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Vogtle Project

May 21, 1985

Director of Nuclear Reactor Regulation
Attention: Ms. E. G. Adensam
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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NRC DOCKET NUMBERS 50-424 AND 50-425
CONSTRUCTION PERMIT NUMBERS CPPR-108 AND CPPR-109
VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
RESOLUTION OF VOGTLE SETTLEMENT OPEN ITEMS

Dear Mr. Denton:

During a conference call on May 16, 1985, with members of the NRC staff we agreed to supply additional information on our plans for settlement assessment and long-term settlement monitoring of safety-related structures and piping.

Enclosed is the additional information requested. If your staff requires further information, please do not hesitate to contact me.

Sincerely,

J. A. Bailey
Project Licensing Manager

JAB/caa
Enclosure

xc: D. O. Foster
R. A. Thomas
J. E. Joiner, Esquire
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ATTACHMENT

1. Assessment of Differential Settlement Effects of Structures

An update of total and differential settlements will be provided in a report to NRC staff three months prior to fuel load of Unit 1. The report will include an assessment of the effects of differential settlement on structural stresses if the net slope of the deflection curve (δ/L) relative to structural tilt is equal to or greater than 1/670 as calculated from the measured structural settlements. The review to determine the need for such an assessment will be performed for the control building, the auxiliary building and the fuel handling building. These large power block structures contain the number of markers required and the accessibility for a similar review of these structures). The maximum δ/L ratio presented in the responses to Question 241.18 is limited differential settlement which has occurred within safety related structures to date. The containment and NSCW cooling towers are only accessible at their periphery and therefore not suitable to the development of contours and the application of the 1/670 type criteria. The report will, however, include the total and differential settlement for these and all other safety related structures to insure that reasonable settlements are occurring within predicted limits. The level of survey accuracy will also be defined.

It should be noted that the containment and NSCW cooling tower structures are very rigid and will settle as rigid bodies without significant deformation of the mats or superstructures.

2. Review of Total and Differential Settlement

In the report to be submitted in Item 1, actual total structure settlements will be compared with the predicted totals in FSAR figure 2.5.4.8. If total predicted settlements are exceeded the settlement analysis will be reevaluated. Actual differential settlements between structures will be compared with those used in design. This will consist primarily of updating the data presented in Table 241.18-1, Differential Settlement for Representative Piping. If future evaluations of the actual differential settlement indicate that 75 percent of the amount used in design has been reached the situation will be reviewed. If it appears that the design differential settlement may be exceeded, the piping will be reanalyzed for an increased differential settlement and/or the supports will be adjusted or modified to satisfy the design requirements.

3. Maintenance of Settlement Markers

Throughout the life of the plant important settlement markers which are destroyed or become inaccessible will be replaced with markers as near as possible to their original locations. Important settlement markers will not be deleted from the program nor will their reading frequency be modified except as provided for in item 4. Important settlement markers are defined as those markers located in safety related structures whose total settlements have exceeded one inch and/or which are needed to continue the determination of differential settlements across a structure or to establish differential settlements at piping penetrations.

As plant construction is finalized some markers may become inaccessible. Wherever possible, these markers will be transferred to new locations and continuous readings provided so that the total settlement of the original marker can be obtained.

4. Settlement Monitoring Frequency and Summaries

Settlement monitoring for both units will be continued for important markers (see item 3) through the first year following issuance of operating license for Unit 2 at a frequency interval not to exceed 90 days. At the end of this period, the licensee will provide a brief technical report with supporting settlement data and graphical plots, and an evaluation of the settlement effects which justifies any proposed reduction in the frequency and number of markers monitored. Future plans for continuing the settlement monitoring program will be identified by the licensee at the time of the submittal.

5. Settlement monitoring will be performed immediately after any earthquake event equal to or exceeding a free-field acceleration of $1/2$ OBE (.06g). A settlement survey will also be performed if the groundwater level in the power block area drops more than 10 feet below the reference groundwater level in more than one observation well monitoring the backfill. The reference level will be verified through monitoring the observation wells in the power block backfill for a two year period (June 1987).