

# NASA TESTING

AVO

To: DE-TPO/C. Griffin  
From: IM-WEL/J. Weeks

Subject: Response to TTA-K517.(KVAR Electrical Optimization System)

Attached for your disposition are the results of our test on the KVAR Electrical Optimization System. Approval of test format was received by Gregory Taylor of KVAR energy Savings, Inc. on 11/19/96. The test was performed at the prototype shop (building M7-581) on a 10 H.P. compressor motor on 11/22/96. Both initial and final values were recorded from a Drantz Power Monitor PP1 (NASA Tag #1382136) while connected to the distribution panel DPA-C2 (see attached diagram). The KVAR switch settings were determined by a KVAR representative. All values pertinent to motor efficiency have been recorded on the attached electric motor performance evaluation form. As shown on this form, the real power draw by this motor decreased from 5.63 kw to 5.14 kw after optimization. This corresponds to a power reduction of 8.7%.

  
John Weeks



cc:

IM-WEL/J. Heuser  
IM-WEL/R. Batman  
IM-WEL/L. Jones  
IM-WEL/J. O'Malley

	VOLTAGE (L-N)	CURRENT (A)	POWER (KW)	kvar	POWER FACTOR
<b>INITIAL VALUES</b>					
PHASE A	277	8.09	1.91	1.13	0.86 (LAGGING)
PHASE B	277	7.75	1.89	1.03	0.88 (LAGGING)
PHASE 3	275	7.85	1.84	1.1	0.86 (LAGGING)
TOTAL			5.63	3.26	
<b>FINAL VALUES</b>					
PHASE A	277	6.38	1.76	-0.199	0.99 (LEADING)
PHASE B	277	6.38	1.71	-0.308	0.99 (LEADING)
PHASE C	275	6.38	1.65	-0.215	0.99 (LEADING)
TOTAL			5.14	-0.722	
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
SWITCH SETTINGS	OFF	ON	OFF	OFF	OFF

% POWER REDUCTION = (INITIAL POWER - FINAL POWER) / INITIAL POWER X 100% = 8.7%

- 1) INITIAL VALUES ARE RECORDED PRIOR TO CONNECTION OF KVAR UNIT.
- 2) FINAL VALUES ARE RECORDED AFTER CONNECTION AND OPTIMIZATION OF KVAR UNIT.
- 3) KVAR REPRESENTATIVE TO DETERMINE OPTIMUM SWITCH SETTINGS.
- 4) DRANTZ POWER MONITOR WILL BE USED FOR ALL MEASUREMENTS.

POWER MONITOR MODES, NUMBER: DRANTZ PP1 (NASA TAG 1362134)

KVAR MODES, NUMBER: US2