

# Naval Station Everett Uses Advanced Metering to Validate Energy Projects

## Retro-Commissioning Projects Reduce Energy Use Up to 15 Percent

**THE NAVAL STATION** Everett energy team is using data from its advanced meters to validate energy projects at two buildings on the base.

Advanced utility meters, capable of showing how much energy is used in a building at specific times of the day and night, have been widely installed across government facilities. Such

“smart” meters are a relatively recent requirement of the Energy Independence and Security Act of 2007. Although the meters themselves do not save energy, they can lead to increased visibility of energy use. Energy managers use meter data to uncover excess energy consumption and to verify that measures undertaken to save energy have met their goal.

Most recently, the Naval Station Everett energy team used advanced meter data to help quantify and verify the cost savings from a retro-commissioning project at Naval Station Everett’s administration building (Building 2000). Retro-commissioning is a process of testing and correcting a building’s heating, air conditioning and fresh air distribution systems to ensure that individual components are working as designed, and that the system as a whole is working efficiently.

Retro-commissioning was completed on the south side of Building 2000 during August 2014, while the north side is scheduled to be completed at a later date. This allowed for comparison of meter data between the south and north side of the building as a control for interpreting the savings. The retro-commissioning process revealed that fan speeds should be reduced at many of the variable-air-volume air distribution terminals in rooms throughout the south side. This action saved energy and also improved occupant comfort. The process also revealed non-functioning dampers that have since been repaired. General testing



Naval Station Everett Resource Efficiency Manager John Payne with one of the installation’s new “smart” meters.

*Doug LaPlante*

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and balancing of the air systems helped to even out temperatures throughout the facility. To date, electricity savings at Building 2000 is approximately 12 percent.

Another retro-commissioning project was conducted at the Naval Station Everett Child Development Center in the fall of 2013. The process revealed control problems that allowed heating and cooling systems to run at the same time, and identified faulty dampers. Dampers were repaired and temperature sensors relocated to restore efficient operations. An in-depth analysis of electrical and natural gas advanced meter data was adjusted for weather data and showed an energy reduction of 15 percent for that project through the first heating season.

The retro-commissioning efforts at Naval Station Everett have improved working conditions for a number of people:

- The projects benefit the building occupants who now work in a more comfortable and predictable climate throughout the day.
- Facility managers and maintenance personnel benefit because they can expect fewer temperature-related complaints from occupants.
- The energy team, the command, and taxpayers overall benefit because of reduced energy consumption.

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Naval Station Everett Child Development Center (Building 1980).

*John Payne*

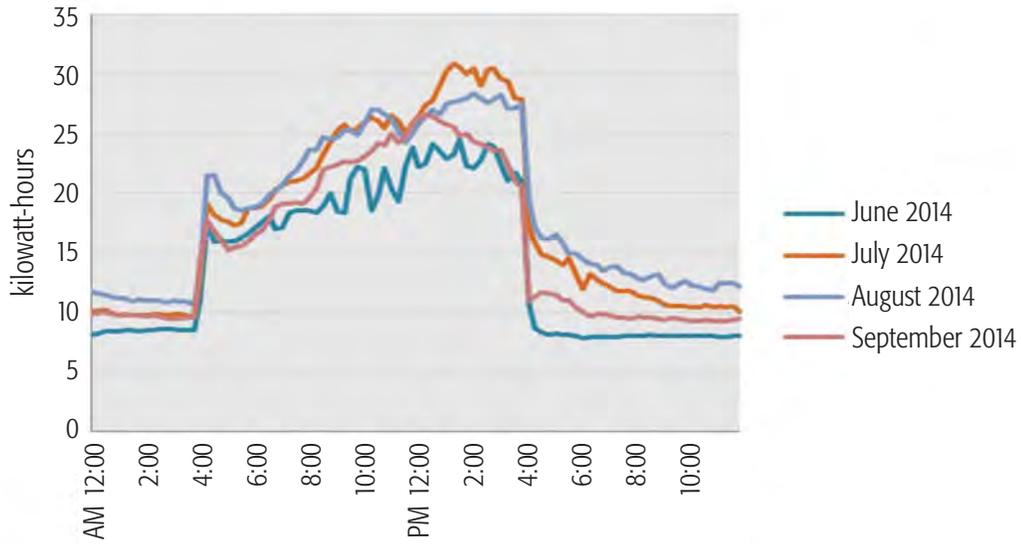


Naval Station Everett Administration Building (Building 2000).

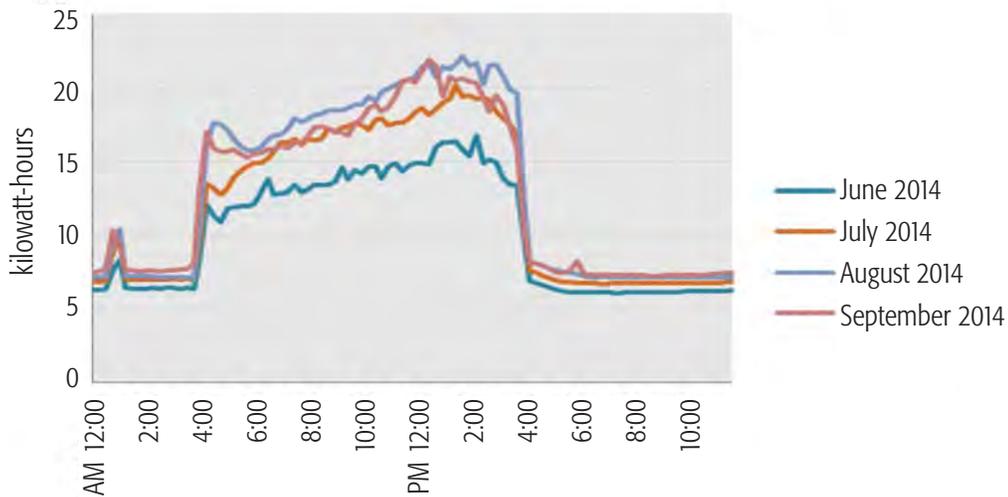
*John Payne*



B2000S Average Daily Electricity Consumption



B2000N Average Daily Electricity Consumption



The graphs above show the average electricity consumed at Building 2000 during different time intervals, June through September. The repair and tune-up phase of the retro-commissioning process began in late August and continued into early September. The north side of the building is somewhat smaller but very similar to the south side. The north side's graph

shows that energy use in June and July, prior to retro-commissioning, follows a pattern similar to the south side. August and September energy use relative to June and July energy use are lower on the south side than on the north side, showing that the energy reduction is not simply a result of lower outside temperatures. The savings are most noticeable during

afternoons in September when the south side energy use dips significantly relative to the north side energy use. [↴](#)

**CONTACT**

Leslie Yuenger  
Naval Facilities Engineering Command  
Northwest  
360-396-6387  
DSN: 744-6387  
leslie.yuenger@navy.mil