SECTION 16322D - MEDIUM VOLTAGE TRANSFORMERS

A. LOCATION OF TRANSFORMERS in general, shall be where removal can be accomplished, and is relatively easy. Transformers located outdoors shall be located where transformer can be loaded onto a truck. This may require analyzing site and if necessary, construction of a service road.

B. TYPES: Outdoor transformers may be pad mounted with approved (non-PCB) fluid such as R-Temp. Indoor transformers shall be dry type of the barrel design. Cast type, are not acceptable.

C. WINDINGS: Primary winding shall be connected Delta and secondary winding shall be connected Wye and grounded. Primary winding of oil insulated transformers shall be equipped with no load tap changing switch with two 2-1/2 percent taps above and four 2-1/2 percent below rated voltage. Primary windings of indoor dry type transformers shall be furnished with two 2-1/2 percent taps above and four 2-1/2 percent taps below nominal primary voltage, changeable by transformer jumpers. All windings copper. Indoor dry type transformers shall have temperature sensor wells integral with windings. The main transformer shall be equipped with a transformer monitor panel to indicate transformer coil temperature, hottest coil temperature, fan status, and include alarm and emergency shutdown relays. The monitor panel shall have the capability of transmitting this information to PMCS system.

D. PRIMARY SWITCH AND FUSES: Primary of transformer shall be fuse protected. Transformer shall also have a gang operated switch for isolation from the primary circuit. Switch and fuse combination shall be load break type. **Interrupting rating shall exceed the available system short circuit current, no exceptions.** Switches shall be rated at 600 amperes continuous duty, minimum.

E. For liquid insulated transformers, provide a temperature gauge equipped with adjustable electrical contact points which can be used for a high temperature alarm.

F. Provide for a “megger” test to verify dielectric strength and a TTR test for proper voltage. Arrange through the University Architect that Facilities Management (Electric Shop) witness test and provide copies of test results to University Architect prior to transformer being energized.

G. Transformers, 15KV Class, shall have a BIL rating of 95KV on the primary side. Transformer shall have distribution class lightning protection on the primary side.

H. Transformer shall have minimum K rating of 4.
I. All transformer rooms shall be ventilated with outdoor air and temperature controlled.

END OF SECTION