

Fleet Readiness Center Southwest, Energy Savings Performance Contract, Phases I and II



Recognizing that process and readiness are interconnected, FRC continues to meet its mission goals and expectations by producing an anticipated 341 aircraft within a year and maintaining its war fighting capabilities and people preparedness.

Client

Fleet Readiness Center - Southwest

Location

San Diego, California

Contract Value

Phase I: \$24 million
Phase II: \$25.5 million

Years

2015–current

Project Size

80 buildings, 1.7 million square feet

Annual Savings

Phase I:

Total cost savings: \$3,428,374
Electrical: 2,611,714 kWh
Water: 4,852,000 gal

Phase II (estimates):

Total cost savings: \$4,003,616
Electrical: 28,633,646 kWh
Water: 935,000 gal

Project Overview

Fleet Readiness Center (FRC) -Southwest faced a considerable challenge in meeting federal energy and water efficiency mandates at the same time as its capital budget was shrinking and its operations were expanding. To meet these challenges, FRC began a multi-phased energy savings performance contract (ESPC) with the US Army Corps of Engineers (USACE) and AECOM.

Established in 1919 at the Naval Air Station North Island, FRC is the birthplace of naval aviation maintenance and the first aviation maintenance facility established in the Department of Defense (DoD). FRC provides world-class support to US Navy and US Marine Corps tactical, logistical, and rotary wing aircrafts and their components, with field sites at bases in Arizona, California, Hawaii, Washington, and Japan. FRC's mission is to "generate readiness through timely and a responsive production of engines, aircrafts, and components for the warfighter."

Since 2015, AECOM has been an integral part of the FRC mission. Our work on Phase I of the ESPC helped FRC realize major increases in energy and water efficiency that greatly reduced costs and improved operations. In 2018, AECOM was awarded Phase II of the ESPC, which includes continuing to support FRC in meeting their energy goals by reducing costs while improving operations and infrastructure.

Client Benefits

AECOM assisted FRC in realizing major increases in energy and water efficiency that reduced costs and improved operations and comfort by:

- Supporting their war fighting capabilities, weapons systems, and infrastructure requirements to ensure their mission readiness
- Upgrading aging, failing, and inefficient systems with high-quality systems
- Improving reliability and reducing operational and maintenance costs



- Developing energy, water, and operational savings that finance complete payback in just 14 years
- Retrofitting lighting systems with LED technology
- Modernizing its industrial production capacity with energy-saving retrofits

Among the noteworthy achievements of the project were the design and construction of a new calibration laboratory for the Primary Standards Division of FRC. This "dream lab" includes a 100 percent increase in lab space; a modern, water-saving recirculating system; a solar thermal process heating unit; a high-efficiency chiller; advanced compressors; and an energy management control system with new data cabling, lighting, and flooring. The modernized infrastructure allowed the facility to increase its production and accept additional contract awards.

This ESPC was eligible to receive both customized and prescribed rebates from San Diego Gas and Electric (SDG&E). AECOM applied for utility incentives for the lighting upgrades and controls, mechanical retrofits, solar thermal heating, and compressed air system retrofit and heat recovery.

Work Performed

Phase I

FRC's indoor and outdoor lighting systems received 3,549 new interior and 216 exterior light fixtures that were improved with the newest generation LED technologies.

The project installed 19 new compressed air plants to vastly improve production reliability. Because HVAC systems at one of FRC's largest buildings were at the end of their useful



After leading a collaborative process to develop measures for energy, water, and operational savings, AECOM completely financed the project investment over 14 years.

lives, these systems were completely replaced with modern components and advanced control systems.

Water savings were achieved primarily through the installation of a zero blow-down system for cooling towers. The system removes calcium and magnesium from a make-up water stream before it enters the cooling towers, thus eliminating the expensive need to maintain water chemistry in blow-down towers.

AECOM worked directly with SDG&E to coordinate the required pre/post-inspections and to provide monitoring and verification reports to the utility in order to maximize the utility incentives offered for the various measures.

Phase II

Work planned for Phase II includes retrofits and upgrades to lighting, lighting controls and HVAC systems, and decentralization of compressed air systems and water conservation measures for the cleaning facility and cooling towers.