

## **DIVISION 26 - ELECTRICAL**

### **SECTION 26 12 19 15KV PAD-MOUNTED, LIQUID-FILLED TRANSFORMERS FOR MEDIUM VOLTAGE SYSTEMS**

#### **PART 1: GENERAL**

##### **1.01 Scope of Standard**

- A. This standard provides general guidance concerning the specific preferences of Texas State University for Pad-Mounted, Liquid-Filled, and Medium-Voltage Transformers.
- B. Texas State University recognizes that project conditions and requirements vary, thus precluding the absolute adherence to the items identified herein in all cases. However, unless there is adequate written justification, it is expected that these guidelines will govern the design and specifications for Texas State University projects.

##### **1.02 Scope of Work**

- A. This section includes liquid filled, pad mounted distribution transformers with primary voltage class of 15kV and a kVA rating as required per project.
- B. The designer shall coordinate the requirements of this section with the requirements of the related sections of this standard.
- C. This is a design standard and is not intended to be used as a construction specification.

#### **PART 2: PRODUCTS**

- A. General: Each transformer shall consist of an incoming high voltage termination section, transformer, and outgoing bus way interconnection chamber. The transformers shall be new and copper wound and designed with 55 degree Celsius rating.
- B. Ordering Specifications:
  - New (no rebuilds),
  - 3 phase Pad-mount,
  - 12,470 Delta 95KV BIL primary,
  - Dead front, 200A elbow connector bushings.
  - Radial feed, (unless another is specified)
  - Taps, split 2, 2 ½%, above and below, Tap Changer Lightning arrestors.
  - Pressure/Vacuum gauge
  - Schrader Valve

- Nitrogen blanket
  - Std PVR & 1" Drain Valve with sampler
  - Oil level gauge
  - Oil level plug
  - Dial-type Thermometer
  - Padlock-able door handle
  - Penta bolt entry
  - Lifting lugs
  - Jacking provisions
  - No switch
  - No fuse. (unless otherwise specified)
  - Custom exterior grade paint, Color: Sherwin Williams SW6108 "Latte".
  - 5.75% Impedance or manufacturer's standard
  - V. BIL: 95 kV
  - H.V. Taps: (2) 2\_% FCAN and FCBN
  - Voltage: **(according to service)**
  - L.V. BIL: 30 kV
  - Insulating: FR-3 oil
- C. Acceptable transformer manufacturers:
1. Cooper Industries
  2. Cutler Hammer
  3. General Electric
- D. Safety Design Issues
1. Install signs stating "DANGER HIGH VOLTAGE" at any location where contact with live 15 kV or 5 kV parts are possible
  2. Install signs stating "DANGER 600 VOLTS" at any location where contact with live 600V parts is possible.
  3. The signs shall use at least 2" red lettering on a 3" white background.

**PART 3: EXECUTION****3.01 Design/Drawing Requirements**

- A. Show transformer on one-line diagram with kVA rating, primary and secondary voltage ratings and % impedance.
- B. The electrical engineer shall detail the designed location of the transformer(s) on enlarged room detail floor plans drawn to scale.

END OF SECTION 26 12 19