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CODE APPLICATION NOTICE (CAN)
H&S Code §129851

SUBJECT

Electrical Life-Support Equipment for Nursing Homes and Limited Care Facilities

CAN: 3-517.40(B)

Effective: 10/10/2012

Revision: 05/08/2020



CODE SECTION

Article 517, Section 517.40(B)
2019 California Electrical Code (CEC)

Chapter 12, Section 1225
2019 California Building Code (CBC)

Chapter 3, Section 321
2019 California Mechanical Code (CMC)

2019 CEC Chapter 5 SPECIAL OCCUPANCIES Article 517 Health Care Facilities

517.2 Definitions.

Critical Branch. A system of feeders and branch circuits supplying power for task illumination, fixed equipment, select receptacles, and select power circuits serving areas and functions related to patient care that are automatically connected to alternate power sources by one or more transfer switches during interruption of normal power source.

Critical Care (Category 1) Space. Space in which failure of equipment or a system is likely to cause major injury or death of patients, staff, or visitors. [99:3.3.127.1] [OSHPD 1, 2, 3, 4 & 5] *Includes special care units, intensive care units, coronary care units, sub-acute units, angiography laboratories, cardiac catheterization laboratories, delivery rooms, operating rooms, portions of emergency departments, electroconvulsive therapy procedure rooms, post-operative recovery rooms and similar areas in which patients are intended to be subjected to invasive procedures and are connected to line-operated electromedical devices.*

Electrical Life-Support Equipment. Electrically powered equipment whose continuous operation is necessary to maintain a patient's life.

517.19 Critical Care (Category 1) Spaces.

(A) Patient Bed Location Branch Circuits. Each patient bed location shall be supplied by at least two branch circuits, one or more from the critical branch and one or more circuits

from the normal system. At least one branch circuit from the critical branch shall supply an outlet(s) only at that bed location.

The electrical receptacles or the cover plates for the electrical receptacles supplied from the life safety and critical branches shall have a distinctive color or marking so as to be readily identifiable. [99:6.4.2.2.6.2(C)]

All branch circuits from the normal system shall be from a single panelboard. Critical branch receptacles shall be identified and shall also indicate the panelboard and circuit number supplying them.

The branch circuit serving patient bed locations shall not be part of a multiwire branch circuit.

(B) Patient Bed Location Receptacles.

(1) Minimum Number and Supply. Each patient bed location shall be provided with a minimum of 14 receptacles, at least one of which shall be connected to either of the following:

- (1) The normal system branch circuit required in 517.19(A)
- (2) A critical branch circuit supplied by a different transfer switch than the other receptacles at the same patient bed location

[OSHPD 1, 2, 4 & 5] Exception: Beds subject to the requirements of 517.40(B) shall be provided with a minimum of eight receptacles.

517.40 Type 2 Essential Electrical Systems for Nursing Homes and Limited Care Facilities [OSHPD 2], Correctional Treatment Centers and Acute Psychiatric Hospitals [OSHPD 4 & 5].

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(B) Inpatient Hospital Care Facilities. For those nursing homes and limited care facilities that admit patients who need to be sustained by electrical life support equipment, the essential electrical system from the source to the portion of the facility where such patients are treated shall comply with the requirements of Part III, 517.29 through 517.30.

2019 CBC

Part 2, Vol. 1, Chapter 12 INTERIOR ENVIRONMENT

Section 1225 Skilled Nursing and Intermediate-Care Facilities

1225.5.1.2.2 Bed clearance. *The dimensions and arrangement shall be such that there is a minimum distance of 3 feet (914 mm) between the sides and foot of the beds and any wall or any other fixed obstruction. In multiple-bed rooms, in addition to the above, a minimum clearance of 3 feet (914 mm) shall be provided between beds and a clearance of 4 feet (1219 mm) shall be available at the foot of each bed to permit the passage of equipment and beds.*

2019 CMC
Chapter 3 GENERAL REQUIREMENTS
Section 321.0 Essential Mechanical Provisions

321.0 Essential Mechanical Provisions [OSHPD 1, 1R, 2, 3 (Surgical Clinics only) 4 & 5]

During periods of power outages essential electrical power shall be provided for the following equipment:

321.1 *(Does not apply to OSHPD 3 surgical clinic.) All heating equipment necessary to maintain a minimum temperature of 60°F (15.6°) in patient areas which are not specified in Section 322.0.*

321.2 *All heating equipment necessary to maintain the minimum temperatures listed in Table 4-A for sensitive areas as specified in Section 322.0.*

321.3 *Equipment necessary for humidification of the areas listed in Section 322.0.*

321.4 *All supply, return, and exhaust fans required to maintain the positive and negative air balances as required in Table 4-A.*

321.5 *All control components and control systems necessary for the normal operation of equipment required to have essential electrical power.*

321.6 *Alarms for airborne infection isolation rooms and protective environment rooms.*

PURPOSE

The purpose of this Code Application Notice (CAN) is to clarify the requirements of sub-acute bed locations related to nursing homes and limited care facilities that admit patients needing sustained electrical life-support equipment. This CAN applies to skilled nursing facility (SNF) projects converting a general care patient bed(s) to sub-acute bed(s) and includes scope of work pertaining to the replacement of a generator or addition of patient bed receptacle(s). Those projects including replacement of a generator or addition of patient bed receptacle(s) in the scope of work, but not converting a general care patient bed(s) to a sub-acute bed(s), will require a note on the drawings stating, "Facility will not admit patients sustained by life support."

BACKGROUND

Electrical life-support equipment, as defined in CEC Section 517.2 and NFPA 99, reflects the type of equipment that would require a hospital-grade essential electrical system as defined in CEC, Part III, Sections 517.29 through 517.35. Nursing homes and limited care facilities that want to admit patients who need to be sustained by electrical life-support equipment must have a hospital-grade essential electrical system for these bed locations in order to meet the needs of these patients. The new life-support equipment will require

sufficient space around each patient's bed so the patient bed location space requirements must comply with the current code. The staff operational needs must be provided for both clinical and emergency functions. Conversion projects may require the removal of a patient bed from a semi-private bedroom so that there is sufficient room surrounding the bed location utilizing the new electrical life-support equipment in order to meet code requirements.

INTERPRETATION

Electrical requirements and architectural space requirements are specific items that must be addressed to provide electrical life-support equipment for a skilled nursing patient bed(s) in a nursing home or limited care facility, generally referred to as sub-acute beds.

For projects converting existing SNF patient bed locations to sub-acute patient bed locations, the project's detailed description in the New Project Application (OSH-FD-121) shall clearly indicate that existing SNF patient bed location(s) are being converted to sub-acute patient bed location(s). The project submittal documents will need to clearly describe the work identified in the context of existing conditions and applicable code requirements. The project submittal documents must demonstrate that all the requirements have been met. A conversion to a sub-acute bed is not a change in licensed service. It would be considered an electrical change in function requiring compliance with the Remodel CAN 2-102.6 (Electrical).

Projects solely for the purpose of establishing a sub-acute bed and involving electrical systems only will not trigger accessibility path of travel requirements. (Refer to CBC Section 11B-202.4 and CAN 2-11B)

Example A: The project consists of converting several skilled nursing semi-private patient bedrooms to sub-acute semi-private beds with the provision of new critical branch receptacles at each bed location. The existing generator has the capacity to serve the converted beds and continue to serve the existing Essential Electrical System loads. New critical branch and equipment branch panels will be added to the system to serve the sub-acute beds.

In this example, the new receptacles are considered "single elements" that will need to comply with the reach range requirements of CBC Chapter 11B, however since the project is limited to alterations to the electrical system; the project is eligible for exception 7 to the path of travel requirements under Section 11B-202.4.

Example B: The project consists of converting several skilled nursing semi-private bedrooms to private sub-acute bedrooms, including new headwall locations with relocated normal branch and new critical branch receptacles. The patient rooms will also receive a lighting soffit over the bed. The generator is not capable of serving the new loads and will be replaced with a larger generator on a new concrete pad surrounded by a new sound wall.

In this example, the project does not qualify for exception 7 and will be required to provide path of travel elements per the requirements of CBC Section 11B-204.4 to each of the converted bedrooms and a path of travel to the new generator enclosure. Note that the path of travel elements to each of the converted bedrooms shall include consideration to accessible male and female (or two all gender) staff toilets serving the area if not already accessible. If the facility is not currently in compliance with the 50% minimum requirement for accessible patient rooms and associated toilet rooms, then a minimum of 50% of the altered rooms must also be made accessible in compliance with CBC Chapter 11B. Refer to CAN 2-11B.

CMS federal regulations for facilities constructed, reconstructed, or newly certified after November 28, 2016, cannot have more than two (2) residents per room. If an existing facility with more than two (2) residents per room is converted to sub-acute use, it would be required to meet this new standard.

The facility's electrical system serving the sub-acute bed(s) will need to meet the requirements as specified in CEC Sections 517.29 through 517.35. The essential electrical system serving the sub-acute bed(s) will need an Essential Electrical System comprised of a life safety branch, critical branch and equipment branch. All transfer switches serving the sub-acute bed(s) will be required to have by-pass isolation per CEC Section 517.31(B)(B)(3). Generator fuel supply shall be a minimum of six hours per CEC Section 700.12(B)(2) Exception No. 2. Life safety branch and critical branch will transfer from normal source to alternate source within 10 seconds per CEC Section 517.32(B). The life safety electrical loads will be required to be connected to the life safety branch as specified in CEC Section 517.33. The nurse call system will be required to meet the requirements in CEC Section 517.123 and CBC Table 1224.4.6.5, and it will need to be served from the critical branch as specified in CEC Section 517.34(A)(5).

The facility will be required to meet the essential mechanical provisions of CMC Section 321. New electrical loads for the equipment associated with CMC Section 321 will be required to be connected to an electrical panel served from the equipment branch as specified in CEC Section 517.35(B)(1.1). If existing mechanical loads serving the sub-acute bed(s) are not connected to an existing equipment branch, they will need to be moved to an electrical panel that is served from the equipment branch.

The sub-acute patient bed location(s) with life-support equipment shall meet the wiring, grounding, branch circuits and receptacles requirements of CEC Sections 517.12, 517.13, 517.19 and 517.34(A)(8). Each sub-acute patient bed location shall have a minimum of eight receptacles per CEC 517.19(B)(1) and a dedicated critical branch circuit supplying critical branch receptacle(s) at that patient bed location per CEC 517.19(A). Branch circuit serving patient bed locations shall not be part of a multiwire branch circuit per CEC 517.19(A). Normal and essential branch-circuit panelboards serving the receptacles in the same individual sub-acute patient care vicinity shall have their equipment grounding terminal buses bonded together per CEC Section 517.14. Task lighting will be provided in the sub-acute patient room and will be on the critical branch per CEC Section 517.34(A)(8).

CODE APPLICATION NOTICE (CAN)

Equipment supporting a sub-acute bed is required to have special seismic certification in accordance with ASCE 7 Section 13.2.2 for the following systems, equipment, and components, unless specified otherwise by the enforcement agency per CBC Section 1705A:

- Emergency and standby power systems
- Elevator equipment (excluding elevator cabs)
- Exhaust and smoke control fans
- Switchgear and switchboards
- Air conditioning units excluding Variable/Constant Air Volume (VAV/CAV) boxes up to 75 lbs.
- Air handling units
- Transformers
- UPS and batteries
- Panelboards as defined in the California Electrical Code (CEC) Article 100
- Electrical control panels powered by the life safety branch in accordance with the California Electrical Code (CEC) Article 517.33 or the critical branch in accordance with the California Electrical Code (CEC) Article 517.34

The architectural minimum dimensions surrounding SNF patient bed location(s) providing sub-acute bed(s) must comply with the current code. Bed clearances shall comply with minimum distance requirements in CBC Section 1225.5.1.2.2. This facilitates proper function of the equipment and staff access to the patient. (Refer to the Remodel CAN 2-102.6).

Original signed

5/08/2020

Paul Coleman

Date