Circuit Branch: CST-MNI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[324] Amps and [61.69] MVA [for summer period] and [395] Amps and [75.26] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.09160] PU (using 100MVA as the base) Reactance [0.31421] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05059] PU (using 100MVA as the base) Reactance [0.10912] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: CST-NPL-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1220] Amps and [232.53] MVA [for summer period] and [1503] Amps and [286.38] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01608] PU (using 100MVA as the base) Reactance [0.07037] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00299] PU (using 100MVA as the base) Reactance [0.02289] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: CST-NPL-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1220] Amps and [232.53] MVA [for summer period] and [1503] Amps and [286.38] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01608] PU (using 100MVA as the base) Reactance [0.07045] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00299] PU (using 100MVA as the base) Reactance [0.02289] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: CST-SFD-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[324] Amps and [61.69] MVA [for summer period] and [399] Amps and [76.05] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.09843] PU (using 100MVA as the base) Reactance [0.35588] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05435] PU (using 100MVA as the base) Reactance [0.11906] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Culverden Transmission Tee Point

Circuit Branch: CUT-KIK-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[816] Amps and [310.94] MVA [for summer period] and [816] Amps and [310.94] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.06022] PU (using 100MVA as the base) Reactance [0.31002] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01853] PU (using 100MVA as the base) Reactance [0.11406] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: CUT-KIK-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[816] Amps and [310.94] MVA [for summer period] and [816] Amps and [310.94] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.06068] PU (using 100MVA as the base) Reactance [0.34129] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01900] PU (using 100MVA as the base) Reactance [0.11406] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: CUT-WTT-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01731] PU (using 100MVA as the base) Reactance [0.08865] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00542] PU (using 100MVA as the base) Reactance [0.03244] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: CUT-WTT-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01731] PU (using 100MVA as the base) Reactance [0.08865] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00542] PU (using 100MVA as the base) Reactance [0.03244] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Clyde

Circuit Branch: CML-CYD-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1473] Amps and [561.32] MVA [for summer period] and [1600] Amps and [609.68] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00772] PU (using 100MVA as the base) Reactance [0.05219] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00138] PU (using 100MVA as the base) Reactance [0.01638] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: CML-CYD-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1473] Amps and [561.32] MVA [for summer period] and [1600] Amps and [609.68] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00773] PU (using 100MVA as the base) Reactance [0.05221] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00138] PU (using 100MVA as the base) Reactance [0.01638] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: CYD-ROX-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01525] PU (using 100MVA as the base) Reactance [0.08768] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00477] PU (using 100MVA as the base) Reactance [0.02856] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: CYD-ROX-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01525] PU (using 100MVA as the base) Reactance [0.08767] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00477] PU (using 100MVA as the base) Reactance [0.02856] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Site: Dobson

Circuit Branch: DOB-GYM-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[253] Amps and [28.94] MVA [for summer period] and [309] Amps and [35.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.09283] PU (using 100MVA as the base) Reactance [0.29128] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.06029] PU (using 100MVA as the base) Reactance [0.08600] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: ATU-DOB-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [357] Amps and [67.99] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08824] PU (using 100MVA as the base) Reactance [0.32450] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05264] PU (using 100MVA as the base) Reactance [0.09571] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Transformer Branch: DOB-TF-T12

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [498] Amps and [94.80] MVA [for summer period] and [520] Amps and [99.00] MVA [for winter period] **MV** [726] Amps and [82.94] MVA [for summer period] and [726] Amps and [82.94] MVA [for winter period] **LV** [1659] Amps and [31.60] MVA [for summer period] and [1732] Amps and [33.00] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [394] Amps and [75.00] MVA **MV** [656] Amps and [75.00] MVA **LV** [1312] Amps and [25.00] MVA

Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00000] PU (using 100MVA as the base) **HV** Reactance [0.14461] PU (using 100MVA as the base) **MV** Resistance [0.00000] PU (using 100MVA as the base) **MV** Reactance [0.01157] PU (using 100MVA as the base) **LV** Resistance [0.00000] PU (using 100MVA as the base) **LV** Reactance [0.29047] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00200] PU (using 100MVA as the base) **HV** Reactance [0.14460] PU (using 100MVA as the base) **MV** Resistance [0.00200] PU (using 100MVA as the base) **MV** Reactance [-0.01140] PU (using 100MVA as the base) **LV** Resistance [0.01533] PU (using 100MVA as the base) **LV** Reactance [0.29007] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[110] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [121] kV Minimum: [99] kV
Tapping steps and ranges DOB-TF-T12 DOB-TF-T12-On Load Tap Changer	Tap voltage range: Maximum: [118.25] kV Minimum: [93.5] kV Number of tapping steps: [18] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [7]

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Dannevirke

Circuit Branch: DVK-WDV-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[256] Amps and [48.85] MVA [for summer period] and [313] Amps and [59.65] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.07163] PU (using 100MVA as the base) Reactance [0.23462] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04630] PU (using 100MVA as the base) Reactance [0.06841] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: DVK-WDV-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[256] Amps and [48.85] MVA [for summer period] and [313] Amps and [59.65] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.07475] PU (using 100MVA as the base) Reactance [0.24380] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04830] PU (using 100MVA as the base) Reactance [0.07189] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: DVK-WPW-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.14381] PU (using 100MVA as the base) Reactance [0.53770] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.08625] PU (using 100MVA as the base) Reactance [0.16396] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: DVK-WPW-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.14599] PU (using 100MVA as the base) Reactance [0.54610] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.08752] PU (using 100MVA as the base) Reactance [0.16647] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Site: Edgecumbe

Circuit Branch: EDG-KAW-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[253] Amps and [48.24] MVA [for summer period] and [309] Amps and [58.91] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04842] PU (using 100MVA as the base) Reactance [0.14933] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03138] PU (using 100MVA as the base) Reactance [0.04923] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: EDG-KAW-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[253] Amps and [48.23] MVA [for summer period] and [309] Amps and [58.90] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04901] PU (using 100MVA as the base) Reactance [0.15149] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03177] PU (using 100MVA as the base) Reactance [0.04980] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: EDG-KAW-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01011] PU (using 100MVA as the base) Reactance [0.04741] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00316] PU (using 100MVA as the base) Reactance [0.01924] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: EDG-OWH-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[300] Amps and [57.14] MVA [for summer period] and [366] Amps and [69.80] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.14362] PU (using 100MVA as the base) Reactance [0.57918] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.07616] PU (using 100MVA as the base) Reactance [0.19185] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: EDG-TRK-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02950] PU (using 100MVA as the base) Reactance [0.16975] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00924] PU (using 100MVA as the base) Reactance [0.05519] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: EDG-TRK-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02950] PU (using 100MVA as the base) Reactance [0.16974] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00924] PU (using 100MVA as the base) Reactance [0.05518] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: EDG-TF-T4

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [152] Amps and [58.00] MVA [for summer period] and [164] Amps and [62.50] MVA [for winter period] **MV** [304] Amps and [58.00] MVA [for summer period] and [328] Amps and [62.50] MVA [for winter period] **LV** [1827] Amps and [34.80] MVA [for summer period] and [1968] Amps and [37.50] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [131] Amps and [50.01] MVA **MV** [262] Amps and [50.01] MVA **LV** [1575] Amps and [30.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [-0.00033] PU (using 100MVA as the base) **HV** Reactance [0.03676] PU (using 100MVA as the base) **MV** Resistance [0.00421] PU (using 100MVA as the base) **MV** Reactance [0.05847] PU (using 100MVA as the base) **LV** Resistance [0.01166] PU (using 100MVA as the base) **LV** Reactance [0.14223] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [-0.00033] PU (using 100MVA as the base) **HV** Reactance [0.03676] PU (using 100MVA as the base) **MV** Resistance [0.00421] PU (using 100MVA as the base) **MV** Reactance [0.05847] PU (using 100MVA as the base) **LV** Resistance [0.01166] PU (using 100MVA as the base) **LV** Reactance [0.14223] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV

Tapping steps and ranges EDG-TF-T4B EDG-TF-T4B-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges EDG-TF-T4R EDG-TF-T4R-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges EDG-TF-T4Y EDG-TF-T4Y-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges EDG-TF-T4B EDG-TF-T4B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges EDG-TF-T4R EDG-TF-T4R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges EDG-TF-T4Y EDG-TF-T4Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Transformer Branch: EDG-TF-T5

Service Measure	**Service Level**

Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [152] Amps and [58.00] MVA [for summer period] and [164] Amps and [62.50] MVA [for winter period] **MV** [304] Amps and [58.00] MVA [for summer period] and [328] Amps and [62.50] MVA [for winter period] **LV** [1827] Amps and [34.80] MVA [for summer period] and [1968] Amps and [37.50] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [131] Amps and [50.01] MVA **MV** [262] Amps and [50.01] MVA **LV** [1575] Amps and [30.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00005] PU (using 100MVA as the base) **HV** Reactance [0.03782] PU (using 100MVA as the base) **MV** Resistance [0.00392] PU (using 100MVA as the base) **MV** Reactance [0.05746] PU (using 100MVA as the base) **LV** Resistance [0.01169] PU (using 100MVA as the base) **LV** Reactance [0.14201] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00005] PU (using 100MVA as the base) **HV** Reactance [0.03782] PU (using 100MVA as the base) **MV** Resistance [0.00392] PU (using 100MVA as the base) **MV** Reactance [0.05746] PU (using 100MVA as the base) **LV** Resistance [0.01169] PU (using 100MVA as the base) **LV** Reactance [0.14201] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges EDG-TF-T5B EDG-TF-T5B-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges EDG-TF-T5R EDG-TF-T5R-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges EDG-TF-T5Y EDG-TF-T5Y-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges EDG-TF-T5B EDG-TF-T5B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges EDG-TF-T5R EDG-TF-T5R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges EDG-TF-T5Y EDG-TF-T5Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Edendale

Circuit Branch: BDE-EDN-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04200] PU (using 100MVA as the base) Reactance [0.15296] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02516] PU (using 100MVA as the base) Reactance [0.04920] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: EDN-INV-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.09888] PU (using 100MVA as the base) Reactance [0.36083] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05914] PU (using 100MVA as the base) Reactance [0.11743] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Site: Fernhill

Circuit Branch: FHL-RDF-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02346] PU (using 100MVA as the base) Reactance [0.08780] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01406] PU (using 100MVA as the base) Reactance [0.02655] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: FHL-RDF-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02397] PU (using 100MVA as the base) Reactance [0.08939] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01437] PU (using 100MVA as the base) Reactance [0.02728] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: FHL-TUI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[549] Amps and [104.60] MVA [for summer period] and [549] Amps and [104.60] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.21417] PU (using 100MVA as the base) Reactance [1.04940] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.07766] PU (using 100MVA as the base) Reactance [0.17860] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: FHL-WPW-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.13805] PU (using 100MVA as the base) Reactance [0.51827] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.08281] PU (using 100MVA as the base) Reactance [0.15655] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: FHL-WPW-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.13800] PU (using 100MVA as the base) Reactance [0.51593] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.08278] PU (using 100MVA as the base) Reactance [0.15754] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Glenbrook

Circuit Branch: GLN-HLY-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02824] PU (using 100MVA as the base) Reactance [0.16054] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00524] PU (using 100MVA as the base) Reactance [0.04566] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: GLN-TAT-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01203] PU (using 100MVA as the base) Reactance [0.05852] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00191] PU (using 100MVA as the base) Reactance [0.01952] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Glenavy

Circuit Branch: GNY-STU-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[371] Amps and [70.76] MVA [for summer period] and [409] Amps and [77.99] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.07611] PU (using 100MVA as the base) Reactance [0.24787] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04919] PU (using 100MVA as the base) Reactance [0.07338] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: BDT-GNY-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[333] Amps and [63.36] MVA [for summer period] and [406] Amps and [77.36] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.03466] PU (using 100MVA as the base) Reactance [0.13943] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01914] PU (using 100MVA as the base) Reactance [0.04184] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Gore

Circuit Branch: BAL-GOR-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.25350] PU (using 100MVA as the base) Reactance [0.92485] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.15191] PU (using 100MVA as the base) Reactance [0.29670] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: BDE-GOR-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.05115] PU (using 100MVA as the base) Reactance [0.18527] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03065] PU (using 100MVA as the base) Reactance [0.06008] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: GOR-ROX-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[333] Amps and [63.36] MVA [for summer period] and [406] Amps and [77.36] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.22961] PU (using 100MVA as the base) Reactance [0.91303] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.12679] PU (using 100MVA as the base) Reactance [0.28215] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Greymouth

Circuit Branch: DOB-GYM-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[253] Amps and [28.94] MVA [for summer period] and [309] Amps and [35.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.09283] PU (using 100MVA as the base) Reactance [0.29128] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.06029] PU (using 100MVA as the base) Reactance [0.08600] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: GYM-KUM-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[253] Amps and [28.94] MVA [for summer period] and [300] Amps and [34.29] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.22579] PU (using 100MVA as the base) Reactance [0.79357] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.14635] PU (using 100MVA as the base) Reactance [0.18756] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Greytown

Circuit Branch: GYT-MST-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[400] Amps and [76.21] MVA [for summer period] and [400] Amps and [76.21] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.06223] PU (using 100MVA as the base) Reactance [0.22452] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03436] PU (using 100MVA as the base) Reactance [0.07457] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: GYT-MST-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[400] Amps and [76.21] MVA [for summer period] and [400] Amps and [76.21] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.06223] PU (using 100MVA as the base) Reactance [0.22451] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03436] PU (using 100MVA as the base) Reactance [0.07456] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: GYT-UHT-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[333] Amps and [63.36] MVA [for summer period] and [400] Amps and [76.21] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08404] PU (using 100MVA as the base) Reactance [0.33647] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04641] PU (using 100MVA as the base) Reactance [0.09956] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: GYT-UHT-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[333] Amps and [63.36] MVA [for summer period] and [400] Amps and [76.21] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08404] PU (using 100MVA as the base) Reactance [0.34184] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04641] PU (using 100MVA as the base) Reactance [0.09956] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Hamilton

Circuit Branch: ARI-HAM-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [324] Amps and [61.73] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.14363] PU (using 100MVA as the base) Reactance [0.47734] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.08615] PU (using 100MVA as the base) Reactance [0.16494] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: ARI-HAM-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [324] Amps and [61.73] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.14444] PU (using 100MVA as the base) Reactance [0.47985] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.08660] PU (using 100MVA as the base) Reactance [0.16594] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HAM-OHW-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1060] Amps and [403.98] MVA [for summer period] and [1293] Amps and [492.85] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01533] PU (using 100MVA as the base) Reactance [0.08117] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00353] PU (using 100MVA as the base) Reactance [0.02304] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HAM-WET-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08475] PU (using 100MVA as the base) Reactance [0.32142] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04957] PU (using 100MVA as the base) Reactance [0.09829] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HAM-WET-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08476] PU (using 100MVA as the base) Reactance [0.32209] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04957] PU (using 100MVA as the base) Reactance [0.09831] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HAM-WKM-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1060] Amps and [403.98] MVA [for summer period] and [1250] Amps and [476.31] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.03618] PU (using 100MVA as the base) Reactance [0.19087] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00836] PU (using 100MVA as the base) Reactance [0.05423] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: HAM-TF-T6

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	[1383] Amps and [263.40] MVA [for summer period] and [1383] Amps and [263.40] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	2 Winding [1155] Amps and [220.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	Resistance [0.00000] PU (using 100MVA as the base) Reactance [0.07412] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	Resistance [0.00214] PU (using 100MVA as the base) Reactance [0.07409] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges HAM-TF-T6 HAM-TF-T6-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [242] kV Minimum: [198] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [9]

Transformer Branch: HAM-TF-T9

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	[1276] Amps and [243.15] MVA [for summer period] and [1276] Amps and [243.15] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	2 Winding [1050] Amps and [200.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	Resistance [0.00035] PU (using 100MVA as the base) Reactance [0.07339] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	Resistance [0.00111] PU (using 100MVA as the base) Reactance [0.07353] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges HAM-TF-T9 HAM-TF-T9-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [242] kV Minimum: [198] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [9]

Site: Haywards AC Substation

Circuit Branch: BPE-HAY-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[807] Amps and [307.52] MVA [for summer period] and [880] Amps and [335.48] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.05821] PU (using 100MVA as the base) Reactance [0.29568] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02185] PU (using 100MVA as the base) Reactance [0.10480] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: BPE-HAY-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[807] Amps and [307.52] MVA [for summer period] and [880] Amps and [335.48] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.05818] PU (using 100MVA as the base) Reactance [0.29568] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02184] PU (using 100MVA as the base) Reactance [0.10475] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HAY-LTN-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04051] PU (using 100MVA as the base) Reactance [0.20255] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00752] PU (using 100MVA as the base) Reactance [0.06586] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HAY-TKR-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[2160] Amps and [411.46] MVA [for summer period] and [2266] Amps and [431.80] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01434] PU (using 100MVA as the base) Reactance [0.08536] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00313] PU (using 100MVA as the base) Reactance [0.01994] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HAY-TKR-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[2160] Amps and [411.46] MVA [for summer period] and [2266] Amps and [431.80] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01434] PU (using 100MVA as the base) Reactance [0.08550] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00313] PU (using 100MVA as the base) Reactance [0.01994] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HAY-UHT-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[576] Amps and [109.74] MVA [for summer period] and [576] Amps and [109.74] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01851] PU (using 100MVA as the base) Reactance [0.08678] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00423] PU (using 100MVA as the base) Reactance [0.02471] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HAY-UHT-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[576] Amps and [109.74] MVA [for summer period] and [576] Amps and [109.74] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01861] PU (using 100MVA as the base) Reactance [0.08680] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00425] PU (using 100MVA as the base) Reactance [0.02475] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HAY-WIL-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [1941] Amps and [739.62] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01251] PU (using 100MVA as the base) Reactance [0.06845] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00232] PU (using 100MVA as the base) Reactance [0.01991] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: HAY-TF-T1

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [659] Amps and [251.30] MVA [for summer period] and [688] Amps and [262.30] MVA [for winter period] **MV** [1221] Amps and [232.70] MVA [for summer period] and [1275] Amps and [242.90] MVA [for winter period] **LV** [3960] Amps and [75.45] MVA [for summer period] and [3960] Amps and [75.45] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [567] Amps and [216.00] MVA **MV** [1050] Amps and [200.00] MVA **LV** [3300] Amps and [62.87] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00000] PU (using 100MVA as the base) **HV** Reactance [0.01104] PU (using 100MVA as the base) **MV** Resistance [0.00000] PU (using 100MVA as the base) **MV** Reactance [0.06694] PU (using 100MVA as the base) **LV** Resistance [0.00000] PU (using 100MVA as the base) **LV** Reactance [0.07935] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00010] PU (using 100MVA as the base) **HV** Reactance [-0.01103] PU (using 100MVA as the base) **MV** Resistance [0.00082] PU (using 100MVA as the base) **MV** Reactance [0.06693] PU (using 100MVA as the base) **LV** Resistance [0.00341] PU (using 100MVA as the base) **LV** Reactance [0.07928] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges HAY-TF-T1 HAY-TF-T1-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [242] kV Minimum: [187] kV Number of tapping steps: [20] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [9]

Tapping steps and ranges HAY-TF-T1 HAY-TF-T1-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Transformer Branch: HAY-TF-T2

Service Measure	**Service Level**
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [659] Amps and [251.30] MVA [for summer period] and [688] Amps and [262.30] MVA [for winter period] **MV** [1221] Amps and [232.70] MVA [for summer period] and [1275] Amps and [242.90] MVA [for winter period] **LV** [3960] Amps and [75.45] MVA [for summer period] and [3960] Amps and [75.45] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [567] Amps and [216.00] MVA **MV** [1050] Amps and [200.00] MVA **LV** [3300] Amps and [62.87] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00000] PU (using 100MVA as the base) **HV** Reactance [0.01104] PU (using 100MVA as the base) **MV** Resistance [0.00000] PU (using 100MVA as the base) **MV** Reactance [0.06694] PU (using 100MVA as the base) **LV** Resistance [0.00000] PU (using 100MVA as the base) **LV** Reactance [0.07935] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00010] PU (using 100MVA as the base) **HV** Reactance [-0.01103] PU (using 100MVA as the base) **MV** Resistance [0.00082] PU (using 100MVA as the base) **MV** Reactance [0.06693] PU (using 100MVA as the base) **LV** Resistance [0.00341] PU (using 100MVA as the base) **LV** Reactance [0.07928] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV

Tapping steps and ranges HAY-TF-T2 HAY-TF-T2-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [242] kV Minimum: [187] kV Number of tapping steps: [20] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [9]
Tapping steps and ranges HAY-TF-T2 HAY-TF-T2-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Transformer Branch: HAY-TF-T5

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [659] Amps and [251.30] MVA [for summer period] and [688] Amps and [262.30] MVA [for winter period] **MV** [1221] Amps and [232.70] MVA [for summer period] and [1275] Amps and [242.90] MVA [for winter period] **LV** [3960] Amps and [75.45] MVA [for summer period] and [3960] Amps and [75.45] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [567] Amps and [216.00] MVA **MV** [1050] Amps and [200.00] MVA **LV** [3300] Amps and [62.87] MVA

Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00000] PU (using 100MVA as the base) **HV** Reactance [0.01104] PU (using 100MVA as the base) **MV** Resistance [0.00000] PU (using 100MVA as the base) **MV** Reactance [0.06694] PU (using 100MVA as the base) **LV** Resistance [0.00000] PU (using 100MVA as the base) **LV** Reactance [0.07935] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00010] PU (using 100MVA as the base) **HV** Reactance [-0.01103] PU (using 100MVA as the base) **MV** Resistance [0.00082] PU (using 100MVA as the base) **MV** Reactance [0.06693] PU (using 100MVA as the base) **LV** Resistance [0.00341] PU (using 100MVA as the base) **LV** Reactance [0.07928] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges HAY-TF-T5 HAY-TF-T5-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [242] kV Minimum: [187] kV Number of tapping steps: [20] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [9]
Tapping steps and ranges HAY-TF-T5 HAY-TF-T5-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Site: Henderson

Circuit Branch: ALB-HEN-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[505] Amps and [96.26] MVA [for summer period] and [552] Amps and [105.08] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04613] PU (using 100MVA as the base) Reactance [0.18245] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02547] PU (using 100MVA as the base) Reactance [0.05527] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: ALB-HEN-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[505] Amps and [96.26] MVA [for summer period] and [552] Amps and [105.08] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04612] PU (using 100MVA as the base) Reactance [0.18634] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02546] PU (using 100MVA as the base) Reactance [0.05526] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: ALB-HEN-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1473] Amps and [561.32] MVA [for summer period] and [1620] Amps and [617.46] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00987] PU (using 100MVA as the base) Reactance [0.04888] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00183] PU (using 100MVA as the base) Reactance [0.01564] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HEN-HEP-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01824] PU (using 100MVA as the base) Reactance [0.06896] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01007] PU (using 100MVA as the base) Reactance [0.02162] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-HEP-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01823] PU (using 100MVA as the base) Reactance [0.07277] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01007] PU (using 100MVA as the base) Reactance [0.02161] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-HEP-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01807] PU (using 100MVA as the base) Reactance [0.06682] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00998] PU (using 100MVA as the base) Reactance [0.02165] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-HEP-4

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01807] PU (using 100MVA as the base) Reactance [0.06684] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00998] PU (using 100MVA as the base) Reactance [0.02166] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-HPI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1200] Amps and [457.26] MVA [for summer period] and [1200] Amps and [457.26] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00448] PU (using 100MVA as the base) Reactance [0.02128] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00083] PU (using 100MVA as the base) Reactance [0.00705] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HEN-SWN-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[2395] Amps and [912.62] MVA [for summer period] and [2395] Amps and [912.62] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00957] PU (using 100MVA as the base) Reactance [0.05950] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00178] PU (using 100MVA as the base) Reactance [0.01555] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HEN-OTA-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[2400] Amps and [914.52] MVA [for summer period] and [2400] Amps and [914.52] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01184] PU (using 100MVA as the base) Reactance [0.05881] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00220] PU (using 100MVA as the base) Reactance [0.01922] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HEN-WEL-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [357] Amps and [67.99] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.20994] PU (using 100MVA as the base) Reactance [0.78159] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.12523] PU (using 100MVA as the base) Reactance [0.22076] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-WEL-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [357] Amps and [67.99] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.21235] PU (using 100MVA as the base) Reactance [0.80034] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.12658] PU (using 100MVA as the base) Reactance [0.22348] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Transformer Branch: HEN-TF-T1

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [667] Amps and [254.00] MVA [for summer period] and [709] Amps and [270.00] MVA [for winter period] **MV** [1202] Amps and [229.09] MVA [for summer period] and [1202] Amps and [229.09] MVA [for winter period] **LV** [3999] Amps and [76.20] MVA [for summer period] and [4157] Amps and [79.20] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [525] Amps and [200.01] MVA **MV** [1050] Amps and [200.01] MVA **LV** [3149] Amps and [60.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00034] PU (using 100MVA as the base) **HV** Reactance [0.02901] PU (using 100MVA as the base) **MV** Resistance [0.00037] PU (using 100MVA as the base) **MV** Reactance [-0.00321] PU (using 100MVA as the base) **LV** Resistance [0.00319] PU (using 100MVA as the base) **LV** Reactance [0.06938] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00034] PU (using 100MVA as the base) **HV** Reactance [0.02901] PU (using 100MVA as the base) **MV** Resistance [0.00037] PU (using 100MVA as the base) **MV** Reactance [-0.00321] PU (using 100MVA as the base) **LV** Resistance [0.00319] PU (using 100MVA as the base) **LV** Reactance [0.06938] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV

Tapping steps and ranges HEN-TF-T1B HEN-TF-T1B-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [12] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges HEN-TF-T1R HEN-TF-T1R-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [12] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges HEN-TF-T1Y HEN-TF-T1Y-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [12] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]

Tapping steps and ranges HEN-TF-T1B HEN-TF-T1B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.73] kV Minimum: [10.27] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [3.33]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges HEN-TF-T1R HEN-TF-T1R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.73] kV Minimum: [10.27] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [3.33]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges HEN-TF-T1Y HEN-TF-T1Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.73] kV Minimum: [10.27] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [3.33]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Transformer Branch: HEN-TF-T5

Service Measure	**Service Level**

Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [719] Amps and [274.00] MVA [for summer period] and [761] Amps and [290.00] MVA [for winter period] **MV** [1397] Amps and [266.11] MVA [for summer period] and [1397] Amps and [266.11] MVA [for winter period] **LV** [4157] Amps and [79.20] MVA [for summer period] and [4157] Amps and [79.20] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [525] Amps and [200.01] MVA **MV** [1050] Amps and [200.01] MVA **LV** [3149] Amps and [60.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00028] PU (using 100MVA as the base) **HV** Reactance [0.02627] PU (using 100MVA as the base) **MV** Resistance [0.00044] PU (using 100MVA as the base) **MV** Reactance [-0.00081] PU (using 100MVA as the base) **LV** Resistance [0.00334] PU (using 100MVA as the base) **LV** Reactance [0.06875] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00028] PU (using 100MVA as the base) **HV** Reactance [0.02627] PU (using 100MVA as the base) **MV** Resistance [0.00044] PU (using 100MVA as the base) **MV** Reactance [-0.00081] PU (using 100MVA as the base) **LV** Resistance [0.00334] PU (using 100MVA as the base) **LV** Reactance [0.06875] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges HEN-TF-T5B HEN-TF-T5B-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [12] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]

Tapping steps and ranges HEN-TF-T5R HEN-TF-T5R-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [12] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges HEN-TF-T5Y HEN-TF-T5Y-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [12] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges HEN-TF-T5B HEN-TF-T5B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges HEN-TF-T5R HEN-TF-T5R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges HEN-TF-T5Y HEN-TF-T5Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Hepburn Road

Circuit Branch: HEN-HEP-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01824] PU (using 100MVA as the base) Reactance [0.06896] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01007] PU (using 100MVA as the base) Reactance [0.02162] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-HEP-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01823] PU (using 100MVA as the base) Reactance [0.07277] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01007] PU (using 100MVA as the base) Reactance [0.02161] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-HEP-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01807] PU (using 100MVA as the base) Reactance [0.06682] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00998] PU (using 100MVA as the base) Reactance [0.02165] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEN-HEP-4

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [531] Amps and [101.24] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01807] PU (using 100MVA as the base) Reactance [0.06684] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00998] PU (using 100MVA as the base) Reactance [0.02166] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEP-ROS-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[800] Amps and [152.42] MVA [for summer period] and [800] Amps and [152.42] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01457] PU (using 100MVA as the base) Reactance [0.05947] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00555] PU (using 100MVA as the base) Reactance [0.01188] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HEP-ROS-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[800] Amps and [152.42] MVA [for summer period] and [800] Amps and [152.42] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01407] PU (using 100MVA as the base) Reactance [0.06316] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00535] PU (using 100MVA as the base) Reactance [0.01131] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Hokitika (Westpower)

Circuit Branch: HKK-OTI-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[232] Amps and [26.51] MVA [for summer period] and [283] Amps and [32.39] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.67800] PU (using 100MVA as the base) Reactance [2.36250] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.43695] PU (using 100MVA as the base) Reactance [0.65176] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Site: Huntly

Circuit Branch: GLN-HLY-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02824] PU (using 100MVA as the base) Reactance [0.16054] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00524] PU (using 100MVA as the base) Reactance [0.04566] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HLY-SFD-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1195] Amps and [455.36] MVA [for summer period] and [1195] Amps and [455.36] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.12488] PU (using 100MVA as the base) Reactance [0.71431] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03910] PU (using 100MVA as the base) Reactance [0.23497] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HLY-TAT-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02356] PU (using 100MVA as the base) Reactance [0.11917] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00405] PU (using 100MVA as the base) Reactance [0.03861] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HLY-TWH-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1231] Amps and [469.17] MVA [for summer period] and [1292] Amps and [492.27] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01338] PU (using 100MVA as the base) Reactance [0.07567] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00419] PU (using 100MVA as the base) Reactance [0.02506] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HLY-OHW-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1806] Amps and [688.18] MVA [for summer period] and [1806] Amps and [688.18] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00627] PU (using 100MVA as the base) Reactance [0.03325] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00116] PU (using 100MVA as the base) Reactance [0.01020] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HLY-OHW-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00628] PU (using 100MVA as the base) Reactance [0.03329] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00116] PU (using 100MVA as the base) Reactance [0.01022] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [198] kV Minimum: [242] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Hororata

Circuit Branch: COL-HOR-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [30.41] MVA [for summer period] and [325] Amps and [37.15] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.39637] PU (using 100MVA as the base) Reactance [1.49392] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.23684] PU (using 100MVA as the base) Reactance [0.42520] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: COL-HOR-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [30.41] MVA [for summer period] and [325] Amps and [37.15] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.39615] PU (using 100MVA as the base) Reactance [1.49327] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.23669] PU (using 100MVA as the base) Reactance [0.42503] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: HOR-ISL-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[527] Amps and [60.21] MVA [for summer period] and [550] Amps and [62.87] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.39105] PU (using 100MVA as the base) Reactance [1.62428] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.21013] PU (using 100MVA as the base) Reactance [0.48247] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: HOR-ISL-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[527] Amps and [60.21] MVA [for summer period] and [550] Amps and [62.87] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.39105] PU (using 100MVA as the base) Reactance [1.62428] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.21013] PU (using 100MVA as the base) Reactance [0.48247] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Huapai

Circuit Branch: ALB-HPI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1473] Amps and [561.32] MVA [for summer period] and [1620] Amps and [617.46] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00539] PU (using 100MVA as the base) Reactance [0.03296] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00100] PU (using 100MVA as the base) Reactance [0.00860] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: BRB-HPI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[875] Amps and [333.31] MVA [for summer period] and [971] Amps and [370.08] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04769] PU (using 100MVA as the base) Reactance [0.22119] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01408] PU (using 100MVA as the base) Reactance [0.08723] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HEN-HPI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1200] Amps and [457.26] MVA [for summer period] and [1200] Amps and [457.26] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00448] PU (using 100MVA as the base) Reactance [0.02128] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00083] PU (using 100MVA as the base) Reactance [0.00705] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HPI-MDN-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1200] Amps and [457.26] MVA [for summer period] and [1200] Amps and [457.26] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04006] PU (using 100MVA as the base) Reactance [0.19737] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00744] PU (using 100MVA as the base) Reactance [0.06325] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Hangatiki

Circuit Branch: ARI-HTI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[300] Amps and [57.14] MVA [for summer period] and [366] Amps and [69.80] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.14832] PU (using 100MVA as the base) Reactance [0.59414] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.08212] PU (using 100MVA as the base) Reactance [0.19094] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Huirangi

Circuit Branch: CST-HUI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[195] Amps and [37.15] MVA [for summer period] and [195] Amps and [37.15] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04174] PU (using 100MVA as the base) Reactance [0.15063] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02305] PU (using 100MVA as the base) Reactance [0.05050] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: CST-HUI-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[195] Amps and [37.15] MVA [for summer period] and [195] Amps and [37.15] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04174] PU (using 100MVA as the base) Reactance [0.15053] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02305] PU (using 100MVA as the base) Reactance [0.05050] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HUI-MNI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[482] Amps and [91.89] MVA [for summer period] and [495] Amps and [94.31] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02315] PU (using 100MVA as the base) Reactance [0.07382] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01278] PU (using 100MVA as the base) Reactance [0.02757] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Hawera

Circuit Branch: HWA-SFD-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08109] PU (using 100MVA as the base) Reactance [0.29256] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.04860] PU (using 100MVA as the base) Reactance [0.09764] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HWA-WVY-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.10804] PU (using 100MVA as the base) Reactance [0.37257] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.06481] PU (using 100MVA as the base) Reactance [0.13091] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Site: Halfway Bush

Circuit Branch: BWK-HWB-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.10833] PU (using 100MVA as the base) Reactance [0.39472] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.06494] PU (using 100MVA as the base) Reactance [0.12815] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HWB-ROX-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[333] Amps and [63.36] MVA [for summer period] and [406] Amps and [77.36] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.34497] PU (using 100MVA as the base) Reactance [1.32332] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.19050] PU (using 100MVA as the base) Reactance [0.44688] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HWB-ROX-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[333] Amps and [63.36] MVA [for summer period] and [406] Amps and [77.36] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.34500] PU (using 100MVA as the base) Reactance [1.32345] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.19051] PU (using 100MVA as the base) Reactance [0.44688] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: HWB-TMH-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[875] Amps and [333.31] MVA [for summer period] and [971] Amps and [370.08] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00167] PU (using 100MVA as the base) Reactance [0.00955] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00052] PU (using 100MVA as the base) Reactance [0.00313] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HWB-SDN-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[875] Amps and [333.31] MVA [for summer period] and [971] Amps and [370.08] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00547] PU (using 100MVA as the base) Reactance [0.02887] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00171] PU (using 100MVA as the base) Reactance [0.01024] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: HWB-TF-T4

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [377] Amps and [143.50] MVA [for summer period] and [398] Amps and [151.70] MVA [for winter period] **MV** [646] Amps and [123.00] MVA [for summer period] and [682] Amps and [130.00] MVA [for winter period] **LV** [3873] Amps and [73.80] MVA [for summer period] and [4094] Amps and [78.00] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [306] Amps and [116.70] MVA **MV** [525] Amps and [99.99] MVA **LV** [3149] Amps and [60.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00040] PU (using 100MVA as the base) **HV** Reactance [0.02291] PU (using 100MVA as the base) **MV** Resistance [0.00132] PU (using 100MVA as the base) **MV** Reactance [0.02356] PU (using 100MVA as the base) **LV** Resistance [0.00449] PU (using 100MVA as the base) **LV** Reactance [0.04455] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00040] PU (using 100MVA as the base) **HV** Reactance [0.02291] PU (using 100MVA as the base) **MV** Resistance [0.00132] PU (using 100MVA as the base) **MV** Reactance [0.02356] PU (using 100MVA as the base) **LV** Resistance [0.00449] PU (using 100MVA as the base) **LV** Reactance [0.04455] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges HWB-TF-T4B HWB-TF-T4B-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [6] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges HWB-TF-T4R HWB-TF-T4R-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [6] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges HWB-TF-T4Y HWB-TF-T4Y-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [198] kV Number of tapping steps: [6] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges HWB-TF-T4B HWB-TF-T4B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges HWB-TF-T4R HWB-TF-T4R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges HWB-TF-T4Y HWB-TF-T4Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Inangahua

Circuit Branch: IGH-KIK-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[327] Amps and [62.30] MVA [for summer period] and [327] Amps and [62.30] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.18781] PU (using 100MVA as the base) Reactance [0.79850] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05802] PU (using 100MVA as the base) Reactance [0.35128] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: IGH-MCH-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [327] Amps and [62.30] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.11255] PU (using 100MVA as the base) Reactance [0.39102] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.06714] PU (using 100MVA as the base) Reactance [0.13129] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: IGH-RFN-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[120] Amps and [22.86] MVA [for summer period] and [120] Amps and [22.86] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.07864] PU (using 100MVA as the base) Reactance [0.36448] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03851] PU (using 100MVA as the base) Reactance [0.10149] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: IGH-RFC-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [357] Amps and [67.99] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08711] PU (using 100MVA as the base) Reactance [0.30609] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05197] PU (using 100MVA as the base) Reactance [0.10050] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Site: Invercargill

Circuit Branch: EDN-INV-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[266] Amps and [50.68] MVA [for summer period] and [325] Amps and [61.92] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.09888] PU (using 100MVA as the base) Reactance [0.36083] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05914] PU (using 100MVA as the base) Reactance [0.11743] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: INV-NMA-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1060] Amps and [403.98] MVA [for summer period] and [1132] Amps and [431.35] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00421] PU (using 100MVA as the base) Reactance [0.02238] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00097] PU (using 100MVA as the base) Reactance [0.00638] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: INV-ROX-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.05884] PU (using 100MVA as the base) Reactance [0.27204] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01842] PU (using 100MVA as the base) Reactance [0.11249] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: INV-ROX-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.05779] PU (using 100MVA as the base) Reactance [0.32327] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01809] PU (using 100MVA as the base) Reactance [0.11214] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: INV-TWI-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1011] Amps and [385.41] MVA [for summer period] and [1195] Amps and [455.36] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00995] PU (using 100MVA as the base) Reactance [0.05320] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00227] PU (using 100MVA as the base) Reactance [0.01536] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: INV-TWI-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1011] Amps and [385.41] MVA [for summer period] and [1195] Amps and [455.36] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.00995] PU (using 100MVA as the base) Reactance [0.05868] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00227] PU (using 100MVA as the base) Reactance [0.01536] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: INV-MAN-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[818] Amps and [311.62] MVA [for summer period] and [997] Amps and [379.94] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.05744] PU (using 100MVA as the base) Reactance [0.30772] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01329] PU (using 100MVA as the base) Reactance [0.09179] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: INV-TF-T1

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [192] Amps and [73.10] MVA [for summer period] and [206] Amps and [78.40] MVA [for winter period] **MV** [328] Amps and [62.50] MVA [for summer period] and [352] Amps and [67.00] MVA [for winter period] **LV** [1330] Amps and [25.34] MVA [for summer period] and [1330] Amps and [25.34] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [154] Amps and [58.50] MVA **MV** [262] Amps and [50.01] MVA **LV** [1109] Amps and [21.12] MVA

Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00772] PU (using 100MVA as the base) **HV** Reactance [0.03309] PU (using 100MVA as the base) **MV** Resistance [0.00788] PU (using 100MVA as the base) **MV** Reactance [0.05609] PU (using 100MVA as the base) **LV** Resistance [0.00488] PU (using 100MVA as the base) **LV** Reactance [0.14727] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00772] PU (using 100MVA as the base) **HV** Reactance [0.03309] PU (using 100MVA as the base) **MV** Resistance [0.00788] PU (using 100MVA as the base) **MV** Reactance [0.05609] PU (using 100MVA as the base) **LV** Resistance [0.00488] PU (using 100MVA as the base) **LV** Reactance [0.14727] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges INV-TF-T1B INV-TF-T1B-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges INV-TF-T1R INV-TF-T1R-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges INV-TF-T1Y INV-TF-T1Y-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges INV-TF-T1B INV-TF-T1B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges INV-TF-T1R INV-TF-T1R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges INV-TF-T1Y INV-TF-T1Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Site: Islington

Circuit Branch: BRY-ISL-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01056] PU (using 100MVA as the base) Reactance [0.06547] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00196] PU (using 100MVA as the base) Reactance [0.01662] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: HOR-ISL-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[527] Amps and [60.21] MVA [for summer period] and [550] Amps and [62.87] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.39105] PU (using 100MVA as the base) Reactance [1.62428] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.21013] PU (using 100MVA as the base) Reactance [0.48247] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: HOR-ISL-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[527] Amps and [60.21] MVA [for summer period] and [550] Amps and [62.87] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.39105] PU (using 100MVA as the base) Reactance [1.62428] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.21013] PU (using 100MVA as the base) Reactance [0.48247] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: ISL-KIK-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.10219] PU (using 100MVA as the base) Reactance [0.56972] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03200] PU (using 100MVA as the base) Reactance [0.20030] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: ISL-LIV-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1060] Amps and [403.98] MVA [for summer period] and [1250] Amps and [476.31] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.09195] PU (using 100MVA as the base) Reactance [0.52359] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.02064] PU (using 100MVA as the base) Reactance [0.14903] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: ISL-SBK-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[527] Amps and [60.21] MVA [for summer period] and [571] Amps and [65.23] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.19307] PU (using 100MVA as the base) Reactance [0.78559] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.10662] PU (using 100MVA as the base) Reactance [0.22473] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: ISL-SBK-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[527] Amps and [60.21] MVA [for summer period] and [571] Amps and [65.23] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.19305] PU (using 100MVA as the base) Reactance [0.78552] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.10661] PU (using 100MVA as the base) Reactance [0.22470] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[66] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [72.6] kV Minimum: [59.4] kV

Circuit Branch: ISL-TKB-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1461] Amps and [556.65] MVA [for summer period] and [1600] Amps and [609.68] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.08491] PU (using 100MVA as the base) Reactance [0.38650] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01962] PU (using 100MVA as the base) Reactance [0.13391] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: ISL-WTT-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02599] PU (using 100MVA as the base) Reactance [0.13556] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00735] PU (using 100MVA as the base) Reactance [0.04801] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: ISL-WTT-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[911] Amps and [347.16] MVA [for summer period] and [1003] Amps and [382.17] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02616] PU (using 100MVA as the base) Reactance [0.13520] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00752] PU (using 100MVA as the base) Reactance [0.04801] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: ASB-ISL-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[1822] Amps and [694.33] MVA [for summer period] and [2000] Amps and [762.10] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02996] PU (using 100MVA as the base) Reactance [0.18339] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00556] PU (using 100MVA as the base) Reactance [0.04751] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: ISL-TF-T3

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [661] Amps and [252.00] MVA [for summer period] and [698] Amps and [266.00] MVA [for winter period] **MV** [2204] Amps and [252.00] MVA [for summer period] and [2327] Amps and [266.00] MVA [for winter period] **LV** [3160] Amps and [60.21] MVA [for summer period] and [3160] Amps and [60.21] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [525] Amps and [200.01] MVA **MV** [1750] Amps and [200.01] MVA **LV** [3149] Amps and [60.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00078] PU (using 100MVA as the base) **HV** Reactance [0.08322] PU (using 100MVA as the base) **MV** Resistance [0.00039] PU (using 100MVA as the base) **MV** Reactance [-0.00477] PU (using 100MVA as the base) **LV** Resistance [0.01735] PU (using 100MVA as the base) **LV** Reactance [0.05613] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00078] PU (using 100MVA as the base) **HV** Reactance [0.08322] PU (using 100MVA as the base) **MV** Resistance [0.00039] PU (using 100MVA as the base) **MV** Reactance [-0.00477] PU (using 100MVA as the base) **LV** Resistance [0.00247] PU (using 100MVA as the base) **LV** Reactance [0.05745] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges ISL-TF-T3B ISL-TF-T3B-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]

Tapping steps and ranges ISL-TF-T3R ISL-TF-T3R-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges ISL-TF-T3Y ISL-TF-T3Y-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges ISL-TF-T3B ISL-TF-T3B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.48] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.37]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges ISL-TF-T3R ISL-TF-T3R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.48] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.37]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges ISL-TF-T3Y ISL-TF-T3Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.48] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.37]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Transformer Branch: ISL-TF-T6

Service Measure	**Service Level**
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [801] Amps and [305.10] MVA [for summer period] and [836] Amps and [318.40] MVA [for winter period] **MV** [2595] Amps and [296.70] MVA [for summer period] and [2709] Amps and [309.70] MVA [for winter period] **LV** [3737] Amps and [71.20] MVA [for summer period] and [3900] Amps and [74.30] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [674] Amps and [257.00] MVA **MV** [2187] Amps and [250.00] MVA **LV** [3149] Amps and [60.00] MVA

Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00000] PU (using 100MVA as the base) **HV** Reactance [0.07600] PU (using 100MVA as the base) **MV** Resistance [0.00000] PU (using 100MVA as the base) **MV** Reactance [0.00453] PU (using 100MVA as the base) **LV** Resistance [0.00000] PU (using 100MVA as the base) **LV** Reactance [0.05162] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00080] PU (using 100MVA as the base) **HV** Reactance [0.07600] PU (using 100MVA as the base) **MV** Resistance [0.00055] PU (using 100MVA as the base) **MV** Reactance [-0.00450] PU (using 100MVA as the base) **LV** Resistance [0.00345] PU (using 100MVA as the base) **LV** Reactance [0.05150] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges ISL-TF-T6 ISL-TF-T6-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [240.02] kV Minimum: [194.26] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.3]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [8]
Tapping steps and ranges ISL-TF-T6 ISL-TF-T6-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Transformer Branch: ISL-TF-T7

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [661] Amps and [252.00] MVA [for summer period] and [698] Amps and [266.00] MVA [for winter period] **MV** [2204] Amps and [252.00] MVA [for summer period] and [2327] Amps and [266.00] MVA [for winter period] **LV** [3968] Amps and [75.60] MVA [for summer period] and [4188] Amps and [79.80] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [525] Amps and [200.01] MVA **MV** [1750] Amps and [200.01] MVA **LV** [3149] Amps and [60.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00079] PU (using 100MVA as the base) **HV** Reactance [0.08276] PU (using 100MVA as the base) **MV** Resistance [0.00037] PU (using 100MVA as the base) **MV** Reactance [-0.00465] PU (using 100MVA as the base) **LV** Resistance [0.00137] PU (using 100MVA as the base) **LV** Reactance [0.05495] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00079] PU (using 100MVA as the base) **HV** Reactance [0.08276] PU (using 100MVA as the base) **MV** Resistance [0.00037] PU (using 100MVA as the base) **MV** Reactance [-0.00465] PU (using 100MVA as the base) **LV** Resistance [0.00137] PU (using 100MVA as the base) **LV** Reactance [0.05495] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges ISL-TF-T7B ISL-TF-T7B-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]

Tapping steps and ranges ISL-TF-T7R ISL-TF-T7R-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges ISL-TF-T7Y ISL-TF-T7Y-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]
Tapping steps and ranges ISL-TF-T7B ISL-TF-T7B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.48] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.37]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges ISL-TF-T7R ISL-TF-T7R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.48] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.37]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges ISL-TF-T7Y ISL-TF-T7Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.48] kV Minimum: [10.45] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.37]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Interconnection Branch Report

As at : 01/07/2009 12:48

Site: Kawerau

Circuit Branch: EDG-KAW-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[253] Amps and [48.24] MVA [for summer period] and [309] Amps and [58.91] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04842] PU (using 100MVA as the base) Reactance [0.14933] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03138] PU (using 100MVA as the base) Reactance [0.04923] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: EDG-KAW-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[253] Amps and [48.23] MVA [for summer period] and [309] Amps and [58.90] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.04901] PU (using 100MVA as the base) Reactance [0.15149] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03177] PU (using 100MVA as the base) Reactance [0.04980] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: EDG-KAW-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.01011] PU (using 100MVA as the base) Reactance [0.04741] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00316] PU (using 100MVA as the base) Reactance [0.01924] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: KAW-OHK-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.03993] PU (using 100MVA as the base) Reactance [0.18434] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01250] PU (using 100MVA as the base) Reactance [0.07651] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: KAW-TF-T12

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	[505] Amps and [96.20] MVA [for summer period] and [527] Amps and [100.40] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	2 Winding [420] Amps and [80.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	Resistance [0.00000] PU (using 100MVA as the base) Reactance [0.19995] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	Resistance [0.00494] PU (using 100MVA as the base) Reactance [0.19989] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV

High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges KAW-TF-T12 KAW-TF-T12-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]

Transformer Branch: KAW-TF-T13

Service Measure	**Service Level**
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	[516] Amps and [98.40] MVA [for summer period] and [546] Amps and [104.00] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	2 Winding [420] Amps and [80.00] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	Resistance [0.00000] PU (using 100MVA as the base) Reactance [0.09688] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	Resistance [0.00285] PU (using 100MVA as the base) Reactance [0.09684] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV

Tapping steps and ranges KAW-TF-T13 KAW-TF-T13-Tap Changer -- ONLOAD -- HV	Tap voltage range: Maximum: [231] kV Minimum: [187] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [5]

Site: Kikiwa

Circuit Branch: ARG-KIK-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [357] Amps and [67.99] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.12181] PU (using 100MVA as the base) Reactance [0.43335] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.07266] PU (using 100MVA as the base) Reactance [0.13806] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: IGH-KIK-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[327] Amps and [62.30] MVA [for summer period] and [327] Amps and [62.30] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.18781] PU (using 100MVA as the base) Reactance [0.79850] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.05802] PU (using 100MVA as the base) Reactance [0.35128] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: ISL-KIK-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.10219] PU (using 100MVA as the base) Reactance [0.56972] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.03200] PU (using 100MVA as the base) Reactance [0.20030] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: KIK-MCH-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [327] Amps and [62.30] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.16268] PU (using 100MVA as the base) Reactance [0.56961] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.09705] PU (using 100MVA as the base) Reactance [0.18990] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: KIK-STK-1

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02333] PU (using 100MVA as the base) Reactance [0.11401] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00731] PU (using 100MVA as the base) Reactance [0.04353] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: KIK-STK-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[627] Amps and [238.85] MVA [for summer period] and [765] Amps and [291.34] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.02334] PU (using 100MVA as the base) Reactance [0.11405] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.00731] PU (using 100MVA as the base) Reactance [0.04354] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: KIK-STK-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[292] Amps and [55.68] MVA [for summer period] and [357] Amps and [67.99] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.16025] PU (using 100MVA as the base) Reactance [0.57619] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.09560] PU (using 100MVA as the base) Reactance [0.17996] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[110] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [121] kV Minimum: [99] kV

Circuit Branch: CUT-KIK-2

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[816] Amps and [310.94] MVA [for summer period] and [816] Amps and [310.94] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.06022] PU (using 100MVA as the base) Reactance [0.31002] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01853] PU (using 100MVA as the base) Reactance [0.11406] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Circuit Branch: CUT-KIK-3

Service Measure	Service Level
Overall continuous capacity rating of the interconnection circuit branch	[816] Amps and [310.94] MVA [for summer period] and [816] Amps and [310.94] MVA [for winter period]
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Shunt	Resistance [0.06068] PU (using 100MVA as the base) Reactance [0.34129] PU (using 100MVA as the base)
Level of Impedance of the interconnection circuit branch Resistive and Reactive - Series	Resistance [0.01900] PU (using 100MVA as the base) Reactance [0.11406] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection circuit branch	[220] kV
High voltage range that the interconnection circuit branch can operate over	Maximum: [242] kV Minimum: [198] kV

Transformer Branch: KIK-TF-T1

Service Measure	Service Level
Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [164] Amps and [62.50] MVA [for summer period] and [176] Amps and [67.00] MVA [for winter period] **MV** [328] Amps and [62.50] MVA [for summer period] and [352] Amps and [67.00] MVA [for winter period] **LV** [296] Amps and [5.64] MVA [for summer period] and [296] Amps and [5.64] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [131] Amps and [50.01] MVA **MV** [262] Amps and [50.01] MVA **LV** [296] Amps and [5.64] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00096] PU (using 100MVA as the base) **HV** Reactance [0.02906] PU (using 100MVA as the base) **MV** Resistance [0.00308] PU (using 100MVA as the base) **MV** Reactance [0.09485] PU (using 100MVA as the base) **LV** Resistance [0.01314] PU (using 100MVA as the base) **LV** Reactance [0.09804] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00096] PU (using 100MVA as the base) **HV** Reactance [0.02906] PU (using 100MVA as the base) **MV** Resistance [0.00308] PU (using 100MVA as the base) **MV** Reactance [0.09485] PU (using 100MVA as the base) **LV** Resistance [0.01091] PU (using 100MVA as the base) **LV** Reactance [0.09862] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [239.8] kV Minimum: [198] kV

Tapping steps and ranges KIK-TF-T1B KIK-TF-T1B-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges KIK-TF-T1R KIK-TF-T1R-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges KIK-TF-T1Y KIK-TF-T1Y-Tap Changer -- OFFLOAD -- HV	Tap voltage range: Maximum: [220] kV Minimum: [198] kV Number of tapping steps: [4] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Tapping steps and ranges KIK-TF-T1B KIK-TF-T1B-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges KIK-TF-T1R KIK-TF-T1R-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]
Tapping steps and ranges KIK-TF-T1Y KIK-TF-T1Y-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [2] Size of each tapping step as a percentage of nominal operating voltage range: [5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]

Transformer Branch: KIK-TF-T2

Service Measure	**Service Level**

Overall 24 hour post contingency capacity rating of the interconnection transformer branch	**HV** [478] Amps and [182.30] MVA [for summer period] and [500] Amps and [190.60] MVA [for winter period] **MV** [957] Amps and [182.30] MVA [for summer period] and [1000] Amps and [190.60] MVA [for winter period] **LV** [296] Amps and [5.64] MVA [for summer period] and [296] Amps and [5.64] MVA [for winter period]
Continuous capacity rating of the interconnection transformer branch	**HV** [394] Amps and [150.00] MVA **MV** [787] Amps and [150.00] MVA **LV** [296] Amps and [5.64] MVA
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Shunt	**HV** Resistance [0.00000] PU (using 100MVA as the base) **HV** Reactance [0.06999] PU (using 100MVA as the base) **MV** Resistance [0.00000] PU (using 100MVA as the base) **MV** Reactance [0.00495] PU (using 100MVA as the base) **LV** Resistance [0.00893] PU (using 100MVA as the base) **LV** Reactance [0.10717] PU (using 100MVA as the base)
Level of Impedance of the interconnection transformer branch Resistive and Reactive - Series	**HV** Resistance [0.00016] PU (using 100MVA as the base) **HV** Reactance [0.06999] PU (using 100MVA as the base) **MV** Resistance [0.00106] PU (using 100MVA as the base) **MV** Reactance [-0.00484] PU (using 100MVA as the base) **LV** Resistance [0.00878] PU (using 100MVA as the base) **LV** Reactance [0.10854] PU (using 100MVA as the base)
Nominal high voltage rating of the interconnection transformer branch	[220] kV
High voltage range that the interconnection transformer branch can operate over	Maximum: [242] kV Minimum: [198] kV
Tapping steps and ranges KIK-TF-T2 KIK-TF-T2-Tap Changer	Tap voltage range: Maximum: [242] kV Minimum: [198] kV Number of tapping steps: [16] Size of each tapping step as a percentage of nominal operating voltage range: [1.25]% On-load/Off-load [Onload] On-load tapping capability [Manual] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [9]

Tapping steps and ranges KIK-TF-T2 KIK-TF-T2-Tap Changer -- OFFLOAD -- LV	Tap voltage range: Maximum: [11.55] kV Minimum: [10.45] kV Number of tapping steps: [5] Size of each tapping step as a percentage of nominal operating voltage range: [2.5]% On-load/Off-load [Offload] On-load tapping capability [Not Applicable] If on-load tapping capability is automatic, is it auto selected? [Not Applicable] If on-load tapping capability is manual, what tap step is normally set? (Actual or expected position at winter peak demand) [Not Applicable]