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**From:** John Nakoski  
**To:** Howe, Allen; Marinos, Evangelos  
**Date:** Thu, Sep 21, 2006 9:06 AM  
**Subject:** CROSSFLOW Topical Report Withdrawal Safety Evaluation and letter to W/AMAG

To All:

The attached file has the basis for withdrawing approval of the CROSSFLOW topical report CENPD-397-P-A, Rev. 1. While we are withdrawing approval, we are not saying the device cannot work - just that the topical report by itself is not sufficient to support future licensing actions. The attached file has incorporated comments from Tom Martin, Jerry Wermiel, Tim Collins, John Nakoski, and Warren Lyon. At this point, the document is close enough to DSS final for you to begin your reviews, comments, and concurrences. It is also at the point where it will support the preparation of a RIS as agreed to by the ET/LT. A hardcopy concurrence package will be sent around today (9/21/06). The plan is to collect all of your comments and incorporate them at the same time. Then, if necessary reobtain your concurrence.

I look forward to your critical reviews and would appreciate your comments or concurrences by the first week of October 2006 at the latest. Thanks for your active participation in completing this task.

John Nakoski

**CC:** Alexion, Thomas; Collins, Timothy; Jackson, Christopher P; Lyon, Warren; Martin, Thomas; Thompson, Jon; Wermiel, Jared

Information in this record was deleted in accordance with the Freedom of Information Act. Exemptions 4 + 3 FOIA/PA 2008-0046

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September , 2006

MEMORANDUM TO: Ho Nieh, Deputy Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

FROM: Thomas O. Martin, Director,  
Division of Safety Systems  
Office of Nuclear Reactor Regulation

SUBJECT: NRC STAFF ASSESSMENT OF THE WESTINGHOUSE / ADVANCE  
MEASUREMENT AND ANALYSIS GROUP (W/AMAG) CROSSFLOW  
ULTRASONIC FLOWMETER (UFM)

Reference: "Improved Flow Measurement Accuracy Using Crossflow Ultrasonic Flow  
Measurement Technology," ABB Combustion Engineering, CENPD-397-  
P-A, ML052070504, May 31, 2000. (Proprietary)

We have completed our reassessment of the CROSSFLOW UFM topical report. The NRC staff finds that (1) the use of the CROSSFLOW calibration factor derived from laboratory testing is not acceptable; (2) the use of in-situ (in-plant) calibration, as currently described in the topical report, is not sufficiently detailed to serve as a basis for future licensing submittals and is not traceable to a national standard; (3) the ranges of flows and plant configurations that define where CROSSFLOW can be used, as currently described in the topical report, were not adequately described; and (4) as currently described in the topical report, the description of the installation and use of CROSSFLOW was not consistent with the actual calibration and commissioning practices necessary to establish reasonable assurance that CROSSFLOW would function as expected within the claimed uncertainty. Accordingly, pending a revision to the topical report that addresses these concerns, the previously approved CENPD-397-P topical report is not acceptable as a basis for future licensing actions using CROSSFLOW to determine feedwater flow rate and NRC staff approval of the topical report should be withdrawn.

We recommend that you transmit the enclosed letter to Westinghouse to inform them of our findings.

CONTACT: Warren Lyon  
301-415-2897

Enclosure: As stated

September , 2006

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Enclosure: As stated

DISTRIBUTION: SPWB/RF I. Ahmed T. Alexion A. Howe C. Jackson  
A. Marinos J. Jolicoeur W. Lyon J. Nakoski S. Rosenberg J. Thompson  
J. Wermiel

ACCESSION NUMBER:

OFFICE	DSS/SPWB	DSS/SLS	BC/DSS/SPWB	BC/DE/EICB	BC/DORL	DD/DSS	D/DSS
NAME	WLyon	TCollins	JNakoski	AHowe	AMarinos	JWermiel	TMartin
DATE	9/ /06	9/ /06	9/ /06	9/ /06	9/ /06	9/ /06	9/ /06

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Pages 4 through 14 redacted for the following reasons:

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(b)(4); (b)(5)