

2.10 Disc/ Porcelain Longrod Insulators for 400 kV voltage level transmission lines with Triple Snowbird configuration

2.10.1 The Qualified manufacturer shall be a manufacturer of Insulators of similar nature for the last five years. The manufacturer's experience should include the following:

The qualified manufacturer should have designed, manufactured, tested and supplied 120 KN & 160 KN or above electro-mechanical strength of disc insulators/ long rod insulators for 110/132 KV or above voltage transmission line of quantities not less than 50,000 nos. disc insulators /6520 nos. long rod insulators of each rating and the same should have been in satisfactory operation for a minimum period of two years as on date of NOA.

Further, the manufacturer should also have successfully completed at least the following tests on insulator units and insulator strings (of # Standard &/Anti-fog disc insulators/ long rod insulators as the case may be) as on date of NOA: -

a) Tests on individual units.

b) Following type tests on insulator strings assembly for 345/ 400 KV or above voltage transmission lines with 120 KN & 210 KN or above electro-mechanical strength insulators: -

- Power frequency Voltage withstand test (Wet)
- Switching Surge Voltage Withstand test (Wet)
- Lightning Impulse Voltage withstand test (Dry)
- Radio interference voltage test (dry)

Either Standard or Anti-fog or both depending on scope

2.10.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.10.1 and also meeting the conditions stipulated at 2.43.

2.11 Disc/ Porcelain Longrod Insulators for 400 kV voltage level transmission lines with Twin Lapwing configuration

2.11.1 The Qualified manufacturer shall be a manufacturer of Insulators of similar nature for the last five years. The manufacturer's experience should include the following:

The qualified manufacturer should have designed, manufactured, tested and supplied 160 KN or above electro-mechanical strength of disc insulators/ long rod insulators for 110/132 KV or above voltage transmission line of quantities not less than 50,000 nos. disc insulators /6520 nos. long rod insulators of each rating and the same should have been in satisfactory operation for a minimum period of two years as on date of NOA.

Further, the manufacturer should also have successfully completed at least the following tests on insulator units and insulator strings (of # Standard &/Anti-fog disc insulators/ long rod insulators as the case may be) as on date of NOA: -

- a) Tests on individual units.
- b) Following type tests on insulator strings assembly for 345/ 400 KV or above voltage transmission lines with 160 KN & 210 KN or above electro-mechanical strength insulators: -
 - Power frequency Voltage withstand test (Wet)
 - Switching Surge Voltage Withstand test (Wet)
 - Lightning Impulse Voltage withstand test (Dry)
 - Radio interference voltage test (dry)

Either Standard or Anti-fog or both depending on scope

2.11.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.11.1 and also meeting the conditions stipulated at 2.43.

2.12 Disc/ Porcelain Longrod Insulators for 220 kV voltage level transmission lines with Single Zebra configuration

2.12.1 The Qualified manufacturer shall be a manufacturer of Insulators of similar nature for the last five years. The manufacturer's experience should include the following:

The qualified manufacturer should have designed, manufactured, tested and supplied 70kN & 120kN or above electro-mechanical strength of disc insulators/ long rod insulators for 110/132 KV or above voltage transmission line of quantities not less than 50,000 nos. disc insulators /6520 nos. long rod insulators of each rating and the same should have been in satisfactory operation for a minimum period of two years as on date of NOA.

Further, the manufacturer should also have successfully completed at least the following tests on insulator units and insulator strings (of # Standard &/Anti-fog disc insulators/ long rod insulators as the case may be) as on date of NOA: -

- a) Tests on individual units.
- b) Following type tests on insulator strings assembly for 220 KV or above voltage transmission lines with 70 KN & 120 KN or above electro-mechanical strength insulators: -
 - Power frequency Voltage withstand test (Wet)
 - Lightning Impulse Voltage withstand test (Dry)
 - Radio interference voltage test (dry)

Either Standard or Anti-fog or both depending on scope

2.12.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.12.1 and also meeting the conditions stipulated at 2.43.

2.13 Disc/ Porcelain Longrod Insulators for 132kV voltage level transmission lines with Single Panther configuration

2.13.1 The Qualified manufacturer shall be a manufacturer of Insulators of similar nature for the last five years. The manufacturer's experience should include the following:

The qualified manufacturer should have designed, manufactured, tested and supplied 70kN & 90kN or above electro-mechanical strength of disc insulators/ long rod insulators for 110/132 KV or above voltage transmission line of quantities not less than 50,000 nos. disc insulators /6520 nos. long rod insulators of each rating and the same should have been in satisfactory operation for a minimum period of two years as on date of NOA.

Further, the manufacturer should also have successfully completed at least the following tests on insulator units and insulator strings (of # Standard &/Anti-fog disc insulators/ long rod insulators as the case may be) as on date of NOA: -

- a) Tests on individual units.
- b) Following type tests on insulator strings assembly for 110/132 KV or above voltage transmission lines with 70kN & 90kN or above electro-mechanical strength insulators: -

- Power frequency Voltage withstand test (Wet)
- Lightning Impulse Voltage withstand test (Dry)

Either Standard or Anti-fog or both depending on scope

2.13.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.13.1 and also meeting the conditions stipulated at 2.43.

2.14 ACSR MOOSE and ACSR ZEBRA Conductor

2.14.1 The qualified manufacturer's experience should include the following:

The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Sixty one (61) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.14.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.14.1 and also meeting the conditions stipulated at 2.43.

2.15 ACSR LAPWING Conductor

2.15.1 The qualified manufacturer's experience should include the following:

The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Fifty two (52) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.15.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.15.1 and also meeting the conditions stipulated at 2.43.

2.16 ACSR BERSIMIS Conductor

2.16.1 The qualified manufacturer's experience should include the following:

The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Forty Nine (49) or above strands ACSR/AAAC/AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.16.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.16.1 and also meeting the conditions stipulated at 2.43.

2.17 ACSR PANTHER Conductor

2.17.1 The qualified manufacturer's experience should include the following:

The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Thirty seven (37) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.17.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.17.1 and also meeting the conditions stipulated at 2.43.

2.18 AACSR MOOSE and AACSR ZEBRA Conductor

2.18.1 The qualified manufacturer's experience should include the following:

- i) The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Sixty one (61) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA and
- ii) The qualified manufacturer should have manufactured, tested and supplied at least cumulative two hundred (200) km of Sixty one (61) or above strands AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.18.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.18.1 and also meeting the conditions stipulated at 2.43.

2.19 AACSR LAPWING Conductor

2.19.1 The qualified manufacturer's experience should include the following:

- i) The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Fifty two (52) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA and

- ii) The qualified manufacturer should have manufactured, tested and supplied at least cumulative two hundred (200) km of Fifty two (52) or above strands AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.19.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.19.1 and also meeting the conditions stipulated at 2.43.

2.20 AACSR BERSIMIS Conductor

2.20.1 The qualified manufacturer's experience should include the following:

- i) The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Forty Nine (49) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA and
- ii) The qualified manufacturer should have manufactured, tested and supplied at least cumulative two hundred (200) km of Forty Nine (49) or above strands AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.20.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.20.1 and also meeting the conditions stipulated at 2.43.

2.21 AACSR PANTHER Conductor

2.21.1 The qualified manufacturer's experience should include the following:

- i) The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Thirty seven (37) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA and
- ii) The qualified manufacturer should have manufactured, tested and supplied at least cumulative two hundred (200) km of Thirty seven (37) or above strands AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.21.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.21.1 and also meeting the conditions stipulated at 2.43.

2.22 AAAC MOOSE, AAAC ZEBRA and AAAC BERSIMIS Conductor

2.22.1 The qualified manufacturer's experience should include the following:

- i) The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Sixty one (61) or above strands ACSR/ AAAC/ AL59/AACSR conductor during last seven (7) years as on date of NOA and
- ii) The qualified manufacturer should have manufactured, tested and supplied at least cumulative two hundred (200) km of Sixty one (61) or above strands AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.22.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.22.1 and also meeting the conditions stipulated at 2.43.

2.23 AAAC PANTHER Conductor

2.23.1 The qualified manufacturer's experience should include the following:

- (i) The qualified manufacturer should have manufactured, tested and supplied at least cumulative One Thousand (1000) km of Thirty Seven (37) or above strands ACSR/ AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA and
- (ii) The qualified manufacturer should have manufactured, tested and supplied at least cumulative two hundred (200) km of Thirty Seven (37) or above strands AAAC/ AL59/ AACSR conductor during last seven (7) years as on date of NOA.

2.23.2 The proposed manufacturer can also be a qualified licensee of a qualified manufacturer meeting the above specified requirements at 2.23.1 and also meeting the conditions stipulated at 2.43.

2.24 AL59 MOOSE, AL59 ZEBRA and AL59 BERSIMIS Conductor

2.24.1 The qualified manufacturer's experience should include the following:

- (a) The qualified manufacturer should have manufactured, tested and supplied at least cumulative one thousand (1000) km of ACSR/ AAAC/AL59/ AACSR conductor with Sixty one (61) strands or above during last seven (7) years as on date of NOA and