Winn Energy Controls, Inc.

View M&V Report (s)

Our automated Measurement and Verification reporting capability provides the user with a setup screen available through the web interface allow the user to:

1. Select the building to run the report against.

2. Select the pre-formatted report against a list of ECMs:
   a. Total Building
   b. Individual HVAC Unit
   c. Chiller
   d. Pump
   e. Lighting Circuit
   f. Solar System
   g. (Additional measures are being formatted).

3. Simply run the report without any other filters or sorting to view all the data available.

4. Select if all the data set will be used in the analysis / report or if only the occupied or un-occupied data is to be used. If occupied data is desired, then the use will select from the pull down menu the start time and end time for daily occupation and individual or multiple days to be included.

5. The User will also select the Baseline dataset period, start day/date and end day/date from the pull down calendars.

6. The User will finally select the Post Retrofit dataset period, start day/date and end day/date from the pull down calendars.

The report can be accessed following these steps:

1. Log onto your web browser, internet explorer.
2. Go to www.winnenergy.com
3. Access the Server Login from the home page.

4. When presented with the login form:
   a. User Name: energypro
   b. Password: demo
5. Select from the menu across the top Reports
6. Select from the Reports Menu: M&V
7. Select from the Building List: Any building starting with M&V.
8. If you don't select anything from the M&V setup page but simply press the View at the bottom it will run the report against the dataset imported using the import tool.

The M&V building reports are running against sample datasets that were developed to show the report and validate the calculations. It is not being used to actually represent recorded data.

There has been a MS Excel spreadsheet developed to allow the user to automatically "bring-in" data collected using stand-alone data loggers or from other sources of data to utilize the web to calculate and present the data. This function is also available to import data and use the automated calculations and reporting functionality. The spreadsheet template will be made available to allow a third party to submit data if for no other reason than to verify the calculated results of the web report.

Typically, this automated M&V capability will be utilized by our ADRES controller hardware to collect all the necessary data hourly as it presently is doing to allow meaningful engineering and analysis to take place for determination and recommendation of operational, maintenance and efficiency improvements based on the trending and actual results.

As can be seen, the user will be able to slice and dice the data on an almost limitless basis.

The M&V building test data set has baseline data starting September 3 to September 30, 2007 four weeks worth of data. The post retrofit data set is from Oct 1 to October 30, 2007.

Configure EnergyPro M&V (s)

Using the Configure EnergyPro M&V through the web interface under the Options menu. The ADRES controllers working in combination with the EnergyPro server software can provide control as well as monitoring / data-recording to generate the necessary M&V data on a real-time and historical basis. This data is used to calculate and display the energy consumption and resulting performance and savings for the building as a whole, or individual heating, ventilation, air-conditioning, lighting, refrigeration, pumps, and other systems for a building or facility.

The Configure EnergyPro M&V provides a setup screen available through the web interface. The following sequence describes the procedures to setup and configure an M&V report:

1. Select the building to configure one or more reports against.

2. Select the starting date for the specific report to import data to be used to create the report. The ADRES hardware and the EnergyPro software must have been configured to automatically communicate to the building and collect the hourly data from the ADRES control modules. It should be noted that depending on how far back the starting date is from the current date would determine the time required for the server to import the data and calculate then display the reports.

3. Select the pre-formatted reports against a list of ECMs:
      i. Total Building
     ii. Individual HVAC Unit
    iii. Chiller
     iv. Pump
      v. Lighting Circuit
     vi. (Additional measures are being formatted).

4. Select the type of report to configure. The three types of reports, the data required from the control modules for each individual type will be presented under the Data Point Type after selection. The three current types of reports to select from are:
    i. HVAC / Building
    ii. Chiller / Pump
    iii. Lighting

5. Select the ADRES control module Unit number to create an individual unit-by-unit report. Select the control module or unit type from:
    i. HVAC unit
    ii. HVAC Zone Control
    iii. Lighting Control
    iv. Analog / Digital Control

    Where there are multiple HVAC units, HVAC Zone control units, Lighting control units, or Analog / Digital units within a building, an individual report can be created for each. Up to four Individual lighting circuit reports can also be created for each lighting control unit.

6. Lighting Circuit selection is only used when a Lighting Report is selected from the Report Type. When the Lighting Report type is selected and the Lighting Controller Unit is selected, then the available lighting circuits defined will be presented to select the individual circuit to configure for the report.

7. The Data Point Types necessary to perform the M&V calculations will be presented based upon the Report Type selected in Step 3. For an HVAC unit, the corresponding HVAC unit data points will be populated automatically, the only other data point input required to configure the report is the energy consumption sub-meter input. The energy consumption input can be selected from the ADRES Lighting or Analog/Digital control module which is being used to sub-meter the input. If a single ambient temperature input is desired, this can be done simply by selecting the Unit which is monitoring the common ambient temperature desired.

8. Once the above selections are made, Use the SAVE button to save the report configuration.

9. If additional reports are desired for the building, repeat Steps 1 through 8 above for each report configured.

10. After configuration of all reports, select and press the Import Data button to begin importing the data into a new data table on the MS Sql Server database running on the remote server. This data will be used to calculate and display the resulting M&V report. The Import Data command will import all data for all reports configured for the individual building. Note, depending upon the amount of data and the start date for the import, the creation of the data set could take several hours to perform. The import will continue if the web browser times-out or is shutdown.

11. If during the configuration of a report a mistake is made, select and press the Cancel button.

12. If the data was not defined properly for the report after the import data was accomplished, select and press the Delete All Previous Data button. This selection will delete all the imported data for all reports for the individual building.