Atomic Energy Act of 1954 Section 182a, in response to NRC Bulletin 88-11 "Pressurizer Surge Line Thermal Stratification".

By:


D. C. Shelton, Vice President, Nuclear

Sworn and subscribed before me this 2nd day of June, 1989


Notary Public, State of Ohio

LAURIE A. HINKLE
Notary Public, State of Ohio
My Commission Expires May 15, 1991

ATTACHMENT 1

DAVIS-BESSE
PRESSURIZER SURGE LINE
THERMAL STRATIFICATION

PHASE I PROGRAM