DESIGN REQUIREMENTS

LOW-VOLTAGE TRANSFORMERS

GENERAL INFORMATION

1.1 This section applies to low voltage transformers.

DESIGN REQUIREMENTS

2.1 Arrange equipment to provide adequate spacing for cooling air circulation.

2.2 Use flexible conduit, 2 foot minimum and 4 foot maximum length, for connections to transformer case. Make conduit connections to side panel of enclosure.

2.3 Provide seismic restraints for the transformer.

2.4 All transformers greater than 45 kVA shall be floor mounted.

2.5 Provide concrete bases for all floor-mounted transformers.

2.6 Temperature Rise: 115 degrees Celsius maximum rise above 40 degrees Celsius.

2.7 Vibration isolators for Floor-mounted transformers: Provide vibration-isolating pads suitable for isolating the transformer noise from the building structure.

2.8 Secondary neutral shall be bonded to building ground as required by NEC.

2.9 Transformers shall comply with energy efficiency ratings listed in Table 4-2 of NEMA Standard TP-1-2002.

2.10 Transformer coils may be either copper or aluminum.

CONSTRUCTION REQUIREMENTS

3.1 Isolate core and coil from enclosure using vibration-absorbing mounts.

3.2 Required factory tests shall include:

   a. No-load loss at rated voltage on the rated voltage connection.

   b. Impedance and load loss at rated current on the rated voltage connection.
DESIGN REQUIREMENTS

c. Efficiency at 25, 50, 75 and 100 percent rated load.
d. Sound level.
e. Temperature tests.

3.3 Required field tests shall include:

a. Continuity tests.
b. Recording as-left tap connections.
c. Insulation-resistance tests, winding-to-winding and each winding-to-ground.
d. Turns-ratio tests at all tap positions.
e. Excitation-current test on each phase.
f. Resistance test of each winding at each tap connection.
g. Core insulation-resistance tests.
h. Applied voltage test on all high and low-voltage windings-to-ground.
i. Secondary voltage tests, phase-to-phase and phase-to-neutral after energizing and prior to loading

REFERENCE

4.1 The applicable CSI Specification Section is 262200.