

April 26, 1996

Mr. Nicholas J. Liparulo, Manager
Nuclear Safety and Regulatory Activities
Nuclear and Advanced Technology Division
Westinghouse Electric Corporation
P.O. Box 355
Pittsburgh, Pennsylvania 15230

SUBJECT: STATUS OF DRAFT SAFETY EVALUATION REPORT (DSER) OPEN ITEMS IN
STANDARD SAFETY ANALYSIS REPORT (SSAR) CHAPTER 2 FOR THE CIVIL
ENGINEERING AND GEOSCIENCES BRANCH REVIEW OF THE AP600 REACTOR
DESIGN

Dear Mr. Liparulo:

The Nuclear Regulatory Commission (NRC) Civil Engineering and Geosciences Branch (ECGB), completed its review of Chapter 2 of the AP600 SSAR through Revision 5. As an aid to reinitiate this review, ECGB prepared a summary of the status of some of the draft safety evaluation report (DSER) open and confirmatory items in the scope of review for Chapter 2, "Site Envelope Characteristics."

The status of these items may not agree with the Westinghouse AP600 Open Item Tracking System (OITS) database. Please update the OITS database to reflect these changes.

This summary is intended to assist in communications between the NRC and Westinghouse, to inform Westinghouse of various staff positions, and can serve as an agenda for conference calls and/or meetings with the staff. Please contact me at (301) 415-8548 if you have any questions or when you are ready to discuss any of these issues.

Sincerely,
Original signed by

Diane T. Jackson, Project Manager
Standardization Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

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PDR ADOCK 05200003
A PDR

Docket No. 52-003

Enclosure: As stated

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Mr. Nicholas J. Liparulo
Westinghouse Electric Corporation

Docket No. 52-003
AP600

cc: Mr. B. A. McIntyre
Advanced Plant Safety & Licensing
Westinghouse Electric Corporation
Energy Systems Business Unit
P.O. Box 355
Pittsburgh, PA 15230

Mr. Ronald Simard, Director
Advanced Reactor Programs
Nuclear Energy Institute
1776 Eye Street, N.W.
Suite 300
Washington, DC 20006-3706

Mr. John C. Butler
Advanced Plant Safety & Licensing
Westinghouse Electric Corporation
Energy Systems Business Unit
Box 355
Pittsburgh, PA 15230

Ms. Lynn Connor
Doc-Search Associates
Post Office Box 34
Cabin John, MD 20818

Mr. M. D. Beaumont
Nuclear and Advanced Technology Division
Westinghouse Electric Corporation
One Montrose Metro
11921 Rockville Pike
Suite 350
Rockville, MD 20852

Mr. James E. Quinn, Projects Manager
LMR and SBWR Programs
GE Nuclear Energy
175 Curtner Avenue, M/C 165
San Jose, CA 95125

Mr. Sterling Franks
U.S. Department of Energy
NE-50
19901 Germantown Road
Germantown, MD 20874

Mr. John E. Leatherman, Manager
SBWR Design Certification
GE Nuclear Energy, M/C 781
San Jose, CA 95125

Mr. S. M. Modro
Nuclear Systems Analysis Technologies
Lockheed Idaho Technologies Company
Post Office Box 1625
Idaho Falls, ID 83415

Barton Z. Cowan, Esq.
Eckert Seamans Cherin & Mellott
600 Grant Street 42nd Floor
Pittsburgh, PA 15219

Mr. Frank A. Ross
U.S. Department of Energy, NE-42
Office of LWR Safety and Technology
19901 Germantown Road
Germantown, MD 20874

Mr. Ed Rodwell, Manager
PWR Design Certification
Electric Power Research Institute
3412 Hillview Avenue
Palo Alto, CA 94303

Mr. Charles Thompson, Nuclear Engineer
AP600 Certification
NE-50
19901 Germantown Road
Germantown, MD 20874



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in cursive script that reads "Diane T. Jackson".

Diane T. Jackson, Project Manager
Standardization Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Docket No. 52-003

Enclosure: As stated

cc w/enclosure:
See next page

Status of ECGB Remaining Open Items for the AP600 in
Chapter 2: Site Envelope Characteristics
(Up to SSAR Revision 5)

<u>ITEM NO. & STATUS</u>	<u>DESCRIPTION</u>
2.4.2-1 Action W	<p>Westinghouse states in Section 2.4 of the SSAR that the plant is designed for a flood level up to grade. This is in conflict with Table 1.2-6 in Chapter 1 of Volume II of the Utility Requirements Document (URD), which states that the maximum flood (or tsunami) level site envelope parameter is 0.3 m (1 ft) below grade. The NRC staff agrees with this URD parameter, as documented in NUREG-1242. Instead of justifying its selection of plant grade elevation as the maximum flood level, Westinghouse simply states that the actual plant grade will be a few inches below grade level to prevent surface water from entering doorways.</p> <p>Westinghouse should explain why the maximum flood level can not be at least 0.3 m (1 ft) below grade (in other words, why the plant grade should not be at least 0.3 m above the maximum flood level).</p>
2.5.4-1 Action W	<p>This open item requires the COL applicant to provide site-specific geotechnical information to demonstrate the comparability to the design analyses assumptions given in Table 2.0-1 of the SSAR (and meet the guidelines set forth in Section 2.5.4 of Regulatory Guide 1.70). Westinghouse simply states in SSAR Revision 5 Section 2.5.4.5.1 that COL applicant will "address" site-specific information regarding the underlying site conditions and geological features. Westinghouse should provide more specific direction to COL applicant as requested by the staff above.</p>
2.5.4.3-2 Action W	<p>Westinghouse has given estimates of total settlements in SSAR Revision 5 Table 2.3, but has not discussed the effects of construction sequence on differential settlement.</p>
2.5.4.6-2 Action W	<p>Westinghouse has partly responded to this open item, but has not indicated the criteria that the COL applicant will be required to use to determine if the site needs remediation such as removal of liquefiable soil lenses and/or in situ soil improvement to preclude the soil liquefaction potential.</p>

Enclosure

2.5.4.8-1 Action W Westinghouse does not state in the SSAR (as requested by the staff) that the COL applicant should provide a site-specific evaluation of static and dynamic earth pressures acting on the structures and confirm that they fall within the certified design parameters. It states that AP600 is designed for static and dynamic earth pressures, and that no additional information is required on earth pressures. This is not acceptable to the staff.

2.5.4.11-1 Action W Westinghouse included the instrumentation requirements for monitoring the performance of the nuclear island foundation, but has not addressed the instrumentation that may be needed at some sites for monitoring the performance of other safety-related water-control structures such as dams, embankments and canals. Westinghouse should include the requirements related to water-control structures also in the SSAR.

Status of ECGB Ch.2 Confirmatory Items not resolved as of SSAR Revision 5

2.5.4.1-1 Action W Westinghouse has not documented in the SSAR the results of free field (FF) analyses showing that the FF response at any depth becomes only a function of the soil column above that depth, and that the strain-compatible modulus and damping values obtained from a 240 ft soil column deconvolution analysis are also applicable to soil columns of 120 ft and 40 ft.

2.5.4.4-1 Action W A previous open item 2.5.4.4-1 related to the effect of dry soil densities on structural responses has been made a confirmatory item. Westinghouse has discussed this at a meeting with the staff, but not yet included it in the SSAR.

2.5.4.5-1 Action W This open item deals with the question of soil degradation models for clays, silts, gravels and soils of various combinations. SSAR Revision 5 discusses the models for clays and silts, but not those for gravels and soils of various combinations.