TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

83 SEP 23 A9:27
83 SEP 27 A9:23

September 30, 1983

WBRD-50-390/82-111
WBRD-50-391/82-104

U.S. Nuclear Regulatory Commission
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - POSTULATED ACCIDENT BLOWDOWN OF MORE THAN ONE STEAM GENERATOR - WBRD-50-390/82-111, WBRD-50-391/82-104 - FINAL REPORT FOR UNIT 1 AND THIRD INTERIM REPORT FOR UNIT 2

The subject deficiency was initially reported to NRC-OIE Inspector D. Quick on October 15, 1982 in accordance with 10 CFR 50.55(e) as NCR GEN NEB 8211. Interim reports were submitted on November 22, 1982 and June 23, 1983. Enclosed is our final report for unit 1 and third interim report for unit 2. We expect to submit our next report for unit 2 on or about January 16, 1984.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Licensing

Enclosure
cc: Mr. Richard C. DeYoung, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Records Center (Enclosure)
Institute of Nuclear Power Operations
1100 Circle 75 Parkway, Suite 1500
Atlanta, Georgia 30339

OFFICIAL COPY

IE 27

1/1

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
POSTULATED ACCIDENT BLOWDOWN OF MORE THAN ONE STEAM GENERATOR
NCR GEN NEB 8211
WBRD-50-390/82-111, WBRD-50-391/82-104
10 CFR 50.55(e)
FINAL REPORT FOR UNIT 1 AND THIRD INTERIM REPORT FOR UNIT 2

Description of Condition

TVA's design intent is such that nonsafety grade equipment will not fail in such a manner as to adversely affect the safe operations of the plant. It has been determined that the nonsafety grade automatic control loop for the steam generator PORVs (atmospheric relief valves) could fail in such a manner as to cause the PORVs to stick open. During a postulated main steam or main feedwater line break, a stuck open PORV could cause uncontrolled blowdown of more than one steam generator (the WBN FSAR assumes accident blowdown of only one steam generator). It should be noted that TVA has provided safety grade position indication and manual override in the main control room for the PORVs. However, TVA's analysis assumes no operator action for 10 minutes.

Safety Implications

If the uncontrolled blowdown of two steam generators was due to a feedwater line break on SG-1 and a failed open PORV on SG-4, the turbine driven pump may not be available after 10 minutes. The analysis assumes that motor-driven pump A is available and motor-driven pump B failed to start due to single failure. The availability of pump A is assured by isolating the pump from the faulted steam generator in accordance with the emergency operating instructions. If the turbine driven pump and motor driven pump B are not available, the heat removal capability of the Auxiliary Feedwater Systems could be degraded below its design basis. Consequently, the ability of the affected system to safely shutdown the reactor may be degraded.

Corrective Action on Unit 1

TVA will disposition the nonconformance by rearranging the power supplies to the steam generator PORV remote manual control circuits. The rearranging of the power supplies will ensure that the design basis for the auxiliary feedwater system including the effects due to single failure will not be violated by any design basis event.

Engineering change notices (ECNs) 3924 and 3925 (units 1 and 2, respectively) have been issued to implement the design changes. Design work on NCR GEN NEB 8211 under ECN 3924 should be complete by November 15, 1983. CONST rework associated with the design revisions should be complete by February 1, 1984, for unit 1.

Interim Progress on Unit 2

TVA will provide the next report on unit 2 upon completion of the design work associated with this NCR under ECN 3925.