Energy Management Study

Using

A1 Motor Controllers

Conducted at:

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By:

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ENERGY SAVING TEST RESULTS FOR SUCO COLLEGE

Test Design Criteria:

It was the intention of this study to identify the reduction of energy costs potential by employing the A1 thermostatically controlled motor speed control device designed by OGD, Inc. The intent of this study is to monitor the electric energy consumption of two uni-vents. The two units would be located in two identical rooms. One would be retrofitted with the A1 unit, and the second unit would be without the A1 unit and set to medium speed (the normal setting).

Both test groups would be equipped with power analyzer energy dataloggers to monitor the energy consumption of each unit in the test group.

While it is apparent, a number of various factors can govern pricing structure for electricity used 10.5 cents per KWH as the average for the calculations. We will also be using an average figure of $275.00 per installed cost for the A1 speed controller, to calculate payback, etc.

Energy Savings Test Data:

1   On May 19, 2005 two energy monitoring devices were installed in the Schumacher Building, in through-the-wall Herman Nelson univents. The univents contained (1) ¼ HP 115V 4.2 Amp 1027 RPM motor (GE M#KCP39LG) along with various building monitor and valve controls. The 1st was installed in room #202 along with the energy saving A1 device. The second energy monitoring device was installed in the next room #203, with no A1 installed.

2   From May 29th thru June 28th of 2005 numerous readings each hour (24-7) through these dates showing the energy consumption of each unit.

3   In late June, 2005 this data was down loaded to an OGD field computer. The following are the results of this comparative test data:

With reference to Chart C-1 we found:

1   A savings of 71357.4 Watt Hours on the A1 equipped unit over the
     unit without an A1 installed over the same time period.
2   This equates out to a cost savings of $91.10 per unit per year.

Equation:

133987.5 WH used Without A1, 62630.1 WH used With A1
133987.5 WH - 62630.1 WH = (71357.4 WH / 1000)= 71.35 KWH * 10.5
cents per KWH =$7.49 / 30 test days=$0.2496 per day.
$0.2496 * 365 days in year = savings of $91.10 per unit per year
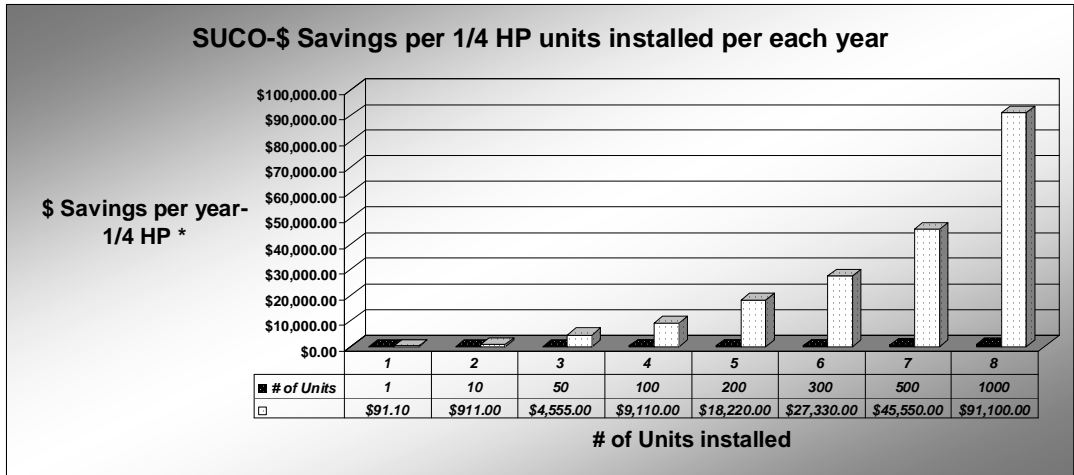

SUCO: Energy Usage Study- by OGD, Inc.
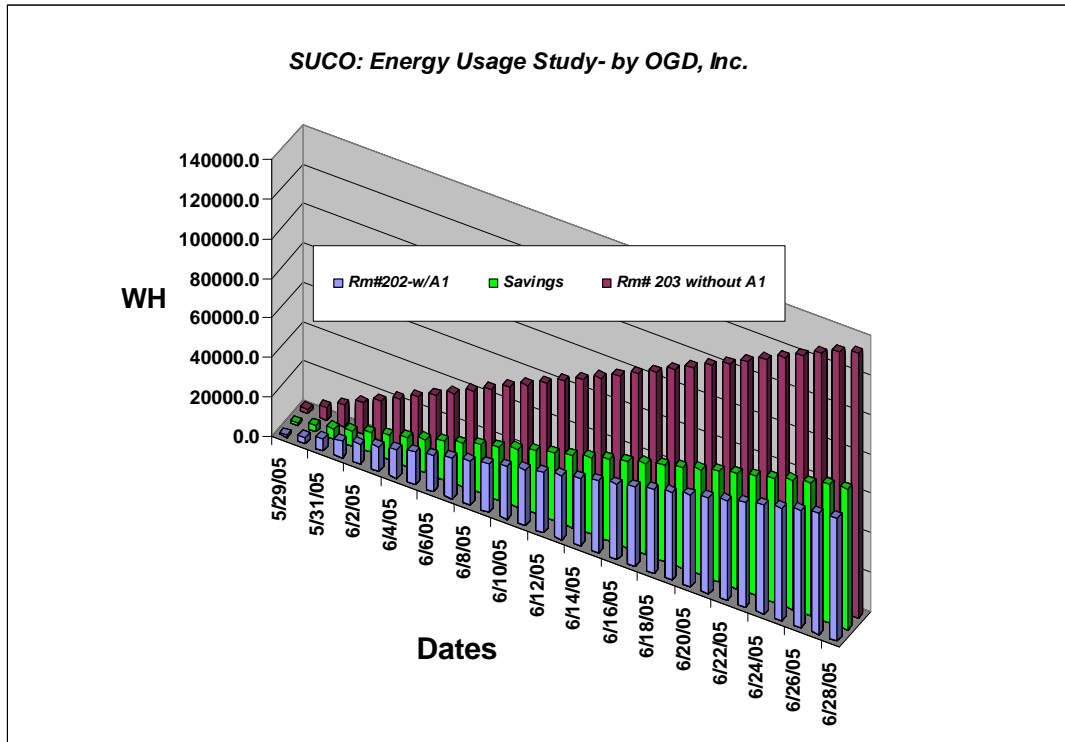
The savings becomes considerable when quantity units are involved such as when 300 units are installed the savings become $27,330.00 per year or more.

Summation

It should be noted here that while the savings of installing the A1 in an entire building would certainly add up, other energy savings are also generated:

1. **First, savings are generated due to the decreasing amount of (on line) time the main plant boiler or chiller unit is required to operate, along with associated pumps, steam & chiller valves, etc.**

2. **Next, the longevity of the motors has a direct impact on reduced maintenance costs.**

3. **Then we have a smoothing out of the thermostat setpoint temperature fluctuation, (See C-2& 3). From these charts you can see the ability for a thermostat to be set up higher for cooling or lower for heating while maintaining the same or better comfort range.**

4. **Other areas of advantage (apart form energy savings) of the A1 motor controller is the reduced noise levels, (especially beneficial in class rooms), and the elimination of air stratification, draft reduction on personnel, etc.**

5. **This test as mentioned was based on a ¼ HP motor and represents a savings based on one uni-vent. Note chart showing savings based on multiple installs.**

SUCO-$ Savings per 1/4 HP units installed per each year

	1	2	3	4	5	6	7	8
■ # of Units	1	10	50	100	200	300	500	1000
□		$91.10	$911.00	$4,555.00	$9,110.00	$18,220.00	$27,330.00	$45,550.00	$91,100.00

# of Units installed

Actual data pages supporting the charts can be provided on request.

We appreciated participating in this study and the many others we have conducted in various institutions, and find that the results even in greatly varying conditions, and climates have proved the A1 to be of great value in the industry of today with its ever increasing world energy costs.

Sincerely,

Dale A. Degler, Sr.
Applications Manager