Jeff Lorch

January 31, 2009

Mr. Jeff Derouen
Executive Director
KENTUCKY PUBLIC SERVICE COMMISSION
P.O. Box 615
Frankfort, KY 40602
Re: 2008-408

Dear Sir:
I represent a manufacturer of an LED roadway lighting product that will reduce energy consumption by 60% and maintenance costs by at least that much if not more. Congresses passage of the Federal Energy Policy Act of 2005 (Public Law 109-58) and just last October the Energy Improvement and Extension Act of 2008 (Public Law 110-343) are part of the ever increasing emphasis on the conservation of energy. Municipalities are challenged with instituting "green" programs in an effort to comply with the above cited Federal Laws as well as the need to reduce operational costs wherever and however possible. New LED roadway illuminating technology is ideal in accomplishing both objectives. In introducing the Leotek outdoor LED lighting product in Central Kentucky, I have found considerable interest as the University of Kentucky has just concluded a trial, Toyota Engineering has recently tested a unit, and Duke Energy has included our product in their Smart Saver Energy rebate program for educational institutions. Since our roadway luminaire is designed to be a retrofit for the traditional cobra heads, it only made sense for me to contact municipalities in the Bluegrass Region. In doing so, I learned that the utility serving that locality owns and operates the municipal street lights. Therefore, I have also visited Kentucky Utilities/LG&E, Blue Grass Energy and East Kentucky Power as well. In talking with them I found that while they acknowledge the virtues of this new, emerging LED technology and will engage in their own evaluation projects this Spring, they have advised me that they are unable to offer them to municipalities as there is no rate structure in place, as established by the KPSC, that will allow them to do so. This information has led me to contact your attorney, Richard Raff. In discussing the need to establish such a rate structure with Richard, he was kind enough to research currently open cases that would fit this circumstance. In doing so, he found 2008-408 to be applicable.

Representing TCP & Leotek Electronics
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With the above as background information, I request that you expand case # 2008-408 to include the establishment of a new rate structure that encourages public utilities to not only offer municipalities energy-conserving street lights, but one that also encourages their use. This may be accomplished both by the rate structure itself as well as through incentive programs. As I mentioned, Duke Energy has put in place the Smart Saver program and there are a number of other utilities around the country offering similar programs. I stand ready to offer both technical data as well as technical support. I am certain that the Leotek Director of General Illumination would be more than willing to extend whatever assistance you may need. Active in the lighting industry for over 35 years, he is currently a member of the Illuminating Society of America and on the IESNA standards board. With this background, he can bring a global perspective to the conversation as well as an in-depth understanding of the technological path LED development will take over the next five years.

I look forward to hearing from you to learn of your thoughts in regard to this request.

Sincerely,

Jeff Lorch

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Enclosure: Article from the September-October issue of IMSA Journal, "Maintaining Roadway Lighting and the Environment"

Cc: Richard Raff

Maintaining Roadway Lighting and the Environment

By Jim Frazer

Progress is always fueled by, well, progress.

The discovery of electricity led to the light bulb, electric motors, and electrical applications of every kind and variety. In a similar way, the invention of the telegraph enabled people to communicate over long distances, paving the way for the telephone, transoceanic cables, satellites, fiber optics, all of which make the Earth a true global village via instantaneous communication.

It's the same with roads. In 1893, the U.S. Department of Agriculture allocated $10,000 to a newly established Office of Road Inquiry. The growing nation needed better byways for its citizens traveling in increasing numbers of wagons and coaches as well as on those new-fangled bicycles.

That same year, the famous Duryea Brothers developed the precursor to the first car – a gasoline-powered cart with seats.

By 1908, it was Henry Ford's turn and he debuted the classic Model-T, an affordable and efficient vehicle that changed the face of popular transportation. That, in turn, changed the roadmap of America. Or, perhaps we should say, was the catalyst to *create* a roadmap of America.

Progress begets progress.

In 1916, the Federal-Aid Road Act created the Federal Aid Highway Program, making monies available to states to improve highways and roadways to accommodate the growing number of vehicles. By the 1920s, more funding was authorized to help states create a paved system of two-lane interstate highways. During the years of the Great Depression and under President Franklin Roosevelt, road projects provided work for the jobless.

In the 1950s, President Eisenhower signed the Federal-Aid Highway Act of 1956 that got the interstate program under way with sufficient funding.

Since then, more and more roads continue to be built under the guidance of federal, state and local agencies. By the late 1980s, the federal government worked with the states to open 99 percent of the designated 42,800-mile interstate system, officially known as the Dwight D. Eisenhower National System of Interstate and Defense Highways.

Along with roadway systems come the accessories: lines painted on the surface, guide rails, signage, traffic lights, and, of course, roadway lighting. It's all great when it's new, but with a majority of our roadways anywhere from 50 to 100 years old, maintenance is now a key issue.

We've all heard the stories of collapsed bridges and roadways that buckle under the pressures of traffic and climate factors. Just last summer a major highway span in Minneapolis collapsed, throwing cars into a river, taking innocent lives, and impacting millions of commuters and the local economy. Such collapses are extreme and fortunately still infrequent. However, the argument could be that more frequent maintenance might have made a difference.

As the national, state and local governments begin to beef up maintenance and improve or replace existing roadways and bridges, lighting is one of the factors to be considered.

There are 60 million street lights in the United States. Indeed, it is reported those lights account for more than 15 percent of all domestic electricity usage.

Lighting is integral to roadways.

And lighting has come a long way since streets were first illuminated. Mosley Street in Newcastle-upon-Tyne in England was the first to be lit by incandescent lamps. Wabash, IN, became the second city to "light up" in February 1880 when four 3,000-candlepower Brush arc lamps were suspended over the courthouse in the town square.

Today, existing street lights run the gamut from florescent to incandescent to mercury vapor to low-pressure sodium to high intensity discharge to LED. The latter will eventually become the standard in the industry.

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Lighting is one of the fixed assets of roadway and bridge infrastructures. Others include toll booths, call boxes, signage and signals.

Maintaining lighting fixtures has long been a costly and cumbersome business.

Sitting out in the elements, in the public right of way, means these fixtures are subject to extremes of weather and man-made mishaps, primarily traffic accidents but also vandalism. Ongoing deterioration leads to increased energy usage and to system failures that can cause accidents, even deaths.

Traditionally, fixing broken lights or light standards required visual confirmation of a problem. A passing motorist may report that a light or series of lights are out. A maintenance crew from the organization is usually dispatched for an inspection, racking up personnel, vehicle, and fuel costs. Sometimes, a second or third trip may be necessary to complete repairs, incurring even more expense.

Oil changes, tire replacement, and skyrocketing fuel costs are obvious expenses. Less obvious but equally notable are the environmental impacts of greenhouse gas emissions from the trucks and the costs and environmental impacts associated with the disposal of waste oil, tires, and other vehicle elements.

But, let's get back to the broken lights because there is also the human liability issue. Leaking electricity is invisible and lethal. Broken and exposed wires touching a conductive surface – such as a utility pole, bus stop, service

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panel or pull box, is an invisible killer just waiting to strike.

Remote monitoring can make a huge difference in maintenance costs and risks.

ELMS (acronym for Electrical and Lighting Management Systems) is a technology that permits, among other things, remote monitoring. ELMS enables municipalities and other entities to be safer when it comes to street lighting systems and ground-fault detection via monitoring, controlling, and communicating certain electrical and lighting system parameters.

In 2003, a rigorous system engineering process to develop user needs and features required in ITS electrical lighting and management systems was unveiled. This effort grew to include streetlight control, ground fault detection and revenue grade power metering. It has been published as the ITS Standard NTCIP 1213 "Electrical Lighting and Management Systems" or ELMS for short.

ELMS incorporates standards set by the National Transportation Communications for Intelligent Transportation System Protocol (NTCIP). This is a family of standards designed to achieve interoperability and interchangeability between electronic traffic control equipment from different manufacturers.

The protocol is the product of a joint standardization project led by the Joint Committee on the NTCIP, which is composed of six representatives each of the National Electrical Manufacturers Association (NEMA), the American Association of State Highway and Transportation Officials (AASHTO), and the Institute of Transportation Engineers(ITE). The project receives funding under a contract with the United States Federal Highway Administration (FHWA) and is part of a wider effort to develop a comprehensive family of Intelligent Transportation System (ITS) standards.

ELMS equipment is a telemetry-based remote monitoring and control system for highway lighting. It is an effective tool for lowering costs, improving maintenance management, reducing liability, implementing lighting curfews, and increasing safety.

Pennsylvania-based Strategic Telemetry Inc.(STI) is among the providers of this equipment, each with their own set of features and interfaces. The standardization effort – defined by the NTCIP 1213 data dictionary of the management information base – has created a common set of features and functionality and defines the point of interoperability.

ELMS can control and monitor system performance, including revenue-grade power metering and up-time of system assets including streetlight cycling, and real-time attributes of each component on the system. This allows greater utilization of service and maintenance assets, and the ability to detect and immediately communicate dangerous electrical fault conditions.

ELMS monitored street lighting technology is beginning to take hold in the United States.

STI has been involved in street-light management systems in St. Cloud, MN, and Miami, FL. Other companies are involved in systems in Canada and Europe.

Coupled with high-tech LED lighting, the systems are becoming more and more attractive to municipal users.

The costs savings of ELMS technology is impressive and has already been realized by the City of Oslo in Norway.

Robert T. Grow, a Ford Fellow at the American Chamber of Commerce Executives in Washington, DC, reported that in 2004, San Jose, CA, based Echelon Corp. partnered with Phillips Lighting and Kongsberg Analogic AS to install a managed street lighting system in Oslo.

Oslo's system is considered, said Grow, to be the first such large-scale implementation of a control network in Europe.

Oslo, Grow said, has cut total electricity usage by 50 percent with a five-year return on investment. The city has seen improved roadway safety and the savings include reduced maintenance costs.

The system feeds data into a control center that keeps track of lights that need to be fixed and automatically dims street lights based on the season, local weather and traffic density.

In addition, Grow reported that the City of Milton Keynes in Great Britain is using monitored street light technology in a trial project involving 400 street lights. Another 10,000 are expected to be added over the next three years.

In Canada, Ville de Quebec installed a system in October 2007 with 200 street lights in its historic district. The trial project will add 1,000 lamps annually over the next decade.

Strategic Telemetry Inc.: Strategic Telemetry's SMART Management® System - STI is focused on intelligent lighting solutions. STI offers a full range of adaptive lighting controls that enable state departments of transportation, municipalities and other public and private organizations to implement integrated NTCIP compliant systems for remotely monitoring and controlling street and roadway lights. STI utilizes Strategic Monitoring and Remote Traffic **SMART** Management® System technology, solutions and

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