DIVISION 16 - ELECTRICAL

Section 16420 - Service Entrances

Introduction

Service entrance type panelboards and switch gear shall be used wherever the service enters into the facility from the utility serving the facility or where connected to a transformer served from the U of A plant power distribution network.

All new buildings should utilize service entrance switchboards sized for the load indicated. All Service entrance switchboards should utilize 100% rated power breakers.

200 – 600 Ampres; electronic with LSI
800 Ampres and up; insulated case with LSI, add G per NEC
1600 Ampere and up; consider use of Pringle bolted pressure switches

Metering at the service entrance shall be as specified by the utility providing the service. For buildings connected to plant power distribution this shall be as specified under division 16430.

At the Main Switchboard or at the service entrance main disconnect switch the neutral conductor should be bonded to the building or facility grounding electrode system. This system shall be as specified in section 16390 Primary Grounding.

Part 1 - General

- Per NEC 230 for under 600 volts and per NEC 710 for over 600 volts.

- *Consultant shall choose major protective device schemes that are easy to coordinate. Consultant shall write into the specifications in **BOLD TYPE** the requirement that a completed coordination study be submitted with the switchboard submittals/service submittals if not in conformance with the basis of design.*

  Examples:

  Do not protect 75 KVA transformers with 100 amp fuses, use 200 amp switches fused at 125 amperes.

  Allow 4 to 1 ratios between motors, motor control centers and upstream devices.

  Do not size transformers for demand. Downstream main devices must clear before transformer fuses.

  Refer to IEEE Standard 141 regarding the art of planning systems.

- *Switchboard entries shall utilize pull sections that allow main devices to be top line, bottom load.*

Part 2 - Products

- Products should be the same as those specified for other divisions of these specifications except that they should meet the requirements of having a means of installing a bonding jumper between the neutral bus and the ground bus. Note that the ground bus should be bonded to the enclosure.

Part 3 - Execution

- The bonding jumper must be a one piece jumper with no splices.

- The service entrance switchboard must be connected to the grounding electrode system. The minimum size of the connection should be per NEC 250-*66*.

End of Section 16420