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JUL 25 1983

Docket Nos. 50-338
and 50-339

Mr. W. L. Stewart
Vice President - Nuclear Operations
Virginia Electric and Power Company
Post Office Box 26666
Richmond, Virginia 23261

Dear Mr. Stewart:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION-SPENT FUEL POOL STORAGE
CAPACITY EXPANSION; NORTH ANNA, UNITS NO. 1 AND NO. 2 (NA-1&2)

The NRC staff has completed its review of the structural aspects of
your submittal dated August 20, 1982 as noted in the subject above.

We find that additional information is needed before we can complete
our review. The additional information requested is provided in the
enclosure to this letter. This requested information was provided to
you by telecopy on July 18, 1983 in order to allow you as much time
as possible in preparing your response.

We request that the additional information specified in the enclosure
to this letter be provided for our review by August 31, 1983. Should
you determine that this date cannot be met, please advise us when your
submittal can so be provided in order that we can maintain control on
the scheduling of these matters.

The information requested in this letter affects fewer than 10 respondents;
therefore OMB clearance is not required under P. L. 96-511.

Sincerely,
Original signed by
Robert A. Clark

Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Enclosure: Request for
Additional Information

cc: See next page
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OFFICE	ORB#3-DL	ORB#3-DL	ORB#3-DL			
SURNAME	PMKreutzer	LEngle/pn	RAClark			
DATE	7/25/83	7/25/83	7/25/83			

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101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

ENCLOSURE

Request for Additional Information Regarding
North Anna 1 and 2 Spent Fuel Pool
Storage Capacity Expansion
Structural Topics

1. Provide structural drawings for the following:
 - a. Poisoned racks
 - b. Pool structure - concrete and reinforcing
 - c. Pool liner

2. For the design of the new racks provide a detailed, step-by-step description and key calculations including, but not limited to, the following:
 - a. Numerical values of design criteria for all rack materials, unit weights and component weights.
 - b. Numerical description and key calculations of the seismic analyses including sketches of all mathematical models and seismic inputs, methods of combining seismic load components and methods of combining seismic loads with other loads.
 - c. Damping values for all materials and components (Note: No credit should be taken for fluid damping).
 - d. Results of computations showing how seismic impact loads were accounted for in the design of the racks.
 - e. A tabulation of actual and allowable stresses for pertinent points in the racks and rack welds as the result of worst-case load combinations.
 - f. Details and numerical results of the "drop analysis".

- g. A discussion of the design of the rack cells and other pertinent components for local and overall buckling including load data, acceptance criteria and a tabulation of actual and allowable stresses.
 - h. A tabulation of sliding and tipping deflections for the racks and factors of safety against overturning.
3. Provide a listing of all computer codes used for the design/analysis of the racks and analysis of the pool and liner. Provide a discussion of the verification for each code. (The staff's criteria for acceptable verification of codes can be found on page 3.8.1-10 of NUREG-0800, Standard Review Plan).
 4. Provide a detailed description of the analysis of the spent fuel pool structure for the new rack loads; in particular describe the seismic loading and analysis. Describe the methods of analysis of the liner and liner anchors. Describe how impact of the racks on the pool floor was considered. Provide key calculations and numerical results of key calculations comparing actual and allowable values of stresses or loads for all pertinent cases.
 5. Since the sliding/tipping analysis of the racks is based on a two dimensional model how was the effect of three dimensional earthquake motion factored into the rack analysis.

6. Describe the methods used to account for fluid inertia effects in the following analyses:
 - a. Fuel bundle/rack impact analysis
 - b. Rack sliding/tipping analysis
 - c. Seismic design of the rack structure
 - d. Seismic analysis of the pool structure

7. Provide a detailed description of the thermal analysis of the racks, pool and liner including numerical values of assumed normal and accident temperatures, methods of performing the analysis, methods of combining thermal with other loads and pertinent assumptions. Is buckling of the liner postulated; if so, provide details. Include key calculations and results.

8. If cask handling in or adjacent to the pool is contemplated, describe the potential structural consequences of a cask drop accident on the pool structure including the pool floor, walls and liner. Provide results of computations showing comparisons of calculated and allowable values for pool structural components including the liner.