February 19, 1992

Docket Nos. 50-269, 50-270
and 50-287

Mr. J. W. Hampton
Vice President, Oconee Site
Duke Power Company
P. O. Box 1439
Seneca, South Carolina 29679

Dear Mr. Hampton:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION CONCERNING OCONEE NUCLEAR STATION - RELIEF REQUEST FROM ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI, SUBSECTION IWP (TACS M8886, M8887, AND M8888)

The NRC staff is reviewing your submittal dated June 19, 1991, for Oconee Nuclear Station, Units 1, 2, and 3. Your submittal addresses the use of digital vibration instrumentation for pump vibration measurements. We find that additional information, as indicated in the enclosure, is required to complete our review. Your response to the enclosed questions is requested within 30 days of the date of this letter. If you have any questions regarding this matter, please contact Frank Rinaldi at (301) 504-1444.

This requirement affects fewer than ten respondents and, therefore, it is not subject to Office of Management and Budget review under P.L. 96-511.

Sincerely,

/s/

Leonard A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

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Leonard A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
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Oconee Nuclear Station

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ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION
RELIEF REQUEST FROM ASME SECT. XI SUBSECT. IWP
OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3
DOCKET NOS. 50-269, 50-270, AND 50-287

1. In your submittal, you state that the loop accuracy of vibration instrument measurements will be ±6.56% of the reading for velocity and ±7.37% of the reading for displacement, and that this accuracy is the best that can be reasonably obtained from state-of-the-art instrumentation used to perform the enhanced testing. Further, you identify an acceptance criteria that will be based solely on displacement, with velocity vibration data having no effect.

   a) Discuss the difference in the instruments used for velocity and displacement measurements and the bases for differences in the accuracy for each instrument.

   b) Discuss whether the error introduced in the instrument readings could mask a degraded pump or cause a good pump to be declared inoperable by stretching or compressing the ASME Code Section XI allowable range. Provide the bases for the acceptability of the proposed instrument accuracies addressing the need for inservice testing to assess the operational readiness and detect degradation. Also, state and discuss whether instrumentation that meets Code accuracy is readily available for acquisition and field use.

   c) Discuss the basis for selecting displacement measurement acceptance criteria in lieu of the more accurate velocity data, particularly for pumps operating at 600 rpm or greater. Also, discuss if and how instrumentation inaccuracy beyond Code allowable limits are evaluated along with the acceptance criteria during the final data review.

2. The ASME Section XI Code requires that the frequency response range of the readout system shall be from one-half the minimum speed to at least maximum pump shaft rotational speed. You state that the measurements for vibration displacement and velocity will be measured over a range, from one-half the minimum pump shaft rotational speed to at least four times shaft rotational speed, and that the vibration instrumentation will be calibrated over a range of 10 to 1000 Hz (600 to 60,000 RPM). The intent of monitoring the Code required frequency response range is to include low speed pumps (<600 RPM) and to detect any subharmonic conditions.

   Discuss the basis or rational for not calibrating the instrumentation in order to include the lower frequency response range (< 600 RPM). Also, discuss the assumed instrument accuracy and repeatability and the bases for these assumptions for measurements made in the lower frequency response range. Further, discuss the licensee's experience and confidence in the validity of these measurements.