



NYSERDA

**Clean Energy Products
Air Source Heat Pump Program
Quality Policies and Procedures**

NYSERDA's Promise to New Yorkers:

NYSERDA provides resources, expertise, and objective information so New Yorkers can make confident, informed energy decisions.

Mission Statement:

Advance innovative energy solutions in ways that improve New York's economy and environment.

Vision Statement:

Serve as a catalyst – advancing energy innovation, technology, and investment; transforming New York's economy; and empowering people to choose clean and efficient energy as part of their everyday lives.

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Overview

As a public benefit corporation, the New York State Energy and Research Development Authority (NYSERDA) strives to deliver the most effective residential energy efficiency programs possible and protect ratepayers across the State. To achieve these goals, NYSEDA's residential programs include, at no cost to the homeowner, a quality assurance process to verify that projects meet all requirements while maintaining healthy and safe living conditions for residents. This process also serves as a learning and teaching tool, supporting the application of sound building science principles to deliver high-quality services to homeowners throughout New York State.

Quality Assurance

Quality Assurance Inspections by a Third Party

Quality Assurance (QA) post-completion field inspections are performed by an independent, third-party contractor to verify compliance with program requirements and manufacturer specifications to ensure homes are in a safe condition. If deficiencies are identified during the field inspection, NYSEDA may require corrections be made, with all remediation activity documented via the corrective action resolution process.

No Cost to the Homeowner

To maintain high standards of performance, NYSEDA randomly selects recently completed projects for post-completion field inspection at no cost to the homeowner. Homeowners may also request inspections at any time. These inspections are performed by an independent expert paid by NYSEDA. Participating contractors are encouraged to be present to receive feedback firsthand.

Sampling Protocol

Projects completed through the program are subject to post-completion field inspection by NYSEDA or its quality designee. Although projects selected for inspection generally occur within 30 to 90 days from the date of completion, NYSEDA reserves the right to inspect projects at any time should specific concerns be brought to attention. The QA contractor should not regularly schedule QA field inspections later than 90 days from project completion unless in response to special circumstances.

It is anticipated that field inspections will be provided to 7.5% of completed projects on average across the program. A rational sampling approach allows contractors with high-quality scores to benefit from a lower inspection rate. Contractors will receive at least one inspection per quarter regardless of their inspection rate and performance in the program.

Targeted Inspection Rate by Production Volume and Performance

The targeted rational sampling approach is based on the overall quality performance using a 5-point scoring system, where 3 is the minimum quality requirement versus the average annual production volume of the participating contractor. An example of this approach is presented in the figure below.

NYSERDA will determine the specific sampling rate and provide notice to the quality services provider as necessary to achieve desired program objectives.

| | | AVERAGE QUALITY SCORE | | |
|---------------------------------|------|-----------------------|-------|------|
| | | < 3 | = 3 | 4-5 |
| CONTRACTOR PRODUCTION VOLUME | HIGH | Up to 100% | 5% | 2.5% |
| | MED | Up to 100% | 7.5 % | 5% |
| | LOW | Up to 100% | 7.5 % | 5 % |

Target Inspection Rate by Contractors' Status

The established sampling protocols based on the participating contractor's status or upon special request from NYSERDA or the homeowner are as follows.

Provisional Status

Newly participating contractors are designated as "provisional" and must complete at least three projects meeting the minimum standard quality requirements. These quality requirements must be met by the sixth inspected project or within a period of one year from the date of completion of the first completed project, whichever comes first. Provisional contractors are strongly encouraged to attend at least the first three field inspections as it provides an opportunity to learn the program quality expectations and field inspection process first-hand.

Full Status

The target inspection rate for full status contractors is 7.5% of completed projects, with a minimum of one inspection per quarter. NYSERDA reserves the right to adjust the field inspection rate based on the individual performance of each contractor.

Probationary Status

Up to 100% of projects completed while on probationary status may be subject to field inspections, at the sole discretion of NYSERDA. Inspection findings will be used by the program technical services team as one of many factors in determining a contractor's future participation status.

Suspended Status

Up to 100% of projects completed while on suspended status may be subject to field inspections, at the sole discretion of NYSERDA. Inspection findings will be used by the program technical services team as one of many factors in determining a contractor's future participation status.

Terminated Status

Depending on the circumstances of termination, NYSERDA may, at its sole discretion, conduct field inspections on a percentage of projects as deemed appropriate.

Scheduling Field Inspections

Setting up the Customer Call List

The quality assurance services provider (QASP) is responsible for scheduling field inspections of completed projects in Salesforce within the assigned region(s) according to the sampling protocol outlined in this document. For information on making customer calls in the Air Source Heat Pump Program, refer to the Scheduling Call Scripts document.

Obtain Project Data Prior to Conducting Field Inspections

Inspectors should review all relevant project documents in Salesforce in preparation of their field inspection and email the participating contractor to request all missing program required documents at least two business days before the inspection.

Contractor Invitation to Field Inspections

Customers contacted by NYSERDA's QASP to schedule a field inspection will have the option of allowing the participating contractor to be present at the time of inspection. Customers are encouraged to allow the participating contractor to attend to answer questions and perform any minor corrections. If the customer agrees, the participating contractor will be notified of the upcoming inspection via email. Inspections shall be scheduled at least two weeks in advance and no less than five business days.

Field Inspection Procedures

Overview

Field inspection procedures, as outlined below, are used to assess the performance of participating contractors and their level of compliance with technical standards and programmatic rules. To view a detailed list of all field inspection check points, please refer to the Air Source Heat Pump Program Field Inspection Checklist.

Preparation for Field Inspection and Homeowner Orientation

The QASP’s field inspector shall provide the following as part of the inspection:

- An introduction to the customer, including the QA field inspector’s name and company
- A description of the inspection and testing procedures
- An overview of the program and answers to customer questions

QA Scoring System

Scoring Algorithm

Field inspections will receive a score from 1 to 5, using a 5-point scoring system, where a score of 3 represents the minimum quality requirements for the program.

Overall QA Inspection Scoring Criteria

Each inspection will receive a score, on a 5-point scale. This score is an indicator of the overall quality and compliance with program requirements, based on the number and type of nonconformances observed.

| Score | Number of Defects by Defect Category | | | |
|-------|--------------------------------------|-------------|-------------|-------------|
| | Incidental | Minor | Major | Critical |
| 5 | Up to 3 | Up to 2 | 0 | 0 |
| 4 | More than 3 | Up to 3 | 0 | 0 |
| 3 | N/A | More than 3 | 0 | 0 |
| 2 | N/A | N/A | 1 | 0 |
| 1 | N/A | N/A | More than 1 | More than 0 |

In calculating the score, the highest level of observed nonconformance is the most important factor. For example, projects with two major nonconformances would receive a score of 1, even if it had no minor or incidental nonconformances. Projects with any critical nonconformance will automatically receive a score of 1. Specific criteria are outlined for scores of 1, 3, and 5.

5: Project Meets All Program Criteria

A project receiving a score of 5 is generally well-installed, with no noticeable defects in assessment quality, work quality, health and safety, and overall program compliance. These projects often exhibit best practices.

3: Project Meets Key Program Requirements

A project achieving a score of 3 meets basic program requirements, but it may require some modification to be considered fully compliant.

1: Project Does Not Meet Program Requirements

Projects receiving a score of 1 have failed to meet key program requirements and are not expected to safely deliver mMBTU and carbon benefits aligned with the statement of work and program records. These projects may require urgent attention to address safety concerns.

Task Ratings

| Inspection Task Ratings | |
|-------------------------|--|
| Rating | Description |
| Pass | Work completed, met, or exceeded program and/or manufacturer specifications. |
| Fail | Work was not completed or the completed work did not meet program and/or manufacturer specifications. Return visit or billing adjustment will be required if the inspection task defect category is major or critical. |
| N/I | The inspection element could not be inspected due to site conditions or is not applicable to the project; therefore, is not included in point calculations. |

Handling Nonconformances and Corrective Action

Projects that have nonconformances with one or more major or critical deficiencies will automatically fail. Projects that have only minor and/or incidental nonconformances will pass. All nonconformances are expected to be addressed and corrected with regard to future work conducted in the program. Acknowledgement and plans for preventing future problems may be requested by NYSERDA.

While some nonconformances cannot be corrected post-installation, others can be remedied through corrective action to the documentation, incentive applied to the project or remediation of the project, or certain energy conservation measures that have not met program requirements.

When corrective action is required by NYSERDA, it will be indicated as such on the field inspection report and on the email issued via Salesforce to the participating contractor. Failed inspection reports must be remediated within 30 days or disputed within 15 days of the issue date. Sufficient evidence of the remediation must be provided to NYSERDA to document the completion of the required corrective action and resolution approved by NYSERDA within 30 calendar days. NYSERDA may, at its discretion, conduct a field verification of the remediated installation.

NYSERDA retains the right to provide a copy of the inspection report or specific information from the field inspection directly to the homeowner, all authorities having local jurisdiction, or other stakeholders based on health, safety, and compliance concerns.

NYSERDA may, at its discretion, communicate by voice and/or written format with any customer (homeowner) with respect to any matter relevant to a proposed or installed project. Such communications may be in reply to an inquiry from a customer or at NYSERDA's initiation.

Reporting

Field Inspection Report

The field inspection report lists all nonconformances identified during the field inspection, along with the overall project score and whether the project passes or fails program requirements. Reports with a score of 1 or 2 are considered failed and the contractor is required to submit corrective action photos for all major and critical failures.

The program implementer is responsible for managing resolution of all field inspection reports with a score of 1 or 2. However, on occasion, the QASP may be asked to review a field inspection report if the contractor contests the results. The QASP is responsible for reviewing and responding to project inspection records in Salesforce with a QA status of "Contested – External QA Manger Review Needed."

For instructions on how to respond to contested field inspection reports, refer to the Air Source Heat Pump SQA Manual.

NOTE: The following reports are currently in development.

QA Performance Summary Report

This report includes the total number of projects completed by participating contractors in the previous month, quarter, and 12 months; the total number of field inspections during the previous month, quarter, and 12 months; the average quality score during the previous month, quarter, and 12 months; and the contractors current program status.

QA Invoicing Report

This report includes a list of all field inspection reports issued during the time period requested; it includes the application number, contractor name, customer name and report issued date.

QA Detail Report

This report includes a list of all completed field inspections over designated period and the respective score, and summary of all measure/task deficiencies.

Pareto Analysis

This statistical technique to guide decision-making quantifies the findings of a specific deficiency divided by the cumulative sum of all deficiencies found during field inspections over a defined period. The cumulative percent of each deficiency is tabulated to prioritize corrective action such that the priority reflects the deficiency with the greatest cumulative impact. It's based on the Pareto Principle (also known as the 80/20 Rule), the idea that 80 percent of problems may be caused by as few as 20 percent of causes.

Defect Frequency Analysis

This statistical technique to guide decision-making quantifies the count of a specific deficiency divided by the sum of occurrence where the measure was included in the statement of work over a defined period. The relative percentage of times a defect is found as a function of time, a measure is implemented is tabulated to prioritize corrective action within certain measure categories, which often relate to specific crew assignments.

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