## STANFORD UNIVERSITY

STANFORD LINEAR ACCELERATOR CENTER

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June 24, 1997

VIA FACSIMIT.E

Messrs. G. Yochum and V. Spektor Sims Pump Valve Co., Inc. 1314 Park Avenue Hoboken, New Jersey 07030

Re: Replacement Impellers for Worthington 3DNE-72

## Gentlemen:

The attached reports are sent for your review and information. The problem concerned the "jittering" of quadrupole magnets (four pole magnets used to steer the particle beam), and the lests performed to isolate the cause/effect.

Your fully machined graphite composite impeller has cured the problem. Initially, I planned to get precision cast (investment) impellers in stainless steel, but the cost was high and the delivery was too long. I'm glad Rob Richards found your website on the Internet.

Thanks again for your help. I also appreciate your ability to deliver the impellers ahead of the proposed schedule.

Very truly yours,

Harry Shin, P.E.

Projects Group Leader

Plant Engineering Department

Attached: 11 pages