SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Contractor Provide:

1. Main Distribution Panelboard (MDP)
2. Lighting and appliance branch circuit panelboards.

1.2 REFERENCES

A. NEMA AB 1 - Molded Case Circuit Breakers.

B. NEMA ICS 2 - Industrial Control Devices, Controllers, and Assemblies.

C. NEMA KS 1 - Enclosed Switches.

D. NEMA PB 1 - Panelboards.

E. NEMA PB 1.1 - Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.

F. NFPA 70 - National Electrical Code.

G. Section 260448 – Vibration and Seismic Controls for Electrical Systems

H. Section 260529 – Supporting Devices.

I. Section 260553 –Identification for Electrical Systems.

1.3 SUBMITTALS

A. Submit Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker and fusible switch arrangement and sizes.

B. Submit Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of Product.

1.4 PROJECT RECORD DOCUMENTS

A. Submit actual locations of Products; indicate actual branch circuit arrangement.

1.5 OPERATION AND MAINTENANCE DATA

A. Submit Maintenance Data: Include spare parts data listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.

B. Furnish products listed and classified by a Nationally Recognized Testing Laboratory (NRTL) as suitable for purpose specified and indicated.

1.8 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. General Electric.

B. Square D.

C. Siemens.

D. Cutler Hammer.

2.2 DISTRIBUTION PANELBOARDS

A. Panelboards: NEMA PB 1, circuit breaker type.

B. Service Conditions: As indicated.

C. Panelboard Bus: Copper or Aluminum, ratings as indicated. Provide ground bus in each panelboard.

D. The fault current information presented on the drawings is the available balanced three phase fault current. Provide breakers with equal rating or next higher standard rating.

E. Molded Case Circuit Breakers: NEMA AB 1. Provide circuit breakers with integral thermal and instantaneous magnetic trip in each pole. Provide circuit breakers UL listed as Type HACR for air conditioning equipment branch circuits. Breakers shall have interchangeable trip unit.

F. Shunt Trip Circuit breakers shall have 120 VAC coils.

G. Enclosure: NEMA PB 1, Type 1.

H. Cabinet Front: Surface type, finish in manufacturer's standard gray enamel. Provide manufacturer's standard lock with two keys per panel board.

2.3 BRANCH CIRCUIT PANELBOARDS

A. Lighting and Appliance Branch Circuit Panelboards: NEMA PBI, circuit breaker type.

B. Panelboard Bus: Copper or Aluminum, ratings as indicated. Provide ground bus in each panelboard.

C. The fault current information presented on the drawings is the available balanced three phase fault current. Provide breakers with next higher standard rating.

D. Molded Case Circuit Breakers: NEMA AB 1, bolt-on type thermal magnetic trip circuit breakers, with common trip handle for all poles. Provide circuit breakers UL listed as Type SWD for lighting circuits. Provide UL Class A ground fault interrupter circuit breakers where scheduled. Series rating of circuit breakers to achieve the same level of fault protection indicated on the drawings shall be acceptable. Do not use tandem circuit breakers.

E. Shunt Trip Circuit breakers shall have 120 VAC coils.

F. Enclosure: NEMA PB 1, as indicated on the drawings.

G. Cabinet box: 6 inches (153 mm) deep; width: 20

H. Cabinet Front: Flush or recessed as indicated on the drawings. Finish in manufacturer's standard gray. Provide manufacturer's standard lock with two keys per panel board.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panelboards plumb in conformance with NEMA PB 1.1. Install recessed panelboards flush with wall finishes.

B. Height: 6 ft to top of panelboard, install panelboards taller than 6 ft with bottom no more than 4 inches above floor.

C. Provide filler plates for unused spaces in panelboards.

D. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads.

E. Provide engraved plastic nameplates under the provisions of section 260553.

F. Provide two of each panelboard key.

G. Provide (10) 3/4 inch spare conduits within flush mounted panels. Extend conduits to above ceiling line. Turn conduits out of full height walls. Seal conduit penetrations in fire rated walls.

3.2 FIELD QUALITY CONTROL

A. Measure steady state load currents at each panelboard feeder. Should the difference at any panelboard between phases exceed 20 percent, rearrange circuits in the panelboard to balance the phase loads within 20 percent. Take care to maintain proper phasing for multi-wire branch circuits.

B. Visual and Mechanical Inspection: Inspect for physical damage, proper alignment, anchorage, and grounding. Check proper installation and tightness of connections for circuit breakers.

END OF SECTION 262416