

1. GENERAL

1.1 Description

- .1 Provide a coordination/protective study, short circuit, and arc flash study of all equipment specified herein and submit for review.
- .2 Include the following:
 - .1 600 V cable thermal damage curves.
 - .2 600V air circuit breaker overcurrent, overload, ground fault devices, and zone interlocking.
 - .3 120/208V circuit breakers in Panels 'X' and "Y"
 - .4 347/600 and 120/208V panelboards, MCCs, and switchgear, and connecting feeder cables.
 - .5 600V transformer damage curves, magnetizing currents for all transformers 150 kVA and larger.
 - .6 Locked rotor currents, acceleration times and damage curves for motors 75 kW and larger.
 - .7 Any additional data necessary for successful completion of the coordination and short circuit study.
- .3 Data shall clearly state the operating time in cycles of each breaker and indicate whether the time current curves for relays are inclusive of breaker trippings time or otherwise.
- .4 Prepare a summation chart showing all ratings and settings with easy reference to the appropriate curve.
- .5 Symmetrical and asymmetrical fault current calculations shall be submitted to verify the correct choice of the protective elements of the system.
- .6 Prepare a systems single line diagram on which the resultant short circuit values, device numbers and equipment ratings are shown.
- .7 Include a list of recommended settings for each relay.

1.2 Qualifications

- .1 This study shall be provided by the supplier of the main switchboard.
- .2 This study shall be performed by and bear the stamp of a Professional Engineer registered in the Province of Manitoba.

1.3 Submittals

- .1 Submit the complete study for review prior to carrying out calibration and verification.
- .2 Submit typed results of coordination and short circuit study in maintenance manuals.

2. PRODUCTS

2.1 Tripping Devices

- .1 Relay style, CT ratios and fuse sizes have been selected on a preliminary basis for design purposes. Final selection shall be based on the results of this study and shall be included at no extra cost.

3. EXECUTION

3.1 Data

- .1 Provide the main switchboard supplier with all relevant data for equipment not provided by that supplier.
- .2 Provide Arc Flash Hazard Level labels for all new electrical equipment.

END OF SECTION