

Avenal State Prison Condensate Return System Monitoring Plan

The following methodology illustrates how savings will be measured for the **Water Savings** component of this project:

Whole Facility Continuous Measurement (Method C)

Method C utilizes a utility bill analysis method of energy savings at the facility level. This method of verification is used for reduction projects that consist of measures that are affected by variable loads and varying end use requirements such as: changes in building occupancy, weather variations, and varying equipment efficiency based on maintenance frequency. Increases or decreases in occupancy hours that result in adjustments in the operating hours of water consuming steam heating equipment is also an example of how this method will be applied. A baseline of monthly use is established, and upon completion of the water reduction measures, the actual monthly water consumption figures from utility billings are compared on a continuous basis. The difference between the established baseline and the current bills equals the savings. When conditions change that may prompt a temporary or permanent adjustment to monthly baseline figures, those adjustments are made and the newly adjusted figures are used for comparison against current billings.

Baseline Adjustment Procedures

It is typical for a building's use to change from time to time, and it is common for structural and mechanical modifications to take place over time. An adjustment of established baseline water figures reflecting changes in operational conditions will most likely be necessary. Some examples of the conditions that may trigger baseline adjustments are: modifications to equipment run time schedules, increased override hours, modified control settings (temperature, % of outside air, static pressure), increased or decreased facility use, gradual baseline creep

The methodology used for baseline adjustments for the building will be categorized as either Permanent Baseline Adjustments or Temporary Baseline Adjustments and baseline adjustments will be made accordingly.

Natural Gas and Electric Savings will be measured using the following methodology:

Stipulated Calculations (Isolation Retrofit Method A &B)

The stipulated calculation method or "isolation A" of energy savings verification is primarily used for constant load reduction type measures for which energy savings can easily be isolated. Typically these measures are lighting only retrofits, motors replacements or any other isolated constant draw device. The existing equipment KW and gas usage is established, as well as the post retrofit calculated usage, the difference becomes the stipulated amount of savings based on run time. The argument for not using the utility bill analysis method for constant load reduction type measures is that only a minor portion of a building's energy consuming equipment is being altered and any increase in building equipment usage can easily offset savings that would come from the equipment which was retrofitted. With the Stipulated approach we will agree with the client regarding the number of components to be measured. This includes a testing of the electric draw of the pre-retrofit component (or name plate/cut sheet identification) and a post retrofit measurement of the new component.

Baseline Adjustment Procedures

It is typical for a building's use to change from time to time, and it is common for structural and mechanical modifications to take place over time. An adjustment of established baseline energy figures reflecting changes in operational conditions will most likely be necessary. These adjustments will be based on run time at the component level.