

**WBN2Public Resource**

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**From:** Boyd, Desiree L [dlboyd@tva.gov]  
**Sent:** Wednesday, August 01, 2012 12:47 PM  
**To:** Epperson, Dan; Wilson, George; Poole, Justin; Milano, Patrick  
**Cc:** Arent, Gordon; Hamill, Carol L; Boyd, Desiree L  
**Subject:** TVA letter to NRC\_07-31-2012\_Vibration Induced Fatigue Submittal  
**Attachments:** 07-31-2012\_Vibration Induced Fatigue Submittal\_Final.pdf

*Please see attached TVA letter that was sent to the NRC today.*

*The enclosures are too large to send by e-mail. For those of you who receive a cc in the mail, the attachments will be included with your letter.*

*Thank You,*

~\*~\*~\*~\*~\*~\*~\*~\*~\*~\*

*Desiree L. Boyd*

*WBN Unit 2 Licensing*

*[dlboyd@tva.gov](mailto:dlboyd@tva.gov)*

*423-365-8764*

**Hearing Identifier:** Watts\_Bar\_2\_Operating\_LA\_Public  
**Email Number:** 721

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**Subject:** TVA letter to NRC\_07-31-2012\_Vibration Induced Fatigue Submittal  
**Sent Date:** 8/1/2012 12:46:45 PM  
**Received Date:** 8/1/2012 12:47:23 PM  
**From:** Boyd, Desiree L

**Created By:** dlboyd@tva.gov

**Recipients:**

"Arent, Gordon" <garent@tva.gov>  
Tracking Status: None  
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"Milano, Patrick" <Patrick.Milano@nrc.gov>  
Tracking Status: None

**Post Office:** TVANUCXVS2.main.tva.gov

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**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** Yes  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

Enclosure 1 is to be withheld from public disclosure under 10 CFR § 2.390.  
When separated from this enclosure, this letter is decontrolled.



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

July 31, 2012

10 CFR 50.4

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

Watts Bar Nuclear Plant, Unit 2  
NRC Docket No. 50-391

**Subject: Watts Bar Nuclear Plant (WBN) Unit 2 - WBN Unit 2 Evaluation for Tube Vibration-Induced Fatigue**

Reference: 1. TVA letter to NRC dated March 1, 1989, "Watts Bar Nuclear Plant (WBN) Units 1 and 2 - Nuclear Regulatory Commission (NRC) Bulletin 88-02, Rapidly Propagating Fatigue Cracks In Steam Generator Tubes"

This letter provides documents that TVA committed to provide in response to NRC Bulletin 88-02, "Rapidly Propagating Fatigue Cracks in Steam Generators Tubes," as detailed in the reference above.

#### **TVA Commitment**

Item 4 of Enclosure 2 of the reference stated, *"The results of the thermal-hydraulic analysis and details of the permanent long-term corrective actions will be submitted to the NRC when they become available to TVA."*

#### **Commitment Closure**

Enclosure 1 contains the Westinghouse Electric Company (WEC) proprietary version of WCAP-17309-P, Revision 1, "Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue," dated February 2012. This report documents the evaluation for tube vibration-induced fatigue for the WEC Model D3 steam generators at WBN Unit 2 for susceptibility to fatigue-induced cracking of the type experienced at North Anna Unit 1 in July 1987.

Enclosure 2 contains WEC non-proprietary version of WCAP-17309-P, Revision 1, "Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue," dated February 2012.

As stated in 9.5 (CONCLUSIONS) of the report, the long term corrective action is as follows:

“... it is recommended that Steam Generator 4 Row 12 Column 106 through 109 tubes be removed from service. These tubes should either be plugged with sentinel plugs or plugged with solid plugs if a cable tube damper is installed. For all other tubes it is not necessary to recommend preventative action since the stress ratios and total cumulative fatigue usage of all the other unsupported U-bend tubes did not exceed the limiting value of 1.0. Steam generator tubes at Watts Bar Unit 2 (other than the four recommended to be removed from service above) are not expected to be susceptible to high-cycle fatigue rupture at the top tube support plate in a manner similar to the rupture that occurred at North Anna Unit 1. This conclusion applies to both the current specified operating conditions and to MUR uprate power operating conditions.”

Note: The recommended solid tube plugs with cable tube dampers were installed as documented in WEC Field Service Report MRS-FSR-1941-WBT)

Enclosure 3 contains WEC non-proprietary document CWA-12-3414, “Application for Withholding Proprietary Information from Public Disclosure WCAP-17309-P, Revision 1, ‘Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue,’” dated February 28, 2012.

Enclosure 1 contains information proprietary to Westinghouse Electric Company LLC (WEC). Enclosure 3 contains the necessary information supporting the request for withholding such information. TVA requests that the WEC proprietary information be withheld from public disclosure in accordance with 10 CFR § 2.390.

There are no new regulatory commitments contained in this letter. If you have any questions, please contact Gordon Arent at (423) 365-2004.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 31<sup>st</sup> day of July, 2012.

Respectfully,



Raymond A. Hruby, Jr.  
General Manager, Technical Services  
Watts Bar Unit 2

Enclosures (see page 3)

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Enclosures:

1. WEC Proprietary Document: WCAP-17309-P Revision 1, "Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue," dated February 2012.
2. WEC Non-Proprietary Document: WCAP-17309-NP, Revision 1, "Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue," dated February 2012.
3. WEC non-proprietary document CAW-12-3414, "Application for Withholding Proprietary Information from Public Disclosure WCAP-17309-P, Revision 1, 'Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue,'" dated February 28, 2012.

cc (Enclosures):

U. S. Nuclear Regulatory Commission  
Region II  
Marquis One Tower  
245 Peachtree Center Ave., NE Suite 1200  
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NRC Resident Inspector Unit 2  
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Spring City, Tennessee 37381

U.S. Nuclear Regulatory Commission  
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bcc (Enclosures):

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Withhold from Public Disclosure Under 10 CFR 2.390

**Enclosure 1**

**WCAP-17309-P, Revision 1, "Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue,"  
dated February 2012**

**Enclosure 2**

**WCAP-17309-P, Revision 1, "Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue," dated February 2012**



**Enclosure 3**

**CAW-12-3414, "Application for Withholding Proprietary Information from Public Disclosure WCAP-17309-P, Revision 1, 'Watts Bar Unit 2 Evaluation for Tube Vibration Induced Fatigue,'" dated February 28, 2012**