

**ANEXO 29**  
**RESULTADOS DE CORTOCIRCUITO**  
**ALTERNATIVA CON CENTROAMÉRICA Y**  
**COLOMBIA**

## **ÍNDICE GENERAL**

**1. Cortocircuito Año 2014**

**2. Cortocircuito Año 2017**

**3. Cortocircuito Año 2020**

# 1. Cortocircuito Año 2014

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, MAY 25 2010 14:52  
 PLAN DE EXPANSION DEL SIN JUNIO-2010 SHORT CIRCUIT  
 AÑO 2014 ESC-MOD DEMANDA-MAX-INVIERNO FAULT CURRENTS  
 OUTPUT FOR AREA 6 [PANAMA ]

X-----	BUS	-----X	THREE PHASE FAULT		ONE PHASE FAULT		
			/I+/ AN(I+)	/IA/ AN(IA)			
1	[PAN230	230.00]	AMPS	9626.9	-81.73	8873.1	-84.57
2	[PAN115	115.00]	AMPS	15974.7	-82.98	15654.7	-87.50
3	[PANII230	230.00]	AMPS	10764.3	-82.96	11215.6	-85.62
4	[PANII115	115.00]	AMPS	12789.0	-86.57	8466.5	-91.15
5	[CHO230	230.00]	AMPS	6821.2	-80.75	6772.9	-83.57
6	[CHO115	115.00]	AMPS	4418.0	-90.96	0.0	0.00
8	[LSA230	230.00]	AMPS	6792.1	-74.16	5924.7	-74.86
9	[LSA115	115.00]	AMPS	5934.3	-79.48	4125.8	-84.32
11	[M.N230	230.00]	AMPS	8121.6	-64.93	8180.4	-64.90
12	[M.N115	115.00]	AMPS	6070.4	-63.03	3657.7	-52.61
14	[PRO230	230.00]	AMPS	5364.8	-64.21	5594.6	-66.05
15	[PRO115	115.00]	AMPS	3146.9	-70.10	0.0	0.00
18	[CAC115	115.00]	AMPS	15721.8	-83.01	15431.7	-87.19
19	[C.V115	115.00]	AMPS	10902.0	-85.35	6861.3	-88.16
20	[CH.AZUL	115.00]	AMPS	1898.1	-66.43	0.0	0.00
21	[C.BAN115	115.00]	AMPS	13493.9	-82.94	9637.8	-84.98
23	[CH115	115.00]	AMPS	6830.1	-86.29	4635.7	-87.76
26	[LOC115	115.00]	AMPS	13967.1	-82.71	11154.0	-84.36
30	[MAR115	115.00]	AMPS	11999.9	-82.88	8809.4	-85.16
33	[STM115	115.00]	AMPS	13842.9	-83.10	12269.7	-86.86
37	[SAN115	115.00]	AMPS	12724.7	-83.43	8309.3	-86.04
48	[TINAJ115	115.00]	AMPS	11240.2	-84.64	7805.4	-87.57
50	[M.O115	115.00]	AMPS	12126.9	-84.30	8974.8	-87.64
52	[TOC115	115.00]	AMPS	9495.0	-86.78	5119.7	-88.09
54	[LM1115	115.00]	AMPS	10816.9	-87.37	13150.1	-89.56
55	[LM2115	115.00]	AMPS	10824.1	-87.48	13155.8	-89.65
61	[FFIELD	115.00]	AMPS	8244.6	-87.59	8573.7	-84.31
85	[PTP230	230.00]	AMPS	4567.2	-64.43	4429.1	-57.93
87	[CAL115	115.00]	AMPS	6085.6	-60.19	7959.1	-59.31
88	[EST115	115.00]	AMPS	5360.2	-58.77	7433.7	-58.85
92	[L.V115	115.00]	AMPS	5810.4	-59.61	8025.4	-59.66
96	[FOR230	230.00]	AMPS	8481.2	-65.35	9750.9	-64.16
100	[BAY230	230.00]	AMPS	6091.6	-84.16	6398.1	-86.24
103	[COPESA23	230.00]	AMPS	8175.6	-83.42	7856.0	-85.18
105	[PAN-AM23	230.00]	AMPS	6751.4	-80.84	6695.1	-83.64
109	[STA RITA115	115.00]	AMPS	10680.5	-87.44	10164.2	-87.20
115	[PACORA23	230.00]	AMPS	7081.9	-83.51	6148.0	-84.47
144	[CANJ230	230.00]	AMPS	7365.5	-66.02	7849.1	-64.61
146	[GUALACA230	230.00]	AMPS	7005.9	-59.25	8036.8	-60.37
147	[GUASQ230	230.00]	AMPS	7738.8	-66.10	8671.4	-65.10
148	[VELADERO 230	230.00]	AMPS	7778.0	-69.05	6395.6	-67.29
149	[BBLANCO	230.00]	AMPS	6575.3	-69.12	4998.0	-66.83
154	[CEMPAN15	115.00]	AMPS	6713.7	-87.21	6557.5	-89.95
190	[CHANG230	230.00]	AMPS	5176.2	-64.20	4010.3	-61.78
191	[CHANG115	115.00]	AMPS	3394.3	-68.41	3837.0	-68.32
306	[CHAN1 230	230.00]	AMPS	5246.2	-63.77	5797.3	-60.42
310	[CONCEPCION23	230.00]	AMPS	6059.9	-64.27	4966.4	-63.99
311	[PANDO230	230.00]	AMPS	4600.2	-66.77	3543.8	-68.64
341	[PRUDENCIA230	230.00]	AMPS	5379.5	-46.55	6037.4	-46.58
345	[LORENA230	230.00]	AMPS	6096.6	-52.00	6960.1	-52.94
354	[SANBARTOLO23	230.00]	AMPS	4881.7	-72.43	3955.1	-71.23
370	[LSA CAP 230	230.00]	AMPS	6792.1	-74.16	5924.7	-74.86
371	[CAISAN230	230.00]	AMPS	4912.3	-66.75	3411.9	-67.09
511	[LGUIAS230	230.00]	AMPS	4186.8	-77.72	3698.8	-78.99
522	[TCATIVÁ 115	115.00]	AMPS	10820.1	-87.42	13168.8	-89.65
529	[TCOLON 115	115.00]	AMPS	7503.6	-88.50	0.0	0.00
540	[ANTON	230.00]	AMPS	3279.4	-83.61	4203.3	-83.35
700	[BAITUN230	230.00]	AMPS	4477.9	-63.82	4094.7	-63.71
701	[BAITUN115	115.00]	AMPS	1993.1	-67.46	2512.2	-67.15
702	[BJOMIN115	115.00]	AMPS	1830.3	-66.09	2363.6	-66.15
6000	[FRONTER	230.00]	AMPS	5184.9	-64.48	5144.0	-65.88
6400	[FRONTCHA	230.00]	AMPS	4579.0	-64.30	3202.4	-61.13
6500	[FRONT CAISAN	230.00]	AMPS	4932.3	-66.54	3237.1	-66.58

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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, MAY 25 2010 14:52  
PLAN DE EXPANSION DEL SIN JUNIO-2010 SHORT CIRCUIT  
AÑO 2014 ESC-MOD DEMANDA-MAX-INVIERNO FAULT CURRENTS  
OUTPUT FOR AREA 7 [ACANAL ]

		THREE PHASE FAULT		ONE PHASE FAULT	
X-----	BUS -----X	/I+/ AN(I+)	/IA/ AN(IA)		
	123 [MIR115 115.00] AMPS	8726.6	-86.39	7939.3	-88.41

## 2. Cortocircuito Año 2017

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, MAY 25 2010 14:54  
PLAN DE EXPANSION DEL SIN JUNIO-2010 SHORT CIRCUIT  
AÑO 2017 ESC-MOD DEMANDA-MAX-INVIERNO FAULT CURRENTS  
OUTPUT FOR AREA 6 [PANAMA ]

		THREE PHASE FAULT		ONE PHASE FAULT	
X-----	BUS -----X	/I+/ AN(I+)	/IA/ AN(IA)		
1	[PAN230 230.00] AMPS	9574.8	-80.09	8832.5	-83.94
2	[PAN115 115.00] AMPS	16053.9	-81.56	15796.1	-87.08
3	[PANII230 230.00] AMPS	10728.6	-81.06	11136.8	-84.45
4	[PANII115 115.00] AMPS	14290.0	-84.92	10304.5	-90.84
5	[CHO230 230.00] AMPS	6816.6	-79.67	6682.1	-83.23
6	[CHO115 115.00] AMPS	4430.3	-91.10	0.0	0.00
8	[LSA230 230.00] AMPS	7541.0	-72.59	5825.8	-73.36
9	[LSA115 115.00] AMPS	6267.3	-78.71	4205.0	-83.99
11	[M.N230 230.00] AMPS	8973.8	-59.72	8749.3	-59.72
12	[M.N115 115.00] AMPS	6576.8	-55.76	3798.1	-45.12
14	[PRO230 230.00] AMPS	6092.8	-58.14	6103.1	-59.97
15	[PRO115 115.00] AMPS	3262.7	-63.84	0.0	0.00
18	[CAC115 115.00] AMPS	15808.5	-81.64	15572.3	-86.80
19	[C.V115 115.00] AMPS	11550.7	-84.21	7452.5	-87.91
20	[CH.AZUL 115.00] AMPS	1940.9	-59.95	0.0	0.00
21	[C.BAN115 115.00] AMPS	13671.2	-81.78	9815.2	-85.26
23	[CH115 115.00] AMPS	6881.9	-86.72	4651.5	-88.97
26	[LOC115 115.00] AMPS	14126.9	-81.50	11309.4	-84.48
30	[MAR115 115.00] AMPS	12103.6	-82.09	8889.1	-85.66
33	[STM115 115.00] AMPS	13917.4	-82.06	12362.9	-86.87
37	[SAN115 115.00] AMPS	12930.2	-82.38	8526.4	-86.42
48	[TINAJ115 115.00] AMPS	11310.7	-84.09	7852.0	-88.19
50	[M.O115 115.00] AMPS	12202.8	-83.57	9033.7	-88.10
52	[TOC115 115.00] AMPS	10302.8	-85.69	5734.8	-87.68
54	[LM1115 115.00] AMPS	10989.3	-87.46	13329.6	-89.98
55	[LM2115 115.00] AMPS	10991.2	-87.57	13329.7	-90.06
61	[FFIELD 115.00] AMPS	8349.4	-88.01	8634.8	-85.12
85	[PTP230 230.00] AMPS	4944.2	-59.26	4891.4	-53.46
87	[CAL115 115.00] AMPS	6952.8	-52.43	9063.5	-51.62
88	[EST115 115.00] AMPS	5962.5	-50.71	8209.0	-50.80
92	[L.V115 115.00] AMPS	6570.1	-51.73	9012.1	-51.76
96	[FOR230 230.00] AMPS	9324.9	-60.28	10516.5	-58.90
100	[BAY230 230.00] AMPS	5571.6	-83.24	6017.2	-85.76
103	[COPESA23 230.00] AMPS	8054.7	-82.15	7773.0	-84.61
105	[PAN-AM23 230.00] AMPS	6747.4	-79.78	6608.7	-83.32
109	[STA RITA115 115.00] AMPS	10879.9	-87.43	10290.5	-87.74
115	[PACORA23 230.00] AMPS	6918.1	-82.51	6061.7	-84.21
144	[CANJ230 230.00] AMPS	8245.5	-61.07	8578.8	-59.37
146	[GUALACA230 230.00] AMPS	7912.6	-54.43	8880.1	-55.31
147	[GUASQ230 230.00] AMPS	8721.0	-61.16	9571.6	-59.89
148	[VELADERO 230230.00] AMPS	8759.9	-65.44	6678.0	-63.55
149	[BBLANCO 230.00] AMPS	7254.3	-65.68	5152.6	-63.33
154	[CEMPAN15 115.00] AMPS	6766.0	-87.82	6593.5	-90.95
155	[TABASARAI23230.00] AMPS	6152.1	-64.86	5007.3	-63.44
190	[CHANG230 230.00] AMPS	5419.1	-59.21	5136.2	-58.30
191	[CHANG115 115.00] AMPS	3462.9	-63.49	4009.3	-63.79
306	[CHAN1 230 230.00] AMPS	5104.1	-58.44	5741.0	-55.37
310	[CONCEPCION23230.00] AMPS	6688.1	-58.50	5252.5	-58.14
311	[PANDO230 230.00] AMPS	5032.1	-60.95	3698.1	-62.71

341	[PRUDENCIA230	230.00]	AMPS	6007.1	-41.37	6588.0	-41.11
345	[LORENA230	230.00]	AMPS	6873.4	-47.26	7663.9	-47.87
354	[SANBARTOLO230	230.00]	AMPS	5283.7	-69.71	4053.4	-68.46
370	[LSA CAP 230	230.00]	AMPS	7541.0	-72.59	5825.8	-73.36
371	[CAISAN230	230.00]	AMPS	5367.7	-61.07	3541.6	-61.23
506	[CHAN2 230	230.00]	AMPS	5022.0	-58.97	5582.4	-59.49
511	[LGUIAS230	230.00]	AMPS	5859.0	-76.05	4672.5	-77.59
522	[TCATIVÁ 115	115.00]	AMPS	10989.8	-87.51	13346.2	-90.06
529	[TCOLON 115	115.00]	AMPS	7602.5	-88.96	0.0	0.00
540	[ANTON	230.00]	AMPS	5058.9	-81.77	5988.9	-81.83
700	[BAITUN230	230.00]	AMPS	5117.6	-57.51	4436.4	-57.10
701	[BAITUN115	115.00]	AMPS	2312.2	-57.60	2841.0	-57.20
702	[BJOMIN115	115.00]	AMPS	2164.1	-56.00	2725.6	-56.00
6000	[FRONTER	230.00]	AMPS	5788.7	-58.50	5525.5	-59.84
6400	[FRONTCHA	230.00]	AMPS	4752.4	-59.54	3880.9	-57.30
6500	[FRONT CAISAN230.00]	AMPS	5378.3	-60.87	3349.9	-60.73	

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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, MAY 25 2010 14:54  
PLAN DE EXPANSION DEL SIN JUNIO-2010 SHORT CIRCUIT  
AÑO 2017 ESC-MOD DEMANDA-MAX-INVIERNO FAULT CURRENTS  
OUTPUT FOR AREA 7 [ACANAL ]

				THREE PHASE FAULT		ONE PHASE FAULT	
X----- BUS -----X				/I+/	AN(I+)	/IA/	AN(IA)
123	[MIR115	115.00]	AMPS	8765.7	-86.63	7972.1	-89.19

### 3. Cortocircuito Año 2020

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, MAY 25 2010 14:56  
PLAN DE EXPANSION DEL SIN JUNIO-2010 SHORT CIRCUIT  
AÑO 2020 ESC-MOD DEMANDA-MAX-INVIERNO FAULT CURRENTS  
OUTPUT FOR AREA 6 [PANAMA ]

				THREE PHASE FAULT		ONE PHASE FAULT	
X----- BUS -----X				/I+/	AN(I+)	/IA/	AN(IA)
1	[PAN230	230.00]	AMPS	10799.5	-81.11	9466.4	-85.54
2	[PAN115	115.00]	AMPS	17697.2	-82.57	16859.7	-88.74
3	[PANI230	230.00]	AMPS	12566.4	-81.81	12534.8	-85.60
4	[PANI115	115.00]	AMPS	14442.8	-87.08	9880.5	-93.40
5	[CHO230	230.00]	AMPS	7321.8	-81.63	6949.1	-85.57
6	[CHO115	115.00]	AMPS	4464.2	-93.74	0.0	0.00
8	[LSA230	230.00]	AMPS	8026.4	-76.07	6010.5	-77.03
9	[LSA115	115.00]	AMPS	6447.0	-82.38	4250.1	-88.21
11	[M.N230	230.00]	AMPS	9122.0	-64.93	8806.5	-65.01
12	[M.N115	115.00]	AMPS	6562.6	-61.22	3782.1	-50.56
14	[PRO230	230.00]	AMPS	6080.7	-63.39	6077.7	-65.29
15	[PRO115	115.00]	AMPS	3240.4	-69.23	0.0	0.00
18	[CAC115	115.00]	AMPS	17403.4	-82.68	16614.2	-88.47
19	[C.V115	115.00]	AMPS	11910.0	-86.04	7343.2	-90.34
20	[CH.AZUL	115.00]	AMPS	1926.2	-65.35	0.0	0.00
21	[C.BAN115	115.00]	AMPS	14788.7	-82.94	10047.8	-87.36
23	[CH115	115.00]	AMPS	7122.3	-88.00	4670.3	-90.51
26	[LOC115	115.00]	AMPS	15343.0	-82.58	11704.2	-86.34
30	[MAR115	115.00]	AMPS	12933.0	-83.47	9071.5	-87.79
33	[STM115	115.00]	AMPS	15075.8	-83.31	12910.9	-88.73
37	[SAN115	115.00]	AMPS	13887.6	-83.70	8637.7	-88.74
48	[TINAJ115	115.00]	AMPS	11997.7	-85.77	7973.7	-90.39
50	[M.O115	115.00]	AMPS	13039.3	-85.13	9241.5	-90.23
52	[TOC115	115.00]	AMPS	10307.0	-87.69	5535.5	-89.99
54	[LM115	115.00]	AMPS	12587.7	-87.91	15253.3	-90.16
55	[LM2115	115.00]	AMPS	12482.8	-87.68	15122.0	-89.92
61	[FFIELD	115.00]	AMPS	9182.2	-88.44	9315.8	-84.85
85	[PTP230	230.00]	AMPS	4954.8	-64.72	4885.3	-58.94
87	[CAL115	115.00]	AMPS	6937.0	-57.94	9040.7	-57.13
88	[EST115	115.00]	AMPS	5948.8	-56.25	8189.2	-56.33
92	[L.V115	115.00]	AMPS	6555.0	-57.24	8990.3	-57.27
96	[FOR230	230.00]	AMPS	9448.7	-65.75	10599.8	-64.39

100	[BAY230	230.00]	AMPS	6472.0	-84.34	6667.7	-86.89
103	[COPESA23	230.00]	AMPS	9085.0	-83.25	8376.7	-85.89
105	[PAN-AM23	230.00]	AMPS	7240.5	-81.76	6868.0	-85.67
109	[STA RITA115	115.00]	AMPS	13662.1	-88.07	15328.5	-90.07
115	[PACORA23	230.00]	AMPS	7713.8	-83.65	6426.7	-85.42
144	[CANJ230	230.00]	AMPS	8354.7	-66.37	8639.9	-64.69
146	[GUALACA230	230.00]	AMPS	8008.6	-59.56	8948.1	-60.52
147	[GUASQ230	230.00]	AMPS	8847.2	-66.45	9655.4	-65.19
148	[VELADERO 230	230.00]	AMPS	9088.0	-70.12	6776.8	-68.22
149	[BBLANCO	230.00]	AMPS	7505.0	-70.28	5216.4	-67.91
154	[CEMPAN15	115.00]	AMPS	7094.2	-88.59	6755.9	-91.81
155	[TABASARAI23	230.00]	AMPS	6291.1	-69.54	5050.4	-68.12
190	[CHANG230	230.00]	AMPS	5409.1	-64.96	5136.5	-64.15
191	[CHANG115	115.00]	AMPS	3451.4	-69.34	4050.7	-69.71
306	[CHAN1 230	230.00]	AMPS	5092.0	-64.26	5719.6	-61.21
310	[CONCEPCION23	230.00]	AMPS	6707.4	-63.75	5235.3	-63.47
311	[PANDO230	230.00]	AMPS	4956.5	-66.34	3656.3	-68.18
325	[STA RITA230	230.00]	AMPS	8650.8	-86.68	10511.8	-88.63
341	[PRUDENCIA230	230.00]	AMPS	6048.2	-46.37	6612.5	-46.22
345	[LORENA230	230.00]	AMPS	6935.8	-52.29	7706.1	-53.00
354	[SANBARTOLO23	230.00]	AMPS	5420.9	-74.09	4097.7	-72.84
370	[LSA CAP 230	230.00]	AMPS	8026.4	-76.07	6010.5	-77.03
371	[CAISAN230	230.00]	AMPS	5302.8	-66.44	3507.6	-66.68
506	[CHAN2 230	230.00]	AMPS	5011.5	-64.67	5568.3	-65.22
511	[LGUIAS230	230.00]	AMPS	6169.7	-79.01	4780.1	-80.75
522	[TCATIVÁ 115	115.00]	AMPS	12534.4	-87.79	15205.8	-90.09
529	[TCOLON 115	115.00]	AMPS	8819.1	-89.44	0.0	0.00
540	[ANTON	230.00]	AMPS	5285.7	-84.52	6184.0	-84.55
700	[BAITUN230	230.00]	AMPS	5098.9	-62.76	4410.4	-62.41
701	[BAITUN115	115.00]	AMPS	2288.9	-62.53	2811.9	-62.13
702	[BJOMIN115	115.00]	AMPS	2142.3	-60.86	2697.9	-60.86
6000	[FRONTER	230.00]	AMPS	5768.8	-63.79	5496.6	-65.20
6400	[FRONTCHA	230.00]	AMPS	4740.0	-65.32	3874.6	-63.15
6500	[FRONT CAISAN230.00]	AMPS	5318.6	-66.25	3319.4	-66.18	

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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E      TUE, MAY 25 2010 14:56  
PLAN DE EXPANSION DEL SIN JUNIO-2010      SHORT CIRCUIT  
AÑO 2020 ESC-MOD DEMANDA-MAX-INVIERNO      FAULT CURRENTS  
OUTPUT FOR AREA 7 [ACANAL      ]

X----- BUS -----X	THREE PHASE FAULT		ONE PHASE FAULT	
	/I+/ AN(I+)		/IA/ AN(IA)	
123 [MIR115      115.00] AMPS	9088.1	-88.85	8085.0	-91.52