

## Schedule E: Technical particulars &amp; Guarantees

## 2.5 33/0.415 kV AUXILIARY TRANSFORMERS

| No.   | Description                                                                             | Minimum Requirements |                                                                                                                         | Guaranteed |
|-------|-----------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------|------------|
|       |                                                                                         | Unit                 | Data                                                                                                                    |            |
| 1     | General                                                                                 |                      |                                                                                                                         |            |
| 1.1   | Manufacturer                                                                            |                      | Insert                                                                                                                  |            |
| 1.2   | Type                                                                                    |                      | Power transformer three-phase, oil immersed, two windings, without tertiary winding, with off-load tap changer, outdoor |            |
| 1.3   | Model designation                                                                       |                      | Insert                                                                                                                  |            |
| 1.4   | Country of origin                                                                       |                      | Insert                                                                                                                  |            |
| 1.5   | Standards                                                                               |                      | IEC 60076                                                                                                               |            |
| 1.6   | Quality control                                                                         |                      | ISO 9001                                                                                                                |            |
| 2     | Ratings and properties                                                                  |                      |                                                                                                                         |            |
| 2.1   | Rated power:                                                                            | kVA                  | 300<br>(As per BoQ)                                                                                                     |            |
| 2.2   | Type of cooling ONAN / ONAF                                                             | -                    | ONAN                                                                                                                    |            |
| 2.3   | Rated voltage of windings:<br>• HV winding<br>• LV winding                              | kV V                 | 33<br>415                                                                                                               |            |
| 2.4   | Tap changer:<br>• Type of tap changing<br>• Tapping range<br>• Tapping step<br>• Rating | %<br><br>%           | Off-load<br>±5<br>2.5<br>Rated power 300 kVA, all taps (As per BoQ)<br>(Calculation is required)                        |            |
| 2.5   | Frequency                                                                               | Hz                   | 50                                                                                                                      |            |
| 2.6   | Connection of three-phase windings (group of vector IEC 60076)                          |                      | Dyn11                                                                                                                   |            |
| 2.7   | Percent Impedance                                                                       | %                    | 5 (±10%)                                                                                                                |            |
| 3     | Special technical requirements                                                          |                      |                                                                                                                         |            |
| 3.1   | Power transformer capacity to withstand external short circuits                         |                      |                                                                                                                         |            |
| 3.1.1 | Short-circuit duration                                                                  | s                    | 3                                                                                                                       |            |

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Design, Supply, Installation, Testing &amp; Commissioning of 132/33 kV AIS Substations at Dhupchanchia, Kumarkhali, Matlab North and Chatkhil including associated 132KV bay extension at Kachua Substation on turnkey basis (Package-4)

Sijana

## Schedule E: Technical particulars &amp; Guarantees

| No.       | Description                                                                                                                                                             | Minimum Requirements                   |                                                                           | Guaranteed |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------|------------|
|           |                                                                                                                                                                         | Unit                                   | Data                                                                      |            |
| 6.2       | Maximum current density in windings at rated power and normal tap changer position:<br><ul style="list-style-type: none"> <li>HV winding</li> <li>LV winding</li> </ul> | A/mm <sup>2</sup><br>A/mm <sup>2</sup> | Insert<br>Insert                                                          |            |
| 6.4       | Winding resistance at 75°C and middle tap changer position:<br><ul style="list-style-type: none"> <li>HV winding</li> <li>LV winding</li> </ul>                         | Ω Ω                                    | Insert<br>Insert                                                          |            |
| <b>7</b>  | <b>Weights and dimensions</b>                                                                                                                                           |                                        |                                                                           |            |
| 7.1       | Total weight of transformer, equipped for service                                                                                                                       | kg                                     | *Insert                                                                   |            |
| 7.10      | Height from foundation to highest point of HV bushing                                                                                                                   | mm                                     | *Insert                                                                   |            |
| 7.11      | Outer dimensions:<br><ul style="list-style-type: none"> <li>Length</li> <li>Width</li> </ul>                                                                            | mm                                     | *Insert<br>*Insert                                                        |            |
| 7.12      | Informative dimensional sketch                                                                                                                                          |                                        | To be enclosed with bid                                                   |            |
| 7.13      | Maximum shipping dimensions of tank:<br><ul style="list-style-type: none"> <li>Outside height</li> <li>Outside width</li> <li>Outside length</li> </ul>                 | mm<br>mm<br>mm                         | *Insert<br>*Insert<br>*Insert                                             |            |
| 7.14      | Transportation drawing                                                                                                                                                  |                                        | To be enclosed with bid                                                   |            |
| <b>8</b>  | <b>Dehydrating breather</b>                                                                                                                                             |                                        |                                                                           |            |
| 8.1       | Type of dehydrating breather                                                                                                                                            |                                        | Insert                                                                    |            |
| 8.2       | Dehumidifying agent                                                                                                                                                     | kg                                     | Insert                                                                    |            |
| <b>9</b>  | <b>Conservator</b>                                                                                                                                                      |                                        |                                                                           |            |
| 9.1       | Type                                                                                                                                                                    |                                        | With dehydrating breather                                                 |            |
| 9.2       | Number of compartments                                                                                                                                                  | pcs.                                   | 1                                                                         |            |
| 9.3       | Total volume of conservator                                                                                                                                             | m <sup>3</sup>                         | Insert                                                                    |            |
| 9.8       | Oil level indicators with alarm for minimum oil level                                                                                                                   | pcs.                                   | 1                                                                         |            |
| <b>10</b> | <b>Current transformer incorporated into the auxiliary power transformer</b>                                                                                            |                                        |                                                                           |            |
| 10.1      | CT in all HV bushings, for protection                                                                                                                                   |                                        | In all bushings, 2 cores characteristics shall be defined in design stage |            |
| 10.2      | CT in all LV bushings, for protection                                                                                                                                   |                                        | In all bushings, 2 cores characteristics shall be defined in design stage |            |

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Signature


