**SECTION 26 18 23**

**MEDIUM-VOLTAGE SURGE ARRESTERS**

**BASED ON DFD MASTER ELECTRICAL SPEC DATED 03/01/23**

This section has been written to cover most (but not all) situations that you will encounter. Depending on the requirements of your specific project, you may have to add material, delete items, or modify what is currently written. The Division of Facilities Development expects changes and comments from you.

***Surge arresters shall be designed into all new or remodeling projects that involve primary electrical service equipment.***

***In general, surge arresters shall be provided in the primary side of all medium voltage transformers. Fused transformer primary switches (5kV and 15kV) do not require separate surge arresters. Surge arresters shall be provided in the medium voltage transformer (Radial feed) or upstream loop switches (Loop Feed). Specification section 26 13 16 indicates the requirement for surge arresters in medium voltage switchgear as accessories; - make sure the section is properly edited based on these guidelines.***

**PART 1 - GENERAL**

# SCOPE

The work under this section includes medium voltage surge arresters as indicated on the project drawings and electrical diagrams, or as specified in other electrical specification sections. Included are the following topics:

PART 1 - GENERAL

 Scope

 Related Work

 Quality Assurance

 Warranty

 Submittals

 Operation and Maintenance Data

PART 2 - PRODUCTS

 Surge Arresters (Above 600V)

PART 3 - EXECUTION

 Inspection

 Installation

 Construction Verification Items

 Agency Training

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

Section 26 08 00 - Commissioning of Electrical.

Section 01 91 01 or 01 91 02 – Commissioning Process

**QUALITY ASSURANCE**

The manufacturer shall have been in the surge arrester industry for a minimum of 5 years.

**WARRANTY**

The manufacturer shall provide a 5 year warranty from the date of shipment of the surge arrester.

**SUBMITTALS**

Include all surge arrester data necessary to show device is in compliance with all product specifications. Include product data sheets which show the device dimensions, weight, connections, and mounting requirements, along with installation instructions.

# OPERATION AND MAINTENANCE DATA

All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

**PART 2 - PRODUCTS**

**SURGE ARRESTERS** (Above 600V)

All surge arresters shall be metal oxide varistor (MOV) type.

All surge arresters shall be distribution class.

***Coordinate with manufacturer and DFDM reviewer if these values cannot be met.***

4160 volt solidly grounded distribution system ratings: 3 kV duty rated, 2.55 kV MCOV, maximum discharge voltage at 10 kA (8 X 20 microsecond current wave) - 13.4 kV crest maximum.

12,470 volt solidly grounded distribution system ratings: 9 kV duty rated, 7.65 kV MCOV, maximum discharge voltage at 10 kA (8 X 20 microsecond current wave) - 34.7 kV crest maximum.

13,800 volt solidly grounded distribution system ratings: 10 kV duty rated, 8.40 kV MCOV, maximum discharge voltage at 10 kA (8 X 20 microsecond current wave) - 36.7 kV crest maximum.

**PART 3 - EXECUTION**

**INSPECTION**

Examine medium voltage [transformers][switchgear] to ensure physical compatibility with size and type of surge arrester.

**INSTALLATION**

Install surge arresters in accordance with manufacturer's written instructions, applicable requirements of NEC and NEMA standards, and recognized industry practices.

**CONSTRUCTION VERIFICATION**

Contractor is responsible for utilizing the construction verification checklists supplied under specification Section 26 08 00 in accordance with the procedures defined for construction verification in Section 01 91 01 or 01 91 02.

**AGENCY TRAINING**

All training provided for agency shall comply with the format, general content requirements and submission guidelines specified under Section 01 91 01 or 01 91 02.

END OF SECTION