



Only Byron attached.

Westinghouse Electric Company  
Nuclear Services  
P.O. Box 355  
Pittsburgh, Pennsylvania 15230-0355  
USA

Mr. Terry Printz  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

Direct tel: 412-374-4901  
Direct fax: 412-374-3257  
e-mail: hausercs@westinghouse.com

CAE-03-107  
CCE-03-121

December 8, 2003

**EXELON NUCLEAR  
BYRON AND BRAIDWOOD NUCLEAR STATIONS  
EXELON Frequency Spectrum Analysis Records**

References:

- 1) TB-03-6, "CROSSFLOW Ultrasonic Flow Measurement System Signal Issues", September 5, 2003.
- 2) CAE-03-100, CCE-03-110, "CROSSFLOW Feedwater Flow Measurement Recommendations", November 11, 2003.
- 3) AMAG-INS-FS-013-01, "Frequency Spectrum Using DIAGNOSE Software", December 5, 2003.

Dear Mr. Printz:

Westinghouse Electric Company recently released the referenced Technical Bulletin, which included several future actions and commitments as well as recommendations for CROSSFLOW users. Since that time, Westinghouse and the Advanced Measurement and Analysis Group, Inc. (AMAG) have completed several of the referenced actions and would like to share the results below.

Following the discovery of signal contamination at Byron Unit 1, Westinghouse and AMAG launched a review of CROSSFLOW test activities and permanent installations performed to date. The following key criteria were used to determine the Extent of Condition and status of CROSSFLOW measurements for each utility customer.

1. Stability and variability of the correction factor during power changes.  
-Unexplained changes in  $C_f$  beyond established or alarmed limits need to be investigated.
2. Stability of CROSSFLOW performance (e.g., data rejection rate, standard deviation)  
-An unexplained increase in data rejection rate or standard deviation could be a precursor to the effects of signal contamination or to other physical changes to the system. This will ultimately result in an increase in  $C_f$  variability.

AD-1

3. Continuous monitoring or an interface with the plant computer.  
-Utilities that utilize continuous monitoring or interface with the plant computer have continuous trending data available to capture potential changing conditions as an early warning.
4. Frequency Spectrum Analysis Records.  
-Original records that document the absence of contamination were available for many Crossflow installations. Through an interview process, it was verified that several units were tested although the frequency spectrum records were not retained. Several units, with no retained baseline records, were able to be promptly tested. As of this date, Westinghouse/AMAG have records for all Utilities currently using CROSSFLOW to adjust plant power.

Based on the above criteria, as applicable to the EXELON installations, the installations at Clinton, Dresden Units 2 and 3, LaSalle Units 1 and 2 and the common header locations at Braidwood 1 and 2 and Byron 1 and 2 are confirmed to be free from signal interference/contamination and can be used to provide future CROSSFLOW measurements. The baseline scans which were collected in accordance with Reference 3 are provided in the attachment to this letter for your records.

Additional recommendations regarding the CROSSFLOW equipment configuration for future measurements were provided in Reference 2.

Westinghouse will be issuing a Nuclear Safety Advisory Letter in early December that will include further guidance to the industry for monitoring for future potential signal contamination. AMAG is also developing new software to allow utilities to independently perform frequency spectrum analyses on demand. The additional guidance and new software will be presented and discussed at the upcoming CROSSFLOW Owners Meeting January 26-28, 2004 in San Antonio.

If you have any questions or would like further information, please call me at 412-374-4901.

Very truly yours,

WESTINGHOUSE ELECTRIC COMPANY



C. S. Hauser  
Nuclear Services Project Manager  
Exelon Nuclear

Cc: T. Eaton - Exelon  
R. Doney - Westinghouse / Windsor  
C. S. Hauser - Westinghouse / ECE 5-7  
J. M. Bunecicky - Westinghouse / ECE 5-7  
Project Letter File

Pages 4 through 13 redacted for the following reasons:

-----

EXEMPTION 4