**Post-Installation Inspection Report**

*Customer Name*

*Address Street
City, CA 92867*

*Project Title – Project ID (in iEnergy)#*

**Prepared by:**

Implementer/Developer Name

Address City, CA 95403

Primary Contact Name

Email

Phone: xxx-xxx-xxxx

**Primary Post Installation Report Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| Rev | Date | Author & Organization | Summary of Changes |
| 01 | mm/dd/yyyy | Name, Title, Organization | Provide summary of changes |
|  |  |  |  |
|  |  |  |  |

|  |
| --- |
| Check appropriate boxes:[ ]  No changes to the proposed solutions have been made since the Project Application Review and Approval, and the  Implementer Name verifies that the Application approved savings calculations are correct. For NMEC projects, I acknowledge that all measures are fully installed and commissioned.[ ]  For Calculated projects, due to changes to the proposed measures, appropriate adjustments in the savings  calculations have been made. For measures with changes made during installation, use this section and Section 5 to *identify all the changes,* calculate the revised installed energy usage, energy savings, peak demand reduction, and incentives. Attach the appropriate calculation backup: the output from the Estimation Software, Calculated Energy Savings Total or the calculation sheets that document the engineering calculations.[ ]  For NMEC projects, due to changes to the proposed measures, scope of work, and/or non-routine events, building  repurposing, etc. adjustments in the savings calculations have been made. Use Section 5 to calculate the revised  installed energy usage, energy savings, peak demand reduction, and incentives. Attach the appropriate calculation  backup: the output from the Estimation Software, Calculated Energy Savings Total or the calculation sheets that  document the engineering calculations. ALL NMEC savings and incentives will be calculated and paid at the end of  the first full year of energy usage after project installation and commissioning. |
| **Name (please print)** | Primary Point of Contact Name |
| **Signature** |  |
| **Position / Title** | Title |
| **Date** |  Mo/Dy/Year |
| *By signing above, you certify that you are authorized to make this declaration on behalf of the Developer/Implementer and that this Post Installation Report and accompanying documents, are complete, true, accurate and correct to the best of your knowledge.**You acknowledge that misrepresentation will result in a rejection of all or part of the project.* |

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# **Customer Information**

|  |
| --- |
| **CUSTOMER INFORMATION** |
| **Customer Name**Customer’s Business Name | **Utility Service Account No.** 3-000-0000-42 |
| **Customer Contact**Jane Doe  | **Title**Engineer |
| **Customer Address**555 Seal Beach Blvd | **City**Seal Beach  | **State**  **Zip**CA 90740 |
| **CA Climate Zone**13 | **Telephone** 562-225-5555 | **E-Mail**jeffrey.doe@Customer.com |
| **Customer’s Typical Operations** | Description of Customers’ typical operations (business type, product, etc.) |

|  |
| --- |
| **PROJECT SITE/FACILITY INFORMATION** |
| **Project Site Name** | Customer Building 23 |
| **Project Site Address** | Address | City | State | Zip |
| 555 Seal Beach Blvd  | Seal Beach | CA | 90740 |
| **Meter Number** | V010V-000555 |
| **Building Code and Type** | OFS  | Office -Small |
| **Square Foot & Space use** | 10,000 |
| **Sector** | Residential [ ]  Commercial [ ]  Industrial [ ]  |
| **Segment**  | Warehouses / Refrigerated Warehouses |
| **Segment Description** | Wholesale Trade |
| **NAICS Code** | 42xxxx |
| **Climate Zone** | 13 |
| **Hard to Reach (HTR)?** | Yes |
| **Disadvantaged communities (DAC)** | No |

|  |
| --- |
| **PROGRAM CONTACTS** |
| **Implementer/Project Mgr./Utility Eng.**Matt Clack | **Utility Program Manager**Anthony Smith | **Utility Account Representative**Jane Doe |
| **Telephone**555-202-5555 | **Telephone**626-101-5555 | **Telephone**555-303-5555 |
| **E-Mail:** johndoe@Implementer.com | **E-Mail:** a.smith@iou.com | **E-Mail:** jane.doe@iou.com |

# **Executive Summary**

The implementer will use this section to provide readers a high-level summary of the project challenges, implemented energy efficiency measures, verified savings, verified measure costs, peak demand reduction, and critical project comparison details from pre- to post- installation.

## **2.1 Project Eligibility**

Provide a detailed update on project eligibility if it has changed from the approved Project Feasibility Study Report. State if no changes occurred.

* Does the customer pay PPP charges? [ ]  Yes [ ]  No
* Does the customer have cogeneration? [ ]  Yes [ ]  No
* Renewable energy [ ]  Yes [ ]  No
* Other non-utility generation [ ]  Yes [ ]  No
* Does the customer have another form of generation? [ ]  Yes [ ]  No
* If yes, describe the cogeneration system, and complete & supply a grid impact calculation and explain how it delivers power to the equipment/system.
* Discuss any load shifting strategies are being employed (i.e. Thermal Energy Storage)

Click here to enter text.

* Discuss if the customer is participating in any Demand Response Programs
	+ If this is not applicable, state not applicable

Click here to enter text.

## **2.2 Project Drivers**

Provide a detailed updated project drivers if it has changed from the approved project feasibility study report. Briefly discuss Program Influence, and reference the Project Feasibility Study. State if no changes occurred.

# **Project Details**

State all or no changes that occurred in the facility.

## **3.1 Facility Description**

Provide readers a concise and thorough overview of the site location, facility operation and general business focus.

* Climate Zone, Building Type and Description, Square Feet, Space Use
* Operating Hours - Provide Breakdown Hours/Day (M-F, and Sat-Sun)
* Seasonal off periods (maintenance/holiday shutdown)
* Production Data (if applicable)
* How the process type (steam, process heating, etc.) is utilized within the process and travels through the system
	+ Details on process operations can be provided in the appendix
* Provide a line diagram or Process Flow Diagram (PFD) to depict the facility process, equipment, and fuel use
* Include description of Non-IOU Fuel Sources

## **3.2 Energy Use Summary**

Tabulate the facility annual energy use totals for KWH, KW, and THERMS/YR as applicable for the post-install period. For NMEC projects, this is to be completed after the 12-month reporting period.

Table 3.1: Facility Annual Electric Use

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Service Account Number** | **Tariff (rate)** | **Electric Meter Number(s)** | **Annual Electrical Usage** | **Peak (max) demand (kW)** |
| xxx-xxxx-xx | TOU-8-R | xxxxxxxxx | xxxxxxxxx  | xxxxxxxxx |

Table 3.2: Facility Annual Natural Gas Use

|  |  |  |
| --- | --- | --- |
| **Description** | **Value** | **Source** |
| Gas Meter Number(s) | xxxxxxxxxxxxx | xxxxxxxxxxxxx |
| Average natural gas use over the past # years, 2012-2017, 2 months normalized to a year | ###### therms/yr | xxxxxxxxxxxxx |

## **3.3 Facility Equipment Inventory**

Provide a list of all relevant major equipment that is enclosed in the project boundary. Should include information about 1) onsite equipment that was not replaced, 2) onsite equipment that was replaced, and 3) new equipment that was installed.

* Equipment Type/Capacity/Manufacturer, Loads Served, Nameplate Data, Plate Rating
* Equipment Location, Condition (including photographs)
* Equipment Operating Procedures (schedules and set points, pressures, temperatures, etc.)
* Installation Dates (i.e. In Service Years)
* Equipment Schedule - Provide Breakdown Hours/Day (M-F, and Sat-Sun)
* Detailed sequence of operation (refer reader to attachments as needed)
* Detailed sequence of operation (refer reader to attachments as needed)
* Sources for all the above data including Non-IOU Fuel Source(s)
* **DO NOT** use general language, be very specific and include diagrams to describe processes

# **Implemented Energy Efficient Measures (EEMs)**

State all or no changes from the baseline or proposed condition. Explain what happened, and if it deviated from what was expected and documented. For each Measure, a full description of the Measure installed as part of the installation including all scope changes or deviations from approved PA project package Scope of Work and the resulting change in the savings from the baseline or proposed condition.

## **4.1 EEM 1 – Name of Measure (Measure/Solution Code)**

**Measure Application Type:**

Confirm the proposed MAT from the approved PFS report is valid for the implemented measure.

**Effective Useful Life (EUL)/Remaining Useful Life (RUL):**

Confirm the measure EUL values and cited data source from the approved PFS report is valid for the implemented measure.

**Standard Practice Discussion:**

Identify any changes to the standard practice discussion if applicable.

**Existing Equipment/System Operation:**

State and identify all or no changes that occurred to the existing equipment/system discussion and the baseline data.

**Implemented Equipment/System Operation:**

Provide detailed description of the proposed equipment or system operation, including location, operating hours, control method, equipment efficiency, changes to the approved PA project package Scope of Work for the proposed measure, etc.

* Utilize charts/graphs to present trend data
* What are the less efficient alternative measures?
* Compare facility operating hours vs. impacted equipment’s operating hours
* Quantify facility usage and measure savings
* Identify and quantify interactive effects
* Provide a picture that depicts the implemented measure
* Lighting measures require photo evidence in accordance with the Lighting Photo Guidelines.
* **DO NOT** use general language, be very specific and include diagrams to describe processes
* Site Inspection related information
	+ Site Inspection Date. Attendees present during the inspection and their role.
	+ Record of any unusual or abnormal conditions or events that occurred during the Primary Post-Installation Inspection and any actions taken in response thereto.
	+ Confirmation (statement and supporting documentation) each Measure in the Installation has been completed and installed in accordance with the applicable M&V Plan and is operating as planned and designed.
	+ A statement regarding any existing equipment that has been retained and still resides in the facility or currently serving as backup or planned to be used as backup equipment.
* **DO NOT** include in the savings estimate the Savings from equipment that does not contribute to each of the Expected Energy Savings, Expected Demand Savings, or Expected TRC Ratio.
* Lighting measures require documentation (manifest, invoice, etc.) from the licensed hazardous waste transporter showing quantities of lamps, fixtures, and ballasts/transformers removed during the project that have been recycled or disposed of. Documentation should show customer name and site address materials were taken from. If this is not available, customer will need to submit a signed affidavit by the customer AND licensed hazardous waste transporter certifying that the lamps, fixtures, and ballasts/transformers removed during the project have been recycled or disposed of in accordance with federal law and California state-specific requirements.

**Non-IOU Fuel Source:**

Confirm and briefly discuss Non-IOU fuel sources and how it affected this measure. If there were changes to the Non-IOU fuel sources from the approved PFS report, then discuss how the changes affected this measure. Provide:

* a statement, and supporting calculations and documentation, as to the amount the Installation reduced capacity use at the Site taking into account savings resulting from any Non-IOU Fuel Source(s)
* A statement, and supporting calculations and documentation, as to the amount the Installation will result in a reduction in the energy use at the Site taking into account savings resulting from any Non-IOU Fuel Source(s)

**Refrigerant Avoided Cost Calculator (RACC)**

Per Attachment A of Resolution E-5152, reporting of refrigerant leakage avoided costs is enabled by the refrigerant avoided cost calculator[[1]](#footnote-2), to be included in cost effectiveness calculations and is applicable to all measures that add new refrigerant. The reporting applies to all claimed measures. For custom projects, the RACC should also be used if the project is fuel substitution with heat pump added, or replacing electric resistance technology with a heat pump, or if the project involves use of low-GWP refrigerants. Documentation of the refrigerant avoided cost inputs and a copy of the refrigerant avoided cost calculator are required to be included as part of the custom application documentation package. Provide the project reporting parameters for each EEM where RACC is applicable.

**Fuel Substitution**

In order to include a fuel substitution measure, it must be demonstrated that the proposed measure passes the Fuel Substitution Test implemented by Decision 19-08-009. The Fuel Substitution Test has two requirements:

1. The measure shall not increase source energy
2. The measure shall not harm the environment

The Fuel Substitution Test and the technical guidance document are applicable only to fuel substitution measures which are eligible for energy efficiency incentives and included in the program administrator's energy efficiency portfolios. For more information on fuel substitution measures, review Decision 19-08-009 and the CPUC website for Fuel Substitution in Energy Efficiency[[2]](#footnote-3). The Fuel Substitution Calculator is an excel based tool used to perform the Fuel Substitution Test calculations. The technical guidance document includes a guide for using the Fuel Substitution Calculator. Additionally, for downstream fuel substitution programs, the fuel substitution infrastructure upgrade costs must be collected by populating the Fuel Substitution infrastructure data reporting template.

**Calculation Methodology:**

Verify actual loads and true-up savings calculations with post-install M&V data. Observed post-installation site conditions should be used for final approved savings.

* Provide detail on inputs (metered data, assumptions, spec sheet)
* Complete calibration of energy simulation model
* Reference any study and data source
* Include and label charts and pictures
* If a preferred calculation tool is not utilized, the calculation methodology must be clearly and concisely documented

State and identify all or no changes that occurred to the calculation tool or method.

**Final Estimated Savings:**

These final savings estimates are only the savings for which the customer may receive incentives for.

|  |
| --- |
| **EEM 1 – Name of Measure (Measure/Solution Code) Final Estimated Energy Savings** |
| Electricity Savings | **1,500,000 kWh** |
| Electric Peak Demand Savings | **20 kW** |
| Natural Gas Savings | **0 Therms/yr** |

## **4.2 EEM 2 – Solution Code (NMEC)**

**Measure Application Type:**

Confirm the proposed MAT(s) from the approved PFS report is valid for each implemented measure.

EEM-1: Measure Description - MAT

EEM-2: Measure Description - MAT

Discuss the Project level MAT that is not only suitable for an existing conditions baseline, but also the one which accounts for the majority of the project savings.

**Effective Useful Life (EUL):**

Confirm the measure EUL values and cited data source from the approved PFS report are valid for each implemented measure.

EEM-1: EUL, EUL Justification

EEM-2: EUL, EUL Justification

Weighted Average EUL:

Attach the Weighted Average Expected Useful Life worksheet[[3]](#footnote-4) as an appendix.  Discuss any variance from DEER EUL values or external sources for measures not identified by DEER or CPUC guidance.

**Standard Practice Discussion:**

Identify any changes to the standard practice discussion if applicable.

**Code Compliance:**

Describe any applicable code requirement with each implemented measure. Make direct reference to the energy codes by section and table number. Provide enough information (e.g., equipment specs, efficiency levels, applicable code requirements) at the measure level to show that the implemented measure provide to-code or above-code savings.

**Existing Equipment/System Operation:**

State and identify all or no changes that occurred to the existing equipment/system discussion and the baseline data.

**Implemented Equipment/System Operation:**

Provide detailed description of the installed equipment or system operation, including location, operating hours (M-F, Sat-Sun), control method, equipment efficiency, changes to the approved PA project package Scope of Work for the Implemented Measure, etc.

* Utilize charts/graphs to present trend data
* What are the less efficient alternative measures?
* Compare facility operating hours vs. impacted equipment’s operating hours
* Quantify facility usage and measure savings
* Identify and quantify interactive effects
* Provide a picture that depicts the implemented measure
* Lighting measures require photo evidence in accordance with the Lighting Photo Guidelines.
* **DO NOT**use general language, be very specific and include diagrams to describe processes
* Site Inspection related information
	+ Site Inspection Date. Attendees present during the inspection and their role.
	+ Record of any unusual or abnormal conditions or events that occurred during the Post-Installation Inspection and any actions taken in response thereto.
	+ Confirmation (statement and supporting documentation) each Measure in the Installation has been completed and installed in accordance with the applicable M&V Plan and is operating as planned and designed.
	+ A statement regarding any existing equipment that has been retained and still resides in the facility or currently serving as backup or planned to be used as backup equipment.
* **DO NOT** include in the savings estimate the Savings from equipment that does not contribute to each of the Expected Energy Savings, Expected Demand Savings, or Expected TRC Ratio.
* Lighting measures require documentation (manifest, invoice, etc.) from the licensed hazardous waste transporter showing quantities of lamps, fixtures, and ballasts/transformers removed during the project that have been recycled or disposed of. Documentation should show customer name and site address materials were taken from. If this is not available, customer will need to submit a signed affidavit by the customer AND licensed hazardous waste transporter certifying that the lamps, fixtures, and ballasts/transformers removed during the project have been recycled or disposed of in accordance with federal law and California state-specific requirements.

**Non-IOU Fuel Source:**

Confirm and briefly discuss Non-IOU fuel sources and how it affected this measure. If there were changes to the Non-IOU fuel sources from the approved PFS report, then discuss how the changes affected this measure. Provide:

* a statement, and supporting calculations and documentation, as to the amount the Installation reduced capacity use at the Site taking into account savings resulting from any Non-IOU Fuel Source(s)
* A statement, and supporting calculations and documentation, as to the amount the Installation will result in a reduction in the energy use at the Site taking into account savings resulting from any Non-IOU Fuel Source(s)

**Refrigerant Avoided Cost Calculator (RACC)**

Per Attachment A of Resolution E-5152, reporting of refrigerant leakage avoided costs is enabled by the refrigerant avoided cost calculator[[4]](#footnote-5), to be included in cost effectiveness calculations and is applicable to all measures that add new refrigerant. The reporting applies to all claimed measures. For custom projects, the RACC should also be used if the project is fuel substitution with heat pump added, or replacing electric resistance technology with a heat pump, or if the project involves use of low-GWP refrigerants. Documentation of the refrigerant avoided cost inputs and a copy of the refrigerant avoided cost calculator are required to be included as part of the custom application documentation package. Provide the project reporting parameters for each EEM where RACC is applicable.

**Fuel Substitution**

In order to include a fuel substitution measure, it must be demonstrated that the proposed measure passes the Fuel Substitution Test implemented by Decision 19-08-009. The Fuel Substitution Test has two requirements:

1. The measure shall not increase source energy
2. The measure shall not harm the environment

The Fuel Substitution Test and the technical guidance document are applicable only to fuel substitution measures which are eligible for energy efficiency incentives and included in the program administrator's energy efficiency portfolios. For more information on fuel substitution measures, review Decision 19-08-009 and the CPUC website for Fuel Substitution in Energy Efficiency[[5]](#footnote-6). The Fuel Substitution Calculator is an excel based tool used to perform the Fuel Substitution Test calculations. The technical guidance document includes a guide for using the Fuel Substitution Calculator. Additionally, for downstream fuel substitution programs, the fuel substitution infrastructure upgrade costs must be collected by populating the Fuel Substitution infrastructure data reporting template. Please reference CP&S E-PPICs No. 054.2 Revised Fuel Substitution Requirements Pursuant to D.19-08-009 for additional information.

**Calculation Methodology:**

Verify actual loads and true-up savings calculations with post-install M&V data. Observed post-installation site conditions should be used for final approved savings. For NMEC projects, this is to be completed after the 12-month reporting period.

* Provide detail on inputs (metered data, assumptions, spec sheet)
* Complete calibration of energy simulation model
* Reference any study and data source
* Include and label charts and pictures
* If a preferred calculation tool is not utilized, the calculation methodology must be clearly and concisely documented

State and identify all or no changes that occurred to the calculation tool or method.

**Final Estimated Savings:**

These savings estimates are only the savings for which the customer may receive incentives for. For NMEC projects, this is to be completed after the 12-month reporting period.

|  |
| --- |
| **EEM 1 – Measure Description Estimated Energy Savings** |
| Electricity Savings | **1,500,000 kWh** |
| Electric Peak Demand Savings | **20 kW** |
| Natural Gas Savings | **100,000 Therms/yr** |
| **EEM 2 – Measure Description Estimated Energy Savings** |
| Electricity Savings | **1,500,000 kWh** |
| Electric Peak Demand Savings | **20 kW** |
| Natural Gas Savings | **100,000 Therms/yr** |

# **Project Cost & Financial Analysis**

Provide a table (suggested format below) that details final project costs and sources of those costs. Implementer to discuss and identify with customer the appropriate financial analysis (payback, NPV, as applicable) and detail the source of any assumptions. Summarize the implemented expected savings for each measure along with their estimated individual financial incentives.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **Annual Estimates** |  |  |  |  |  |  |  |  |  |
| **EEM No.** | **Measure Description****(with Solution/Measure Code)** | **Measure Type** | **ElectricitySavings (kWh)** | **Electricity Savings (kW)** | **Gas Savings****(therms/yr)** | **Cost Savings** | **Installation Cost (GMC)** | **Incremental Cost (IMC)** | **Standard Measure Cost (SMC)** | **Potential Utility Incentive** | **Effective Useful Life (EUL)** | **Remaining Useful Live (RUL), for AR MAT only** | **Estimated Payback (Years) no incentive** | **Estimated Payback (Years) with incentive** |
| EEM-1 | Lighting Upgrade(xx-12345) | NR |  |  |  |  |  |  |  |  |  |  |  | 2.25 |
| EEM-2 | Chiller Upgrade(xx-12345) | AR |  |  |  |  |  |  |  |  |  |  |  | 1.75 |
| **TOTAL (ALL MEASURES)** |  |  |  |  |  |  |  |  |  |  |  |  |  |

## **5.1 California Public Utilities Commission (CPUC) NMEC Technical Guidance Document**

All NMEC projects require completion and submission of the CPUC Weighted Average Expected Life/Net to Gross Method Technical Document. This document named ‘ Weighted Average Expected Useful Life/Net to Gross Method’ is located on the [Rolling Portfolio Program Guidance (ca.gov)](https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/energy-efficiency/rolling-portfolio-program-guidance) on the CPUC.CA.GOV website. Identify any changes to the Weighted EUL if applicable (e.g. if changes were made to the scope of work) and attach the updated document. Otherwise, confirm that no changes apply.

## **5.2 Southern California Edison Simple Payback Tool**

All calculated projects require completion and submission of the SCE Calculated Incentives EUL-Simple Payback Tool. Identify any changes to the EUL-Simple Payback Tool if applicable (e.g. if changes were made to the scope of work). Otherwise, confirm that no changes apply.

# **Post Measurement and Verification Data Analysis**

Provide a detailed description of how the post-M&V data was used to true-up the final expected savings estimates including a summary of assessment of the measured data. For NMEC projects, this is to be completed after the 12-month reporting period.

A complete post M&V analysis must provide the following:

* State if Pre- and/or Post- M&V was implemented, if not, explain rationale
	+ Discussion of any rationale for any deviation from the Customized Guidelines or approved M&V plan
* The IMPVP Option used to determine savings
* Identification of project boundaries of the savings determination
* Data that was measured and verified
	+ Specify location of metering points on a line diagram
	+ Discussion of how the data was used in the calculations
* Specifications of measurement equipment, period (i.e. 2 weeks), and interval (i.e. 15min increment)
	+ Discussion of the accuracy of the measurement equipment
	+ Include no less than 2 weeks of metered data (pre- and post-)
	+ Discussion of capturing seasonality (i.e. harvest) in metered data
* Specifications of the exact data analysis procedures, algorithms, assumptions, software tools (name and version)
	+ Reference relevant sections of energy efficiency standards or guides used for assumptions
* How the results are reported and documented
	+ Discussion of uncertainty associated with the results
* Provide a statement regarding measurement accuracy and data uncertainty of measurement equipment

All BRO (Retrocommissioning and Operational) projects require a three-year maintenance plan or service contract at IR.

Table 6.1: Summary of Parameters Causing Final Energy Savings to Change from Approved Savings

|  |  |  |
| --- | --- | --- |
| **Description** | **Approved Value** | **Post-Installation Value** |
| [Production [lbs/yr]] | [#] | [#] |
| [Operating Hours (hrs/yr)] | [#] | [#] |
| [Facility Energy Usage (kW, kWh, therms/yr)] | [#] | [#] |
| [Combustion Efficiency] | [#] | [#] |
| [Flue Gas Temperature (°F)] | [#] | [#] |
| Others | [#] | [#] |

# **Final Project Parameters for Utility Energy Efficiency Programs**

Implementer to provide project reporting and technical parameters for each implemented measure (solution/measure code) that is part of the submitted application for utility incentive.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PA Approved** | **Post-Install Verified** | **% of Change** |
| **EEM** | **1**  | **1**  | **1** |
| **Site # / SA Number** | Site #SA # | Site #SA # |  |
| **Utility Solution/Measure Code** | PR-78584 | PR-78584 |  |
| **Measure Description** | High efficiency process chiller | High efficiency process chiller |  |
| **MAT** | NR | NR |  |
| **Standard Practice Applicable** | Yes | Yes |  |
| **EUL (years)** |  |  |  |
| **EUL Source** |  |  |  |
| **EUL Justification** |  |  |  |
| **RUL (years)** |  |  |  |
| **RUL Source** |  |  |  |
| **RUL Justification** |  |  |  |
| **Therms Interactive Effects Justification** |  |  |  |
| **Facility Usage** | **kWh** |  |  |  |
| **kW** |  |  |  |
| **Therms/yr** |  |  |  |
| **1st Period Baseline Usage** | **kWh** |  |  |  |
| **kW** |  |  |  |
| **Therms/yr** |  |  |  |
| **2nd Period Baseline Usage** | **kWh** | N/A for NR, NC, AOE, and BRO | N/A for NR, NC, AOE, and BRO |  |
| **kW** | N/A for NR, NC, AOE, and BRO | N/A for NR, NC, AOE, and BRO |  |
| **Therms/yr** | N/A for NR, NC, AOE, and BRO | N/A for NR, NC, AOE, and BRO |  |
| **Measure Usage** | **kWh** |  |  |  |
| **kW** |  |  |  |
| **Therms/yr** |  |  |  |
| **1st Period Savings** | **kWh** |  |  |  |
| **kW** |  |  |  |
| **Therms/yr** |  |  |  |
| **2nd Period Savings** | **kWh** | N/A for NR, NC, AOE, and BRO | N/A for NR, NC, AOE, and BRO |  |
| **kW** | N/A for NR, NC, AOE, and BRO | N/A for NR, NC, AOE, and BRO |  |
| **Therms/yr** | N/A for NR, NC, AOE, and BRO | N/A for NR, NC, AOE, and BRO |  |
| **Gross Measure Cost [GMC]** |  |  |  |
| **Standard Measure Cost [SMC]** |  |  |  |
| **Incremental Measure Cost [IMC]** |  |  |  |
| **Accelerated Replacement Cost [ARC]** | N/A for NR, NC, AOE, and BRO | N/A for NR, NC, AOE, and BRO |  |
| **Cost Documentation [GMC]** | Describe Cost Estimate Reference  | Describe Cost Estimate Reference  |  |
| **Cost Documentation [SMC]** | Describe Cost Estimate Reference  | Describe Cost Estimate Reference  |  |
| **Cost Documentation [IMC]** | Describe Cost Estimate Reference  | Describe Cost Estimate Reference  |  |
| **Total Estimated Savings** | **kWh** |  |  |  |
| **kW** |  |  |  |
| **Therms/yr** |  |  |  |
| **Total GMC** |  |  |  |
| **PreDesc** | Description of existing base case. N/A for NR, NC, AOE, and BRO | Description of existing base case. N/A for NR, NC, AOE, and BRO |  |
| **StdDesc** | Description of Standard Practice for NR, NC, and AR. Description of existing case for AOE and BRO | Description of Standard Practice for NR, NC, and AR. Description of existing case for AOE and BRO |  |
| **Tech Group** | Standard ExAnte Technology Group | Standard ExAnte Technology Group |  |
| **Tech Type** | Standard ExAnte Technology Type used to categorize measure | Standard ExAnte Technology Type used to categorize measure |  |
| **E3TargetSector** | Values allowed for Avoided Cost Combo | Values allowed for Avoided Cost Combo |  |
| **E3MeaElecEndUseShape** | Verify proper electric impact profile ID is specified. Ensure that electric load shapes align with Sector so that these will be processed correctly through the CET calculator. | Verify proper electric impact profile ID is specified. Ensure that electric load shapes align with Sector so that these will be processed correctly through the CET calculator. |  |
| **MeasImpactType** |  |  |  |

**Data Fields:**

When RACC or Water-Energy Calculator is applicable, implementer to provide additional project reporting parameters for each measure that is part of the submitted application for utility incentive. Please contact SCE for directions to complete the data fields table for RACC and Water-Energy Calculator.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **PA Approved** | **Post-Install Verified** | **% of Change** |
| **EEM** | **1** | **1**  | **1** |
| **Site # / SA Number** | Site #SA # | Site #SA # |  |
| **Utility Solution/Measure Code** | Solution Code | Solution Code |  |
| **Measure Description** | Measure Description | Measure Description |  |
| **UnitRefrigCosts** | Column H in “eTRM Export” tab (per EEM basis) of RACC v1.3 Rev4 found on CEDARS | Column H in “eTRM Export” tab (per EEM basis) of RACC v1.3 Rev4 found on CEDARS |  |
| **UnitRefrigBens** | Column I in “eTRM Export” tab (per EEM basis) of RACC v1.3 Rev4 found on CEDARS | Column I in “eTRM Export” tab (per EEM basis) of RACC v1.3 Rev4 found on CEDARS |  |
| **Water Use** | Either “Indoor” or “Outdoor,” needs to be populated if the water savingsfields are populated | Either “Indoor” or “Outdoor,” needs to be populated if the water savingsfields are populated |  |
| **UnitkWhIOUWater1stBaseline** | Column J in “Output Table” tab (per EEM basis) of W-E Calculator 2.0 v2.0.4 | Column J in “Output Table” tab (per EEM basis) of W-E Calculator 2.0 v2.0.4 |  |
| **UnitkWhIOUWater2ndBaseline** | Column J in “Output Table” tab (per EEM basis) of W-E Calculator 2.0 v2.0.4 | Column J in “Output Table” tab (per EEM basis) of W-E Calculator 2.0 v2.0.4 |  |

# **Post Installation Inspection Report**

## **8.1 Site Inspection Meeting Details**

|  |
| --- |
| **POST-INSTALLATION SITE INSPECTION DETAILS** |
| **Name, Title, Company** John Doe, Engineer, ABC Co. | **Name, Title, Company** John Doe, Engineer, Consultant Co. | **Name, Title, Company** Jane Doe, Engineer, Customer Co. |
| **Telephone**555-202-5555 | **Telephone**626-101-5555 | **Telephone**555-303-5555 |
| **E-Mail:** johndoe@Implementer.com | **E-Mail:** johndoe@consultant.com | **E-Mail:** jane.doe@customer.com |
| **Meeting Date**September 21, 2022 | **Meeting Time**11:00 am |
| **Customer Name**Customer’s Business Name | **Project Name**Enter Project Name |
| **Customer Contact**Jane Doe | **Stage**Project Application or Installation Report |
| **Site Address**555 Seal Beach Blvd | **City**Seal Beach |
| **CA Climate Zone**13 | **Building type**Commercial | **Market Segment**Large - Office |

|  |
| --- |
| **POST M&V SITE INSPECTION DETAILS** |
| **Name, Title, Company** John Doe, Engineer, ABC Co. | **Name, Title, Company** John Doe, Engineer, Consultant Co. | **Name, Title, Company** Jane Doe, Engineer, Customer Co. |
| **Telephone**555-202-5555 | **Telephone**626-101-5555 | **Telephone**555-303-5555 |
| **E-Mail:** johndoe@Implementer.com | **E-Mail:** johndoe@consultant.com | **E-Mail:** jane.doe@customer.com |
| **Meeting Date**September 21, 2022 | **Meeting Time**11:00 am |
| **Customer Name**Customer’s Business Name | **Project Name**Enter Project Name |
| **Customer Contact**Jane Doe | **Stage**Project Application or Installation Report |
| **Site Address**555 Seal Beach Blvd | **City**Seal Beach |
| **CA Climate Zone**13 | **Building type**Commercial | **Market Segment**Large - Office |

## **8.2 Project Scope and Site Description**

The inspector will use this section to provide readers a high-level summary of the implemented project scope and site description (i.e. office, retail, rental, process, manufacturing, etc.), site area square footage, site function/operation, existing equipment and installed energy efficient equipment, etc.

## **8.3 Inspection Findings**

Include information on site inspection notes below:

**Post-Installation Inspection Requirements:**

* Does the equipment have a dedicated utility or non-utility energy meter. If yes, describe.
* Identify any site monitoring capabilities, i.e. existing meters, sub-meters, SCADA, BMS, etc.:
* Accuracy/any data uncertainty of measurement equipment: (Example Brand X model 3 data logging equipment was used and meter was calibrated beforehand.)
* Indicate any similar proposed measure equipment already existing at the site (Customer Standard Practice):
* Site Photos and Videos: Inspector to confirm it has Located/Pasted all related site equipment/site condition photos or videos in the Photos and Videos in the Project Package.
* Does this site purchase electric power from a source other than SCE? If yes, provide details (source and qty.).
* Is Onsite Generation present at this Customer site or planned to be installed in the near future? If yes, provide details; i.e. type, size, location, installation date)
* Are Load Shifting Strategies Implemented at this Customer site? If yes, provide details of the Peak Load Shifting Strategies (battery storage, thermal storage, etc.)
* Is the Customer enrolled in Demand Response Programs? If yes, provide the name of the program
* Equipment Operates During Peak Periods?
* Provide a statement, including supporting documentation, of whether the Post-Installation Description is correct and accurate.
* Provide a statement regarding any redundant, non-operational equipment for each Installation that is part of the Project. Savings from such units or any other equipment that does not contribute to each of the Expected Energy Savings, Expected Demand Savings, or Expected TRC Ratio shall not be included in the final savings.
* Provide a statement on any adjacent or related equipment/phased projects (predecessor or future) that could impact the project.
* Enumerate every equipment inventory (present at the site and/or inspected), including nameplate data, age and Remaining Useful Life (RUL), quantity, location, condition (including photographs), load served, and equipment operating procedures (e.g., schedules and set points, pressures, temperatures, etc.) that are associated with each Measure and with any Non-IOU Fuel Source(s).
* Clearly state the operating hours for the facility and the operating hours for the equipment.
* Provide a record of any unusual or abnormal conditions or events that occurred during the Site Inspection and any actions taken in response thereto.
* Provide a statement that will cover the equipment viability definition items including its physical operations and its ability to remain in service and meet customer requirements (maintain required Level of Service) for its Remaining Useful Life (RUL).
* Identify any Code and/or regulation impact to this project (i.e Title 24, Title 20, AQMD, OSHA, fire-life safety, etc.)
* Identify any fuel-switching implications of the project

**Post-M&V Inspection Requirements (for NMEC projects only):**

* Provide a statement confirming that all approved measures remain installed, fully commissioned, and are still fully operational.
* Clearly state the operating hours for the facility and the operating hours for the equipment.
* Provide a record of any unusual or abnormal conditions or events that occurred during the Site Inspection and any actions taken in response thereto.
* Site Photos and Videos: Inspector to confirm it has Located/Pasted all related site equipment/site condition photos or videos in the Photos and Videos in the Project Package.
* Provide a statement that will cover the equipment viability definition items including its physical operations and its ability to remain in service and meet customer requirements (maintain required Level of Service).

# **Appendix**

Implementer shall include as an attachment any of the following applicable files (check appropriate box(es)):

[x]  Site Inspection Form - Post-Installation

[ ]  Existing System/Equipment Performance Data

[ ]  Comprehensive Implemented System/Equipment Performance Data and operating conditions

[ ]  M&V data collection procedures/plan (Implemented at Post Installation, indicate any deviations from PA Application proposed M&V procedures)

[ ]  M&V monitoring equipment used, interval data/frequency of M&V data, duration of M&V data (Implemented at Post Installation)

[ ]  M&V Data (Post Installation)

[ ]  Photos of system/existing equipment

[ ]  Photos of implemented equipment

[ ]  Schematic/Diagram of existing system

[ ]  Schematic/Diagram of implemented system

[ ]  Implemented Equipment Spec Cut Sheets and catalog performance data (if applicable)

[ ]  Schematic/Diagram of Implemented system

[ ]  Equipment schedule of Implemented system/equipment

[ ]  Final Invoices for implemented system/equipment (Stamped Paid, Dated and Customer signed-Physical or Digital signature)

[ ]  Energy models

* + All whole building energy models **must** be calibrated to utility bills (except for new construction)
	+ Provide paper and electronic copy of input files, output files, and reference to weather files
	+ Note what input parameters were measured and which were assumed by providing sources
	+ Report the accuracy with which the simulation results match the energy data used for calibration

[ ]  Production Data (if applicable)

Additional attachment(s), describe in full

[ ]  Click here to enter text.

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1. RACC Workbook for Deemed/Custom Measures found on [Supporting Files - CEDARS (sound-data.com)](https://cedars.sound-data.com/deer-resources/tools/supporting-files/) [↑](#footnote-ref-2)
2. [Fuel Substitution in Energy Efficiency (ca.gov)](https://www.cpuc.ca.gov/about-cpuc/divisions/energy-division/building-decarbonization/fuel-substitution-in-energy-efficiency) [↑](#footnote-ref-3)
3. [Weighted Average Expected Useful Life/Net to Gross Method (ca.gov)](https://files.cpuc.ca.gov/gopher-data/energy_division/EnergyEfficiency/RollingPortfolioPgmGuidance/Combining_Measures_Claims.DRAFT.xlsm) [↑](#footnote-ref-4)
4. RACC Workbook for Deemed/Custom Measures found on [Supporting Files - CEDARS (sound-data.com)](https://cedars.sound-data.com/deer-resources/tools/supporting-files/) [↑](#footnote-ref-5)
5. [Fuel Substitution in Energy Efficiency (ca.gov)](https://www.cpuc.ca.gov/about-cpuc/divisions/energy-division/building-decarbonization/fuel-substitution-in-energy-efficiency) [↑](#footnote-ref-6)