Division 261219
Pad Mounted Distribution Transformers
DESIGN GUIDE

1 General

1.1 Introduction

A. This section applies to the following:

1. Liquid-Filled Transformers

B. Transformers used on the CWU campus are typically 3 phase transformers. In some cases, housing facilities will utilize 1 phase transformers.

C. Transformer locations shall be clear of surrounding landscape and structures. Provide minimum 10 feet clear on service side of transformer and minimum 4 feet clear on non-service sides of transformer.

2 Materials

2.1 Liquid-Filled Transformers

A. Manufacturers: Copper Envirotran or approved equal

B. Liquid-filled Transformers: ANSI C57.12.26, three phase, pad mounted, self-cooled transformer unit.

C. Windings: Transformer primary and secondary windings shall be copper.

D. Ratings:

1. Primary Voltage: 12.47KV, delta connected
2. Primary Basic Impulse Level: 95kV
3. Secondary Voltage: Dependent on the project. Typically, 480Y/277V or 208Y/120V.
4. Impedance: 5.75 % nominal
5. Secondary Basic Impulse Level: 30 kV

E. Accessories

1. Accessories: ANSI C57.12.00, IEEE C57.12.01, standard accessories and magnetic liquid level gage and dial type thermometer.
2. Tap Changer: Externally-operated type.
3. Primary Terminations: Bushing wells to IEEE 386; provide six for loop feed. Include bushings for insulated loadbreak connectors.
4. Primary Switching: Internal liquid-immersed gang-operated load break switching. Provide A/B/BOTH/OFF switch.
5. Primary Overcurrent Protection: Internally-mounted, externally removable loadbreak expulsion Bay-O-Net type fuse assembly with a flapper valve to minimize oil spillage. The bayonet fuses shall be in series with ELSP under-oil partial-range current-limiting back-up fuses.
6. Provide protective caps to fill all unused primary spaces.
7. Secondary Terminations: Spade lugs.
8. Secondary Switching and Overcurrent Protection: Molded case circuit breaker to NEMA AB1.
9. Oil sampling: Drain valve with sampling device. Oil sample valve system shall be factory extended to a secure box, with lockable access door, on the exterior of the transformer enclosure. This enclosure is to be located outside the primary or secondary voltage

compartments. Intent of feature is to allow transformer oil testing at any time without exposing technicians to energized parts, shock hazards and/or potential arc blast hazards.

F. Finish Color: Olive green.

3 Execution

3.1 Installation

A. Install precast concrete pull vault below each transformer with precast top. Equal to Utility Vault 810-LA. Provide precast top with 30” round steel access cover and cable block outs. Provide grounding and bonding of vault interior. Field apply ocal spray plastic coating on all exposed metal hardware and metal supports after vault interior grounding is complete.

B. Adjust primary taps so that secondary voltage is above and within 2% of rated voltage.

C. Install protective posts in proximity to the transformer and provide smooth yellow plastic sleeve cover for protective post.

4 Appendix

4.1 Reserved for future.