



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 3, 1997

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

SUBJECT: WATER HAMMER TEST FOR THE AP600 CONDENSATE AND FEEDWATER SYSTEMS

Dear Mr. Liparulo:

By letter dated February 7, 1997, in response to Q410.263, Westinghouse declined to perform tests for verifying feedwater hammer occurrence in the AP600 design. Westinghouse states that these tests have been performed on many Westinghouse feeding-type steam generators in the United States, and that these tests verify the effectiveness of the Westinghouse feeding design, which is like that described in the AP600 standard safety analysis report (SSAR), for preventing water hammer.

Branch Technical Position (BTP) (ASB) 10-2 of the Standard Review Plan provides design guidance for meeting the requirements of General Design Criteria 4 on the dynamic effects associated with possible water hammers in feedwater piping. Specifically, BTP (ASB) 10-2 states that testing should be performed to verify that unacceptable feedwater hammer will not occur, and that procedures for the tests be approved by the Nuclear Regulatory Commission. The only basis Westinghouse provided for not performing the tests is that the same tests have been performed in other Westinghouse plants. Westinghouse's proposal for the AP600 may be acceptable if Westinghouse performed an engineering analysis based on test data from an identical Westinghouse plant that was acceptably tested for a feedwater hammer occurrence. However, without acceptable test data to verify water hammer occurrence in the feedwater system, the tests must be performed on the AP600.

0603  
1/0  
NRC FILE CENTER COPY

9706060373 970603  
PDR ADOCK 05200003  
A PDR

Mr. Nicholas J. Liparulo

- 2 -

June 3, 1997

The staff concludes that Westinghouse's proposal to not perform the water hammer tests has not been satisfactorily justified, and is, therefore, unacceptable. We request that Westinghouse commit to performing the tests for verifying feedwater hammer occurrence for the AP600 design. If you have any questions regarding this matter, you can contact T.J. Kenyon at (301) 415-1120.

Sincerely,

original signed by:

Marylee M. Slosson, Acting Director  
Division of Reactor Program Management  
Office of Nuclear Reactor Regulation

Docket No. 52-003

cc: See next page

DISTRIBUTION:

Docket File  
PUBLIC  
TQuay  
JSebrosky  
ACRS (11)  
JGuo, 0-8 D1  
LMarsh, 0-8 D1

PDST R/F  
SWeiss  
TKenyon  
DJackson  
JMoore, 0-15 B18  
HWalker, 0-8 D1

MSlosson  
TQuay  
BHuffman  
GHolahan, 0-8 E2  
WDean, 0-5 E23  
CLi, 0-8 D1

DOCUMENT NAME: A;WATER HM.MER

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	PM:PDST:DRPM	D:PDST:DRPM	D:DSSA	(A)D:DRPM
NAME	TJKenyon:sg	TRQuay	GHolahan	MMSlosson
DATE	05/24/97	05/22/97	05/30/97	05/31/97

OFFICIAL RECORD COPY

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. Cindy L. Haag  
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 20618

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

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. Robert H. Buchholz  
GE Nuclear Energy  
175 Curtner Avenue, MC-781  
San Jose, CA 95125

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

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

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

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