Westinghouse Electric Corporation Energy Systems

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DCP/NRC0655
Docket No.: STN-52-003

November 6, 1996

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

ATTENTION: T. R. QUAY

SUBJECT: AP600 SEISMIC MARGIN HCLPF METHODOLOGY

Dear Mr. Quay:

The NRC performed an audit of the Westinghouse AP600 seismic margin high-confidence/low-probability of failure (HCLPF) calculations on February 8 and 9, 1995, and issued meeting minutes in a letter dated March 6, 1995. Westinghouse responded to the open items presented in the NRC meeting minutes and provided a written methodology of how to revise the seismic margin HCLPF valves to address the NRC open issues. This information was transmitted to the NRC in Westinghouse letter NTD-NRC-96-4625, dated January 17, 1996.

The calculated AP600 seismic margins HCLPF values were originally estimated using the median shape review level earthquake from NUREG/CR-0098, similar to the HCLPF analysis of another evolutionary plant analysis since approved by the NRC. During the February 1995 audit, it was strongly suggested to Westinghouse by the NRC staff to use the one-sigma (84-percentile) spectra rather than the median shape for NUREG/CR-0098, similar to that approved for one of the evolutionary plants. Thus, in the methodology Westinghouse issued in January 1996, the 84th-percentile was proposed to be used when the HCLPF values for AP600 were updated.

Several telecons between Westinghouse and NRC occurred since the January 1996 Westinghouse submittal, and the NRC issued RAIs about the proposed methodology. In the most recent telecon (June 28, 1996), the NRC staff strongly suggested Westinghouse use the AP600 response spectrum curve rather than the previously suggested NUREG/CR-0098 84th-percentile curve.

The purpose of this letter is to summarize what Westinghouse has chosen to do concerning updating the AP600 HCLPF values for the seismic margins assessment. Specifically:

> Westinghouse is revising the calculated AP600 HCLPF values for the seismic margins assessment. Following the NRC staff position put forth during the June 28, 1996 telecon, Westinghouse will determine HCLPF values based on the latest AP600 seismic response spectra.

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HCLPF values will be calculated using the log-normal fragility formulation procedure for the following buildings/structures:

- shield building roof
- containment vessel
- interior containment structure which includes modular construction
- containment baffle support
- primary component supports for the reactor pressure vessel, pressurizer, and steam generators.

Westinghouse will define HCLPF values for equipment based on its design margin as defined by qualification analyses, design requirements, and test programs. HCLPF values will be defined from applicable generic information for those items that sufficient design information is not available.

It is noted that no HCLPF value will be determined for the shield building walls, or for the Auxiliary Building walls or floors since these structures are not the controlling HCLPF values for the associated buildings. This is consistent with an NRC staff statement put forth during the June 28, 1996 telecon.

Finally, in response to an NRC question posed during the June 28, 1996 telecon, the turbine building collapse and its effect on the nuclear island will be addressed in the seismic margin assessment.

The HCLPF values are scheduled to be updated and available for NRC to review by January 1997. Cindy Haag will contact Ms. Diane Jackson, NRC, to set the agenda and schedule the meeting.

Please contact Cynthia L. Haag on (412) 374-4277 if you have any questions or disagreements concerning this approach.

Brian A. McIntyre, Manager
Advanced Plant Safety and Licensing

/nja

Enclosure

cc: D. Jackson, NRC
T. Martin, NRC
N. J. Liparulo, Westinghouse (w/o enclosure)