



TABLE 7 : SUBSTATION M - MV SWITCHGEAR AND TRANSFORMERS

Item	Description
SUBSTATIONS M: SWITCHGEAR	
11 kV Busbars	1250 A Single busbar SF ₆ gas insulated system. All switchgear shall have a fault rating of 31.5 kA for 3 seconds and shall be internally arc type tested AFLR 31.5 kA for 1 second.
11 kV Circuit Breakers	11 kV Fixed vacuum circuit breakers with a normal rated current of 1250 A for incomer and bus coupler (section) switchgear and 630 A for feeder switchgear. All switchgear shall have a fault rating of 31.5 kA for 3 seconds and shall be internally arc type tested AFLR 31.5 kA for 1 second.
11 kV Three-way Switches	11 kV Three-way switches with normal rated current of 1250 A for incomer, bus coupler (section) and riser panel switchgear and 630 A for feeder switchgear. All switchgear shall have a fault rating of 31.5 kA for 3 seconds and shall be internally arc type tested AFLR 31.5 kA for 1 second.
3.3 kV Busbars	1250 A Single busbar SF ₆ gas insulated system with a 25 kA fault rating for 3 seconds. All switchgear shall have a fault rating 25 kA for 3 seconds and shall be internally arc type tested AFLR 25 kA for 1 second.
3.3 kV Circuit Breakers	11 kV fixed vacuum circuit breakers with a normal rated current of 1250 A for incomer and bus coupler (section) switchgear and 630 A for feeder switchgear. All switchgear shall have a fault rating of 25 kA for 3 seconds and shall be internally arc type tested AFLR 25 kA for 1 second.
3.3 kV Three-way Switches	Three-way switches with normal rated current of 1250 A for incomer, bus coupler (section) and riser panel switchgear and 630 A for feeder switchgear. All switchgear shall have a fault rating of 25 kA for 3 seconds and shall be internally arc type tested AFLR 25 kA for 1 second.
11 kV Voltage Transformers	11/0.11 kV busbar 3-phase voltage transformers to be mounted on respective bus coupler (section) and riser panels.
3.3 kV Voltage Transformers	3.3/0.11 kV busbar 3-phase voltage transformers to be mounted on respective bus coupler (section) panel.
SUBSTATION M : TRANSFORMERS	
T3 Conveyor Transformer	11/3.3 kV, 3.5 MVA, Dyn11, 7% dry-type transformer with enclosure. OCTS +5% -5% with 2.5% voltage per tap.
Substation Local Transformer	11/0.4 kV, 1 MVA, Dyn11, 5% dry-type transformer with enclosure. OCTS +5% -5% with 2.5% voltage per tap.



TRANSNET SOC LIMITED

ENQUIRY / CONTRACT NUMBER: 1924701-E004

Tippler 3 : Supply and Install Bulk Electrical Supply including Transformers, Switchgear, MCC and Sub-Station Buildings

TABLE 7 : SUBSTATION M - MV SWITCHGEAR AND TRANSFORMERS

Item	Description
T3 Building Transformer	11/0.4 kV, 3.15 MVA, Dyn11, 7% dry-type transformer with enclosure. OCTS +5% -5% with 2.5% voltage per tap. Note: Additional requirements pertaining to transformer unit protection and local LV supply apply. Refer to specifications, drawings and/or BoQ for further details.



TABLE 8 : SUBSTATION N MV SWITCHGEAR AND TRANSFORMERS

Item	Description
SUBSTATIONS N- SWITCHGEAR	
11 kV Busbars	1250 A Single busbar SF ₆ gas insulated system. All switchgear shall have a fault rating of 40 kA for 3 seconds and shall be internally arc type tested AFLR 40 kA for 1 second.
11 kV Circuit Breakers	11 kV fixed vacuum circuit breakers with a normal rated current of 1250 A for incomer and bus coupler (section) switchgear and 630 A for feeder switchgear. All switchgear shall have a fault rating of 40 kA for 3 seconds and shall be internally arc type tested AFLR 40 kA for 1 second.
11 kV Three-way Switches	11 kV Three-way switches with normal rated current of 1250 A for incomer, bus coupler (section) and riser panel switchgear and 630A for feeder switchgear. All switchgear shall have a fault rating of 40 kA for 3 seconds and shall be internally arc type tested AFLR 40 kA for 1 second.
3.3 kV Busbars	1250 A Single busbar SF ₆ gas insulated system with a 25 kA fault rating for 3 seconds. All switchgear shall have a fault rating of 25 kA for 3 seconds and shall be internally arc type tested AFLR 25 kA for 1 second.
3.3 kV Circuit Breakers	11 kV fixed vacuum circuit breakers with a normal rated current of 1250 A for incomer and bus coupler (section) switchgear and 630 A for feeder switchgear. All switchgear shall have a fault rating of 25 kA for 3 seconds and shall be internally arc type tested AFLR 25 kA for 1 second.
3.3 kV Three-way Switches	Three-way switches with normal rated current of 1250 A for incomer, bus coupler (section) and riser panel switchgear and 630 A for feeder switchgear. All switchgear shall have a fault rating of 25 kA for 3 seconds and shall be internally arc type tested AFLR 25 kA for 1 second.
11 kV Voltage Transformers	11/0.11 kV busbar 3-phase voltage transformers to be mounted on respective bus coupler (section) and riser panels.
3.3 kV Voltage Transformers	3.3/0.11 kV busbar 3-phase voltage transformers to be mounted on respective bus coupler (section) panel.
SUBSTATION N : TRANSFORMERS	
T3 Conveyor Transformer	11/3.3 kV, 4.5 MVA, Dyn11, 7% dry-type transformer with enclosure. OCTS +5% -5% with 2.5% voltage per tap.
Substation Local Transformer	11/0.4 kV, 1 MVA, Dyn11, 5% dry-type transformer with enclosure. OCTS +5% -5% with 2.5% voltage per tap.