

devices for energy storage systems as specified in California Energy Code Section 150.0(s). Additionally, the panelboards shall be provided with the minimum busbar rating as specified in California Energy Code Section 150.0(s).

Alternatively, an energy storage systems (ESS) shall be installed with minimal backup capacity and ESS supplied branch circuits as specified in California Energy Code Section 150.0(s).

Part II. Disconnecting Means

706.15 Disconnecting Means.

▲ (A) **ESS Disconnecting Means.** A disconnecting means shall be provided for all ungrounded conductors derived from an ESS and shall be permitted to be integral to listed ESS equipment. The disconnecting means shall comply with all of the following:

- (1) The disconnecting means shall be readily accessible.
- (2) The disconnecting means shall be located within sight of the ESS. Where it is impractical to install the disconnecting means within sight of the ESS, the disconnect shall be installed as close as practicable, and the location of the disconnecting means shall be field marked on or immediately adjacent to the ESS. The marking shall be of sufficient durability to withstand the environment involved and shall not be handwritten.
- (3) The disconnecting means shall be lockable open in accordance with 110.25.

For one-family and two-family dwellings, a disconnecting means or its remote control shall be located at a readily accessible location outside the building.

▲ (B) **Remote Actuation.** Where controls to activate the disconnecting means of an ESS are used and are not located within sight of the system, the location of the controls shall be field marked on the disconnecting means.

▲ (C) **Notification and Marking.** Each ESS disconnecting means shall plainly indicate whether it is in the open (off) or closed (on) position and be permanently marked "ENERGY STORAGE SYSTEM DISCONNECT." The disconnecting means shall be legibly marked in the field to indicate the following:

- (1) Nominal ESS ac voltage and maximum ESS dc voltage
- (2) Available fault current derived from the ESS
- (3) An arc-flash label applied in accordance with acceptable industry practice
- (4) Date the calculation was performed

Exception: List items (2), (3), and (4) shall not apply to one- and two-family dwellings.

Informational Note No. 1: Industry practices for equipment labeling are described in NFPA 70E-2018, *Standard for Electrical Safety in the Workplace*. This standard provides specific criteria for developing arc-flash labels for equipment that provides nominal system voltage, incident energy levels, arc-flash boundaries, minimum required levels of personal protective equipment, and so forth.

Informational Note No. 2: Battery equipment suppliers can provide information about available fault current on any particular battery model.

For ESS disconnecting means where the line and load terminals may be energized in the open position, the device shall be marked with the following words or equivalent:

WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD
SIDES MAY BE ENERGIZED IN THE OPEN POSITION

The notification(s) and marking(s) shall comply with 110.21(B).

▲ (D) **Partitions Between Components.** Where circuits from the input or output terminals of energy storage components in an ESS pass through a wall, floor, or ceiling, a readily accessible disconnecting means shall be provided within sight of the energy storage component. Fused disconnecting means or circuit breakers shall be permitted to be used.

▲ 706.16 **Connection to Energy Sources.** The connection of an ESS to sources of energy shall comply with 706.16(A) through (F).

▲ (A) **Source Disconnect.** A disconnect that has multiple sources of power shall disconnect all energy sources when in the off position.

(B) **Identified Interactive Equipment.** ESS that operate in parallel with other ac sources shall use inverters that are listed and identified as interactive.

(C) **Loss of Interactive System Power.** Upon loss of a primary source of power, an ESS with a utility-interactive inverter shall comply with the requirements of 705.40.

▲ (D) **Unbalanced Interconnections.** Unbalanced ac connections between an ESS and other ac electric power production sources shall be in accordance with 705.45.

(E) **Other Energy Sources.** The connection of an ESS to other energy sources shall be in accordance with 705.12 and Parts III and VI of Article 712.

▲ (F) **Stand-Alone Operation.** Where the output of an ESS is capable of operating in stand-alone mode, the requirements of 710.15 shall apply.

Part III. Installation Requirements

706.20 General.

▲ (A) **Ventilation.** Provisions appropriate to the energy storage technology shall be made for sufficient diffusion and ventilation of any possible gases from the storage device, if present, to prevent the accumulation of an explosive mixture. Ventilation of an ESS shall be permitted to be provided in accordance with the manufacturer's recommendations and listing for the system.

Informational Note No. 1: See NFPA 1-2018, *Fire Code*, Chapter 52, for ventilation considerations for specific battery chemistries.