1.0 GENERAL

1.1 Related UBC Guidelines

.1 Division 26

1.2 Coordination Requirements

.1 UBC Energy & Water Services
.2 UBC Building Operations Electrical Technical Support

1.3 Description

.1 UBC requirements for Secondary Power Distribution.

2.0 MATERIALS AND DESIGN REQUIREMENTS

.1 Two secondary voltage levels are acceptable at the University:
  .1 120/208 Volt, 3-Phase 4-Wire Wye System
  .2 347/600 Volt, 3-Phase 4-Wire Wye System.

.2 All isolation, step-up, and step-down power transformers shall have a solidly-grounded wye secondary.

.3 The selection of distribution voltage shall be based on building layout. Conditions such as large distribution loads, high building and large footprint shall be used to determine the preferred secondary distribution.

.4 If a 600V secondary distribution is selected, all motors 3/4 hp and over shall be supplied at this level.

.5 Any building or addition supplied by 208 or 600 Volts shall have entrance switchgear designed and labelled as "Suitable for Service Entrance".

.6 New Panelboards shall utilize bolt-on molded case circuit breakers. Panelboards shall contain copper buswork. All panelboards shall have phases balanced to within 15% and shall contain a typewritten directory on cardstock. The directory shall include the circuit number, room(s) number and load description. All new panelboards shall have a minimum of 6 spare breakers and the equivalent of 6 spaces at time of handover. All new panelboards shall be located on the same floors as the loads they serve.

.7 All loadcentres shall have main lugs. Panelboards and loadcentres shall not be back-fed through a circuit breaker.

.8 Where possible every load shall be supplied by a panelboard on the same floor.

.9 Daisy-chaining of electrical panels shall not be permitted. All panelboards shall be fed from separate overcurrent devices.

.10 Life Safety, Stand-by, Emergency Power distribution shall not contain any switches between the generator distribution overcurrent device and each transfer switch. All CBs upstream of Life Safety transfer switches shall have auxiliary contacts monitored by the transfer switch or generator or fire alarm system that will notify building maintenance personnel of a "not
normal” situation. The monitoring wiring diagram shall form a separate section of the generator submittals.

.11 The electrical distribution shall be designed to limit incident energy to maximum 8 cal/cm² at all switches, circuit breakers and MCCs while retaining acceptable coordination selectivity. Incorporate LSI Circuit Breakers, not fuses, where necessary to achieve the desired results.

.12 All transformers shall be mounted at floor level with minimum 1m clearance to access connection lugs and perform maintenance.

3.0 SECONDARY DISTRIBUTION EQUIPMENT IDENTIFICATION AND LABELING

.1 Secondary distribution equipment, such as Panel Boards, Load Centers and MCCs shall have conspicuously attached a permanent 2” X 4” Hazard Warning Label to meet OHSA and NFPA standards that clearly identifies:

1. Incident Energy
2. Arc Flash protection boundary
3. Hazard Category
   .1 Secondary distribution equipment that is identified as Hazard Category two or higher, the above label shall be 3.5” X 5”

.2 Panel Boards, Load Centers and Transformers shall be labeled and identified in accordance with Standard Drawing E 10-2 in all new buildings, UBC Renew projects and in any major additions to existing buildings.

   .1 Each Panel Board, Load Center, Transformer and MCC shall have permanently affixed a (2” X 4”) BLACK letter on WHITE background identification lamacoid as illustrated in Standard Drawing E 10-2.

***END OF SECTION***