

NY-Sun

Quality Assurance Policies and Procedures

For Commercial/Industrial and Large Nonresidential

May 2022



NY-Sun

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Overview

NYSERDA maintains the integrity of the NY-Sun Commercial/Industrial and Large Nonresidential Program through an independent Standards and Quality Assurance (SQA), team. This team manages the Quality Assurance, QA, platform for the program. This manual covers NY-Sun Commercial/Industrial and Large Nonresidential inspection process. NYSERDA offers another SQA Policy and Procedure manual for NY-Sun Residential and Nonresidential.

Quality Control (QC): “control of the process, prior to and during the process.”

Planned and systematic activity implemented to ensure quality requirements are met and non-conformances documented in a Quality Assurance inspection are corrected. Contractors/installers should have their own QC resources to confirm their work.

Quality Assurance (QA): “assuring the work is done properly, at the end of the process”.

Field and photo evaluations to verify compliance of key milestones within projects to assess compliance with industry standards and Program requirements; identify corrective action necessary to comply with said standards and requirements.

Quality Assurance Services Provide (QSP):

Members of a Quality Assurance Service Provider are responsible for performing field or photo inspections, while also reporting observed findings in accordance with project requirements. These members are also responsible for review and approval of all inspection reports. The QSP is fully separate and independent from the Program Implementer.

NYSERDA’s SQA team provides 3rd party Quality Assurance and monitoring. The quality assurance system has several components, including a review of qualifications and credentials, paperwork audits, establishment of program standards, and comprehensive field and photo inspections. QA inspections involve verification of the contracted scope of work, accuracy of site analysis, comparison of installation to submitted design drawings, and compliance with New York State Uniform Building Code, including references to the International Building Codes and National Electrical Code, NFPA 70, as they relate to the overall quality of the installation.

NYSERDA or its representatives may make a reasonable number of visits to the customer site before, during, and/or after installation of a solar electric system to assess overall compliance.

Corresponding with NYSERDA’S Standards and Quality Assurance Team

All correspondence with NYSERDA’s SQA team should be sent to: inspections@nyserda.ny.gov. A member of the SQA team will reply in a timely manner.

Program Roles and Responsibilities

The program relies on Contractors to implement new solar electric systems for customers seeking incentives through the program. The Contractors have roles and responsibilities in the program, including the following:

Contractor Roles and Responsibilities

- Agree to terms of NYSERDA's participation agreement
- Hold the agreement with the customer
- Receive incentive payments
- Responsible for resolution of customer complaints, warranties, and production guarantees for the entire system
- Responsible for installation and quality of project
- Responsible for maintaining a credentialed person on staff

Inspections will primarily focus on the quality of the Contractor's installation, and average inspection scores will be calculated. The Contractor will be included in any correspondence related to project inspections.

NYSERDA Portal

Contractors can review all their projects by going into Salesforce, also known as the NYSERDA Portal, by going to portal.nysesda.ny.gov/login. Within the NYSERDA Portal, open the dashboard and clicking on **Project Inspections** tab. To review average inspection score by year, by quarter, and program related data, go into the dashboard, and click on the **Dashboards** tab.

NY-Sun Contractors can view inspection scores and reports in their Salesforce portal in two ways:

- Even though the SQA Inspection Workflow includes automated email communications to Contractors with a link to help the Contractor navigate to the correct area of Salesforce, it can be helpful to understand how to access these records from within Salesforce. After logging into Salesforce, click the **Project Inspections** tab, which shows a table of all inspection records. Click the drop-down list and select either **Field Inspections** or **Photo Inspections** to toggle the list of inspection records between the two inspection types. To open the inspection record, click the **Project Inspection ID** relevant to the record.
- To access other reports associated to the project(s), log into Salesforce and click the **Reports** tab. Then, click the **Go to Dashboard List** link, following with selecting the **Program** folder to access the report list. Once clicked, the reports will show to the right. Use the **Filters** at the top of the page to define how the information in the report should be displayed. Click any underlined link in a report to open the corresponding project record.

- To view visual charts, click the **Dashboards** tab to access the Dashboard. Use the dropdown menu to navigate between them. These charts show, for example, average score by quarter over time. Clicking on a specific chart will open the underlying data, that can also be exported into a spreadsheet.

Inspection of Completed Projects

The purpose of the QA inspection is to provide NYSERDA with an opportunity to evaluate the accuracy of the site analysis, design paperwork and to verify the Commercial/Industrial and Large Nonresidential Systems were installed according to all program requirements. The QA inspection also includes selected health and safety, performance items, and specific compliance items per applicable code.

Field Inspections

Field inspections are conducted by a qualified independent third party, using comprehensive field inspection QA checklists and processes.

In general, QA field inspections are scheduled at the system owner's convenience. If the system owner is not the same as the Contractor, the owner may request the Contractor not to attend. This is an exception, not the rule. System owners are encouraged to allow the Contractor to attend the inspection to answer questions and perform minor fixes on site. If the system owner agrees, the Contractor will be notified between 5 and 14 days of the upcoming inspection. Every effort will be made to accommodate the schedule of the Contractor, but the system owner's convenience and efficient scheduling of inspections take precedence. System owners have the right to request that the Contractor not attend the QA field inspection. In these situations, the Contractor will not be notified of the scheduled inspection, but they will receive the results within 15 business days.

For Community Distributed Generation projects, the Contractor will be the primary contact for scheduling the inspections.

NYSERDA may select any completed project at any point in the future for a field inspection based on system owner complaints, warranty-related issues, or a review of the work done by the Contractor under status review or program disciplinary action. All Contractors are encouraged to perform in-house quality control of their projects.

Commercial/Industrial Solar Plus Energy Storage Projects

Each Commercial/Industrial and/or Large Nonresidential Solar Plus Energy Storage project will receive a QA field inspection and usable capacity testing prior to the incentive payment being issued to the Contractor. In addition to the components of the standard QA field inspection, Solar Plus Energy Storage Commercial/Industrial project inspections will confirm that the installed storage equipment, kW/kWh AC, is as approved by the program, ensure general quality of the storage installation complies with the [Battery Energy Storage System Guidebook](#), codes, standards, and industry accepted practices, and inspect that appropriate metering and data logging are in place.

QA field inspections will be conducted after the Contractor submits the invoice for the Solar Plus Energy Storage Incentive. This inspection may also include a review of up to one-week, post-commercial operational data to check proper operation of the energy storage system and any automated controls operating the charge and discharge functions of the storage system.

The storage system must be commissioned in accordance with manufacturer specifications, and a commissioning report must be available at the time of invoicing to NYSERDA. The commissioning report should document the specific parameters within which the system was fully charged and discharged to determine its usable energy in accordance with manufacturer requirements.

QA Inspection Report

The QA inspection report will provide a list of all non-conformances identified. The report will provide an overall score of the project inspection and identify a pass or fail.

The report will be made available to the Contractor within approximately 15 days after the inspection. The report will be made available to the system owner upon request directly to NYSERDA. The report will contain a score, based on the scoring criteria, and a list of any non-conformances observed during the inspection.

Scoring Criteria

The scoring criteria characteristics will be used as a guideline for inspectors to gauge relative installation quality but cannot predict every possible situation. These QA scores will:

- Allow NYSERDA to track trends in installation quality over time
- Allow NYSERDA to gauge the relative quality of installations across installers, regions, or other screening criteria
- Provide valuable feedback to contractors, local code officials, and inspectors

Classification of Program Non-conformances

Prior to issuing an overall QA score, it is important to understand the magnitude of non-conformances observed during the inspections. A high-quality solar electric system will:

- Comply with the Uniform Code Supplement as published by the NYS Department of State
- Comply with the National Electric Code, NEC
- Meet all NYSERDA program requirements and standards
- Generate safe, reliable electricity consistent with pre-installation estimates

Table 1 contains the definitions of non-conformances.

Table 1: Non-conformance definitions

	Energy Impact	Non-Energy Impact
Incidental	May result in a savings shortfall, but the impact will be small and may not be measurable.	Not expected, on its own, to pose a substantial risk of system failure or hazard.
Minor	Will result in a savings shortfall, but the impact will be small and may not be measurable.	Requires modifications to address but not expected to pose a substantial risk of system failure or hazard.
Major	Will result in a measurable shortfall in energy savings.	Presents an increased risk of system failure or hazard but not determined to be in imminent danger of failure or hazard.
Critical	N/A	Presents an imminent hazard and/or probability of system failure.

Incidental

Examples of Incidental non-conformances include the following:

- Missing screws on indoor enclosure covers, but cover is still secure and renders interior of enclosure inaccessible
- Installation debris, e.g., bits of wire or packing materials, left onsite
- Missing/incomplete labels
- Poor wire management that is not expected to cause a fault condition

Minor

Examples of Minor non-conformances include the following:

- Conductors are not protected from abrasion as required
- Insufficient clearance around boxes
- Missing/inadequate thermal expansion joints in long conduit runs
- Not adequately protecting conductors from accidental contact by unqualified personnel

Major

Examples of Major non-conformances include the following:

- Conductors are not adequately protected from physical damage
- Improper system or equipment grounding
- Bonding neutral to ground in a meter enclosure
- Undersized circuit protection, nuisance tripping

Critical

Examples of Critical non-conformances include the following:

- DC input voltage exceeds inverter maximum input rating
- Lack of or oversized overcurrent protection
- PV Backfed breaker current rating exceeds ampacity of circuit conductors
- Use of non-DC rated equipment in DC circuits

This list is not intended to be exhaustive, and inspectors will fully evaluate each installation on a case-by-case basis.

Overall QA Inspection Scoring Criteria

Each inspection will receive a score, on a five-point scale. This score is an indicator of the overall quality and compliance with Program requirements, based on the number and type of non-conformances observed. Projects receiving an inspection score of 1-2 are considered failures whereas projects receiving an inspection score of 3-5 are passing scores.

Projects with an inspection score of 5 represents a fully compliant project that employs best practices. Projects with an inspection score of 3 signifies a fully acceptable project. Receiving a 1 or 2 on an inspection represents a project with major or critical failure.

Projects which have non-conformances related to critical, health and safety, or major, system performance, attributes will automatically fail. Specific criteria for each score are given in the following table:

Table 2. Inspection Score Criteria

QA Scoring Matrix				
Score	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	Up to 1	0
1	N/A	N/A	More than 1	More than 0

When assigning a QA score, the SQA Salesforce module will automatically generate a score based on the inspection results. For example, a system with two major non-conformances will receive a score of 1, even if there were no minor or incidental non-conformances. Systems with any critical non-conformance will automatically receive a score of 1. The passing scores of 3, 4, and 5 may depend on the number of incidental and minor non-conformances found in the inspection report. In this case, a system with up to 3 minor non-conformances will receive a score of 4 since it does not quite meet the requirements for a 5 but exceeds the thresholds of a score of 3.

QA Score Descriptions

5: System Meets All Program Criteria

A system receiving a score of 5 is generally well-installed, with no noticeable defects in workmanship, code compliance, or expected energy output. These systems are examples of best practices in Commercial/Industrial solar electric installation.

3: System Meets Key Program Requirements

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

1: System Does Not Meet Program Requirements

Systems receiving a score of 1 have failed to meet key program requirements and are not expected to safely generate electricity consistent with program records. These systems may require urgent attention to address safety concerns.

Procedure for Handling Non-conformance and Corrective Action

The QA inspection report will list any non-conformances identified. The report will provide an overall score of the project and identify a pass or fail. Projects that have non-conformances related to critical, health and safety, or major system performance attributes will automatically fail. Projects that have minor or incidental non-conformances may pass or fail based on their overall merits.

All identified non-conformances from the Inspection Report, and in future work conducted in the program, are expected to be addressed and corrected. Acknowledgment and plans for preventing future problems may be requested with the report. Non-conformances can be corrected post-installation through corrective action to the documentation, incentive applied to the project, or remediation of the installation or its components.

Contractors are required to respond to NYSERDA with proof of corrective action for those projects that received a failed inspection report with a score of 1 or 2. A failed inspection report must be either disputed within fifteen, 15, days by responding to the Salesforce Project Inspection record or remedied within thirty, 30, days. Sufficient evidence of remediation must be provided to NYSERDA via Salesforce, documenting the completion of required actions. NYSERDA may, at its discretion, conduct a field verification of the remediated installation.

NYSERDA has the right to provide a copy of the QA report, or specific information from the inspection, directly to the site operator, AHJ, or the interconnecting utility based on health, safety, and compliance concerns. In an emergency, NYSERDA or its representatives may shut down the system and will notify the Contractor of such action as soon as is possible.

NYSERDA may communicate with any Contractor or site operator on any matter relevant to a project. Such communications may be in reply to an inquiry from a site operator or at NYSERDA's initiation. It is the Contractor's responsibility to notify the local authority that has jurisdiction of any changes made to the installation and coordinate any required reinspection as needed.

Procedure for Contesting an Inspection Score

A Contractor may contest the findings of an inspection report by responding to the Salesforce Project Inspection record within 15 days of receiving the inspection report.

Upon review, if NYSERDA agrees with Contractor, the non-conformance will be removed. The inspection score may or may not change based on other non-conformances. If NYSERDA agrees with the inspector, the non-conformance will stand, and the score will remain the same.

Procedure to Resolve a Corrective Action Request, CAR or Contest the Inspection

This step-by-step process will assist Contractors on how to upload images and documentation for a corrective action or to contest the inspection.

1. Access the **Review Failed Tasks** page, which can be found in the email communication sent to Contractors when an inspection uncovers CARs.
2. On the **Review Failed Tasks** page, locate all CAR eligible failed tasks in the navigation bar to the left, which will be denoted with a **Red X** to the right of the task.
 - a. To contest a failed task, select **Contest Rating** from the **Action** dropdown list, then add a note in the **Notes** section. Finally, click on **Insert** to update the failed task and open the attachment window.
3. To resolve a failed task, click on the **Action** dropdown list and select **Mark as Resolved**, then add a note in the **Notes** section. Finally, click on **Insert** to update the failed task and open the attachment window.
4. Click on the **Paperclip** icon in the **Attachment** column to open the **CAR Failure Review Attachment** window, where documents can be attached.
5. Click **Choose Files** in the new window to locate the files on the computer. Choose the appropriate file(s) for upload.
6. After uploading the document, a thumbnail of the file being displayed in the **Attachment** window will be visible. When uploading is completed, click on the **Close** button.
7. After successfully responding to all Failed tasks, click on **Submit** at the bottom of the page to submit the **CAR** replies for review.
8. Once submitted, the **Contested/Resolved Failed Tasks** will either be **Denied** or **Upheld** by Program Implementers during the review process.
 - a. If the Program Implementer denies the contest, the Contractor is still responsible for resolving all the failed tasks.

Inspections Requiring Corrective Action

1. All non-conformances are required to be addressed within 30 days of issuing report.
2. Critical and major non-conformances require a response through the link sent with the report.
3. Responded Corrective Actions will be reviewed and responded to by NYSERDA staff.
4. If NYSERDA staff accepts the corrective action, the non-conformance will be marked resolved.
5. If NYSERDA does not accept the response, the non-conformance will be marked “resubmit” with a description of why the response was not accepted. The non-conformance will remain open until NYSERDA accepts a response.

System Shutdowns

In an emergency, NYSERDA or its representatives may shut down the system. NYSERDA will notify the Contractor whenever it takes such action as soon as possible. In the event an inspector feels a solar electric system, as installed, presents an imminent hazard to persons or property, the following procedure will take place:

1. NYSERDA QSP, along with other NYSERDA staff, will review critical issues and confirm shutdown.
2. NYSERDA QSP takes appropriate steps to safely shutdown and secure the system and informs the customer of the decision.
3. If not on site, NYSERDA QSP calls the Contractor to notify them of the situation and the shutdown. The Contractor is instructed that the system may not be re-energized without corrective action being taken. The Contractor may address critical issues before receiving the NYSERDA issued report.
4. The Contractor receives the report and must then coordinate any required re-inspection by the local authority having jurisdiction or third-party designee.
5. The Contractor is required to provide proof of the corrective action as specified by the NYSERDA QA Inspector.

Prescriptive Probation and Disciplinary Action

When a Contractor fails to consistently complete projects that pass NYSERDA's QA evaluation or fails to respond to or remedy failed inspections, NYSERDA may review their status in the program and take further action.

A Contractor may be issued a prescriptive plan, in which specific results and a timeline for demonstrating those results will be prescribed and monitored. The Contractor may be suspended or terminated from the program if determined necessary. Complete details of demonstrating continued project viability are located in region specific NY-Sun Program Manuals:

- [NY-Sun Con Edison Program Manual](#)
- [NY-Sun Upstate + Long Island Program Manual](#)

Scheduling a call with NYSERDA

At times NYSERDA QA and Program staff will contact a Contractor should they see a negative trend in their performance and see how NYSERDA staff can assist to better performance. Subsequently, a Contractor may schedule a call at any time to review their inspection reports, contesting a corrective action, and overall check-in with NYSERDA. Please email inspections@nyserda.ny.gov and one of our QA staff will schedule a call.



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