

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401  
400 Chestnut Street Tower II

June 16, 1983

WBRD-50-390/82-77  
WBRD-50-391/82-73

USNRC REGION II  
ATLANTA, GEORGIA  
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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 - FREQUENCY CRITERIA FOR PIPING  
SUPPORTS - WBRD-50-390/82-77, WBRD-50-391/82-73 - FIFTH INTERIM REPORT

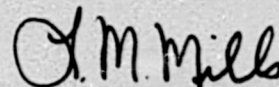
The subject deficiency was initially reported to NRC-OIE Inspector  
R. V. Crlenjak on July 13, 1982 in accordance with 10 CFR 50.55(e)  
as NCR WBN SWP 8234. Interim reports were submitted on August 12,  
October 5, and December 23, 1982 and January 3 and March 23, 1983.  
Enclosed is our fifth interim report.

Further reporting on the subject NCR will be in combination with similar  
NCR WBN SWP 8319 (WBRD-50-390/83-14, WBRD-50-391/83-13). We expect to  
submit our next report addressing the above identified NCRs on or about  
September 21, 1983.

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

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## ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2  
FREQUENCY CRITERIA FOR PIPING SUPPORTS  
NCR WBN SWP 8234  
WBRD-50-390/82-77, WBRD-50-391/82-73  
FIFTH INTERIM REPORT

### Description of Deficiency

During an investigation into a dissimilarity of information (concerning frequency criteria for piping supports) regarding frequency criteria for supports between section 3.9.3.4.2(1d) of the Watts Bar Nuclear Plant (WBN) Final Safety Analysis Report (FSAR) and section 8.2.3, figure 8.2-1 of design criteria WB-DC-40-31.9 (i.e., as amended by DIM-WB-DC-40-31.9-3), the following discrepancies were identified:

1. Uncertainty as to which support types must meet a frequency criteria.
2. Use of a frequency of 20 Hertz in some situations, as specified in the design criteria, rather than 33 Hertz in the FSAR to represent the natural frequency of a fixed support.
3. The use of the total span of the pipe on each side of a support or one-half of that mass in determining the support's natural frequency.

These discrepancies resulted from the support design engineers misinterpreting the Watts Bar Design Criteria WB-DC-40-31.9, subsections 8.2.2 and 8.2.3.

### Interim Progress

Cantilevers and other supports designed to carry loads primarily in bending on lines larger than two inches as well as those which are the first two supports adjacent to a pump, compressor, or turbine nozzle, will be designed to have a first natural frequency equal to or greater than 20 Hz using mass modeling similar to that present in Figure 8.2-1 of the design criteria WB-DC-40-31.9. Please note that this design requirement is being addressed in NCR WBN SWP 8319 (WBRD-50-390/83-14, WBRD-50-391/83-13) which previously was reported to NRC-Region II on March 16, 1983, and which addresses discrepancy 1 listed above. Therefore, resolution of NCR WBN SWP 8319 will correct deficiency 1 above.

Also, subsections 8.2.2 and 8.2.3 of WB-DC-40-31.9 have been revised to provide clarification and thus, prevent future misinterpretations. Additionally, section 3.9.3.4.2(1d) of the WBN FSAR has been revised to bring it into agreement with the subsections of the subject design criteria.

Additional information will be provided in our next submittal.