

Industrial Facility Retrofit Showcase Lighting Project Case Study

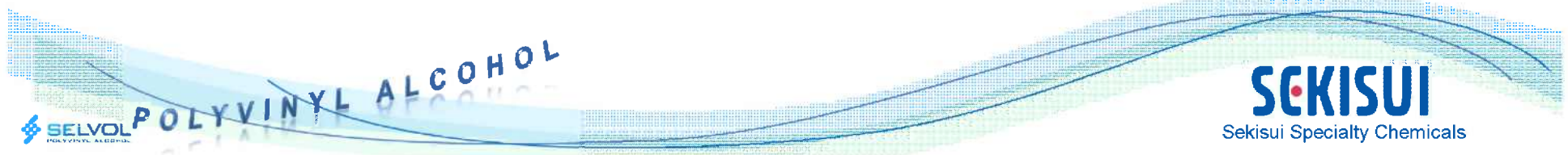
Sekisui Specialty Chemicals America
Calvert City, Kentucky



Sekisui purchased the Calvert City facility on July 1, 2009. We primarily produce Polyvinyl Alcohol (PVOH) at numerous viscosities and degrees of hydrolysis. PVOH is used in a variety of fields of applications including, but not limited to, paper, building & construction, textiles, films, oil field cementing and seed coating. We also produce glacial Acetic Acid that is Food Grade and Kosher.

The plant was originally constructed in 1959 with major expansions in 1974 and 1985. The age of the facility presents many challenges in the area of maintenance. In particular, facility lighting was taking an inordinate amount of time and expense to maintain.

The Calvert City facility has many “high-bay” type lighting fixtures that were not easily maintained because of accessibility issues and the age of the fixtures. These fixtures required maintenance with increasing frequency. A number of the fixtures were over 50 years old and very inaccessible, leading to extremely costly upkeep. In some cases, the cost to repair or replace a light approached \$2,000 due to the requirement to erect scaffolding to reach the fixture.



Sekisui researched opportunities to reduce the costs associated with maintaining facility lighting. Our research indicated that LED lighting on the market with a 10-12 year life expectancy would greatly minimize the frequency of replacement while also reducing the wattage needed to generate a sufficient plant lighting level.

In 2010, Sekisui applied for and was awarded \$144,170 in American Recovery and Reinvestment Act (ARRA) funding through the Kentucky Cabinet for Economic Development's Industrial Facility Retrofit Showcase program. The funding was awarded for the purpose of installing more energy efficient and maintenance free lighting in Sekisui's Calvert City facility.

A total of 145 fixtures were changed throughout five buildings at the Calvert facility. The American made LED fixtures were obtained through local electric suppliers in Paducah, Kentucky and local labor was used to make the retrofits. Because of the nature of the products produced in this facility, explosion proof fixtures were required to maintain high safety standards.

The LED lighting retrofit was completed in July 2011 and the positive impacts of the project are already apparent. The reduced frequency of fixture component replacement and/or lamp replacement, along with the more efficient LED lighting, will provide ongoing benefits of lower maintenance and electric costs.

Sekisui estimates that combined maintenance and electricity cost savings from the new lights will be approximately \$46,532 annually. This includes the cost of labor, material, and scaffolding to repair/replace lights, as well as the reduction in energy costs. The reduced need for lighting maintenance frees plant personnel to devote more time to work on other projects to reduce the facility's carbon footprint.

Other important benefits derived from the project include increased employee safety and much better lighting quality. The new LED fixtures provide a cleaner, brighter, and better dispersed light than the light obtained from the old fixtures.

With the old lights, there were “dark spots” in some of the buildings. The light was sufficient directly underneath the fixture, but was poor between fixtures. The LED lights have provided a much more even and consistent light throughout the buildings.

Sekisui has been so impressed with the quality of light from the LED fixtures that we have implemented additional lighting retrofits beyond the scope of the original grant funding.

Sekisui’s partnership with the Kentucky Economic Development Cabinet and the funding from the ARRA program helps us achieve our mission:

At Calvert City, we are committed to working together to safely produce quality products that meet or exceed customer needs utilizing continuous improvement for the long term benefit of our employees, customers, shareholders and community



Type of LED Light Fixture Installed



Lighting in Saponification Building

Old Fixtures

New (LED)



Lighting in Stores Building

Old Fixtures

New (LED)

