FEBRUARY 22, 2010

James J. McNulty
Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

RE: Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual Update
Docket Number M-00051865

Dear Secretary McNulty,

Enclosed are (15) copies of the Comments of Field Diagnostic Services, Inc, in the above referenced Technical Reference Manual Update. We have grouped the Comments into two categories 1) more significant standards changes and 2) minor administrative changes.

Sincerely,

Todd Rossi
President

Enclosure: FDSI-PA TRM Comments.doc

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA PUBLIC UTILITY COMMISSION

Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual Update	:	**Docket Number M-00051865**

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PA PUBLIC UTILITY COMMISSION
SECRETARY'S BUREAU

Field Diagnostic Services, Inc.

Comments to the PA TRM

February 22, 2010

1. General Comments

1.1. This is a useful technical reference manual for estimating energy impact and peak demand impact for a selection of energy efficient technologies and measures.

1.2. We commend the Commission for supporting the collaborative process to review and update the TRM with the purpose of supporting both the AEPS Act and the Act 129 EE&C program that culminated in the adoption of the 2009 version of the TRM at the May 28, Public Meeting.

1.3. The TRM does not take into account the significant improvements that have been made with respect to HVAC technician's tools, associated diagnostics, and data capture. Specifically, there are several devices in the market that capture the activity of the technician directly from the HVAC unit and provide energy efficiency and unit reliability diagnostic advice to the technician concerning what he/ she should do next during unit service. Furthermore, as the device captures the performance of the unit it can benchmark the improvement of the machine – giving a specific audit record of the activity of the technician – thus correlating their activity on the machine to a specific result.

The data acquisition is relatively clean as it outputs directly from the unit. These records of activity can also be electronically transported back to validation servers via wireless / modem connections so that the data can be certified against any specific program rules – ensuring that payments are only made to *legitimate activities*. As this process is data driven and there is no human manipulation of the data there is very little opportunity for contractor's to defraud the rebate process – and provides a *financial or*

Bank grade solution. Additionally, we recommend that automated electronic processes be encouraged for utilities where possible as the alternative physical document method only increase the costs and decrease the accuracy associated with running conservation programs.

As such we would highly recommend that the TRM take into account the newer technologies that support a bank grade process around the distribution of public money related to HVAC installs and conservation programs. Specifically, we would like the TRM to define tools that support the above process.

2. Minor Administrative Changes

2.1. Nomenclature

2.1.1 Add appropriate terms to the "Definition of Terms" list in each chapter as needed. Several terms are used in each chapter without their definitions appearing in the "Definition of Terms" section.

2.1.2 The following are examples of terms that should be included in the "Definition of Terms" in each appropriate chapter. It may be necessary to add more terms to each list.

2.1.2.1 Chapter 1

2.1.2.1.1. C&I

2.1.2.2 Chapter 2

2.1.2.2.1. therm

2.1.2.2.2. QIV

2.1.2.2.3. EDC

2.1.2.3 Chapter 4

2.1.2.3.1. RAC

2.1.2.3.2. REM

2.1.2.3.3. CAC

2.1.2.4 Chapter 5

2.1.2.4.1. inst

2.1.3 List "Definition of Terms" and "Sources" at the end of manual or at the end of each Chapter.

2.2. Equations

2.2.1 Add the number for each equation and add "Table of Equations" at the beginning of this manual.

2.3. Symbols

2.3.1 Keep the symbols consistent, such as cooling capacity, which is symbolized as "CAPY" in section 2.1 but symbolized as "BtuH" in section 6.6.1.

2.3.2 Use symbols adopted in the ASHRAE handbook for electric demand saving (P) and electric energy (E) instead of using unit symbol, kW; use EU for energy use instead of using unit symbol, kWh, and so on.

2.4. Tables

2.4.1 Add the descriptions in text for Tables, for example, add the descriptions for Table 4.1 and Table 4.2 in Section 4.1.

2.5. Table of Contents

2.5.1 This needs to be updated. Some section titles are missing in the Table. For example:

2.5.1.1 4

2.5.1.2 8

2.5.1.3 8.1

2.5.2 Indentation is not consistent in the "Table of Contents." For example:

2.5.2.1 Compare section 1.11.1 to section 4.1.1.

2.6. Chapter 1, Introduction

2.7. In section 1.17, the statement "The following pages present measure-specific algorithms" is not specific. Change this statement to read "The following chapters present measure-specific algorithms," and then specify each appropriate chapter. Note: Chapter 5 does not present measure-specific algorithms.

2.8. Add an appropriate reference to "AEPS Application Form."

2.9. Chapter 2, Residential Electric HVAC

2.10. In section 2.1.1.1, add an explanation that CAPY is the design cooling capacity under design conditions per ARI test.

2.11. Chapter 4, Energy Star Products

2.12. For Section 4.4 Energy Star Audit, Field Diagnostics has developed ACRx performance verification system, in which the algorithms relevant to refrigeration audit are used, and the audit results are helpful for customers to make decisions about what actions to take to improve energy efficiencies of their air conditioner systems. It is suggested to refer Field Diagnostics Service Assistant tool.

2.13. Chapter 5, Home performance with Energy Star

2.14. Add a section that addresses "Common Recommendations" in Energy Star's webpage, "What to Expect from Home Performance with Energy Star," from the following link:

http://www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_hpwes_common

2.15. Add the following link to home performance service providers, who are equipped with specialized training and diagnostic tools to determine how a home is performing. Home service providers can assist customers in achieving their goals, whether it's improving comfort, cutting energy costs, or protecting the environment.

http://www.pahomeenergy.com/homePerformance/find_a_contractor.html

2.16. The phrase "cooling degree-hours CDH)" in the last line of Page 37 should be "cooling degree-hours (CDH)."

2.17. Chapter 6, Commercial and Industrial Electric Efficient Construction

2.18. Start this Chapter on a new page.

2.19. Update all reference links as necessary in this chapter, such as in the line above Table 6-3, line 2 in Table 6-3, and also line 6 on Page 63.

2.20. In section 6.6.1.2, add an explanation that BtuH is design cooling capacity (full load).

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