

TOPIC 8 – ELECTRICAL ROOMS AND CLOSETS

1. GENERAL PROVISIONS FOR NEW BUILDINGS

- a. Provide a minimum of two means of egress from switchgear rooms, transformer vaults, generator rooms. Egress by means of a ladder in an areaway is prohibited.
- b. Provide doors that open under simple pressure leading from switchgear rooms, transformer vaults, and generator rooms with door swing in the direction of exit travel.
- c. Provide standard hardware on doors of electrical closets. Doors must swing out.
- d. Refer to the HVAC Design Manual for necessary mechanical ventilation or mechanical cooling system to maintain indoor temperatures as required for proper operation of the equipment for all electrical rooms, generator rooms, and transformer vaults.

2. SWITCHGEAR ROOMS AND TRANSFORMER VAULTS IN NEW BUILDINGS

- a. Refer to the Physical Security and Resiliency Design Manual (PSRDM) for requirements. Additionally, locate switchgear rooms and transformer vaults as close as practical to the utility electrical service entrance.
- b. Establish the required size of switchgear rooms and transformer vaults after the electrical loads and equipment layouts have been determined. For high, medium and low voltage switchgear, allow a minimum clearance of 1.2 m (4 feet) on both ends and rear, and 1.8 m (6 feet) in front, from any wall, column or other equipment. Additionally, NEC's required working clearance shall be complied with if more than 1.8 m (6 feet) is required.

3. ELECTRICAL CLOSETS IN NEW AND MAJOR ALTERATIONS TO EXISTING BUILDINGS

- a. Except for the VA Hospital Building System (VAHBS) concept, provide one centrally located electrical closet for each wing with length of 45.7 m (150 feet) or less. When the wing length exceeds 45.7 m (150 feet), provide a minimum of two electrical closets. Where feasible, centrally locate electrical closets in the area to be served. The minimum size of electrical closets containing step-down transformers should be at a minimum 2.4 m (8 feet) by 3.0 m (10 feet). Establish the size of closets - that do not contain step-down transformers - with sufficient width to accommodate all installed panels. Provide closet with a minimum of 20% spare wall space for a future expansion. Walk-in closets should be a minimum 2.1 m (7 feet) wide.
- b. In electrical closet where one, or a maximum of two branch-circuit panels are installed, shallow closet is permitted. The depth of the closet should be 0.6 m (2 feet) minimum. The length should be 1.8 m (6 feet) with double doors that swing 180 degrees out into the corridor.
- c. Position electrical closet locations to avoid disturbances to building structural framing elements such as structural steel beams. This arrangement is to allow conduit feeder



risers to be routed vertically straight up and down the building, without going through building structural framing elements.

4. EMERGENCY and/or STAND-BY GENERATOR ROOMS

Size the generator room to accommodate the generator(s), and all associated electrical equipment. At a minimum, provide a horizontal clearance of 1.5 m (5 feet) between generators, and 1.2 m (4 feet) between a generator and a wall or other piece of equipment. Additionally, refer to the PSRDM for physical security requirements. Refer to the Architecture Design Manual for ceiling height requirements.

5. ALTERATIONS TO EXISTING BUILDINGS

Follow the recommended space requirements as described herein for new buildings.

