



# Commissioning Case Study

## Central Power Plant

### Chiller Performance Test

Riverhead, NY

## Background

As part of a CFC refrigerant replacement project, Suffolk County Department of Public Works (SCDPW) elected to replace two existing centrifugal chillers at the Riverhead County Central Power Plant with two new units utilizing a more favorable, environmentally-friendly refrigerant.

Through the use of the LIPA Commercial Construction Program, the project qualified for \$100,000 in incentives under the Prescriptive Approach method. LIPA included \$21,800 for Building Commissioning services, to review the design, oversee the installation and verify the performance of each unit in accordance with the program guidelines. LIPA assigned and fully funded a pre-qualified commissioning agent, Horizon Engineering Associates, LLP (HEA) to provide this service.

## Description

A comprehensive plan was developed to integrate commissioning services into the construction process for the installation of the new chillers. The commissioning scope of work included reviewing the equipment submittals and assisting with coordination, unit start up, functional testing, and training of the operations staff. The goal of the commissioning effort was to ensure that the units were installed properly, were maintainable and the unit performance satisfied the requirements for energy efficiency in addition to fulfilling the expectation of the owner and building operators.

## Solution

The installation of the new centrifugal chillers presented many challenges, specifically with the installation of the units, coordination of the service piping and the start-up of each unit. During the performance verification, the commissioning team identified significant deficiencies stemming from the methods of water balancing, resulting in a higher than acceptable electrical consumption ratio. To validate these deficiencies, a temporary water balance was conducted under design operating conditions and demonstrated an acceptable kW per ton efficiency ratio in accordance with the LIPA program guidelines. Overall, commissioning demonstrated a significant value to the owner both in future maintenance costs and operating expenses.



Commissioning Provider:  
Horizon Engineering Associates, LLP  
Customer Name:  
Suffolk County Dept. of Public Works  
Location: Riverhead, NY  
Commissioning Fee: \$21,800  
LIPA Cx Funding: \$21,800