

## **DRAFT – Audit Plan Outline – DRAFT**

### **1 Introduction and Purpose of the Audit Plan**

This Audit Plan has been developed by the GDS Team as the Pennsylvania Statewide Evaluator contracted by the Pennsylvania Public Utilities Commission (PA PUC) as part of fulfilling the requirements of Act 129 and the Energy Efficiency and Conservation Program Implementation Order. As the Statewide Evaluator the GDS Team is expected to:

- Perform annual and a five year independent evaluations of the cost-effectiveness of each Electric Distribution Company (EDC) Energy Efficiency and Conservation (EE&C) Plan; and
- Develop the Measurement and Verification (M&V) protocols, standard data collection formats, and databases for the evaluation of program benefits and results to be used across all EDC service territories.

This plan addresses the following:

- M&V Protocols, metrics and data formats;
- Required reporting formats;
- Data management and quality control guidelines;
- Data tracking and reporting system;
- Cost effectiveness calculation requirements;
- Criteria the GDS Team will use to review and comment on EDC evaluation plans; and
- Description of how GDS Team will audit the evaluations performed by EDC's

This document also outlines the schedule of and activities to be conducted by the GDS Team in order to audit each EDC EE&C Plan and to evaluate the progress made by the EDCs both individually and collectively towards the attainment of the energy and demand savings targets set by the PA PUC.

### **2 EDC Evaluation Plan Expectations**

#### **2.1 Goals**

#### **2.2 Impact Evaluation Plan**

##### **2.2.1 Research Objectives**

*2.2.1.1 Determine Realization Rates for Gross Savings*

*2.2.1.2 Sources of Savings – Determine Net to Gross Ratios*

*2.2.1.3 Precision and Bias*

##### **2.2.2 Gross Energy and Demand Impact Protocol**

#### **2.2.2.1 Verification**

#### **2.2.2.2 IPMVP Option**

#### **2.2.2.3 Sampling and Uncertainty**

#### **2.2.2.4 Source of Stipulated Data**

#### **2.2.2.5 Baseline Definition**

#### **2.2.2.6 Monitoring Duration**

#### **2.2.2.7 Weather Adjustment**

#### **2.2.2.8 Calibration Criteria**

#### **2.2.2.9 Additional Provisions**

### **2.2.3 Net Energy and Demand Impact Protocol**

## **2.3 Process Evaluation Plan**

### **2.3.1 Research Objectives**

#### *2.3.1.1 Program Design*

#### *2.3.1.2 Program Administration*

#### *2.3.1.3 Program Implementation and Delivery*

#### *2.3.1.4 Market Response*

### **2.3.2 Activities**

### **2.3.3 Data Collection**

## **2.4 Cost-Effectiveness Evaluation Plan**

## **2.5 General Evaluation Plan Recommendations**

## **3 Audit Plan**

As specified in Act 129, there are certain expectations of the EE&C programs. These quality assurance requirements include:

- Audits of building, equipment and processes to determine the cost-effectiveness of energy efficiency and conservation measures using nationally recognized tools and certification programs; and
- Independent inspections of completed energy efficiency and conservation measures completed

by third-party entities to evaluate the quality of the completed measure.

As the Statewide Evaluator, the GDS Team will help to ensure that these quality expectations are adhered to by auditing, evaluating, and assessing the EDC EE&C programs and the evaluation activities and findings. The GDS Team will audit the programs and evaluations in order to evaluate the credibility and accuracy of the EDC published program accomplishments. This section of the Audit Plan highlights some of the actions and activities that the GDS Team will pursue in order to ensure that the quality of service and the level of energy and demand savings outlined by the PA PUC and Act 129 are met by each EDC.

### **3.1 Impact Evaluation**

#### **3.1.1 Review Protocols in Evaluation Plans**

#### **3.1.2 Auditable Evaluation Activities**

##### ***3.1.2.1 On-site Savings Measurements***

##### ***3.1.2.2 On-site Measure Installation Verifications***

##### ***3.1.2.3 Savings Regression Analyses***

##### ***3.1.2.4 Technical Reference Manual and Deemed Savings Formula***

##### ***3.1.2.5 Engineering Models and Simulations***

### **3.2 Process Evaluation**

#### **3.2.1 Review Protocols in Evaluation Plans**

#### **3.2.2 Auditable Evaluation Activities**

##### ***3.2.2.1 Review Interview and Survey Materials***

##### ***3.2.2.2 Observe Operations and Field Efforts***

##### ***3.2.2.3 Review Workflow, Production and Productivity Measurements***

##### ***3.2.2.4 Review Program-Related Materials and Tools***

### **3.3 Evaluation Metrics**

## **4 EDC Reporting Guidelines**

### **4.1 Performance Metrics**

### **4.2 Energy Savings**

### **4.3 Impact Savings**

#### **4.4 Participant Numbers**

#### **4.5 Program Expenditures**

#### **4.6 Cost Effectiveness Calculations**

##### **4.6.1 Inputs**

##### **4.6.2 Outputs**

###### **4.6.2.1 *Net Present Value***

###### **4.6.2.2 *Benefit-Cost Ratio***

#### **5 Data Tracking Requirements**

##### **5.1 Database System Structure**

##### **5.2 Inputs**

##### **5.3 Outputs**

##### **5.4 Capabilities**

##### **5.5 Requirements**

###### **5.5.1 Program Data**

###### **5.5.2 Measurement and Verification Data**

#### **6 Statewide Evaluator Reporting Activities**

##### **6.1 EDC Specific Evaluations by Customer Class**

##### **6.2 EDC Specific Evaluations by Program Type**

##### **6.3 Statewide Evaluation by Customer Class**

##### **6.4 Statewide Evaluation by Program Type**

##### **6.5 Quarterly and Annual Evaluation Reports**

##### **6.6 Biannual Workshops**

#### **7 Expected Deadlines**