



## **NEVADA SURE BET PROGRAM**

**Offered By: Sierra Pacific Power Company and Nevada Power Company**

### **John Ascuaga's Nugget LED Casino Lighting Retrofit**



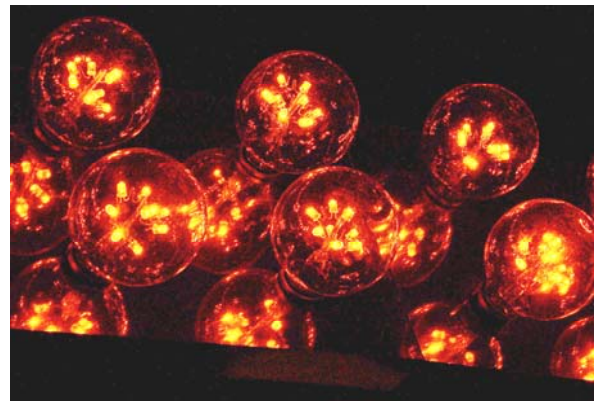
#### **Project Description**

A light-emitting diode (LED) is “a semiconductor device that emits incoherent narrow-spectrum light when electrically biased in the forward direction.” In layman’s terms, this means that light is emitted from a semiconductor which is small in size and extremely energy efficient. The color of the light emitted depends on the material that the semiconductor is made from, thus light can be many different colors without the use of lenses or colored glass. Because of the low energy use of LED’s, the lamps are cooler in temperature than an incandescent bulb which saves on air conditioning costs as well.

LED lights can easily be used in applications where “blinking” or dimming is required because their efficiency, lamp life or brightness are not affected. LED technology has advanced to traffic signals, automobile lights and now commercial lighting. Recently, a casino in Northern Nevada retrofitted incandescent accent lights to LED lights and is reaping the benefits.

## Application

John Ascuaga's Nugget in Sparks, Nevada converted a total of 5,372 incandescent lamps to LED lamps in their casino area. Both 11 Watt (W) and 5 W lamps were changed out for a 1 W LED lamp. The LED lamp looks similar to the incandescent lamp, puts out the same amount of light and is the same color but uses a fraction of the energy. While the initial cost of LED lamps is higher, the life expectancy is rated at 100,000 hours compared to 2,000 for an incandescent lamp. The longer life will also save on maintenance costs, which is an important factor since their lights operate 24 hours a day, seven days a week.



## LED Decorative Lamps

As a result of the lighting retrofit, the Casino can expect energy savings of over 244,000 kWh and a reduction in peak demand of about 28 kW annually. At current electric rates, this enabled the facility to realize an overall annual savings of approximately \$26,800. John Ascuaga's Nugget received an incentive of \$10,123 from Sierra Pacific Power Company through the 2006 Sure Bet Program.

## Project Results

Peak Demand Reduction	27.9 kW
Annual Energy Savings	244,422 kWh
Annual Energy Cost Savings	\$26,884
Project Cost (5,500 lamps)	\$74,630.83
Custom Incentive	\$10,122.66