

Battery energy storage system (BESS) annual maintenance checklist

The annual battery energy storage system service is the deep pass: the measurements, cleanings and tests a quarterly round doesn't reach. This checklist keeps the full service on record with the photos that make it defensible later. Work is commonly verified against NFPA 855, manufacturer's published instructions. Confirm the edition your authority having jurisdiction has adopted.

Who runs it: The ESS service technician on the annual visit, with the qualified fire party present for the detection and suppression testing, which they perform and the tech records. When: Once a year, scheduled with the fire party so the annual commissioning-verification and suppression tests they run can be witnessed and documented in one visit.

Connections and heat

- ☐ **Power and battery terminations inspected and retorqued**
DC and AC terminations checked to the marked value with the system safely shut down, no discoloration or corrosion at the lugs. 2 photos required
- ☐ **Thermal survey of connections and modules under load**
Terminations, disconnects and module surfaces surveyed while the system is operating, hot spots noted against the rest of the cabinet. 2 photos required

Battery health

- ☐ **Full BMS log and cell-balance review**
Per-cell voltage spread, temperature history and capacity or state-of-health figures read from the BMS and compared against the last service, recorded not rated. 2 photos required
- ☐ **Disconnects, signage and labeling verified**
DC and AC disconnects operate and are labeled, hazard and shutdown signage present and legible at the enclosure and the fire-service point. 1 photo required

Life-safety testing (witnessed and recorded)

- ☐ **Fire detection, gas detection and suppression tested by the qualified party**
The fire party's detection, gas-detection and suppression tests witnessed and their results documented — the tech records the outcome and does not certify it. 2 photos required
- ☐ **System safe-shutdown interface observed to respond**
On the qualified party's test signal, the system's shutdown and isolation response observed and recorded, unit returned to normal by that party afterward. 1 photo required