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| version: | 2022-4-18 |

# Instructions

The prompts in this self-inspection report are intended to collect key system installation characteristics, including photographs, which will allow Commerce Rhode Island staff and contractors to conduct a reasonable due diligence review, as a substitute for an onsite inspection. This report includes a self-inspection checklist and a descriptive photograph sheet. **Installers wishing to complete a self-inspection must fill out all applicable fields, including all photos.** **Forms with missing information will be returned to the installer.** In cases where multiple pieces of equipment (e.g., two different types of PV modules) are used, please copy/paste the relevant information table and fill it out for both sets of equipment. Installers are encouraged, but not required, to attach an as-built electrical design drawing to this report.

Once completed, please submit this form in PDF format via email to ref@commerceri.com.

For technical questions on completing this self-inspection report, contact QAInspections.RI@cadmusgroup.com.

# System Information

|  |  |
| --- | --- |
| **Grant Number** | #-### |
| **System Owner Last Name** |  |
| **Installation Company** |  |
| **Installer Last Name** |  |
| **Person Completing This Report** |  |
| **Phone** |  |
| **Email** |  |
| **Report Date** |  |

# Self-Inspection Checklist

## Array and PV Modules

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| System Capacity (kWDC) |  |
| System Lifetime Energy Production (kWh) |  |
| TSRF(%) |  |
| Module Quantity |  |
| Module Manufacturer |  |
| Module Model Number |  |
| Modules per String (or per circuit for microinverters) |  |
| Number of Strings per Input Circuit |  |
| Conductor Size/Insulation Type |  |

## Racking and Grounding

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| PV Racking manufacturer  |  |
| Model  |  |
| Grounding, If WEEBs (or equivalent) used, indicate number used per module. |  |
| Conductors supported and protected from damage. | Yes | No | N/A |
| All enclosures and splicing means rated for outdoor/wet location use (e.g., no indoor wire nuts). | Yes | No | N/A |
| All roof penetrations are properly flashed and sealed (note that sealant is a supplement, not a replacement, to flashing). | Yes | No | N/A |
| DC conduit labeled as containing PV circuits (NEC 690.31(D)(2)). | Yes | No | N/A |

## Microinverter

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Quantity (enter 0 if not present) |  |
| Manufacturer |  |
| Model Number |  |
| Mount Type | Rack or Module Frame |
| Grounding | Microinverter bonding hardware or other |
| Inverter Breaker/Fuse Current Rating (A) | 20A |

## Optimizer

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Quantity (enter 0 if not present) |  |
| Manufacturer |  |
| Model Number |  |
| Mount Type | Rack or Module Frame |
| Grounding | Optimizer bonding hardware or other |

## Rooftop Junction Box 1(Copy and Paste if Multiple)

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Number of Strings in JB |  |
| Conductor Size/Insulation Type |  |
| Enclosure rated for outdoor/wet location use. | Yes | No | N/A |
| Conductors supported and protected from damage. | Yes | No | N/A |
| Splice means rated for outdoor/wet location use (e.g., no indoor wire nuts). | Yes | No | N/A |
| All roof penetrations are properly and sealed  | Yes | No | N/A |
| DC conduit labeled as containing PV circuits (NEC 690.31(D)(2). | Yes | No | N/A |

## Rooftop Junction Box 2(Copy and Paste if Multiple)

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Number of Strings in JB |  |
| Conductor Size/Insulation Type |  |
| Enclosure rated for outdoor/wet location use. | Yes | No | N/A |
| Conductors supported and protected from damage. | Yes | No | N/A |
| Splice means rated for outdoor/wet location use (e.g., no indoor wire nuts). | Yes | No | N/A |
| All roof penetrations are properly and sealed  | Yes | No | N/A |
| DC conduit labeled as containing PV circuits (NEC 690.31(D)(2). | Yes | No | N/A |

## Standalone DC Disconnect

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Max DC Ratings | Voltage | Current |
| Location |  |
| DC disconnect located near inverter and readily accessible. | Yes | No | N/A |
| DC characteristics label present (NEC 690.53). | Yes | No | N/A |
| Disconnects all ungrounded conductors (note that ungrounded arrays must disconnect both positive and negative conductors). | Yes | No | N/A |

## Backup Power System

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| System Type(Select All Applicable Configurations if Multiple are present) | Entire Facility | Genset |
| Partial Facility | Genset |
| Dedicated Backed up Subpanel | AC Coupled ESS/Multimode Inverter |
| Dedicated Backed up Subpanel | DC Coupled ESS/Multimode Inverter |
| Entire Facility | Microgrid Interconnection Device/Gateway |
| Partial Facility | Microgrid Interconnection Device/Gateway |
| Location(s) | Garage  |

## String Inverter

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Quantity (enter 0 if not present) |  |
| Manufacturer |  |
| Model Number |  |
| AC Conductor size/Rating  |  |
| Inverter Type | Transformerless | Transformer |
| Integrated Energy Storage | Yes | No |
| Rapid Shutdown device | Inverter Integrated | Other |
| If Other, enter manufacturer/model |  |
| Continuous grounding electrode conductor originates at designated inverter terminal. (Applicable for Transformer based inverters) | Yes | No | N/A |
| Inverter is grounded. | Yes | No | N/A |
| Integrated AC disconnect or External Disconnect within sight (10ft) | Yes | No | N/A |
| DC fuse rating (if combining 3 or more strings) | Voltage | Current | N/A |
| DC characteristics label present (NEC 690.53). | Yes | No | N/A |

## AC Combiner or ESS AC Combiner

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Max Enclosure Ratings (AC) | Voltage V | Current A |
| Location (enter N/A for not present) |  | N/A |
| Front panel included labels that identify each circuit/source (NEC 408.4(A)) | Yes | No | N/A |
| Combiner enclosure is grounded. | Yes | No | N/A |
| PV and/or ESS Disconnect ID label(s)/ AC characteristics label(s) present (NEC 690.54),706.15(C)). | Yes | No | N/A |
| Multiple sources & overcurrent device ratings warning label present (NEC 705.12(D)). | Yes | No | N/A |

## AC Disconnect (Other than Interconnection) (Copy and Paste if Multiple)

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Max Enclosure Ratings (AC) | Voltage | Current |
| Location (enter N/A for not present)  | N/A | N/A |
| Disconnects all ungrounded conductors. | Yes | No | N/A |
| Utility conductors connected to “Line” side of PV disconnecting means. | Yes | No | N/A |
| PV disconnect identification label present (NEC 690.13(B)). | Yes | No | N/A |
| Disconnect enclosure is grounded. | Yes | No | N/A |
| AC disconnect door latch secured (NEC 690.15(A)) | Yes | No | N/A |

## Energy Storage System

|  |  |
| --- | --- |
| **Inspection Item** | **Value** |
| Coupling | AC or DC |
| Manufacturer | LG CHEM |
|  Model | RESU10H |
| Quantity | 1 |
| Battery (If external how many units?) | Internal/External | Qty: |
| Total ESS Rating (kW and kWh) | Output Power kW:5  | Capacity kWh:9.3 |
| Gateway Model (enter N/A if not present) |  | N/A |
| Critical Load/Backed-Up Load Subpanel Busbar Rating (A) (enter N/A if not present) |  A | N/A |
| Critical Load /Backed-Up Load Subpanel Breaker Rating (A) (select MLO if main lug only or N/A if not present,) |  A | MLO | N/A |
| Location (enter N/A for not present)  |  | N/A |
| Integrated disconnect or External Disconnect within sight (10ft) (NEC 706.15). | Yes | No | N/A |
| ESS disconnect identification label present (NEC 706.15(C)). | Yes | No | N/A |
| Directories/labeling present per 706.21(A), 705.10, 712.10. | Yes | No | N/A |
| Enclosure is grounded. | Yes | No | N/A |

## Interconnection (fill in one of the three sections below)

|  |  |  |
| --- | --- | --- |
|  | **Inspection Item** | **Value** |
| **SUPPLY SIDE CONNECTION** | PV Service Disconnect Location | House exterior adjacent toelectrical utility meter |
| Enclosure Rating | Voltage V | Current A |
| Fuse Rating | Voltage V | Current A |
| Conductor Size/Type | Line  | Load  |
| Utility conductors connected to “Line” side of disconnecting means. | Yes | No | N/A |
| Interconnection wiring method compliant with NEC 230.43. | Yes | No | N/A |
| Grounded conductor bonded to enclosure (NEC 250.24(C)). | Yes | No | N/A |
| AC characteristics label present (NEC 690.54) | Yes | No | N/A |
| AC disconnect door latch secured (NEC 690.15(A)) | Yes | No | N/A |
| Directories/labeling present on all service disconnects per NEC 230.2(E), 230.70(B), 705.10, and 690.56(B). | Yes | No | N/A |
| **FEEDER TAP CONNECTION** | Primary Source Overcurrent Device Rating (A) |  |
| Existing Feeder Conductor Size/Type |  |
| Main panel or subpanel Busbar Rating (A) |  |
| Main panel or subpanel Breaker Rating (A) (enter MLO for if main lug only) |  | N/A(main lug) |
| PV Disconnect Location |  |
| Enclosure Rating | Voltage | Current |
| Fuse Rating | Voltage | Current |
| Conductor Size/Type | Line | Load |
| Utility conductors connected to “Line” side of PV disconnecting means. | Yes | No | N/A |
| AC characteristics label present (NEC 690.54) | Yes | No | N/A |
| PV disconnect identification label present (NEC 690.13(B)). | Yes | No | N/A |
| AC disconnect door latch secured (NEC 690.15(A)) | Yes | No | N/A |
| Directories/labeling present on all service disconnects per NEC 230.2(E), 230.70(B), 705.10, and 690.56(B). | Yes | No | N/A |
| **LOAD SIDE CONNECTION** | Main Breaker Rating (A) |  |  |  |
| Main Breaker Location | Top | Bottom | Other |
| Backfeed Breaker Rating (A) |  |
| Backfeed Breaker Location | Top | Bottom | Other |
| Panel Busbar Rating (A) |  |
| PV Conductor Size/Type |  |
| Combined Rating of Other Current Sources (A)-if applicable |  |
| Panelboard labeled to indicate presence of all power sources (NEC 705.12(C)). | Yes | No | N/A |
| AC characteristics label present (NEC 690.54) | Yes | No | N/A |
| “Do not relocate” label present at PV breaker (NEC 705.12)(B)(3)(2). |  |  |  |
| AC disconnect door latch secured (NEC 690.15(A)) | Yes | No | N/A |
| Directories/labeling present on all service disconnects per NEC 230.2(E), 230.70(B), 705.10, and 690.56(B). | Yes | No | N/A |

## Photos Required (Multiple photos may be needed)

|  |
| --- |
| **Module Nameplate Photo** |
|  Insert Photo(s) HereNotes: |
| **Module Close-up Connector Mating/Compatibility Photo** |
|  Insert Photo(s) HereNotes: |
| **Full Array Image(s)** **Multiple photos** may be needed to include all modules for verifying system capacity |
|  Insert Photo(s) HereNotes: |
| **Horizon Profile Photos**From a single point near the middle of the either the bottom or top row of each array, start by pointing the camera to the left side of the array. Include a little of the array’s left edge, then take successive overlaping photos rotating to the right side of the array typically 4 or 5 photos per array. If more than one array, take another set if the array faces another direction not seen in the previous set. Identify the associated cardinal direction per set. (i.e. E, ESE, SE, SSE, S, SSW, SW, WSW, W, etc)  |
|  Insert Photo(s) HereNotes: |
| **Array Mounting/Flashing Detail** Close shot of mounting bracket connection to roof and associated use of flashing/sealant |
|  Insert Photo(s) HereNotes: |
| **Under-Array Wire Management** **Close up** photo showing the wire management under each array. Multiple photos may be necessary |
|  Insert Photo(s) HereNotes: |
| **Module Clamping and Grounding**Show typical grounding hardware installation, including ground rails, ground lugs, module clamping, and rail splices, if applicable |
|  Insert Photo(s) HereNotes: |
| **Microinverter Nameplate Photo** |
|  Insert Photo(s) HereNotes: |
| **Microinverter Mounting**Show mounting method and mounting/grounding hardware |
|  Insert Photo(s) HereNotes: |
| **Optimizer Nameplate Photo** |
|  Insert Photo(s) HereNotes: |
| **Optimizer Mounting**Show mounting method and/or mounting/grounding hardware |
|  Insert Photo(s) HereNotes: |
| **Rooftop Junction and/or Combiner Box Wiring**Show splice/termination method, conductor fittings |
|  Insert Photo(s) HereNotes: |
| **Cable/Conduit Runs**Show indoor and outdoor cable and conduit runs towards inverters, AC combiners, and/or raceways and troughs**Include wiring of building penetration LBs** |
|  Insert Photo(s) HereNotes: |
| **Raceway/Trough/Junction Box Exterior**Show labeling , conduit fittings, and conduits**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **Raceway/Trough/Junction Box Wiring**Show wiring, splice/termination methods, grounding hardware, and/or conductor fittings, LB building penetration |
|  Insert Photo(s) HereNotes:  |
| **Standalone DC Disconnect/Combiner Exterior**Show nameplate/labeling details**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes:  |
| **Standalone DC Disconnect/Combiner Wiring**Show wiring details |
| Insert Photo(s) HereNotes:  |
| **String Inverter Exterior**Show sufficient detail to verify labeling |
|  Insert Photo(s) HereNotes: |
| **String Inverter Nameplate Photo** |
|  Insert Photo(s) HereNotes: |
| **String Inverter Wiring**Show all wiring terminations |
|  Insert Photo(s) HereNotes: |
| **AC Combiner Exterior**Show nameplate/labeling details |
|  Insert Photo(s) HereNotes: |
| **AC Combiner Front Panel**Show front panel unique descriptive breaker/circuit ID. labeling |
|  Insert Photo(s) HereNotes: |
| **AC Combiner Wiring**Show all wiring details and terminations |
|  Insert Photo(s) HereNotes: |
|

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| --- |
| **ESS Gateway Exterior**Show gateway enclosure and proximity to disconnects. |
|  Insert Photo(s) HereNotes: |
| **ESS Gateway Nameplate and Front Panel labeling photo(s)** |
|  Insert Photo(s) HereNotes: |
| **ESS Gateway Wiring**Show all wiring details and terminations**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **ESS & PV AC Combiner Panel**Show Exterior and Front panel labeling **Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **ESS & PV AC Combiner Panel Wiring Photo(s)**Show all wiring details and terminations**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **Critical Loads/Backed-Up Loads Subpanel** Show labeling with door closed and open,  |
|  Insert Photo(s) HereNotes: |
| **Critical Loads/Backed-Up Loads Subpanel Wiring**Nameplate photo ,Show wiring details and terminations**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **ESS/Battery Exterior**Show enclosure and proximity to disconnects. |
|  Insert Photo(s) HereNotes: |
| **ESS/Battery Nameplate** |
|  Insert Photo(s) HereNotes: |
|

|  |
| --- |
| **Battery Pack/Bank (External)**Show all wiring details and terminations**Multiple photos may be needed** |

 Insert Photo(s) HereNotes: |
| **Battery Wiring**Show all wiring details and terminations**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |

 **Production Meter Exterior**Show production meter enclosure, nameplate ratings, and production reading**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **Production Meter Wiring**Show wiring of production meter enclosure**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **Standalone AC Disconnect Exterior**Show nameplate/labeling details |
|  Insert Photo(s) HereNotes: Remote Rapid Shutdown Device |
| **Standalone AC Disconnect Wiring**Show all wiring details, nameplate, and terminations |
|  Insert Photo(s) HereNotes: |
|  |
| **Load Side Connection Main Service Panel Exterior (Door Open and Closed)**Show labeling detail, Main breaker rating , System Backfeed Breaker |
|  Insert Photo(s) HereNotes: |
| **Load Side Connection Main Service Panel Wiring**Show full wiring detail inside panel and Nameplate photo |
|  Insert Photo(s) HereNotes: |
| **Feeder Tap Connection**Show feeder tap interconnection wiring/splice connector detail |
|  Insert Photo(s) HereNotes: |
| **Feeder Tap Connection Disconnect Exterior**Show labeling/nameplate detail |
|  Insert Photo(s) HereNotes: |
| **Feeder Tap Connection Disconnect Wiring**Show all wiring, termination, nameplate, and fuse details |
|  Insert Photo(s) HereNotes: |
| **Feeder Tap Connection Load panel/Panel Disconnect** Show labeling, nameplate detail, main breaker |
|  Insert Photo(s) HereNotes: |
| **Supply Side Connection Disconnect Exterior**Show labeling/nameplate detail |
|  Insert Photo(s) HereNotes: |
| **Supply Side Connection Disconnect Wiring**Show all wiring, termination, nameplate, and fuse details. Ensure neutral terminal and green ground bonding screw are visible |
|  Insert Photo(s) HereNotes: |
| **Interconnection Standalone Main Service Disconnect**Photo showing the busbar rating |
|  Insert Photo(s) HereNotes: |
| **Supply Side Connection**Show service entrance conductor interconnection/spice connector detail, main/service OCPD**Include images of genset / automatic transfer switches if present** |
|  Insert Photo(s) HereNotes: |
| **Interconnection Standalone Main Service Disconnect** |
|  Insert Photo(s) HereNotes: |
| **Balance of System (BOS) Overview Photos** Show general location/configuration of DC disconnect, inverter, production meter, panelboards, and other co-located equipment, indoor and outdoor**Multiple photos may be needed** |
|  Insert Photo(s) HereNotes: |
| **Balance of System (BOS) Utility Meter Photo**Show location and labeling and Meter reading |
| Insert Photo(s) HereNotes: |
| **Additional Photos**  |
| Notes: |