



Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

JUN 11 1998

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

Gentlemen:

In the Matter of ) Docket No. 50-390  
Tennessee Valley Authority )

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - TRITIUM PRODUCING BURNABLE  
POISON ROD (TPBAR) LEAD TEST ASSEMBLIES (LTA) (TA NO. M98615)

The purpose of this letter is to provide changes to previously  
supplied information regarding the LTA project. Changes to  
calculation PNNL-TTQP-1-655 have resulted in changes to Table 2.2  
of LTA Technical Report PNNL-11419. Technical Report PNNL-11419  
was previously provided by TVA to NRC as part of the LTA license  
amendment approved by NRC on September 15, 1997. The enclosure  
provides the revised information. It is TVA's understanding that  
none of these changes alter conclusions of the Technical Report or  
the LTA amendment approved by NRC on September 15, 1997.

If you should have any questions, please contact me at (423) 365-  
1824.

Sincerely,

P. L. Pace  
Licensing and Industry Affairs Manager

Enclosure  
cc: See page 2

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cc (Enclosure):

NRC Resident Inspector  
Watts Bar Nuclear Plant  
1260 Nuclear Plant Road  
Spring City, Tennessee 37381

Mr. Robert E. Martin, Senior Project Manager  
U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike  
Rockville, Maryland 20852

U.S. Nuclear Regulatory Commission  
Region II  
Atlanta Federal Center  
61 Forsyth St., SW, Suite 23T85  
Atlanta, Georgia 30303

ENCLOSURE

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## Pacific Northwest National Laboratory

Operated by Battelle for the U.S. Department of Energy

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April 3, 1998

Mr. James S. Chardos  
Project Manager  
Tennessee Valley Authority  
P.O. Box 2000  
Hollywood, AL 35752

Dear Mr. Chardos:

### SMALL BREAK LOCA CALCULATION (PNNL-TTQP-1-655, Rev.1)

The subject calculation, "Evaluation of Modified SBLOCA Conditions on Cladding Mechanical Design Analysis" (U), is being sent to the classified reading room at Oak Ridge National Laboratory for your review and use. This calculation was prepared to take into account new information related to the effects of a small break loss of coolant accident (SBLOCA) on the TPBAR Lead Test Assemblies (LTAs) in Watts Bar.

The original calculation was performed with the following assumptions: (1) the rod design temperature was calculated assuming saturated temperature conditions in the rod channel; and (2) the rod internal pressure was calculated at saturated temperature and external pressure at atmospheric pressure conditions. Under these conditions, the clad temperature did not exceed 650°F. Subsequent information received from Westinghouse indicated that the appropriate conditions for Cycle 2 are: (1) rod temperature of 1126°F calculated at the bounding SBLOCA temperature conditions and (2) rod internal pressure calculated using the bounding temperature and external pressure at 450 psia. This results in a change to the information provided in Table 2.2 of the LTA Technical Report (PNNL-11419, Rev.1), but does not alter the conclusions of the Technical Report or the NRC Safety Evaluation Report for the LTA (NUREG-1607). Provided below for your information are copies of the original and revised Table 2.2.

Original Table 2.2. TPBAR Design Bounding Parameters for  
Conditions III and IV

Operating Condition	Cladding Design Temp., F	External Pressure, psia	Internal Design Pressure, psia
SBLOCA	650	14.7	2957
LBLOCA	1500	14.7	5228

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Mr. James S. Chardos  
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Revised Table 2.2. TPBAR Design Bounding Parameters for Conditions III and IV

Operating Condition	Cladding Design Temp., F	External Pressure, psia	Internal Design Pressure, psia
SBLOCA	1126	450	3472
LBLOCA	1500	14.7	5228

Failure of the TPBAR cladding is assumed to occur at a temperature of 1500°F. At the SBLOCA temperatures calculated under the revised conditions, clad failure will not occur. Thus, the conclusions from the original calculation remain valid.

The NRC Safety Evaluation Report (NUREG-1607) makes the following statements regarding SBLOCA effects:

Section 2.2.1 (pages 2-4)

On the basis of cladding stress calculations, DOE states that cladding breach is not expected during a small-break loss-of-coolant accident (SBLOCA).

Section 6.4.3 (pages 6-7)

DOE states that the TPBAR stresses do not exceed the stresses from temperature and pressure that occur during the small-break loss-of-coolant accident (SBLOCA) at Watts Bar. Therefore, the TPBAR is not assumed to fail during the SBLOCA at Watts Bar.

As noted above, these conclusions are still valid for the revised SBLOCA information.

Should you have any questions, please contact me.

Sincerely,



Walter W. Laity, Manager  
Tritium Target Qualification Project

cc: S Stack, DOE-62  
N Rollo, ORNL, with attachment  
DP-60 RMS/SS (CLWR/01-01)