

Best Practice #117

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Title: Integrated Controls Result in Significant Energy Savings

Facility: Building 802 / Sandia National Laboratories

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Brief Description: Installation of integrated energy controller and occupancy sensor for controlling lighting, daylight, and HVAC for office area save an estimated 30% in electrical consumption.

Why Best Practice used: In an effort to make progress on site energy reduction goals, pilot integration of occupancy sensors to both lighting and HVAC.

What are the benefits: The benefits are the estimated savings of over 30% of energy consumption and associated energy costs.

What problems/issues were associated with the Best Practice: Tuning the occupancy sensors to coincide with office activities, scoping and purchasing appropriate sensors and devices.

How success of the Best Practice was measured: Metering of the circuit allowed us to calculate the resulting energy savings.

Description of the process experience using the Best Practice: Once adjustments were made to the occupancy sensor timing the occupants of the area are very pleased with the results. Also, replacement of lighting with LEDs reduces electrical safety risk since bulbs do not have to be replaced as often and voltage is lower than fluorescent lighting.

Next Steps:

1. Expand installations. Now that we have data for the pilot building, the occupancy/HVAC systems are being installed in additional office buildings, larger office buildings and then office/light laboratory buildings
2. Investigate integrating LED lighting retrofits and HVAC control. This step has already started.
3. Determine limits for HVAC control portion. Currently we are allowing the HVAC to drift plus or minus 2.5 degrees from current set point. Our next step will be to allow the zone temperature to drift 5 degrees.
4. Integrate plug loads.