



Powell Technical Brief #50

NEC Article 384 - Switchboards and Panelboards

December 10, 1993

Every three years the National Electrical Code is revised, and a cottage industry springs up to inform all of us about the changes made in the new version of the Code. However, sometimes when you are looking for the intent for the detailed meaning of a particular section of the Code, it is just as useful to know what proposed changes were not made, and why the code-making panel rejected the proposal. This information appears in the NFPA Technical Committee Report (TCR), which is issued during each code cycle. In this document, each proposal for revision of the NEC is reproduced, along with the panel's action and the panel's reason for taking that action.

In the 1992 TCR, which preceded the 1993 revision of the NEC, there were two interesting rejected proposals with regard to §384-4 - Installation. The first of these suggested adding the following text:

"Where water sprinklers are in a position where they can deliver water to service equipment or service bus duct, then that service equipment and service bus duct shall be rated as raintight."

The code-making panel unanimously rejected that proposal, with the following comment:

"Experience has proven that if a fire activates sprinklers, the sprinklers, if properly installed and maintained, provide effective protection with virtually no hazard to personnel and with no measurable increase in damage to the equipment as compared with the damage done by heat, flame, smoke and the manual hose streams."

The other proposal suggested removing the words "foreign to the electrical equipment" from the text of the section. The proposer's substantiation was:

"This particular sentence in the 1990 NEC as written can be interpreted as permitting the installation of a dry type, floor mounted transformer below a panelboard. The transformer is equipment not foreign to the electrical equipment (panelboard), thus permitting the installation below the panelboard."

The code-making panel also unanimously rejected the proposal, with the comment:

"Such a transformer not being foreign to electrical equipment is permitted in the dedicated panelboard space provided it does not intrude into the 110-16 work space."



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page 2

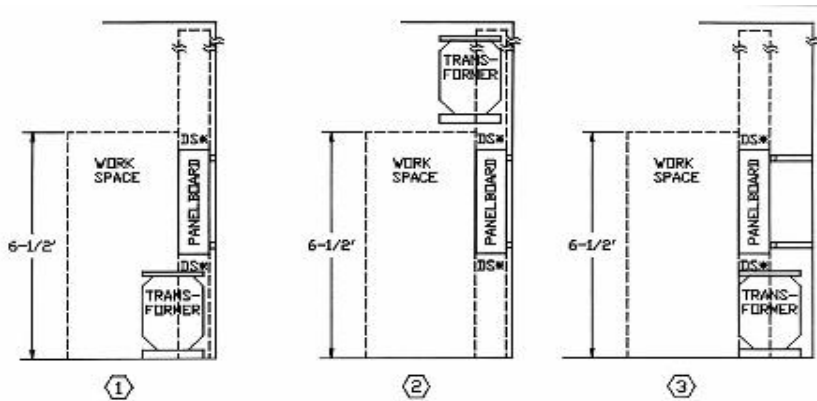


Figure 1 - Panelboard/Transformer Arrangements (DS* is panelboard's Dedicated Space)

Figure 1 shows three examples of a transformer located near a panelboard. View 1, with the transformer mounted below the panelboard, is not permitted, as the transformer intrudes into the work space required by 110-16 of the NEC.

Views 2 and 3 are both installations permitted by the NEC. In View 2, the transformer is located above the work space, which only extends up to 6½ feet from the floor. In View 3, the panelboard has been mounted away from the wall so that the transformer does not extend into the work space.

Note that the "dedicated space" above and below the panelboard is the width and depth of the panelboard and extends from the floor to a point 25 feet above the floor, or to the structural ceiling, whichever is lower. A typical hung ceiling of drop-in panels is not considered to be a structural ceiling for this purpose.

Baldwin Bridger, P.E.
Technical Director