January 23, 2004

Mr. Lew W. Myers
Chief Operating Officer
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, REQUEST FOR ADDITIONAL INFORMATION FOR LICENSE AMENDMENT REQUEST, ONE-TIME EXTENSION OF STEAM GENERATOR TUBE INSERVICE INSPECTION INTERVAL (TAC NO. MC1573)

Dear Mr. Myers:

By your application dated December 16, 2003, FirstEnergy Nuclear Operating Company requested a license amendment to Permit a One-Time Extension of the Steam Generator Tube In-service Inspection Interval. Based on the staff's review of your application, please provide additional information as discussed in the enclosure of this letter.

The enclosed request was discussed with Mr. D. Wuokko of your staff on January 16, 2004. A mutually agreeable target date of January 30, 2004, for your response was established. If circumstances result in the need to revise the target date, please contact me at (301) 415-3027 or Jim Shea at (301) 415-1388 at the earliest opportunity.

Sincerely,

/RA/

Jon B. Hopkins, Sr. Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosure: Request for Additional Information

cc w/enclosure: See next page

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REQUEST FOR ADDITIONAL INFORMATION

DAVIS-BESSE NUCLEAR POWER STATION

ONE-TIME EXTENSION OF STEAM GENERATOR TUBE INSERVICE INSPECTION

LICENSE AMENDMENT REQUEST NO. 03-0019

1. The under prediction of the number of indications of volumetric intergranular attack (IGA) observed during the 2002 outage (refueling outage 13) was attributed to the chemical cleaning performed in the prior outage (i.e., refueling outage 12). Similarly, the under prediction of the number of indications of tube wear observed during the 2002 outage was attributed to a new eddy current technique and to the chemical cleaning. Please discuss the basis for your conclusion that chemical cleaning and the new eddy current technique resulted in detecting a larger number of indications during refueling outage 13 than anticipated. Ensure that your response addresses the following: (1) a discussion of when the chemical cleaning was performed in relation to the steam generator tube inspections during refueling outage 12 (e.g., if the chemical cleaning was performed prior to or during the steam generator tube inspections, wouldn't the inspection transient have been observed during refueling outage 12), (2) an assessment of tube noise prior to and following the chemical cleaning (since detectability is a function of noise and other interfering signals), and (3) the nature of the new eddy current technique for detecting tube wear including an assessment of whether this new technique could be used to reanalyze the refueling outage 12 data (if it can be used, address whether the "new" indications were present during refueling outage 12).

2. Your conclusion regarding the acceptability of your proposal is contingent upon maintaining satisfactory water chemistry during the storage and layup conditions subsequent to your assessment (which was through December 1, 2003). As a result, you provided a commitment to assure that the steam generator layup and storage conditions subsequent to the time period assessed in your submittal were consistent with the conclusions of that assessment. Given the importance of water chemistry during the shutdown period, discuss the need to incorporate this commitment as a license condition. In addition, discuss the need to incorporate a time period for the performance of this assessment (since the restart date is not specified). In other words, discuss the need for a license condition to perform an assessment within x days following plant restart of the actual steam generator water chemistry for the time period from December 1, 2003, until plant restart to verify that the chemistry control during the extended shutdown did not create conditions that would have an adverse effect on, or cause any type of known corrosion to, the steam generators during the shutdown period (i.e., the extended shutdown did not create conditions that would affect the integrity of the steam generators or their ability to perform their intended safety function).

3. It was indicated that circumferential cracks at the tube ends in the upper tubesheet were accounted for in the Cycle 14 operational assessment. Please clarify how these indications were accounted for. For example, was it assumed that indications similar in size to that observed during refueling outage 13 are present in a fraction of the tubes that were not inspected with a rotating probe during refueling outage 13 (and that these indications were postulated to grow at a specific length/depth growth rate)? Provide the technical basis for the methodology used in assessing these circumferential cracks. For

example, if you assumed that the circumferential cracks that you detected in refueling outage 13 were developing for one or more cycles, discuss your technical basis for this assumption.

4. An axial indication was detected in the expanded region of the tube (2A-Row 63 Tube 78). This indication had a maximum reported depth of 99 percent through-wall. In your assessment of cracking in the roll transition, you indicated that you conservatively assumed that this indication (and one other) was “roll transition” cracking. You concluded that you could observe five axial indications at the end of the next cycle and that none are projected to have any effect on tube integrity or leakage contribution at the end of Cycle 14. Given that one of the indications was measured to be nearly through-wall in 2002 (in refueling outage 13), discuss why no leakage is postulated to occur at the end of Cycle 14. In your response, please address how you are assessing when the crack started to develop (i.e., have you assumed that the crack was developing for more than one cycle? If so, discuss your basis?)

5. In several places, you indicate that indications are not significant and are not expected to challenge tube integrity (e.g., operational assessment ensures acceptable structural integrity during the extended surveillance interval). Please clarify the meaning of these statements. For example, do they indicate that for each degradation mechanism expected to occur (groove IGA, wear, volumetric IGA, axial and circumferential flaws at tube ends and dents, axial flaws at expansion transition, etc) that structural integrity will be maintained consistent with the margins in the design and licensing basis of the facility (since acceptable structural integrity could imply that no margins are being maintained)? In other words, do these statements imply that structural integrity involves demonstrating the tubes are capable of withstanding the loadings specified in the American Society of Mechanical Engineers Code and Regulatory Guide 1.121, "Bases for Plugging Degraded Presssurized-Water Reactor Steam Generator Tubes?" Similarly for accident induced leakage integrity, you indicate that 1.0 gallon per minute is the appropriate limit. Is this limit consistent with your accident analyses which demonstrates that the dose consequences from this steam generator tube leakage are acceptable per General Design Criteria 19 of 10 CFR Part 50, Appendix A, and 10 CFR Part 100?