Work Paper SCE17RN029

**Revision 0**

**Short Form**

**Southern California Edison**

**High Efficiency Ultra-Low Temperature Freezers**

**Introduction**

This short form workpaper documents (WP) the values adopted from PGE’s WP entitled “PGECOREF130 R0 - High Efficiency Ultra-Low Temperature Freezers”. SCE adopts all the values in PGECOREF130 R0 - High Efficiency Ultra-Low Temperature Freezers.

# Document Revision History

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| --- | --- | --- | --- |
| **Rev** | **Date** | **Author** | **Summary of Changes** |
| 0 | 11/06/2017 | Jay Madden, Southern California Edison | 1. Calculation templates were developed based on PGE’s template “PGECOREF130 R0 Statewide 8-4-2017”. |

**Measure Summary**

Table 1: Measure Summary Table

| **Section** | **Value** |
| --- | --- |
| **Summary & Purpose** | This short form workpaper documents ex-ante load impacts and cost-effectiveness values for ultra-low temperature freezers. |
| **1.1 Measure & Baseline** | No Difference  Measure is installation of high efficiency ultra-low temperature (ULT) freezers.  Baseline is standard efficiency ULT freezers with dual cascade refrigeration system. |
| **1.2 Technical Description** |  |
| **Measures** | No difference |
| **Code for All Measures** | No difference |
| **Requirements** | No difference |
| **1.3 Installation Type and Delivery Mechanisms** |  |
| **Installation Type** | No difference |
| **Delivery Mechanisms** | No difference  Non-Residential:  Down-Stream Incentive - Deemed |
| **1.4.1 DEER Data** |  |
| **Net-Gross-Ratio** | No difference  0.85 (DEER NTGR ID: ET-Default) |
| **Effective and Remaining Useful Life** | No difference  12 years (GrocDisp-FixtDoors) |
| **Section 2. Calculation Methodology** |  |
| **Energy savings/Peak Demand Reduction – All Measures** | No difference  Direct energy savings is calculated by taking the difference of the measure and base case measured energy consumption with an operating temperature of -75 °C. Additional indirect energy savings associated with reduced heat load to HVAC system is calculated using eQuest lab prototype model. |
| **Section 3. Load Shapes** | DEER:RefgFrzr\_HighEff |
| **Section 4. Costs** | No Difference |
| **Section 4.1 Base and Measure Costs** | No difference  ULT freezer cost data was acquired from eleven universities and four large biotech companies with multiple sites across California. |

**Attachments**

1. A1 SCE17RN029.0 - ULT Freezers\_Final.xlsm