**Energy Storage Solutions (ESS)**

**Residential Self-Inspection Report**

**Inspection Failed** [ ]  **Inspection Passed** [ ]

**INSPECTOR:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **INSPECTION DATE:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CUSTOMER NAME:** \_\_ \_\_\_\_\_\_\_\_\_\_ **TOWN:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Project #:** ESS-\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **INSTALLER:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Battery Equipment Verification**

|  |  |
| --- | --- |
| **Battery Energy Storage System (BESS) EQUIPMENT** | **Pass / Fail / NA** |
| Coupling (AC or DC) Match Application? |   |
| Battery Location Suitable per Manufacturer Specifications |  |
| Passes municipal inspection? |  |
| Installed as per manufacturer specs (eg, wiring)? |  |
| Total kWh of Battery Storage match application? |   |
| Maximum Power of BESS match application? |  |
| Battery Chemistry ElectroChemical-based?  |   |

**Battery Equipment All VERIFIED? YES** [ ]  **NO** [ ]

**IF NO, Specify Differences from application (eg, AC vs DC-coupled, Make/Model of BESS):**

­­­­­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Other notes on Battery Equipment (eg, unsafe location, other chemistry):**

 ­­­­­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Location of storage: Basement** [ ]  **Garage** [ ]  **Outdoors** [ ]  **In living space** [ ]  **Other** [ ]

|  |  |
| --- | --- |
| **Main Electric Service** | **Pass/Fail/NA** |
| Circuit breakers shall be of the same manufacturer as the main service panel, (NEC 110.3)  |  |

|  |  |
| --- | --- |
| **Ventilation** | **Pass/Fail/NA** |
| Provide adequate ventilation for batteries per manufacturer’s requirements. (NEC 706.10(A)) |  |

|  |  |
| --- | --- |
| **Connections and Terminations** | **Pass/Fail/NA** |
| A listed current-limiting overcurrent protective device shall be installed adjacent to the ESS for each dc output circuit, (NEC 706.21(C)) |  |
| Lock in Circuit Breaker Required (NEC 408.36(D), 710.15(E)) |  |
| Sufficient Ampacity of Battery conductors |  |

|  |  |
| --- | --- |
| **Monitoring and Charge Control** | **Pass/Fail/NA** |
| Charge controllers shall be compatible with the battery or ESS manufacturer's electrical ratings and charging specifications, (NEC 110.3(B)) |  |
| Devices or methods to prevent Battery Overcharging – Per manufacturer |  |

|  |  |
| --- | --- |
| **Disconnecting Means** | **Pass/Fail/NA** |
| A disconnecting means is provided for all ungrounded conductors derived from a dc stationary battery system with a voltage of over 60 volts dc, (NEC 480.7) |  |
| A disconnecting means shall be provided for all ungrounded conductors derived from an ESS. A disconnecting means shall be readily accessible and located within sight of the ESS, (NEC 706.7(A)) |  |
| Where battery energy storage system input and output terminals are more than 5ft from the connected equipment, or where these terminals pass through a wall or partition must comply with all of NEC 706.7(E),1. A disconnecting means shall be provided at the energy storage system end of the circuit. Fused disconnecting means or circuit breakers shall be permitted to be used.
2. A second disconnecting means located at the connected equipment shall be installed where the disconnecting means required by 706.7(E)(1) is not within sight of the connected equipment.
3. Where fused disconnecting means are used, the line terminals of the disconnecting means shall be connected toward the energy storage system terminals.
4. Disconnecting means shall be permitted to be installed in energy storage system enclosures where explosive atmospheres can exist if listed for hazardous locations.

Where the disconnecting means in (1) is not within sight of the disconnecting means in (2), placards or directories shall be installed at the locations of all disconnecting means indicating the location of all other disconnecting means. (NEC 706.7(E)) |  |
| Maximum height requirements for Disconnects, Per NEC 240.24 (A) 6 ft 7 in. |  |

|  |  |
| --- | --- |
| **Interconnection** | **Pass/Fail/NA** |
| The interconnection methods comply with NEC Article 705.12 (if connected to other energy sources) |  |
| AC Electrical panel busbar are not above allowed ampacity |  |

|  |  |
| --- | --- |
| **Signage** | **Pass/Fail/NA** |
| The signage shall be in compliance with ANSI Z535 and shall include the following information1. Labeled “Energy Storage Systems” with symbol of lightning bolt in a triangle
2. Type of technology associated with the ESS
3. Electrical shock warning
 |  |
| A permanent plaque or directory denoting the location of all electric power source disconnecting means on or in the premises shall be installed at each service equipment location and at the location(s) of the system disconnect(s) for all electric power production sources capable of being interconnected. The marking shall comply with NEC 110.21(B) (NEC 706.11) |  |
| Equipment containing overcurrent devices in circuits supplying power to a busbar or conductors supplied from multiple sources shall be marked to indicate the presence of all sources. (NEC 705.12(B)(3)) |  |
| Where controls to activate the disconnecting means of a battery are not located within sight of a stationary battery system, the location of the controls shall be field marked on the disconnecting means. (NEC 480.7(B)) D |  |
| Where two sources, one a primary power source and the other another power source, are located at opposite ends of a busbar that contains loads, the sum of 125 percent of the power source(s) output circuit current and the rating of the overcurrent device protecting the busbar shall not exceed 120 percent of the ampacity of the busbar. The busbar shall be sized for the loads connected in accordance with Article 220. A permanent warning label shall be applied to the distribution equipment adjacent to the back-fed breaker from the power source that displays the following or equivalent wording: (NEC 705.12(B)(2)(3)(b)):WARNING:INVERTER OUTPUT CONNECTION;DO NOT RELOCATE THIS OVERCURRENT DEVICE. |  |
| If a battery dc disconnecting means is not provided at the batteries, the disconnecting means shall be legibly marked in the field. The marking shall be of sufficient durability to withstand the environment involved and shall include the following (NEC 480.7(D)):* Nominal battery voltage
* Maximum available short-circuit current derived from the stationary battery system
* Date the calculation was performed for the value above

The battery disconnecting means shall be marked in accordance with 110.16 |  |

Photos

1. Battery photo (including make and model, for each battery)
2. Automatic Transfer Switch / Main Electrical Panel, or Equivalent
3. Optional battery photo #1
4. Optional battery photo #2
5. Optional battery photo #3
6. Optional site photo #1
7. Optional site photo #2
8. Optional site photo #3