



**Tentative Interim Amendment 2017-1
to the
National Electrical Safety Code
ANSI C2-2017**

5 February 2020

In accordance with Section 10 of its Procedures, as a result of a Proposal submitted by a member of the NESC Main Committee, a 30-day ballot for a proposed Tentative Interim Amendment (TIA) to ANSI C2, National Electrical Safety Code, 2017 Edition, was issued by the Secretariat to the NESC Main Committee on 6 December 2019; concurrently, a call for public review was issued in ANSI Standards Action on 6 December 2019.

A TIA is tentative because it has not been processed through the entire standards-making procedure. It is interim because, if approved, it is effective only between editions of the Code. A TIA automatically becomes a Proposal of the proponent for the next edition of the Code; as such, it is then subject to all the procedures of the standards-making process.

Change Section 14 as indicated:

Section 14. Storage batteries

140. General

The provisions of this section are intended to apply to all stationary installations of storage batteries. For operating precautions, see Part 4 of this Code.

- A. Space shall be provided around batteries for safe inspection, maintenance, testing, and cell replacement and space left above the cells to allow for operation of lifting equipment when required, addition of water, and taking measurements.

141. Location

- B. Storage batteries shall be located within a protective enclosure or area accessible only to qualified persons. A protective enclosure can be a battery room, control building, or a case, cage, or fence that will protect the contained equipment and limit the likelihood of inadvertent contact with energized parts.

142. Ventilation

- C. ~~Ventilation to maintain levels of combustible gases below an explosive mixture shall be provided where batteries are subject to producing such gases. The battery area shall be ventilated, either by a natural or powered ventilation system to limit hydrogen combustible gas accumulation to less than an explosive mixture.~~ Failure of a continuously operated or automatically controlled powered ventilation system required by design to limit hydrogen combustible gas accumulation to less than an explosive mixture shall be annunciated.



National Electrical Safety Code®

NOTE: IEEE Std 1635 and NFPA 855 contains information regarding battery ventilation and Lower Explosive Limit (LEL).

143. Racks

- D. Racks refer to structures or frames designed to support cells or trays. Racks shall be firmly anchored, preferably to the floor. Anchoring to both walls and floors is not recommended. Racks made of metal shall be grounded. Racks shall be constructed for their applicable geographic seismic activity.

NOTE: IEEE Std 693, ASCE 7 and the International Building Code contain information regarding seismic design.

144. Floors in battery areas

- E. Floors areas under of a battery areas that contains acid-corrosive chemical agents liquids should be of an acid-resistant corrosive resistant material, painted with acid-resistant corrosive resistant paint, or otherwise protected. Provision should be made to contain spilled electrolyte or corrosive liquids.

145. Illumination for battery areas

- F. Lighting fixtures for the illumination of battery areas shall be protected from physical damage by guards or isolation. Receptacles and lighting switches, where there is the potential for hazardous combustible gas concentrations, should be located outside of battery areas.

146. Service facilities

A. ~~Proper eye protection and clothing shall be provided in the battery area during battery maintenance and installation and shall consist of the following:~~

- ~~1. Goggles or face shield~~
- ~~2. Acid resistant gloves~~
- ~~3. Protective aprons and overshoes~~

- G. ~~4. Portable or stationary water facilities or neutralizing agent for rinsing eyes and skin shall be readily available while performing battery maintenance and installation.~~

NOTE: See Rule 420G for protective requirements.

- H. ~~B-~~ Safety signs inside and outside of a battery room or in the vicinity of a battery area, prohibiting smoking, sparks, or flame shall be displayed where batteries are subject to producing combustible gases.

NOTE: ANSI Z535.1-2011, ANSI Z535.2-2011, ANSI Z535.3-2011, ANSI Z535.4-2011, and ANSI Z535.5-2011 contain information regarding safety signs.



National Electrical Safety Code®

141. Switchgear and Plant Batteries

Switchgear and plant batteries are those batteries used to supply dc energy in the control and operation of generating station and substation safety, switching, protective devices and systems. Batteries used in this application shall meet the following requirements.

- A. Switchgear and plant batteries shall not be used for grid storage applications.
- B. Batteries systems shall be sized to provide the necessary dc energy with a specified duration and rate to allow for remediation of a faulted or loss of dc charging system.
- C. ~~Battery chargers shall be sized to supply DC power to simultaneously operate continuous loads and recharge a discharged battery.~~
- D. ~~Ventilation to maintain levels of combustible gases below an explosive mixture shall be provide where batteries are subject to producing such gases.~~

NOTE: Battery system and battery charger capacity may require re-evaluation as loads change. See IEEE 485; and IEEE 1115 for sizing information.

142. Grid Storage Batteries

Grid storage batteries are those batteries that discharges their energy into a utility's electric power supply grid AC electric system. Batteries used in this application shall meet the following requirements.

- A. Grid storage batteries shall not be used for switchgear and plant battery applications.
- B. Batteries installations that pose a fire hazard shall provide protective measures to prevent a battery fire from damaging adjacent structures and equipment.
- C. Batteries installations containing hazardous electrolytes liquids shall have spill containment.
- D. Batteries installation shall have signage regarding fire, toxic chemicals and other hazards prominently displayed in the battery area.
- E. ~~When combustible gases are possible, battery enclosures shall have ventilation to maintain the levels of such gas to less than deflagration levels.~~
- F. ~~Grid storage batteries shall not be used for switchgear and plant battery applications.~~

NOTE: NFPA 855 contains information regarding installation of energy storage systems.