Facility:

Commissioning Provider: Date:

DIRECTIONS: Address each item listed or note why it was not tested/investigated. Add other items that were tested/investigated. Note what testing/investigation was done, how these were conducted and results of the testing/investigation. Indicate any operating parameters found. Put in EEI# for improvements to resolve items that are not optimal or explain why no improvements are recommended. Complete full EEI description and information in PSE NC Post Occ EEI Details form. Include other capital improvements that may be cost effective. Expand to fit information or note specific location of information. (Handwritten legible notes are acceptable.)

**SYSTEM TYPE: ENERGY DATA**

**ENERGY USE INDICATORS INVESTIGATED** *(be specific)***:**

**Meters Examined:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Energy Type** | **ID#** | **Utility** | **Interval Data?** | **Dates of Interval Data** | **Area Served** |
| *Example: gas* | *000347395* | *PSE* | *No* | *None* | *DHW* |
| *electric* | *none* | *sub metered* | *No* | *None* | *Tenant: Community Bank* |
| *electric* | *Z00008882219* | *PSE* | *YES* | *1/12-3/14* | *Entire building* |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Bills Examined:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Energy Type** | **Account#** | **Utility** | **Dates** | **Area Served** |
| *Example: gas* | *200-009-663-069* | *PSE* | *1/12-3/14* | *DHW only* |
| *electric* | *200-005-673-081* | *PSE* | *1/12-3/14* | *Entire Building* |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**FINDINGS, TESTS and INVESTIGATION RESULTS:**

**Data Indicates Systems Working Optimally?**

**Yes No N/A Date(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EUI (Energy Utilization Index)**: The EUI (annual energy use/conditioned square footage) of the building is in line with typical (or design if very new building) energy use of this type of facility.

Comparison EUI background:

Facility type \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Source of EUI (eg: design model, PSE) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Energy Type** | **Annual Energy Use** | **Units** | **Conditioned Square footage** | **Dates** | **Facility**  **EUI** | **Typical or Design**  **EUI** | **Units** |
| **gas** |  | Therms |  |  |  |  | Therms/sf |
| **electric** |  | kWh |  |  |  |  | kWh/sf |
| **TOTAL** |  | kBTU |  |  |  |  | kBTU/sf |

Comments/Results/Findings:

**Yes No N/A EEI# \_\_\_\_\_\_\_ Date range of data examined\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ENERGY BILL DATA**: Billing data does not show any opportunities for energy savings. Following are typically what well-tuned building would show on billing data.

* EUI is reasonable (see EUI information above)
* energy use correlates with weather data for bills where heating or cooling is used
* energy use correlates with other items:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* balance point of building, temperature when mechanical heating and cooling start, meets expectations Heating balance Point: \_\_\_\_\_\_\_\_\_\_\_\_◦F Cooling Balance Point:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ◦F
* year over year use is not increasing without explanation
* current year’s monthly use did not increase compared with previous year’s monthly use without explanation
* differences in seasonal use seems reasonable
* use tracks occupancy if there are different occupancies throughout the year

Comments / Findings:

**Yes No N/A EEI# \_\_\_\_\_\_\_ Date range of data examined\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ENERGY INTERVAL SERVICE (EIS) OR OTHER INTERVAL DATA:** Interval data does not show any opportunities for energy savings. Following are typically what a well-tuned building would show on EIS data:

* night/unoccupied loads are low showing equipment is turning off
* weekday versus weekend profiles show very different use if appropriate
* specific times and days equipment is turning on and off closely match the unoccupied schedule or other expectations of equipment use and occupancy
* warm-up/cool down is not bringing system on too early (typically not on more than 2-3 hours before occupancy)
* daytime demand seems reasonable for the load in each season
* there are no unexpected/unexplained major increases in demand over time
* there are no unexpected/unexplained major spikes in demand
* data does not show equipment cycling on and off excessively.
* night/unoccupied loads do not show excessive overrides

Tests Conducted /Results/Findings:

**Yes No N/A EEI# \_\_\_\_\_\_\_ Date(s)/time(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ENERGY USE TRACKING (BILLS):** Customer has a system to track billed energy use and examines data on a regular basis to find opportunities for efficiency and spot possible problems. Customer understands how to track and interpret bills to assess energy use. Customer has a way of assessing the fluctuation of energy use that is dependent on weather, occupancy and other items that effect energy use.

Billing Energy Use Tracking Tool Used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Person who tracks: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Comments / Findings:

**Yes No N/A EEI# \_\_\_\_\_\_\_ Date(s)/time(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ENERGY USE TRACKING (INTERVAL DATA):** Customer has a system to track energy interval data and examines data on regular basis to find opportunities for efficiency and spot possible problems. Customer understands how to look at interval data and assess trends or anomalies. Customer has a way of assessing the fluctuation of energy use that is dependent on weather, scheduling and other items that effect energy use.

Energy Interval Tracking Tool Used: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Person who tracks: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Comments / Findings:

**Yes No N/A EEI# \_\_\_\_\_\_\_ Date(s)/time(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**CUSTOMER INSTALLED** **ENERGY USE MONITORING/SUBMETERING:** Energy use monitored/submetering and energy data shown on DDC or other system matches actual use. Customer understands how to extract and interpret data. Customer has monitoring or submetering in place if necessary to understand building use.

Energy Use Monitoring/Submetering in place: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Person who tracks: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Comments / Findings:

**Yes No N/A EEI# \_\_\_\_\_\_\_ Date(s)/time(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ENERGY DASHBOARD:** Energy use information is provided for customer and occupants in a simple form to give feedback to occupants and staff so they can engage in energy efficiency. Dashboard appears to be effective.

Dashboard in Place: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Person who manages: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Location of dashboard: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Comments / Findings:

**Yes No EEI#\_\_\_\_\_\_\_ Date(s)/time(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***OTHER****: Describe other things tested/investigated.*

Tests Conducted /Results/Findings:

**Yes No EEI#\_\_\_\_\_\_\_ Date(s)/time(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

***OTHER:*** *Describe other things tested/investigated*

Tests Conducted /Results/Findings:

**CAPITAL EE IMPROVEMENTS**

**EEI# \_\_\_\_**  *Brief Description of Capital Improvement*

Notes/Comments:

**EEI# \_\_\_\_** *Brief Description of Capital Improvement*

Notes/Comments:

**TRAINING**

**Yes No Date(s)/time(s)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Staff (occupants and O&M) fully understands how get energy use data (EIS, bills, DDC monitoring system, etc).**

**Staff (occupants and O&M) fully understands how to look at energy use data to see if building and systems are running efficiently.**

Specific Staff evaluated:

Comments:

**Specific Training needs of staff (occupants and O&M):**

**Ideas for Facility Guide/Operational Aides/Persistence:** What needs to be added (for example: energy tracking tool/spreadsheet), provided (for example: a pulse meter) or done (for example: identify person to track energy use) to help the operators track and analyze their energy use over time?