



1450 Infinite Drive  
Louisville, CO 80027

Dennis Wellen  
Sun / RHO Wafer Operations Manager  
Sun Microsystems, Inc.  
1450 Infinite Dr.  
Louisville, CO. 80027

May 3, 2007

Subject: Energy Efficiency and Power Quality

Dear Dennis,

Just prior to Triumph selling the building at 1450 Infinite Drive, as you were aware, I was working on gathering data from the W3 office area for energy efficiency and power quality upgrades, specifically in Sun's lease space areas. These upgrades being planned included changing of the existing GE transformers to PowerSmiths transformers in conjunction of adding Total Protection Solutions Transient Voltage Surge Suppression (TVSS) units.

While at Maxtor, I installed one such TVSS unit at an AT&T telephone PBX cabinet which had 50 to 60 telephone routing printed circuit boards within. Prior to the TVSS installation, we averaged 1.2 board replacements per month. After the TVSS installation, we install no boards in the next 18 months. Each board cost \$110.00. The return on investment for the TVSS was 9 months without considering downtime due to the phone use outages.

PowerSmiths transformers are designed for 98% efficiency with mixed loads of linear (motors) and nonlinear loads (equipment with electronic power supplies) and to eliminate the harmonics which are caused by nonlinear loads.

In designing the new campus facility for Maxtor, I used a combination of both technologies throughout the building. The bottom line results after the first year of operation at the new campus compared to the previous building set was 3.1 watts per square foot electricity savings and reducing the average power quality work orders from 30 per month to 3 per month.

Since the 1450 building is designed similar to the Maxtor previous building set, such energy efficiency and power quality improvements are available for your facility. While I was at this facility, I realized that the general power quality is poor. Although there are United Power TVSS units on the incoming switch gear from the utility and generator



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sources only, they were installed as required to protect from lightning strikes, in conjunction with the lightning protection grounding system for the building. The United Power TVSS unit bandwidth is too broad to protect from lesser power disturbances caused by the utility company switching on the power grid and have virtually have no impact on the internally generated power disturbances. Eighty percent (80%) of the power disturbances within a facility are internally generated.

At several locations throughout the 1450 building, 2 GE transformers can be replaced by a single PowerSmiths transformer of the same size as one of the GE transformers. The single PowerSmiths as compared to 2 GE transformers results in 7.5 times less transformer power losses annually and 6.5 times less HVAC required annually to cool the space where the transformers are located. GE transformers are oversized and/or under loaded to compensate for the harmonics generated by the electronics power supplies throughout the building. The best efficiency of the GE transformers is achieved with linear loads when loaded over 60%. With nonlinear loads, the transformers cannot be loaded over 50% without over heating damaging the transformer insulation. See the attached pictures of the GE Services IR scans of a GE transformer and a PowerSmiths transformer from 1450 Infinite last year.

The TOTAL PROTECTION SOLUTIONS TVSS units installed throughout the power distribution system dramatically improve the power quality throughout the building. With the building being fully occupied, there are more internal sources for power disturbances than before. The air compressors cycle much more frequent and the second chiller is required more often which are frequently seen on power recordings that Power Services and Xcel Energy performed for me in March 2007 as compared to May 2005. I believe these power disturbances significantly contributed to your production equipment failures in April 2007 based from my experiences at Maxtor and the power recordings at 1450 in March. This building in the past year experienced many VFD failures, lighting and ballast failures, small motor failures, UPS system component failures, and other controller problems in the CUP all due to the internal caused power disturbances.

At the time of the building sale, I had the proposed plan completed to install the TOTAL PROTECTION SOLUTIONS TVSS units throughout MDS2 distribution system to correct the problems we were experiencing in the CUP. Then develop the TVSS installation plan for MDS1 which provides for the majority of your lease space power requirements.

The efficiency savings is significant with over \$50,000 reduction annually. However, I was not there long enough to quantify the potential savings due to power disturbances throughout the building. You are aware of the impacts of down time for production equipment failure of electronic components and probably can readily quantify down time



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costs and the effects of the reliability of equipment life. Power disturbances and harmonics can shorten electronic component life by 30% or more. Unexpected component failure of a lighting system does not impact nearly as much as the PLC for the acid waste treatment system or the sputtering equipment for the production line, but all are currently exposed to premature failure due to power quality problems.

I am willing to discuss these power quality solutions with you further at your earliest convenience to answer questions and assist you in making the decision for upgrading your leased space in 1450.

Sincerely,

A handwritten signature in cursive script that reads "Lonnie Zlomke".

Lonnie Zlomke, CFM  
Facilities Manager and Chief Engineer



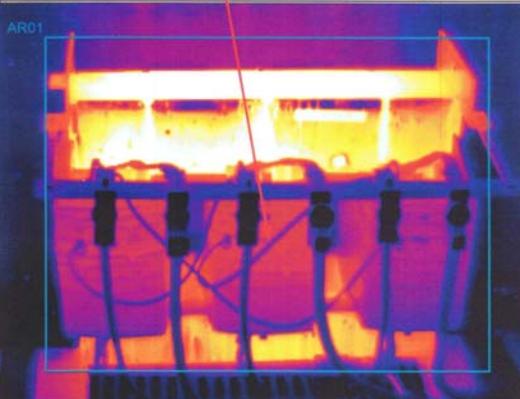
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**GE Energy Services**

4900 Kingston St. Denver, CO 80239  
303-329-2300 Fax 303-329-2367

### Thermography Inspection

Equipment Identification							
	<table border="1"> <tr> <td>Customer</td> <td>Louisville Tech Center</td> </tr> <tr> <td>Date</td> <td>9/26/2006</td> </tr> <tr> <td>Time</td> <td>11:27:42 AM</td> </tr> </table>	Customer	Louisville Tech Center	Date	9/26/2006	Time	11:27:42 AM
Customer	Louisville Tech Center						
Date	9/26/2006						
Time	11:27:42 AM						
	<b>IR Results</b>						
<b>IR Text Comment</b>	<b>Value</b>						
Equipment	Xfmr 3EL5, 9T23B3874, Mnfr: GE						
Fault	No Abnormal Observations						
Recommendation	No Action Necessary						
<b>Label</b>	<b>Value</b>						
AR01 : max	267.6°F						
AR01 : min	72.9°F						
AR01 : max-min	194.7°F						
AR01 : avg	134.1°F						

44

**GE 75KVA TRANSFORMER IN REPLIDYNE'S AREA – AT 16% LOAD  
AVERAGE TEMPERATURE RECORDED 134.1°F**



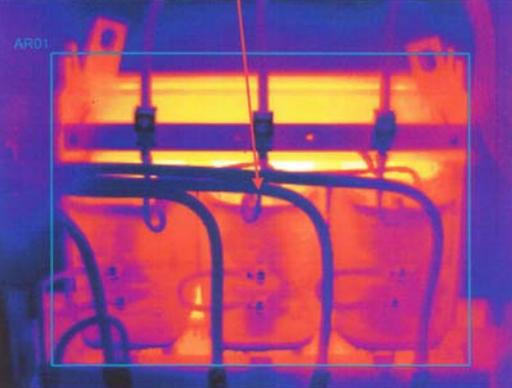
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Customer	Louisville Tech Center						
Date	9/26/2006						
Time	2:14:55 PM						
	<b>IR Results</b>						
<b>IR Text Comment</b>	<b>Value</b>						
Equipment	Powersmith Xfmr						
Fault	No Abnormal Observations						
Recommendation	No Action Necessary						
<b>Label</b>	<b>Value</b>						
AR01 : max	149.2°F						
AR01 : min	73.6°F						
AR01 : max-min	75.6°F						
AR01 : avg	92.5°F						

74

PS 75KVA TRANSFORMER FOR GLOBEIMMUNE'S AREA – AT 14.5% LOAD  
AVERAGE TEMPERATURE RECORDED 92.5°F