THE BABCOCK & WILCOX COMPANY
POWER GENERATION GROUP

⑬

R. W. MOORE
P. S. BARTELLS
J. R. BURRIS
J. M. KNOLL
P. A. TREVENTI
J. R. GLOUDEMAS
C. E. PARKS
L M DUNN
D W LEELE BDS 66

To	J. D. CARLTON
From	R. M. GRIBBLE (EXT. 2584)
Cust.	TMI-2
Subj.	CORE BYPASS FLOW FOR CORE BLOCKED AT TOP ONLY

File No. or Ref.

Date APRIL 3, 1979

This letter is cover one customer and one subject only.

REFERENCE: MEMO, R. M. GRIBBLE TO J. D. CARLTON, "CORE BYPASS FLOW THROUGH CORE BASKET (UNIFORM BLOCKAGE)," 4/3/79.

THE REFERENCED MEMO REPORTS CORE BYPASS FLOW FOR A UNIFORMLY BLOCKED CORE. FOR THIS CONDITION, 22% OF THE VESSEL FLOW BYPASSES THE CORE THROUGH THE CORE BASKET. ANOTHER CASE HAS BEEN CONSIDERED AND IS REPORTED HEREIN.

CORE BLOCKAGE AT ONLY THE TOP OF THE CORE HAS BEEN ANALYZED TO DETERMINE CORE BYPASS FLOW FOR THIS MORE LIMITING SITUATION. RESULTS OF THIS ANALYSIS INDICATED THAT CORE BYPASS FLOW FOR THE CORE BLOCKED ABOVE THE UPPERMOST INTERMEDIATE SPACER GRID WILL BE APPROXIMATELY 27% LEAVING 73% AVAILABLE FOR CORE HEAT REMOVAL.

MAJOR ANALYSIS ASSUMPTIONS FOLLOW:

1. MAXIMUM RESISTANCE OF THE CORE AND CORE BASKET

   $= 83 \times 10^{-8}$ PSI/(LB/SEC)^2, 17.7 PSI AT 4600 LB/SEC

2. NOMINAL CORE BASKET RESISTANCES

   • LOCA HOLES (CROSSFLOW) $R = 7.64 \times 10^{-6}$ PSI/(LB/SEC)^2

   • UPPER BASKET $R = 5.43 \times 10^{-6}$ PSI/(LB/SEC)^2

3. CORE GEOMETRY IS NOMINAL BELOW BLOCKAGE

J19143

7907260566

4. CORE BASKET GEOMETRY IS UNDISTORTED.

5. RELATIVE RESISTANCES OF THE CORE AND CORE BASKET REMAIN UNCHANGED
   DURING NATURAL CIRCULATION CONDITIONS COMPARED TO THEIR VALUES
   DURING 1/0 PUMP OPERATION.

549144