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TIM BALL
SENIOR DIRECTOR OF FACILITY SERVICES,
SALK INSTITUTE FOR BIOLOGICAL STUDIES

![Image]

**Annual Savings: 2,612,000 kWh**

**SDG&E® Incentives: $284,000**

### Highlights

Central Plant retrofit includes:

- Electrical and mechanical infrastructure upgrade with electric chillers, high-efficiency boilers and variable frequency drives (VFDs)
- LED lighting
- Photovoltaic (PV) solar panels
- Electric vehicle (EV) charging stations
- Automated Critical Peak Pricing (CPP) processes

### An energy-efficient environment for world-class research

With a set of energy demands that has evolved since the campus was originally built in 1962, the Salk Institute completed an entire retrofit and expansion of their Central Plant mechanical and electrical infrastructure to improve overall energy efficiency, sustainability, and cost savings. Tim Ball, Senior Director of Facility Services at the Salk Institute for Biological Studies comments on this major undertaking, “The ultimate challenge was trying to complete the full scope of the project within the confines of an historic and iconic structure.” In addition to maintaining design integrity, changing out the entire infrastructure without interruption to the science was an endeavor in and of itself.

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About the Salk Institute for Biological Studies
The Salk Institute for Biological Studies is one of the leading scientific research institutions in the world. Founded in 1960 by Dr. Jonas Salk and designed by architect Louis Kahn, the Institute employs a scientific staff of more than 850. Its major areas of study include Molecular Biology and Genetics, Neurosciences, and Plant Biology. Knowledge acquired in these areas provides potential new treatments for diseases such as cancer, AIDS, Alzheimer’s, cardiovascular disorders, anomalies of the brain, and birth defects.

A comprehensive change out
The upgrade of the Salk Institute’s Central Plant infrastructure included the installation of new electric chillers, high-efficiency boilers and the implementation of variable frequency drives (VFDs) for supply, exhaust fans, and pumping systems. While undergoing this expansion, the Institute was able to minimize operational interruptions by functioning on redundant electrical and mechanical systems. Ball describes some of the benefits of the upgrade, “The new infrastructure now provides a more efficient and reliable supply of electrical, heating and cooling services to the Institute. And, it holds capacity for future growth while reducing energy use, maintenance expenses, and the long-term impact of our carbon footprint.”

As part of its Central Plant retrofit, Salk introduced a number of energy-efficient measures including the installation of LED lamps for exterior and corridor lighting. Alex Ter-Vrugt, SDG&E Senior Account Executive points out, “The LEDs help match the original look of the 250 watt incandescent from the Kahn architectural design, while gaining significant energy savings and a longer lifecycle.” Salk also incorporated 460 kW of rooftop photovoltaic (PV) power, representing up to 15% of its peak power needs. The Institute also installed four electric vehicle (EV) charging stations.

Upgrades leading to sizeable gains
With the entire electrical infrastructure upgrade and new energy-efficiency measures, the Salk Institute has realized an annual savings of 2,612,000 kWh. And, by working with SDG&E’s Energy Efficiency Business Incentives (EEBI) program, they received $284,000 in incentives. “The EEBI program assisted in our overall ROI calculations, making it possible to incorporate all of the efficiency strategies throughout our whole project, rather than attempting to perform them on an individual basis. This provided a more immediate return for us,” explains Ball. The incentives also helped offset the cost of both the VFD and PV implementations.

In addition to the EEBI program, the Salk Institute participates in SDG&E’s Critical Peak Pricing (CPP) program. As part of its normal business practice, Salk already automates systems to function as efficiently as possible so they always operate at optimal performance when a demand response event occurs. However, through automated CPP processes, additional cutbacks are initiated when the need arises.

Energy enhancements with global impact
Ball summarizes the achievements, “Although challenging, the opportunity to enhance this infrastructure with energy-efficiency improvements was monumental, as the Salk Institute is a haven for discovery with global impact on human health.”

For more information
To learn which SDG&E program is right for your business, contact your SDG&E Account Executive, call the Energy Savings Center at: 1-800-644-6133 or email ESC@semprautilities.com.