DRESSER-RAND
Electric Machinery
Terry
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May 1, 1991

Dear

George Lucas has given me a copy of your FAX of April 29 on Venturi Valve Instability.

The ASME Transactions of Oct. 1989 contained a 5-page paper by M. Pluviose titled "Stabilization of Flow Through Steam Turbine Control Valves." This paper generated considerable interest at D-R since we were at that time, trying to eliminate valve instability on a recently commissioned, inner-barrel machine in Korea. I am sure Pluviose's paper is a short summary of your 200 page report. Yes, I would like to receive a translation of the full report as well as information on the unit of present concern to you.

You might find it interesting that we have actually tested the "cupped & lipped" valve head configuration implied by Pluviose studies (Fig. 1 of attached sketch) on the Ft. Drum machine in the field and in our lab valve test rig. The field test was dramatic. At low lift, there was a strong reversal of the steady force, to a large net opening force that produced large excursions of the valve from its desired position. Evidently we failed to account for the significant upward momentum force at the onset of flow past the shaped wall.

Lab tests have shown, however, that the "cupped & lipped" head is associated with the smallest unsteady force component of all the shapes tested. We will repeat these tests to confirm the results.

We have not tested the fluted venturi seat described by Pluviose. I will certainly let you know our final conclusions.

Best regards,

Jatin Katariya

Jatin Katariya

jl

attach.

cc: G. Lucas

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