

ANEXO 23

RESULTADOS DE FLUJOS DE POTENCIA

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5.1. Demanda Máxima de Verano

5.2. Demanda Mínima de Verano

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5.3.1. Contingencia Llano Sánchez-Panamá II

5.3.2. Contingencia Guasquitas-Veladero

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:48
 PLAN DE EXP-SIN CON C.A. MAYO 2009
 Año 2009 ESC MOD DEM MAX VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	1.0142	233.26	3		PANII230		230.00	6	1.0176	234.06
5		CHO230		230.00	6	1.0224	235.16	8		LSA230		230.00	6	1.0404	239.30
11		M.N230		230.00	6	1.0345	237.94	14		PRO230		230.00	6	1.0382	238.79
85		PTP230		230.00	6	1.0232	235.33	96		FOR230		230.00	6	1.0274	236.31
100		BAY230		230.00	6	1.0374	238.60	103		COPESA23		230.00	6	1.0210	234.82
105		PAN-AM23		230.00	6	1.0224	235.16	115		PACORA23		230.00	6	1.0239	235.50
144		CANJ230		230.00	6	1.0326	237.49	147		GUASQ230		230.00	6	1.0327	237.51
148		VELADERO		230.00	6	1.0443	240.19	190		CHANG230		230.00	6	1.0232	235.35
6000		FRONTER		230.00	6	1.0386	238.89								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
* NONE *															

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:48
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BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0069	115.79	4		PANII115		115.00	6	1.0190	117.18
6		CHO115		115.00	6	1.0234	117.69	9		LSA115		115.00	6	1.0745	123.57
12		M.N115		115.00	6	1.0307	118.53	15		PRO115		115.00	6	1.0400	119.60
18		CAC115		115.00	6	1.0068	115.78	19		C.V115		115.00	6	1.0088	116.01
20		CH.AZUL		115.00	6	1.0408	119.69	21		C.BAN115		115.00	6	1.0002	115.03
23		CH115		115.00	6	1.0085	115.98	26		LOC115		115.00	6	1.0008	115.09
33		STM115		115.00	6	1.0053	115.61	48		TINAJ115		115.00	6	1.0050	115.58
50		M.O115		115.00	6	1.0051	115.59	52		TOC115		115.00	6	1.0168	116.93
54		LM1115		115.00	6	1.0274	118.15	55		LM2115		115.00	6	1.0283	118.25
61		FFIELD		115.00	6	1.0259	117.98	87		CAL115		115.00	6	1.0331	118.81
88		EST115		115.00	6	1.0336	118.87	92		L.V115		115.00	6	1.0333	118.83
109		STA RITA115		115.00	6	1.0252	117.89	123		MIR115		115.00	7	1.0131	116.50
154		CEMPAN15		115.00	6	1.0303	118.48	191		CHANG115		115.00	6	1.0198	117.28
522		TCATIVÁ 115		115.00	6	1.0281	118.23								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
* NONE *															

30 MAR115 115.00 6 0.9994 114.93 37 SAN115 115.00 6 0.9999 114.99

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:48
 PLAN DE EXP-SIN CON C.A. MAYO 2009
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AREA 6 [PANAMA] MACHINE SUMMARY:																	
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
66		BLM13B		13.800	V2	28.0	1.2	25.0	0.0	0.9800	28.6	0.9991	47.0			1	6
67		BLM13C		13.800	V3	28.0	1.2	25.0	0.0	0.9800	28.6	0.9991	47.0			1	6
68		BLM13D		13.800	V4	28.0	1.2	25.0	0.0	0.9800	28.6	0.9991	47.0			1	6
90		EST-13L		13.800	E1	22.0	-0.6	12.0	-5.0	0.9800	22.5	0.9996	27.0			1	6
94		LV-13.8L		13.800	L1	24.0	-0.4	12.0	-5.0	0.9800	24.5	0.9999	27.0			1	6
97		FOR13A		13.800	F1	95.0	-37.3	50.0	-50.0	0.9800	104.2	0.9308	111.0			1	6
98		FOR13B		13.800	F2	95.0	-37.3	50.0	-50.0	0.9800	104.2	0.9308	111.0			1	6
99		FOR13C		13.800	F3	95.0	-37.3	50.0	-50.0	0.9800	104.2	0.9308	111.0			1	6
101		BAY13A		13.800	B1	45.8	10.8	50.0	-25.0	1.0000	47.1	0.9735	96.0			1	6
102		BAY13B		13.800	B2	64.1	12.1	50.0	-25.0	1.0000	65.3	0.9828	96.0			1	6
106		PANAM13A		13.800	M1	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7			1	6
106		PANAM13A		13.800	M2	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7			1	6
106		PANAM13A		13.800	M3	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7			1	6
107		PANAM13B		13.800	M4	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7			1	6
107		PANAM13B		13.800	M5	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7			1	6
107		PANAM13B		13.800	M6	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7			1	6
108		BAY13C		13.800	B3	64.1	12.1	50.0	-25.0	1.0000	65.3	0.9828	100.0			1	6
116		PACORA13		13.800	P1	17.5	0.0	8.8	0.0	1.0151	17.2	1.0000	21.7			1	6
116		PACORA13		13.800	P2	17.5	0.0	8.8	0.0	1.0151	17.2	1.0000	21.7			1	6
116		PACORA13		13.800	P3	17.5	0.0	8.8	0.0	1.0151	17.2	1.0000	21.7			1	6
142		CANJ13A		13.800	C1	50.0	7.6	29.0	-29.0	0.9800	51.6	0.9887	69.0			1	6
143		CANJ13B		13.800	C2	50.0	7.6	29.0	-29.0	0.9800	51.6	0.9887	69.0			1	6
301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9843	9.8	0.8566	13.5			1	6
302		PASOANCH13.8		13.800	P1	3.7	2.0	2.0	-2.0	0.9824	4.3	0.8797	6.2			1	6
521		EGIRAL13.8		113.800	G1	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8			1	6
521		EGIRAL13.8		113.800	G2	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8			1	6
521		EGIRAL13.8		113.800	G3	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8			1	6
521		EGIRAL13.8		113.800	G4	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8			1	6
523		TCATIVÁ 13A		13.800	G1	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
523		TCATIVÁ 13A		13.800	G2	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
523		TCATIVÁ 13A		13.800	G3	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
523		TCATIVÁ 13A		13.800	G4	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
523		TCATIVÁ 13A		13.800	G5	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
524		TCATIVÁ 13B		13.800	10	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
524		TCATIVÁ 13B		13.800	G6	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
524		TCATIVÁ 13B		13.800	G7	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
524		TCATIVÁ 13B		13.800	G8	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
524		TCATIVÁ 13B		13.800	G9	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9			1	6
531		EGIRAL13.8		213.800	G5	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9			1	6

531 EGIRAL13.8	213.800	G6	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9	1	6
531 EGIRAL13.8	213.800	G7	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9	1	6
531 EGIRAL13.8	213.800	G8	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9	1	6
SUBSYSTEM TOTALS			974.1	0.7	646.9	-348.4				1339.3		

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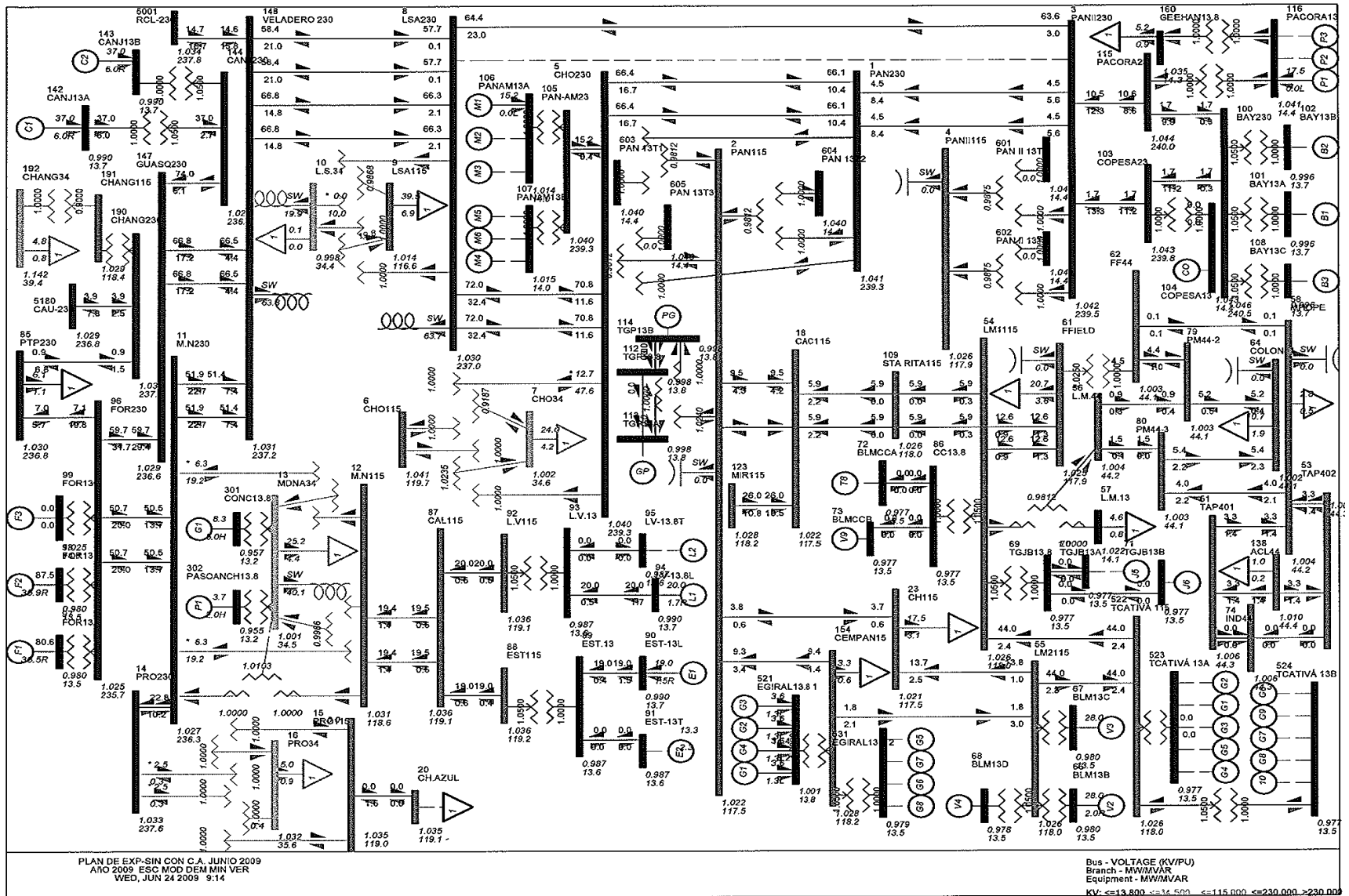
AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0067	34.8	1.0000	44.1			2	7
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0197	16.8	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.7	2.0	-2.0	1.0000	2.1	0.9351	4.1			2	7
140		GAT6A		6.9000	G2	1.9	-0.7	2.0	-2.0	1.0000	2.1	0.9351	4.1			2	7
140		GAT6A		6.9000	G3	1.9	-0.7	2.0	-2.0	1.0000	2.1	0.9351	4.1			2	7
141		GAT6B		6.9000	G4	3.9	-1.5	3.0	-3.0	1.0000	4.1	0.9338	5.6			2	7
141		GAT6B		6.9000	G5	3.9	-1.5	3.0	-3.0	1.0000	4.1	0.9338	6.2			2	7
141		GAT6B		6.9000	G6	3.9	-1.5	3.0	-3.0	1.0000	4.1	0.9338	6.2			2	7
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0340	17.7	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0430	17.6	0.9281	23.0			2	7
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0430	17.6	0.9281	23.0			2	7
SUBSYSTEM TOTALS						120.5	13.8	71.5	5.5				171.3				

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
66		BLM13B		13.800	V2	28.0	1.2	25.0	0.0	0.9800	28.6	0.9991	47.0								1	6	
67		BLM13C		13.800	V3	28.0	1.2	25.0	0.0	0.9800	28.6	0.9991	47.0								1	6	
68		BLM13D		13.800	V4	28.0	1.2	25.0	0.0	0.9800	28.6	0.9991	47.0								1	6	
90		EST-13L		13.800	E1	22.0	-0.6	12.0	-5.0	0.9800	22.5	0.9996	27.0								1	6	
94		LV-13.8L		13.800	L1	24.0	-0.4	12.0	-5.0	0.9800	24.5	0.9999	27.0								1	6	
97		FOR13A		13.800	F1	95.0	-37.3	50.0	-50.0	0.9800	104.2	0.9308	111.0								1	6	
98		FOR13B		13.800	F2	95.0	-37.3	50.0	-50.0	0.9800	104.2	0.9308	111.0								1	6	
99		FOR13C		13.800	F3	95.0	-37.3	50.0	-50.0	0.9800	104.2	0.9308	111.0								1	6	
101		BAY13A		13.800	B1	45.8	10.8	50.0	-25.0	1.0000	47.1	0.9735	96.0								1	6SYST	
102		BAY13B		13.800	B2	64.1	12.1	50.0	-25.0	1.0000	65.3	0.9828	96.0								1	6	
106		PANAM13A		13.800	M1	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7								1	6	
106		PANAM13A		13.800	M2	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7								1	6	
106		PANAM13A		13.800	M3	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7								1	6	
107		PANAM13B		13.800	M4	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7								1	6	
107		PANAM13B		13.800	M5	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7								1	6	
107		PANAM13B		13.800	M6	15.2	1.2	9.0	0.0	1.0000	15.2	0.9971	20.7								1	6	
108		BAY13C		13.800	B3	64.1	12.1	50.0	-25.0	1.0000	65.3	0.9828	100.0								1	6	
116		PACORA13		13.800	P1	17.5	0.0	8.8	0.0	1.0151	17.2	1.0000	21.7								1	6	
116		PACORA13		13.800	P2	17.5	0.0	8.8	0.0	1.0151	17.2	1.0000	21.7								1	6	
116		PACORA13		13.800	P3	17.5	0.0	8.8	0.0	1.0151	17.2	1.0000	21.7								1	6	
142		CANJ13A		13.800	C1	50.0	7.6	29.0	-29.0	0.9800	51.6	0.9887	69.0								1	6	
143		CANJ13B		13.800	C2	50.0	7.6	29.0	-29.0	0.9800	51.6	0.9887	69.0								1	6	
301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9843	9.8	0.8566	13.5								1	6	
302		PASOANCH13.8		13.800	P1	3.7	2.0	2.0	-2.0	0.9824	4.3	0.8797	6.2								1	6	
521		EGIRAL13.8		113.800	G1	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8								1	6	
521		EGIRAL13.8		113.800	G2	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8								1	6	
521		EGIRAL13.8		113.800	G3	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8								1	6	
521		EGIRAL13.8		113.800	G4	3.6	1.3	2.8	1.3	1.0035	3.8	0.9407	4.8								1	6	
523		TCATIVÁ	13A	13.800	G1	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
523		TCATIVÁ	13A	13.800	G2	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
523		TCATIVÁ	13A	13.800	G3	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
523		TCATIVÁ	13A	13.800	G4	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
523		TCATIVÁ	13A	13.800	G5	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
524		TCATIVÁ	13B	13.800	10	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
524		TCATIVÁ	13B	13.800	G6	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
524		TCATIVÁ	13B	13.800	G7	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
524		TCATIVÁ	13B	13.800	G8	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
524		TCATIVÁ	13B	13.800	G9	8.3	2.9	6.6	-6.6	1.0000	8.7	0.9444	10.9								1	6	
531		EGIRAL13.8		213.800	G5	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9								1	6	
531		EGIRAL13.8		213.800	G6	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9								1	6	
531		EGIRAL13.8		213.800	G7	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9								1	6	
531		EGIRAL13.8		213.800	G8	8.1	3.0	6.4	3.0	1.0045	8.6	0.9374	10.9								1	6	
SUBSYSTEM TOTALS						974.1	0.7	646.9	-348.4				1339.3										

1.2. Demanda Mínima de Verano



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:55
 PLAN DE EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MIN VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	1.0405	239.33	3		PANII230		230.00	6	1.0415	239.55
5		CHO230		230.00	6	1.0403	239.27	8		LSA230		230.00	6	1.0304	236.98
11		M.N230		230.00	6	1.0273	236.28	14		PRO230		230.00	6	1.0328	237.55
85		PTP230		230.00	6	1.0296	236.81	96		FOR230		230.00	6	1.0250	235.74
100		BAY230		230.00	6	1.0455	240.47	103		COPESA23		230.00	6	1.0426	239.81
105		PAN-AM23		230.00	6	1.0403	239.27	115		PACORA23		230.00	6	1.0436	240.02
144		CANJ230		230.00	6	1.0286	236.59	147		GUASQ230		230.00	6	1.0286	236.57
148		VELADERO	230	230.00	6	1.0313	237.19	190		CHANG230		230.00	6	1.0305	237.01
6000		FRONTER		230.00	6	1.0334	237.67								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)

* NONE *

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:55
 PLAN DE EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MIN VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0220	117.53	4		PANII115		115.00	6	1.0256	117.95
6		CHO115		115.00	6	1.0410	119.72	9		LSA115		115.00	6	1.0136	116.56
12		M.N115		115.00	6	1.0313	118.59	15		PRO115		115.00	6	1.0346	118.98
18		CAC115		115.00	6	1.0221	117.54	19		C.V115		115.00	6	1.0222	117.55
20		CH.AZUL		115.00	6	1.0353	119.06	21		C.BAN115		115.00	6	1.0198	117.27
23		CH115		115.00	6	1.0214	117.46	26		LOC115		115.00	6	1.0200	117.30
30		MAR115		115.00	6	1.0193	117.22	33		STM115		115.00	6	1.0214	117.46
37		SAN115		115.00	6	1.0196	117.25	48		TINAJ115		115.00	6	1.0216	117.48
50		M.O115		115.00	6	1.0216	117.49	52		TOC115		115.00	6	1.0248	117.85
54		LM1115		115.00	6	1.0259	117.98	55		LM2115		115.00	6	1.0264	118.04
61		FFIELD		115.00	6	1.0248	117.85	87		CAL115		115.00	6	1.0356	119.09
88		EST115		115.00	6	1.0364	119.19	92		L.V115		115.00	6	1.0359	119.13
109		STA RITA115		115.00	6	1.0257	117.96	123		MIR115		115.00	7	1.0280	118.22
154		CEMPAN15		115.00	6	1.0280	118.22	191		CHANG115		115.00	6	1.0293	118.37
522		TCATIVÁ	115	115.00	6	1.0262	118.01								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)

* NONE *

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:55
 PLAN DE EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MIN VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING	
66		BLM13B		13.800	V2	28.0	2.0	25.0	0.0	0.9800	28.6	0.9974	47.0			1	6		
67		BLM13C		13.800	V3	28.0	2.0	25.0	0.0	0.9800	28.6	0.9974	47.0			1	6		
90		EST-13L		13.800	E1	19.0	1.5	12.0	-5.0	0.9900	19.3	0.9969	27.0			1	6		
94		LV-13.8L		13.800	L1	20.0	1.7	12.0	-5.0	0.9900	20.3	0.9963	27.0			1	6		
97		FOR13A		13.800	F1	80.6	-36.5	50.0	-50.0	0.9800	90.3	0.9110	111.0			1	6	6SYST	
98		FOR13B		13.800	F2	87.5	-35.9	50.0	-50.0	0.9800	96.5	0.9253	111.0			1	6		
106		PANAM13A		13.800	M1	15.2	0.0	9.0	0.0	1.0144	15.0	1.0000	20.7			1	6		
116		PACORA13		13.800	P1	17.5	0.0	8.8	0.0	1.0414	16.8	1.0000	21.7			1	6		
142		CANJ13A		13.800	C1	37.0	6.0	29.0	-29.0	0.9900	37.9	0.9869	69.0			1	6		
143		CANJ13B		13.800	C2	37.0	6.0	29.0	-29.0	0.9900	37.9	0.9869	69.0			1	6		
301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9566	10.1	0.8566	13.5			1	6		
302		PASOANCH13.8		13.800	P1	3.7	2.0	2.0	-2.0	0.9548	4.4	0.8797	6.2			1	6		
521		EGIRAL13.8		113.800	G1	3.6	1.3	2.8	1.3	1.0013	3.8	0.9407	4.8			1	6		
521		EGIRAL13.8		113.800	G2	3.6	1.3	2.8	1.3	1.0013	3.8	0.9407	4.8			1	6		
521		EGIRAL13.8		113.800	G3	3.6	1.3	2.8	1.3	1.0013	3.8	0.9407	4.8			1	6		
521		EGIRAL13.8		113.800	G4	3.6	1.3	2.8	1.3	1.0013	3.8	0.9407	4.8			1	6		
SUBSYSTEM TOTALS						396.3	-40.8	268.1	-169.8				589.5						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:55
PLAN DE EXP-SIN CON C.A. MAYO 2009
Año 2009 ESC MOD DEM MIN VER

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING	
170		MIR13G		13.800	M1	16.1	6.8	11.2	6.8	1.0562	16.5	0.9204	23.0			2	7		
171		MIR13H		13.800	M1	16.1	6.8	11.2	6.8	1.0652	16.4	0.9205	23.0			2	7		
171		MIR13H		13.800	M2	16.1	6.8	11.2	6.8	1.0652	16.4	0.9205	23.0			2	7		
SUBSYSTEM TOTALS						48.2	20.5	33.5	20.5				69.1						

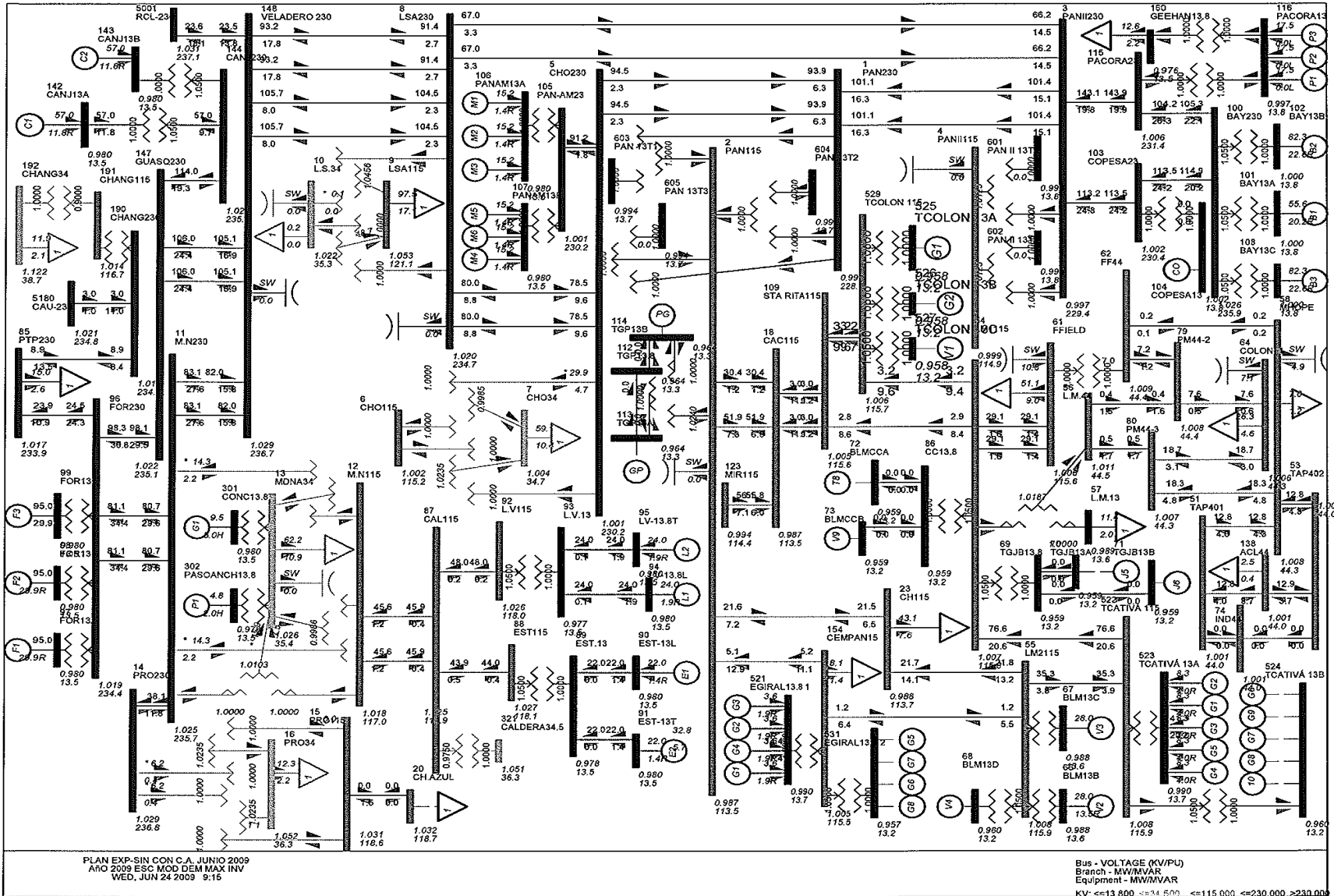
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN DE EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MIN VER

WED, JUN 24 2009 8:55

AREA TOTALS
 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.3	158.1	
3	1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
HONDURAS	55.6	290.6	-188.3	0.0	302.9	-5.3	261.6	
4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	32.3	224.5	-98.9	0.0	143.3	-97.4	147.3	
5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	243.7	569.4	-236.2	0.0	470.7	24.0	357.1	
6	396.3	415.9	0.0	0.0	0.0	-33.5	9.2	25.0
PANAMA	-40.8	72.9	187.5	0.0	428.0	9.2	116.8	
7	48.2	15.3	0.0	0.0	0.0	32.6	0.2	50.0
ACANAL	20.5	2.7	0.0	0.0	0.0	13.3	4.5	
9	0.0	4.6	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	0.8	0.0	0.0	0.0	0.0	0.0	
TOTALS	5593.7	5487.4	0.0	0.0	0.0	0.0	106.3	0.0
	441.8	1692.7	-660.2	0.0	1977.5	0.0	1386.8	

1.3. Demanda Máxima de Invierno



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:00
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
5		CHO230		230.00	6	1.0007	230.16	8		LSA230		230.00	6	1.0205	234.70
11		M.N230		230.00	6	1.0246	235.66	14		PRO230		230.00	6	1.0294	236.76
85		PTP230		230.00	6	1.0168	233.87	96		FOR230		230.00	6	1.0192	234.41
100		BAY230		230.00	6	1.0256	235.90	103		COPESA23		230.00	6	1.0019	230.44
105		PAN-AM23		230.00	6	1.0007	230.16	115		PACORA23		230.00	6	1.0059	231.36
144		CANJ230		230.00	6	1.0220	235.07	147		GUASQ230		230.00	6	1.0221	235.09
148		VELADERO	230	230.00	6	1.0291	236.69	190		CHANG230		230.00	6	1.0177	234.06
6000		FRONTER		230.00	6	1.0301	236.91								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9928	228.33	3		PANII230		230.00	6	0.9974	229.41

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:00
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
6		CHO115		115.00	6	1.0017	115.19	9		LSA115		115.00	6	1.0533	121.13
12		M.N115		115.00	6	1.0177	117.04	15		PRO115		115.00	6	1.0312	118.59
20		CH.AZUL		115.00	6	1.0320	118.68	54		LM1115		115.00	6	1.0071	115.81
55		LM2115		115.00	6	1.0078	115.89	61		FFIELD		115.00	6	1.0056	115.65
87		CAL115		115.00	6	1.0251	117.89	88		EST115		115.00	6	1.0268	118.09
92		L.V115		115.00	6	1.0258	117.97	109		STA RITA115		115.00	6	1.0051	115.58
154		CEMPAN15		115.00	6	1.0047	115.54	191		CHANG115		115.00	6	1.0144	116.65
522		TCATIVÁ	115	115.00	6	1.0076	115.87	529		TCOLON	115	115.00	6	1.0061	115.70

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	0.9871	113.51	4		PANII115		115.00	6	0.9989	114.87
18		CAC115		115.00	6	0.9869	113.49	19		C.V115		115.00	6	0.9885	113.68
21		C.BAN115		115.00	6	0.9801	112.72	23		CH115		115.00	6	0.9884	113.67
26		LOC115		115.00	6	0.9808	112.79	30		MAR115		115.00	6	0.9793	112.62
33		STM115		115.00	6	0.9855	113.33	37		SAN115		115.00	6	0.9797	112.67
48		TINAJ115		115.00	6	0.9851	113.29	50		M.O115		115.00	6	0.9852	113.30
52		TOC115		115.00	6	0.9966	114.61	123		MIR115		115.00	7	0.9944	114.36

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 8:59
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009

141 GAT6B	6.9000 G6	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9786	6.2	2	7
170 MIR13G	13.800 M1	17.0	6.8	11.2	6.8	1.0208	17.9	0.9281	23.0	2	7
171 MIR13H	13.800 M1	17.0	6.8	11.2	6.8	1.0299	17.8	0.9281	23.0	2	7
171 MIR13H	13.800 M2	17.0	6.8	11.2	6.8	1.0299	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS		120.5	20.4	71.5	5.5				171.3		

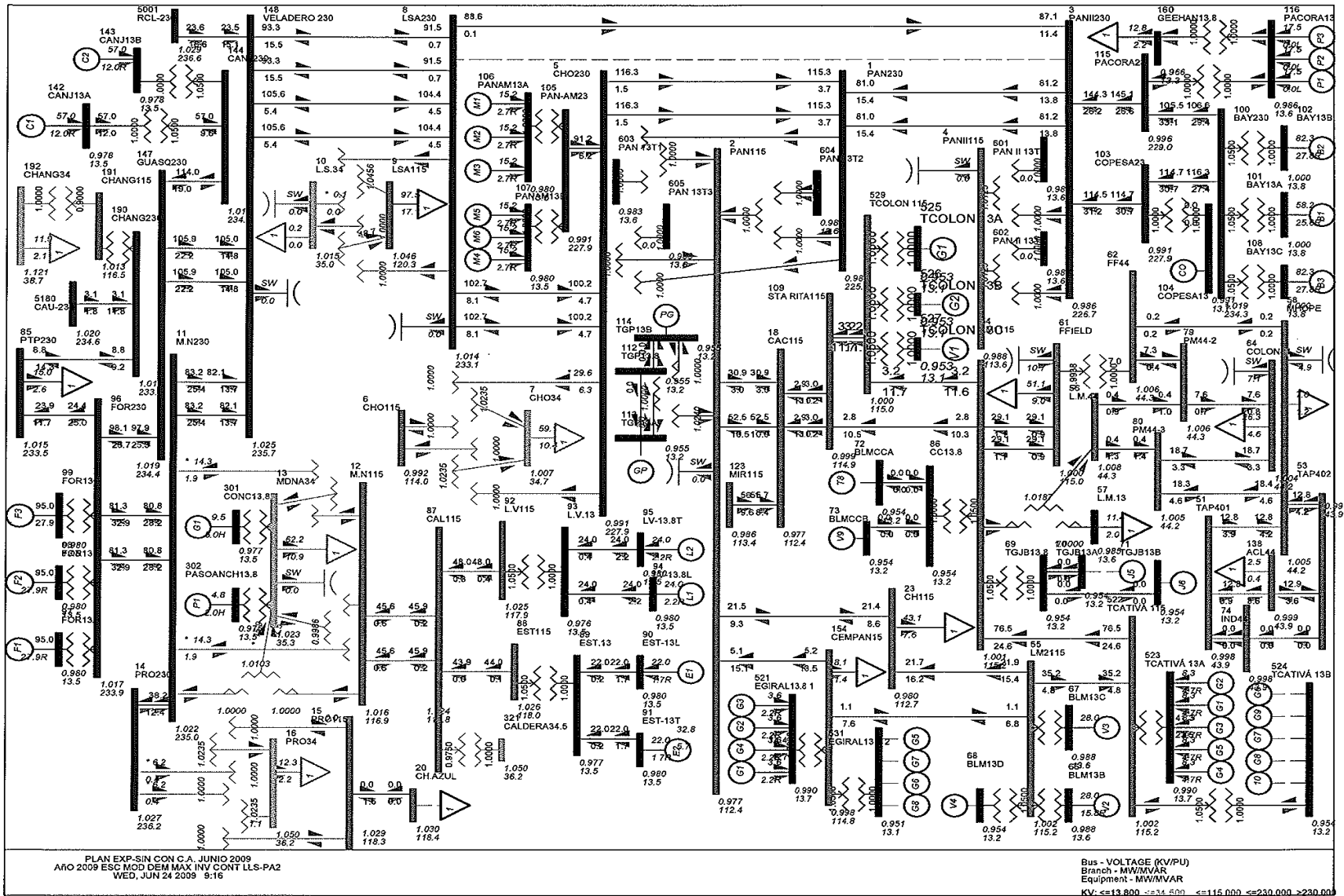
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MAX INV

WED, JUN 24 2009 9:00

AREA TOTALS
 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
HONDURAS	55.7	290.6	-188.3	0.0	302.9	-5.3	261.6	
4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	32.5	224.5	-98.9	0.0	143.2	-97.2	147.4	
5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	254.8	569.4	-236.6	0.0	469.8	34.4	357.3	
6	980.8	1025.4	0.0	0.0	0.0	-82.2	26.1	25.0
PANAMA	75.6	179.6	-22.8	0.0	441.4	13.8	344.3	
7	120.5	37.8	0.0	0.0	0.0	81.4	1.3	50.0
ACANAL	20.4	6.6	0.0	0.0	0.0	-2.0	15.7	
9	0.0	11.4	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.0	0.0	0.0	0.0	0.0	0.0	
TOTALS	6250.6	6126.3	0.0	0.0	0.0	0.0	124.3	0.0
	569.5	1804.6	-870.8	0.0	1990.1	0.0	1625.8	

1.3.1. Contingencia Llano Sánchez-Panamá II



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:03
ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
AÑO 2009 ESC MOD DEM MAX INV CONT. LLS-PA2

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
8		LSA230		230.00	6	1.0135	233.11	11		M.N230		230.00	6	1.0219	235.03
14		PRO230		230.00	6	1.0270	236.21	85		PTP230		230.00	6	1.0151	233.48
96		FOR230		230.00	6	1.0170	233.90	100		BAY230		230.00	6	1.0187	234.29
144		CANJ230		230.00	6	1.0192	234.42	147		GUASQ230		230.00	6	1.0193	234.44
148		VELADERO	230	230.00	6	1.0246	235.67	190		CHANG230		230.00	6	1.0162	233.72
6000		FRONTER		230.00	6	1.0277	236.37								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9818	225.82	3		PANII230		230.00	6	0.9858	226.74
5		CHO230		230.00	6	0.9907	227.87	103		COPESA23		230.00	6	0.9910	227.94
105		PAN-AM23		230.00	6	0.9908	227.88	115		PACORA23		230.00	6	0.9956	228.99

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:03
ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
AÑO 2009 ESC MOD DEM MAX INV CONT. LLS-PA2

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9		LSA115		115.00	6	1.0459	120.28	12		M.N115		115.00	6	1.0161	116.86
15		PRO115		115.00	6	1.0288	118.31	20		CH.AZUL		115.00	6	1.0296	118.40
54		LM1115		115.00	6	1.0014	115.17	55		LM2115		115.00	6	1.0021	115.25
87		CAL115		115.00	6	1.0241	117.77	88		EST115		115.00	6	1.0259	117.98
92		L.V115		115.00	6	1.0248	117.85	191		CHANG115		115.00	6	1.0129	116.48
522		TCATIVÁ	115	115.00	6	1.0019	115.22	529		TCOLON	115	115.00	6	1.0002	115.03

523 TCATIVÁ 13A	13.800	G4	8.3	4.7	6.6	-6.6	0.9900	9.6	0.8694	10.9	1	6
523 TCATIVÁ 13A	13.800	G5	8.3	4.7	6.6	-6.6	0.9900	9.6	0.8694	10.9	1	6
SUBSYSTEM TOTALS			983.5	116.6	587.6	-337.6				1247.9		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:03
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 Año 2009 ESC MOD DEM MAX INV CONT. LLS-PA2

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129		MIR13D		13.800	G4	35.0	4.7	15.0	0.0	1.0000	35.3	0.9913	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0011	17.1	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	0.0	2.0	-2.0	1.0000	1.9	0.9997	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	0.0	2.0	-2.0	1.0000	1.9	0.9997	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	0.0	2.0	-2.0	1.0000	1.9	0.9997	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.7	3.0	-3.0	1.0000	3.9	0.9845	5.6			2	7	
141		GAT6B		6.9000	G5	3.9	-0.7	3.0	-3.0	1.0000	3.9	0.9845	6.2			2	7	
141		GAT6B		6.9000	G6	3.9	-0.7	3.0	-3.0	1.0000	3.9	0.9845	6.2			2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0157	18.0	0.9281	23.0			2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0248	17.9	0.9281	23.0			2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0248	17.9	0.9281	23.0			2	7	
SUBSYSTEM TOTALS						120.5	23.2	71.5	5.5				171.3					

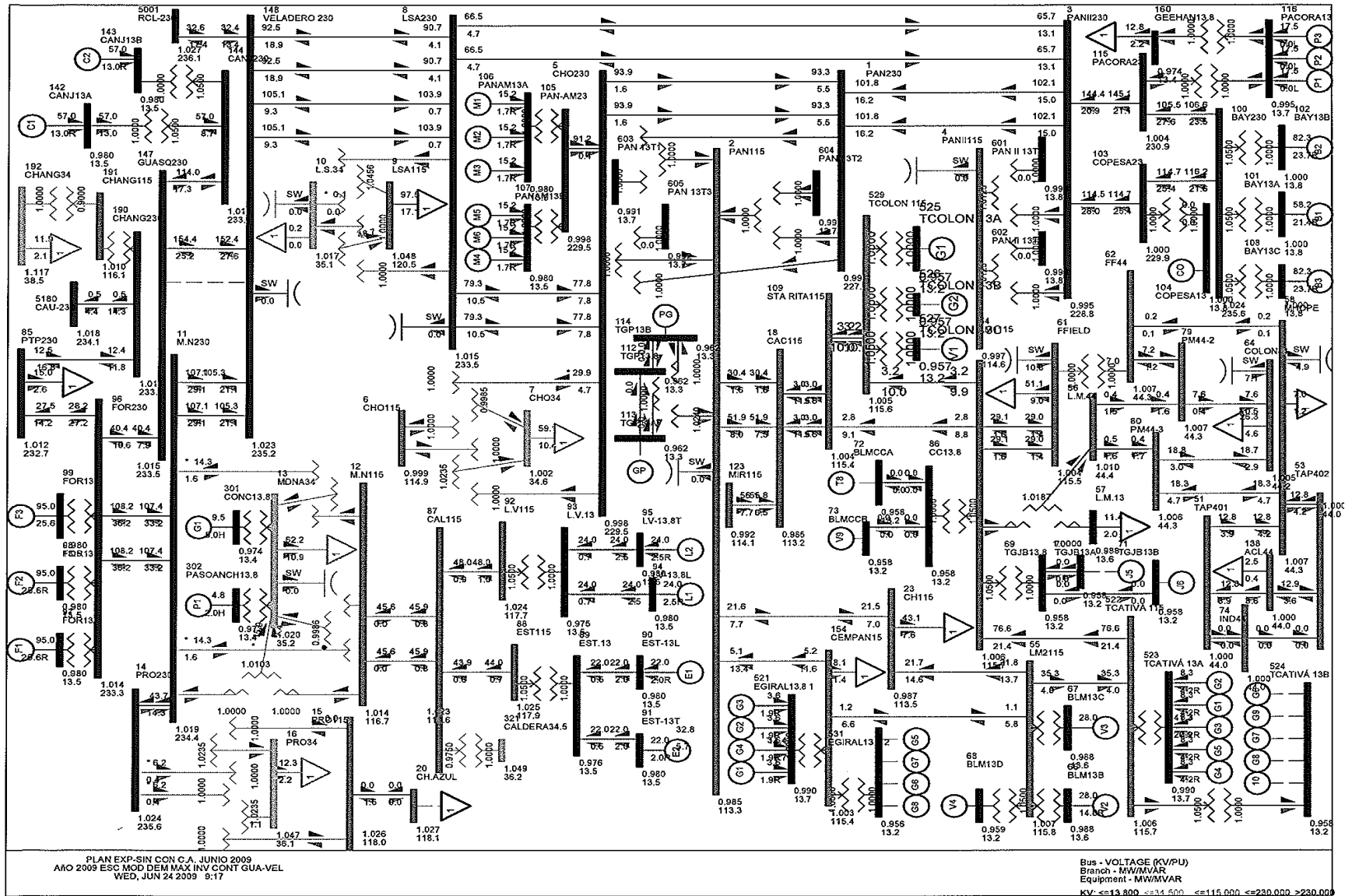
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MAX INV CONT LLS-PA2

WED, JUN 24 2009 9:03

AREA TOTALS
 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
HONDURAS	55.7	290.6	-188.3	0.0	302.8	-5.3	261.6	
4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	32.6	224.5	-98.9	0.0	143.2	-97.1	147.4	
5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	258.3	569.4	-236.4	0.0	469.4	37.3	357.5	
6	983.5	1025.4	0.0	0.0	0.0	-82.2	28.8	25.0
PANAMA	116.6	179.6	-22.6	0.0	410.8	8.3	360.1	
7	120.5	37.8	0.0	0.0	0.0	81.3	1.4	50.0
ACANAL	23.2	6.6	0.0	0.0	0.0	0.6	16.0	
9	0.0	11.4	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.0	0.0	0.0	0.0	0.0	0.0	
TOTALS	6253.2	6126.3	0.0	0.0	0.0	0.0	127.0	0.0
	617.0	1804.6	-870.5	0.0	1959.1	0.0	1641.9	

1.3.2. Contingencia Guasquitas-Veladero



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:07
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 Año 2009 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
8		LSA230		230.00	6	1.0154	233.55	11		M.N230		230.00	6	1.0190	234.37
14		PRO230		230.00	6	1.0245	235.63	85		PTP230		230.00	6	1.0119	232.74
96		FOR230		230.00	6	1.0144	233.30	100		BAY230		230.00	6	1.0242	235.57
115		PACORA23		230.00	6	1.0037	230.86	144		CANJ230		230.00	6	1.0150	233.46
147		GUASQ230		230.00	6	1.0151	233.48	148		VELADERO	230	230.00	6	1.0226	235.19
190		CHANG230		230.00	6	1.0128	232.95	6000		FRONTER		230.00	6	1.0253	235.82

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9903	227.77	3		PANII230		230.00	6	0.9950	228.84
5		CHO230		230.00	6	0.9980	229.53	103		COPESA23		230.00	6	0.9996	229.91
105		PAN-AM23		230.00	6	0.9980	229.54								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:07
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 Año 2009 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9		LSA115		115.00	6	1.0479	120.51	12		M.N115		115.00	6	1.0144	116.66
15		PRO115		115.00	6	1.0263	118.02	20		CH.AZUL		115.00	6	1.0271	118.11
54		LM1115		115.00	6	1.0058	115.67	55		LM2115		115.00	6	1.0065	115.75
61		FFIELD		115.00	6	1.0044	115.51	87		CAL115		115.00	6	1.0230	117.64
88		EST115		115.00	6	1.0249	117.86	92		L.V115		115.00	6	1.0237	117.73
109		STA RITA115		115.00	6	1.0037	115.43	154		CEMPAN15		115.00	6	1.0033	115.38
191		CHANG115		115.00	6	1.0096	116.10	522		TCATIVA 115		115.00	6	1.0063	115.73
529		TCOLON 115		115.00	6	1.0048	115.55								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	0.9849	113.26	4		PANII115		115.00	6	0.9965	114.60
6		CHO115		115.00	6	0.9990	114.88	18		CAC115		115.00	6	0.9848	113.25
19		C.V115		115.00	6	0.9862	113.41	21		C.BAN115		115.00	6	0.9780	112.47
23		CH115		115.00	6	0.9866	113.46	26		LOC115		115.00	6	0.9786	112.54

30	MAR115	115.00	6	0.9771	112.37	33	STM115	115.00	6	0.9833	113.08
37	SAN115	115.00	6	0.9775	112.42	48	TINAJ115	115.00	6	0.9830	113.04
50	M.O115	115.00	6	0.9831	113.05	52	TOC115	115.00	6	0.9942	114.33
123	MIR115	115.00	7	0.9925	114.14						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 9:06
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MAX INV

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME --X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	28.0	14.0	25.0	0.0	0.9880	31.7	0.8947	47.0			1	6	
67	BLM13C	13.800	V3	28.0	14.0	25.0	0.0	0.9880	31.7	0.8947	47.0			1	6	
90	EST-13L	13.800	E1	22.0	2.0	12.0	-5.0	0.9800	22.5	0.9959	27.0			1	6	
91	EST-13T	13.800	E2	22.0	2.0	12.0	-5.0	0.9800	22.5	0.9959	27.0			1	6	
94	LV-13.8L	13.800	L1	24.0	2.5	12.0	-5.0	0.9800	24.6	0.9947	27.0			1	6	
95	LV-13.8T	13.800	L2	24.0	2.5	12.0	-5.0	0.9800	24.6	0.9947	27.0			1	6	
97	FOR13A	13.800	F1	95.0	-25.6	50.0	-50.0	0.9800	100.4	0.9655	111.0			1	6	
98	FOR13B	13.800	F2	95.0	-25.6	50.0	-50.0	0.9800	100.4	0.9655	111.0			1	6	
99	FOR13C	13.800	F3	95.0	-25.6	50.0	-50.0	0.9800	100.4	0.9655	111.0			1	6	
101	BAY13A	13.800	B1	58.2	21.4	50.0	-25.0	1.0000	62.0	0.9383	96.0			1	6	6SYST
102	BAY13B	13.800	B2	82.3	23.7	50.0	-25.0	1.0000	85.6	0.9610	96.0			1	6	
106	PANAM13A	13.800	M1	15.2	1.7	9.0	0.0	0.9800	15.6	0.9935	20.7			1	6	
106	PANAM13A	13.800	M2	15.2	1.7	9.0	0.0	0.9800	15.6	0.9935	20.7			1	6	
106	PANAM13A	13.800	M3	15.2	1.7	9.0	0.0	0.9800	15.6	0.9935	20.7			1	6	
107	PANAM13B	13.800	M4	15.2	1.7	9.0	0.0	0.9800	15.6	0.9935	20.7			1	6	
107	PANAM13B	13.800	M5	15.2	1.7	9.0	0.0	0.9800	15.6	0.9935	20.7			1	6	
107	PANAM13B	13.800	M6	15.2	1.7	9.0	0.0	0.9800	15.6	0.9935	20.7			1	6	
108	BAY13C	13.800	B3	82.3	23.7	50.0	-25.0	1.0000	85.6	0.9610	100.0			1	6	
116	PACORA13	13.800	P1	17.5	0.0	8.8	0.0	0.9945	17.6	1.0000	21.7			1	6	
116	PACORA13	13.800	P2	17.5	0.0	8.8	0.0	0.9945	17.6	1.0000	21.7			1	6	
116	PACORA13	13.800	P3	17.5	0.0	8.8	0.0	0.9945	17.6	1.0000	21.7			1	6	
142	CANJ13A	13.800	C1	57.0	13.0	29.0	-29.0	0.9800	59.7	0.9750	69.0			1	6	
143	CANJ13B	13.800	C2	57.0	13.0	29.0	-29.0	0.9800	59.7	0.9750	69.0			1	6	
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9745	11.0	0.8849	13.5			1	6	
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9726	5.3	0.9216	6.2			1	6	
521	EGIRAL13.8	113.800	G1	3.6	1.9	2.8	1.3	0.9900	4.1	0.8821	4.8			1	6	
521	EGIRAL13.8	113.800	G2	3.6	1.9	2.8	1.3	0.9900	4.1	0.8821	4.8			1	6	
521	EGIRAL13.8	113.800	G3	3.6	1.9	2.8	1.3	0.9900	4.1	0.8821	4.8			1	6	
521	EGIRAL13.8	113.800	G4	3.6	1.9	2.8	1.3	0.9900	4.1	0.8821	4.8			1	6	
523	TCATIVÁ 13A	13.800	G1	8.3	4.2	6.6	-6.6	0.9900	9.4	0.8923	10.9			1	6	
523	TCATIVÁ 13A	13.800	G2	8.3	4.2	6.6	-6.6	0.9900	9.4	0.8923	10.9			1	6	
523	TCATIVÁ 13A	13.800	G3	8.3	4.2	6.6	-6.6	0.9900	9.4	0.8923	10.9			1	6	
523	TCATIVÁ 13A	13.800	G4	8.3	4.2	6.6	-6.6	0.9900	9.4	0.8923	10.9			1	6	
523	TCATIVÁ 13A	13.800	G5	8.3	4.2	6.6	-6.6	0.9900	9.4	0.8923	10.9			1	6	
SUBSYSTEM TOTALS				983.4	100.9	587.6	-337.6				1247.9					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MAX INV

WED, JUN 24 2009 9:06

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
129		MIR13D		13.800	G4	35.0	3.0	15.0	0.0	1.0000	35.1	0.9962	44.1								2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0052	17.0	1.0000	27.7								2	7	
140		GAT6A		6.9000	G1	1.9	0.0	2.0	-2.0	1.0000	1.9	0.9998	4.1								2	7	
140		GAT6A		6.9000	G2	1.9	0.0	2.0	-2.0	1.0000	1.9	0.9998	4.1								2	7	
140		GAT6A		6.9000	G3	1.9	0.0	2.0	-2.0	1.0000	1.9	0.9998	4.1								2	7	
141		GAT6B		6.9000	G4	3.9	-0.8	3.0	-3.0	1.0000	3.9	0.9806	5.6								2	7	
141		GAT6B		6.9000	G5	3.9	-0.8	3.0	-3.0	1.0000	3.9	0.9806	6.2								2	7	
141		GAT6B		6.9000	G6	3.9	-0.8	3.0	-3.0	1.0000	3.9	0.9806	6.2								2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0197	18.0	0.9281	23.0								2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0288	17.8	0.9281	23.0								2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0288	17.8	0.9281	23.0								2	7	
SUBSYSTEM TOTALS						120.5	21.1	71.5	5.5				171.3										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. MAYO 2009
 AÑO 2009 ESC MOD DEM MAX INV

WED, JUN 24 2009 9:07

AREA TOTALS
 IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
	1		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
	GUATEMAL		29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
	2		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
	SALVADOR		100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
	3		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
	HONDURAS		55.7	290.6	-188.3	0.0	302.8	-5.3	261.6	

4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	32.7	224.5	-98.9	0.0	143.2	-97.1	147.4	
5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	263.0	569.4	-236.3	0.0	468.9	41.0	357.8	
6	983.4	1025.4	0.0	0.0	0.0	-82.2	28.7	25.0
PANAMA	100.9	179.6	-22.7	0.0	421.7	6.3	357.3	
7	120.5	37.8	0.0	0.0	0.0	81.4	1.3	50.0
ACANAL	21.1	6.6	0.0	0.0	0.0	-1.3	15.8	
9	0.0	11.4	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.0	0.0	0.0	0.0	0.0	0.0	
TOTALS	6253.2	6126.3	0.0	0.0	0.0	0.0	126.9	0.0
	604.0	1804.6	-870.5	0.0	1969.4	0.0	1639.4	

2. AÑO 2010

2.1 Demanda Máxima de Verano

67	BLM13C	13.800	V3	31.0	0.7	25.0	0.0	0.9800	31.6	0.9997	47.0	1	6
68	BLM13D	13.800	V4	31.0	0.6	25.0	0.0	0.9800	31.6	0.9998	47.0	1	6
90	EST-13L	13.800	E1	22.0	-0.2	12.0	-5.0	0.9700	22.7	1.0000	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	0.1	12.0	-5.0	0.9700	24.7	1.0000	27.0	1	6
97	FOR13A	13.800	F1	90.0	-37.4	50.0	-50.0	0.9710	100.4	0.9235	111.0	1	6
98	FOR13B	13.800	F2	90.0	-37.4	50.0	-50.0	0.9710	100.4	0.9235	111.0	1	6
99	FOR13C	13.800	F3	91.0	-37.3	50.0	-50.0	0.9710	101.3	0.9254	111.0	1	6
101	BAY13A	13.800	B1	55.6	15.3	50.0	-25.0	1.0000	57.7	0.9641	96.0	1	6SYST
102	BAY13B	13.800	B2	75.3	17.0	50.0	-25.0	1.0000	77.2	0.9754	96.0	1	6
106	PANAM13A	13.800	M1	15.2	0.0	9.0	0.0	0.9803	15.5	1.0000	20.7	1	6
106	PANAM13A	13.800	M2	15.2	0.0	9.0	0.0	0.9803	15.5	1.0000	20.7	1	6
106	PANAM13A	13.800	M3	15.2	0.0	9.0	0.0	0.9803	15.5	1.0000	20.7	1	6
108	BAY13C	13.800	B3	75.3	17.0	50.0	-25.0	1.0000	77.2	0.9754	100.0	1	6
116	PACORA13	13.800	P1	17.5	0.0	8.8	0.0	1.0078	17.3	1.0000	21.7	1	6
116	PACORA13	13.800	P2	17.5	0.0	8.8	0.0	1.0078	17.3	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	50.0	9.0	29.0	-29.0	0.9800	51.8	0.9841	69.0	1	6
143	CANJ13B	13.800	C2	50.0	9.0	29.0	-29.0	0.9800	51.8	0.9841	69.0	1	6
301	CONC13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9752	9.9	0.8566	13.5	1	6
302	PASOANCH13.8	13.800	P1	3.5	2.0	2.0	-2.0	0.9734	4.1	0.8682	6.2	1	6
304	ALGA13.8	13.800	A1	8.2	0.0	2.0	0.0	1.0973	7.5	1.0000	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.0972	8.2	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	5.9	0.0	0.0	0.0	1.0973	5.4	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	2.6	0.0	2.0	0.0	0.9953	2.6	1.0000	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0015	3.8	0.9407	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0015	3.8	0.9407	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0015	3.8	0.9407	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.6	1.3	2.8	1.3	1.0015	3.8	0.9407	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.3	1.4	6.6	-6.6	0.9900	8.5	0.9860	10.9	1	6
525	TCOLON 13A	13.800	G1	40.0	19.3	19.3	19.3	1.0178	43.6	0.9009	44.4	1	6
527	TCOLON 13C	13.800	V1	40.0	19.3	19.3	19.3	1.0178	43.6	0.9009	44.4	1	6
531	EGIRAL13.8	213.800	G5	8.1	3.0	6.4	3.0	1.0025	8.6	0.9374	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.1	3.0	6.4	3.0	1.0025	8.6	0.9374	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.1	3.0	6.4	3.0	1.0025	8.6	0.9374	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.1	3.0	6.4	3.0	1.0025	8.6	0.9374	10.9	1	6
SUBSYSTEM TOTALS				1043.5	34.0	653.6	-309.8				1434.8		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 11:07
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX VER

AREA 7 [ACANAL] MACHINE SUMMARY:

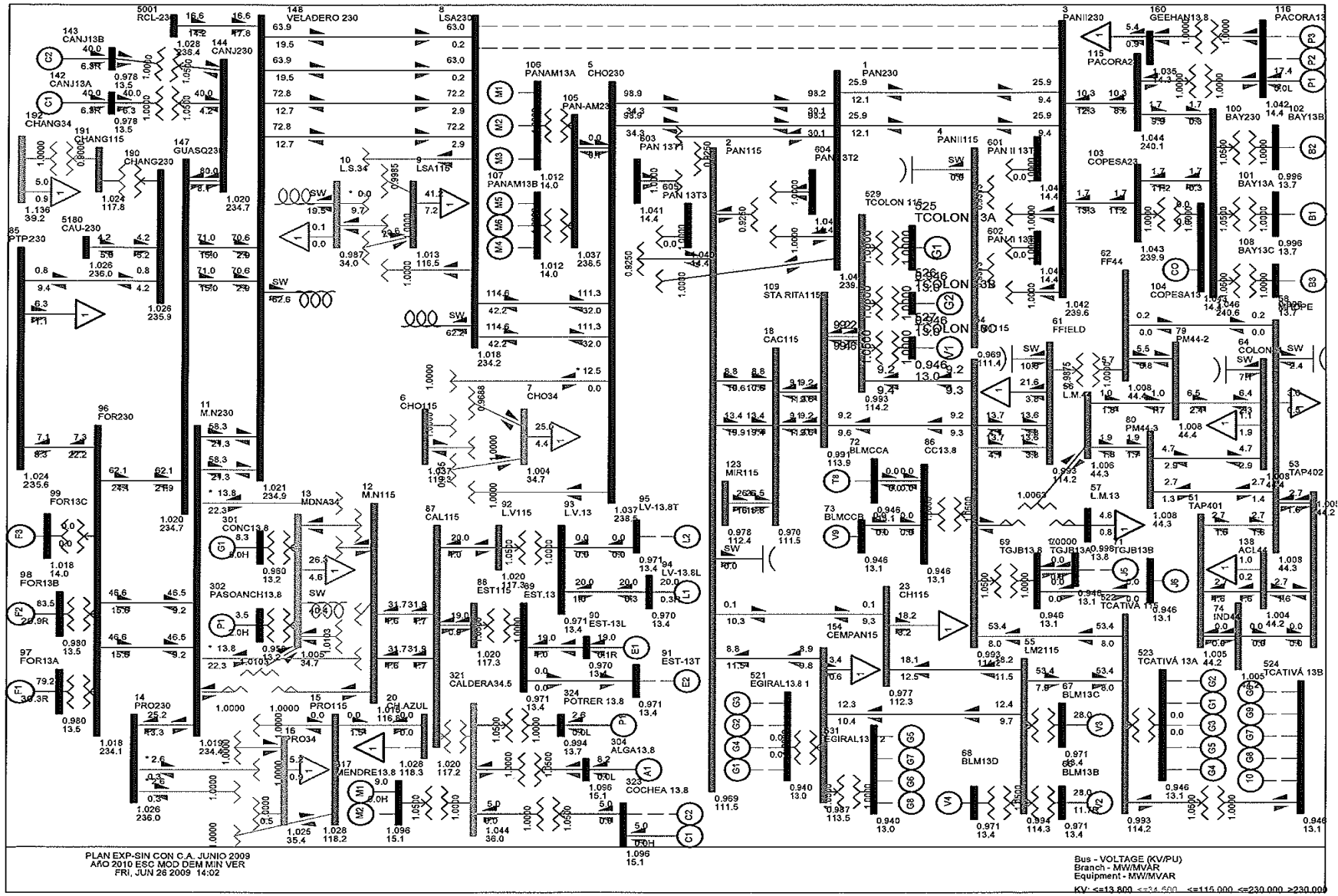
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
129		MIR13D		13.800	G4	35.0	1.0	15.0	0.0	1.0000	35.0	0.9996	44.1							2	7		
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0103	16.9	1.0000	27.7							2	7		
140		GAT6A		6.9000	G1	1.9	-0.4	2.0	-2.0	1.0000	2.0	0.9834	4.1							2	7		
140		GAT6A		6.9000	G2	1.9	-0.4	2.0	-2.0	1.0000	2.0	0.9834	4.1							2	7		
140		GAT6A		6.9000	G3	1.9	-0.4	2.0	-2.0	1.0000	2.0	0.9834	4.1							2	7		
141		GAT6B		6.9000	G4	3.9	-1.1	3.0	-3.0	1.0000	4.0	0.9619	5.6							2	7		
141		GAT6B		6.9000	G5	3.9	-1.1	3.0	-3.0	1.0000	4.0	0.9619	6.2							2	7		
141		GAT6B		6.9000	G6	3.9	-1.1	3.0	-3.0	1.0000	4.0	0.9619	6.2							2	7		
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0247	17.9	0.9281	23.0							2	7		
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0338	17.7	0.9281	23.0							2	7		
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0338	17.7	0.9281	23.0							2	7		
SUBSYSTEM TOTALS						120.5	17.1	71.5	5.5				171.3										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 11:07
 PLAN EXP-SIN CON C.A. JUNIO 2009 AREA TOTALS
 Año 2010 ESC MOD DEM MAX VER IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
			29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	SALVADOR		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
			100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	HONDURAS		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
			55.7	290.6	-188.3	0.0	302.9	-5.3	261.6	
4	NICA		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
			32.5	224.5	-98.9	0.0	143.2	-97.2	147.4	

5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	254.0	569.4	-236.3	0.0	469.9	33.4	357.4	
6	1043.5	1088.6	0.0	0.0	0.0	-80.1	22.9	25.0
PANAMA	34.0	190.7	-23.4	0.0	447.1	18.4	293.3	
7	120.5	40.1	0.0	0.0	0.0	79.3	1.1	50.0
ACANAL	17.1	7.0	0.0	0.0	0.0	-5.5	15.6	
9	0.0	12.1	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.1	0.0	0.0	0.0	0.0	0.0	
TOTALS	6313.3	6192.4	0.0	0.0	0.0	0.0	120.9	0.0
	523.8	1816.2	-871.1	0.0	1995.9	0.0	1574.7	

2.2. Demanda Mínima de Verano



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 Año 2010 ESC MOD DEM MIN VER

WED, JUN 24 2009 11:36

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
66		BLM13B		13.800	V2	28.0	11.7	25.0	0.0	0.9710	31.2	0.9229	47.0								1	6	
67		BLM13C		13.800	V3	28.0	11.7	25.0	0.0	0.9710	31.2	0.9229	47.0								1	6	
68		BLM13D		13.800	V4	28.0	12.2	25.0	0.0	0.9710	31.5	0.9169	47.0								1	6	
90		EST-13L		13.800	E1	19.0	0.1	12.0	-5.0	0.9700	19.6	1.0000	27.0								1	6	
94		LV-13.8L		13.800	L1	20.0	0.3	12.0	-5.0	0.9700	20.6	0.9999	27.0								1	6	
97		FOR13A		13.800	F1	79.2	-30.3	50.0	-50.0	0.9800	86.6	0.9340	111.0								1	6SYST	
98		FOR13B		13.800	F2	83.5	-29.9	50.0	-50.0	0.9800	90.5	0.9413	111.0								1	6	
116		PACORA13		13.800	P1	17.4	0.0	8.8	0.0	1.0417	16.7	1.0000	21.7								1	6	
142		CANJ13A		13.800	C1	40.0	6.3	29.0	-29.0	0.9783	41.4	0.9879	69.0								1	6	
143		CANJ13B		13.800	C2	40.0	6.3	29.0	-29.0	0.9783	41.4	0.9879	69.0								1	6	
301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9598	10.1	0.8566	13.5								1	6	
302		PASOANCH13.8		13.800	P1	3.5	2.0	2.0	-2.0	0.9580	4.2	0.8682	6.2								1	6	
304		ALGA13.8		13.800	A1	8.2	0.0	2.0	0.0	1.0957	7.5	1.0000	13.5								1	6	
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.0956	8.2	1.0000	35.3								1	6	
323		COCHEA 13.8		13.800	C1	5.0	0.0	0.0	0.0	1.0957	4.6	1.0000	35.3								1	6	
324		POTRER 13.8		13.800	P1	2.6	0.0	2.0	0.0	0.9939	2.6	1.0000	6.2								1	6	
SUBSYSTEM TOTALS						419.7	-4.7	276.8	-175.0				686.9										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 Año 2010 ESC MOD DEM MIN VER

WED, JUN 24 2009 11:36

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
170		MIR13G		13.800	M1	16.1	6.8	11.2	6.8	1.0147	17.2	0.9204	23.0								2	7	
171		MIR13H		13.800	M1	16.1	6.8	11.2	6.8	1.0240	17.0	0.9205	23.0								2	7	
171		MIR13H		13.800	M2	16.1	6.8	11.2	6.8	1.0240	17.0	0.9205	23.0								2	7	
SUBSYSTEM TOTALS						48.2	20.5	33.5	20.5				69.1										

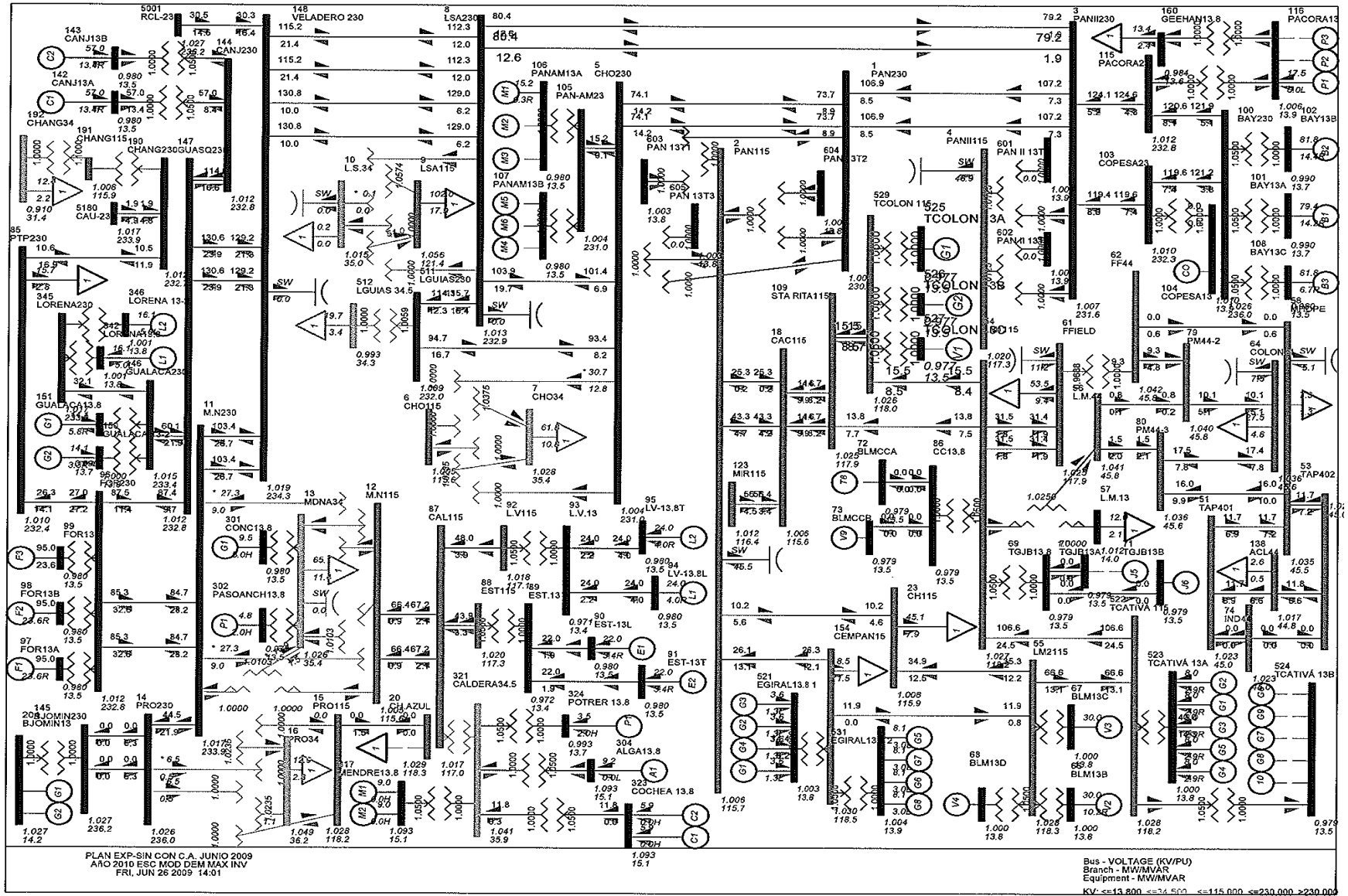
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 Año 2010 ESC MOD DEM MIN VER

WED, JUN 24 2009 11:36

AREA TOTALS
 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
HONDURAS	55.7	290.6	-188.3	0.0	302.8	-5.3	261.6	
4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	32.6	224.5	-98.9	0.0	143.2	-97.2	147.4	
5	1344.9	1324.8	0.0	0.0	0.0	0.9	19.3	0.0
C.RICA	252.7	569.4	-236.7	0.0	469.7	32.4	357.2	
6	419.7	433.0	0.0	0.0	0.0	-32.9	14.7	25.0
PANAMA	-4.7	75.9	164.5	0.0	391.9	1.3	144.7	
7	48.2	16.0	0.0	0.0	0.0	32.0	0.2	50.0
ACANAL	20.5	2.8	0.0	0.0	0.0	12.6	5.1	
9	0.0	4.8	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	0.8	0.0	0.0	0.0	0.0	0.0	
TOTALS	5617.1	5505.4	0.0	0.0	0.0	0.0	111.7	0.0
	487.1	1695.8	-683.6	0.0	1940.5	0.0	1415.4	

2.3. Demanda Máxima de Invierno



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 11:43
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	1.0034	230.77	3		PANII230		230.00	6	1.0071	231.64
5		CHO230		230.00	6	1.0043	230.99	8		LSA230		230.00	6	1.0127	232.92
11		M.N230		230.00	6	1.0168	233.86	14		PRO230		230.00	6	1.0261	236.01
85		PTP230		230.00	6	1.0104	232.40	96		FOR230		230.00	6	1.0121	232.79
100		BAY230		230.00	6	1.0260	235.97	103		COPESA23		230.00	6	1.0102	232.34
105		PAN-AM23		230.00	6	1.0043	231.00	115		PACORA23		230.00	6	1.0123	232.84
144		CANJ230		230.00	6	1.0123	232.83	145		BJOMIN230		230.00	6	1.0269	236.18
146		GUALACA230		230.00	6	1.0149	233.43	147		GUASQ230		230.00	6	1.0124	232.84
148		VELADERO	230230.00		6	1.0188	234.33	190		CHANG230		230.00	6	1.0118	232.71
345		LORENA230		230.00	6	1.0167	233.85	511		LGUIAS230		230.00	6	1.0085	231.96
6000		FRONTER		230.00	6	1.0267	236.13								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
* NONE *															

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 11:43
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0057	115.65	4		PANII115		115.00	6	1.0204	117.35
6		CHO115		115.00	6	1.0054	115.62	9		LSA115		115.00	6	1.0560	121.44
12		M.N115		115.00	6	1.0049	115.56	15		PRO115		115.00	6	1.0279	118.21
18		CAC115		115.00	6	1.0055	115.64	19		C.V115		115.00	6	1.0091	116.05
20		CH.AZUL		115.00	6	1.0287	118.30	23		CH115		115.00	6	1.0077	115.88
33		STM115		115.00	6	1.0040	115.47	48		TINAJ115		115.00	6	1.0037	115.42
50		M.O115		115.00	6	1.0038	115.44	52		TOC115		115.00	6	1.0181	117.08
54		LM1115		115.00	6	1.0275	118.16	55		LM2115		115.00	6	1.0285	118.28
61		FFIELD		115.00	6	1.0249	117.86	87		CAL115		115.00	6	1.0175	117.01
88		EST115		115.00	6	1.0200	117.30	92		L.V115		115.00	6	1.0185	117.12
109		STA RITA115		115.00	6	1.0252	117.90	123		MIR115		115.00	7	1.0120	116.39
154		CEMPAN15		115.00	6	1.0302	118.47	191		CHANG115		115.00	6	1.0081	115.93
522		TCATIVÁ	115	115.00	6	1.0281	118.23	529		TCOLON	115	115.00	6	1.0264	118.03

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
* NONE *															

531 EGIRAL13.8	213.800	G6	8.1	3.0	6.4	3.0	1.0044	8.6	0.9374	10.9	1	6
531 EGIRAL13.8	213.800	G7	8.1	3.0	6.4	3.0	1.0044	8.6	0.9374	10.9	1	6
531 EGIRAL13.8	213.800	G8	8.1	3.0	6.4	3.0	1.0044	8.6	0.9374	10.9	1	6
SUBSYSTEM TOTALS			1060.4	58.9	615.4	-352.4				1422.2		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 11:42
 PLAN EXP-SIN CON C.A. JUNIO 2009
 Año 2010 ESC MOD DEM MAX INV

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0072	34.7	1.0000	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0202	16.8	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-1.1	2.0	-2.0	1.0000	2.2	0.8783	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-1.1	2.0	-2.0	1.0000	2.2	0.8783	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-1.1	2.0	-2.0	1.0000	2.2	0.8783	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-1.8	3.0	-3.0	1.0000	4.3	0.9060	5.6			2	7	
141		GAT6B		6.9000	G5	3.9	-1.8	3.0	-3.0	1.0000	4.3	0.9060	6.2			2	7	
141		GAT6B		6.9000	G6	3.9	-1.8	3.0	-3.0	1.0000	4.3	0.9060	6.2			2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0345	17.7	0.9281	23.0			2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0435	17.6	0.9281	23.0			2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0435	17.6	0.9281	23.0			2	7	
SUBSYSTEM TOTALS						120.5	11.9	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 11:43
 PLAN EXP-SIN CON C.A. JUNIO 2009 AREA TOTALS
 Año 2010 ESC MOD DEM MAX INV IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
			29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	SALVADOR		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
			100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	HONDURAS		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
			55.7	290.6	-188.3	0.0	302.8	-5.3	261.6	
4	NICA		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
			32.7	224.5	-98.9	0.0	143.2	-97.1	147.4	

5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	261.7	569.4	-237.2	0.0	469.1	41.5	357.1	
6	1060.4	1092.6	0.0	0.0	0.0	-80.6	36.4	25.0
PANAMA	58.9	191.4	-116.3	0.0	451.0	15.1	417.6	
7	120.5	39.6	0.0	0.0	0.0	79.7	1.2	50.0
ACANAL	11.9	6.9	0.0	0.0	0.0	-10.4	15.4	
9	0.0	12.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.1	0.0	0.0	0.0	0.0	0.0	
TOTALS	6330.2	6195.6	0.0	0.0	0.0	0.0	134.5	0.0
	551.4	1816.7	-964.9	0.0	1998.9	0.0	1698.6	

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 13:39
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV CONT. LLS-PA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
8		LSA230		230.00	6	1.0004	230.09	11		M.N230		230.00	6	1.0124	232.86
14		PRO230		230.00	6	1.0222	235.10	85		PTP230		230.00	6	1.0078	231.80
96		FOR230		230.00	6	1.0088	232.01	100		BAY230		230.00	6	1.0181	234.16
115		PACORA23		230.00	6	1.0007	230.17	144		CANJ230		230.00	6	1.0082	231.89
145		BJOMIN230		230.00	6	1.0229	235.28	146		GUALACA230		230.00	6	1.0109	232.51
147		GUASQ230		230.00	6	1.0082	231.90	148		VELADERO 230		230.00	6	1.0113	232.60
190		CHANG230		230.00	6	1.0095	232.19	345		LORENA230		230.00	6	1.0128	232.94
6000		FRONTER		230.00	6	1.0228	235.24								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9905	227.81	3		PANII230		230.00	6	0.9941	228.65
5		CHO230		230.00	6	0.9908	227.88	103		COPESA23		230.00	6	0.9979	229.52
105		PAN-AM23		230.00	6	0.9908	227.89	511		LGUIAS230		230.00	6	0.9943	228.68

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 13:39
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV CONT. LLS-PA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
4		PANIII115		115.00	6	1.0075	115.86	9		LSA115		115.00	6	1.0428	119.92
12		M.N115		115.00	6	1.0023	115.26	15		PRO115		115.00	6	1.0240	117.76
20		CH.AZUL		115.00	6	1.0248	117.85	52		TOC115		115.00	6	1.0051	115.59
54		LM1115		115.00	6	1.0217	117.49	55		LM2115		115.00	6	1.0227	117.61
61		FFIELD		115.00	6	1.0191	117.19	87		CAL115		115.00	6	1.0157	116.81
88		EST115		115.00	6	1.0184	117.12	92		L.V115		115.00	6	1.0168	116.93
109		STA RITA115		115.00	6	1.0188	117.16	123		MIR115		115.00	7	1.0013	115.15
154		CEMPAN15		115.00	6	1.0234	117.69	191		CHANG115		115.00	6	1.0058	115.67
522		TCATIVÁ 115		115.00	6	1.0223	117.57	529		TCOLON 115		115.00	6	1.0202	117.33

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	0.9944	114.36	6		CHO115		115.00	6	0.9918	114.06
18		CAC115		115.00	6	0.9943	114.34	19		C.V115		115.00	6	0.9965	114.60
21		C.BAN115		115.00	6	0.9873	113.54	23		CH115		115.00	6	0.9986	114.84
26		LOC115		115.00	6	0.9879	113.61	30		MAR115		115.00	6	0.9864	113.44

531 EGIRAL13.8	213.800	G6	8.1	3.2	6.4	3.0	1.0000	8.7	0.9284	10.9	1	6
531 EGIRAL13.8	213.800	G7	8.1	3.2	6.4	3.0	1.0000	8.7	0.9284	10.9	1	6
531 EGIRAL13.8	213.800	G8	8.1	3.2	6.4	3.0	1.0000	8.7	0.9284	10.9	1	6
SUBSYSTEM TOTALS			1064.4	110.4	615.4	-352.4				1422.2		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 13:39
 PLAN EXP-SIN CON C.A. JUNIO 2009
 Año 2010 ESC MOD DEM MAX INV CONT. LLS-PA II

AREA 7 [ACANAL] MACHINE SUMMARY:

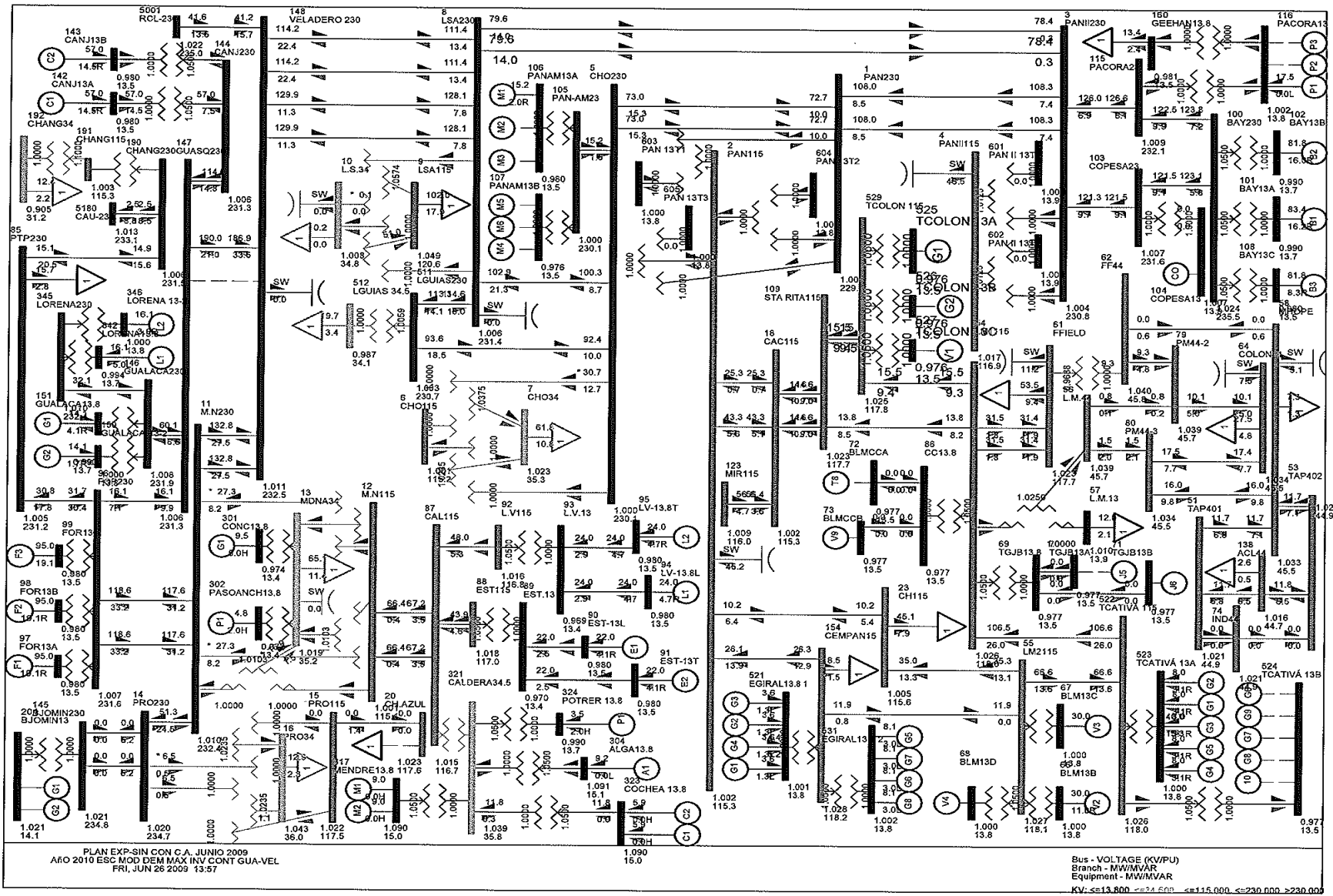
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129		MIR13D		13.800	G4	35.0	0.6	15.0	0.0	1.0000	35.0	0.9998	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0112	16.9	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.8	2.0	-2.0	1.0000	2.1	0.9214	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.8	2.0	-2.0	1.0000	2.1	0.9214	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.8	2.0	-2.0	1.0000	2.1	0.9214	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-1.6	3.0	-3.0	1.0000	4.2	0.9269	5.6			2	7	
141		GAT6B		6.9000	G5	3.9	-1.6	3.0	-3.0	1.0000	4.2	0.9269	6.2			2	7	
141		GAT6B		6.9000	G6	3.9	-1.6	3.0	-3.0	1.0000	4.2	0.9269	6.2			2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0256	17.9	0.9281	23.0			2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0347	17.7	0.9281	23.0			2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0347	17.7	0.9281	23.0			2	7	
SUBSYSTEM TOTALS						120.5	13.9	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 13:39
 PLAN EXP-SIN CON C.A. JUNIO 2009 AREA TOTALS
 Año 2010 ESC MOD DEM MAX INV CONT. LLS-PA II IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
			29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	SALVADOR		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
			100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	HONDURAS		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
			55.8	290.6	-188.3	0.0	302.8	-5.2	261.6	
4	NICA		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
			32.8	224.5	-98.9	0.0	143.2	-97.0	147.4	

5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	267.2	569.4	-237.1	0.0	468.5	46.1	357.3	
6	1064.4	1092.6	0.0	0.0	0.0	-80.5	40.4	25.0
PANAMA	110.4	191.4	-113.8	0.0	418.0	8.5	440.2	
7	120.5	39.6	0.0	0.0	0.0	79.7	1.3	50.0
ACANAL	13.9	6.9	0.0	0.0	0.0	-8.6	15.6	
9	0.0	12.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.1	0.0	0.0	0.0	0.0	0.0	
TOTALS	6334.1	6195.6	0.0	0.0	0.0	0.0	138.5	0.0
	610.6	1816.7	-962.4	0.0	1965.3	0.0	1721.6	

2.3.2. Contingencia Guasquitas-Veladero



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 13:43
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV CONT GUA-VEL

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
3		PANII230		230.00	6	1.0036	230.82	5		CHO230		230.00	6	1.0003	230.06
8		LSA230		230.00	6	1.0062	231.42	11		M.N230		230.00	6	1.0103	232.37
14		PRO230		230.00	6	1.0203	234.66	85		PTP230		230.00	6	1.0050	231.15
96		FOR230		230.00	6	1.0071	231.64	100		BAY230		230.00	6	1.0238	235.48
103		COPESA23		230.00	6	1.0068	231.57	105		PAN-AM23		230.00	6	1.0003	230.06
115		PACORA23		230.00	6	1.0092	232.11	144		CANJ230		230.00	6	1.0056	231.28
145		BJOMIN230		230.00	6	1.0210	234.83	146		GUALACA230		230.00	6	1.0083	231.92
147		GUASQ230		230.00	6	1.0056	231.29	148		VELADERO 230		230.00	6	1.0108	232.48
190		CHANG230		230.00	6	1.0063	231.46	345		LORENA230		230.00	6	1.0103	232.36
511		LGUIAS230		230.00	6	1.0030	230.69	6000		FRONTER		230.00	6	1.0209	234.81

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9997	229.94								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 13:43
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV CONT GUA-VEL

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0025	115.28	4		PANII115		115.00	6	1.0169	116.94
6		CHO115		115.00	6	1.0013	115.15	9		LSA115		115.00	6	1.0490	120.63
12		M.N115		115.00	6	1.0010	115.12	15		PRO115		115.00	6	1.0221	117.54
18		CAC115		115.00	6	1.0023	115.27	19		C.V115		115.00	6	1.0056	115.64
20		CH.AZUL		115.00	6	1.0228	117.62	23		CH115		115.00	6	1.0050	115.58
33		STM115		115.00	6	1.0008	115.09	48		TINAJ115		115.00	6	1.0004	115.05
50		M.O115		115.00	6	1.0006	115.06	52		TOC115		115.00	6	1.0145	116.67
54		LM1115		115.00	6	1.0257	117.96	55		LM2115		115.00	6	1.0268	118.08
61		FFIELD		115.00	6	1.0231	117.66	87		CAL115		115.00	6	1.0149	116.71
88		EST115		115.00	6	1.0176	117.03	92		L.V115		115.00	6	1.0160	116.84
109		STA RITA115		115.00	6	1.0233	117.68	123		MIR115		115.00	7	1.0089	116.03
154		CEMPAN15		115.00	6	1.0280	118.22	191		CHANG115		115.00	6	1.0026	115.30
522		TCATIVA 115		115.00	6	1.0264	118.03	529		TCOLON 115		115.00	6	1.0245	117.82

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
21		C.BAN115		115.00	6	0.9956	114.50	26		LOC115		115.00	6	0.9962	114.56
30		MAR115		115.00	6	0.9946	114.38	37		SAN115		115.00	6	0.9954	114.47

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING	
66		BLM13B		13.800	V2	30.0	11.0	25.0	0.0	1.0000	31.9	0.9392	47.0			1	6		
67		BLM13C		13.800	V3	30.0	11.0	25.0	0.0	1.0000	31.9	0.9392	47.0			1	6		
68		BLM13D		13.800	V4	30.0	11.4	25.0	0.0	1.0000	32.1	0.9344	47.0			1	6		
90		EST-13L		13.800	E1	22.0	4.1	12.0	-5.0	0.9800	22.8	0.9833	27.0			1	6		
91		EST-13T		13.800	E2	22.0	4.1	12.0	-5.0	0.9800	22.8	0.9833	27.0			1	6		
94		LV-13.8L		13.800	L1	24.0	4.7	12.0	-5.0	0.9800	25.0	0.9813	27.0			1	6		
95		LV-13.8T		13.800	L2	24.0	4.7	12.0	-5.0	0.9800	25.0	0.9813	27.0			1	6		
97		FOR13A		13.800	F1	95.0	-19.1	50.0	-50.0	0.9800	98.9	0.9803	111.0			1	6		
98		FOR13B		13.800	F2	95.0	-19.1	50.0	-50.0	0.9800	98.9	0.9803	111.0			1	6		
99		FOR13C		13.800	F3	95.0	-19.1	50.0	-50.0	0.9800	98.9	0.9803	111.0			1	6		
101		BAY13A		13.800	B1	83.4	16.2	50.0	-25.0	0.9900	85.8	0.9817	96.0			1	6	6SYST	
102		BAY13B		13.800	B2	81.8	16.0	50.0	-25.0	0.9900	84.2	0.9814	96.0			1	6		
106		PANAM13A		13.800	M1	15.2	2.0	9.0	0.0	0.9800	15.6	0.9912	20.7			1	6		
108		BAY13C		13.800	B3	81.8	8.3	50.0	-25.0	0.9800	83.9	0.9949	100.0			1	6		
116		PACORA13		13.800	P1	17.5	0.0	8.8	0.0	1.0023	17.4	1.0000	21.7			1	6		
142		CANJ13A		13.800	C1	57.0	14.5	29.0	-29.0	0.9800	60.0	0.9690	69.0			1	6		
143		CANJ13B		13.800	C2	57.0	14.5	29.0	-29.0	0.9800	60.0	0.9690	69.0			1	6		
150		GUALACA	13-2	13.800	G2	14.1	-1.7	7.4	-7.4	1.0000	14.2	0.9928	14.8			1	6		
151		GUALACA	13.8	13.800	G1	14.1	-4.1	7.4	-7.4	0.9900	14.8	0.9592	14.8			1	6		
301		CONC	13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9740	11.0	0.8849	13.5			1	6		
302		PASOANCH	13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9722	5.3	0.9216	6.2			1	6		
304		ALGA	13.8	13.800	A1	9.2	0.0	2.0	0.0	1.0906	8.4	1.0000	13.5			1	6		
317		MENDRE	13.8	13.800	M1	9.0	0.0	0.0	0.0	1.0900	8.3	1.0000	35.3			1	6		
317		MENDRE	13.8	13.800	M2	9.0	0.0	0.0	0.0	1.0900	8.3	1.0000	35.3			1	6		
323		COCHEA	13.8	13.800	C1	5.9	0.0	0.0	0.0	1.0904	5.4	1.0000	35.3			1	6		
323		COCHEA	13.8	13.800	C2	5.9	0.0	0.0	0.0	1.0904	5.4	1.0000	35.3			1	6		
324		POTRER	13.8	13.800	P1	3.5	2.0	2.0	-2.0	0.9905	4.1	0.8682	6.2			1	6		
342		LORENA	13.8	13.800	L1	16.1	-5.0	10.5	-5.0	0.9940	16.9	0.9547	19.9			1	6		
346		LORENA	13-2	13.800	L2	16.1	-3.0	10.5	-5.0	1.0000	16.3	0.9825	19.9			1	6		
521		EGIRAL	13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0014	3.8	0.9407	4.8			1	6		
521		EGIRAL	13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0014	3.8	0.9407	4.8			1	6		
521		EGIRAL	13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0014	3.8	0.9407	4.8			1	6		
521		EGIRAL	13.8	113.800	G4	3.6	1.3	2.8	1.3	1.0014	3.8	0.9407	4.8			1	6		
523		TCATIVÁ	13A	13.800	G1	8.0	3.1	6.6	-6.6	1.0000	8.6	0.9339	10.9			1	6		
523		TCATIVÁ	13A	13.800	G2	8.0	3.1	6.6	-6.6	1.0000	8.6	0.9339	10.9			1	6		
523		TCATIVÁ	13A	13.800	G3	8.0	3.1	6.6	-6.6	1.0000	8.6	0.9339	10.9			1	6		
523		TCATIVÁ	13A	13.800	G4	8.0	3.1	6.6	-6.6	1.0000	8.6	0.9339	10.9			1	6		
523		TCATIVÁ	13A	13.800	G5	8.0	3.1	6.6	-6.6	1.0000	8.6	0.9339	10.9			1	6		
531		EGIRAL	13.8	213.800	G5	8.1	3.0	6.4	3.0	1.0024	8.6	0.9374	10.9			1	6		
531		EGIRAL	13.8	213.800	G6	8.1	3.0	6.4	3.0	1.0024	8.6	0.9374	10.9			1	6		
531		EGIRAL	13.8	213.800	G7	8.1	3.0	6.4	3.0	1.0024	8.6	0.9374	10.9			1	6		
531		EGIRAL	13.8	213.800	G8	8.1	3.0	6.4	3.0	1.0024	8.6	0.9374	10.9			1	6		
SUBSYSTEM TOTALS						1064.4	92.7	615.4	-352.4				1422.2						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV CONT GUA-VEL

WED, JUN 24 2009 13:42

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0045	34.8	1.0000	44.1							2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0173	16.8	1.0000	27.7							2	7	
140		GAT6A		6.9000	G1	1.9	-1.0	2.0	-2.0	1.0000	2.2	0.8920	4.1							2	7	
140		GAT6A		6.9000	G2	1.9	-1.0	2.0	-2.0	1.0000	2.2	0.8920	4.1							2	7	
140		GAT6A		6.9000	G3	1.9	-1.0	2.0	-2.0	1.0000	2.2	0.8920	4.1							2	7	
141		GAT6B		6.9000	G4	3.9	-1.7	3.0	-3.0	1.0000	4.2	0.9126	5.6							2	7	
141		GAT6B		6.9000	G5	3.9	-1.7	3.0	-3.0	1.0000	4.2	0.9126	6.2							2	7	
141		GAT6B		6.9000	G6	3.9	-1.7	3.0	-3.0	1.0000	4.2	0.9126	6.2							2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0317	17.8	0.9281	23.0							2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0407	17.6	0.9281	23.0							2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0407	17.6	0.9281	23.0							2	7	
SUBSYSTEM TOTALS						120.5	12.3	71.5	5.5				171.3									

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2010 ESC MOD DEM MAX INV CONT GUA-VEL

WED, JUN 24 2009 13:43

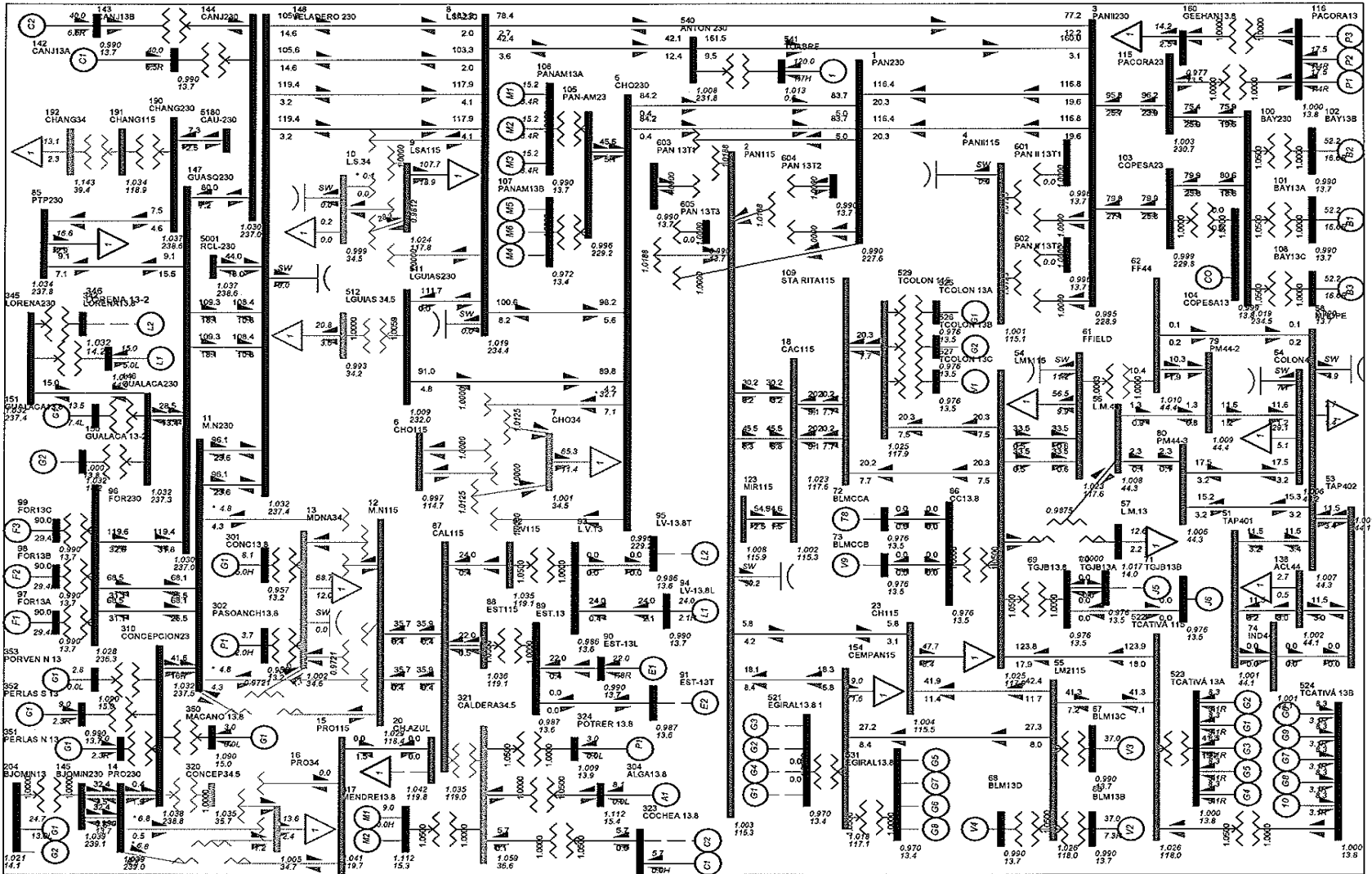
AREA TOTALS
 IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
			29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	SALVADOR		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
			100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	HONDURAS		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
			55.8	290.6	-188.3	0.0	302.8	-5.2	261.6	
4	NICA		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
			32.9	224.5	-98.9	0.0	143.2	-96.9	147.4	
5	C.RICA		1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
			271.6	569.4	-236.8	0.0	468.1	49.1	357.9	

6	1064.4	1092.6	0.0	0.0	0.0	-80.5	40.3	25.0
PANAMA	92.7	191.4	-115.6	0.0	430.5	6.8	438.5	
7	120.5	39.6	0.0	0.0	0.0	79.7	1.2	50.0
ACANAL	12.3	6.9	0.0	0.0	0.0	-10.1	15.4	
9	0.0	12.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.1	0.0	0.0	0.0	0.0	0.0	
TOTALS	6334.1	6195.6	0.0	0.0	0.0	0.0	138.5	0.0
	595.9	1816.7	-963.8	0.0	1977.4	0.0	1720.3	

3. AÑO 2011

3.1. Demanda Máxima de Verano



PLAN EXP-SIN CON C.A. JUNIO 2009
 AAO 2011 ESC MOD DEM MAX VER
 FOL. JUN 26 2009 14.11

Bus - VOLTAGE (kV/PU)
 Branch - MW/MVA
 Equipment - MW/MVA
 kV < 13.800 < 34.500 < 115.000 < 230.000 > 230.000

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	37.0	7.3	25.0	0.0	0.9900	38.1	0.9812	47.0			1	6	
67		BLM13C		13.800	V3	37.0	7.3	25.0	0.0	0.9900	38.1	0.9812	47.0			1	6	
68		BLM13D		13.800	V4	37.0	7.5	25.0	0.0	0.9900	38.1	0.9801	47.0			1	6	
90		EST-13L		13.800	E1	22.0	1.8	12.0	-5.0	0.9900	22.3	0.9966	27.0			1	6	
94		LV-13.8L		13.800	L1	24.0	2.1	12.0	-5.0	0.9900	24.3	0.9960	27.0			1	6	
97		FOR13A		13.800	F1	90.0	-29.4	50.0	-50.0	0.9900	95.6	0.9506	111.0			1	6	
98		FOR13B		13.800	F2	90.0	-29.4	50.0	-50.0	0.9900	95.6	0.9506	111.0			1	6	
99		FOR13C		13.800	F3	90.0	-29.4	50.0	-50.0	0.9900	95.6	0.9506	111.0			1	6	
101		BAY13A		13.800	B1	52.2	16.6	50.0	-25.0	0.9900	55.3	0.9529	96.0			1	6	6SYST
102		BAY13B		13.800	B2	52.2	16.6	50.0	-25.0	0.9900	55.3	0.9529	96.0			1	6	
106		PANAM13A		13.800	M1	15.2	3.4	9.0	0.0	0.9900	15.7	0.9758	20.7			1	6	
106		PANAM13A		13.800	M2	15.2	3.4	9.0	0.0	0.9900	15.7	0.9758	20.7			1	6	
106		PANAM13A		13.800	M3	15.2	3.4	9.0	0.0	0.9900	15.7	0.9758	20.7			1	6	
108		BAY13C		13.800	B3	52.2	16.6	50.0	-25.0	0.9900	55.3	0.9529	100.0			1	6	
116		PACORA13		13.800	P1	17.5	1.4	8.8	0.0	1.0000	17.5	0.9967	21.7			1	6	
116		PACORA13		13.800	P2	17.5	1.4	8.8	0.0	1.0000	17.5	0.9967	21.7			1	6	
142		CANJ13A		13.800	C1	40.0	6.5	29.0	-29.0	0.9900	40.9	0.9870	69.0			1	6	
143		CANJ13B		13.800	C2	40.0	6.5	29.0	-29.0	0.9900	40.9	0.9870	69.0			1	6	
151		GUALACA13.8		13.800	G1	13.5	-7.4	7.4	-7.4	1.0004	15.4	0.8761	14.8			1	6	
204		BJOMIN13		13.800	G1	24.7	-13.0	13.0	-13.0	1.0211	27.3	0.8849	28.9			1	6	
205		BAITUN13.8		13.800	G1	40.0	1.1	26.6	-26.6	0.9900	40.4	0.9996	50.6			1	6	
301		CONC13.8		13.800	G1	8.1	5.0	5.0	-5.0	0.9570	9.9	0.8509	13.5			1	6	
302		PASOANCH13.8		13.800	P1	3.7	2.0	2.0	-2.0	0.9552	4.4	0.8797	6.2			1	6	
304		ALGA13.8		13.800	A1	8.1	0.0	2.0	0.0	1.1124	7.3	1.0000	13.5			1	6	
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.1122	8.1	1.0000	35.3			1	6	
323		COCHEA 13.8		13.800	C1	5.7	0.0	0.0	0.0	1.1123	5.1	1.0000	35.3			1	6	
324		POTRER 13.8		13.800	P1	3.0	0.0	2.0	0.0	1.0090	3.0	1.0000	6.2			1	6	
340		PEDGALITO13.8		13.800	P1	17.5	2.4	12.0	-5.0	0.9900	17.8	0.9908	27.0			1	6	
342		LORENA13.8		13.800	L1	15.0	-5.0	10.5	-5.0	1.0167	15.6	0.9487	19.9			1	6	
350		MACANO 13.8		13.800	G1	3.0	0.0	2.0	0.0	1.0900	2.8	1.0000	6.2			1	6	
351		PERLAS N 13		13.800	G1	9.0	2.3	5.0	-5.0	0.9900	9.4	0.9700	13.5			1	6	
352		PERLAS S 13		13.800	G1	9.0	2.3	5.0	-5.0	0.9900	9.4	0.9700	13.5			1	6	
353		PORVEN N 13		13.800	G1	2.8	0.0	2.0	0.0	1.0900	2.6	1.0000	6.2			1	6	
523		TCATIVÁ 13A		13.800	G1	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
523		TCATIVÁ 13A		13.800	G2	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
523		TCATIVÁ 13A		13.800	G3	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
523		TCATIVÁ 13A		13.800	G4	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
523		TCATIVÁ 13A		13.800	G5	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
524		TCATIVÁ 13B		13.800	10	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
524		TCATIVÁ 13B		13.800	G6	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
524		TCATIVÁ 13B		13.800	G7	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	
524		TCATIVÁ 13B		13.800	G8	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9			1	6	

524 TCATIVÁ 13B	13.800	G9	8.3	3.1	6.6	-6.6	1.0000	8.8	0.9349	10.9	1	6
541 TOABRE	0.6000	1	120.0	1.7	1.7	1.7	1.0128	118.5	0.9999	166.7	1	6
SUBSYSTEM TOTALS			1118.8	36.4	663.5	-430.9				1630.4		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 13:45
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX VER

AREA 7 [ACANAL] MACHINE SUMMARY:

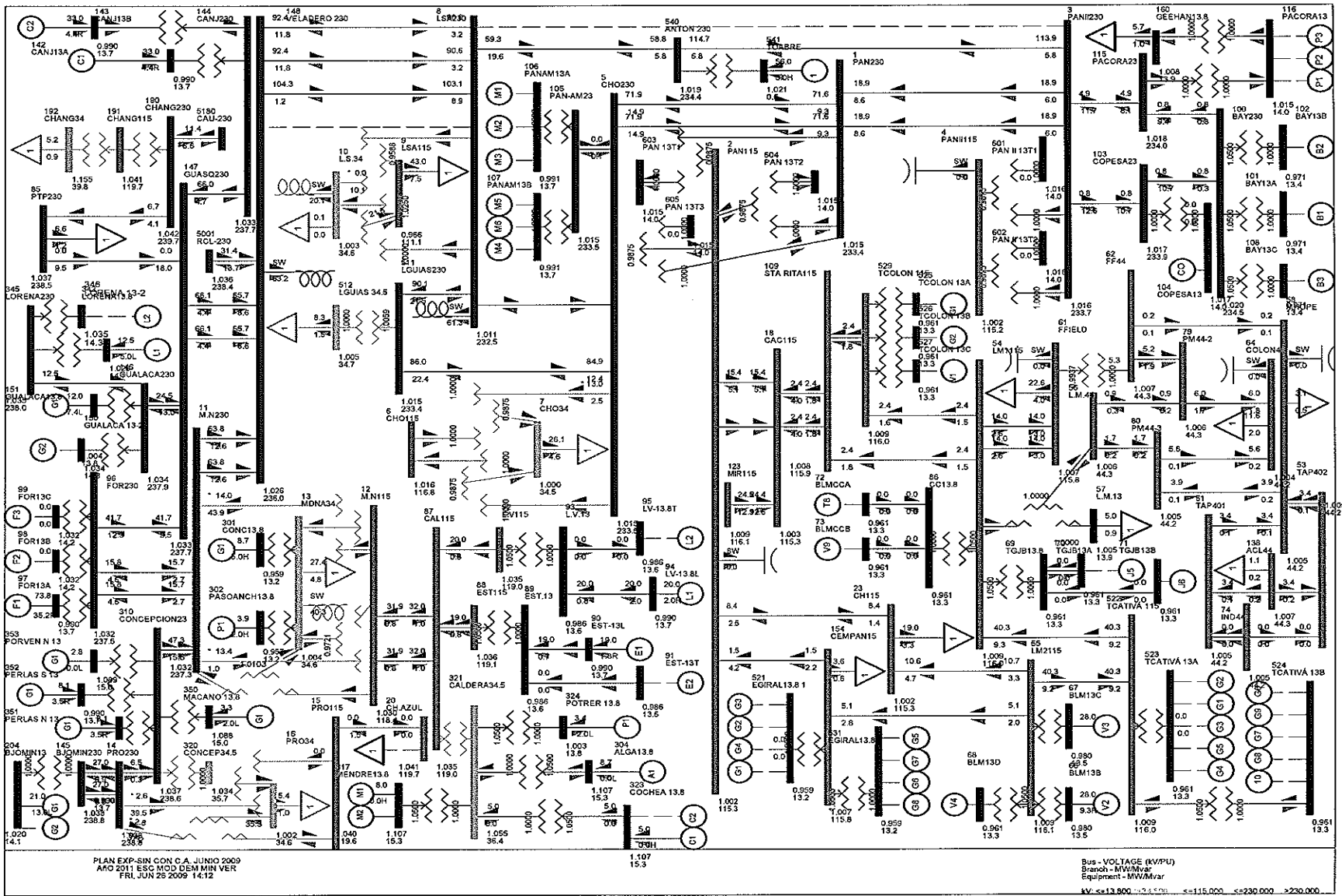
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0007	35.0	1.0000	44.1							2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0134	16.9	1.0000	27.7							2	7	
140		GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9971	4.1							2	7	
140		GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9971	4.1							2	7	
140		GAT6A		6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9971	4.1							2	7	
141		GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9747	5.6							2	7	
141		GAT6B		6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9747	6.2							2	7	
141		GAT6B		6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9747	6.2							2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0278	17.8	0.9281	23.0							2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0369	17.7	0.9281	23.0							2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0369	17.7	0.9281	23.0							2	7	
SUBSYSTEM TOTALS						120.5	17.4	71.5	5.5				171.3									

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:01
 PLAN EXP-SIN CON C.A. JUNIO 2009 AREA TOTALS
 AÑO 2011 ESC MOD DEM MAX VER IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
	1		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
	GUATEMAL		29.7	349.5	-266.2	0.0	412.9	17.9	341.4	
	2		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
	SALVADOR		100.8	182.3	-58.1	0.0	219.9	38.3	158.1	
	3		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
	HONDURAS		55.6	290.6	-188.3	0.0	302.9	-5.4	261.6	
	4		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
	NICA		32.2	224.5	-98.9	0.0	143.3	-97.5	147.3	

5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	234.8	569.4	-236.6	0.0	471.5	16.6	356.8	
6	1118.8	1154.0	0.0	0.0	0.0	-78.4	30.6	25.0
PANAMA	36.4	202.2	-53.3	0.0	484.8	35.0	335.3	
7	120.5	41.8	0.0	0.0	0.0	77.6	1.2	50.0
ACANAL	17.4	7.3	0.0	0.0	0.0	-4.9	15.0	
9	0.0	12.6	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.2	0.0	0.0	0.0	0.0	0.0	
TOTALS	6388.6	6259.9	0.0	0.0	0.0	0.0	128.6	0.0
	506.8	1828.0	-901.4	0.0	2035.2	0.0	1615.5	

3.2. Demanda Mínima de Verano



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:06
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MIN VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	1.0147	233.38	3		PANII230		230.00	6	1.0161	233.70
5		CHO230		230.00	6	1.0154	233.53	8		LSA230		230.00	6	1.0110	232.54
11		M.N230		230.00	6	1.0317	237.30	14		PRO230		230.00	6	1.0383	238.80
85		PTP230		230.00	6	1.0388	238.92	96		FOR230		230.00	6	1.0324	237.46
100		BAY230		230.00	6	1.0197	234.54	103		COPESA23		230.00	6	1.0172	233.95
105		PAN-AM23		230.00	6	1.0154	233.53	115		PACORA23		230.00	6	1.0176	234.05
144		CANJ230		230.00	6	1.0334	237.69	145		BJOMIN230		230.00	6	1.0384	238.84
146		GUALACA230		230.00	6	1.0343	237.89	147		GUASQ230		230.00	6	1.0334	237.68
148		VELADERO		230230.00	6	1.0263	236.05	190		CHANG230		230.00	6	1.0421	239.69
310		CONCEPCION23		230.00	6	1.0373	238.58	345		LORENA230		230.00	6	1.0350	238.04
511		LGUIAS230		230.00	6	1.0148	233.40	540		ANTON		230.00	6	1.0192	234.41
6000		FRONTER		230.00	6	1.0380	238.75								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
* NONE *															

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:06
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MIN VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0025	115.29	4		PANIII115		115.00	6	1.0018	115.21
6		CHO115		115.00	6	1.0157	116.81	12		M.N115		115.00	6	1.0299	118.44
15		PRO115		115.00	6	1.0402	119.62	18		CAC115		115.00	6	1.0025	115.29
20		CH.AZUL		115.00	6	1.0410	119.71	23		CH115		115.00	6	1.0025	115.29
33		STM115		115.00	6	1.0018	115.21	48		TINAJ115		115.00	6	1.0019	115.22
50		M.O115		115.00	6	1.0020	115.23	52		TOC115		115.00	6	1.0008	115.10
54		LM1115		115.00	6	1.0087	116.00	55		LM2115		115.00	6	1.0092	116.05
61		FFIELD		115.00	6	1.0069	115.79	87		CAL115		115.00	6	1.0347	118.99
88		EST115		115.00	6	1.0356	119.10	92		L.V115		115.00	6	1.0351	119.03
109		STA RITA115		115.00	6	1.0082	115.94	123		MIR115		115.00	7	1.0092	116.06
154		CEMPAN15		115.00	6	1.0072	115.83	191		CHANG115		115.00	6	1.0409	119.70
522		TCATIVÁ		115.00	6	1.0089	116.02	529		TCOLON		115.00	6	1.0086	115.99

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9		LSA115		115.00	6	0.9658	111.07	19		C.V115		115.00	6	0.9992	114.91
21		C.BAN115		115.00	6	0.9993	114.92	26		LOC115		115.00	6	0.9997	114.96
30		MAR115		115.00	6	0.9992	114.90	37		SAN115		115.00	6	0.9988	114.87

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MIN VER

WED, JUN 24 2009 14:06

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING	
66		BLM13B		13.800	V2	28.0	9.3	25.0	0.0	0.9800	30.1	0.9495	47.0			1	6		
67		BLM13C		13.800	V3	28.0	9.3	25.0	0.0	0.9800	30.1	0.9495	47.0			1	6		
90		EST-13L		13.800	E1	19.0	1.8	12.0	-5.0	0.9900	19.3	0.9958	27.0			1	6		
94		LV-13.8L		13.800	L1	20.0	2.0	12.0	-5.0	0.9900	20.3	0.9951	27.0			1	6		
97		FOR13A		13.800	F1	73.8	-35.2	50.0	-50.0	0.9900	82.6	0.9024	111.0			1	6	6SYST	
142		CANJ13A		13.800	C1	33.0	4.4	29.0	-29.0	0.9900	33.6	0.9913	69.0			1	6		
143		CANJ13B		13.800	C2	33.0	4.4	29.0	-29.0	0.9900	33.6	0.9913	69.0			1	6		
151		GUALACA13.8		13.800	G1	12.0	-7.4	7.4	-7.4	1.0036	14.1	0.8502	14.8			1	6		
204		BJOMIN13		13.800	G1	21.0	-13.0	13.0	-13.0	1.0202	24.2	0.8503	28.9			1	6		
205		BAITUN13.8		13.800	G1	33.0	1.5	26.6	-26.6	0.9900	33.4	0.9990	50.6			1	6		
301		CONC13.8		13.800	G1	8.7	5.0	5.0	-5.0	0.9589	10.5	0.8670	13.5			1	6		
302		PASOANCH13.8		13.800	P1	3.9	2.0	2.0	-2.0	0.9570	4.6	0.8884	6.2			1	6		
304		ALGA13.8		13.800	A1	8.7	0.0	2.0	0.0	1.1074	7.9	1.0000	13.5			1	6		
317		MENDRE13.8		13.800	M1	8.0	0.0	0.0	0.0	1.1073	7.2	1.0000	35.3			1	6		
323		COCHEA 13.8		13.800	C1	5.0	0.0	0.0	0.0	1.1073	4.5	1.0000	35.3			1	6		
324		POTRER 13.8		13.800	P1	3.4	-2.0	2.0	-2.0	1.0032	3.9	0.8619	6.2			1	6		
340		PEDGALITO138		13.800	P1	18.7	2.7	12.0	-5.0	0.9900	19.1	0.9900	27.0			1	6		
342		LORENA13.8		13.800	L1	12.5	-5.0	10.5	-5.0	1.0196	13.2	0.9285	19.9			1	6		
350		MACANO 13.8		13.800	G1	3.3	-2.0	2.0	-2.0	1.0879	3.5	0.8521	6.2			1	6		
351		PERLAS N 13		13.800	G1	8.1	3.5	5.0	-5.0	0.9900	8.9	0.9183	13.5			1	6		
352		PERLAS S 13		13.800	G1	8.1	3.5	5.0	-5.0	0.9900	8.9	0.9183	13.5			1	6		
353		PORVEN N 13		13.800	G1	2.8	0.0	2.0	0.0	1.0892	2.6	1.0000	6.2			1	6		
541		TOABRE		0.6000	1	56.0	0.0	0.0	0.0	1.0214	54.8	1.0000	166.7			1	6		
SUBSYSTEM TOTALS						448.0	-15.5	276.5	-196.0				854.6						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MIN VER

WED, JUN 24 2009 14:06

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING	
170		MIR13G		13.800	M1	16.1	6.8	11.2	6.8	1.0406	16.8	0.9204	23.0			2	7		
171		MIR13H		13.800	M1	16.1	6.8	11.2	6.8	1.0497	16.6	0.9205	23.0			2	7		
171		MIR13H		13.800	M2	16.1	6.8	11.2	6.8	1.0497	16.6	0.9204	23.0			2	7		
SUBSYSTEM TOTALS						48.2	20.5	33.5	20.5				69.1						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MIN VER

WED, JUN 24 2009 14:07

AREA TOTALS
 IN MW/MVAR

X-- AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL		29.7	349.5	-266.2	0.0	412.9	17.9	341.4	
2		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR		100.8	182.3	-58.1	0.0	219.9	38.3	158.1	
3		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
HONDURAS		55.6	290.6	-188.3	0.0	302.9	-5.4	261.6	
4		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA		32.2	224.5	-98.9	0.0	143.3	-97.5	147.3	
5		1344.9	1324.8	0.0	0.0	0.0	0.9	19.3	0.0
C.RICA		233.1	569.4	-236.4	0.0	471.5	14.8	356.9	
6		448.0	460.9	0.0	0.0	0.0	-32.2	14.1	25.0
PANAMA		-15.5	80.7	184.9	0.0	439.5	19.0	138.6	
7		48.2	16.7	0.0	0.0	0.0	31.3	0.2	50.0
ACANAL		20.5	2.9	0.0	0.0	0.0	12.9	4.6	
9		0.0	5.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON		0.0	0.9	0.0	0.0	0.0	0.0	0.0	
TOTALS		5645.4	5534.2	0.0	0.0	0.0	0.0	111.2	0.0
		456.4	1700.9	-663.0	0.0	1989.9	0.0	1408.5	

523	TCATIVÁ	13A	13.800	G1	8.2	2.3	6.6	-6.6	0.9900	8.6	0.9627	10.9	1	6
523	TCATIVÁ	13A	13.800	G2	8.2	2.3	6.6	-6.6	0.9900	8.6	0.9627	10.9	1	6
523	TCATIVÁ	13A	13.800	G3	8.2	2.3	6.6	-6.6	0.9900	8.6	0.9627	10.9	1	6
523	TCATIVÁ	13A	13.800	G4	8.2	2.3	6.6	-6.6	0.9900	8.6	0.9627	10.9	1	6
523	TCATIVÁ	13A	13.800	G5	8.2	2.3	6.6	-6.6	0.9900	8.6	0.9627	10.9	1	6
541	TOABRE		0.6000	1	60.0	0.0	0.0	0.0	0.9972	60.2	1.0000	166.7	1	6
SUBSYSTEM TOTALS					1113.7	98.1	672.5	-522.4				1852.6		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:10
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV

AREA 7 [ACANAL] MACHINE SUMMARY:

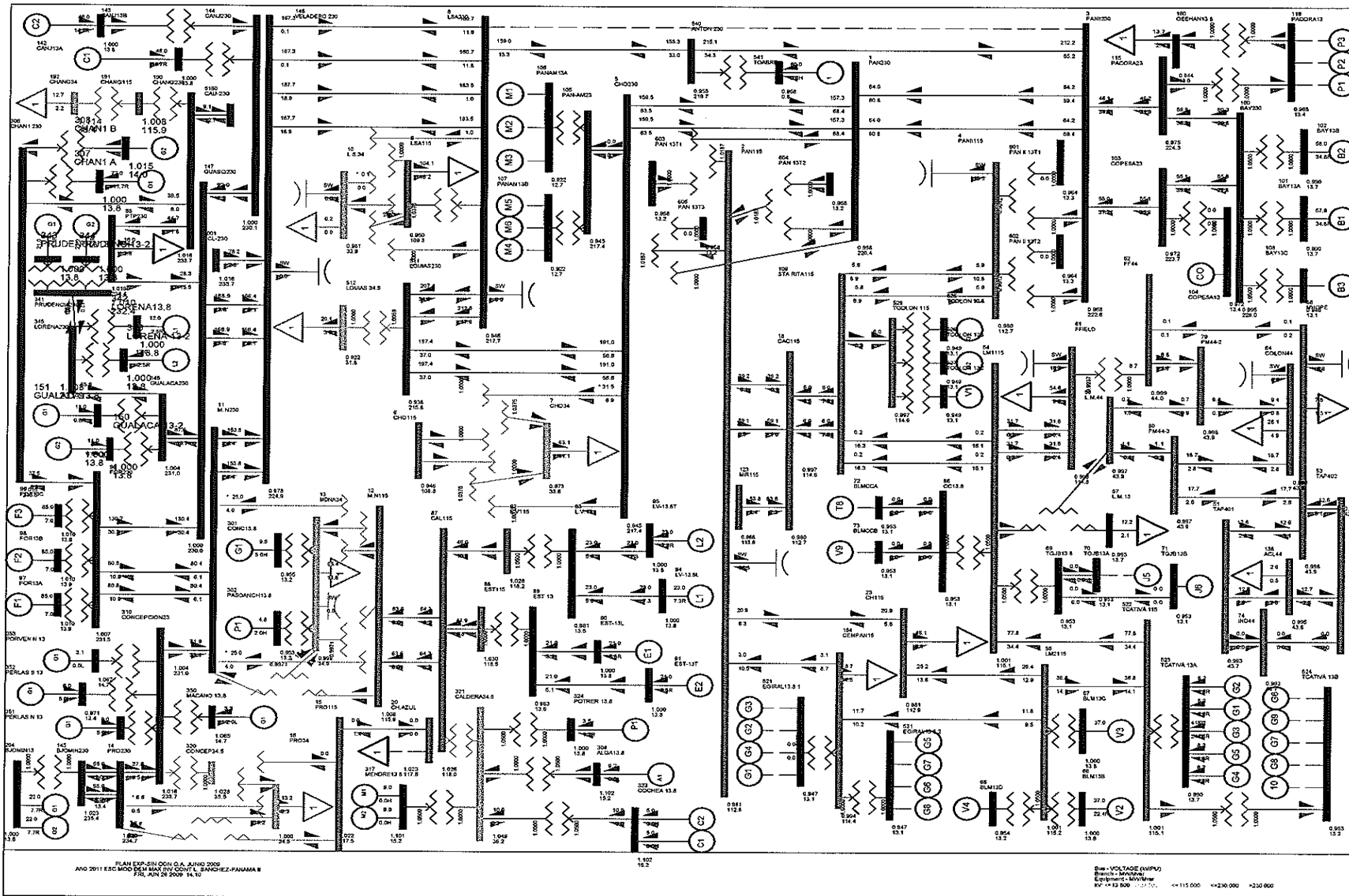
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0102	34.6	1.0000	44.1								2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0232	16.7	1.0000	27.7								2	7	
140		GAT6A		6.9000	G1	1.9	-0.4	2.0	-2.0	1.0000	2.0	0.9755	4.1								2	7	
140		GAT6A		6.9000	G2	1.9	-0.4	2.0	-2.0	1.0000	2.0	0.9755	4.1								2	7	
140		GAT6A		6.9000	G3	1.9	-0.4	2.0	-2.0	1.0000	2.0	0.9755	4.1								2	7	
141		GAT6B		6.9000	G4	3.9	-1.2	3.0	-3.0	1.0000	4.0	0.9565	5.6								2	7	
141		GAT6B		6.9000	G5	3.9	-1.2	3.0	-3.0	1.0000	4.0	0.9565	6.2								2	7	
141		GAT6B		6.9000	G6	3.9	-1.2	3.0	-3.0	1.0000	4.0	0.9565	6.2								2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0375	17.7	0.9281	23.0								2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0465	17.5	0.9281	23.0								2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0465	17.5	0.9281	23.0								2	7	
SUBSYSTEM TOTALS						120.5	15.6	71.5	5.5				171.3										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:10
 PLAN EXP-SIN CON C.A. JUNIO 2009 AREA TOTALS
 AÑO 2011 ESC MOD DEM MAX INV IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
	1		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
	GUATEMAL		29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
	2		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
	SALVADOR		100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
	3		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
	HONDURAS		55.7	290.6	-188.3	0.0	302.8	-5.3	261.6	
	4		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
	NICA		32.7	224.5	-98.9	0.0	143.2	-97.1	147.4	

5	1344.9	1324.8	0.0	0.0	0.0	0.4	19.7	0.0
C.RICA	260.8	569.4	-237.4	0.0	476.3	45.9	359.3	
6	1113.7	1114.8	0.0	0.0	0.0	-79.3	66.0	25.0
PANAMA	98.1	195.3	-238.3	0.0	463.1	6.5	595.5	
7	120.5	40.4	0.0	0.0	0.0	78.9	1.3	50.0
ACANAL	15.6	7.1	0.0	0.0	0.0	-6.3	14.9	
9	0.0	12.2	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.1	0.0	0.0	0.0	0.0	0.0	
TOTALS	6383.5	6218.9	0.0	0.0	0.0	0.0	164.6	0.0
	593.5	1820.8	-1087.1	0.0	2018.2	0.0	1878.1	

3.3.1. Contingencia Llano Sánchez-Panamá II



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:13
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV CONT L. SANCHEZ-PANAMA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.N230	230.00	6	1.0043	230.99	14	PRO230	230.00	6	1.0203	234.66				
85	PTP230	230.00	6	1.0066	231.51	96	FOR230	230.00	6	1.0067	231.54				
144	CANJ230	230.00	6	1.0002	230.06	145	BJOMIN230	230.00	6	1.0234	235.38				
146	GUALACA230	230.00	6	1.0041	230.95	147	GUASQ230	230.00	6	1.0000	230.00				
190	CHANG230	230.00	6	1.0159	233.66	306	CHAN1 230	230.00	6	1.0153	233.53				
310	CONCEPCION230	230.00	6	1.0159	233.66	341	PRUDENCIA230	230.00	6	1.0104	232.39				
345	LORENA230	230.00	6	1.0082	231.88	6000	FRONTER	230.00	6	1.0194	234.46				

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN230	230.00	6	0.9582	220.39	3	PANII230	230.00	6	0.9678	222.60				
5	CHO230	230.00	6	0.9453	217.41	8	LSA230	230.00	6	0.9464	217.67				
100	BAY230	230.00	6	0.9955	228.96	103	COPESA23	230.00	6	0.9725	223.66				
105	PAN-AM23	230.00	6	0.9453	217.41	115	PACORA23	230.00	6	0.9754	224.33				
148	VELADERO	230230.00	6	0.9776	224.85	511	LGUIAS230	230.00	6	0.9383	215.80				
540	ANTON 230	230.00	6	0.9553	219.71										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:13
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV CONT L. SANCHEZ-PANAMA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
12	M.N115	115.00	6	1.0081	115.93	15	PRO115	115.00	6	1.0221	117.54				
20	CH.AZUL	115.00	6	1.0228	117.62	54	LM1115	115.00	6	1.0005	115.06				
55	LM2115	115.00	6	1.0013	115.15	87	CAL1115	115.00	6	1.0264	118.03				
88	EST115	115.00	6	1.0300	118.46	92	L.V115	115.00	6	1.0278	118.20				
191	CHANG115	115.00	6	1.0075	115.87	522	TCATIVÁ 115	115.00	6	1.0011	115.12				

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115	115.00	6	0.9806	112.77	4	PANII115	115.00	6	0.9803	112.73				
6	CHO115	115.00	6	0.9464	108.84	9	LSA115	115.00	6	0.9504	109.30				
18	CAC115	115.00	6	0.9803	112.74	19	C.V115	115.00	6	0.9727	111.86				
21	C.BAN115	115.00	6	0.9714	111.71	23	CH115	115.00	6	0.9814	112.86				

26	LOC115	115.00	6	0.9724	111.83	30	MAR115	115.00	6	0.9715	111.72
33	STM115	115.00	6	0.9789	112.57	37	SAN115	115.00	6	0.9703	111.58
48	TINAJ115	115.00	6	0.9784	112.52	50	M.O115	115.00	6	0.9785	112.53
52	TOC115	115.00	6	0.9778	112.45	61	FFIELD	115.00	6	0.9983	114.81
109	STA RITA115	115.00	6	0.9969	114.64	123	MIR115	115.00	7	0.9881	113.64
154	CEMPAN15	115.00	6	0.9945	114.36	529	TCOLON 115	115.00	6	0.9969	114.64

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:13
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV CONT L. SANCHEZ-PANAMA II

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	37.0	22.4	25.0	0.0	1.0000	43.3	0.8551	47.0			1	6	
67		BLM13C		13.800	V3	37.0	22.4	25.0	0.0	1.0000	43.3	0.8551	47.0			1	6	
90		EST-13L		13.800	E1	21.0	6.5	12.0	-5.0	1.0000	22.0	0.9548	27.0			1	6	
91		EST-13T		13.800	E2	21.0	6.5	12.0	-5.0	1.0000	22.0	0.9548	27.0			1	6	
94		LV-13.8L		13.800	L1	23.0	7.3	12.0	-5.0	1.0000	24.1	0.9526	27.0			1	6	
95		LV-13.8T		13.800	L2	23.0	7.3	12.0	-5.0	1.0000	24.1	0.9526	27.0			1	6	
97		FOR13A		13.800	F1	85.0	7.0	50.0	-50.0	1.0100	84.4	0.9967	111.0			1	6	
98		FOR13B		13.800	F2	85.0	7.0	50.0	-50.0	1.0100	84.4	0.9967	111.0			1	6	
99		FOR13C		13.800	F3	85.0	7.0	50.0	-50.0	1.0100	84.4	0.9967	111.0			1	6	
101		BAY13A		13.800	B1	57.9	34.8	50.0	-25.0	0.9900	68.2	0.8574	96.0			1	6	6SYST
102		BAY13B		13.800	B2	58.0	34.8	50.0	-25.0	0.9900	68.3	0.8577	96.0			1	6	
142		CANJ13A		13.800	C1	46.0	14.7	29.0	-29.0	1.0000	48.3	0.9526	69.0			1	6	
143		CANJ13B		13.800	C2	46.0	14.7	29.0	-29.0	1.0000	48.3	0.9526	69.0			1	6	
150		GUALACA	13-213.800	G2		11.0	-0.8	7.4	-7.4	1.0000	11.0	0.9974	14.8			1	6	
151		GUALACA	13.8	G1		11.0	-0.8	7.4	-7.4	1.0000	11.0	0.9974	14.8			1	6	
193		GEBONYIC		13.800	G1	9.0	-0.4	4.0	-4.0	1.0000	9.0	0.9988	35.3			1	6	
193		GEBONYIC		13.800	G2	9.0	-0.4	4.0	-4.0	1.0000	9.0	0.9988	35.3			1	6	
193		GEBONYIC		13.800	G3	9.0	-0.4	4.0	-4.0	1.0000	9.0	0.9988	35.3			1	6	
204		BJOMIN13		13.800	G1	22.0	-7.7	13.0	-13.0	1.0000	23.3	0.9436	28.9			1	6	
204		BJOMIN13		13.800	G2	22.0	-7.7	13.0	-13.0	1.0000	23.3	0.9436	28.9			1	6	
205		BAITUN13.8		13.800	G1	33.0	11.3	26.6	-26.6	1.0000	34.9	0.9457	50.6			1	6	
205		BAITUN13.8		13.800	G2	33.0	11.3	26.6	-26.6	1.0000	34.9	0.9457	50.6			1	6	
301		CONC13.8		13.800	G1	9.5	5.0	5.0	-5.0	0.9549	11.2	0.8849	13.5			1	6	
302		PASOANCH	13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9531	5.4	0.9216	6.2			1	6	
304		ALGA13.8		13.800	A1	9.2	0.0	2.0	0.0	1.1017	8.4	1.0000	13.5			1	6	
307		CHAN1 A		13.800	G1	77.0	-11.7	50.0	-50.0	1.0000	77.9	0.9886	118.6			1	6	
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.1011	8.2	1.0000	35.3			1	6	
317		MENDRE13.8		13.800	M2	9.0	0.0	0.0	0.0	1.1011	8.2	1.0000	35.3			1	6	
323		COCHEA	13.8	13.800	C1	5.0	0.0	0.0	0.0	1.1015	4.5	1.0000	35.3			1	6	
323		COCHEA	13.8	13.800	C2	5.0	0.0	0.0	0.0	1.1015	4.5	1.0000	35.3			1	6	
324		POTRER	13.8	13.800	P1	3.5	1.2	2.0	-2.0	1.0000	3.7	0.9481	6.2			1	6	
340		PEDGALITO	138	13.800	P1	20.0	10.3	12.0	-5.0	1.0000	22.5	0.8887	27.0			1	6	
342		LORENA13.8		13.800	L1	12.0	-2.5	10.5	-5.0	1.0000	12.3	0.9789	19.9			1	6	
343		PRUDENCIA	138	13.800	G1	21.0	-5.3	9.8	-9.8	1.0000	21.7	0.9695	33.0			1	6	
344		PRUDENCIA	13-213	13.800	G2	21.0	-5.3	9.8	-9.8	1.0000	21.7	0.9695	33.0			1	6	
346		LORENA	13-2	13.800	L2	12.0	-2.5	10.5	-5.0	1.0000	12.3	0.9789	19.9			1	6	
350		MACANO	13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0655	3.6	0.8522	6.2			1	6	

351	PERLAS	N	13	13.800	G1	9.0	5.0	5.0	-5.0	0.9706	10.6	0.8742	13.5	1	6
352	PERLAS	S	13	13.800	G1	9.0	5.0	5.0	-5.0	0.9706	10.6	0.8742	13.5	1	6
353	PORVEN	N	13	13.800	G1	3.1	0.0	2.0	0.0	1.0667	2.9	1.0000	6.2	1	6
523	TCATIVÁ	13A	13.800	G1	8.2	4.8	6.6	-6.6	0.9900	9.6	0.8634	10.9	1	6	
523	TCATIVÁ	13A	13.800	G2	8.2	4.8	6.6	-6.6	0.9900	9.6	0.8634	10.9	1	6	
523	TCATIVÁ	13A	13.800	G3	8.2	4.8	6.6	-6.6	0.9900	9.6	0.8634	10.9	1	6	
523	TCATIVÁ	13A	13.800	G4	8.2	4.8	6.6	-6.6	0.9900	9.6	0.8634	10.9	1	6	
523	TCATIVÁ	13A	13.800	G5	8.2	4.8	6.6	-6.6	0.9900	9.6	0.8634	10.9	1	6	
541	TOABRE		0.6000	1	60.0	0.0	0.0	0.0	0.9578	62.6	1.0000	166.7	1	6	
SUBSYSTEM TOTALS						1127.2	219.9	672.5	-522.4				1852.6		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:13
PLAN EXP-SIN CON C.A. JUNIO 2009
AÑO 2011 ESC MOD DEM MAX INV CONT L. SANCHEZ-PANAMA II

AREA 7 [ACANAL] MACHINE SUMMARY:

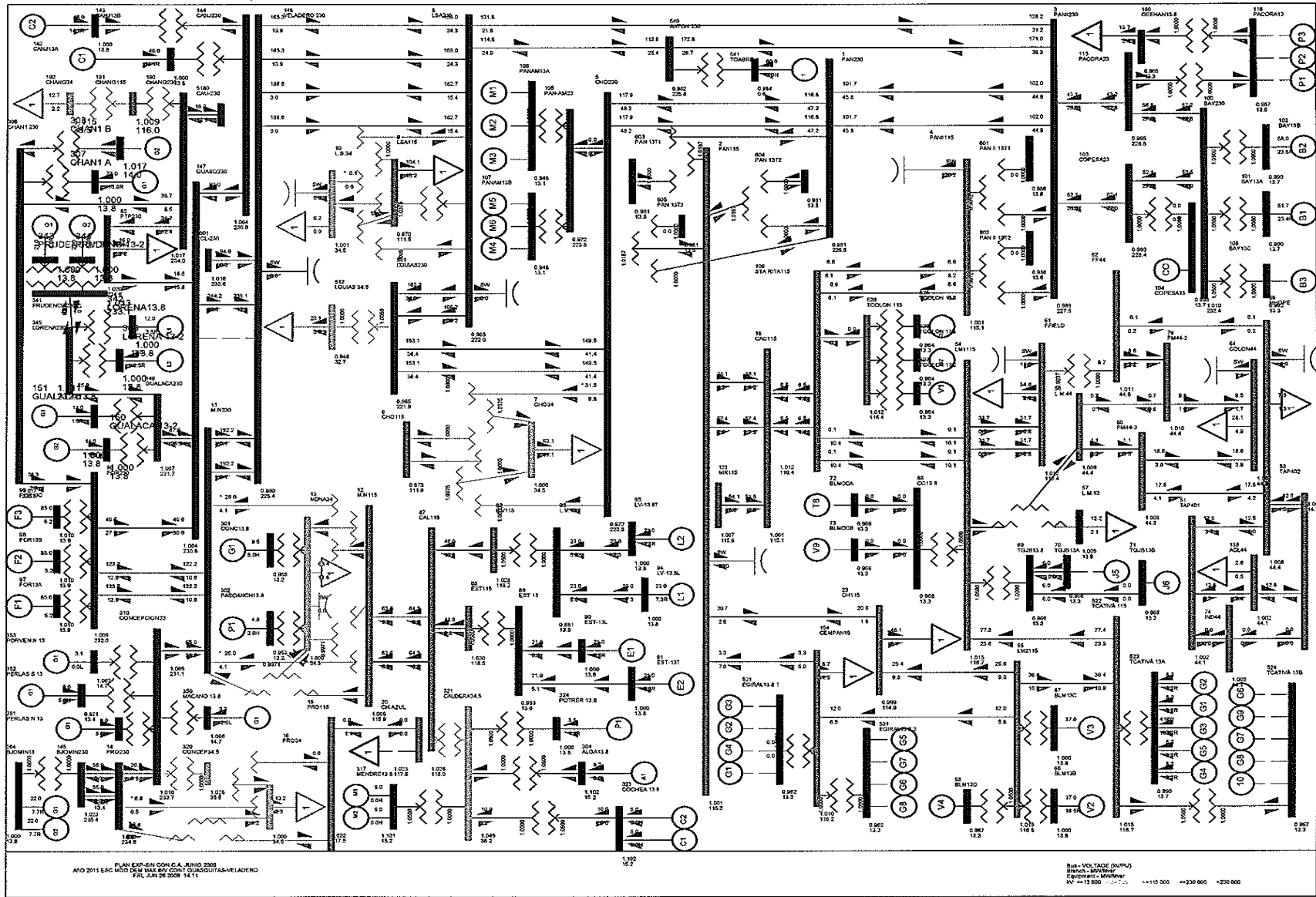
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
129		MIR13D		13.800	G4	35.0	4.5	15.0	0.0	1.0000	35.3	0.9920	44.1							2	7		
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0016	17.1	1.0000	27.7							2	7		
140		GAT6A		6.9000	G1	1.9	0.3	2.0	-2.0	1.0000	2.0	0.9900	4.1							2	7		
140		GAT6A		6.9000	G2	1.9	0.3	2.0	-2.0	1.0000	2.0	0.9900	4.1							2	7		
140		GAT6A		6.9000	G3	1.9	0.3	2.0	-2.0	1.0000	2.0	0.9900	4.1							2	7		
141		GAT6B		6.9000	G4	3.9	-0.5	3.0	-3.0	1.0000	3.9	0.9931	5.6							2	7		
141		GAT6B		6.9000	G5	3.9	-0.5	3.0	-3.0	1.0000	3.9	0.9931	6.2							2	7		
141		GAT6B		6.9000	G6	3.9	-0.5	3.0	-3.0	1.0000	3.9	0.9931	6.2							2	7		
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0162	18.0	0.9281	23.0							2	7		
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0253	17.9	0.9281	23.0							2	7		
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0253	17.9	0.9281	23.0							2	7		
SUBSYSTEM TOTALS						120.5	24.4	71.5	5.5				171.3										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:13
PLAN EXP-SIN CON C.A. JUNIO 2009 AREA TOTALS
AÑO 2011 ESC MOD DEM MAX INV CONT L. SANCHEZ-PANAMA II IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
			29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	SALVADOR		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
			100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	HONDURAS		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
			55.8	290.6	-188.3	0.0	302.8	-5.2	261.6	
4	NICA		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
			33.0	224.5	-98.9	0.0	143.2	-96.8	147.4	
5	C.RICA		1344.9	1324.8	0.0	0.0	0.0	0.4	19.7	0.0
			271.5	569.4	-236.9	0.0	475.1	54.3	359.9	

6	1127.2	1114.8	0.0	0.0	0.0	-79.2	79.5	25.0
PANAMA	219.9	195.3	-224.2	0.0	419.0	-10.2	675.9	
7	120.5	40.4	0.0	0.0	0.0	78.8	1.3	50.0
ACANAL	24.4	7.1	0.0	0.0	0.0	1.7	15.6	
9	0.0	12.2	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.1	0.0	0.0	0.0	0.0	0.0	
TOTALS	6397.0	6218.9	0.0	0.0	0.0	0.0	178.1	0.0
	735.1	1820.8	-1072.6	0.0	1972.9	0.0	1959.8	

3.3.2. Contingencia Guasquitas-Veladero



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:17
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV CONT GUASQUITAS-VELADERO

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.N230			230.00	6	1.0046	231.05	14	PRO230			230.00	6	1.0201	234.62
85	PTP230			230.00	6	1.0095	232.19	96	FOR230			230.00	6	1.0086	231.98
100	BAY230			230.00	6	1.0103	232.36	144	CANJ230			230.00	6	1.0037	230.86
145	BJOMIN230			230.00	6	1.0233	235.35	146	GUALACA230			230.00	6	1.0074	231.71
147	GUASQ230			230.00	6	1.0035	230.82	190	CHANG230			230.00	6	1.0174	233.99
306	CHAN1 230			230.00	6	1.0166	233.83	310	CONCEPCION230			230.00	6	1.0160	233.68
341	PRUDENCIA230			230.00	6	1.0133	233.06	345	LORENA230			230.00	6	1.0112	232.58
6000	FRONTER			230.00	6	1.0191	234.40								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN230			230.00	6	0.9807	225.56	3	PANII230			230.00	6	0.9892	227.52
5	CHO230			230.00	6	0.9718	223.51	8	LSA230			230.00	6	0.9651	221.97
103	COPESA23			230.00	6	0.9929	228.36	105	PAN-AM23			230.00	6	0.9718	223.51
115	PACORA23			230.00	6	0.9949	228.84	148	VELADERO 230			230.00	6	0.9798	225.36
511	LGUIAS230			230.00	6	0.9646	221.87	540	ANTON 230			230.00	6	0.9818	225.82

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:17
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV CONT GUASQUITAS-VELADERO

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115			115.00	6	1.0015	115.17	4	PANIII115			115.00	6	1.0009	115.10
12	M.N115			115.00	6	1.0082	115.95	15	PRO115			115.00	6	1.0219	117.52
18	CAC115			115.00	6	1.0011	115.13	20	CH.AZUL			115.00	6	1.0227	117.61
54	LM1115			115.00	6	1.0145	116.67	55	LM2115			115.00	6	1.0152	116.75
61	FFIELD			115.00	6	1.0123	116.41	87	CAL115			115.00	6	1.0265	118.04
88	EST115			115.00	6	1.0301	118.46	92	L.V115			115.00	6	1.0279	118.21
109	STA RITA115			115.00	6	1.0123	116.41	123	MIR115			115.00	7	1.0071	115.82
154	CEMPAN15			115.00	6	1.0104	116.20	191	CHANG115			115.00	6	1.0085	115.98
522	TCATIVA 115			115.00	6	1.0150	116.73	529	TCOLON 115			115.00	6	1.0123	116.41

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
6	CHO115			115.00	6	0.9729	111.88	9	LSA115			115.00	6	0.9695	111.50
19	C.V115			115.00	6	0.9935	114.26	21	C.BAN115			115.00	6	0.9924	114.13
23	CH115			115.00	6	0.9995	114.94	26	LOC115			115.00	6	0.9935	114.25
30	MAR115			115.00	6	0.9925	114.14	33	STM115			115.00	6	0.9998	114.97

37 SAN115	115.00	6 0.9913	114.00	48 TINAJ115	115.00	6 0.9994	114.93
50 M.O115	115.00	6 0.9995	114.94	52 TOC115	115.00	6 0.9984	114.82

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:16
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV CONT GUASQUITAS-VELADERO

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	37.0	16.5	25.0	0.0	1.0000	40.5	0.9137	47.0			1	6	
67		BLM13C		13.800	V3	37.0	16.5	25.0	0.0	1.0000	40.5	0.9137	47.0			1	6	
90		EST-13L		13.800	E1	21.0	6.5	12.0	-5.0	1.0000	22.0	0.9551	27.0			1	6	
91		EST-13T		13.800	E2	21.0	6.5	12.0	-5.0	1.0000	22.0	0.9551	27.0			1	6	
94		LV-13.8L		13.800	L1	23.0	7.3	12.0	-5.0	1.0000	24.1	0.9529	27.0			1	6	
95		LV-13.8T		13.800	L2	23.0	7.3	12.0	-5.0	1.0000	24.1	0.9529	27.0			1	6	
97		FOR13A		13.800	F1	85.0	5.2	50.0	-50.0	1.0100	84.3	0.9982	111.0			1	6	
98		FOR13B		13.800	F2	85.0	5.2	50.0	-50.0	1.0100	84.3	0.9982	111.0			1	6	
99		FOR13C		13.800	F3	85.0	5.2	50.0	-50.0	1.0100	84.3	0.9982	111.0			1	6	
101		BAY13A		13.800	B1	51.7	23.4	50.0	-25.0	0.9900	57.3	0.9112	96.0			1	6	6SYST
102		BAY13B		13.800	B2	58.0	23.8	50.0	-25.0	0.9900	63.3	0.9250	96.0			1	6	
142		CANJ13A		13.800	C1	46.0	14.1	29.0	-29.0	1.0000	48.1	0.9560	69.0			1	6	
143		CANJ13B		13.800	C2	46.0	14.1	29.0	-29.0	1.0000	48.1	0.9560	69.0			1	6	
150		GUALACA	13-213.800	G2		11.0	-1.6	7.4	-7.4	1.0000	11.1	0.9893	14.8			1	6	
151		GUALACA	13.8	G1		11.0	-1.6	7.4	-7.4	1.0000	11.1	0.9893	14.8			1	6	
193		GEBONYIC		13.800	G1	9.0	-0.5	4.0	-4.0	1.0000	9.0	0.9982	35.3			1	6	
193		GEBONYIC		13.800	G2	9.0	-0.5	4.0	-4.0	1.0000	9.0	0.9982	35.3			1	6	
193		GEBONYIC		13.800	G3	9.0	-0.5	4.0	-4.0	1.0000	9.0	0.9982	35.3			1	6	
204		BJOMIN13		13.800	G1	22.0	-7.7	13.0	-13.0	1.0000	23.3	0.9442	28.9			1	6	
204		BJOMIN13		13.800	G2	22.0	-7.7	13.0	-13.0	1.0000	23.3	0.9442	28.9			1	6	
205		BAITUN13.8		13.800	G1	33.0	11.4	26.6	-26.6	1.0000	34.9	0.9453	50.6			1	6	
205		BAITUN13.8		13.800	G2	33.0	11.4	26.6	-26.6	1.0000	34.9	0.9453	50.6			1	6	
301		CONC13.8		13.800	G1	9.5	5.0	5.0	-5.0	0.9552	11.2	0.8849	13.5			1	6	
302		PASOANCH13.8		13.800	P1	4.8	2.0	2.0	-2.0	0.9533	5.4	0.9216	6.2			1	6	
304		ALGA13.8		13.800	A1	9.2	0.0	2.0	0.0	1.1017	8.4	1.0000	13.5			1	6	
307		CHAN1 A		13.800	G1	77.0	-13.0	50.0	-50.0	1.0000	78.1	0.9860	118.6			1	6	
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.1011	8.2	1.0000	35.3			1	6	
317		MENDRE13.8		13.800	M2	9.0	0.0	0.0	0.0	1.1011	8.2	1.0000	35.3			1	6	
323		COCHEA 13.8		13.800	C1	5.0	0.0	0.0	0.0	1.1015	4.5	1.0000	35.3			1	6	
323		COCHEA 13.8		13.800	C2	5.0	0.0	0.0	0.0	1.1015	4.5	1.0000	35.3			1	6	
324		POTRE 13.8		13.800	P1	3.5	1.1	2.0	-2.0	1.0000	3.7	0.9507	6.2			1	6	
340		PEDGALITO13813.800		13.800	P1	20.0	10.3	12.0	-5.0	1.0000	22.5	0.8890	27.0			1	6	
342		LORENA13.8		13.800	L1	12.0	-3.5	10.5	-5.0	1.0000	12.5	0.9593	19.9			1	6	
343		PRUDENCIA13813.800		13.800	G1	21.0	-6.9	9.8	-9.8	1.0000	22.1	0.9497	33.0			1	6	
344		PRUDENCIA13-213.800		13.800	G2	21.0	-6.9	9.8	-9.8	1.0000	22.1	0.9497	33.0			1	6	
346		LORENA 13-2		13.800	L2	12.0	-3.5	10.5	-5.0	1.0000	12.5	0.9593	19.9			1	6	
350		MACANO 13.8		13.800	G1	3.3	-2.0	2.0	-2.0	1.0656	3.6	0.8522	6.2			1	6	
351		PERLAS N 13		13.800	G1	9.0	5.0	5.0	-5.0	0.9707	10.6	0.8742	13.5			1	6	
352		PERLAS S 13		13.800	G1	9.0	5.0	5.0	-5.0	0.9707	10.6	0.8742	13.5			1	6	
353		PORVEN N 13		13.800	G1	3.1	0.0	2.0	0.0	1.0668	2.9	1.0000	6.2			1	6	
523		TCATIVÁ 13A		13.800	G1	8.2	3.2	6.6	-6.6	0.9900	8.9	0.9333	10.9			1	6	

523	TCATIVÁ	13A	13.800	G2	8.2	3.2	6.6	-6.6	0.9900	8.9	0.9333	10.9	1	6
523	TCATIVÁ	13A	13.800	G3	8.2	3.2	6.6	-6.6	0.9900	8.9	0.9333	10.9	1	6
523	TCATIVÁ	13A	13.800	G4	8.2	3.2	6.6	-6.6	0.9900	8.9	0.9333	10.9	1	6
523	TCATIVÁ	13A	13.800	G5	8.2	3.2	6.6	-6.6	0.9900	8.9	0.9333	10.9	1	6
541	TOABRE		0.6000	1	60.0	0.0	0.0	0.0	0.9843	61.0	1.0000	166.7	1	6
SUBSYSTEM TOTALS					1121.0	162.4	672.5	-522.4				1852.6		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:16
 PLAN EXP-SIN CON C.A. JUNIO 2009
 AÑO 2011 ESC MOD DEM MAX INV CONT GUASQUITAS-VELADERO

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0009	35.0	1.0000	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0137	16.9	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9964	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9964	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9964	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9738	5.6			2	7	
141		GAT6B		6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9738	6.2			2	7	
141		GAT6B		6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9738	6.2			2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0281	17.8	0.9281	23.0			2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0371	17.7	0.9281	23.0			2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0371	17.7	0.9281	23.0			2	7	
SUBSYSTEM TOTALS						120.5	17.3	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, JUN 24 2009 14:17
 PLAN EXP-SIN CON C.A. JUNIO 2009 AREA TOTALS
 AÑO 2011 ESC MOD DEM MAX INV CONT GUASQUITAS-VELADERO IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
	1		1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
	GUATEMAL		29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
	2		911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
	SALVADOR		100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
	3		1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
	HONDURAS		55.8	290.6	-188.3	0.0	302.8	-5.2	261.6	
	4		538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
	NICA		33.0	224.5	-98.9	0.0	143.2	-96.8	147.4	
	5		1344.9	1324.8	0.0	0.0	0.0	0.2	20.0	0.0

C.RICA	271.6	569.4	-236.9	0.0	475.0	52.9	361.3	
6	1121.0	1114.8	0.0	0.0	0.0	-79.0	73.0	25.0
PANAMA	162.4	195.3	-233.4	0.0	437.4	-2.2	638.0	
7	120.5	40.4	0.0	0.0	0.0	78.9	1.3	50.0
ACANAL	17.3	7.1	0.0	0.0	0.0	-4.9	15.1	
9	0.0	12.2	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.1	0.0	0.0	0.0	0.0	0.0	
TOTALS	6390.7	6218.9	0.0	0.0	0.0	0.0	171.8	0.0
	670.6	1820.8	-1081.8	0.0	1991.2	0.0	1922.8	

4. AÑO 2012

4.1. Demanda Máxima de Verano

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:21
 PLAN. EXP-SIN - C.A. JUNIO 2009
 Año 2012 ESC MOD DEM MAX VERANO

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
8		LSA230		230.00	6	1.0069	231.58	11		M.N230		230.00	6	1.0266	236.11
14		PRO230		230.00	6	1.0361	238.30	85		PTP230		230.00	6	1.0254	235.84
96		FOR230		230.00	6	1.0234	235.38	100		BAY230		230.00	6	1.0021	230.49
144		CANJ230		230.00	6	1.0236	235.44	145		BJOMIN230		230.00	6	1.0372	238.56
146		GUALACA230		230.00	6	1.0251	235.78	147		GUASQ230		230.00	6	1.0236	235.42
148		VELADERO	230	230.00	6	1.0225	235.18	149		BBLANCO		230.00	6	1.0209	234.81
190		CHANG230		230.00	6	1.0258	235.94	306		CHAN1	230	230.00	6	1.0248	235.71
310		CONCEPCION23	230	230.00	6	1.0339	237.79	311		PANDO230		230.00	6	1.0338	237.76
341		PRUDENCIA230	230	230.00	6	1.0277	236.36	345		LORENA230		230.00	6	1.0268	236.16
511		LGUIAS230		230.00	6	1.0008	230.19	6000		FRONTER		230.00	6	1.0358	238.23

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9834	226.19	3		PANII230		230.00	6	0.9854	226.64
5		CHO230		230.00	6	0.9914	228.03	103		COPESA23		230.00	6	0.9884	227.33
105		PAN-AM23		230.00	6	0.9915	228.06	115		PACORA23		230.00	6	0.9897	227.64
540		ANTON 230		230.00	6	0.9996	229.92								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:22
 PLAN. EXP-SIN - C.A. JUNIO 2009

AÑO 2012 ESC MOD DEM MAX VERANO
 BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0011	115.12	4		PANIII115		115.00	6	1.0006	115.07
9		LSA115		115.00	6	1.0091	116.05	12		M.N115		115.00	6	1.0290	118.33
15		PRO115		115.00	6	1.0380	119.37	18		CAC115		115.00	6	1.0007	115.08
20		CH.AZUL		115.00	6	1.0388	119.46	23		CH115		115.00	6	1.0016	115.18
54		LM1115		115.00	6	1.0251	117.88	55		LM2115		115.00	6	1.0258	117.96
61		FFIELD		115.00	6	1.0214	117.46	87		CAL115		115.00	6	1.0362	119.16
88		EST115		115.00	6	1.0376	119.32	92		L.V115		115.00	6	1.0367	119.22
109		STA RITA115		115.00	6	1.0257	117.96	123		MIR115		115.00	7	1.0063	115.73
154		CEMPAN15		115.00	6	1.0188	117.16	191		CHANG115		115.00	6	1.0153	116.76
522		TCATIVÁ 115		115.00	6	1.0255	117.94	529		TCOLON 115		115.00	6	1.0386	119.44

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
6		CHO115		115.00	6	0.9929	114.19	19		C.V115		115.00	6	0.9915	114.02
21		C.BAN115		115.00	6	0.9899	113.83	26		LOC115		115.00	6	0.9912	113.98
30		MAR115		115.00	6	0.9902	113.87	33		STM115		115.00	6	0.9990	114.89
37		SAN115		115.00	6	0.9885	113.68	48		TINAJ115		115.00	6	0.9984	114.82
50		M.O115		115.00	6	0.9985	114.83	52		TOC115		115.00	6	0.9975	114.72

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX VERANO

FRI, JUN 26 2009 15:22

AREA 6 [PANAMA] MACHINE SUMMARY:

SWING	BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
	66		BLM13B		13.800	V2	38.0	12.0	25.0	0.0	1.0000	39.9	0.9534	47.0			1	6
	67		BLM13C		13.800	V3	38.0	12.0	25.0	0.0	1.0000	39.9	0.9534	47.0			1	6
	68		BLM13D		13.800	V4	38.0	12.5	25.0	0.0	1.0000	40.0	0.9501	47.0			1	6
	90		EST-13L		13.800	E1	17.0	4.3	12.0	-5.0	1.0000	17.5	0.9699	27.0			1	6
	94		LV-13.8L		13.800	L1	21.0	4.8	12.0	-5.0	1.0000	21.5	0.9752	27.0			1	6
	97		FOR13A		13.800	F1	85.0	-17.4	50.0	-50.0	1.0000	86.8	0.9797	111.0			1	6
	98		FOR13B		13.800	F2	85.0	-17.4	50.0	-50.0	1.0000	86.8	0.9797	111.0			1	6
	99		FOR13C		13.800	F3	85.0	-17.4	50.0	-50.0	1.0000	86.8	0.9797	111.0			1	6
	101		BAY13A		13.800	B1	74.4	39.4	50.0	-25.0	1.0000	84.1	0.8838	96.0			1	6
	106		PANAM13A		13.800	M1	15.0	5.5	9.0	0.0	1.0000	16.0	0.9382	20.7			1	6
	106		PANAM13A		13.800	M2	15.0	5.5	9.0	0.0	1.0000	16.0	0.9382	20.7			1	6
	106		PANAM13A		13.800	M3	15.0	5.5	9.0	0.0	1.0000	16.0	0.9382	20.7			1	6
	107		PANAM13B		13.800	M4	15.0	5.5	9.0	0.0	1.0000	16.0	0.9382	20.7			1	6
	107		PANAM13B		13.800	M5	15.0	5.5	9.0	0.0	1.0000	16.0	0.9382	20.7			1	6
	107		PANAM13B		13.800	M6	15.0	5.5	9.0	0.0	1.0000	16.0	0.9382	20.7			1	6
	142		CANJ13A		13.800	C1	35.0	8.0	29.0	-29.0	1.0000	35.9	0.9749	69.0			1	6
	150		GUALACA	13-213.800	G2	10.0	-6.1	7.4	-7.4	1.0000	11.7	0.8540	14.8			1	6	
	152		BBLANCO_13.813.800		G1	5.0	0.0	6.1	0.0	1.0209	4.9	1.0000	11.6			1	6	
	193		GEBONYIC		13.800	G1	8.5	-4.0	4.0	-4.0	1.0025	9.4	0.9048	35.3			1	6
	204		BJOMINI13		13.800	G1	22.0	-13.0	13.0	-13.0	1.0190	25.1	0.8609	28.9			1	6
	205		BAITUN13.8		13.800	G1	20.0	9.8	26.6	-26.6	1.0000	22.3	0.8984	50.6			1	6
	302		PASOANCH13.813.800		P1	4.7	2.0	2.0	-2.0	0.9574	5.4	0.9216	6.2			1	6	
	304		ALGA13.8		13.800	A1	9.0	0.0	2.0	0.0	1.1087	8.1	1.0000	13.5			1	6
	305		ELALTO		13.800	G1	10.0	-5.0	12.0	-5.0	1.0269	10.9	0.8944	20.6			1	6
	307		CHAN1 A		13.800	G1	70.0	-21.4	50.0	-50.0	1.0000	73.2	0.9562	118.6			1	6
	312		PANDO13.8		13.800	G1	12.0	-5.0	10.0	-5.0	1.0007	13.0	0.9231	19.9			1	6
	317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.1086	8.1	1.0000	35.3			1	6
	323		COCHEA 13.8		13.800	C1	5.0	0.0	0.0	0.0	1.1087	4.5	1.0000	35.3			1	6
	324		POTRE 13.8		13.800	P1	3.5	-2.0	2.0	-2.0	1.0044	4.0	0.8682	6.2			1	6
	340		PEDGALITO13813.800		P1	12.0	5.6	12.0	-5.0	1.0000	13.2	0.9075	27.0			1	6	
	342		LORENA13.8		13.800	L1	12.0	-5.0	10.5	-5.0	1.0113	12.9	0.9231	19.9			1	6
	343		PRUDENCIA_1		13.800	G1	20.0	-9.8	9.8	-9.8	1.0095	22.0	0.8987	33.0			1	6
	350		MACANO 13.8		13.800	G1	3.3	-2.0	2.0	-2.0	1.0843	3.5	0.8522	6.2			1	6
	351		PERLAS N 13		13.800	G1	5.0	3.0	3.0	-3.0	0.9864	5.9	0.8575	13.5			1	6
	353		PORVEN N 13		13.800	G1	3.1	0.0	2.0	0.0	1.0855	2.9	1.0000	6.2			1	6
	521		EGIRAL13.8	113.800	G1	3.5	1.3	2.8	1.3	0.9823	3.8	0.9373	4.8			1	6	
	521		EGIRAL13.8	113.800	G2	3.5	1.3	2.8	1.3	0.9823	3.8	0.9373	4.8			1	6	
	523		TCATIVÁ 13A		13.800	G1	8.0	0.8	6.6	-6.6	0.9800	8.2	0.9947	10.9			1	6
	523		TCATIVÁ 13A		13.800	G2	8.0	0.8	6.6	-6.6	0.9800	8.2	0.9947	10.9			1	6
	523		TCATIVÁ 13A		13.800	G3	8.0	0.8	6.6	-6.6	0.9800	8.2	0.9947	10.9			1	6
	524		TCATIVÁ 13B		13.800	10	8.3	0.8	6.6	-6.6	0.9800	8.5	0.9949	10.9			1	6
	524		TCATIVÁ 13B		13.800	G6	8.3	0.8	6.6	-6.6	0.9800	8.5	0.9949	10.9			1	6
	524		TCATIVÁ 13B		13.800	G7	8.3	0.8	6.6	-6.6	0.9800	8.5	0.9949	10.9			1	6
	525		TCOLON 13A		13.800	G1	33.0	19.3	19.3	19.3	1.0267	37.2	0.8636	44.4			1	6
	526		TCOLON 13B		13.800	G2	33.0	19.3	19.3	19.3	1.0267	37.2	0.8636	44.4			1	6

527	TCOLON	13C	13.800	V1	33.0	19.3	19.3	19.3	1.0267	37.2	0.8636	44.4	1	6
541	TOABRE		0.6000	1	116.0	0.0	0.0	0.0	1.0040	115.5	1.0000	166.7	1	6
SUBSYSTEM TOTALS					1121.3	86.4	659.3	-332.8				1695.1		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:22
 PLAN. EXP-SIN - C.A. JUNIO 2009
 Año 2012 ESC MOD DEM MAX VERANO

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
129		MIR13D		13.800	G4	35.0	0.7	15.0	0.0	1.0000	35.0	0.9998	44.1			2	7
130		MIR13F		13.800	G5	17.0	0.0	8.0	0.0	1.0109	16.8	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.7	2.0	-2.0	1.0000	2.1	0.9362	4.1			2	7
140		GAT6A		6.9000	G2	1.9	-0.7	2.0	-2.0	1.0000	2.1	0.9362	4.1			2	7
140		GAT6A		6.9000	G3	1.9	-0.7	2.0	-2.0	1.0000	2.1	0.9362	4.1			2	7
141		GAT6B		6.9000	G4	3.9	-1.5	3.0	-3.0	1.0000	4.1	0.9344	5.6			2	7
141		GAT6B		6.9000	G5	3.9	-1.5	3.0	-3.0	1.0000	4.1	0.9344	6.2			2	7
141		GAT6B		6.9000	G6	3.9	-1.5	3.0	-3.0	1.0000	4.1	0.9344	6.2			2	7
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0254	17.9	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0344	17.7	0.9281	23.0			2	7
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0344	17.7	0.9281	23.0			2	7
SUBSYSTEM TOTALS						120.4	14.6	71.5	5.5				171.3				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E MON, JUN 29 2009 11:38
 PLAN. EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2012 ESC MOD DEM MAX VERANO IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	1006.9	985.5	0.0	0.0	0.0	0.0	21.4	0.0
HONDURAS	55.7	290.6	-188.3	0.0	302.9	-5.3	261.6	
4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	32.4	224.5	-98.9	0.0	143.3	-97.3	147.4	
5	1344.9	1324.8	0.0	0.0	0.0	0.6	19.5	0.0
C.RICA	247.0	569.4	-236.1	0.0	478.1	33.5	358.4	
6	1121.3	1155.6	0.0	0.0	0.0	-78.0	31.0	25.0
PANAMA	86.4	289.6	-83.7	0.0	475.5	24.1	328.8	
7	120.4	41.8	0.0	0.0	0.0	77.4	1.2	50.0
ACANAL	14.6	10.5	0.0	0.0	0.0	-11.2	15.3	
9	0.0	12.7	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	3.2	0.0	0.0	0.0	0.0	0.0	
TOTALS	6390.9	6261.6	0.0	0.0	0.0	0.0	129.3	0.0
	566.6	1919.6	-931.3	0.0	2032.5	0.0	1610.9	

4.2. Demanda Mínima de Verano

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:27
PLAN. EXP-SIN - C.A. JUNIO 2009
Año 2012 ESC MOD DEM MIN VERANO

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11		M.N230		230.00	6	1.0052	231.20	14		PRO230		230.00	6	1.0179	234.11
85		PTP230		230.00	6	1.0103	232.36	96		FOR230		230.00	6	1.0060	231.37
144		CANJ230		230.00	6	1.0060	231.38	145		BJOMIN230		230.00	6	1.0187	234.30
146		GUALACA230		230.00	6	1.0067	231.54	147		GUASQ230		230.00	6	1.0059	231.36
190		CHANG230		230.00	6	1.0127	232.92	306		CHAN1 230		230.00	6	1.0100	232.31
310		CONCEPCION230		230.00	6	1.0133	233.05	311		PANDO230		230.00	6	1.0131	233.02
341		PRUDENCIA230		230.00	6	1.0086	231.99	345		LORENA230		230.00	6	1.0077	231.78
6000		FRONTER		230.00	6	1.0183	234.22								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9741	224.05	3		PANII230		230.00	6	0.9744	224.12
5		CHO230		230.00	6	0.9766	224.62	8		LSA230		230.00	6	0.9746	224.15
100		BAY230		230.00	6	0.9779	224.91	103		COPESA23		230.00	6	0.9754	224.35
105		PAN-AM23		230.00	6	0.9766	224.63	115		PACORA23		230.00	6	0.9758	224.42
148		VELADERO 230		230.00	6	0.9955	228.97	149		BBLANCO		230.00	6	0.9936	228.52
511		LGUIAS230		230.00	6	0.9771	224.72	540		ANTON 230		230.00	6	0.9821	225.88

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:28
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MIN VERANO

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
66		BLM13B		13.800	V2	20.0	8.5	25.0	0.0	0.9800	22.2	0.9202	47.0			1	6
67		BLM13C		13.800	V3	20.0	8.5	25.0	0.0	0.9800	22.2	0.9202	47.0			1	6
68		BLM13D		13.800	V4	20.0	8.9	25.0	0.0	0.9800	22.3	0.9136	47.0			1	6
90		EST-13L		13.800	E1	17.0	3.2	12.0	-5.0	0.9800	17.6	0.9830	27.0			1	6
94		LV-13.8L		13.800	L1	19.0	3.5	12.0	-5.0	0.9800	19.7	0.9834	27.0			1	6
97		FOR13A		13.800	F1	68.5	-20.5	50.0	-50.0	0.9800	73.0	0.9580	111.0			1	6
106		PANAM13A		13.800	M1	13.5	9.0	9.0	0.0	0.9736	16.7	0.8321	20.7			1	6
142		CANJ13A		13.800	C1	32.0	6.9	29.0	-29.0	0.9800	33.4	0.9776	69.0			1	6
193		GEBONYIC		13.800	G1	8.5	-4.0	4.0	-4.0	0.9922	9.5	0.9048	35.3			1	6
204		BJOMIN13		13.800	G1	22.0	-13.0	13.0	-13.0	1.0001	25.6	0.8609	28.9			1	6
205		BAITUN13.8		13.800	G1	17.5	7.7	26.6	-26.6	0.9800	19.5	0.9145	50.6			1	6
301		CONC13.8		13.800	G1	9.0	5.0	5.0	-5.0	0.9574	10.8	0.8742	13.5			1	6
305		ELALTO		13.800	G1	10.0	-5.0	12.0	-5.0	1.0061	11.1	0.8944	20.6			1	6
307		CHAN1 A		13.800	G1	63.0	-26.3	50.0	-50.0	0.9800	69.7	0.9230	118.6			1	6
312		PANDO13.8		13.800	G1	12.0	-4.9	10.0	-5.0	0.9800	13.2	0.9264	19.9			1	6
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.0964	8.2	1.0000	35.3			1	6
343		PRUDENCIA_1		13.800	G1	20.0	-9.8	9.8	-9.8	0.9900	22.5*	0.8987	33.0			1	6
351		PERLAS N 13		13.800	G1	5.0	3.0	3.0	-3.0	0.9669	6.0	0.8575	13.5			1	6
541		TOABRE		0.6000	1	60.0	0.0	0.0	0.0	0.9845	60.9	1.0000	166.7			1	6
SUBSYSTEM TOTALS						446.0	-19.2	320.4	-210.4				931.6				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:28
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MIN VERANO

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0403	17.6	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0493	17.5	0.9281	23.0			2	7
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0493	17.5	0.9281	23.0			2	7
SUBSYSTEM TOTALS						51.0	20.5	33.5	20.5				69.1				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E MON, JUN 29 2009 11:37
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MIN VERANO

FROM TO TO BUS TO LINE FROM TO DESIRED

X-- AREA	--X GENERATION	LOAD	SHUNT	SHUNT CHARGING	NET INT	LOSSES	NET INT
1	1347.4	1312.2	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4
2	911.8	902.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.4	158.1
3	1006.9	985.5	0.0	0.0	0.0	21.4	0.0
HONDURAS	55.8	290.6	-188.3	0.0	302.8	-5.2	261.6
4	538.2	527.1	0.0	0.0	0.0	11.1	0.0
NICA	32.9	224.5	-98.9	0.0	143.2	-96.9	147.4
5	1344.9	1324.8	0.0	0.0	0.0	19.4	0.0
C.RICA	271.1	569.4	-236.5	0.0	475.3	55.5	358.0
6	446.0	462.2	0.0	0.0	0.0	-34.8	13.5
PANAMA	-19.2	115.8	176.7	0.0	414.1	-20.8	121.9
7	51.0	16.7	0.0	0.0	0.0	34.0	0.2
ACANAL	20.5	4.2	0.0	0.0	0.0	11.2	5.1
9	0.0	5.1	0.0	0.0	0.0	0.0	0.0
COLON	0.0	1.3	0.0	0.0	0.0	0.0	0.0
TOTALS	5646.2	5535.6	0.0	0.0	0.0	110.6	0.0
	491.7	1737.6	-671.2	0.0	1968.3	0.0	1393.5

4.3. Demanda Máxima de Invierno

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:13
 PLAN. EXP-SIN - C.A. JUNIO 2009
 Año 2012 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.	N230		230.00	6	1.0319	237.33	14	PRO	230		230.00	6	1.0396	239.11
85	PTP	230		230.00	6	1.0296	236.81	96	FOR	230		230.00	6	1.0316	237.26
100	BAY	230		230.00	6	1.0160	233.69	144	CANJ	230		230.00	6	1.0265	236.10
145	BJOMIN	230		230.00	6	1.0409	239.41	146	GUALACA	230		230.00	6	1.0300	236.90
147	GUASQ	230		230.00	6	1.0262	236.04	148	VELADERO	230		230.00	6	1.0142	233.27
149	BBLANCO	230		230.00	6	1.0122	232.81	190	CHANG	230		230.00	6	1.0336	237.72
306	CHAN1	230		230.00	6	1.0353	238.11	310	CONCEPCION	230		230.00	6	1.0398	239.16
311	PANDO	230		230.00	6	1.0403	239.27	341	PRUDENCIA	230		230.00	6	1.0362	238.33
345	LORENA	230		230.00	6	1.0340	237.83	6000	FRONTER	230		230.00	6	1.0383	238.82

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN	230		230.00	6	0.9809	225.60	3	PANII	230		230.00	6	0.9845	226.43
5	CHO	230		230.00	6	0.9800	225.40	8	LSA	230		230.00	6	0.9937	228.54
103	COPE	230		230.00	6	0.9897	227.63	105	PAN-AM	230		230.00	6	0.9800	225.40
115	PACORA	230		230.00	6	0.9931	228.40	511	LGUIAS	230		230.00	6	0.9866	226.93
540	ANTON	230		230.00	6	0.9902	227.74								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:15
 PLAN. EXP-SIN - C.A. JUNIO 2009
 Año 2012 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN	115		115.00	6	1.0042	115.49	4	PANII	115		115.00	6	1.0040	115.46
9	LSA	115		115.00	6	1.0035	115.40	12	M.N	115		115.00	6	1.0470	120.41
15	PRO	115		115.00	6	1.0415	119.77	18	CAC	115		115.00	6	1.0040	115.46
20	CH.AZUL	115		115.00	6	1.0422	119.86	23	CH	115		115.00	6	1.0033	115.39
33	STM	115		115.00	6	1.0025	115.28	48	TINAJ	115		115.00	6	1.0020	115.23
50	M.O	115		115.00	6	1.0021	115.25	52	TOC	115		115.00	6	1.0014	115.16
54	LM	115		115.00	6	1.0213	117.45	55	LM	115		115.00	6	1.0217	117.50
61	FFIELD	115		115.00	6	1.0186	117.13	87	CAL	115		115.00	6	1.0690	122.93
88	EST	115		115.00	6	1.0736	123.47	92	L.V	115		115.00	6	1.0708	123.14
109	STA RITA	115		115.00	6	1.0220	117.53	123	MIR	115		115.00	7	1.0106	116.22
154	CEMPAN	115		115.00	6	1.0158	116.81	191	CHANG	115		115.00	6	1.0243	117.80
522	TCATIVÁ	115		115.00	6	1.0215	117.47	529	TCOLON	115		115.00	6	1.0306	118.52

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
6		CHO115		115.00	6	0.9812	112.83
21		C.BAN115		115.00	6	0.9947	114.39
30		MAR115		115.00	6	0.9948	114.40

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
19		C.V115		115.00	6	0.9961	114.56
26		LOC115		115.00	6	0.9958	114.52
37		SAN115		115.00	6	0.9936	114.26

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	37.5	18.4	25.0	0.0	1.0100	41.3	0.8982	47.0							1	6	
67		BLM13C		13.800	V3	37.5	18.4	25.0	0.0	1.0100	41.3	0.8982	47.0							1	6	
90		EST-13L		13.800	E1	20.5	9.5	12.0	-5.0	1.0500	21.5	0.9081	27.0							1	6	
91		EST-13T		13.800	E2	20.5	9.5	12.0	-5.0	1.0500	21.5	0.9081	27.0							1	6	
94		LV-13.8L		13.800	L1	23.3	10.5	12.0	-5.0	1.0500	24.3	0.9114	27.0							1	6	
95		LV-13.8T		13.800	L2	23.3	10.5	12.0	-5.0	1.0500	24.3	0.9114	27.0							1	6	
97		FOR13A		13.800	F1	95.0	2.3	50.0	-50.0	1.0290	92.3	0.9997	111.0							1	6	
98		FOR13B		13.800	F2	95.0	2.3	50.0	-50.0	1.0290	92.3	0.9997	111.0							1	6	
99		FOR13C		13.800	F3	95.0	2.3	50.0	-50.0	1.0290	92.3	0.9997	111.0							1	6	
101		BAY13A		13.800	B1	43.1	26.5	50.0	-25.0	1.0000	50.6	0.8515	96.0							1	6	SYST
102		BAY13B		13.800	B2	43.0	26.5	50.0	-25.0	1.0000	50.5	0.8511	96.0							1	6	
108		BAY13C		13.800	B3	43.0	26.5	50.0	-25.0	1.0000	50.5	0.8511	100.0							1	6	
142		CANJ13A		13.800	C1	34.5	10.8	29.0	-29.0	1.0200	35.5	0.9546	69.0							1	6	
143		CANJ13B		13.800	C2	34.5	10.8	29.0	-29.0	1.0200	35.5	0.9546	69.0							1	6	
150		GUALACA	13-213.800	G2		9.9	-4.9	7.4	-7.4	1.0100	10.9	0.8967	14.8							1	6	
151		GUALACA	13.8	G1		9.9	-4.9	7.4	-7.4	1.0100	10.9	0.8967	14.8							1	6	
152		BBLANCO	13.813.800	G1		8.6	0.0	6.1	0.0	1.0120	8.5	1.0000	11.6							1	6	
152		BBLANCO	13.813.800	G2		8.6	0.0	6.1	0.0	1.0120	8.5	1.0000	11.6							1	6	
193		GEBONYIC		13.800	G1	9.0	-0.6	4.0	-4.0	1.0150	8.9	0.9974	35.3							1	6	
193		GEBONYIC		13.800	G2	9.0	-0.6	4.0	-4.0	1.0150	8.9	0.9974	35.3							1	6	
193		GEBONYIC		13.800	G3	9.0	-0.6	4.0	-4.0	1.0150	8.9	0.9974	35.3							1	6	
204		BJOMIN13		13.800	G1	17.5	-10.8	13.0	-13.0	1.0100	20.3	0.8515	28.9							1	6	
204		BJOMIN13		13.800	G2	17.5	-10.8	13.0	-13.0	1.0100	20.3	0.8515	28.9							1	6	
205		BAITUN13.8		13.800	G1	25.5	8.2	26.6	-26.6	1.0100	26.5	0.9520	50.6							1	6	
205		BAITUN13.8		13.800	G2	25.5	8.2	26.6	-26.6	1.0100	26.5	0.9520	50.6							1	6	
301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9558	10.1	0.8552	13.5							1	6	
302		PASOANCH13.8		13.800	P1	4.7	2.0	2.0	-2.0	0.9539	5.4	0.9216	6.2							1	6	
304		ALGA13.8		13.800	A1	8.0	0.0	2.0	0.0	1.1411	7.0	1.0000	13.5							1	6	
305		ELALTO		13.800	G1	17.4	-3.1	12.0	-5.0	1.0250	17.3	0.9840	20.6							1	6	
305		ELALTO		13.800	G2	17.4	-3.1	12.0	-5.0	1.0250	17.3	0.9840	20.6							1	6	
305		ELALTO		13.800	G3	17.4	-3.1	12.0	-5.0	1.0250	17.3	0.9840	20.6							1	6	
307		CHAN1 A		13.800	G1	104.4	-4.8	50.0	-50.0	1.0250	102.0	0.9990	118.6							1	6	
308		CHAN1 B		13.800	G2	104.4	-4.8	50.0	-50.0	1.0250	102.0	0.9990	118.6							1	6	
312		PANDO13.8		13.800	G1	13.9	-0.2	10.0	-5.0	1.0250	13.6	0.9999	19.9							1	6	
312		PANDO13.8		13.800	G2	13.9	-0.2	10.0	-5.0	1.0250	13.6	0.9999	19.9							1	6	
317		MENDRE13.8		13.800	M1	8.6	0.0	0.0	0.0	1.1405	7.5	1.0000	35.3							1	6	
317		MENDRE13.8		13.800	M2	8.6	0.0	0.0	0.0	1.1405	7.5	1.0000	35.3							1	6	
323		COCHEA	13.8	13.800	C1	5.4	0.0	0.0	0.0	1.1409	4.8	1.0000	35.3							1	6	
323		COCHEA	13.8	13.800	C2	5.4	0.0	0.0	0.0	1.1409	4.8	1.0000	35.3							1	6	
324		POTRER	13.8	13.800	P1	3.6	-2.0	2.0	-2.0	1.0338	4.0	0.8759	6.2							1	6	
340		PEDGALITO138		13.800	P1	14.8	6.8	12.0	-5.0	1.0100	16.2	0.9078	27.0							1	6	
342		LORENA13.8		13.800	L1	12.8	-2.9	10.5	-5.0	1.0250	12.8	0.9760	19.9							1	6	
343		PRUDENCIA_1		13.800	G1	21.6	-5.9	9.8	-9.8	1.0250	21.9	0.9645	33.0							1	6	
344		PRUDENCIA_2		13.800	G2	21.6	-5.9	9.8	-9.8	1.0250	21.9	0.9645	33.0							1	6	
346		LORENA	13-2	13.800	L2	12.8	-2.9	10.5	-5.0	1.0250	12.8	0.9760	19.9							1	6	
350		MACANO	13.8	13.800	G1	3.0	-2.0	2.0	-2.0	1.0906	3.3	0.8312	6.2							1	6	
351		PERLAS	N 13	13.800	G1	8.1	5.0	5.0	-5.0	0.9933	9.6	0.8518	13.5							1	6	
352		PERLAS	S 13	13.800	G1	8.1	5.0	5.0	-5.0	0.9933	9.6	0.8518	13.5							1	6	
353		PORVEN	N 13	13.800	G1	2.7	0.0	2.0	0.0	1.0918	2.5	1.0000	6.2							1	6	

523	TCATIVÁ 13A	13.800	G1	7.6	-1.7	6.6	-6.6	0.9700	8.0	0.9761	10.9	1	6
525	TCOLON 13A	13.800	G1	31.3	19.3	19.3	19.3	1.0196	36.0	0.8514	44.4	1	6
526	TCOLON 13B	13.800	G2	31.3	19.3	19.3	19.3	1.0196	36.0	0.8514	44.4	1	6
541	TOABRE	0.6000	1	22.0	0.0	0.0	0.0	0.9911	22.2	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1335.0	187.6	853.0	-557.7				2241.1		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:16
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	1.2	15.0	0.0	1.0100	34.7	0.9994	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0201	16.7	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.4	2.0	-2.0	1.0100	2.0	0.9783	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.4	2.0	-2.0	1.0100	2.0	0.9783	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.4	2.0	-2.0	1.0100	2.0	0.9783	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-1.2	3.0	-3.0	1.0100	4.0	0.9571	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-1.2	3.0	-3.0	1.0100	4.0	0.9571	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-1.2	3.0	-3.0	1.0100	4.0	0.9571	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0344	17.7	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0434	17.6	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0434	17.6	0.9281	23.0			2	7	
SUBSYSTEM TOTALS				120.4	16.9	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV

MON, JUN 29 2009 11:39

AREA TOTALS
 IN MW/MVAR

X-- AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1		1199.9	1312.2	0.0	0.0	0.0	-145.0	32.8	-145.0
GUATEMAL		59.0	349.5	-265.8	0.0	412.0	39.7	347.6	
2		913.4	902.0	0.0	0.0	0.0	0.0	11.4	0.0
SALVADOR		109.0	182.3	-58.0	0.0	219.4	38.0	166.1	
3		1009.2	985.5	0.0	0.0	0.0	0.1	23.6	0.0
HONDURAS		68.2	290.6	-187.9	0.0	301.9	-9.9	277.3	
4		536.7	527.1	0.0	0.0	0.0	0.0	9.6	0.0
NICA		41.6	224.5	-98.5	0.0	142.7	-83.1	141.4	
5		1345.1	1324.8	0.0	0.0	0.0	-0.1	20.4	0.0
C.RICA		230.0	569.4	-236.9	0.0	478.8	16.0	360.4	
6		1335.0	1182.7	0.0	0.0	0.0	68.7	70.7	170.0
PANAMA		187.6	207.2	-129.4	0.0	470.1	4.7	573.0	
7		120.4	42.8	0.0	0.0	0.0	76.3	1.3	50.0
ACANAL		16.9	7.5	0.0	0.0	0.0	-5.4	14.8	
9		0.0	13.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON		0.0	2.3	0.0	0.0	0.0	0.0	0.0	
TOTALS		6459.7	6290.1	0.0	0.0	0.0	0.0	169.7	0.0
		712.4	1833.3	-976.5	0.0	2024.8	0.0	1880.5	

4.3.1. Contingencia Llano Sánchez- Panamá II

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:32
PLAN. EXP-SIN - C.A. JUNIO 2009
AÑO 2012 ESC MOD DEM MAX INV CONT (1) LLSCH-PMII

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11		M.N230		230.00	6	1.0202	234.64	14		PRO230		230.00	6	1.0326	237.51
85		PTP230		230.00	6	1.0213	234.89	96		FOR230		230.00	6	1.0229	235.26
144		CANJ230		230.00	6	1.0162	233.72	145		BJOMIN230		230.00	6	1.0351	238.08
146		GUALACA230		230.00	6	1.0203	234.66	147		GUASQ230		230.00	6	1.0159	233.65
190		CHANG230		230.00	6	1.0293	236.74	306		CHAN1 230		230.00	6	1.0314	237.23
310		CONCEPCION230		230.00	6	1.0316	237.27	311		PANDO230		230.00	6	1.0330	237.58
341		PRUDENCIA230		230.00	6	1.0275	236.34	345		LORENA230		230.00	6	1.0250	235.75
6000		FRONTER		230.00	6	1.0310	237.14								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9306	214.04	3		PANII230		230.00	6	0.9368	215.47
5		CHO230		230.00	6	0.9242	212.57	8		LSA230		230.00	6	0.9524	219.04
100		BAY230		230.00	6	0.9875	227.13	103		COPESA23		230.00	6	0.9449	217.33
105		PAN-AM23		230.00	6	0.9242	212.57	115		PACORA23		230.00	6	0.9507	218.66
148		VELADERO 230		230.00	6	0.9885	227.36	149		BBLANCO		230.00	6	0.9861	226.81
511		LGUIAS230		230.00	6	0.9326	214.50	540		ANTON 230		230.00	6	0.9372	215.57

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:33
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT (1) LLSCH-PMALL

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0001	115.01	4		PANII115		115.00	6	1.0019	115.22
12		M.N115		115.00	6	1.0401	119.62	15		PRO115		115.00	6	1.0345	118.96
20		CH.AZUL		115.00	6	1.0352	119.05	54		LM1115		115.00	6	1.0189	117.17
55		LM2115		115.00	6	1.0194	117.23	61		FFIELD		115.00	6	1.0162	116.86
87		CAL115		115.00	6	1.0644	122.40	88		EST115		115.00	6	1.0695	122.99
92		L.V115		115.00	6	1.0663	122.63	109		STA RITA115		115.00	6	1.0194	117.23
123		MIR115		115.00	7	1.0068	115.79	154		CEMPAN15		115.00	6	1.0129	116.48
191		CHANG115		115.00	6	1.0213	117.45	522		TCATIVÁ 115		115.00	6	1.0191	117.20
529		TCOLON 115		115.00	6	1.0281	118.23								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
6		CHO115		115.00	6	0.9255	106.43	9		LSA115		115.00	6	0.9611	110.52
18		CAC115		115.00	6	0.9999	114.98	19		C.V115		115.00	6	0.9935	114.25
21		C.BAN115		115.00	6	0.9908	113.94	23		CH115		115.00	6	0.9999	114.99
26		LOC115		115.00	6	0.9918	114.06	30		MAR115		115.00	6	0.9907	113.94
33		STM115		115.00	6	0.9983	114.81	37		SAN115		115.00	6	0.9898	113.82
48		TINAJ115		115.00	6	0.9979	114.75	50		M.O115		115.00	6	0.9980	114.77

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT (1) LLSCH-PMIAI

FRI, JUN 26 2009 15:33

AREA 6 [PANAMA] MACHINE SUMMARY:
 BUS# X-- NAME --X BASKV ID MW MVAR QMAX

SWING	BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
	66		BLM13B		13.800	V2	37.5	19.4	25.0	0.0	1.0100	41.8	0.8883	47.0			1	6
	67		BLM13C		13.800	V3	37.5	19.4	25.0	0.0	1.0100	41.8	0.8883	47.0			1	6
	90		EST-13L		13.800	E1	20.5	10.7	12.0	-5.0	1.0500	22.0	0.8861	27.0			1	6
	91		EST-13T		13.800	E2	20.5	10.7	12.0	-5.0	1.0500	22.0	0.8861	27.0			1	6
	94		LV-13.8L		13.800	L1	23.3	11.9	12.0	-5.0	1.0500	24.9	0.8909	27.0			1	6
	95		LV-13.8T		13.800	L2	23.3	11.9	12.0	-5.0	1.0500	24.9	0.8909	27.0			1	6
	97		FOR13A		13.800	F1	95.0	10.4	50.0	-50.0	1.0290	92.9	0.9940	111.0			1	6
	98		FOR13B		13.800	F2	95.0	10.4	50.0	-50.0	1.0290	92.9	0.9940	111.0			1	6
	99		FOR13C		13.800	F3	95.0	10.4	50.0	-50.0	1.0290	92.9	0.9940	111.0			1	6
	101		BAY13A		13.800	B1	60.4	49.0	50.0	-25.0	1.0000	77.8	0.7764	96.0			1	6
	102		BAY13B		13.800	B2	43.0	47.8	50.0	-25.0	1.0000	64.3	0.6687	96.0			1	6
	108		BAY13C		13.800	B3	43.0	47.8	50.0	-25.0	1.0000	64.3	0.6687	100.0			1	6
	142		CANJ13A		13.800	C1	34.5	12.5	29.0	-29.0	1.0200	36.0	0.9407	69.0			1	6
	143		CANJ13B		13.800	C2	34.5	12.5	29.0	-29.0	1.0200	36.0	0.9407	69.0			1	6
	150		GUALACA	13-2	13.800	G2	9.9	-2.4	7.4	-7.4	1.0100	10.0	0.9714	14.8			1	6
	151		GUALACA	13.8	13.800	G1	9.9	-2.4	7.4	-7.4	1.0100	10.0	0.9714	14.8			1	6
	152		BBLANCO	13.8	13.800	G1	8.6	5.7	6.1	0.0	1.0000	10.3	0.8344	11.6			1	6
	152		BBLANCO	13.8	13.800	G2	8.6	5.7	6.1	0.0	1.0000	10.3	0.8344	11.6			1	6
	193		GEBONYIC		13.800	G1	9.0	-0.3	4.0	-4.0	1.0150	8.9	0.9993	35.3			1	6
	193		GEBONYIC		13.800	G2	9.0	-0.3	4.0	-4.0	1.0150	8.9	0.9993	35.3			1	6
	193		GEBONYIC		13.800	G3	9.0	-0.3	4.0	-4.0	1.0150	8.9	0.9993	35.3			1	6
	204		BJOMIN13		13.800	G1	17.5	-8.7	13.0	-13.0	1.0100	19.3	0.8958	28.9			1	6
	204		BJOMIN13		13.800	G2	17.5	-8.7	13.0	-13.0	1.0100	19.3	0.8958	28.9			1	6
	205		BAITUN	13.8	13.800	G1	25.5	10.4	26.6	-26.6	1.0100	27.3	0.9263	50.6			1	6
	205		BAITUN	13.8	13.800	G2	25.5	10.4	26.6	-26.6	1.0100	27.3	0.9263	50.6			1	6
	301		CONC	13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9568	10.1	0.8552	13.5			1	6
	302		PASOANCH	13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9550	5.4	0.9216	6.2			1	6
	304		ALGA	13.8	13.800	A1	8.0	0.0	2.0	0.0	1.1360	7.0	1.0000	13.5			1	6
	305		ELALTO		13.800	G1	17.4	-1.4	12.0	-5.0	1.0250	17.0	0.9970	20.6			1	6
	305		ELALTO		13.800	G2	17.4	-1.4	12.0	-5.0	1.0250	17.0	0.9970	20.6			1	6
	305		ELALTO		13.800	G3	17.4	-1.4	12.0	-5.0	1.0250	17.0	0.9970	20.6			1	6
	307		CHAN1	A	13.800	G1	104.4	-1.0	50.0	-50.0	1.0250	101.9	1.0000	118.6			1	6
	308		CHAN1	B	13.800	G2	104.4	-1.0	50.0	-50.0	1.0250	101.9	1.0000	118.6			1	6
	312		PANDO	13.8	13.800	G1	13.9	0.5	10.0	-5.0	1.0250	13.6	0.9995	19.9			1	6
	312		PANDO	13.8	13.800	G2	13.9	0.5	10.0	-5.0	1.0250	13.6	0.9995	19.9			1	6
	317		MENDRE	13.8	13.800	M1	8.6	0.0	0.0	0.0	1.1355	7.6	1.0000	35.3			1	6
	317		MENDRE	13.8	13.800	M2	8.6	0.0	0.0	0.0	1.1355	7.6	1.0000	35.3			1	6
	323		COCHEA	13.8	13.800	C1	5.4	0.0	0.0	0.0	1.1358	4.8	1.0000	35.3			1	6
	323		COCHEA	13.8	13.800	C2	5.4	0.0	0.0	0.0	1.1358	4.8	1.0000	35.3			1	6
	324		POTRER	13.8	13.800	P1	3.6	-2.0	2.0	-2.0	1.0292	4.0	0.8759	6.2			1	6
	340		PEDGALITO	138	13.800	P1	14.8	8.8	12.0	-5.0	1.0100	17.1	0.8596	27.0			1	6
	342		LORENA	13.8	13.800	L1	12.8	0.2	10.5	-5.0	1.0250	12.5	0.9998	19.9			1	6
	343		PRUDENCIA	_1	13.800	G1	21.6	-1.0	9.8	-9.8	1.0250	21.1	0.9989	33.0			1	6
	344		PRUDENCIA	_2	13.800	G2	21.6	-1.0	9.8	-9.8	1.0250	21.1	0.9989	33.0			1	6
	346		LORENA	13-2	13.800	L2	12.8	0.2	10.5	-5.0	1.0250	12.5	0.9998	19.9			1	6

350	MACANO	13.8	13.800	G1	3.0	-2.0	2.0	-2.0	1.0819	3.3	0.8312	6.2	1	6
351	PERLAS N 13	13.800	G1	8.1	5.0	5.0	-5.0	0.9855	9.7	0.8518	13.5	1	6	
352	PERLAS S 13	13.800	G1	8.1	5.0	5.0	-5.0	0.9855	9.7	0.8518	13.5	1	6	
353	PORVEN N 13	13.800	G1	2.7	0.0	2.0	0.0	1.0832	2.5	1.0000	6.2	1	6	
523	TCATIVA 13A	13.800	G1	7.6	-0.3	6.6	-6.6	0.9700	7.8	0.9991	10.9	1	6	
525	TCOLON 13A	13.800	G1	31.3	19.3	19.3	19.3	1.0172	36.1	0.8514	44.4	1	6	
526	TCOLON 13B	13.800	G2	31.3	19.3	19.3	19.3	1.0172	36.1	0.8514	44.4	1	6	
541	TOABRE	0.6000	1	22.0	0.0	0.0	0.0	0.9382	23.4	1.0000	166.7	1	6	
SUBSYSTEM TOTALS					1352.4	347.2	853.0	-557.7			2241.1			

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:33
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT (1) LLSCH-PMIII

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
129		MIR13D		13.800	G4	35.0	2.1	15.0	0.0	1.0100	34.7	0.9982	44.1			2	7
130		MIR13F		13.800	G5	17.0	0.0	8.0	0.0	1.0178	16.7	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.3	2.0	-2.0	1.0100	1.9	0.9860	4.1			2	7
140		GAT6A		6.9000	G2	1.9	-0.3	2.0	-2.0	1.0100	1.9	0.9860	4.1			2	7
140		GAT6A		6.9000	G3	1.9	-0.3	2.0	-2.0	1.0100	1.9	0.9860	4.1			2	7
141		GAT6B		6.9000	G4	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9627	5.6			2	7
141		GAT6B		6.9000	G5	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9627	6.2			2	7
141		GAT6B		6.9000	G6	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9627	6.2			2	7
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0321	17.7	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0412	17.6	0.9281	23.0			2	7
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0412	17.6	0.9281	23.0			2	7
SUBSYSTEM TOTALS						120.4	18.3	71.5	5.5				171.3				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT (1) LLSCH-PMAL I

MON, JUN 29 2009 11:42

AREA TOTALS
 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1199.9	1312.2	0.0	0.0	0.0	-145.0	32.8	-145.0
GUATEMAL	59.0	349.5	-265.8	0.0	412.0	39.7	347.6	
2	913.4	902.0	0.0	0.0	0.0	0.0	11.4	0.0
SALVADOR	109.1	182.3	-58.0	0.0	219.4	38.1	166.1	
3	1009.2	985.5	0.0	0.0	0.0	0.1	23.6	0.0
HONDURAS	68.3	290.6	-187.8	0.0	301.9	-9.8	277.3	
4	536.7	527.1	0.0	0.0	0.0	0.0	9.6	0.0
NICA	41.9	224.5	-98.5	0.0	142.6	-82.8	141.4	
5	1345.1	1324.8	0.0	0.0	0.0	-0.1	20.4	0.0
C.RICA	242.5	569.4	-236.3	0.0	477.4	25.6	361.2	
6	1352.4	1182.7	0.0	0.0	0.0	68.7	88.0	170.0
PANAMA	347.2	207.2	-127.4	0.0	423.6	-6.7	695.5	
7	120.4	42.8	0.0	0.0	0.0	76.3	1.3	50.0
ACANAL	18.3	7.5	0.0	0.0	0.0	-4.0	14.9	
9	0.0	13.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.3	0.0	0.0	0.0	0.0	0.0	
TOTALS	6477.1	6290.1	0.0	0.0	0.0	0.0	187.0	0.0
	886.4	1833.3	-974.0	0.0	1976.8	0.0	2003.9	

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:35
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT 2 GUASQ-VELADERO

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0032	115.37	4		PANII115		115.00	6	1.0003	115.04
12		M.N115		115.00	6	1.0421	119.84	15		PRO115		115.00	6	1.0362	119.16
18		CAC115		115.00	6	1.0029	115.34	20		CH.AZUL		115.00	6	1.0369	119.25
23		CH115		115.00	6	1.0022	115.26	33		STM115		115.00	6	1.0014	115.16
48		TINAJ115		115.00	6	1.0010	115.11	50		M.O115		115.00	6	1.0011	115.13
54		LM1115		115.00	6	1.0200	117.31	55		LM2115		115.00	6	1.0205	117.36
61		FFIELD		115.00	6	1.0173	116.99	87		CAL115		115.00	6	1.0657	122.55
88		EST115		115.00	6	1.0707	123.13	92		L.V115		115.00	6	1.0676	122.77
109		STA RITA115		115.00	6	1.0205	117.36	123		MIR115		115.00	7	1.0096	116.10
154		CEMPAN15		115.00	6	1.0146	116.68	191		CHANG115		115.00	6	1.0229	117.63
522		TCATIVÁ 115		115.00	6	1.0203	117.33	529		TCOLON 115		115.00	6	1.0292	118.36

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
6		CHO115		115.00	6	0.9682	111.34	9		LSA115		115.00	6	0.9877	113.58
19		C.V115		115.00	6	0.9932	114.21	21		C.BAN115		115.00	6	0.9933	114.23
26		LOC115		115.00	6	0.9945	114.37	30		MAR115		115.00	6	0.9936	114.27
37		SAN115		115.00	6	0.9920	114.08	52		TOC115		115.00	6	0.9977	114.74

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT 2 GUASQ-VELADERO

FRI, JUN 26 2009 15:35

AREA 6 [PANAMA] MACHINE SUMMARY:

SWING	BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
	66		BLM13B		13.800	V2	37.5	18.9	25.0	0.0	1.0100	41.6	0.8932	47.0			1	6
	67		BLM13C		13.800	V3	37.5	18.9	25.0	0.0	1.0100	41.6	0.8932	47.0			1	6
	90		EST-13L		13.800	E1	20.5	10.4	12.0	-5.0	1.0500	21.9	0.8925	27.0			1	6
	91		EST-13T		13.800	E2	20.5	10.4	12.0	-5.0	1.0500	21.9	0.8925	27.0			1	6
	94		LV-13.8L		13.800	L1	23.3	11.5	12.0	-5.0	1.0500	24.7	0.8968	27.0			1	6
	95		LV-13.8T		13.800	L2	23.3	11.5	12.0	-5.0	1.0500	24.7	0.8968	27.0			1	6
	97		FOR13A		13.800	F1	95.0	6.4	50.0	-50.0	1.0290	92.5	0.9977	111.0			1	6
	98		FOR13B		13.800	F2	95.0	6.4	50.0	-50.0	1.0290	92.5	0.9977	111.0			1	6
	99		FOR13C		13.800	F3	95.0	6.4	50.0	-50.0	1.0290	92.5	0.9977	111.0			1	6
	101		BAY13A		13.800	B1	50.9	32.1	50.0	-25.0	1.0000	60.2	0.8461	96.0			1	6
	102		BAY13B		13.800	B2	43.0	31.6	50.0	-25.0	1.0000	53.4	0.8059	96.0			1	6
	108		BAY13C		13.800	B3	43.0	31.6	50.0	-25.0	1.0000	53.4	0.8059	100.0			1	6
	142		CANJ13A		13.800	C1	34.5	11.4	29.0	-29.0	1.0200	35.6	0.9495	69.0			1	6
	143		CANJ13B		13.800	C2	34.5	11.4	29.0	-29.0	1.0200	35.6	0.9495	69.0			1	6
	150		GUALACA	13-2	13.800	G2	9.9	-3.9	7.4	-7.4	1.0100	10.5	0.9287	14.8			1	6
	151		GUALACA	13.8	13.800	G1	9.9	-3.9	7.4	-7.4	1.0100	10.5	0.9287	14.8			1	6
	152		BBLANCO	13.813	13.800	G1	8.6	1.6	6.1	0.0	1.0000	8.8	0.9830	11.6			1	6
	152		BBLANCO	13.813	13.800	G2	8.6	1.6	6.1	0.0	1.0000	8.8	0.9830	11.6			1	6
	193		GEBONYIC		13.800	G1	9.0	-0.5	4.0	-4.0	1.0150	8.9	0.9985	35.3			1	6
	193		GEBONYIC		13.800	G2	9.0	-0.5	4.0	-4.0	1.0150	8.9	0.9985	35.3			1	6
	193		GEBONYIC		13.800	G3	9.0	-0.5	4.0	-4.0	1.0150	8.9	0.9985	35.3			1	6
	204		BJOMIN13		13.800	G1	17.5	-9.2	13.0	-13.0	1.0100	19.6	0.8853	28.9			1	6
	204		BJOMIN13		13.800	G2	17.5	-9.2	13.0	-13.0	1.0100	19.6	0.8853	28.9			1	6
	205		BAITUN13.8		13.800	G1	25.5	9.8	26.6	-26.6	1.0100	27.1	0.9329	50.6			1	6
	205		BAITUN13.8		13.800	G2	25.5	9.8	26.6	-26.6	1.0100	27.1	0.9329	50.6			1	6
	301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9600	10.0	0.8552	13.5			1	6
	302		PASOANCH	13.813	13.800	P1	4.7	2.0	2.0	-2.0	0.9581	5.4	0.9216	6.2			1	6
	304		ALGA13.8		13.800	A1	8.0	0.0	2.0	0.0	1.1374	7.0	1.0000	13.5			1	6
	305		ELALTO		13.800	G1	17.4	-1.8	12.0	-5.0	1.0250	17.1	0.9945	20.6			1	6
	305		ELALTO		13.800	G2	17.4	-1.8	12.0	-5.0	1.0250	17.1	0.9945	20.6			1	6
	305		ELALTO		13.800	G3	17.4	-1.8	12.0	-5.0	1.0250	17.1	0.9945	20.6			1	6
	307		CHAN1 A		13.800	G1	104.4	-2.9	50.0	-50.0	1.0250	101.9	0.9996	118.6			1	6
	308		CHAN1 B		13.800	G2	104.4	-2.9	50.0	-50.0	1.0250	101.9	0.9996	118.6			1	6
	312		PANDO13.8		13.800	G1	13.9	0.3	10.0	-5.0	1.0250	13.6	0.9998	19.9			1	6
	312		PANDO13.8		13.800	G2	13.9	0.3	10.0	-5.0	1.0250	13.6	0.9998	19.9			1	6
	317		MENDRE13.8		13.800	M1	8.6	0.0	0.0	0.0	1.1369	7.6	1.0000	35.3			1	6
	317		MENDRE13.8		13.800	M2	8.6	0.0	0.0	0.0	1.1369	7.6	1.0000	35.3			1	6
	323		COCHEA	13.8	13.800	C1	5.4	0.0	0.0	0.0	1.1372	4.8	1.0000	35.3			1	6
	323		COCHEA	13.8	13.800	C2	5.4	0.0	0.0	0.0	1.1372	4.8	1.0000	35.3			1	6
	324		POTRER	13.8	13.800	P1	3.6	-2.0	2.0	-2.0	1.0305	4.0	0.8759	6.2			1	6
	340		PEDGALITO	13813	13.800	P1	14.8	8.3	12.0	-5.0	1.0100	16.8	0.8729	27.0			1	6
	342		LORENA13.8		13.800	L1	12.8	-1.7	10.5	-5.0	1.0250	12.6	0.9914	19.9			1	6
	343		PRUDENCIA_1		13.800	G1	21.6	-4.1	9.8	-9.8	1.0250	21.5	0.9827	33.0			1	6
	344		PRUDENCIA_2		13.800	G2	21.6	-4.1	9.8	-9.8	1.0250	21.5	0.9827	33.0			1	6
	346		LORENA	13-2	13.800	L2	12.8	-1.7	10.5	-5.0	1.0250	12.6	0.9914	19.9			1	6

350	MACANO	13.8	13.800	G1	3.0	-2.0	2.0	-2.0	1.0843	3.3	0.8312	6.2	1	6
351	PERLAS N 13	13.800	G1	8.1	5.0	5.0	-5.0	0.9876	9.7	0.8518	13.5	1	6	
352	PERLAS S 13	13.800	G1	8.1	5.0	5.0	-5.0	0.9876	9.7	0.8518	13.5	1	6	
353	PORVEN N 13	13.800	G1	2.7	0.0	2.0	0.0	1.0855	2.5	1.0000	6.2	1	6	
523	TCATIVA 13A	13.800	G1	7.6	-1.0	6.6	-6.6	0.9700	7.9	0.9917	10.9	1	6	
525	TCOLON 13A	13.800	G1	31.3	19.3	19.3	19.3	1.0182	36.1	0.8514	44.4	1	6	
526	TCOLON 13B	13.800	G2	31.3	19.3	19.3	19.3	1.0182	36.1	0.8514	44.4	1	6	
541	TOABRE	0.6000	1	22.0	0.0	0.0	0.0	0.9782	22.5	1.0000	166.7	1	6	
SUBSYSTEM TOTALS					1342.9	250.6	853.0	-557.7			2241.1			

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 15:35
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT 2 GUASQ-VELADERO

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
129		MIR13D		13.800	G4	35.0	1.5	15.0	0.0	1.0100	34.7	0.9991	44.1			2	7
130		MIR13F		13.800	G5	17.0	0.0	8.0	0.0	1.0195	16.7	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.4	2.0	-2.0	1.0100	2.0	0.9816	4.1			2	7
140		GAT6A		6.9000	G2	1.9	-0.4	2.0	-2.0	1.0100	2.0	0.9816	4.1			2	7
140		GAT6A		6.9000	G3	1.9	-0.4	2.0	-2.0	1.0100	2.0	0.9816	4.1			2	7
141		GAT6B		6.9000	G4	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9594	5.6			2	7
141		GAT6B		6.9000	G5	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9594	6.2			2	7
141		GAT6B		6.9000	G6	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9594	6.2			2	7
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0338	17.7	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0428	17.6	0.9281	23.0			2	7
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0428	17.6	0.9281	23.0			2	7
SUBSYSTEM TOTALS						120.4	17.4	71.5	5.5				171.3				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT 2 GUASQ-VELADERO

MON, JUN 29 2009 11:43
 AREA TOTALS
 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1 GUATEMAL	1199.9 59.0	1312.2 349.5	0.0 -265.8	0.0 0.0	0.0 412.0	-145.0 39.7	32.8 347.6	-145.0
2 SALVADOR	913.4 109.1	902.0 182.3	0.0 -58.0	0.0 0.0	0.0 219.4	0.0 38.1	11.4 166.1	0.0
3 HONDURAS	1009.2 68.3	985.5 290.6	0.0 -187.8	0.0 0.0	0.0 301.9	0.1 -9.8	23.6 277.3	0.0
4 NICA	536.7 41.9	527.1 224.5	0.0 -98.5	0.0 0.0	0.0 142.6	0.0 -82.9	9.6 141.4	0.0
5 C.RICA	1345.1 240.1	1324.8 569.4	0.0 -236.4	0.0 0.0	0.0 477.7	-0.5 21.6	20.7 363.2	0.0
6 PANAMA	1342.9 250.6	1182.7 207.2	0.0 -128.5	0.0 0.0	0.0 445.4	69.0 -1.7	78.2 616.8	170.0
7 ACANAL	120.4 17.4	42.8 7.5	0.0 0.0	0.0 0.0	0.0 0.0	76.3 -4.9	1.3 14.8	50.0
9 COLON	0.0 0.0	13.0 2.3	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	-75.0
TOTALS	6467.6 786.3	6290.1 1833.3	0.0 -975.2	0.0 0.0	0.0 1998.9	0.0 0.0	177.5 1927.1	0.0

5. AÑO 2015

5.1. Demanda Máxima de Verano

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:18
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
3		PANII230		230.00	6	1.0005	230.12	8		LSA230		230.00	6	1.0162	233.72
11		M.N230		230.00	6	1.0334	237.67	14		PRO230		230.00	6	1.0437	240.04
85		PTP230		230.00	6	1.0261	236.00	96		FOR230		230.00	6	1.0288	236.63
100		BAY230		230.00	6	1.0211	234.85	103		COPESA23		230.00	6	1.0041	230.94
115		PACORA23		230.00	6	1.0059	231.37	144		CANJ230		230.00	6	1.0288	236.61
145		BJOMIN230		230.00	6	1.0455	240.46	146		GUALACA230		230.00	6	1.0309	237.11
147		GUASQ230		230.00	6	1.0286	236.57	148		VELADERO 230		230.00	6	1.0300	236.91
149		BBLANCO		230.00	6	1.0288	236.61	155		TABASARAI		230.00	6	1.0306	237.04
190		CHANG230		230.00	6	1.0243	235.60	306		CHAN1 230		230.00	6	1.0248	235.69
310		CONCEPCION23		230.00	6	1.0416	239.58	311		PANDO230		230.00	6	1.0412	239.47
341		PRUDENCIA230		230.00	6	1.0345	237.94	345		LORENA230		230.00	6	1.0333	237.65
506		CHAN2 230		230.00	6	1.0237	235.46	511		LGUIAS230		230.00	6	1.0080	231.83
540		ANTON 230		230.00	6	1.0107	232.47	6000		FRONTER		230.00	6	1.0428	239.85

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9970	229.31	5		CHO230		230.00	6	0.9980	229.55
105		PAN-AM23		230.00	6	0.9980	229.55								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:18
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9		LSA115		115.00	6	1.0204	117.35	12		M.N115		115.00	6	1.0329	118.78
15		PRO115		115.00	6	1.0455	120.24	20		CH.AZUL		115.00	6	1.0463	120.33
23		CH115		115.00	6	1.0021	115.24	54		LM1115		115.00	6	1.0286	118.29
55		LM2115		115.00	6	1.0296	118.40	61		FFIELD		115.00	6	1.0254	117.92
87		CAL115		115.00	6	1.0397	119.57	88		EST115		115.00	6	1.0409	119.71
92		L.V115		115.00	6	1.0402	119.62	109		STA RITA115		115.00	6	1.0258	117.97
123		MIR115		115.00	7	1.0040	115.46	154		CEMPAN15		115.00	6	1.0225	117.58

191	CHANG115	115.00	6	1.0136	116.56	522	TCATIVÁ	115	115.00	6	1.0293	118.37
529	TCOLON	115	6	1.0345	118.97							

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	0.9985	114.82	4		PANII115		115.00	6	0.9931	114.21
6		CHO115		115.00	6	0.9993	114.92	18		CAC115		115.00	6	0.9982	114.79
19		C.V115		115.00	6	0.9857	113.35	21		C.BAN115		115.00	6	0.9871	113.52
26		LOC115		115.00	6	0.9885	113.67	30		MAR115		115.00	6	0.9877	113.58
33		STM115		115.00	6	0.9965	114.60	37		SAN115		115.00	6	0.9855	113.34
48		TINAJ115		115.00	6	0.9959	114.53	50		M.O115		115.00	6	0.9961	114.55
52		TOC115		115.00	6	0.9902	113.87								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:07
 PLAN EXP-SIN - C.A. JUNIO 2009
 Año 2015 ESC MOD DEM MAX VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
SWING																	
66		BLM13B		13.800	V2	39.0	15.1	25.0	0.0	1.0100	41.4	0.9328	47.0			1	6
67		BLM13C		13.800	V3	39.0	15.1	25.0	0.0	1.0100	41.4	0.9328	47.0			1	6
68		BLM13D		13.800	V4	39.0	15.7	25.0	0.0	1.0100	41.6	0.9278	47.0			1	6
90		EST-13L		13.800	E1	19.0	3.3	12.0	-5.0	1.0000	19.3	0.9849	27.0			1	6
94		LV-13.8L		13.800	L1	24.0	3.9	12.0	-5.0	1.0000	24.3	0.9870	27.0			1	6
97		FOR13A		13.800	F1	80.0	-13.9	50.0	-50.0	1.0100	80.4	0.9852	111.0			1	6
98		FOR13B		13.800	F2	80.0	-13.9	50.0	-50.0	1.0100	80.4	0.9852	111.0			1	6
99		FOR13C		13.800	F3	80.0	-13.9	50.0	-50.0	1.0100	80.4	0.9852	111.0			1	6
101		BAY13A		13.800	B1	42.1	22.7	50.0	-25.0	1.0000	47.8	0.8800	96.0			1	6
SYST																	
102		BAY13B		13.800	B2	59.9	23.9	50.0	-25.0	1.0000	64.5	0.9287	96.0			1	6
142		CANJ13A		13.800	C1	34.5	8.7	29.0	-29.0	1.0100	35.3	0.9695	69.0			1	6
143		CANJ13B		13.800	C2	34.5	8.7	29.0	-29.0	1.0100	35.3	0.9695	69.0			1	6
150		GUALACA	13-213.800	G2	14.1	-4.9	7.4	-7.4	1.0100	14.7	0.9443	14.8			1	6	
152		BBLANCO_13.813.800	G1	9.4	0.0	6.1	0.0	1.0287	9.1	1.0000	9.1	1.0000	11.6			1	6
156		TABASARAI11313.800	G1	16.4	0.2	5.7	0.2	1.0305	15.9	0.9999	20.5		20.5			1	6
193		GEBONYIC	13.800	G1	9.5	-1.9	4.0	-4.0	1.0000	9.7	0.9804	35.3			1	6	
193		GEBONYIC	13.800	G2	9.5	-1.9	4.0	-4.0	1.0000	9.7	0.9804	35.3			1	6	
204		BJOMIN13	13.800	G1	24.7	-13.0	13.0	-13.0	1.0273	27.2	0.8849	28.9			1	6	
205		BAITUN13.8	13.800	G1	40.8	12.4	26.6	-26.6	1.0100	42.3	0.9571	50.6			1	6	
301		CONC13.8	13.800	G1	8.7	5.0	5.0	-5.0	0.9631	10.4	0.8673	13.5			1	6	
302		PASOANCH13.813.800	P1	4.7	2.0	2.0	-2.0	0.9613	5.4	0.9216	6.2		6.2		1	6	
304		ALGA13.8	13.800	A1	8.7	0.0	2.0	0.0	1.1143	7.8	1.0000	13.5			1	6	
305		ELALTO	13.800	G1	18.0	-5.0	12.0	-5.0	1.0264	18.2	0.9635	20.6			1	6	
305		ELALTO	13.800	G2	18.0	-5.0	12.0	-5.0	1.0264	18.2	0.9635	20.6			1	6	
307		CHAN1 A	13.800	G1	60.0	-12.5	50.0	-50.0	1.0100	60.7	0.9788	118.6			1	6	

308	CHAN1 B	13.800	G2	60.0	-12.5	50.0	-50.0	1.0100	60.7	0.9788	118.6	1	6	
312	PANDO13.8	13.800	G1	15.2	-4.5	10.0	-5.0	1.0100	15.7	0.9592	19.9	1	6	
316	MONTE LIRIO	13.800	G1	24.5	-5.0	12.0	-5.0	1.0285	24.3	0.9798	27.0	1	6	
317	MENDRE13.8	13.800	M1	9.4	0.0	0.0	0.0	1.1141	8.4	1.0000	35.3	1	6	
323	COCHEA	13.8	13.800	C1	5.9	0.0	0.0	1.1142	5.3	1.0000	35.3	1	6	
324	POTRER	13.8	13.800	P1	3.1	-1.2	2.0	-2.0	1.0100	3.3	0.9322	6.2	1	6
340	PEDGALITO138	13.800	P1	13.7	6.4	12.0	-5.0	1.0100	15.0	0.9073	27.0	1	6	
342	LORENA13.8	13.800	L1	16.1	-5.0	10.5	-5.0	1.0174	16.5	0.9548	19.9	1	6	
343	PRUDENCIA_1	13.800	G1	26.6	-9.8	9.8	-9.8	1.0159	27.9	0.9388	33.0	1	6	
350	MACANO	13.8	13.800	G1	3.2	-2.0	2.0	-2.0	1.0925	3.5	0.8517	6.2	1	6
351	PERLAS N	13	13.800	G1	8.2	5.0	5.0	-5.0	0.9950	9.7	0.8538	13.5	1	6
352	PERLAS S	13	13.800	G1	8.2	5.0	5.0	-5.0	0.9950	9.7	0.8538	13.5	1	6
353	PORVEN N	13	13.800	G1	2.5	0.0	2.0	0.0	1.0937	2.3	1.0000	6.2	1	6
507	CHAN2 A	13.800	G1	60.0	-11.5	50.0	-50.0	1.0100	60.5	0.9820	118.6	1	6	
508	CHAN32 B	13.800	G2	60.0	-11.5	50.0	-50.0	1.0100	60.5	0.9820	118.6	1	6	
521	EGIRAL13.8	113.800	G1	3.6	1.5	2.8	1.3	1.0000	3.9	0.9228	4.8	1	6	
521	EGIRAL13.8	113.800	G2	3.6	1.5	2.8	1.3	1.0000	3.9	0.9228	4.8	1	6	
521	EGIRAL13.8	113.800	G3	3.6	1.5	2.8	1.3	1.0000	3.9	0.9228	4.8	1	6	
521	EGIRAL13.8	113.800	G4	3.6	1.5	2.8	1.3	1.0000	3.9	0.9228	4.8	1	6	
523	TCATIVÁ	13A	13.800	G1	8.3	2.7	6.6	-6.6	1.0000	8.7	0.9496	10.9	1	6
523	TCATIVÁ	13A	13.800	G2	8.3	2.7	6.6	-6.6	1.0000	8.7	0.9496	10.9	1	6
523	TCATIVÁ	13A	13.800	G3	8.3	2.7	6.6	-6.6	1.0000	8.7	0.9496	10.9	1	6
523	TCATIVÁ	13A	13.800	G4	8.3	2.7	6.6	-6.6	1.0000	8.7	0.9496	10.9	1	6
523	TCATIVÁ	13A	13.800	G5	8.3	2.7	6.6	-6.6	1.0000	8.7	0.9496	10.9	1	6
524	TCATIVÁ	13B	13.800	G6	8.3	4.2	6.6	-6.6	1.0000	9.3	0.8893	10.9	1	6
524	TCATIVÁ	13B	13.800	G7	8.3	4.2	6.6	-6.6	1.0000	9.3	0.8893	10.9	1	6
524	TCATIVÁ	13B	13.800	G8	8.3	4.2	6.6	-6.6	1.0000	9.3	0.8893	10.9	1	6
525	TCOLON	13A	13.800	G1	39.0	19.3	19.3	19.3	1.0220	42.6	0.8965	44.4	1	6
526	TCOLON	13B	13.800	G2	39.0	19.3	19.3	19.3	1.0220	42.6	0.8965	44.4	1	6
541	TOABRE	0.6000	1	80.0	0.0	0.0	0.0	1.0139	78.9	1.0000	166.7	1	6	
SUBSYSTEM TOTALS				1368.8	75.0	879.5	-592.3				2209.5			

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:07
 PLAN EXP-SIN - C.A. JUNIO 2009
 Año 2015 ESC MOD DEM MAX VER

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
SWING																	
129		MIR13D		13.800	G4	35.0	0.8	15.0	0.0	1.0000	35.0	0.9998	44.1			2	7
130		MIR13F		13.800	G5	17.0	0.0	8.0	0.0	1.0108	16.8	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.5	2.0	-2.0	1.0000	2.0	0.9707	4.1			2	7
140		GAT6A		6.9000	G2	1.9	-0.5	2.0	-2.0	1.0000	2.0	0.9707	4.1			2	7
140		GAT6A		6.9000	G3	1.9	-0.5	2.0	-2.0	1.0000	2.0	0.9707	4.1			2	7
141		GAT6B		6.9000	G4	3.9	-1.2	3.0	-3.0	1.0000	4.1	0.9535	5.6			2	7
141		GAT6B		6.9000	G5	3.9	-1.2	3.0	-3.0	1.0000	4.1	0.9535	6.2			2	7
141		GAT6B		6.9000	G6	3.9	-1.2	3.0	-3.0	1.0000	4.1	0.9535	6.2			2	7
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0252	17.9	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0343	17.7	0.9281	23.0			2	7

171 MIR13H	13.800 M2	17.0	6.8	11.2	6.8	1.0343	17.7	0.9281	23.0
SUBSYSTEM TOTALS		120.4	16.1	71.5	5.5				171.3

2 7

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:18
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2015 ESC MOD DEM MAX VER IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL	30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR	101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS	57.1	290.6	-188.3	0.0	302.8	-7.7	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	31.9	224.5	-99.0	0.0	143.3	-93.1	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	0.5	18.5	0.0
C.RICA	229.5	569.4	-236.9	0.0	479.6	26.9	349.7	
6	1368.8	1303.2	0.0	0.0	0.0	-2.6	53.9	95.0
PANAMA	75.0	228.3	-97.9	0.0	529.4	13.2	458.3	
7	120.4	47.2	0.0	0.0	0.0	72.1	1.1	50.0
ACANAL	16.1	8.3	0.0	0.0	0.0	-6.8	14.6	
9	0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS	6565.1	6416.2	0.0	0.0	0.0	0.0	148.9	0.0
	541.5	1855.4	-946.5	0.0	2088.0	0.0	1720.6	

5.2. Demanda Mínima de Verano

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:40
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
3		PANII230		230.00	6	1.0013	230.30	5		CHO230		230.00	6	1.0031	230.71
8		LSA230		230.00	6	1.0124	232.85	11		M.N230		230.00	6	1.0308	237.09
14		PRO230		230.00	6	1.0431	239.92	85		PTP230		230.00	6	1.0308	237.07
96		FOR230		230.00	6	1.0296	236.82	100		BAY230		230.00	6	1.0047	231.09
103		COPESA23		230.00	6	1.0023	230.53	105		PAN-AM23		230.00	6	1.0031	230.71
115		PACORA23		230.00	6	1.0026	230.59	144		CANJ230		230.00	6	1.0300	236.90
145		BJOMIN230		230.00	6	1.0448	240.31	146		GUALACA230		230.00	6	1.0320	237.35
147		GUASQ230		230.00	6	1.0298	236.86	148		VELADERO 230		230.00	6	1.0238	235.47
149		BBLANCO		230.00	6	1.0229	235.26	155		TABASARAI		230.00	6	1.0243	235.59
190		CHANG230		230.00	6	1.0296	236.80	306		CHAN1 230		230.00	6	1.0297	236.83
310		CONCEPCION23		230.00	6	1.0406	239.35	311		PANDO230		230.00	6	1.0405	239.32
341		PRUDENCIA230		230.00	6	1.0351	238.08	345		LORENA230		230.00	6	1.0341	237.84
506		CHAN2 230		230.00	6	1.0292	236.72	511		LGUIAS230		230.00	6	1.0100	232.31
540		ANTON 230		230.00	6	1.0122	232.80	6000		FRONTER		230.00	6	1.0423	239.72

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9998	229.95								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:40
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0016	115.18	6		CHO115		115.00	6	1.0037	115.42
9		LSA115		115.00	6	1.0215	117.48	12		M.N115		115.00	6	1.0329	118.78
15		PRO115		115.00	6	1.0449	120.16	18		CAC115		115.00	6	1.0014	115.16
20		CH.AZUL		115.00	6	1.0457	120.25	33		STM115		115.00	6	1.0006	115.07
48		TINAJ115		115.00	6	1.0005	115.06	50		M.O115		115.00	6	1.0006	115.07
54		LM1115		115.00	6	1.0076	115.87	55		LM2115		115.00	6	1.0080	115.92
61		FFIELD		115.00	6	1.0073	115.84	87		CAL115		115.00	6	1.0396	119.55
88		EST115		115.00	6	1.0408	119.70	92		L.V115		115.00	6	1.0401	119.61
109		STA RITA115		115.00	6	1.0057	115.65	123		MIR115		115.00	7	1.0080	115.92
154		CEMPAN15		115.00	6	1.0059	115.67	191		CHANG115		115.00	6	1.0220	117.53
522		TCATIVA 115		115.00	6	1.0078	115.89	529		TCOLON 115		115.00	6	1.0057	115.65

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
4		PANII115		115.00	6	0.9896	113.80	19		C.V115		115.00	6	0.9886	113.69
21		C.BAN115		115.00	6	0.9951	114.44	23		CH115		115.00	6	0.9999	114.99
26		LOC115		115.00	6	0.9960	114.54	30		MAR115		115.00	6	0.9959	114.53
37		SAN115		115.00	6	0.9938	114.29	52		TOC115		115.00	6	0.9881	113.64

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:39
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	39.0	24.5	25.0	0.0	1.0100	45.6	0.8473	47.0								1	6
90		EST-13L		13.800	E1	19.0	3.4	12.0	-5.0	1.0000	19.3	0.9846	27.0								1	6
94		LV-13.8L		13.800	L1	20.0	3.7	12.0	-5.0	1.0000	20.3	0.9836	27.0								1	6
97		FOR13A		13.800	F1	50.7	-16.7	50.0	-50.0	1.0100	52.9	0.9500	111.0								1	6SYST
98		FOR13B		13.800	F2	81.1	-14.6	50.0	-50.0	1.0100	81.6	0.9843	111.0								1	6
142		CANJ13A		13.800	C1	32.0	8.0	29.0	-29.0	1.0100	32.7	0.9702	69.0								1	6
143		CANJ13B		13.800	C2	32.0	8.0	29.0	-29.0	1.0100	32.7	0.9702	69.0								1	6
150		GUALACA	13-213.800	G2		14.1	-5.2	7.4	-7.4	1.0100	14.8	0.9387	14.8								1	6
152		BBLANCO	13.813.800	G1		9.4	0.0	6.1	0.0	1.0228	9.2	1.0000	11.6								1	6
156		TABASARAI	1313.800	G1		15.0	0.2	5.7	0.2	1.0243	14.7	0.9999	20.5								1	6
193		GEBONYIC		13.800	G1	9.5	-4.0	4.0	-4.0	1.0092	10.2	0.9216	35.3								1	6
204		BJOMIN13		13.800	G1	22.0	-13.0	13.0	-13.0	1.0267	24.9	0.8609	28.9								1	6
205		BAITUN13.8		13.800	G1	33.0	12.5	26.6	-26.6	1.0100	34.9	0.9354	50.6								1	6
301		CONC13.8		13.800	G1	8.7	5.0	5.0	-5.0	0.9478	10.6	0.8673	13.5								1	6
302		PASOANCH	13.813.800	P1		4.7	2.0	2.0	-2.0	0.9460	5.4	0.9216	6.2								1	6
304		ALGA13.8		13.800	A1	8.7	0.0	2.0	0.0	1.1143	7.8	1.0000	13.5								1	6
305		ELALTO		13.800	G1	18.0	-5.0	12.0	-5.0	1.0335	18.1	0.9635	20.6								1	6
307		CHAN1 A		13.800	G1	60.0	-17.4	50.0	-50.0	1.0100	61.8	0.9606	118.6								1	6
312		PANDO13.8		13.800	G1	14.0	-4.5	10.0	-5.0	1.0100	14.6	0.9524	19.9								1	6
316		MONTE LIRIO		13.800	G1	22.0	-5.0	12.0	-5.0	1.0282	21.9	0.9751	27.0								1	6
317		MENDRE13.8		13.800	M1	9.4	0.0	0.0	0.0	1.1141	8.4	1.0000	35.3								1	6
323		COCHEA	13.8	13.800	C1	5.9	0.0	0.0	0.0	1.1142	5.3	1.0000	35.3								1	6
324		POTRER	13.8	13.800	P1	3.1	-1.2	2.0	-2.0	1.0100	3.3	0.9360	6.2								1	6
340		PEDGALITO	13813.800	P1		13.7	6.6	12.0	-5.0	1.0100	15.1	0.9011	27.0								1	6
342		LORENA13.8		13.800	L1	16.1	-5.0	10.5	-5.0	1.0183	16.5	0.9548	19.9								1	6
343		PRUDENCIA	_1	13.800	G1	23.0	-9.8	9.8	-9.8	1.0168	24.6	0.9205	33.0								1	6
350		MACANO	13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0915	3.5	0.8517	6.2								1	6
351		PERLAS N	13	13.800	G1	8.2	5.0	5.0	-5.0	0.9941	9.7	0.8538	13.5								1	6
352		PERLAS S	13	13.800	G1	8.2	5.0	5.0	-5.0	0.9941	9.7	0.8538	13.5								1	6
353		PORVEN N	13	13.800	G1	2.5	0.0	2.0	0.0	1.0927	2.3	1.0000	6.2								1	6
507		CHAN2 A		13.800	G1	60.0	-16.9	50.0	-50.0	1.0100	61.7	0.9625	118.6								1	6
541		TOABRE		0.6000	1	75.0	0.0	0.0	0.0	1.0151	73.9	1.0000	166.7								1	6
SUBSYSTEM TOTALS						741.3	-36.3	461.1	-374.5				1323.7									

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:39
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX VER

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING
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170 MIR13G	13.800 M1	16.1	6.8	11.2	6.8	1.0415	16.8	0.9205	23.0	2	7
171 MIR13H	13.800 M1	16.1	6.8	11.2	6.8	1.0507	16.6	0.9204	23.0	2	7
171 MIR13H	13.800 M2	16.1	6.8	11.2	6.8	1.0507	16.6	0.9204	23.0	2	7
SUBSYSTEM TOTALS		48.2	20.5	33.5	20.5				69.1		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 9:40
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 Año 2015 ESC MOD DEM MAX VER IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
			30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	SALVADOR		912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
			101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	HONDURAS		1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
			57.0	290.6	-188.3	0.0	302.8	-7.7	265.2	
4	NICA		537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
			31.8	224.5	-99.0	0.0	143.3	-93.2	142.8	
5	C.RICA		1343.8	1324.8	0.0	0.0	0.0	1.0	18.1	0.0
			225.0	569.4	-237.0	0.0	479.9	25.4	347.1	
6	PANAMA		741.3	663.3	0.0	0.0	0.0	45.1	25.6	95.0
			-36.3	116.2	160.4	0.0	528.0	-3.7	217.7	
7	ACANAL		48.2	24.0	0.0	0.0	0.0	23.9	0.3	50.0
			20.5	4.2	0.0	0.0	0.0	11.7	4.5	
9	COLON		0.0	7.3	0.0	0.0	0.0	0.0	0.0	-75.0
			0.0	1.3	0.0	0.0	0.0	0.0	0.0	
TOTALS			5865.4	5746.2	0.0	0.0	0.0	0.0	119.2	0.0
			429.9	1738.0	-688.4	0.0	2086.9	0.0	1467.1	

5.3. Demanda Máxima de Invierno

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:21
 PLAN EXP-SIN - C.A. JUNIO 2009
 Año 2015 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	1.0345	237.93	3		PANII230		230.00	6	1.0383	238.81
5		CHO230		230.00	6	1.0315	237.24	8		LSA230		230.00	6	1.0384	238.83
11		M.N230		230.00	6	1.0368	238.47	14		PRO230		230.00	6	1.0472	240.85
85		PTP230		230.00	6	1.0301	236.93	96		FOR230		230.00	6	1.0313	237.19
100		BAY230		230.00	6	1.0500	241.49	103		COPESA23		230.00	6	1.0406	239.33
105		PAN-AM23		230.00	6	1.0315	237.24	115		PACORA23		230.00	6	1.0413	239.50
144		CANJ230		230.00	6	1.0317	237.29	145		BJOMIN230		230.00	6	1.0495	241.37
146		GUALACA230		230.00	6	1.0348	238.01	147		GUASQ230		230.00	6	1.0315	237.24
148		VELADERO 230		230.00	6	1.0398	239.16	149		BBLANCO		230.00	6	1.0393	239.03
155		TABASARAI		230.00	6	1.0406	239.34	190		CHANG230		230.00	6	1.0341	237.84
306		CHAN1 230		230.00	6	1.0350	238.05	310		CONCEPCION23		230.00	6	1.0452	240.40
311		PANDO230		230.00	6	1.0447	240.27	341		PRUDENCIA230		230.00	6	1.0402	239.24
345		LORENA230		230.00	6	1.0382	238.79	506		CHAN2 230		230.00	6	1.0337	237.74
511		LGUIAS230		230.00	6	1.0341	237.84	540		ANTON 230		230.00	6	1.0419	239.63
6000		FRONTER		230.00	6	1.0461	240.59								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
* NONE *															

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:21
 PLAN EXP-SIN - C.A. JUNIO 2009
 Año 2015 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0440	120.06	4		PANII115		115.00	6	1.0458	120.27
6		CHO115		115.00	6	1.0327	118.76	9		LSA115		115.00	6	1.0770	123.85
12		M.N115		115.00	6	1.0342	118.93	15		PRO115		115.00	6	1.0491	120.64

18	CAC115	115.00	6	1.0434	119.99	19	C.V115	115.00	6	1.0368	119.23
20	CH.AZUL	115.00	6	1.0498	120.73	21	C.BAN115	115.00	6	1.0340	118.91
23	CH115	115.00	6	1.0359	119.13	26	LOC115	115.00	6	1.0351	119.04
30	MAR115	115.00	6	1.0339	118.90	33	STM115	115.00	6	1.0421	119.84
37	SAN115	115.00	6	1.0329	118.79	48	TINAJ115	115.00	6	1.0416	119.78
50	M.O115	115.00	6	1.0417	119.80	52	TOC115	115.00	6	1.0431	119.95
54	LM1115	115.00	6	1.0454	120.23	55	LM2115	115.00	6	1.0457	120.25
61	FFIELD	115.00	6	1.0424	119.88	87	CAL115	115.00	6	1.0474	120.45
88	EST115	115.00	6	1.0497	120.71	92	L.V115	115.00	6	1.0483	120.56
109	STA RITA115	115.00	6	1.0478	120.50	123	MIR115	115.00	7	1.0479	120.51
154	CEMPAN15	115.00	6	1.0442	120.08	191	CHANG115	115.00	6	1.0275	118.17
522	TCATIVÁ 115	115.00	6	1.0456	120.24	529	TCOLON 115	115.00	6	1.0521	120.99

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS# X-- NAME --X BASKV AREA V(PU) V(KV) BUS# X-- NAME --X BASKV AREA V(PU) V(KV)

* NONE *

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:21
 PLAN EXP-SIN - C.A. JUNIO 2009
 Año 2015 ESC MOD DEM MAX INV

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	39.0	11.8	25.0	0.0	1.0181	40.0	0.9569	47.0							1	6	
90		EST-13L		13.800	E1	17.8	3.4	12.0	-5.0	1.0090	17.9	0.9824	27.0							1	6	
91		EST-13T		13.800	E2	17.8	3.4	12.0	-5.0	1.0090	17.9	0.9824	27.0							1	6	
94		LV-13.8L		13.800	L1	21.7	4.3	12.0	-5.0	1.0100	21.9	0.9807	27.0							1	6	
95		LV-13.8T		13.800	L2	21.7	4.3	12.0	-5.0	1.0100	21.9	0.9807	27.0							1	6	
97		FOR13A		13.800	F1	81.1	-16.0	50.0	-50.0	1.0100	81.9	0.9810	111.0							1	6	
98		FOR13B		13.800	F2	81.1	-16.0	50.0	-50.0	1.0100	81.9	0.9810	111.0							1	6	
99		FOR13C		13.800	F3	81.1	-16.0	50.0	-50.0	1.0100	81.9	0.9810	111.0							1	6	
101		BAY13A		13.800	B1	42.7	7.5	50.0	-25.0	1.0080	43.0	0.9850	96.0							1	6	6SYST
102		BAY13B		13.800	B2	57.3	8.4	50.0	-25.0	1.0080	57.5	0.9894	96.0							1	6	
142		CANJ13A		13.800	C1	34.5	9.9	29.0	-29.0	1.0200	35.2	0.9611	69.0							1	6	
143		CANJ13B		13.800	C2	34.5	9.9	29.0	-29.0	1.0200	35.2	0.9611	69.0							1	6	
150		GUALACA 13-213		13.800	G2	9.5	-2.3	7.4	-7.4	1.0250	9.5	0.9708	14.8							1	6	
151		GUALACA13.8		13.800	G1	9.5	-2.3	7.4	-7.4	1.0250	9.5	0.9708	14.8							1	6	
152		BBLANCO_13.8		13.800	G1	8.6	0.0	6.1	0.0	1.0391	8.3	1.0000	11.6							1	6	
152		BBLANCO_13.8		13.800	G2	8.6	0.0	6.1	0.0	1.0391	8.3	1.0000	11.6							1	6	
156		TABASARAI13		13.800	G1	15.0	0.2	5.7	0.2	1.0397	14.5	0.9999	20.5							1	6	
156		TABASARAI13		13.800	G2	15.0	0.2	5.7	0.2	1.0397	14.5	0.9999	20.5							1	6	
193		GEBONYIC		13.800	G1	8.7	0.1	4.0	-4.0	1.0250	8.5	1.0000	35.3							1	6	
193		GEBONYIC		13.800	G2	8.7	0.1	4.0	-4.0	1.0250	8.5	1.0000	35.3							1	6	
193		GEBONYIC		13.800	G3	8.7	0.1	4.0	-4.0	1.0250	8.5	1.0000	35.3							1	6	

204	BJOMIN13	13.800	G1	19.5	-10.3	13.0	-13.0	1.0200	21.6	0.8849	28.9	1	6
204	BJOMIN13	13.800	G2	19.5	-10.3	13.0	-13.0	1.0200	21.6	0.8849	28.9	1	6
205	BAITUN13.8	13.800	G1	25.5	11.0	26.6	-26.6	1.0250	27.1	0.9177	50.6	1	6
205	BAITUN13.8	13.800	G2	25.5	11.0	26.6	-26.6	1.0250	27.1	0.9177	50.6	1	6
301	CONC13.8	13.800	G1	8.7	5.0	5.0	-5.0	0.9667	10.4	0.8673	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9648	5.3	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	8.7	0.0	2.0	0.0	1.1267	7.7	1.0000	13.5	1	6
305	ELALTO	13.800	G1	17.4	-4.2	12.0	-5.0	1.0250	17.5	0.9718	20.6	1	6
305	ELALTO	13.800	G2	17.4	-4.2	12.0	-5.0	1.0250	17.5	0.9718	20.6	1	6
305	ELALTO	13.800	G3	17.4	-4.2	12.0	-5.0	1.0250	17.5	0.9718	20.6	1	6
307	CHAN1 A	13.800	G1	91.2	-5.8	50.0	-50.0	1.0250	89.2	0.9980	118.6	1	6
308	CHAN1 B	13.800	G2	91.2	-5.8	50.0	-50.0	1.0250	89.2	0.9980	118.6	1	6
312	PANDO13.8	13.800	G1	13.0	-0.7	10.0	-5.0	1.0250	12.7	0.9986	19.9	1	6
312	PANDO13.8	13.800	G2	13.0	-0.7	10.0	-5.0	1.0250	12.7	0.9986	19.9	1	6
316	MONTE LIRIO	13.800	G1	21.0	-3.4	12.0	-5.0	1.0250	20.8	0.9869	27.0	1	6
316	MONTE LIRIO	13.800	G2	21.0	-3.4	12.0	-5.0	1.0250	20.8	0.9869	27.0	1	6
317	MENDRE13.8	13.800	M1	8.6	0.0	0.0	0.0	1.1262	7.6	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	8.6	0.0	0.0	0.0	1.1262	7.6	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	5.4	0.0	0.0	0.0	1.1265	4.8	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C2	5.4	0.0	0.0	0.0	1.1265	4.8	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	3.4	2.0	2.0	-2.0	1.0232	3.8	0.8613	6.2	1	6
340	PEDGALITO138	13.800	P1	19.3	9.8	12.0	-5.0	1.0250	21.1	0.8923	27.0	1	6
342	LORENA13.8	13.800	L1	10.8	-4.3	10.5	-5.0	1.0250	11.4	0.9276	19.9	1	6
343	PRUDENCIA_1	13.800	G1	21.0	-8.2	9.8	-9.8	1.0250	22.0	0.9322	33.0	1	6
344	PRUDENCIA_2	13.800	G2	21.0	-8.2	9.8	-9.8	1.0250	22.0	0.9322	33.0	1	6
346	LORENA 13-2	13.800	L2	10.8	-4.3	10.5	-5.0	1.0250	11.4	0.9276	19.9	1	6
350	MACANO 13.8	13.800	G1	3.2	-2.0	2.0	-2.0	1.0963	3.5	0.8517	6.2	1	6
351	PERLAS N 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9984	10.1	0.8673	13.5	1	6
352	PERLAS S 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9984	10.1	0.8673	13.5	1	6
353	PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0975	2.6	1.0000	6.2	1	6
507	CHAN2 A	13.800	G1	88.0	-4.7	50.0	-50.0	1.0250	86.0	0.9986	118.6	1	6
508	CHAN32 B	13.800	G2	88.0	-4.7	50.0	-50.0	1.0250	86.0	0.9986	118.6	1	6
525	TCOLON 13A	13.800	G1	31.5	19.3	19.3	19.3	1.0393	35.5	0.8530	44.4	1	6
541	TOABRE	0.6000	1	21.2	0.0	0.0	0.0	1.0427	20.4	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1404.3	-8.5	887.5	-654.9				2371.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:21
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0374	33.7	1.0000	44.1			2	7
130		MIR13F		13.800	G5	17.0	0.0	8.0	0.0	1.0513	16.2	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.9	2.0	-2.0	1.0100	2.1	0.8998	4.1			2	7
140		GAT6A		6.9000	G2	1.9	-0.9	2.0	-2.0	1.0100	2.1	0.8998	4.1			2	7

140	GAT6A	6.9000	G3	1.9	-0.9	2.0	-2.0	1.0100	2.1	0.8998	4.1	2	7
141	GAT6B	6.9000	G4	3.9	-1.7	3.0	-3.0	1.0100	4.2	0.9148	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-1.7	3.0	-3.0	1.0100	4.2	0.9148	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-1.7	3.0	-3.0	1.0100	4.2	0.9148	6.2	2	7
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0652	17.2	0.9281	23.0	2	7
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0740	17.1	0.9281	23.0	2	7
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0740	17.1	0.9281	23.0	2	7
SUBSYSTEM TOTALS				120.4	12.5	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:22
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2015 ESC MOD DEM MAX INV IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
	1		1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
	GUATEMAL		30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
	2		912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
	SALVADOR		101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
	3		1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
	HONDURAS		57.0	290.6	-188.3	0.0	302.8	-7.7	265.2	
	4		537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
	NICA		31.7	224.5	-99.0	0.0	143.3	-93.2	142.8	
	5		1343.8	1324.8	0.0	0.0	0.0	-0.1	19.1	0.0
	C.RICA		221.7	569.4	-237.2	0.0	480.3	16.7	353.1	
	6		1404.3	1303.2	0.0	0.0	0.0	-1.8	88.7	95.0
	PANAMA		-8.5	228.3	-390.7	0.0	597.2	26.2	722.4	
	7		120.4	47.2	0.0	0.0	0.0	71.9	1.3	50.0
	ACANAL		12.5	8.3	0.0	0.0	0.0	-9.5	13.7	
	9		0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
	COLON		0.0	2.5	0.0	0.0	0.0	0.0	0.0	
	TOTALS		6600.6	6416.2	0.0	0.0	0.0	0.0	184.4	0.0
			446.3	1855.4	-1239.6	0.0	2156.5	0.0	1987.1	

5.3.1. Contingencia Llano Sánchez- Panamá II

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:29
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV CONT LLS-PA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.N230			230.00	6	1.0216	234.97	14	PRO230			230.00	6	1.0385	238.86
85	PTP230			230.00	6	1.0189	234.35	96	FOR230			230.00	6	1.0191	234.40
100	BAY230			230.00	6	1.0096	232.20	144	CANJ230			230.00	6	1.0161	233.71
145	BJOMIN230			230.00	6	1.0423	239.73	146	GUALACA230			230.00	6	1.0202	234.64
147	GUASQ230			230.00	6	1.0158	233.64	148	VELADERO 230	230.00		6	1.0075	231.73	
149	BBLANCO			230.00	6	1.0058	231.34	155	TABASARAI			230.00	6	1.0093	232.14
190	CHANG230			230.00	6	1.0300	236.89	306	CHAN1 230			230.00	6	1.0308	237.08
310	CONCEPCION23	230.00		6	1.0350	238.06		311	PANDO230			230.00	6	1.0361	238.30
341	PRUDENCIA230	230.00		6	1.0271	236.23		345	LORENA230			230.00	6	1.0246	235.65
506	CHAN2 230			230.00	6	1.0291	236.69	6000	FRONTER			230.00	6	1.0370	238.51

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN230			230.00	6	0.9740	224.02	3	PANII230			230.00	6	0.9800	225.39
5	CHO230			230.00	6	0.9676	222.55	8	LSA230			230.00	6	0.9884	227.33
103	COPESA23			230.00	6	0.9849	226.53	105	PAN-AM23			230.00	6	0.9676	222.55
115	PACORA23			230.00	6	0.9879	227.21	511	LGUIAS230			230.00	6	0.9732	223.84
540	ANTON 230			230.00	6	0.9804	225.48								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:29
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV CONT LLS-PA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115			115.00	6	1.0243	117.79	12	M.N115			115.00	6	1.0253	117.90
15	PRO115			115.00	6	1.0404	119.65	20	CH.AZUL			115.00	6	1.0412	119.74
87	CAL115			115.00	6	1.0414	119.76	88	EST115			115.00	6	1.0443	120.10
92	L.V115			115.00	6	1.0426	119.90	191	CHANG115			115.00	6	1.0246	117.83

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115			115.00	6	0.9830	113.04	4	PANII115			115.00	6	0.9860	113.40
6	CHO115			115.00	6	0.9689	111.43	18	CAC115			115.00	6	0.9825	112.99
19	C.V115			115.00	6	0.9762	112.26	21	C.BAN115			115.00	6	0.9725	111.83
23	CH115			115.00	6	0.9767	112.32	26	LOC115			115.00	6	0.9736	111.96
30	MAR115			115.00	6	0.9723	111.82	33	STM115			115.00	6	0.9810	112.81
37	SAN115			115.00	6	0.9714	111.71	48	TINAJ115			115.00	6	0.9804	112.75
50	M.O115			115.00	6	0.9805	112.76	52	TOC115			115.00	6	0.9831	113.06

323	COCHEA	13.8	13.800	C2	5.4	0.0	0.0	0.0	1.1201	4.9	1.0000	35.3	1	6
324	POTRER	13.8	13.800	P1	3.4	2.0	2.0	-2.0	1.0173	3.9	0.8613	6.2	1	6
340	PEDGALITO138	13.800	P1	19.3	12.0	12.0	-5.0	1.0241	22.2	0.8492	27.0	1	6	
342	LORENA13.8	13.800	L1	10.8	0.3	10.5	-5.0	1.0250	10.5	0.9996	19.9	1	6	
343	PRUDENCIA_1	13.800	G1	21.0	-0.8	9.8	-9.8	1.0250	20.5	0.9993	33.0	1	6	
344	PRUDENCIA_2	13.800	G2	21.0	-0.8	9.8	-9.8	1.0250	20.5	0.9993	33.0	1	6	
346	LORENA 13-2	13.800	L2	10.8	0.3	10.5	-5.0	1.0250	10.5	0.9996	19.9	1	6	
350	MACANO	13.8	13.800	G1	3.2	-2.0	2.0	-2.0	1.0856	3.5	0.8517	6.2	1	6
351	PERLAS N 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9888	10.2	0.8673	13.5	1	6	
352	PERLAS S 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9888	10.2	0.8673	13.5	1	6	
353	PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0868	2.6	1.0000	6.2	1	6	
507	CHAN2 A	13.800	G1	88.0	-0.2	50.0	-50.0	1.0250	85.9	1.0000	118.6	1	6	
508	CHAN32 B	13.800	G2	88.0	-0.2	50.0	-50.0	1.0250	85.9	1.0000	118.6	1	6	
525	TCOLON 13A	13.800	G1	31.5	19.3	19.3	19.3	0.9876	37.4	0.8530	44.4	1	6	
541	TOABRE	0.6000	1	21.2	0.0	0.0	0.0	0.9813	21.6	1.0000	166.7	1	6	
SUBSYSTEM TOTALS					1419.0	197.3	887.5	-654.9				2371.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:28
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV CONT LLS-PA II

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
SWING																	
129		MIR13D		13.800	G4	35.0	4.2	15.0	0.0	1.0000	35.3	0.9928	44.1			2	7
130		MIR13F		13.800	G5	17.0	0.0	8.0	0.0	1.0022	17.0	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	0.8	2.0	-2.0	1.0100	2.1	0.9171	4.1			2	7
140		GAT6A		6.9000	G2	1.9	0.8	2.0	-2.0	1.0100	2.1	0.9171	4.1			2	7
140		GAT6A		6.9000	G3	1.9	0.8	2.0	-2.0	1.0100	2.1	0.9171	4.1			2	7
141		GAT6B		6.9000	G4	3.9	0.1	3.0	-3.0	1.0100	3.8	0.9997	5.6			2	7
141		GAT6B		6.9000	G5	3.9	0.1	3.0	-3.0	1.0100	3.8	0.9997	6.2			2	7
141		GAT6B		6.9000	G6	3.9	0.1	3.0	-3.0	1.0100	3.8	0.9997	6.2			2	7
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0168	18.0	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0259	17.9	0.9281	23.0			2	7
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0259	17.9	0.9281	23.0			2	7
SUBSYSTEM TOTALS						120.4	27.5	71.5	5.5				171.3				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV CONT LLS-PA II

FRI, JUN 26 2009 11:29

AREA TOTALS
 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL	30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR	101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS	57.1	290.6	-188.3	0.0	302.7	-7.6	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	32.1	224.5	-99.0	0.0	143.3	-92.9	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	0.0	19.1	0.0
C.RICA	236.3	569.4	-236.5	0.0	478.6	28.3	353.6	
6	1419.0	1303.2	0.0	0.0	0.0	-1.8	103.3	95.0
PANAMA	197.3	228.3	-349.1	0.0	529.9	0.5	845.0	
7	120.4	47.2	0.0	0.0	0.0	71.8	1.4	50.0
ACANAL	27.5	8.3	0.0	0.0	0.0	4.3	15.0	
9	0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS	6615.3	6416.2	0.0	0.0	0.0	0.0	199.1	0.0
	682.1	1855.4	-1197.3	0.0	2087.4	0.0	2111.5	

5.3.2. Contingencia Guasquitas-Veladero

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:35
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV CONT GUA-VEL

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	1.0261	235.99	3		PANII230		230.00	6	1.0301	236.92
5		CHO230		230.00	6	1.0227	235.23	8		LSA230		230.00	6	1.0292	236.71
11		M.N230		230.00	6	1.0309	237.11	14		PRO230		230.00	6	1.0437	240.06
85		PTP230		230.00	6	1.0262	236.02	96		FOR230		230.00	6	1.0269	236.19
100		BAY230		230.00	6	1.0443	240.20	103		COPESA23		230.00	6	1.0327	237.52
105		PAN-AM23		230.00	6	1.0227	235.23	115		PACORA23		230.00	6	1.0338	237.77
144		CANJ230		230.00	6	1.0257	235.91	145		BJOMIN230		230.00	6	1.0466	240.72
146		GUALACA230		230.00	6	1.0292	236.72	147		GUASQ230		230.00	6	1.0254	235.85
148		VELADERO 230		230.00	6	1.0308	237.09	149		BBLANCO		230.00	6	1.0303	236.97
155		TABASARAI		230.00	6	1.0316	237.27	190		CHANG230		230.00	6	1.0325	237.47
306		CHAN1 230		230.00	6	1.0334	237.69	310		CONCEPCION23		230.00	6	1.0412	239.49
311		PANDO230		230.00	6	1.0413	239.51	341		PRUDENCIA230		230.00	6	1.0351	238.08
345		LORENA230		230.00	6	1.0330	237.58	506		CHAN2 230		230.00	6	1.0320	237.37
511		LGUIAS230		230.00	6	1.0250	235.74	540		ANTON 230		230.00	6	1.0332	237.63
6000		FRONTER		230.00	6	1.0424	239.76								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
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* NONE *

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV CONT GUA-VEL

FRI, JUN 26 2009 11:35

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	1.0355	119.09	4		PANII115		115.00	6	1.0375	119.31
6		CHO115		115.00	6	1.0240	117.76	9		LSA115		115.00	6	1.0673	122.73
12		M.N115		115.00	6	1.0307	118.53	15		PRO115		115.00	6	1.0456	120.25
18		CAC115		115.00	6	1.0350	119.03	19		C.V115		115.00	6	1.0284	118.27
20		CH.AZUL		115.00	6	1.0464	120.33	21		C.BAN115		115.00	6	1.0255	117.93
23		CH115		115.00	6	1.0279	118.21	26		LOC115		115.00	6	1.0266	118.06
30		MAR115		115.00	6	1.0254	117.92	33		STM115		115.00	6	1.0336	118.87
37		SAN115		115.00	6	1.0244	117.81	48		TINAJ115		115.00	6	1.0331	118.81
50		M.O115		115.00	6	1.0333	118.83	52		TOC115		115.00	6	1.0347	119.00
54		LM1115		115.00	6	1.0382	119.39	55		LM2115		115.00	6	1.0384	119.42
61		FFIELD		115.00	6	1.0352	119.04	87		CAL115		115.00	6	1.0450	120.18
88		EST115		115.00	6	1.0476	120.47	92		L.V115		115.00	6	1.0461	120.30
109		STA RITA115		115.00	6	1.0403	119.64	123		MIR115		115.00	7	1.0397	119.56
154		CEMPAN15		115.00	6	1.0366	119.21	191		CHANG115		115.00	6	1.0264	118.04
522		TCATIVÁ 115		115.00	6	1.0383	119.41	529		TCOLON 115		115.00	6	1.0446	120.13

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
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* NONE *

346	LORENA	13-2	13.800	L2	10.8	-2.6	10.5	-5.0	1.0250	10.8	0.9731	19.9	1	6
350	MACANO	13.8	13.800	G1	3.2	-2.0	2.0	-2.0	1.0921	3.5	0.8517	6.2	1	6
351	PERLAS	N 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9947	10.1	0.8673	13.5	1	6
352	PERLAS	S 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9947	10.1	0.8673	13.5	1	6
353	PORVEN	N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0933	2.6	1.0000	6.2	1	6
507	CHAN2	A	13.800	G1	88.0	-3.1	50.0	-50.0	1.0250	85.9	0.9994	118.6	1	6
508	CHAN32	B	13.800	G2	88.0	-3.1	50.0	-50.0	1.0250	85.9	0.9994	118.6	1	6
525	TCOLON	13A	13.800	G1	31.5	19.3	19.3	19.3	1.0324	35.8	0.8530	44.4	1	6
541	TOABRE		0.6000	1	21.2	0.0	0.0	0.0	1.0341	20.5	1.0000	166.7	1	6
SUBSYSTEM TOTALS					1409.2	48.4	887.5	-654.9				2371.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:34
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV CONT GUA-VEL

AREA 7 [ACANAL] MACHINE SUMMARY:																	
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA
SWING																	
129		MIR13D		13.800	G4	35.0	0.0	15.0	0.0	1.0300	34.0	1.0000	44.1			2	7
130		MIR13F		13.800	G5	17.0	0.0	8.0	0.0	1.0437	16.3	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.7	2.0	-2.0	1.0100	2.0	0.9419	4.1			2	7
140		GAT6A		6.9000	G2	1.9	-0.7	2.0	-2.0	1.0100	2.0	0.9419	4.1			2	7
140		GAT6A		6.9000	G3	1.9	-0.7	2.0	-2.0	1.0100	2.0	0.9419	4.1			2	7
141		GAT6B		6.9000	G4	3.9	-1.5	3.0	-3.0	1.0100	4.1	0.9359	5.6			2	7
141		GAT6B		6.9000	G5	3.9	-1.5	3.0	-3.0	1.0100	4.1	0.9359	6.2			2	7
141		GAT6B		6.9000	G6	3.9	-1.5	3.0	-3.0	1.0100	4.1	0.9359	6.2			2	7
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0577	17.3	0.9281	23.0			2	7
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0666	17.2	0.9281	23.0			2	7
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0666	17.2	0.9281	23.0			2	7
SUBSYSTEM TOTALS						120.4	14.0	71.5	5.5				171.3				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, JUN 26 2009 11:37
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2015 ESC MOD DEM MAX INV CONT GUA-VEL IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1			1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL			30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2			912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR			101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3			1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0

HONDURAS	57.1	290.6	-188.3	0.0	302.8	-7.7	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	31.9	224.5	-99.0	0.0	143.3	-93.1	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	-0.4	19.4	0.0
C.RICA	228.6	569.4	-236.8	0.0	479.6	20.4	355.3	
6	1409.2	1303.2	0.0	0.0	0.0	-1.5	93.3	95.0
PANAMA	48.4	228.3	-384.4	0.0	572.7	21.0	753.7	
7	120.4	47.2	0.0	0.0	0.0	71.9	1.3	50.0
ACANAL	14.0	8.3	0.0	0.0	0.0	-8.1	13.9	
9	0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS	6605.5	6416.2	0.0	0.0	0.0	0.0	189.3	0.0
	511.9	1855.4	-1232.9	0.0	2131.2	0.0	2020.7	