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BuildingName
The Description of the Project
P00000000 0000

SPECIFICATION DIVISION 26

NUMBER SECTION DESCRIPTION

DIVISION 26 ELECTRICAL
SECTION 262000 - LOW VOLTAGE ELECTRICAL DISTRIBUTION

END OF CONTENTS TABLE

DIVISION 26 ELECTRICAL
SECTION 262000 - LOW VOLTAGE ELECTRICAL DISTRIBUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

INCLUDE PARAGRAPH 1.1.A AND B IN EVERY SPECIFICATION SECTION. EDIT RELATED SECTIONS 1.1.B TO MAKE IT PROJECT SPECIFIC.

A. Drawings and general provisions of the Contract, Standard General and Supplementary General Conditions, Division 01 Specification Sections, and other applicable Specification Sections, in particular the Related Sections listed below, apply to this Section.

VERIFY ALL RATINGS, DIMENSIONS AND REQUIREMENTS SPECIFIED TO BE AS SHOWN ON THE DRAWINGS ARE CLEARLY SHOWN ON THE DRAWINGS.

IN 1 BELOW, SELECT PROPER COMMISSIONING SPEC SECTION NUMBER APPLICABLE TO THE PROJECT.

B. Related Sections:

1. Section 019100/019110 - Commissioning
2. Section 017823 - Operation and Maintenance Manual
3. Section 260513 - Medium, Low & Control Voltage Cables
4. Section 260526 - Grounding and Bonding for Electrical
5. Section 260533 - Electrical Materials and Methods
6. Section 260800 - Electrical Acceptance Tests

PART 2 - PRODUCTS

2.1 POWER AND DISTRIBUTION PANELBOARDS - FUSIBLE SWITCH TYPE

A. Power and distribution panelboards shall be of the voltage and amperage shown, 3 phase, 4 wire, 200,000 amps AIC, dead front, fusible switch type, with main fused switch or main lugs only as shown, copper bus, fully rated neutral and ground bars, NEMA Type 1 enclosure and surface trim. Provide switches and Class R dual element fuses as shown. Eaton Pow-R-Line 4F, Siemens P4 or P5, or Square D QMB.

1. Blank switch positions shall be fully bused and ready to accept future switches.
2. Bus and switch terminals shall be identified as accepting copper and aluminum cables.
3. Enclosure shall be sized to provide adequate conduit knockout space and gutter wire bending space for future conduits and cables. When aluminum feeder cables are being used, oversize the enclosure for aluminum cables. Enclosures that are too small to accommodate future conduits and cables or aluminum cables (when used) shall be replaced at the Contractor's expense.

4. Door shall have concealed hinge, flush handle, lock, with 2 keys and panel directory frame. All panel locks shall be keyed alike.

2.2 POWER AND DISTRIBUTION PANELBOARDS - CIRCUIT BREAKER TYPE

A. Power and distribution panelboards shall be of the voltage and amperage shown, 3 phase, 4 wire, 50,000 amps AIC minimum, dead front, circuit breaker type, with main circuit breaker or main lugs only as shown, copper bus, fully rated neutral and ground bars, NEMA Type 1 enclosure and surface trim. Provide circuit breakers as shown. Eaton Pow-R-Line 4B, Siemens P4 or P5, or Square D I-Line.

1. Blank circuit breaker spaces shall be fully bused and ready to accept future circuit breakers.
2. Bus and circuit breaker terminals shall be identified as accepting copper and aluminum cables.
3. Enclosure shall be sized to provide adequate conduit knockout space and gutter wire bending space for future conduits and cables. When aluminum feeder cables are being used, oversize the enclosure for aluminum cables. Enclosures that are too small to accommodate future conduits and cables or aluminum cables (when used) shall be replaced at the Contractor's expense.
4. Door shall have concealed hinge, flush handle, lock with 2 keys, and panel directory frame. All panel locks shall be keyed alike.

2.3 LIGHTING AND RECEPTACLE PANELS

A. Lighting and receptacle panels shall be of the voltage, amperage and number of positions shown, 3 phase, 4 wire, 22,000 amps AIC minimum unless shown otherwise, circuit breaker type, with main circuit breaker or main lugs only as shown, copper bus, fully rated neutral and ground bars, NEMA Type 1 enclosure and surface or flush trim as shown. In main circuit breaker panels, the main circuit breaker shall be separate from and not mounted in feeder breaker positions. Load center type panels are not acceptable. Provide circuit breakers as shown. Eaton Pow-R-Line 1 or 2, Siemens P1 or P2, or Square D NF or NQOD.

1. Bus and circuit breaker terminals shall be identified as accepting copper and aluminum cables.
2. Enclosure shall be sized to provide adequate conduit knockout space and wire bending space for future conduits and cables. When aluminum feeder cables are being used, oversize the enclosure for aluminum cables. Enclosures that are too small to accommodate future conduits and cables or aluminum cables (when used) shall be replaced at the Contractor's expense.

3. Front cover shall be factory manufactured, UL/NRTL listed, one-piece, hinged "door-in-door" type with: Interior hinged door with hand-operated latch or latches as required to provide access to circuit breaker operating handles only; not energized parts. Outer hinged door to provide access to the entire closure including the dead front and all wiring gutters. Outer door shall be kept securely closed with factory bolts, screws, clips or other fasteners to the panel box, requiring a tool for entry; hand operated latches are not acceptable. Both inner and outdoor doors shall open left to right. Include one-piece, removable, inner dead front cover, independent of the panelboard cover. Door shall have concealed hinge, flush handle, lock with 2 keys and panel directory frame. All panel locks shall be keyed alike.

2.4 CIRCUIT BREAKERS

A. Circuit breakers shall be molded case, bolt-on, quick make and quick break, thermal-magnetic type with trip indication, and shall be from the same manufacturer as the panel in which they are installed. Circuit breaker terminals shall be identified as accepting copper and aluminum cables. Eaton, Siemens, or Square D.

1. Circuit breakers for power and distribution panelboards shall have a minimum interrupting rating of 35,000 amps RMS at 240 volts AC or 25,000 amps RMS at 480 volts AC.
2. Circuit breakers for lighting and receptacle panelboards shall have a minimum interrupting rating of 22,000 amps RMS at 240 volts AC or 25,000 amps RMS at 480 volts AC.
3. Circuit breakers used for switching fluorescent lighting or for protecting air conditioning compressors shall be so listed.
4. Circuit breakers used for feeding electrical heat tracing shall include ground fault equipment protection rated to trip at 30 ma.

2.5 DISTRIBUTION TRANSFORMERS

A. Distribution transformers shall be 480-208Y/120 volts, of the kVA and K rating shown, dry type, with copper or aluminum windings, a 220 degrees C insulation system, and designed for a maximum temperature rise at full load of 115 degrees C above a 40 degrees C ambient. Terminals shall be identified as accepting copper and aluminum cables. Transformers shall have a sound rating 3 dB below NEMA standard (42 dB for 10-50 kVA, 47 dB for 51-150 kVA, 52 dB for 151-300 kVA and 57 dB for 301-500 kVA rated transformers), and shall be equipped with four taps, two 2-1/2 percent above and two 2-1/2 percent below nominal. Acme, Cutler Hammer/Westinghouse, Hevi-Duty, MGM, Olsun, Siemens, or Square D.

2.6 FUSES

A. Fuses for general use shall be rated 250 or 600 volts as required, Class R, dual element type with a 200,000 amp AIC interrupting rating. Bussmann, Gould Shawmut, or Littelfuse.

PART 3 - PART 3 EXECUTION

3.1 INSTALLATION

A. Provide No. 10 AWG wire to NEMA Type 6-20R receptacles serving freezers, window air conditioners, or other large appliances.

B. Where shown on the drawings, provide a separate neutral conductor for each single-phase branch circuit. The neutrals of these single-phase circuits shall not be shared or daisy-chained.

C. Color code circuit breakers and disconnect switches of fire alarm systems and emergency circuits with red paint. Provide lock-on clips on the circuit breaker handles.

D. Provide nameplates in accordance with Section 260500.

E. Provide a detailed typed directory for all new and modified panelboards.

3.2 FIELD QUALITY CONTROL

A. Prior to any testing, perform visual inspections to verify the following:

1. The equipment is properly installed and anchored.
2. The equipment is free from damage and defects.
3. Electrical terminations have been properly tightened.
4. The ventilation louvers are open and unobstructed.
5. The equipment has been thoroughly cleaned inside and outside.
6. The equipment is properly labeled and labels are correct.
7. The equipment is ready to be tested.

B. Perform the following testing and submit a test report.

1. Verify proper phasing of power circuits.
2. Perform a 1,000-volt Megger test on buses and disconnect switches. This test may be combined with the power cable Megger test by testing the equipment and terminated cables together.
3. Perform a continuity check on control circuits and control panel internal wiring.
4. Perform an operational test on the controls and alarms.
5. Perform a continuity check and a 1,000-volt DC Megger test on 3 phase distribution and isolation transformers.

3.3 COMMISSIONING

A. Perform Commissioning activities per Related Sections above.

END OF SECTION 262000