16300S01 - MEDIUM VOLTAGE MATERIALS AND METHODS

1. MEDIUM VOLTAGE, 15 KV, MATERIALS

1. The phase conductors shall be in accordance with 16124S01. All new main distribution feeder cables shall be 500 MCM. Branch feeder distribution cables to buildings may be 4/0. All splices in cable installations shall be elbow splices. Do not provide hard splices unless approval is received from the University engineer for the application submitted.
2. Cable terminations at SF6 gas switches and transformers shall be made with dead break, premolded, dead front, and submergible elbow terminators. All elbow terminators at SF6 gas switches shall be rated 600 amp. Elbow terminators at transformers shall be rated 200 amp for 4/0 cable, and 600 amp for 500 MCM cable. All 200 amp elbows shall be load break type with capacitor test point.
3. All 15 KV switches shall be load breaking and have close into the fault rating.
4. The 15 KV medium voltage cable shall be supported by thermoplastic elastomer cable clamps. The supports shall be Cooper B-Line Insulclamp® Cable Clamps, or an approved equal, appropriately sized for the cables.
5. All splices and terminations shall be heat shrink, cold shrink is not acceptable

2. MEDIUM VOLTAGE, 15 KV, METHODS

1. A certified Medium Voltage Cable Technician must perform all medium voltage cable splices, terminations, elbows and associated medium voltage related work. The technician must perform the work on site. Certification is to be by a nationally recognized training organization such as AVO International or equal.
2. Typical Courses to get certified should include:
    1. CABLE SPLICING AND TESTING
        1. Cable Splicing and Terminating of Medium-Voltage Cables, Course 304
        2. Cable Testing and Fault Location, Course 133
    2. SAFETY AND CODE
        1. Electrical Safety for Utilities, Course 223

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3. The existing 15 KV system is a delta connected, 4 wire, copper distribution network. All additions to the system shall be the same as existing.
4. All three 15 KV cables shall be the same length between splices.
5. Before energizing, all new cables shall have a high voltage cable acceptance test performed in accordance with the UK Design Standard 16950S01 High Voltage Cable Testing.
6. Cables in manholes shall have circuit arc proof taping around the group of bundled circuit cables.
7. Provide a minimum of 4 foot of slack in new cables in all manholes. All new cables in every manhole shall be tagged with a durable plastic label identifying the circuit.
8. Perform and submit report of continuity test on all high voltage ground wire(s).
9. All additions to the 15 KV system shall be designed to trip the protection devices in sequence back to the source under short circuit conditions. Drawings shall be provided showing the fuse/breaker curves of the system addition, including the substation oil circuit breaker. Perform continuity test on high voltage ground wire.