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From: Jared Wermiel
To: Marinos, Evangelos
Date: Mon, Mar 8, 2004 10:19 AM
Subject: Re: Flawed Instrument (Crossflow) used for Power Uprates

Angelo-

Thank you for your thoughts on this issue. The task group will take into account the points you make in its evaluation of the allegation.

Jerry

>>> Evangelos Marinos 03/08/04 09:55AM >>>
Jerry,

Your report, last Friday, to Bill Borchardt and Brian Sheron, on your preliminary conclusions of your independent team determination that the Crossflow instrumentation is flawed, is troubling. It is troubling because you recommend derating of all plants that use this instrument for power uprates without evidence of misperformance of the instrument in formally licensed applications. It is even more troubling that you have apparently made the determination that this instrument is flawed conceptually and, therefore, no further evidence could demonstrate its claimed performance capabilities.

You and your team dismissed as unworthy of serious consideration fluid dynamics and mass transport principles applied in support of the Crossflow instrument, as originally proposed for review by the staff. Consequently, from your present review you remain unconvinced that the date presented in the topical report that was previously reviewed and approved by your staff, supports the instrument's integrity.

In March of 2000 DSSA (RSX) and DE (EEIB) jointly issued an SER accepting the Crossflow instrument on the basis of fluid dynamics principles and empirical data that support the instrument's claimed performance. The major aspects that needed careful consideration for determining acceptability of the instrument are the fluid dynamics and mass transport principles that your staff carefully considered prior to issuance of the SER. You presently dispute the principle that eddies formed in the fluid have unique density characteristics for signal recognition when ultrasonic signals modulated, and demodulated in a unique phase shift between transmitters, establish fluid velocity. Is your present dispute based on new knowledge you have obtained in fluid characteristics that invalidates your staff's previous conclusions? With regard to the requirement that a fully developed flow location be determined for placing the instrument, you stated that your calculations indicate that the 15 diameters minimum distance proposed in the topical report is nowhere near what it should be. In fact you suggested approximately 39 diameters. Is your present conclusion again based on new knowledge you have obtained in fluid flow that invalidates your previous conclusions?

Another important aspect on which acceptance of the Crossflow instrument was based, is your earlier assessment on the determination of the velocity profile correction factor calculated from plant parameters related to fluid conditions and other plant specific consideration. Is your present conclusion that this correction factor is erroneously calculated, again based on new knowledge you have obtained in fluid dynamics and other factors that invalidate your previous conclusions?

I believe that all these aspects should be more carefully considered with whatever other evidence is available, before Westinghouse is confronted to again defend fluid dynamics first principles previously addressed in the topical report and accepted by the staff. This acceptance was based on numerous encounters with the licensee in public meetings, some times attended by upper management with knowledge in this area, and principally lead by your expert staff and their technical management.

I, at great personal peril, have defended the staff position simply because my staff and I are in the front line of reviews of MUR power uprates using the Crossflow instrument whose acceptability to a large extent relied on your previous evaluations. I believe that Caldon in its relentless pursuit to gain market

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advantage should not be allowed to drive the agency agenda and damage its credibility.

CC: Ahmed, Iqbal; Barrett, Richard; Black, Suzanne; Boger, Bruce; Borchardt, Richard; Bucci, Veronica O.; Calvo, Jose; Chiramal, Matthew; Craig, John; Doutt, Clifford; Dyer, Jim; Garg, Hukam; Grimes, Christopher; Johnson, Michael; Leeds, Eric; Li, Hulbert; Loeser, Paul; Lyon, Warren; Marcus, Barry; Marsh, Tad; Mazumdar, Subinoy; Rebstock, Paul; Rhow, Sang; Sheron, Brian; Travers, William; Waterman, Michael; Zigh, Ghani