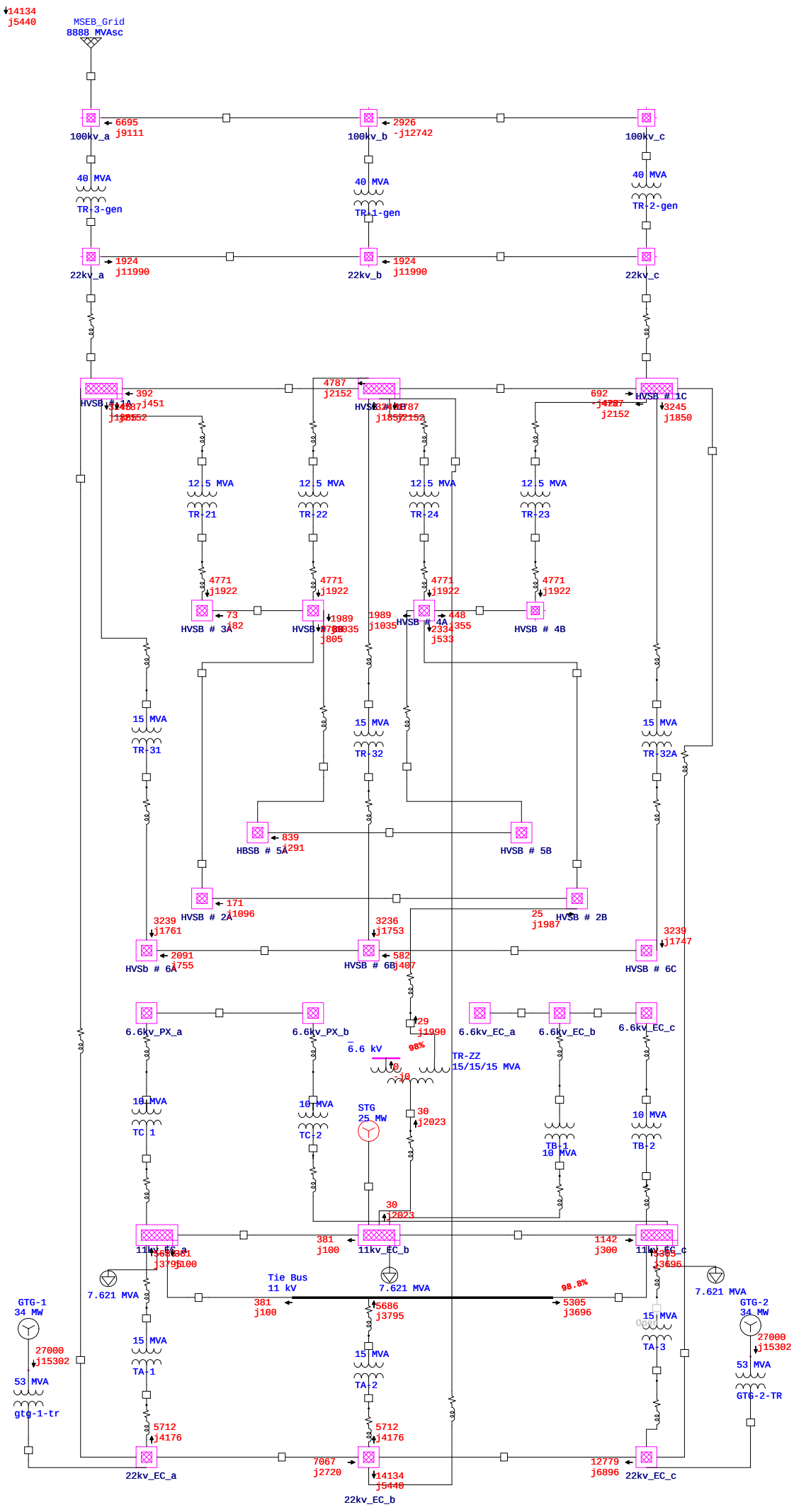
14134
j5440
MSEB_Grid
8888 MVAsc
100kv_a
6695
j9111
100kv_b
2926
-j12742
100kv_c
40 MVA
TR-3-gen
40 MVA
TR-1-gen
40 MVA
TR-2-gen
22kv_a
1924
j11990
22kv_b
1924
j11990
22kv_c
HVSB # 1A
392
j451
4787
j2152
HVSB # 1C
692
-j1227
j2152
3245
j1850
12.5 MVA
TR-21
12.5 MVA
TR-22
12.5 MVA
TR-24
12.5 MVA
TR-23
4771
j1922
4771
j1922
4771
j1922
4771
j1922
HVSB # 3A
73
j82
1989
j1035
HVSB # 4A
448
2334
j533
355
HVSB # 4B
15 MVA
TR-31
15 MVA
TR-32
15 MVA
TR-32A
HBSB # 5A
839
j291
HVSB # 5B
HVSB # 2A
171
j1096
HVSB # 2B
25
j1987
3239
j1761
3236
j1753
3239
j1747
HVSb # 6A
2091
j755
HVSB # 6B
582
j407
HVSB # 6C
6.6kv_PX_a
6.6kv_PX_b
6.6 kV
29
j1990
98%
TR-ZZ
15/15/15 MVA
6.6kv_EC_a
6.6kv_EC_b
6.6kv_EC_c
10 MVA
TC 1
10 MVA
TC-2
STG
25 MW
30
j2023
10 MVA
TB-1
10 MVA
TB-2
30
j2023
11kv_EC_a
381
j100
11kv_EC_b
1142
j300
11kv_EC_c
7.621 MVA
Tie Bus
11 kV
7.621 MVA
98.8%
7.621 MVA
GTG-1
34 MW
381
j100
5686
j3795
5305
j3696
GTG-2
34 MW
27000
j15302
15 MVA
TA-1
15 MVA
TA-2
15 MVA
TA-3
53 MVA
gtg-1-tr
53 MVA
GTG-2-TR
5712
j4176
5712
j4176
22kv_EC_a
7067
j2720
14134
j5440
22kv_EC_b
12779
j6896
22kv_EC_c

2-Winding Transformer Input Data

Transformer	Rating					Z Variation			% Tap Setting		Adjusted	Phase Shift	
ID	MVA	Prim. kV	Sec. kV	% Z	X/R	+ 5%	- 5%	% Tol.	Prim.	Sec.	% Z	Type	Angle
gtg-1-tr	53.000	11.000	22.000	17.86	34.10	0	0	0	0	0	17.8600	Std Pos. Seq.	0.000
GTG-2-TR	53.000	11.000	22.000	17.86	34.10	0	0	0	0	0	17.8600	Std Pos. Seq.	0.000
TA-1	15.000	11.000	22.000	11.20	18.60	0	0	0	0	0	11.2000	Std Pos. Seq.	0.000
TA-2	15.000	11.000	22.000	11.20	18.60	0	0	0	0	0	11.2000	Std Pos. Seq.	0.000
TB-1	10.000	6.600	11.000	7.32	15.50	0	0	0	0	0	7.3200	Std Pos. Seq.	0.000
TB-2	10.000	6.600	11.000	7.32	15.50	0	0	0	0	0	7.3200	Std Pos. Seq.	0.000
TC 1	10.000	6.600	11.000	7.30	15.50	0	0	0	0	0	7.3000	Std Pos. Seq.	0.000
TC-2	10.000	6.600	11.000	7.30	15.50	0	0	0	0	0	7.3000	Std Pos. Seq.	0.000
TR-1	2.000	22.000	0.433	6.45	7.10	0	0	0	0	0	6.4500	Std Pos. Seq.	0.000
TR-1-gen	40.000	100.000	22.000	14.30	27.30	0	0	0	0	0	14.3000	Std Pos. Seq.	0.000
TR-2-gen	40.000	100.000	22.000	14.30	27.30	0	0	0	0	0	14.3000	Std Pos. Seq.	0.000
TR-3	2.000	22.000	0.433	6.45	7.10	0	0	0	0	0	6.4500	Std Pos. Seq.	0.000
TR-3-gen	40.000	100.000	22.000	14.30	27.30	0	0	0	0	0	14.3000	Std Pos. Seq.	0.000
TR-4	2.000	22.000	0.433	6.50	7.10	0	0	0	0	0	6.5000	Std Pos. Seq.	0.000
TR-6	2.000	22.000	0.433	6.38	7.10	0	0	0	0	0	6.3800	Std Pos. Seq.	0.000
TR-7	2.000	22.000	0.433	6.35	7.10	0	0	0	0	0	6.3500	Std Pos. Seq.	0.000
TR-9	2.000	22.000	0.433	6.51	7.10	0	0	0	0	0	6.5100	Std Pos. Seq.	0.000
TR-11	2.000	6.600	0.433	6.33	7.10	0	0	0	0	0	6.3300	Std Pos. Seq.	0.000
TR-13	2.000	6.600	0.433	6.33	7.10	0	0	0	0	0	6.3300	Std Pos. Seq.	0.000
TR-14	2.000	6.600	0.400	6.31	7.10	0	0	0	0	0	6.3100	Std Pos. Seq.	0.000
TR-16	2.000	6.600	0.400	6.31	7.10	0	0	0	0	0	6.3100	Std Pos. Seq.	0.000
TR-17	2.000	6.600	0.433	6.41	7.10	0	0	0	0	0	6.4100	Std Pos. Seq.	0.000
TR-19	2.000	6.600	0.433	6.41	7.10	0	0	0	0	0	6.4100	Std Pos. Seq.	0.000
TR-21	12.500	22.000	6.600	10.74	18.60	0	0	0	0	0	10.7400	Std Pos. Seq.	0.000
TR-22	12.500	22.000	6.600	10.74	18.60	0	0	0	0	0	10.7400	Std Pos. Seq.	0.000
TR-23	12.500	22.000	6.600	10.74	18.60	0	0	0	0	0	10.7400	Std Pos. Seq.	0.000
TR-24	12.500	22.000	6.600	10.74	18.60	0	0	0	0	0	10.7400	Std Pos. Seq.	0.000
TR-26	2.000	22.000	0.433	6.44	7.10	0	0	0	0	0	6.4400	Std Pos. Seq.	0.000
TR-27	2.000	22.000	0.433	6.44	7.10	0	0	0	0	0	6.4400	Std Pos. Seq.	0.000
TR-30	2.000	6.600	0.433	7.05	7.10	0	0	0	0	0	7.0500	Std Pos. Seq.	0.000
TR-31	15.000	22.000	11.000	11.00	18.60	0	0	0	0	0	11.0000	Std Pos. Seq.	0.000
TR-32	15.000	22.000	11.000	11.00	18.60	0	0	0	0	0	11.0000	Std Pos. Seq.	0.000
TR-32A	15.000	22.000	11.000	11.00	18.60	0	0	0	0	0	11.0000	Std Pos. Seq.	0.000
TR-33	2.000	11.000	0.433	6.63	7.10	0	0	0	0	0	6.6300	Std Pos. Seq.	0.000

Transformer	Rating					Z Variation			% Tap Setting		Adjusted	Phase Shift	
ID	MVA	Prim. kV	Sec. kV	% Z	X/R	+ 5%	- 5%	% Tol.	Prim.	Sec.	% Z	Type	Angle
TR-35	1.600	11.000	0.433	6.70	7.10	0	0	0	0	0	6.7000	Std Pos. Seq.	0.000
TR-36	1.600	11.000	0.433	6.70	7.10	0	0	0	0	0	6.7000	Std Pos. Seq.	0.000
TR-CH-A	1.600	11.000	0.433	6.50	7.10	0	0	0	0	0	6.5000	Std Pos. Seq.	0.000
TR-CH-B	1.600	11.000	0.433	6.50	7.10	0	0	0	0	0	6.5000	Std Pos. Seq.	0.000
TR-CH-C	1.600	11.000	0.433	6.50	7.10	0	0	0	0	0	6.5000	Std Pos. Seq.	0.000
TR-CP7-1	3.500	11.000	0.433	6.66	11.41	0	0	0	0	0	6.6600	Std Pos. Seq.	0.000
TR-CP7-3	3.500	11.000	0.433	6.66	11.41	0	0	0	0	0	6.6600	Std Pos. Seq.	0.000
TR-CP7-4	2.500	11.000	0.433	7.37	10.67	0	0	0	0	0	7.3700	Std Pos. Seq.	0.000
TR-CP7-6	2.500	11.000	0.433	7.37	10.67	0	0	0	0	0	7.3700	Std Pos. Seq.	0.000
TR DG Aux	0.315	6.600	0.433	4.49	4.70	0	0	0	0	0	4.4900	Std Pos. Seq.	0.000
TR-DL2	1.350	6.600	0.433	5.80	7.10	0	0	0	0	0	5.8000	Std Pos. Seq.	0.000
TR- DL3	2.250	6.600	0.433	7.45	10.67	0	0	0	0	0	7.4500	Std Pos. Seq.	0.000
TR-DL4	2.250	6.600	0.433	7.45	10.67	0	0	0	0	0	7.4500	Std Pos. Seq.	0.000
TR-LP-I	1.500	11.000	0.433	6.20	7.10	0	0	0	0	0	6.2000	Std Pos. Seq.	0.000
TR-UTL1	2.500	11.000	0.433	7.20	10.67	0	0	0	0	0	7.2000	Std Pos. Seq.	0.000
TR-UTL-2	2.500	11.000	0.433	7.20	10.67	0	0	0	0	0	7.2000	Std Pos. Seq.	0.000

2-Winding Transformer Load Tap Changer (LTC) Settings

Transformer	Connected Buses ("*" LTC Side)		Transformer Load Tap Changer Setting					
ID	Primary Bus ID	Secondary Bus ID	% Min. Tap	% Max. Tap	% Step	Regulated Bus ID	% V	kV
TA-1	* Bus236	Bus237	-10.00	10.00	1.250	Bus236	100.00	11.000
TA-2	* Bus43	Bus17	-10.00	10.00	1.250	Bus43	100.00	11.000
TR-1-gen	* 100kv_100kv_b	22kv_100kv_b	-10.00	10.00	1.250	100kv_100kv_b	100.00	100.000
TR-2-gen	* 100kv_100kv_c	22kv_100kv_c	-10.00	10.00	1.250	22kv_100kv_c	100.00	22.000
TR-3-gen	* 100kv_100kv_a	22kv_100kv_a	-10.00	10.00	1.250	22kv_100kv_a	100.00	22.000
TR-21	* n_tr-21	n_tr-21_2	-10.00	10.00	1.250	n_tr-21_2	100.00	6.600
TR-22	* n_tr-22	n_tr-22_2	-10.00	10.00	1.250	n_tr-22_2	100.00	6.600
TR-23	* n_tr-23	n_tr-23_2	-10.00	10.00	1.250	n_tr-23_2	100.00	6.600
TR-24	* n_tr-24	n_tr-24_2	-10.00	10.00	1.250	n_tr-24_2	100.00	6.600

3-Winding Transformer Input Data

Transformer		Rating		Tap	Impedance				Z Variation		Phase Shift	
ID	Winding	MVA	kV	%	% Z		X/R	MVAb	% Tol.	+ 5%	- 5%	Type	Angle
TR-ZZ	Primary:	15.000	11.000	0	Zps =	11.64	20.00	15.000	0	0	0		
	Secondary:	15.000	6.600	0	Zpt =	11.42	20.00	15.000	0			Std Pos. Seq.	0.000
	Tertiary:	15.000	6.600	0	Zst =	11.37	18.60	15.000	0			Std Pos. Seq.	0.000

Line/Cable Input Data

Line/Cable			Ohms or Siemens/1000 m per Conductor (Cable) or per Phase (Line)						
			Length						
ID	Library	Size	Adj. (m)	% Tol.	#/Phase	T (°C)	R	X	Y
CHW-A Cable	6.6NALS3	300	150.0	0.0	1	75	0.130000	0.105000	
CHW-B Cable	6.6NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
CHW-C Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
FIB Incomer-2 Cable	33NCUN3	300	300.0	0.0	3	75	0.076302	0.105000	0.0000811
FIB- Incomer 1 Cable	33NCUN3	300	300.0	0.0	3	75	0.076302	0.105000	0.0000811
HP-A Cable	6.6NALS3	300	70.0	0.0	1	75	0.130000	0.105000	
HP-C Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
Incomer-1 Cable	6.6NALS3	400	50.0	0.0	2	75	0.102000	0.090000	
Incomer-2 Cable	6.6NALS3	400	50.0	0.0	2	75	0.102000	0.090000	
LA Cable	6.6NALS3	300	100.0	0.0	4	75	0.130000	0.105000	
LB Cable	6.6NALS3	300	100.0	0.0	4	75	0.130000	0.105000	
LLP-J Cable	11NALS3	400	250.0	0.0	2	75	0.102000	0.090000	
LP-A Cable	6.6NALS3	300	70.0	0.0	1	75	0.130000	0.105000	
LP-B Cable	6.6NALS3	300	70.0	0.0	1	75	0.130000	0.105000	
LP-C Cable	6.6NALS3	300	70.0	0.0	1	75	0.130000	0.105000	
LP-D Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
LP-H Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
LP-K Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
McQy -1 Cable	6.6NALS3	400	12.2	0.0	1	75	0.102000	0.090000	
McQy-2 Cable	6.6NALS3	300	70.0	0.0	1	75	0.130000	0.105000	
McQy-3 Cable	6.6NALS3	300	70.0	0.0	1	75	0.130000	0.105000	
McQy-4 Cable	6.6NALS3	400	40.0	0.0	1	75	0.102000	0.090000	
McQy-5 Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
McQy-6 Cable	6.6NALS3	300	70.0	0.0	1	75	0.130000	0.105000	
Offsite-A Cable	6.6NALS3	300	150.0	0.0	1	75	0.130000	0.105000	
Offsite B Cable	6.6NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
Offsite C Cable	6.6NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
Offsite D Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
TA-1 Cable P	11NALS3	300	300.0	0.0	3	75	0.130000	0.105000	
TA-1 Cable S	22NALS3	300	250.0	0.0	3	75	0.130000	0.105000	
TA-2 Cable P	11NALS3	300	300.0	0.0	3	75	0.130000	0.105000	
TA-2 Cable S	22NALS3	300	250.0	0.0	3	75	0.130000	0.105000	
TA-3 Cable P	11NALS3	300	350.0	0.0	3	75	0.130000	0.105000	
TA-3 Cable S	22NALS3	300	250.0	0.0	2	75	0.130000	0.105000	

Line/Cable	Ohms or Siemens/1000 m per Conductor (Cable) or per Phase (Line)								
			Length						
ID	Library	Size	Adj. (m)	% Tol.	#/Phase	T (°C)	R	X	Y
TB-1 Cable P	6.6NALS3	400	50.0	0.0	1	75	0.102000	0.090000	
TB-1 Cable S	11NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
TB-2 Cable P	6.6NALS3	400	50.0	0.0	1	75	0.102000	0.090000	
TB-2 Cable S	11NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
TC-1 Cable P	6.6NALS3	400	20.0	0.0	2	75	0.102000	0.090000	
TC-1 Cable S	11NALS3	400	500.0	0.0	2	75	0.102000	0.090000	
TC-2 Cable P	6.6NALS3	400	20.0	0.0	2	75	0.102000	0.090000	
TC-2 Cable S	11NALS3	400	500.0	0.0	2	75	0.102000	0.090000	
Tie-1 Cable	22NALS3	300	1200.0	0.0	3	75	0.130000	0.105000	
Tie-2 Cable	22NALS3	300	1200.0	0.0	3	75	0.130000	0.105000	
Tie-3 Cable	22NALS3	300	1200.0	0.0	3	75	0.130000	0.105000	
Tie-4 Cable	22NALS3	300	1600.0	0.0	3	75	0.130000	0.105000	
TR-1 Cable P	22NALS3	300	700.0	0.0	1	75	0.130000	0.105000	
TR-3 Cable P	22NALS3	300	700.0	0.0	1	75	0.130000	0.105000	
TR-4 Cable P	22NALS3	300	35.0	0.0	1	75	0.130000	0.105000	
TR-6 Cable P	22NALS3	300	35.0	0.0	1	75	0.130000	0.105000	
TR-7 Cable P	22NALS3	300	35.0	0.0	1	75	0.130000	0.105000	
TR-9 Cable P	22NALS3	300	35.0	0.0	1	75	0.130000	0.105000	
TR-11 Cable P	6.6NALS3	400	300.0	0.0	1	75	0.102000	0.090000	
TR-13 Cable P	6.6NALS3	400	300.0	0.0	1	75	0.102000	0.090000	
TR-14 Cable P	6.6NALS3	400	300.0	0.0	1	75	0.102000	0.090000	
TR-15 Cable P	6.6NALS3	400	300.0	0.0	1	75	0.102000	0.090000	
TR-16 Cable P	6.6NALS3	400	300.0	0.0	1	75	0.102000	0.090000	
TR-17 Cable P	6.6NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TR-19 Cable P	6.6NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TR-21 Cable P	22NALS3	300	100.0	0.0	1	75	0.130000	0.105000	
TR-21 Cable S	6.6NALS3	400	100.0	0.0	2	75	0.102000	0.090000	
TR-22 Cable P	22NALS3	300	100.0	0.0	1	75	0.130000	0.105000	
TR-22 Cable S	6.6NALS3	400	100.0	0.0	2	75	0.102000	0.090000	
TR-23 Cable P	22NALS3	300	100.0	0.0	1	75	0.130000	0.105000	
TR-23 Cable S	6.6NALS3	400	100.0	0.0	2	75	0.102000	0.090000	
TR-24 Cable P	22NALS3	300	100.0	0.0	1	75	0.130000	0.105000	
TR-24 Cable S	6.6NALS3	400	100.0	0.0	2	75	0.102000	0.090000	
TR-26 Cable P	22NALS3	300	213.4	0.0	1	75	0.130000	0.105000	
TR-27 Cable P	22NALS3	300	700.0	0.0	1	75	0.130000	0.105000	
TR-30 Cable P	6.6NALS3	400	50.0	0.0	1	75	0.102000	0.090000	

Line/Cable	Ohms or Siemens/1000 m per Conductor (Cable) or per Phase (Line)								
			Length						
ID	Library	Size	Adj. (m)	% Tol.	#/Phase	T (°C)	R	X	Y
TR-31 Cable P	22NALS3	400	100.0	0.0	2	75	0.102000	0.090000	
TR-31 Cable S	11NALS1	630	100.0	0.0	3	75	0.060600	0.086000	
TR-32A Cable P	22NALS3	400	100.0	0.0	2	75	0.102000	0.090000	
TR-32A Cable S	11NALS3	400	100.0	0.0	2	75	0.102000	0.090000	
TR-32 Cable P	22NALS3	300	100.0	0.0	2	75	0.130000	0.105000	
TR-32 Cable S	11NALS1	630	100.0	0.0	2	75	0.060600	0.086000	
TR-33 Cable P	11NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TR-35 Cable P	11NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TR-36 Cable P	11NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TRANE-A Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
TRANE B Cable	6.6NALS3	400	70.0	0.0	1	75	0.102000	0.090000	
TR-CH-A Cable P	11NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
TR-CH-B Cable P	11NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
TR-CH-C Cable P	11NALS3	400	150.0	0.0	1	75	0.102000	0.090000	
TR-CP7-1 Cable P	11NALS3	400	450.0	0.0	1	75	0.102000	0.090000	
TR-CP7-3 Cable P	11NALS3	400	450.0	0.0	1	75	0.102000	0.090000	
TR-CP7-6 Cable P	11NALS3	400	450.0	0.0	1	75	0.102000	0.090000	
TR-CP7 4 Cable P	11NALS3	400	450.0	0.0	1	75	0.102000	0.090000	
TR-DG Aux Cable P	6.6NALS3	400	50.0	0.0	1	75	0.102000	0.090000	
TR-DL2 Cable P	6.6NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TR-DL3 Cable P	6.6NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TR-DL4 Cable P	6.6NALS3	400	700.0	0.0	1	75	0.102000	0.090000	
TR-LP-I Cable P	11NALS3	400	30.0	0.0	1	75	0.102000	0.090000	
TR-UTL-1 Cable P	11NALS3	400	110.0	0.0	1	75	0.102000	0.090000	
TR-UTL-2 Cable P	11NALS3	400	110.0	0.0	1	75	0.102000	0.090000	
TR ZZ Cable P	6.6NALS3	400	1200.0	0.0	3	75	0.102000	0.090000	
TR ZZ Cable S	6.6NALS3	300	50.0	0.0	2	75	0.130000	0.105000	

Line / Cable resistances are listed at the specified temperatures.