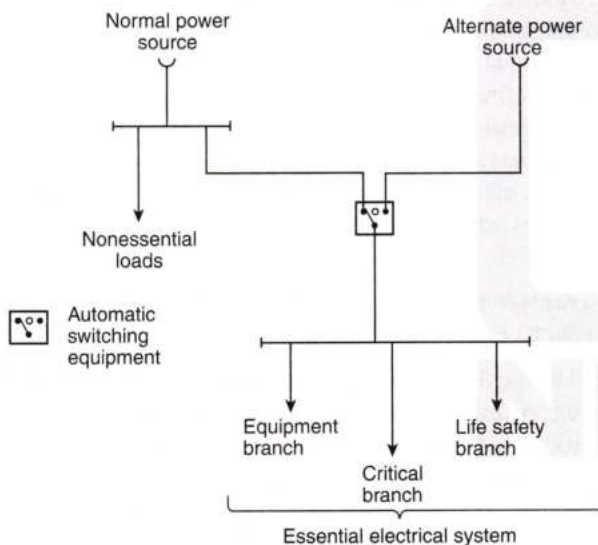


Δ **INFORMATIONAL NOTE FIGURE 517.31(B)(1) Type 1 Essential Electrical System — Minimum Requirement (Greater Than 150 kVA) for Transfer Switch Arrangement.**



Δ **INFORMATIONAL NOTE FIGURE 517.31(B)(2) Type 1 Essential Electrical System — Minimum Requirement (150 kVA or Less) for Transfer Switch Arrangement.**

(1) Optional Loads. Loads served by the generating equipment not specifically named in this article shall be served by their own transfer switches such that the following conditions apply:

- (1) These loads shall not be transferred if the transfer will overload the generating equipment.
- (2) These loads shall be automatically shed upon generating equipment overloading.

(2) Contiguous Facilities. Hospital power sources and alternate power sources shall be permitted to serve the essential electrical systems of contiguous or same-site facilities.

(C) Wiring Requirements.

Δ **(1) Separation from Other Circuits.** The life safety branch and critical branch [of the essential electrical system] shall be kept independent of all other wiring and equipment. [99:6.7.5.2.1]

(a) Raceways, cables, or enclosures of the life safety and critical branch shall be readily identified as components of the essential electrical system (EES). Boxes and enclosures (including transfer switches, generators, and power panels) shall be field- or factory-marked and identified as components of the EES. Raceways and cables shall be field- or factory-marked as components of the EES at intervals not to exceed 7.6 m (25 ft).

(b) Conductors of the life safety branch or critical branch shall not enter the same raceways, boxes, or cabinets with each other or any other wiring system. Branch conductors shall be permitted to occupy common equipment, raceways, boxes, or cabinets of other circuits not part of the life safety branch and critical branch where such wiring complies with one of the following:

- (1) Is in transfer equipment enclosures
- (2) Is in exit or emergency luminaires supplied from two sources
- (3) Is in a common junction box attached to exit or emergency luminaires supplied from two sources
- (4) Is for two or more circuits supplied from the same branch and same transfer switch

(c) The wiring of the equipment branch shall be permitted to occupy the same raceways, boxes, or cabinets of other circuits that are not part of the essential electrical system.

(d) Where Category 2 locations are served from two separate transfer switches on the essential electrical system in accordance with 517.18(A), Exception No. 3, the Category 2 circuits from the two separate systems shall be kept independent of each other.

(e) Where Category 1 locations are served from two separate transfer switches on the essential electrical system in accordance with 517.19(A), Exception No. 2, the critical care circuits from the two separate systems shall be kept independent of each other.

The life safety branch and the critical branch of the essential electrical system are not permitted to occupy the same raceways, boxes, or cabinets with each other or with other wiring. However, circuits on the life safety or critical branch are allowed to be in the same raceway or cable with other circuits of the same branch.

Where Category 2 or Category 1 spaces are supplied from two transfer switches on an essential electrical system, the separate feeder and branch circuits are to be kept independent of each other. The issue of a failure in one circuit affecting the other is the same whether there is a normal system circuit and an essential system circuit or two essential system circuits.

(2) Isolated Power Systems. Where isolated power systems are installed in any of the areas in 517.34(A)(1) and (A)(2),