

TVSS SITE FOLLOW UP SURVEY DATED 9-28-06

K&G oil site 7505 Parkway Drive Lone Tree Colorado Site # 544

Reported maintenance issue:	Reported Corrective action:
Power company failure for over 1 hour.	UPS back up battery fails after 1 hour operation.
Cash registers came back on line and lost memory status.	Reprogrammed/rebooted system.
2 dispensers not working # 9 and 10, # 15 and 16	Same electric reprogrammed dispensers, no parts used.
Submerged pumps not pumping correct product per hose on # 9, 10, 15, 16.	Reprogrammed dispenser to Veeder root system for correct product supply.
Veeder Root system showed product leak.	Veeder Root system was reading wrong product, reprogrammed to read correct product.
Car wash machine not releasing codes and not washing cars properly.	Reconnect code box cable. Reprogram car wash system.

Bill Horn was on site to follow up on the 2 year installation of the Total Protection Solutions TVSS system installation.

The Manager Paul Lord noted the electrical related maintenance issues listed.

While on site the TVSS units were determined to be in working order.

Bill Horn followed up with Same Electric to determine the cause of the maintenance issues as noted above.

SUMMARY:

Conclusion: The power failure that lasted over 1 hour, drained the batteries down to zero on the UPS units. This caused the cash registers to lock up when power can back on line, and had to be reprogrammed. The dispensers came back on line and had a false start up signal. That caused the Regular product to flow when the Premium product was called for. This gave the Veeder Root system a false leak failure reading. The car wash had a false start up also when the power can back on line. The unit could have been running for a few days before customers noted the wrong car wash cycle. After reprogramming all the units were and are working properly. **It should also be pointed out that prior to these maintenance issues this site had no electrical service related service calls since the installation of the Total Protection Solutions TVSS was installed (January 2005). Prior to that, there were weekly related electrical service and/or repairs at this site.**

Potential problems: **Without the TVSS system with enhanced transient filtering in place, this site could have had a major system failure.** The cash registers could have taken a high voltage spike and damaged the mother boards. The dispensers could have had major power supply damage to many dispensers when the power came back on line. The Veeder root system could have failed completely and shut down the station for days. The car wash could have had a failed start signal to the high pressure pump and cause a motor to burn up internally. This only notes the items that had a failure or have a lower reliability. **The rest of the equipment on site most likely would have had similar issues or been damaged without the TVSS in place based on previous experience.**

Recommendations: The UPS batteries should have a regular maintenance check and replacement program, with training on what the facility should do in a long term power failure. **The TVSS system in place has been working for nearly 2 years and is still protecting the facility from the major lightning strikes and the internal electrical spikes protected by the enhanced transient filter, (it was designed to eliminate).** The next step would be to protect the dispensers line voltage and data feeds from noise generated and spikes at the islands. All K & G sites should have an electrical review. **K & G should consider a facility wide project or application of the quality and performed based TVSS system because of apparent dramatic maintenance and operational saving they should realize at all their facilities. It is recommended that management meet for a complete presentation of details relative to this technology and its benefits.**

The ROI for this potential investment appears to be around 1 1/2 years or less for all K & G facilities. It should be noted that this particular TVSS technology has a 30 year unconditional free replacement warranty (including lightning) and therefore the life cycle savings would be most significant (approximately 20 times the investment).

Report written by:
Bill Horn
Project Manager
Blue Flame Services
303-261-7788 Cell Ph.