Short Form Work Paper WPSDGENRHC1020

**Revision 3**

**San Diego Gas & Electric**

**Energy Efficiency Engineering**

**Commercial Condenser Coil Cleaning**

**January 21, 2017**

# SDG&E Commercial Condenser Coil Cleaning

## Introduction

This short form workpaper documents the ex-ante load impact and cost-effectiveness values used for Commercial Condenser Coil Cleaning. The given short form workpaper is being utilized to document the minor changes from the previous revision 2 by removing the negative therm impacts as stated in “WPSDGENRHC1020 Rev2 Commercial Cond Coil Cleaning – Final.doc”. The 2013-2014 DNG VL HVAC Commercial QM Impact Evaluation Study did not reference any negative therm impacts associated with condenser coil cleaning.

## Document Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Rev** | **Date** | **Author** | **Summary of Changes** |
| 0 | 06/04/2012 | Charles Harmstead / SDG&E | - Adopted from Matrix WPMSDGECC0408 Revision 1 dated April 25, 2008.  - Updated NTG to DEER 2011 |
| 1 | 06/19/2014 | Rocaciano Vega /RMS | INTERNAL REVISION ONLY – no material impact made  - Updated to new workpaper template  - Added GSIA  - Revised Measure Cost language to indicate that cost is from the program due to it being a Direct Install measure |
| 2 | 06/29/2016 | Martin Vu /RMS | - Updated workpaper with using the DNV GL Energy Impact Evaluation of 2013-14 HVAC3 Commercial Quality Maintenance Programs Ex-Post Realization Rates for kWh and kW. |
| 3 | 01/21/2017 | Eduardo Reynoso /SDG&E | -Adopted short form workpaper and removed negative therm impacts from previous revision. |

## 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 Commercial Condenser Coil Cleaning. The energy savings and load impacts are based on the 2013-2014 DNG VL HVAC Commercial QM Impact Evaluation Study. The given workpaper is being revised to remove the negative therm impacts from the previous revision. |
| **1.1 Measure & Baseline Data** | |  |  |  | | --- | --- | --- | | Measures Description | Baseline Description | Measure ID | | Commercial Condenser Coil Cleaning | Coils with built-up particulate and other matter | WPSDGENRHC1020-Rev02-Msr001 | |  |  |  | |
| **1.2 Technical Description** |  |
| Measures | |  |  | | --- | --- | |  | | | SDG&E product code | Measure Name | | 463025 | Commercial Coil Cleaning 3 to 5 tons | | 463026 | Commercial Coil Cleaning Less than 3 ton | | 463027 | Commercial Coil Cleaning 6 tons and over | |  | | |
| Code for All Measures / Dispostions and EM&V Study | 1. There are neither federal nor state codes applicable to commercial condenser coil cleaning. 2. Workpaper Dispositions and Evaluation Study  * May 2, 2013 Workpaper Disposition for Non-Residential HVAC Rooftop Quality Maintenance California Public Utilities Commission * The 2013-2014 DNG VL HVAC Commercial QM Impact Evaluation Study |
| Requirements | As cited per “WPSDGENRHC1020 Rev2 Commercial Condensing Coil Cleaning” workpaper.  This measure is performed by licensed HVAC contractors as part of a comprehensive AC tune-up service. Participating Commercial HVAC contractors market the tune-ups to their customers, enabling the program to target hard-to-reach market segments. Website, direct outreach, and program marketing materials distributed through business and trade associations enable greater penetration into targeted market segments. This service is provided to customers at low or no cost, depending on prices set by participating contractors. |
| **1.3 Installation Type and Delivery Mechanisms** |  |
| Installation Type | |  |  |  |  | | --- | --- | --- | --- | | Product Code | Measure Description | Measasure App. Type | Sector | | 463025 | Commercial Coil Cleaning 3 to 5 tons | REA | NonRes | | 463026 | Commercial Coil Cleaning Less than 3 ton | REA | NonRes | | 463027 | Commercial Coil Cleaning 6 tons and over | REA | NonRes | |
| Delivery Mechanisms | |  |  |  | | --- | --- | --- | | Product Code | Measure Description | Delivery Type | | 463025 | Commercial Coil Cleaning 3 to 5 tons | PreRebDown- Downstream Prescriptive Rebate | | 463026 | Commercial Coil Cleaning Less than 3 ton | PreRebDown- Downstream Prescriptive Rebate | | 463027 | Commercial Coil Cleaning 6 tons and over | PreRebDown- Downstream Prescriptive Rebate | |
| **1.4.1 DEER Data** |  |
| Net-to-Gross Ratio | NTG: NonRes-sAll-mHVAC-RCA |
| GSIA | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | | | | | | | GSIA | Description | Sector | BldgType | ProgDelivID | GSIAValue | | Def-GSIA | Default GSIA | Any | Any | Any | 1 | |
| Effective and Remaining Useful Life | |  |  |  |  | | --- | --- | --- | --- | |  | | | | | EUL ID | Description | Sector | UseCategory | | HVAC-ClnCondCoils | Clean Condenser Coils - Commercial | Com | HVAC | |  | | | | |
| **Section 2. Calculation Methodology** |  |
| Energy Savings/Peak Demand Reduction – All Measures | Removed negative therm impacts and replaced them with zero.  Sample Annual Energy Savings and Demand Reduction Values: refer to ExAnte data tables for a full list of energy impacts.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | SDG&E Solution Code | Bldg Type | Climate Zone | Build Vintage | Building  HVAC | Annual Energy Savings (KWh/Yr) | DEER Peak Demand (KW) | Norm Units | | 463025 | OfS | CZ07 | 1979-1992 | Any | 107.94 | 0.047 | Cap-Tons | | 463026 | RFF | CZ07 | 1979-1992 | Any | 96.97 | 0.693 | Cap-Tons | | 463027 | RSD | CZ07 | 1979-1992 | Any | 194.3 | 0.087 | Cap-Tons | |
| **Section 3. Load Shapes** | ElecImpProfile: SDGE:DEER:Com:HVAC\_Split-Package\_AC  GasImpProfile: WinterOnly |
| **Section 4. Costs** | All cost adopted from previous version “WPSDGENRHC1020 Rev2 Commercial Cond Coil Cleaning-FINAL.doc” workpaper. |
| **Section 4.1 Modeled Costs** |  |
| Base Cost – Measure1 | $0.00  For this measure category, the base case cost is assumed to be zero given that the alternative is to make no changes to their existing system. |
| Measure Cost – Measure 1 | |  |  |  |  | | --- | --- | --- | --- | |  | | | | | SDG&E Product Code | Labor Cost | Material Cost | Measure Cost | | 463025 | $ 30.50 | 0.00 | $ 30.50 | | 463026 | $ 30.50 | 0.00 | $ 30.50 | | 463027 | $ 30.50 | 0.00 | $ 30.50 | |