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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | February 19, 2010 | Modified ‘Related Sections’ |
| 3 | March 15, 2011 | Minor changes from Legal reviews |
| 4 | June 25, 2013 | Final Draft – Consolidated Comments Spec Update Project |
| 5 | June 25, 2013 | Incorporation of new Commissioning and Computerized Maintenance Management System Data Requirements Specification cross references. |
| 6 | August 5, 2014 | Changes to reflect renaming of commissioning specification and final review (AV) |
| **7** | **February 4, 2015** | **Updated, Finalized Specification – Reference eDOCS #5630509 v9 (AV)** |
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NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

**Notice:** This Document hardcopy must be used for reference purpose only.

**The on-line copy is the current version of the document.**

# GEneral

## Related Sections

#### Section 01250 – Substitutions

#### Section 01425 – Computerized Maintenance Management System Data Requirements

#### Section 16010 – Electrical General Requirements

#### Section 16441 – Panelboard Breaker Type

## References

### American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE)

#### Air circuit breaker in accordance with ANSI/IEEE C37.13-2008, IEEE Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures, as amended by IEEE C37.13a-2012, IEEE Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures Amendment 1: Increase of Voltages to 1000 V AC and Below.

#### IEEE Standard 1015-2006, IEEE Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems.

### Canadian Standards Association (CSA)

#### C22.2 NO. 5-13, Molded-case circuit breakers, molded-case switches and circuit-breaker enclosures (Tri-national standard, with UL 489 and NMX-J-266-ANCE-2013).

## Measurement and Payment

### The work of this Section will not be measured separately for payment. All costs associated with the work of this Section shall be included in the Contract Price.

## Product Data

### Submit Product data in accordance with Section 01300 – Submittals.

### Equipment shall be in accordance with Section 16010 – Electrical General Requirements.

### Include time-current characteristic curves for breakers with interrupting capacity of 22,000 A symmetrical (rms) and over at system voltage.

### Submit all other required information as detailed in the equipment information template in an electronic format suitable for upload to the Region’s CMMS (Maximo) and in accordance with Section 01430 – Operation and Maintenance Data and Section 01425 - Computerized Maintenance Management System Data Requirements.

## Field Quality Control

### Perform tests in accordance with Section 16031 – Inspection and Testing, Section 16010 – Electrical General Requirements.

### Check factory made connections for mechanical security and electrical continuity.

### Check trip unit settings and to ensure proper working operation and protection of the components.

# PRODUCTS

## Breakers General

### Bolt-on Moulded Case Circuit Breaker: Quick- make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.

### Plug-in Moulded Case Circuit Breakers: Quick- make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.

### Common-trip Breakers: With single handle for multi-pole applications.

### Magnetic instantaneous trip elements in circuit breakers shall operate only when the value of current reaches setting. Trip settings on breakers with adjustable trips shall range from 3 to 8 times the current rating.

### Circuit breakers with interchangeable trips as indicated in the Contract Documents.

### NEMA rated equipment only.

## Thermal Magnetic Breakers

### Moulded case circuit breaker shall operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping and instantaneous tripping for short circuit protection.

## Solid State Trip Breakers

### Moulded case circuit breaker shall operate by means of a solid-state trip unit with associated current monitors and self-powered shunt trip to provide inverse time current trip under overload condition, and long time, short time, instantaneous tripping for phase, and/or ground fault short circuit protection per the application.

## Enclosure

### Mounted inbreaker panel as indicated on the Contract Drawings.

# EXECUTION

## Installation

### Install circuit breakers as indicated on the Contract Drawings.

### For component and system commissioning activities refer to Section 01810 – Equipment Testing and Facility Commissioning. It is recognized that overall system commissioning activities highly depend on properly functioning and fully documented components as detailed in this Section.

## Commissioning

### For all commissioning activities on systems where components of this Section are integral to functionality, refer to Section 01810 – Equipment Testing and Facility Commissioning. All inspection and testing activities shall be completed in accordance with the commissioning plan that shall be provided to the Consultant and get approved prior to the commencement of commissioning activities.

**END OF SECTION**