Energy Smart Services

solutions & incentives for business

SECTION 4

OPERATIONS & MAINTENANCE SERVICES

from Seattle City Light

- Big capital improvement projects often receive priority at the expense of the ongoing maintenance of existing equipment. Stuck outside air dampers and clogged heat recovery coils are easily forgotten as more dramatic issues need attention. But deferred maintenance can have a huge effect on energy consumption, and neglected repairs can negate the effects of large capital investments in energy efficient equipment.
- Energy Smart Services encourages customers to pay careful attention to operations and maintenance in four ways:
- First, Facility Assessments identify problems in building operations, and supply specific low-cost suggestions for improvements that can be implemented quickly.
- Second, as a condition of funding an energy conservation measure, City Light may require the owner to repair, clean, or adjust broken equipment related to that measure. For example, it doesn't make sense for City Light to fund a super-efficient piece of equipment that is controlled by a dysfunctional time clock. The time clock needs to be repaired.
- Third, City Light staff help to make sure building operators understand newly installed equipment and are familiar with its operation so energy savings will be ongoing.
- And finally as a pilot project, Seattle City Light is offering limited funding to facilities that wish to pursue operation and maintenance upgrades independent of other installation incentives. Operation and maintenance measures are inexpensive and very effective. By striving not only for maintenance, but also for continuous improvement, customers can work to bring down operating costs in very inexpensive ways.

Section 4.
Operations and Maintenance Services

- The Relationship Between ECMs and O&Ms
- Operations and Maintenance Measure Recommendations
- Operations and Maintenance Requirements as Part of the Financial Incentives Contract
- Pilot Service: Funding for Recommended Operations and Maintenance Measures

Operations and Maintenance Services

Operations and Maintenance Measures (O&Ms) are repairs, replacements, and adjustments that offer a rapid payback on the investment due to their low cost and high energy savings. Typically, they are measures that involve the cleaning, repair or replacement of broken equipment, changes to control settings or software, or changes to operational procedures. Examples include: replacing the "dogs" on a mechanical time clock if they have all been removed; replacing a broken thermostat; cleaning a clogged heat recovery coil; reactivating night setback software that has been overridden; or repairing an outside air damper that is stuck in the full open position. Rapid payback results from the fact that often a very small adjustment or inexpensive piece of equipment has a disproportionate effect on energy consumption. Energy Smart Services offers the customer technical assistance in identifying Operations and Maintenance Measures.

THE RELATIONSHIP BETWEEN ECMS AND O&MS

The efficiency of a customer's facility is dependent not only on the initial selection of efficient equipment, but also on effective operation and maintenance throughout the life of the equipment. For that reason, Energy Smart Services supports energy efficiency both through capital investments and operations and maintenance.

Facility investments are typically broken down into project-specific capital budgets on the one hand and annual operations and maintenance budgets on the other. Seattle City Light's Energy Smart Services funding creates a bridge between capital investments and operations and maintenance. Through Financial Incentives for ECM Installation, Seattle City Light increases the amount of capital available during equipment selection allowing the customer to select equipment that is likely to have lower operating costs due to its higher efficiency. In addition, Energy Smart Services recommends ways that the equipment can be operated and maintained so that it can fully realize its efficiency potential.

OPERATIONS AND MAINTENANCE MEASURE RECOMMENDATIONS

In a Facility Assessment, the Energy Management Analyst outlines how the customer can improve facility efficiency through both Energy Conservation Measures and Operations and Maintenance Measures. Because O&Ms are generally low-cost, fast payback items, the customer may decide to move forward on them independent of subsequent City Light funding contracts for Energy Conservation Measures. In other cases, the availability of measure funding gives higher priority to O&Ms that the building operations staff may have already had on their list of things to do.

Some facilities have a comprehensive preventative maintenance program targeting a wide range of goals, including prolonging measure life, occupant safety, comfort, and in the case of manufacturing, increased production rates and product quality. Although Seattle City Light has high regard for such an approach to maintenance, in order to work within realistic expectations for budget and staffing, Energy Smart Services projects target a list of specific operations and maintenance actions rather than ongoing facility-wide preventative maintenance plans.

OPERATIONS AND MAINTENANCE REQUIREMENTS AS PART OF THE FINANCIAL INCENTIVES CONTRACT

When a customer signs a City Light funding contract for Energy Conservation Measures, he or she also makes a commitment to good maintenance of the systems on which the measures are being installed.

1. Operation and Maintenance of Existing Equipment

The scope of work specified under the Seattle City Light funding contract includes the Energy Conservation Measures being funded and a list of any O&Ms needed to bring the same systems into proper operation. Seattle City Light payment is issued after the measures and O&Ms have been completed per contract.

2. Operation and Maintenance of New Equipment

Building operator understanding and commitment is essential to the success of energy conservation projects. Prior to City Light payment, the Energy Management Analyst assigned to the project checks that the Energy Conservation Measure is operating properly and that the customer's operations staff is familiar with its operation. The City Light funding contract language also requires that the customer operates and maintains the equipment over the assumed measure life. The customer is asked to accept responsibility for proper operations and maintenance of equipment purchased because the Energy Conservation Measures need to be properly maintained and operated to realize the energy savings that are the basis of City Light energy conservation investments.

PILOT SERVICE: FUNDING FOR RECOMMENDED OPERATIONS AND MAINTENANCE MEASURES

Traditionally, City Light's energy conservation program offered technical support and capital funding in return for the customer's willingness to take responsibility for operations and maintenance. In February of 2003, Energy Smart Services will expand to include a pilot service for funding Operations and Maintenance Measures. Under that pilot service, O&Ms recommended by an Energy Management Analyst may receive one cent per kWh of estimated first-year savings based on simplified Custom Incentive calculations. The funding process will otherwise be the same as for Energy Conservation Measures (see *Financial Incentives for ECM Installation–Steps to Participate* in Section 2 of this manual).

The O&M pilot service operates on a limited budget, which is assigned at the utility's discretion to capture a wide range of building types, customers and building system technologies. O&Ms on systems affected by Energy Conservation Measures do not receive funding under the pilot service; they are to be completed by the customer in return for measure funding.

If the O&M pilot service demonstrates the effectiveness of O&M funding, the service may become a standard part of the Energy Smart Services program. It must be kept in mind, however, that the funding required throughout the city to attain energy efficient operations and maintenance far exceeds the utility's total annual energy conservation budget. So it is hoped that O&Ms funded or required by the utility may encourage customers to increase their own

investments in O&Ms as way to lower overall operations costs. The intent of Energy Smart Services funding is to "jump start" existing building owners to achieve superior performance, not to support ongoing Operations and Maintenance. In selecting projects for funding, Energy Management Analysts will seek out customers who show a commitment to sustaining the funded improvements.