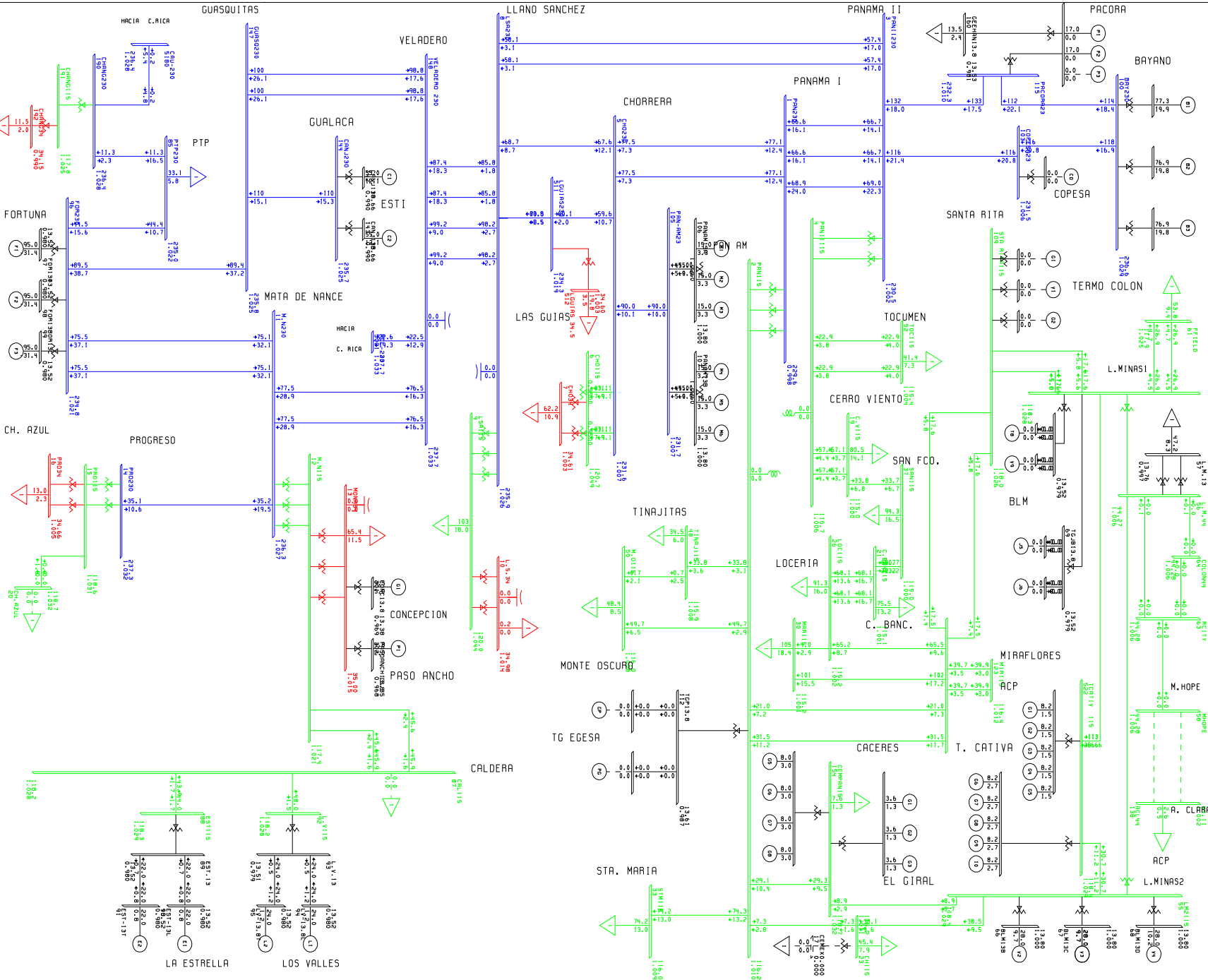


ANEXO 6

RESULTADOS DE FLUJOS DE POTENCIA

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2009 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO**



W ACTUALIZATION PLAN - EXP - SIN CON C.R. JUNIO 2008
 R O 2009 ESC MOD DEM INV
 THU, OCT 30 2008 15:50

KVS14 . *35 . S115
 BUS - VOLTAGE (KV/PUI)
 BRANCH - MW/MVA
 EQUIPMENT - MW/MVA

BUS - VOLTAGE (KV/PUI)
 BRANCH - MW/MVA
 EQUIPMENT - MW/MVA

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV

THU, OCT 30 2008 14:44

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	PANII	230		230.00	6	1.0021	230.49	5	CHO230			230.00	6	1.0072	231.65
8	LSA	230		230.00	6	1.0258	235.94	11	M.N230			230.00	6	1.0274	236.30
14	PRO	230		230.00	6	1.0319	237.33	85	FTP230			230.00	6	1.0219	235.04
96	FOR	230		230.00	6	1.0208	234.78	100	BAY230			230.00	6	1.0286	236.57
103	COPE	230		230.00	6	1.0063	231.46	105	PAN-AM23			230.00	6	1.0072	231.67
115	PACOR	230		230.00	6	1.0098	232.26	144	CANJ230			230.00	6	1.0250	235.75
147	GUASQ	230		230.00	6	1.0250	235.76	148	VELADERO	230	230.00	6	1.0334	237.68	
190	CHANG	230		230.00	6	1.0278	236.39	511	LGUIAS230			230.00	6	1.0186	234.28
6000	FRONTER			230.00	6	1.0325	237.48								

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	0.9985	229.65								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV

THU, OCT 30 2008 14:44

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	1.0103	116.18	4	PANII	115		115.00	6	1.0060	115.70
6	CHO	115		115.00	6	1.0493	120.67	9	LSA	115		115.00	6	1.0439	120.05
12	M.N	115		115.00	6	1.0213	117.45	15	PRO	115		115.00	6	1.0312	118.59
18	CAC	115		115.00	6	1.0099	116.14	20	CH.AZUL			115.00	6	1.0319	118.67
21	C.BAN	115		115.00	6	1.0010	115.12	23	CH	115		115.00	6	1.0106	116.22
26	LOC	115		115.00	6	1.0021	115.24	30	MAR	115		115.00	6	1.0014	115.16
33	STM	115		115.00	6	1.0086	115.99	48	TINAJ	115		115.00	6	1.0083	115.95
50	M.O	115		115.00	6	1.0084	115.96	52	TOC	115		115.00	6	1.0037	115.42
54	LM	115		115.00	6	1.0285	118.27	55	LM2	115		115.00	6	1.0293	118.37
61	FFIELD			115.00	9	1.0253	117.91	87	CAL	115		115.00	6	1.0275	118.17
88	EST	115		115.00	6	1.0290	118.34	92	L.V	115		115.00	6	1.0281	118.24
109	STA RITA	115		115.00	6	1.0265	118.05	123	MIR	115		115.00	7	1.0124	116.43
154	CEMPAN	15		115.00	6	1.0322	118.70	191	CHANG	115		115.00	6	1.0246	117.82
522	TCATIVÁ	115		115.00	6	1.0291	118.35								

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)
19	C.V	115		115.00	6	1.0000	114.99	37	SAN	115		115.00	6	0.9997	114.97

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV

THU, OCT 30 2008 14:43

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	BLM	13B		13.800	V2	28.0	9.7	25.0	0.0	1.0000	29.6	0.9445	47.0				1	6

67	BLM13C	13.800	V3	28.0	9.7	25.0	0.0	1.0000	29.6	0.9445	47.0	1	6
68	BLM13D	13.800	V4	28.0	10.2	25.0	0.0	1.0000	29.8	0.9401	47.0	1	6
90	EST-13L	13.800	E1	22.0	0.8	12.0	-5.0	0.9800	22.5	0.9993	27.0	1	6
91	EST-13T	13.800	E2	22.0	0.8	12.0	-5.0	0.9800	22.5	0.9993	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	1.2	12.0	-5.0	0.9800	24.5	0.9987	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	1.2	12.0	-5.0	0.9800	24.5	0.9987	27.0	1	6
97	FOR13A	13.800	F1	95.0	-31.4	50.0	-50.0	0.9800	102.1	0.9496	111.0	1	6
98	FOR13B	13.800	F2	95.0	-31.4	50.0	-50.0	0.9800	102.1	0.9496	111.0	1	6
99	FOR13C	13.800	F3	95.0	-31.4	50.0	-50.0	0.9800	102.1	0.9496	111.0	1	6
101	BAY13A	13.800	B1	77.3	19.9	50.0	-25.0	1.0000	79.9	0.9685	96.0	1	6
102	BAY13B	13.800	B2	76.9	19.8	50.0	-25.0	1.0000	79.4	0.9683	96.0	1	6
106	PANAM13A	13.800	M1	15.0	3.3	9.0	0.0	1.0000	15.4	0.9766	20.7	1	6
106	PANAM13A	13.800	M2	15.0	3.3	9.0	0.0	1.0000	15.4	0.9766	20.7	1	6
106	PANAM13A	13.800	M3	15.0	3.3	9.0	0.0	1.0000	15.4	0.9766	20.7	1	6
107	PANAM13B	13.800	M4	15.0	3.3	9.0	0.0	1.0000	15.4	0.9766	20.7	1	6
107	PANAM13B	13.800	M5	15.0	3.3	9.0	0.0	1.0000	15.4	0.9766	20.7	1	6
107	PANAM13B	13.800	M6	15.0	3.3	9.0	0.0	1.0000	15.4	0.9766	20.7	1	6
108	BAY13C	13.800	B3	76.9	19.8	50.0	-25.0	1.0000	79.4	0.9683	100.0	1	6
116	PACORA13	13.800	P1	17.0	0.0	8.8	0.0	1.0022	17.0	1.0000	21.7	1	6
116	PACORA13	13.800	P2	17.0	0.0	8.8	0.0	1.0022	17.0	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	55.0	12.1	29.0	-29.0	0.9900	56.9	0.9766	69.0	1	6
143	CANJ13B	13.800	C2	55.0	12.1	29.0	-29.0	0.9900	56.9	0.9766	69.0	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9694	11.1	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9675	5.3	0.9216	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0055	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0055	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0055	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0055	3.3	0.9173	4.8	1	6
523	TCATIVÁ	13A 13.800	G1	8.2	1.5	6.6	-6.6	0.9900	8.4	0.9838	10.9	1	6
523	TCATIVÁ	13A 13.800	G2	8.2	1.5	6.6	-6.6	0.9900	8.4	0.9838	10.9	1	6
523	TCATIVÁ	13A 13.800	G3	8.2	1.5	6.6	-6.6	0.9900	8.4	0.9838	10.9	1	6
523	TCATIVÁ	13A 13.800	G4	8.2	1.5	6.6	-6.6	0.9900	8.4	0.9838	10.9	1	6
523	TCATIVÁ	13A 13.800	G5	8.2	1.5	6.6	-6.6	0.9900	8.4	0.9838	10.9	1	6
524	TCATIVÁ	13B 13.800	10	8.2	2.7	6.6	-6.6	1.0000	8.6	0.9482	10.9	1	6
524	TCATIVÁ	13B 13.800	G6	8.2	2.7	6.6	-6.6	1.0000	8.6	0.9482	10.9	1	6
524	TCATIVÁ	13B 13.800	G7	8.2	2.7	6.6	-6.6	1.0000	8.6	0.9482	10.9	1	6
524	TCATIVÁ	13B 13.800	G8	8.2	2.7	6.6	-6.6	1.0000	8.6	0.9482	10.9	1	6
524	TCATIVÁ	13B 13.800	G9	8.2	2.7	6.6	-6.6	1.0000	8.6	0.9482	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0063	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0063	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0063	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0063	8.5	0.9363	10.9	1	6
SUBSYSTEM TOTALS				1068.2	88.7	662.1	-358.4				1371.6		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 14:43
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 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	1.3	15.0	0.0	1.0000	35.0	0.9993	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0095	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	0.9953	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9953	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9953	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9725	5.6			2	7	

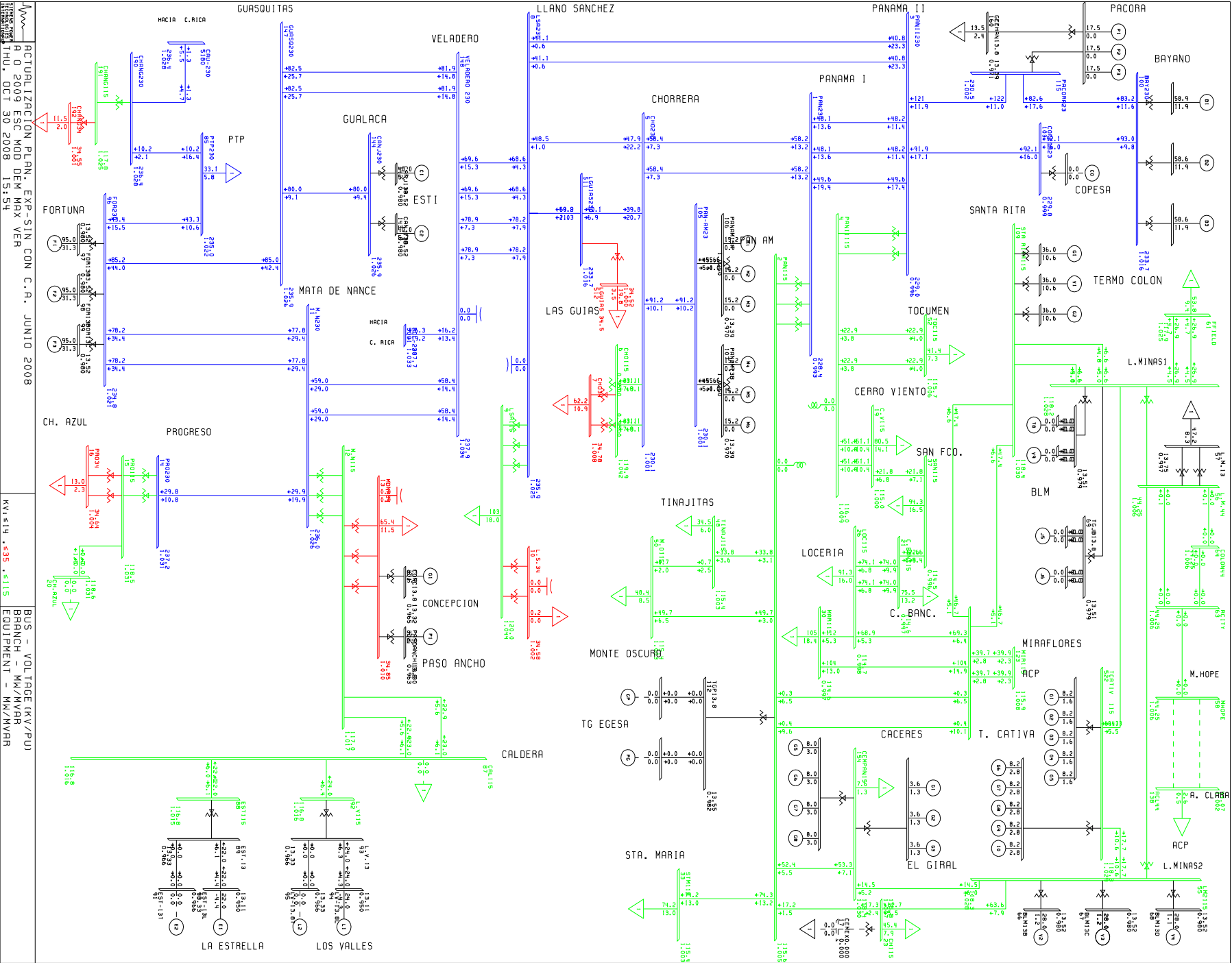
141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9725	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9725	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0239	17.9	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0330	17.7	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0330	17.7	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	18.4	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 14:44
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2009 ESC MOD DEM MAX INV IN MW/MVAR

X-- AREA	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	1006.8	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	32.4	224.5	-98.9	0.0	143.3	-97.3	147.3	
5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	245.7	569.4	-236.5	0.0	470.5	26.0	357.3	
6	1068.2	1024.7	0.0	0.0	0.0	20.8	22.7	25.0
PANAMA	88.7	179.5	0.0	0.0	447.9	49.8	307.3	
7	120.5	39.8	0.0	0.0	0.0	79.5	1.3	50.0
ACANAL	18.4	7.0	0.0	0.0	0.0	-7.0	18.5	
9	0.0	100.9	0.0	0.0	0.0	-101.0	0.1	-75.0
COLON	0.0	17.7	0.0	0.0	1.1	-22.3	5.7	
TOTALS	6338.0	6217.0	0.0	0.0	0.0	0.0	121.0	0.0
	571.3	1820.5	-848.0	0.0	1998.4	0.0	1597.3	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2009 ESCENARIO MODERADO DEMANDA MÁXIMA VERANO**



ACTUALIZATION PLAN. EXP-SIN CON C.A. JUNIO 2008
 R 0 2009 ESC MOD DEM MAX VER
 THU, OCT 30 2008 15:54

KV1=14 . <35 . <115

BUS - VOLTAGE (KV/PU)
 BRANCH - MM/MVAR
 EQUIPMENT - MM/MVAR

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	1.0005	230.12	8		LSA230		230.00	6	1.0255	235.86
11		M.N230		230.00	6	1.0262	236.03	14		PRO230		230.00	6	1.0314	237.22
85		PTP230		230.00	6	1.0218	235.02	96		FOR230		230.00	6	1.0207	234.76
100		BAY230		230.00	6	1.0159	233.65	105		PAN-AM23		230.00	6	1.0005	230.12
115		PACORA23		230.00	6	1.0021	230.48	144		CANJ230		230.00	6	1.0258	235.93
147		GUASQ230		230.00	6	1.0258	235.93	148		VELADERO	230	230.00	6	1.0344	237.91
190		CHANG230		230.00	6	1.0277	236.38	511		LGUIAS230		230.00	6	1.0161	233.70
6000		FRONTER		230.00	6	1.0322	237.40								

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	0.9930	228.38	3		PANII230		230.00	6	0.9958	229.04
103		COPESA23		230.00	6	0.9992	229.81								

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	1.0051	115.59	4		PANII115		115.00	6	1.0086	115.98
6		CHO115		115.00	6	1.0423	119.86	9		LSA115		115.00	6	1.0436	120.01
12		M.N115		115.00	6	1.0172	116.97	15		PRO115		115.00	6	1.0307	118.53
18		CAC115		115.00	6	1.0050	115.57	19		C.V115		115.00	6	1.0004	115.05
20		CH.AZUL		115.00	6	1.0315	118.62	23		CH115		115.00	6	1.0067	115.77
33		STM115		115.00	6	1.0035	115.40	48		TINAJ115		115.00	6	1.0031	115.36
50		M.O115		115.00	6	1.0032	115.37	52		TOC115		115.00	6	1.0062	115.71
54		LM1115		115.00	6	1.0282	118.25	55		LM2115		115.00	6	1.0284	118.27
61		FFIELD		115.00	9	1.0251	117.88	87		CAL115		115.00	6	1.0158	116.81
88		EST115		115.00	6	1.0155	116.78	92		L.V115		115.00	6	1.0157	116.81
109		STA RITA115		115.00	6	1.0296	118.40	123		MIR115		115.00	7	1.0077	115.89
154		CEMPAN15		115.00	6	1.0296	118.40	191		CHANG115		115.00	6	1.0245	117.82
522		TCATIVÁ	115	115.00	6	1.0286	118.28								

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	0.9968	114.64	26		LOC115		115.00	6	0.9977	114.73
30		MAR115		115.00	6	0.9966	114.61	37		SAN115		115.00	6	0.9960	114.54

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	0.9992	47.0	1	6
67	BLM13C	13.800	V3	28.0	1.2	25.0	0.0	0.9800	28.6	0.9992	47.0	1	6
68	BLM13D	13.800	V4	28.0	1.1	25.0	0.0	0.9800	28.6	0.9992	47.0	1	6
90	EST-13L	13.800	E1	22.0	-4.4	12.0	-5.0	0.9500	23.6	0.9805	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	-4.3	12.0	-5.0	0.9500	25.7	0.9842	27.0	1	6
97	FOR13A	13.800	F1	95.0	-31.3	50.0	-50.0	0.9800	102.1	0.9499	111.0	1	6
98	FOR13B	13.800	F2	95.0	-31.3	50.0	-50.0	0.9800	102.1	0.9499	111.0	1	6
99	FOR13C	13.800	F3	95.0	-31.3	50.0	-50.0	0.9800	102.1	0.9499	111.0	1	6
101	BAY13A	13.800	B1	58.9	11.9	50.0	-25.0	0.9800	61.4	0.9801	96.0	1	6
102	BAY13B	13.800	B2	58.6	11.9	50.0	-25.0	0.9800	61.1	0.9800	96.0	1	6
106	PANAM13A	13.800	M1	15.2	0.0	9.0	0.0	0.9701	15.7	1.0000	20.7	1	6
106	PANAM13A	13.800	M2	15.2	0.0	9.0	0.0	0.9701	15.7	1.0000	20.7	1	6
106	PANAM13A	13.800	M3	15.2	0.0	9.0	0.0	0.9701	15.7	1.0000	20.7	1	6
107	PANAM13B	13.800	M4	15.2	0.0	9.0	0.0	0.9701	15.7	1.0000	20.7	1	6
107	PANAM13B	13.800	M5	15.2	0.0	9.0	0.0	0.9701	15.7	1.0000	20.7	1	6
107	PANAM13B	13.800	M6	15.2	0.0	9.0	0.0	0.9701	15.7	1.0000	20.7	1	6
108	BAY13C	13.800	B3	58.6	11.9	50.0	-25.0	0.9800	61.1	0.9800	100.0	1	6
116	PACORA13	13.800	P1	17.5	0.0	8.8	0.0	0.9925	17.6	1.0000	21.7	1	6
116	PACORA13	13.800	P2	17.5	0.0	8.8	0.0	0.9925	17.6	1.0000	21.7	1	6
116	PACORA13	13.800	P3	17.5	0.0	8.8	0.0	0.9925	17.6	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	40.0	5.7	29.0	-29.0	0.9800	41.2	0.9901	69.0	1	6
143	CANJ13B	13.800	C2	40.0	5.7	29.0	-29.0	0.9800	41.2	0.9901	69.0	1	6
301	CONC13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9653	10.0	0.8566	13.5	1	6
302	PASOANCH13.8	13.800	P1	3.7	2.0	2.0	-2.0	0.9634	4.4	0.8797	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0029	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0029	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0029	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.6	1.3	2.8	1.3	1.0029	3.8	0.9404	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9823	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9823	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9823	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9823	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9823	10.9	1	6
524	TCATIVÁ 13B	13.800	G10	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9458	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9458	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9458	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9458	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9458	10.9	1	6
525	TCOLON 13A	13.800	G1	36.0	10.6	18.4	9.2	1.0000	37.5	0.9595	44.4	1	6
526	TCOLON 13B	13.800	G2	36.0	10.6	18.4	9.2	1.0000	37.5	0.9595	44.4	1	6
527	TCOLON 13C	13.800	V1	36.0	10.6	18.4	5.8	1.0000	37.5	0.9595	44.4	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
SUBSYSTEM TOTALS				1063.3	25.8	702.1	-324.1				1472.5		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 15:54
ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
AÑO 2009 ESC MOD DEM MAX VER

AREA 7 [ACANAL] MACHINE SUMMARY:											X T R A N			GENTAP ZONE		AREA SWING	
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE				
129		MIR13D		13.800	G4	35.0	2.5	15.0	0.0	1.0000	35.1	0.9976	44.1			2	7
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0066	17.0	1.0000	27.7			2	7
140		GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1			2	7

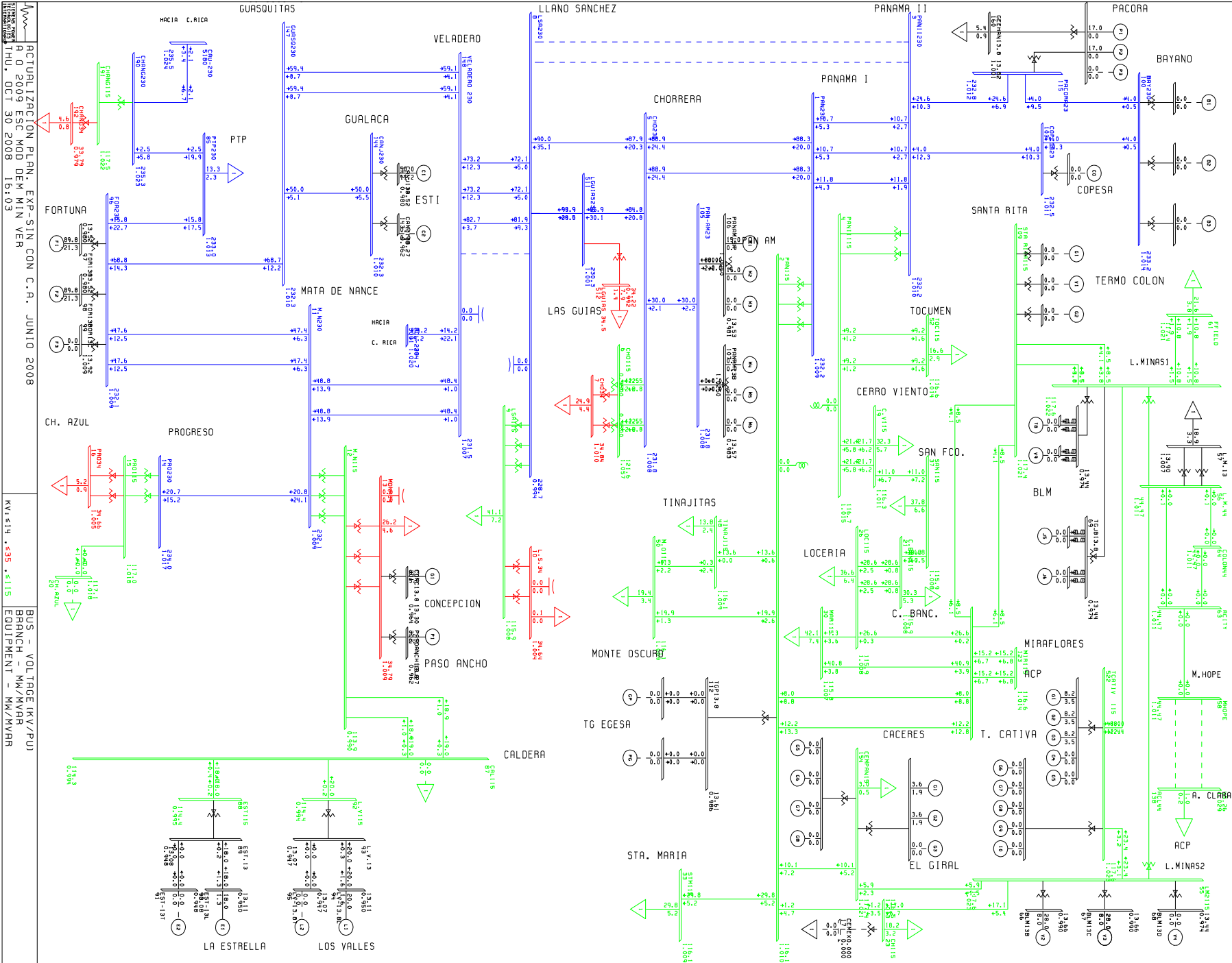
140	GAT6A	6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1	2	7
140	GAT6A	6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1	2	7
141	GAT6B	6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9755	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9755	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9755	6.2	2	7
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0211	17.9	0.9281	23.0	2	7
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0302	17.8	0.9281	23.0	2	7
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0302	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS				120.5	19.9	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 15:54
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2009 ESC MOD DEM MAX VER IN MW/MVAR

X-- AREA	--X 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	1006.8	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	32.4	224.5	-98.9	0.0	143.3	-97.3	147.3	

5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	245.7	569.4	-236.5	0.0	470.5	26.1	357.2	
6	1063.3	1024.7	0.0	0.0	0.0	20.8	17.8	25.0
PANAMA	25.8	179.5	0.0	0.0	446.3	48.3	244.3	
7	120.5	39.8	0.0	0.0	0.0	79.5	1.3	50.0
ACANAL	19.9	7.0	0.0	0.0	0.0	-5.7	18.6	
9	0.0	100.9	0.0	0.0	0.0	-101.0	0.1	-75.0
COLON	0.0	17.7	0.0	0.0	1.1	-22.3	5.7	
TOTALS	6333.0	6217.0	0.0	0.0	0.0	0.0	116.0	0.0
	509.9	1820.5	-848.0	0.0	1996.8	0.0	1534.2	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2009 ESCENARIO MODERADO DEMANDA MÍNIMA VERANO**



ACTUALIZACION PLAN. EXP-SIN CON C.R. JUNIO 2008
 R 0 2009 ESC MOD DEN MEN VER
 ITHU, OCT 30 2008 16:03

KV: 15.4, 35, 115
 BUS - VOLTAJE (KV/PU)
 BRNCH - MW/MVA
 EQUIPMENT - MW/MVA

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MIN VER

THU, OCT 30 2008 16:02

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	1.0095	232.17	3	PANII230	230.00	6	1.0097	232.23				
5	CHO230	230.00	6	1.0077	231.78	11	M.N230	230.00	6	1.0090	232.08				
14	PRO230	230.00	6	1.0174	234.00	85	FTP230	230.00	6	1.0132	233.04				
96	FOR230	230.00	6	1.0089	232.06	100	BAY230	230.00	6	1.0138	233.17				
103	COPESA23	230.00	6	1.0108	232.48	105	PAN-AM23	230.00	6	1.0077	231.78				
115	PACORA23	230.00	6	1.0120	232.76	144	CANJ230	230.00	6	1.0099	232.27				
147	GUASQ230	230.00	6	1.0099	232.27	148	VELADERO	230230.00	6	1.0066	231.52				
190	CHANG230	230.00	6	1.0230	235.29	511	LGUIAS230	230.00	6	1.0013	230.30				
6000	FRONTER	230.00	6	1.0184	234.24										

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)
8	LSA230	230.00	6	0.9945	228.73										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MIN VER

THU, OCT 30 2008 16:02

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	1.0098	116.13	4	PANII115	115.00	6	1.0150	116.72				
6	CHO115	115.00	6	1.0574	121.60	9	LSA115	115.00	6	1.0079	115.91				
15	PRO115	115.00	6	1.0177	117.04	18	CAC115	115.00	6	1.0100	116.15				
19	C.V115	115.00	6	1.0110	116.26	20	CH.AZUL	115.00	6	1.0184	117.12				
21	C.BAN115	115.00	6	1.0076	115.88	23	CH115	115.00	6	1.0126	116.45				
26	LOC115	115.00	6	1.0078	115.90	30	MAR115	115.00	6	1.0071	115.81				
33	STM115	115.00	6	1.0092	116.06	37	SAN115	115.00	6	1.0075	115.87				
48	TINAJ115	115.00	6	1.0093	116.07	50	M.O115	115.00	6	1.0094	116.08				
52	TOC115	115.00	6	1.0141	116.62	54	LM1115	115.00	6	1.0224	117.58				
55	LM2115	115.00	6	1.0228	117.63	61	FFIELD	115.00	9	1.0212	117.44				
109	STA RITA115	115.00	6	1.0212	117.44	123	MIR115	115.00	7	1.0138	116.58				
154	CEMPAN15	115.00	6	1.0211	117.43	191	CHANG115	115.00	6	1.0218	117.51				
522	TCATIVÁ	115	115.00	6	1.0227	117.61									

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)
12	M.N115	115.00	6	0.9901	113.86	87	CAL115	115.00	6	0.9942	114.33				
88	EST115	115.00	6	0.9950	114.42	92	L.V115	115.00	6	0.9945	114.37				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MIN VER

THU, OCT 30 2008 16:01

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	8.0	25.0	0.0	0.9900	29.4	0.9618	47.0					1	6	

67	BLM13C	13.800	V3	28.0	8.0	25.0	0.0	0.9900	29.4	0.9618	47.0	1	6
90	EST-13L	13.800	E1	18.0	1.3	12.0	-5.0	0.9500	19.0	0.9974	27.0	1	6
94	LV-13.8L	13.800	L1	20.0	1.6	12.0	-5.0	0.9500	21.1	0.9969	27.0	1	6
97	FOR13A	13.800	F1	89.8	-21.3	50.0	-50.0	0.9800	94.2	0.9731	111.0	1	6
98	FOR13B	13.800	F2	89.8	-21.3	50.0	-50.0	0.9800	94.2	0.9731	111.0	1	6
106	PANAM13A	13.800	M1	15.0	0.0	9.0	0.0	0.9806	15.3	1.0000	20.7	1	6
106	PANAM13A	13.800	M2	15.0	0.0	9.0	0.0	0.9806	15.3	1.0000	20.7	1	6
116	PACORA13	13.800	P1	17.0	0.0	8.8	0.0	1.0085	16.9	1.0000	21.7	1	6
116	PACORA13	13.800	P2	17.0	0.0	8.8	0.0	1.0085	16.9	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	50.0	11.2	29.0	-29.0	0.9800	52.3	0.9756	69.0	1	6
301	CONC13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9636	10.1	0.8566	13.5	1	6
302	PASOANCH13.8	13.800	P1	3.7	2.0	2.0	-2.0	0.9618	4.4	0.8797	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.9	2.8	1.3	0.9900	4.1	0.8858	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.9	2.8	1.3	0.9900	4.1	0.8858	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	3.5	6.6	-6.6	0.9900	9.0	0.9217	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	3.5	6.6	-6.6	0.9900	9.0	0.9217	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	3.5	6.6	-6.6	0.9900	9.0	0.9217	10.9	1	6
SUBSYSTEM TOTALS				431.5	8.6	271.0	-163.1				586.0		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 16:01
ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
AÑO 2009 ESC MOD DEM MIN VER

AREA 7 [ACANAL] MACHINE SUMMARY:

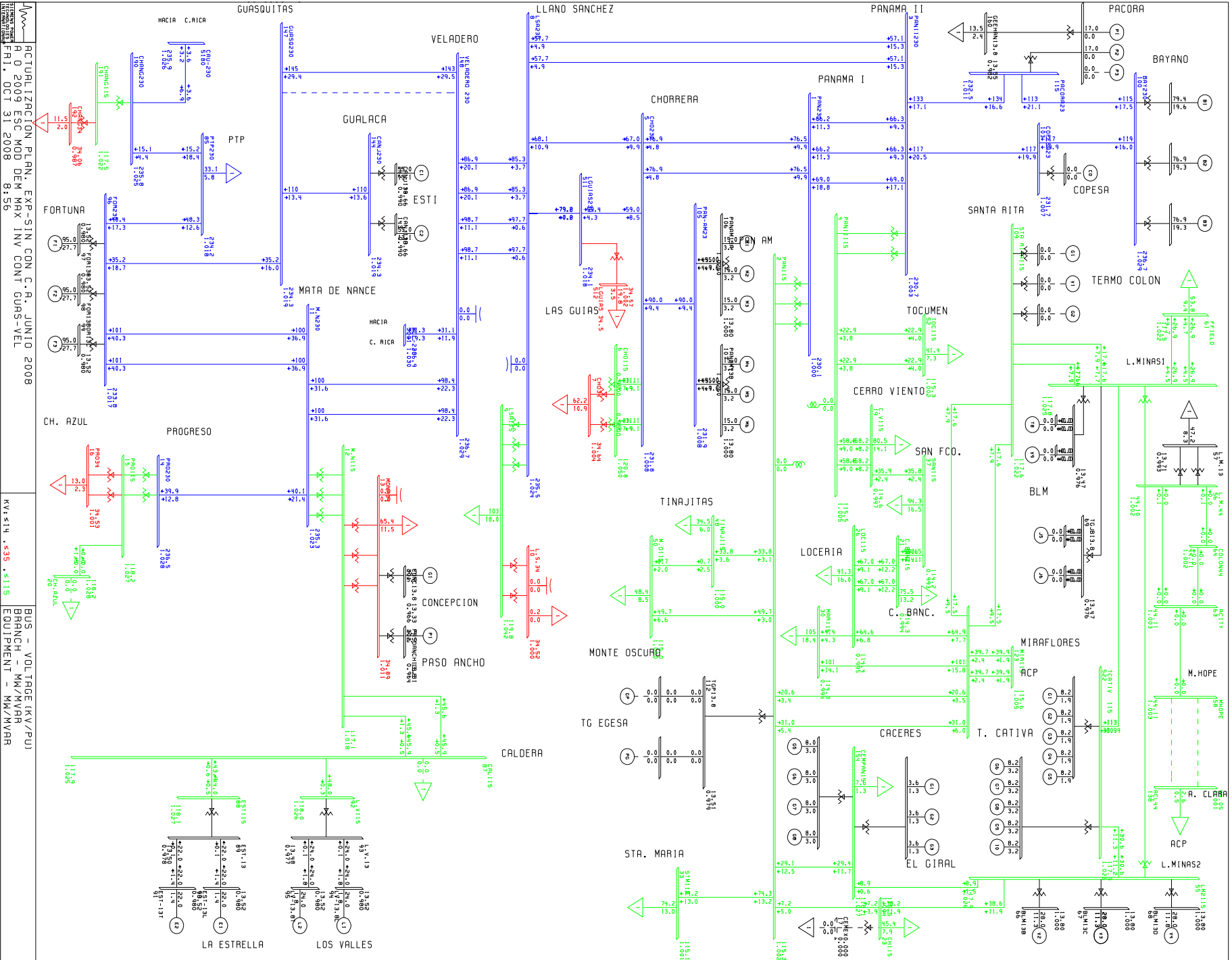
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
170	MIR13G	13.800	M1	15.5	6.8	11.2	6.8	1.0464	16.2	0.9150	23.0					2	7	
171	MIR13H	13.800	M1	15.5	6.8	11.2	6.8	1.0555	16.0	0.9149	23.0					2	7	
171	MIR13H	13.800	M2	15.5	6.8	11.2	6.8	1.0555	16.0	0.9149	23.0					2	7	
SUBSYSTEM TOTALS				46.4	20.5	33.5	20.5						69.1					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 16:02
ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
AÑO 2009 ESC MOD DEM MIN 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			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	1006.8	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	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	0.9	19.3	0.0
C.RICA	262.3	569.4	-236.6	0.0	468.5	40.8	357.3	
6	431.5	411.1	0.0	0.0	0.0	9.3	11.2	25.0
PANAMA	8.6	72.0	181.0	0.0	363.7	-1.4	120.7	
7	46.4	16.0	0.0	0.0	0.0	30.4	0.1	50.0
ACANAL	20.5	2.8	0.0	0.0	0.0	13.5	4.2	
9	0.0	40.5	0.0	0.0	0.0	-40.5	0.0	-75.0
COLON	0.0	7.1	0.0	0.0	1.1	-6.9	0.9	
TOTALS	5627.1	5519.1	0.0	0.0	0.0	0.0	108.0	0.0
	510.5	1698.2	-667.1	0.0	1912.1	0.0	1391.5	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2009 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA GUASQUITAS VELADERO**



ACTUALIZATION PLAN. EXP-SIN CON C.A.R. JUNIO 2008
 R 0 2009 ESC MOD DEM MAX INV CONT GUAS-VEL
 C.F.R.I. OCT 31 2008 8:56

CH. AZUL
 KVA:14 . *35 . *15

BUS - VOLTAGE (KV/PU)
 BRANCH - KM/MVAR
 EQUIPMENT - KM/MVAR

LA ESTRELLA
 LOS VALLES

67	BLM13C	13.800	V3	28.0	11.3	25.0	0.0	1.0000	30.2	0.9268	47.0	1	6
68	BLM13D	13.800	V4	28.0	11.8	25.0	0.0	1.0000	30.4	0.9210	47.0	1	6
90	EST-13L	13.800	E1	22.0	1.4	12.0	-5.0	0.9800	22.5	0.9980	27.0	1	6
91	EST-13T	13.800	E2	22.0	1.4	12.0	-5.0	0.9800	22.5	0.9980	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	1.8	12.0	-5.0	0.9800	24.6	0.9971	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	1.8	12.0	-5.0	0.9800	24.6	0.9971	27.0	1	6
97	FOR13A	13.800	F1	95.0	-27.7	50.0	-50.0	0.9800	101.0	0.9601	111.0	1	6
98	FOR13B	13.800	F2	95.0	-27.7	50.0	-50.0	0.9800	101.0	0.9601	111.0	1	6
99	FOR13C	13.800	F3	95.0	-27.7	50.0	-50.0	0.9800	101.0	0.9601	111.0	1	6
101	BAY13A	13.800	B1	79.4	19.6	50.0	-25.0	1.0000	81.8	0.9709	96.0	1	6
102	BAY13B	13.800	B2	76.9	19.3	50.0	-25.0	1.0000	79.3	0.9699	96.0	1	6
106	PANAM13A	13.800	M1	15.0	3.2	9.0	0.0	1.0000	15.3	0.9782	20.7	1	6
106	PANAM13A	13.800	M2	15.0	3.2	9.0	0.0	1.0000	15.3	0.9782	20.7	1	6
106	PANAM13A	13.800	M3	15.0	3.2	9.0	0.0	1.0000	15.3	0.9782	20.7	1	6
107	PANAM13B	13.800	M4	15.0	3.2	9.0	0.0	1.0000	15.3	0.9782	20.7	1	6
107	PANAM13B	13.800	M5	15.0	3.2	9.0	0.0	1.0000	15.3	0.9782	20.7	1	6
107	PANAM13B	13.800	M6	15.0	3.2	9.0	0.0	1.0000	15.3	0.9782	20.7	1	6
108	BAY13C	13.800	B3	76.9	19.3	50.0	-25.0	1.0000	79.3	0.9699	100.0	1	6
116	PACORA13	13.800	P1	17.0	0.0	8.8	0.0	1.0033	16.9	1.0000	21.7	1	6
116	PACORA13	13.800	P2	17.0	0.0	8.8	0.0	1.0033	16.9	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	55.0	13.1	29.0	-29.0	0.9900	57.1	0.9726	69.0	1	6
143	CANJ13B	13.800	C2	55.0	13.1	29.0	-29.0	0.9900	57.1	0.9726	69.0	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9662	11.1	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9644	5.3	0.9216	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0008	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0008	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0008	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0008	3.3	0.9173	4.8	1	6
523	TCATIVÁ	13A 13.800	G1	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9732	10.9	1	6
523	TCATIVÁ	13A 13.800	G2	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9732	10.9	1	6
523	TCATIVÁ	13A 13.800	G3	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9732	10.9	1	6
523	TCATIVÁ	13A 13.800	G4	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9732	10.9	1	6
523	TCATIVÁ	13A 13.800	G5	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9732	10.9	1	6
524	TCATIVÁ	13B 13.800	G10	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9318	10.9	1	6
524	TCATIVÁ	13B 13.800	G6	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9318	10.9	1	6
524	TCATIVÁ	13B 13.800	G7	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9318	10.9	1	6
524	TCATIVÁ	13B 13.800	G8	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9318	10.9	1	6
524	TCATIVÁ	13B 13.800	G9	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9318	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
SUBSYSTEM TOTALS				1070.3	111.5	662.1	-358.4				1371.6		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 8:55
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV CONT GUAS-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	3.1	15.0	0.0	1.0000	35.1	0.9961	44.1			2	7	
130	MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0050	17.0	1.0000	27.7			2	7	
140	GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9986	4.1			2	7	
140	GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9986	4.1			2	7	
140	GAT6A		6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9986	4.1			2	7	
141	GAT6B		6.9000	G4	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9772	5.6			2	7	

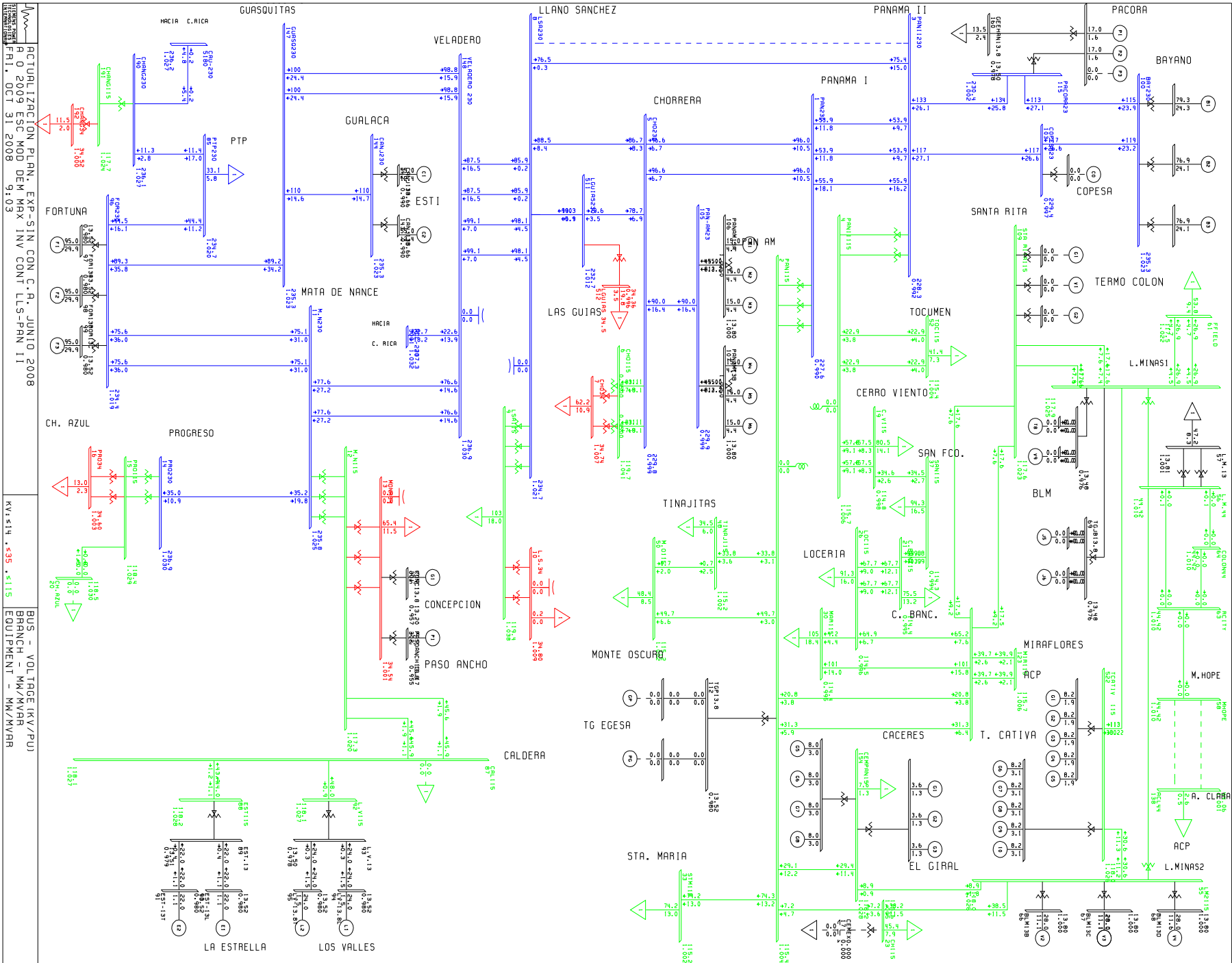
141 GAT6B	6.9000	G5	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9772	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9772	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0195	18.0	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0286	17.8	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0286	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	20.7	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 8:55
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2009 ESC MOD DEM MAX INV CONT GUAS-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	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	1006.8	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	0.7	19.4	0.0
C.RICA	251.3	569.4	-236.3	0.0	469.9	30.4	357.7	
6	1070.3	1024.7	0.0	0.0	0.0	20.8	24.8	25.0
PANAMA	111.5	179.5	0.0	0.0	429.5	43.2	318.3	
7	120.5	39.8	0.0	0.0	0.0	79.5	1.3	50.0
ACANAL	20.7	7.0	0.0	0.0	0.0	-4.9	18.6	
9	0.0	100.9	0.0	0.0	0.0	-101.0	0.1	-75.0
COLON	0.0	17.7	0.0	0.0	1.1	-22.4	5.8	
TOTALS	6340.1	6217.0	0.0	0.0	0.0	0.0	123.1	0.0
	602.2	1820.5	-847.7	0.0	1979.4	0.0	1608.9	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2009 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA LLANO SÁNCHEZ-PANAMÁ II**



Actualization PLAN. EXP-SIN CON C.R. JUNIO 2008
 R 0 2009 ESC MOD DEM MAX INV CONT LLS-PAN II
 FRI. OCT 31 2008 9:03

KV*115 *35 *115

BUS - VOLTAGE (KV/PUI)
 BRANCH - KM/VVAR
 EQUIPMENT - KM/VVAR

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:00
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV CONT LLS-PAN 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	1.0206	234.73	11		M.N230		230.00	6	1.0254	235.85
14		PRO230		230.00	6	1.0301	236.93	85		PTP230		230.00	6	1.0204	234.70
96		FOR230		230.00	6	1.0192	234.41	100		BAY230		230.00	6	1.0229	235.27
115		PACORA23		230.00	6	1.0017	230.39	144		CANJ230		230.00	6	1.0230	235.28
147		GUASQ230		230.00	6	1.0230	235.29	148		VELADERO	230	230.00	6	1.0301	236.92
190		CHANG230		230.00	6	1.0267	236.15	511		LGUIAS230		230.00	6	1.0117	232.68
6000		FRONTER		230.00	6	1.0308	237.08								

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	0.9897	227.63	3		PANII230		230.00	6	0.9925	228.27
5		CHO230		230.00	6	0.9993	229.84	103		COPESA23		230.00	6	0.9973	229.38
105		PAN-AM23		230.00	6	0.9994	229.86								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:00
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV CONT LLS-PAN 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)
2		PAN115		115.00	6	1.0036	115.41	4		PANII115		115.00	6	1.0059	115.68
6		CHO115		115.00	6	1.0410	119.71	9		LSA115		115.00	6	1.0385	119.42
12		M.N115		115.00	6	1.0198	117.28	15		PRO115		115.00	6	1.0294	118.38
18		CAC115		115.00	6	1.0033	115.38	20		CH.AZUL		115.00	6	1.0302	118.47
23		CH115		115.00	6	1.0054	115.62	33		STM115		115.00	6	1.0019	115.22
48		TINAJ115		115.00	6	1.0015	115.18	50		M.O115		115.00	6	1.0016	115.19
52		TOC115		115.00	6	1.0035	115.41	54		LM115		115.00	6	1.0253	117.91
55		LM2115		115.00	6	1.0262	118.01	61		FFIELD		115.00	9	1.0221	117.54
87		CAL115		115.00	6	1.0265	118.05	88		EST115		115.00	6	1.0281	118.23
92		L.V115		115.00	6	1.0272	118.13	109		STA RITA115		115.00	6	1.0229	117.63
123		MIR115		115.00	7	1.0062	115.71	154		CEMPAN15		115.00	6	1.0280	118.22
191		CHANG115		115.00	6	1.0235	117.71	522		TCATIVÁ	115	115.00	6	1.0260	117.99

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)
19		C.V115		115.00	6	0.9980	114.77	21		C.BAN115		115.00	6	0.9951	114.44
26		LOC115		115.00	6	0.9960	114.54	30		MAR115		115.00	6	0.9950	114.42
37		SAN115		115.00	6	0.9942	114.33								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:00
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV CONT LLS-PAN 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
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66	BLM13B	13.800	V2	28.0	11.1	25.0	0.0	1.0000	30.1	0.9297	47.0	1	6
67	BLM13C	13.800	V3	28.0	11.1	25.0	0.0	1.0000	30.1	0.9297	47.0	1	6
68	BLM13D	13.800	V4	28.0	11.6	25.0	0.0	1.0000	30.3	0.9241	47.0	1	6
90	EST-13L	13.800	E1	22.0	1.1	12.0	-5.0	0.9800	22.5	0.9988	27.0	1	6
91	EST-13T	13.800	E2	22.0	1.1	12.0	-5.0	0.9800	22.5	0.9988	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	1.5	12.0	-5.0	0.9800	24.5	0.9980	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	1.5	12.0	-5.0	0.9800	24.5	0.9980	27.0	1	6
97	FOR13A	13.800	F1	95.0	-29.9	50.0	-50.0	0.9800	101.6	0.9538	111.0	1	6
98	FOR13B	13.800	F2	95.0	-29.9	50.0	-50.0	0.9800	101.6	0.9538	111.0	1	6
99	FOR13C	13.800	F3	95.0	-29.9	50.0	-50.0	0.9800	101.6	0.9538	111.0	1	6
101	BAY13A	13.800	B1	79.3	24.3	50.0	-25.0	1.0000	82.9	0.9560	96.0	1	6
102	BAY13B	13.800	B2	76.9	24.1	50.0	-25.0	1.0000	80.6	0.9543	96.0	1	6
106	PANAM13A	13.800	M1	15.0	4.4	9.0	0.0	1.0000	15.6	0.9593	20.7	1	6
106	PANAM13A	13.800	M2	15.0	4.4	9.0	0.0	1.0000	15.6	0.9593	20.7	1	6
106	PANAM13A	13.800	M3	15.0	4.4	9.0	0.0	1.0000	15.6	0.9593	20.7	1	6
107	PANAM13B	13.800	M4	15.0	4.4	9.0	0.0	1.0000	15.6	0.9593	20.7	1	6
107	PANAM13B	13.800	M5	15.0	4.4	9.0	0.0	1.0000	15.6	0.9593	20.7	1	6
107	PANAM13B	13.800	M6	15.0	4.4	9.0	0.0	1.0000	15.6	0.9593	20.7	1	6
108	BAY13C	13.800	B3	76.9	24.1	50.0	-25.0	1.0000	80.6	0.9543	100.0	1	6
116	PACORA13	13.800	P1	17.0	1.6	8.8	0.0	1.0000	17.1	0.9956	21.7	1	6
116	PACORA13	13.800	P2	17.0	1.6	8.8	0.0	1.0000	17.1	0.9956	21.7	1	6
142	CANJ13A	13.800	C1	55.0	12.4	29.0	-29.0	0.9900	57.0	0.9754	69.0	1	6
143	CANJ13B	13.800	C2	55.0	12.4	29.0	-29.0	0.9900	57.0	0.9754	69.0	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9565	11.2	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9547	5.4	0.9216	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0016	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0016	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0016	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0016	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9751	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9751	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9751	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9751	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9751	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9345	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9345	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9345	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9345	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9345	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0024	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0024	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0024	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0024	8.5	0.9363	10.9	1	6
SUBSYSTEM TOTALS				1070.2	125.4	662.1	-358.4				1371.6		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:00
ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
AÑO 2009 ESC MOD DEM MAX INV CONT LLS-PAN 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	2.8	15.0	0.0	1.0000	35.1	0.9968	44.1	2	7					
130	MIR13F	13.800	G5	17.1	0.0	8.0	0.0	1.0057	17.0	1.0000	27.7	2	7					
140	GAT6A	6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9982	4.1	2	7					
140	GAT6A	6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9982	4.1	2	7					
140	GAT6A	6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9982	4.1	2	7					

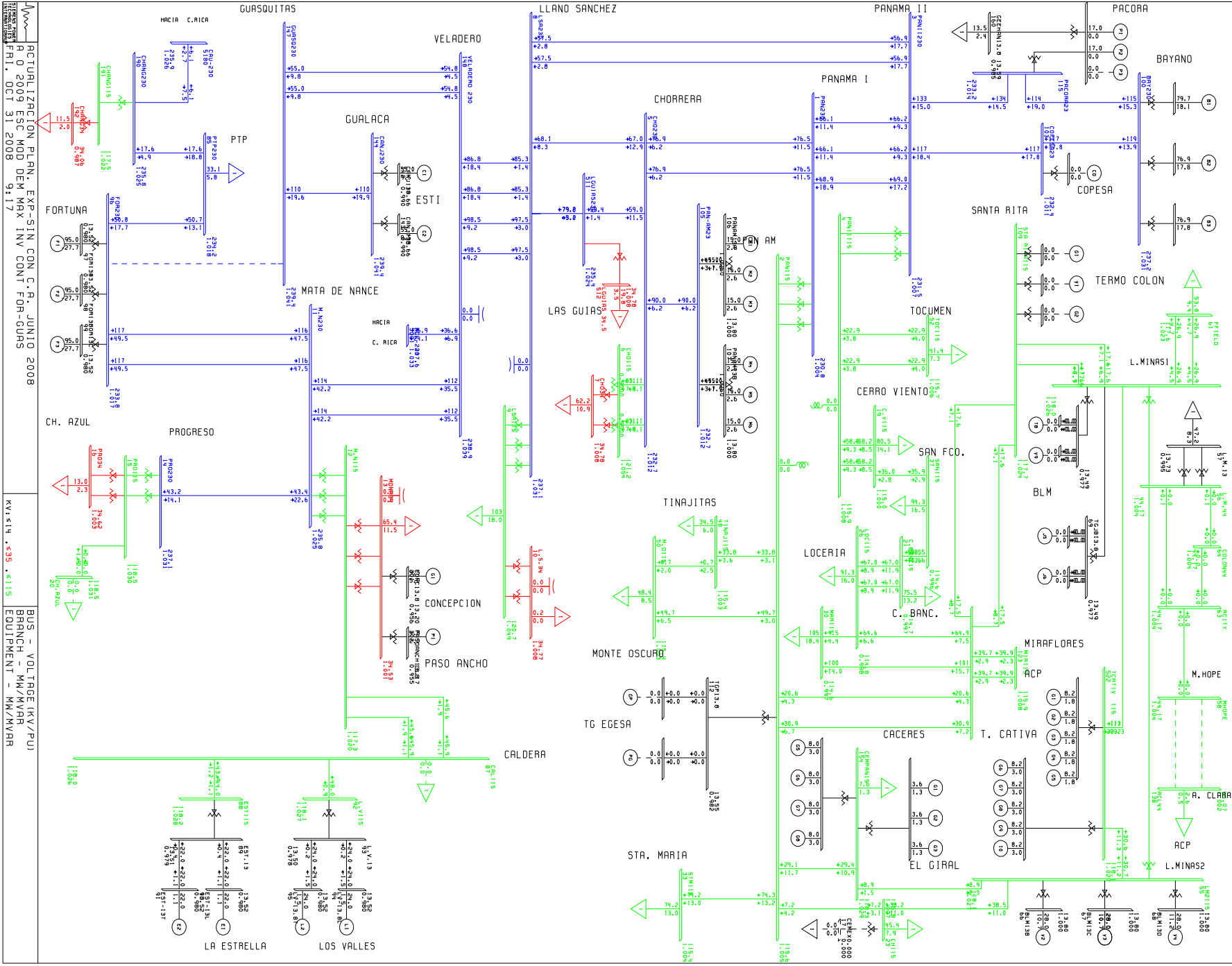
141 GAT6B	6.9000 G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9765	5.6	2	7
141 GAT6B	6.9000 G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9765	6.2	2	7
141 GAT6B	6.9000 G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9765	6.2	2	7
170 MIR13G	13.800 M1	17.0	6.8	11.2	6.8	1.0202	18.0	0.9281	23.0	2	7
171 MIR13H	13.800 M1	17.0	6.8	11.2	6.8	1.0293	17.8	0.9281	23.0	2	7
171 MIR13H	13.800 M2	17.0	6.8	11.2	6.8	1.0293	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/E FRI, OCT 31 2008 9:00
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2009 ESC MOD DEM MAX INV CONT LLS-PAN II IN MW/MVAR

X-- AREA	--X 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	1006.8	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	0.8	19.3	0.0
C.RICA	248.7	569.4	-236.0	0.0	470.2	28.0	357.5	
6	1070.2	1024.7	0.0	0.0	0.0	20.8	24.7	25.0
PANAMA	125.4	179.5	0.0	0.0	418.1	45.8	318.2	
7	120.5	39.8	0.0	0.0	0.0	79.5	1.3	50.0
ACANAL	20.4	7.0	0.0	0.0	0.0	-5.2	18.6	
9	0.0	100.9	0.0	0.0	0.0	-101.0	0.1	-75.0
COLON	0.0	17.7	0.0	0.0	1.1	-22.3	5.7	
TOTALS	6339.9	6217.0	0.0	0.0	0.0	0.0	122.9	0.0
	613.1	1820.5	-847.5	0.0	1968.3	0.0	1608.4	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2009 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA FORTUNA-GUASQUITAS**



ACTUALIZACION PLAN_EXP-SIN CON C.R. JUNIO 2008
 P O 2009 ESC MOD DEM MAX INV CONT FOR-GURS
 R.I., OCT 31 2008 9:17

KV=114, 235, 1115
 BUS - VOLTAGE (KV/PUI)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

67	BLM13C	13.800	V3	28.0	10.7	25.0	0.0	1.0000	30.0	0.9338	47.0	1	6
68	BLM13D	13.800	V4	28.0	11.2	25.0	0.0	1.0000	30.2	0.9285	47.0	1	6
90	EST-13L	13.800	E1	22.0	1.1	12.0	-5.0	0.9800	22.5	0.9987	27.0	1	6
91	EST-13T	13.800	E2	22.0	1.1	12.0	-5.0	0.9800	22.5	0.9987	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	1.5	12.0	-5.0	0.9800	24.5	0.9980	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	1.5	12.0	-5.0	0.9800	24.5	0.9980	27.0	1	6
97	FOR13A	13.800	F1	95.0	-27.7	50.0	-50.0	0.9800	101.0	0.9601	111.0	1	6
98	FOR13B	13.800	F2	95.0	-27.7	50.0	-50.0	0.9800	101.0	0.9601	111.0	1	6
99	FOR13C	13.800	F3	95.0	-27.7	50.0	-50.0	0.9800	101.0	0.9601	111.0	1	6
101	BAY13A	13.800	B1	79.7	18.1	50.0	-25.0	1.0000	81.8	0.9753	96.0	1	6
102	BAY13B	13.800	B2	76.9	17.8	50.0	-25.0	1.0000	78.9	0.9743	96.0	1	6
106	PANAM13A	13.800	M1	15.0	2.6	9.0	0.0	1.0000	15.2	0.9849	20.7	1	6
106	PANAM13A	13.800	M2	15.0	2.6	9.0	0.0	1.0000	15.2	0.9849	20.7	1	6
106	PANAM13A	13.800	M3	15.0	2.6	9.0	0.0	1.0000	15.2	0.9849	20.7	1	6
107	PANAM13B	13.800	M4	15.0	2.6	9.0	0.0	1.0000	15.2	0.9849	20.7	1	6
107	PANAM13B	13.800	M5	15.0	2.6	9.0	0.0	1.0000	15.2	0.9849	20.7	1	6
107	PANAM13B	13.800	M6	15.0	2.6	9.0	0.0	1.0000	15.2	0.9849	20.7	1	6
108	BAY13C	13.800	B3	76.9	17.8	50.0	-25.0	1.0000	78.9	0.9743	100.0	1	6
116	PACORA13	13.800	P1	17.0	0.0	8.8	0.0	1.0063	16.9	1.0000	21.7	1	6
116	PACORA13	13.800	P2	17.0	0.0	8.8	0.0	1.0063	16.9	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	55.0	9.5	29.0	-29.0	0.9900	56.4	0.9855	69.0	1	6
143	CANJ13B	13.800	C2	55.0	9.5	29.0	-29.0	0.9900	56.4	0.9855	69.0	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9564	11.2	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9546	5.4	0.9216	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0026	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0026	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0026	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0026	3.3	0.9173	4.8	1	6
523	TCATIVÁ	13A 13.800	G1	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9775	10.9	1	6
523	TCATIVÁ	13A 13.800	G2	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9775	10.9	1	6
523	TCATIVÁ	13A 13.800	G3	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9775	10.9	1	6
523	TCATIVÁ	13A 13.800	G4	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9775	10.9	1	6
523	TCATIVÁ	13A 13.800	G5	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9775	10.9	1	6
524	TCATIVÁ	13B 13.800	10	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9383	10.9	1	6
524	TCATIVÁ	13B 13.800	G6	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9383	10.9	1	6
524	TCATIVÁ	13B 13.800	G7	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9383	10.9	1	6
524	TCATIVÁ	13B 13.800	G8	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9383	10.9	1	6
524	TCATIVÁ	13B 13.800	G9	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9383	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0034	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0034	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0034	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0034	8.5	0.9363	10.9	1	6
SUBSYSTEM TOTALS				1070.6	91.4	662.1	-358.4				1371.6		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:16
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV CONT FOR-GUAS

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	2.4	15.0	0.0	1.0000	35.1	0.9976	44.1			2	7	
130	MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0067	17.0	1.0000	27.7			2	7	
140	GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1			2	7	
140	GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1			2	7	
140	GAT6A		6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1			2	7	
141	GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9754	5.6			2	7	

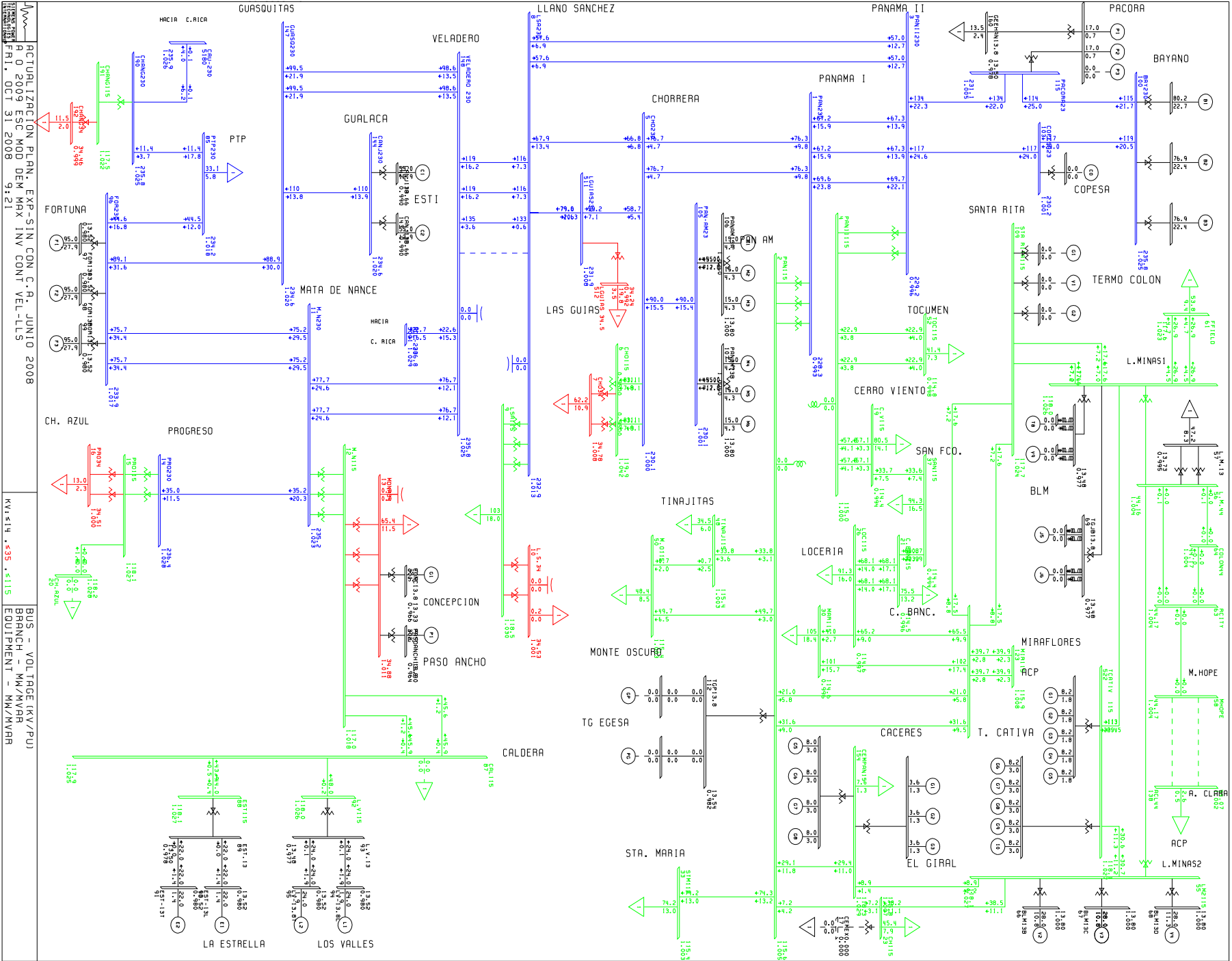
141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9754	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9754	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0212	17.9	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0303	17.8	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0303	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	19.8	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:17
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2009 ESC MOD DEM MAX INV CONT FOR-GUAS 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	1006.8	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	0.7	19.4	0.0
C.RICA	248.6	569.4	-236.0	0.0	470.3	27.5	358.0	
6	1070.6	1024.7	0.0	0.0	0.0	20.9	25.0	25.0
PANAMA	91.4	179.5	0.0	0.0	447.7	46.9	312.7	
7	120.5	39.8	0.0	0.0	0.0	79.5	1.3	50.0
ACANAL	19.8	7.0	0.0	0.0	0.0	-5.7	18.6	
9	0.0	100.9	0.0	0.0	0.0	-101.0	0.1	-75.0
COLON	0.0	17.7	0.0	0.0	1.1	-22.3	5.8	
TOTALS	6340.4	6217.0	0.0	0.0	0.0	0.0	123.4	0.0
	578.5	1820.5	-847.5	0.0	1997.9	0.0	1603.5	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2009 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA VELADERO- LLANO SÁNCHEZ**



ACTUALIZACION PLAN. EXP. SIN CON. C. R. JUNIO 2008
 P. 0 2009 ESC. MOD. DEM. MRA. INV. CONT. VEL.-LLS
 R. I. OCT. 31. 2008 9121

KV: 114 • 435 • 4115

BUS - VOLTAGE (KV/PUI)
 BRANCH - MM/MWR
 EQUIPMENT - MM/MWR

67	BLM13C	13.800	V3	28.0	10.8	25.0	0.0	1.0000	30.0	0.9331	47.0	1	6
68	BLM13D	13.800	V4	28.0	11.3	25.0	0.0	1.0000	30.2	0.9277	47.0	1	6
90	EST-13L	13.800	E1	22.0	1.4	12.0	-5.0	0.9800	22.5	0.9979	27.0	1	6
91	EST-13T	13.800	E2	22.0	1.4	12.0	-5.0	0.9800	22.5	0.9979	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	1.9	12.0	-5.0	0.9800	24.6	0.9969	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	1.9	12.0	-5.0	0.9800	24.6	0.9969	27.0	1	6
97	FOR13A	13.800	F1	95.0	-27.9	50.0	-50.0	0.9800	101.0	0.9596	111.0	1	6
98	FOR13B	13.800	F2	95.0	-27.9	50.0	-50.0	0.9800	101.0	0.9596	111.0	1	6
99	FOR13C	13.800	F3	95.0	-27.9	50.0	-50.0	0.9800	101.0	0.9596	111.0	1	6
101	BAY13A	13.800	B1	80.2	22.7	50.0	-25.0	1.0000	83.3	0.9621	96.0	1	6
102	BAY13B	13.800	B2	76.9	22.4	50.0	-25.0	1.0000	80.1	0.9602	96.0	1	6
106	PANAM13A	13.800	M1	15.0	4.3	9.0	0.0	1.0000	15.6	0.9621	20.7	1	6
106	PANAM13A	13.800	M2	15.0	4.3	9.0	0.0	1.0000	15.6	0.9621	20.7	1	6
106	PANAM13A	13.800	M3	15.0	4.3	9.0	0.0	1.0000	15.6	0.9621	20.7	1	6
107	PANAM13B	13.800	M4	15.0	4.3	9.0	0.0	1.0000	15.6	0.9621	20.7	1	6
107	PANAM13B	13.800	M5	15.0	4.3	9.0	0.0	1.0000	15.6	0.9621	20.7	1	6
107	PANAM13B	13.800	M6	15.0	4.3	9.0	0.0	1.0000	15.6	0.9621	20.7	1	6
108	BAY13C	13.800	B3	76.9	22.4	50.0	-25.0	1.0000	80.1	0.9602	100.0	1	6
116	PACORA13	13.800	P1	17.0	0.7	8.8	0.0	1.0000	17.0	0.9991	21.7	1	6
116	PACORA13	13.800	P2	17.0	0.7	8.8	0.0	1.0000	17.0	0.9991	21.7	1	6
142	CANJ13A	13.800	C1	55.0	12.9	29.0	-29.0	0.9900	57.1	0.9735	69.0	1	6
143	CANJ13B	13.800	C2	55.0	12.9	29.0	-29.0	0.9900	57.1	0.9735	69.0	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9659	11.1	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9641	5.3	0.9216	6.2	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0024	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0024	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0024	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0024	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9771	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9771	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9771	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9771	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9771	10.9	1	6
524	TCATIVÁ 13B	13.800	G10	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9376	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9376	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9376	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9376	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9376	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0033	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0033	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0033	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0033	8.5	0.9363	10.9	1	6
SUBSYSTEM TOTALS				1071.1	124.6	662.1	-358.4				1371.6		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:20
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2009 ESC MOD DEM MAX INV CONT VEL-LLS

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	2.5	15.0	0.0	1.0000	35.1	0.9975	44.1			2	7	
130	MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0065	17.0	1.0000	27.7			2	7	
140	GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9977	4.1			2	7	
140	GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9977	4.1			2	7	
140	GAT6A		6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9977	4.1			2	7	
141	GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9756	5.6			2	7	

141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9756	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9756	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0210	17.9	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0301	17.8	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0301	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	19.9	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 31 2008 9:21
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2009 ESC MOD DEM MAX INV CONT VEL-LLS IN MW/MVAR

X-- AREA	--X GENERATION	FROM 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	1006.8	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	251.9	569.4	-236.2	0.0	469.8	31.1	357.5	
6	1071.1	1024.7	0.0	0.0	0.0	20.7	25.6	25.0
PANAMA	124.6	179.5	0.0	0.0	420.7	43.2	322.6	
7	120.5	39.8	0.0	0.0	0.0	79.5	1.3	50.0
ACANAL	19.9	7.0	0.0	0.0	0.0	-5.6	18.6	
9	0.0	100.9	0.0	0.0	0.0	-101.0	0.1	-75.0
COLON	0.0	17.7	0.0	0.0	1.1	-22.3	5.8	
TOTALS	6340.8	6217.0	0.0	0.0	0.0	0.0	123.8	0.0
	615.1	1820.5	-847.7	0.0	1970.6	0.0	1612.9	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2010 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO**

67	BLM13C	13.800	V3	38.0	10.8	25.0	0.0	1.0000	39.5	0.9622	47.0	1	6
68	BLM13D	13.800	V4	38.0	11.2	25.0	0.0	1.0000	39.6	0.9595	47.0	1	6
90	EST-13L	13.800	E1	22.0	3.0	12.0	-5.0	1.0000	22.2	0.9906	27.0	1	6
91	EST-13T	13.800	E2	22.0	3.0	12.0	-5.0	1.0000	22.2	0.9906	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	3.6	12.0	-5.0	1.0000	24.3	0.9890	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	3.6	12.0	-5.0	1.0000	24.3	0.9890	27.0	1	6
97	FOR13A	13.800	F1	95.0	-19.5	50.0	-50.0	1.0000	97.0	0.9796	111.0	1	6
98	FOR13B	13.800	F2	95.0	-19.5	50.0	-50.0	1.0000	97.0	0.9796	111.0	1	6
99	FOR13C	13.800	F3	95.0	-19.5	50.0	-50.0	1.0000	97.0	0.9796	111.0	1	6
101	BAY13A	13.800	B1	73.4	25.2	50.0	-25.0	1.0000	77.6	0.9457	96.0	1	6
102	BAY13B	13.800	B2	71.3	25.0	50.0	-25.0	1.0000	75.6	0.9436	96.0	1	6
106	PANAM13A	13.800	M1	15.0	7.3	9.0	0.0	1.0000	16.7	0.8992	20.7	1	6
106	PANAM13A	13.800	M2	15.0	7.3	9.0	0.0	1.0000	16.7	0.8992	20.7	1	6
108	BAY13C	13.800	B3	71.3	25.0	50.0	-25.0	1.0000	75.6	0.9436	100.0	1	6
116	PACORA13	13.800	P1	17.0	4.6	8.8	0.0	1.0000	17.6	0.9649	21.7	1	6
142	CANJ13A	13.800	C1	55.0	13.1	29.0	-29.0	1.0000	56.5	0.9727	69.0	1	6
143	CANJ13B	13.800	C2	55.0	13.1	29.0	-29.0	1.0000	56.5	0.9727	69.0	1	6
204	BJOMIN13	13.800	G1	23.0	-10.2	13.0	-13.0	1.0000	25.2	0.9142	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-10.2	13.0	-13.0	1.0000	25.2	0.9142	28.9	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9628	11.1	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9610	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9917	9.5	0.9772	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1171	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1171	8.1	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0045	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0045	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0045	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0045	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9820	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9820	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9820	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9820	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9820	10.9	1	6
524	TCATIVÁ 13B	13.800	G10	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9452	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9452	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9452	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9452	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	2.8	6.6	-6.6	1.0000	8.7	0.9452	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0054	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0054	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0054	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0054	8.5	0.9363	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	1.0060	59.7	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1139.3	137.4	646.7	-383.0				1545.1		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:34
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 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	1.7	15.0	0.0	1.0000	35.0	0.9989	44.1	2	7					
130	MIR13F	13.800	G5	17.1	0.0	8.0	0.0	1.0086	17.0	1.0000	27.7	2	7					
140	GAT6A	6.9000	G1	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9966	4.1	2	7					
140	GAT6A	6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9966	4.1	2	7					
140	GAT6A	6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9966	4.1	2	7					

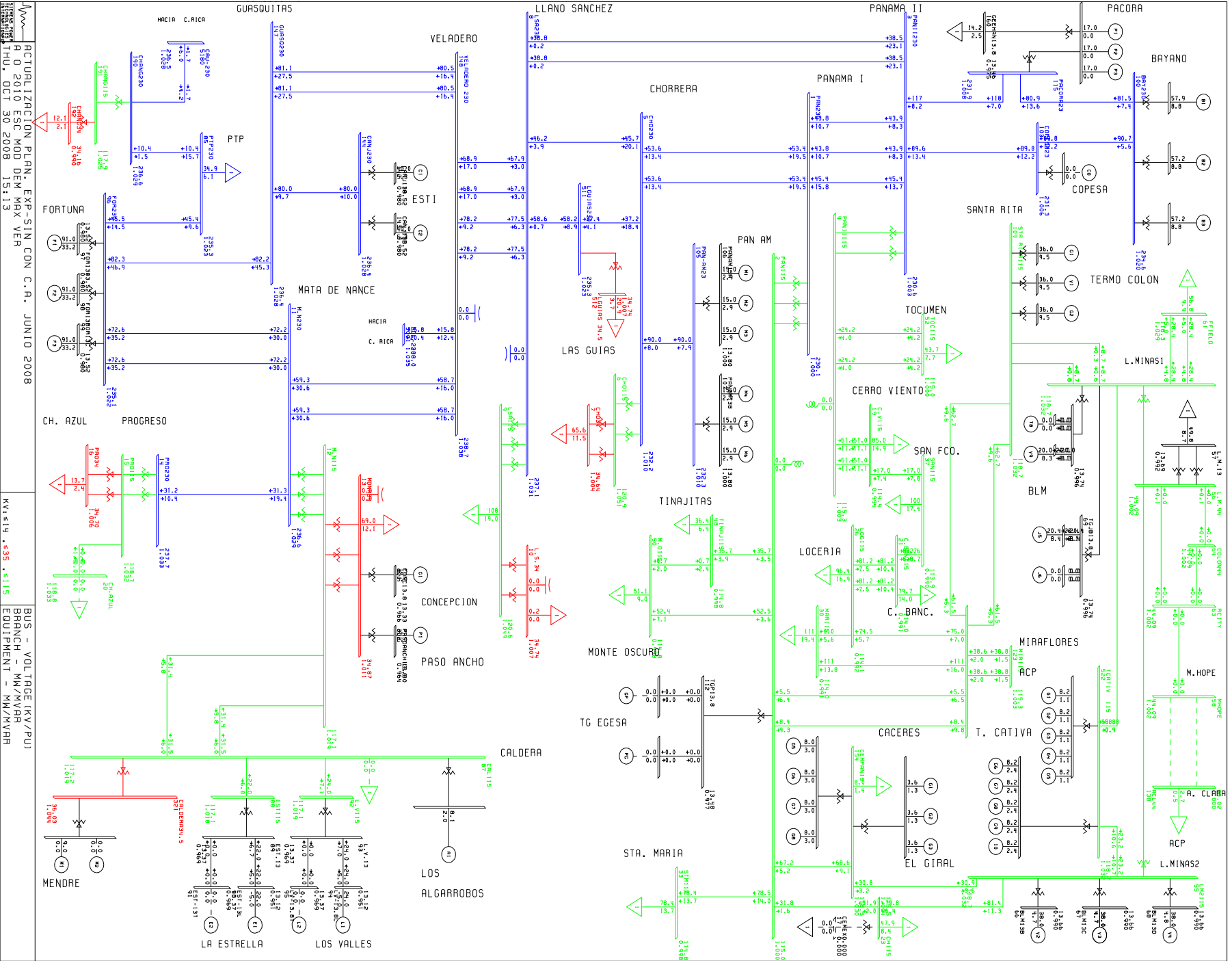
141	GAT6B	6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9740	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9740	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9740	6.2	2	7
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0230	17.9	0.9281	23.0	2	7
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0321	17.7	0.9281	23.0	2	7
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0321	17.7	0.9281	23.0	2	7
SUBSYSTEM TOTALS				120.5	19.0	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV

THU, OCT 30 2008 8:34
 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	1006.8	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	32.4	224.5	-98.9	0.0	143.3	-97.3	147.3	
5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	244.2	569.4	-236.2	0.0	470.6	24.3	357.2	
6	1139.3	1081.9	0.0	0.0	0.0	28.6	28.8	25.0
PANAMA	137.4	189.5	0.0	0.0	455.9	52.4	351.4	
7	120.5	42.0	0.0	0.0	0.0	77.3	1.2	50.0
ACANAL	19.0	7.4	0.0	0.0	0.0	-6.4	18.0	
9	0.0	106.6	0.0	0.0	0.0	-106.7	0.1	-75.0
COLON	0.0	18.7	0.0	0.0	1.1	-23.9	6.3	
TOTALS	6409.0	6282.0	0.0	0.0	0.0	0.0	127.0	0.0
	619.1	1831.9	-847.7	0.0	2006.5	0.0	1641.4	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2010 ESCENARIO MODERADO DEMANDA MÁXIMA VERANO**



ACTUALIZATION PLAN. EXP-SIN CON C.R. JUNIO 2008
 R 0 2010 ESC MOD DEM MAX VEA
 THU, OCT 30 2008 15:13

KV:114 . *35 . *115

BUS - VOLTAGE (KV/PU)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:43
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 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	1.0004	230.09	3	PANII230	230.00	6	1.0027	230.63				
5	CHO230	230.00	6	1.0097	232.24	8	LSA230	230.00	6	1.0309	237.10				
11	M.N230	230.00	6	1.0285	236.56	14	PRO230	230.00	6	1.0333	237.66				
85	PTP230	230.00	6	1.0232	235.34	96	FOR230	230.00	6	1.0224	235.15				
100	BAY230	230.00	6	1.0200	234.60	103	COPESA23	230.00	6	1.0057	231.30				
105	PAN-AM23	230.00	6	1.0098	232.26	115	PACORA23	230.00	6	1.0082	231.88				
144	CANJ230	230.00	6	1.0279	236.43	147	GUASQ230	230.00	6	1.0279	236.43				
148	VELADERO	230230.00	6	1.0379	238.71	190	CHANG230	230.00	6	1.0286	236.57				
511	LGUIAS230	230.00	6	1.0230	235.29	6000	FRONTER	230.00	6	1.0340	237.82				

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)
* NONE *															

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:43
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 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	1.0001	115.01	4	PANII115	115.00	6	1.0029	115.33				
6	CHO115	115.00	6	1.0512	120.89	9	LSA115	115.00	6	1.0486	120.59				
12	M.N115	115.00	6	1.0187	117.15	15	PRO115	115.00	6	1.0325	118.74				
20	CH.AZUL	115.00	6	1.0333	118.82	23	CH115	115.00	6	1.0042	115.49				
52	TOC115	115.00	6	1.0003	115.04	54	LM1115	115.00	6	1.0322	118.70				
55	LM2115	115.00	6	1.0323	118.72	61	FFIELD	115.00	9	1.0289	118.32				
87	CAL115	115.00	6	1.0188	117.16	88	EST115	115.00	6	1.0183	117.11				
92	L.V115	115.00	6	1.0186	117.14	109	STA RITA115	115.00	6	1.0319	118.67				
123	MIR115	115.00	7	1.0029	115.33	154	CEMPAN15	115.00	6	1.0303	118.48				
191	CHANG115	115.00	6	1.0251	117.89	522	TCATIVÁ	115 115.00	6	1.0325	118.73				

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)
18	CAC115	115.00	6	0.9999	114.99	19	C.V115	115.00	6	0.9944	114.36				
21	C.BAN115	115.00	6	0.9911	113.97	26	LOC115	115.00	6	0.9920	114.08				
30	MAR115	115.00	6	0.9910	113.96	33	STM115	115.00	6	0.9983	114.81				
37	SAN115	115.00	6	0.9902	113.87	48	TINAJ115	115.00	6	0.9979	114.76				
50	M.O115	115.00	6	0.9980	114.77										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:43
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 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	38.0	4.7	25.0	0.0	0.9900	38.7	0.9924	47.0	1	6
67	BLM13C	13.800	V3	38.0	4.7	25.0	0.0	0.9900	38.7	0.9924	47.0	1	6
68	BLM13D	13.800	V4	38.0	4.8	25.0	0.0	0.9900	38.7	0.9922	47.0	1	6
70	TGJB13A	13.800	J5	20.4	8.4	20.0	0.0	1.0000	22.1	0.9256	39.4	1	6
73	BLMCCB	13.800	V9	20.0	8.3	40.0	0.0	1.0000	21.7	0.9229	71.0	1	6
90	EST-13L	13.800	E1	22.0	-5.0	12.0	-5.0	0.9508	23.7	0.9751	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	-5.0	12.0	-5.0	0.9506	25.8	0.9790	27.0	1	6
97	FOR13A	13.800	F1	91.0	-33.2	50.0	-50.0	0.9800	98.8	0.9394	111.0	1	6
98	FOR13B	13.800	F2	91.0	-33.2	50.0	-50.0	0.9800	98.8	0.9394	111.0	1	6
99	FOR13C	13.800	F3	91.0	-33.2	50.0	-50.0	0.9800	98.8	0.9394	111.0	1	6
101	BAY13A	13.800	B1	57.9	8.8	50.0	-25.0	0.9800	59.8	0.9885	96.0	1	6
102	BAY13B	13.800	B2	57.2	8.8	50.0	-25.0	0.9800	59.0	0.9884	96.0	1	6
106	PANAM13A	13.800	M1	15.0	2.9	9.0	0.0	1.0000	15.3	0.9814	20.7	1	6
106	PANAM13A	13.800	M2	15.0	2.9	9.0	0.0	1.0000	15.3	0.9814	20.7	1	6
106	PANAM13A	13.800	M3	15.0	2.9	9.0	0.0	1.0000	15.3	0.9814	20.7	1	6
107	PANAM13B	13.800	M4	15.0	2.9	9.0	0.0	1.0000	15.3	0.9814	20.7	1	6
107	PANAM13B	13.800	M5	15.0	2.9	9.0	0.0	1.0000	15.3	0.9814	20.7	1	6
107	PANAM13B	13.800	M6	15.0	2.9	9.0	0.0	1.0000	15.3	0.9814	20.7	1	6
108	BAY13C	13.800	B3	57.2	8.8	50.0	-25.0	0.9800	59.0	0.9884	100.0	1	6
116	PACORA13	13.800	P1	17.0	0.0	8.8	0.0	0.9984	17.0	1.0000	21.7	1	6
116	PACORA13	13.800	P2	17.0	0.0	8.8	0.0	0.9984	17.0	1.0000	21.7	1	6
116	PACORA13	13.800	P3	17.0	0.0	8.8	0.0	0.9984	17.0	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	40.0	5.3	29.0	-29.0	0.9800	41.2	0.9912	69.0	1	6
143	CANJ13B	13.800	C2	40.0	5.3	29.0	-29.0	0.9800	41.2	0.9912	69.0	1	6
301	CONC13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9658	10.0	0.8566	13.5	1	6
302	PASOANCH13.8	13.800	P1	3.4	2.0	2.0	-2.0	0.9639	4.1	0.8619	6.2	1	6
304	ALGA13.8	13.800	A1	8.1	2.0	2.0	0.0	0.9715	8.6	0.9708	13.5	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
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0037	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0037	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0037	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0037	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.1	6.6	-6.6	0.9900	8.4	0.9911	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.1	6.6	-6.6	0.9900	8.4	0.9911	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.1	6.6	-6.6	0.9900	8.4	0.9911	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.1	6.6	-6.6	0.9900	8.4	0.9911	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.1	6.6	-6.6	0.9900	8.4	0.9911	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.2	2.4	6.6	-6.6	1.0000	8.5	0.9613	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	2.4	6.6	-6.6	1.0000	8.5	0.9613	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	2.4	6.6	-6.6	1.0000	8.5	0.9613	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	2.4	6.6	-6.6	1.0000	8.5	0.9613	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	2.4	6.6	-6.6	1.0000	8.5	0.9613	10.9	1	6
525	TCOLON 13A	13.800	G1	36.0	9.5	18.4	9.2	1.0000	37.2	0.9669	44.4	1	6
526	TCOLON 13B	13.800	G2	36.0	9.5	18.4	9.2	1.0000	37.2	0.9669	44.4	1	6
527	TCOLON 13C	13.800	V1	36.0	9.5	18.4	5.8	1.0000	37.2	0.9669	44.4	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0045	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0045	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0045	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0045	8.5	0.9363	10.9	1	6
SUBSYSTEM TOTALS				1131.3	48.0	764.1	-324.1				1631.7		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:43
ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
AÑO 2010 ESC MOD DEM MAX VER

AREA 7 [ACANAL] MACHINE SUMMARY:

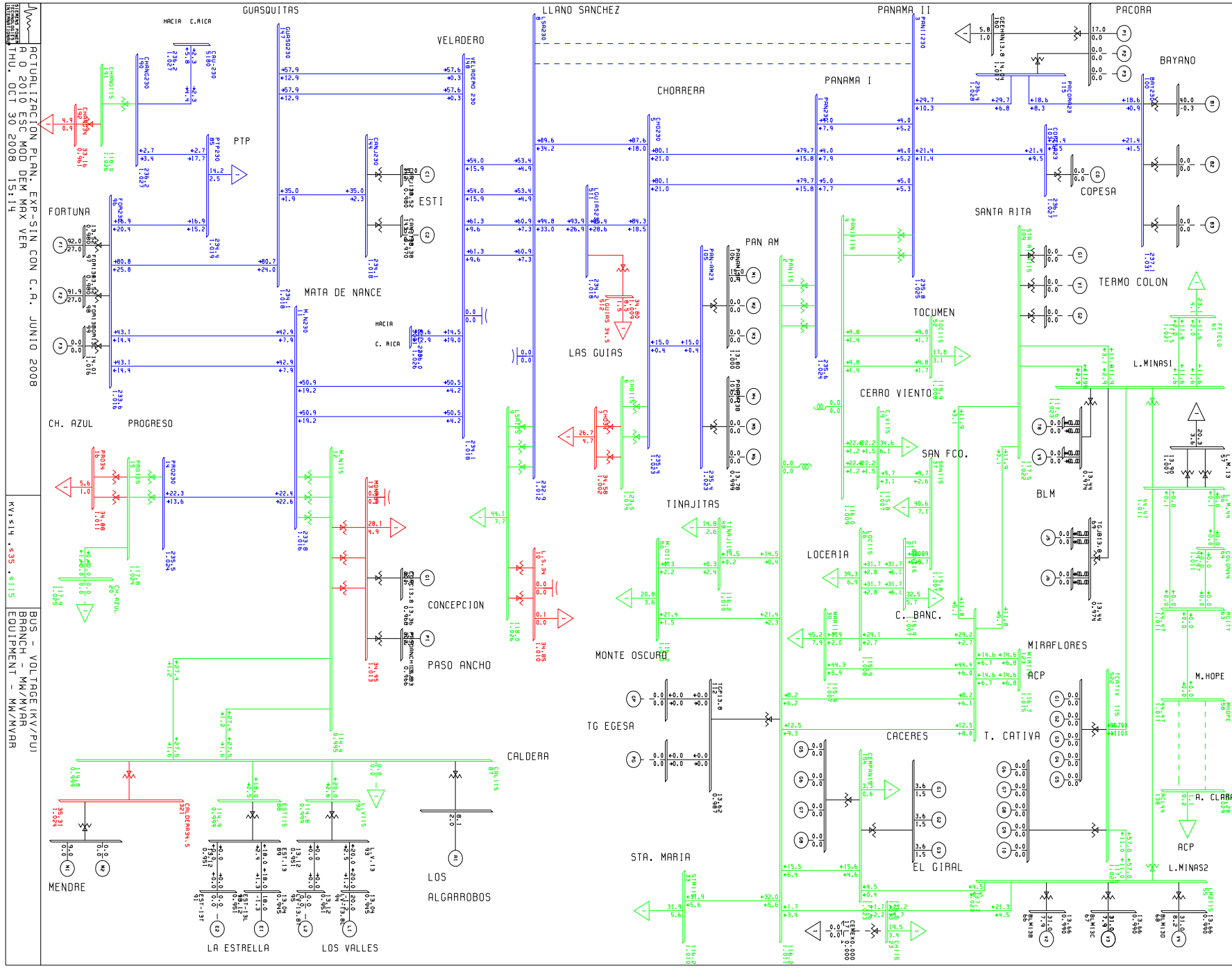
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129		MIR13D		13.800	G4	35.0	3.6	15.0	0.0	1.0000	35.2	0.9946	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0036	17.0	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9994	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9994	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9994	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9790	5.6			2	7	
141		GAT6B		6.9000	G5	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9790	6.2			2	7	
141		GAT6B		6.9000	G6	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9790	6.2			2	7	
170		MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0182	18.0	0.9281	23.0			2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0273	17.8	0.9281	23.0			2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0273	17.8	0.9281	23.0			2	7	
SUBSYSTEM TOTALS						120.5	21.5	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX VER

THU, OCT 30 2008 8:43
 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	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	1006.8	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	1344.2	1324.8	0.0	0.0	0.0	0.1	19.3	0.0
C.RICA	243.5	569.4	-236.3	0.0	470.8	24.2	356.9	
6	1131.3	1081.9	0.0	0.0	0.0	29.3	20.0	25.0
PANAMA	48.0	189.5	0.0	0.0	449.6	50.3	257.7	
7	120.5	42.0	0.0	0.0	0.0	77.3	1.2	50.0
ACANAL	21.5	7.4	0.0	0.0	0.0	-4.0	18.1	
9	0.0	106.6	0.0	0.0	0.0	-106.7	0.1	-75.0
COLON	0.0	18.7	0.0	0.0	1.1	-24.0	6.4	
TOTALS	6400.2	6282.0	0.0	0.0	0.0	0.0	118.2	0.0
	531.4	1831.9	-847.7	0.0	2000.3	0.0	1547.6	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2010 ESCENARIO MODERADO DEMANDA MÍNIMA VERANO**



PROYECTO DE
 DISEÑO DEL SISTEMA DE
 TRANSMISION DE ENERGIA
 ELECTRICA

ESTRUCTURAL PLAN. EXP-SIN CON C.R. JUNIO 2008
 P.O. 2010 ESC. MOD. DEM. MAX. VER.
 15:11

KV: 115 • 235 • 115
 BUS - VOLTAGE (KV/PUI)
 BRANCH - MM/MVAR
 EQUIPMENT - MM/MVAR

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:48
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 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	1.0245	235.63	3	PANII230	230.00	6	1.0252	235.79				
5	CHO230	230.00	6	1.0235	235.40	8	LSA230	230.00	6	1.0124	232.86				
11	M.N230	230.00	6	1.0165	233.79	14	PRO230	230.00	6	1.0238	235.48				
85	PTP230	230.00	6	1.0192	234.41	96	FOR230	230.00	6	1.0155	233.57				
100	BAY230	230.00	6	1.0308	237.09	103	COPESA23	230.00	6	1.0265	236.10				
105	PAN-AM23	230.00	6	1.0235	235.40	115	PACORA23	230.00	6	1.0276	236.35				
144	CANJ230	230.00	6	1.0180	234.15	147	GUASQ230	230.00	6	1.0180	234.14				
148	VELADERO	230230.00	6	1.0180	234.14	190	CHANG230	230.00	6	1.0271	236.23				
511	LGUIAS230	230.00	6	1.0184	234.24	6000	FRONTER	230.00	6	1.0247	235.68				

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/E THU, OCT 30 2008 8:48
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 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	1.0108	116.25	4	PANII115	115.00	6	1.0089	116.02				
6	CHO115	115.00	6	1.0737	123.48	9	LSA115	115.00	6	1.0262	118.01				
15	PRO115	115.00	6	1.0241	117.77	18	CAC115	115.00	6	1.0109	116.26				
19	C.V115	115.00	6	1.0066	115.76	20	CH.AZUL	115.00	6	1.0249	117.86				
21	C.BAN115	115.00	6	1.0074	115.86	23	CH115	115.00	6	1.0132	116.52				
26	LOC115	115.00	6	1.0078	115.90	30	MAR115	115.00	6	1.0074	115.85				
33	STM115	115.00	6	1.0101	116.17	37	SAN115	115.00	6	1.0069	115.80				
48	TINAJ115	115.00	6	1.0103	116.18	50	M.O115	115.00	6	1.0103	116.19				
52	TOC115	115.00	6	1.0079	115.91	54	LM115	115.00	6	1.0227	117.61				
55	LM2115	115.00	6	1.0234	117.69	61	FFIELD	115.00	9	1.0214	117.46				
109	STA RITA115	115.00	6	1.0215	117.48	123	MIR115	115.00	7	1.0146	116.68				
154	CEMPAN15	115.00	6	1.0228	117.62	191	CHANG115	115.00	6	1.0258	117.97				
522	TCATIVÁ	115	115.00	6	1.0230	117.65									

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)
12	M.N115	115.00	6	0.9949	114.41	87	CAL115	115.00	6	0.9985	114.83				
88	EST115	115.00	6	0.9988	114.86	92	L.V115	115.00	6	0.9987	114.85				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:48
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 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	31.0	7.9	25.0	0.0	0.9900	32.3	0.9687	47.0	1	6
67	BLM13C	13.800	V3	31.0	7.9	25.0	0.0	0.9900	32.3	0.9687	47.0	1	6
68	BLM13D	13.800	V4	31.0	8.2	25.0	0.0	0.9900	32.4	0.9664	47.0	1	6
90	EST-13L	13.800	E1	18.0	-1.3	12.0	-5.0	0.9450	19.1	0.9972	27.0	1	6
94	LV-13.8L	13.800	L1	20.0	-1.2	12.0	-5.0	0.9450	21.2	0.9983	27.0	1	6
97	FOR13A	13.800	F1	92.0	-27.0	50.0	-50.0	0.9800	97.8	0.9596	111.0	1	6
98	FOR13B	13.800	F2	91.9	-27.0	50.0	-50.0	0.9800	97.8	0.9595	111.0	1	6
101	BAY13A	13.800	B1	40.0	-0.3	50.0	-25.0	0.9800	40.8	1.0000	96.0	1	6
106	PANAM13A	13.800	M1	15.0	0.9	9.0	0.0	1.0000	15.0	0.9982	20.7	1	6
116	PACORA13	13.800	P1	17.0	0.0	8.8	0.0	1.0252	16.6	1.0000	21.7	1	6
142	CANJ13A	13.800	C1	35.0	5.7	29.0	-29.0	0.9800	36.2	0.9872	69.0	1	6
301	CONC13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9679	10.0	0.8566	13.5	1	6
302	PASOANCH13.8	13.800	P1	3.4	2.0	2.0	-2.0	0.9660	4.1	0.8619	6.2	1	6
304	ALGA13.8	13.800	A1	8.1	2.0	2.0	0.0	0.9522	8.8	0.9708	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.0745	8.4	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.5	2.8	1.3	1.0000	3.9	0.9241	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.5	2.8	1.3	1.0000	3.9	0.9241	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.5	2.8	1.3	1.0000	3.9	0.9241	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.6	1.5	2.8	1.3	1.0000	3.9	0.9241	4.8	1	6
SUBSYSTEM TOTALS				465.1	-11.1	316.1	-165.8				712.3		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:48
ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
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
170	MIR13G	13.800	M1	15.5	6.8	11.2	6.8	1.0470	16.1	0.9150	23.0			2	7	
171	MIR13H	13.800	M1	15.5	6.8	11.2	6.8	1.0561	16.0	0.9149	23.0			2	7	
171	MIR13H	13.800	M2	15.5	6.8	11.2	6.8	1.0561	16.0	0.9149	23.0			2	7	
SUBSYSTEM TOTALS				46.4	20.5	33.5	20.5				69.1					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX VER

THU, OCT 30 2008 8:52
 AREA TOTALS
 IN MW/MVAR

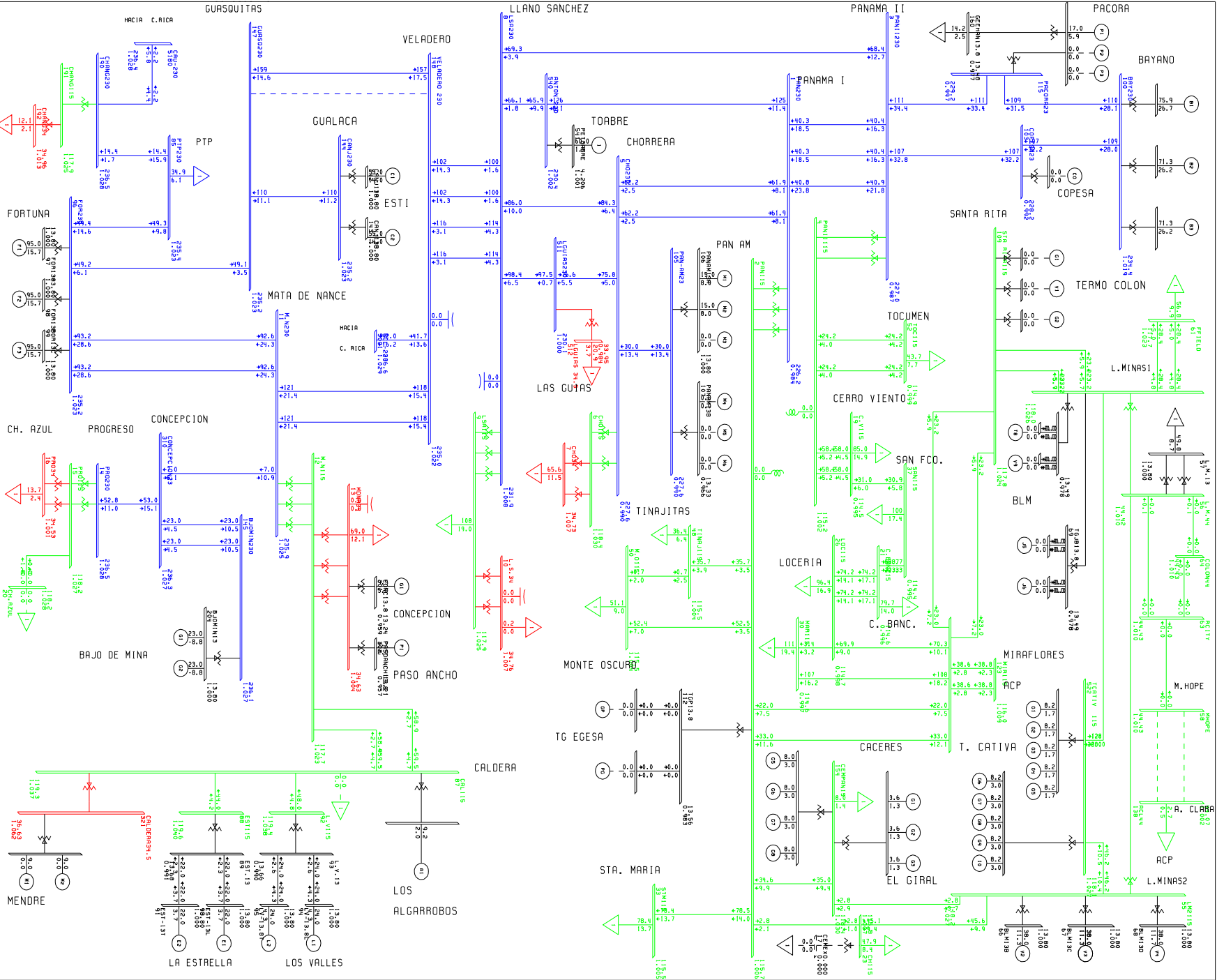
X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	1006.8	985.5	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	1344.2	1324.8	0.0	0.0	0.0	0.1	19.2	0.0
C.RICA	253.6	569.4	-236.5	0.0	469.5	33.3	356.9	
6	465.1	440.9	0.0	0.0	0.0	14.1	10.1	25.0
PANAMA	-11.1	77.2	185.1	0.0	392.0	7.1	111.4	
7	46.4	17.1	0.0	0.0	0.0	29.2	0.1	50.0
ACANAL	20.5	3.0	0.0	0.0	0.0	13.4	4.1	
9	0.0	43.4	0.0	0.0	0.0	-43.4	0.0	-75.0
COLON	0.0	7.6	0.0	0.0	1.1	-7.5	1.0	
TOTALS	5660.0	5553.0	0.0	0.0	0.0	0.0	107.0	0.0
	481.8	1704.2	-662.8	0.0	1941.5	0.0	1381.9	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2010 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA GUASQUITAS-VELADERO**

ACTUALIZATION PLAN - EXP-SIN CON C-R - JUNIO 2008
 R O 2010 ESC MOD DEM MAX INV CONT GUAS-YEL
 THU, OCT 30 2008 15:15

KV:414 . *35 . 4115

BUS - VOLTAGE (KV/PU)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:54
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT GUAS-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)
8	LSA	230	230.00	6	1.0084	231.93		11	M.N	230	230.00	6	1.0255	235.86	
14	PRO	230	230.00	6	1.0283	236.50		85	PTP	230	230.00	6	1.0233	235.36	
96	FOR	230	230.00	6	1.0227	235.21		100	BAY	230	230.00	6	1.0193	234.45	
144	CANJ	230	230.00	6	1.0226	235.21		145	BJOMIN	230	230.00	6	1.0265	236.10	
147	GUASQ	230	230.00	6	1.0226	235.20		148	VELADERO	230	230.00	6	1.0217	234.98	
190	CHANG	230	230.00	6	1.0283	236.52		310	CONCEPCION	230	230.00	6	1.0273	236.29	
511	LGUIAS	230	230.00	6	1.0003	230.07		540	ANTON	230	230.00	6	1.0016	230.36	
6000	FRONTER	230	230.00	6	1.0287	236.60									

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	0.9835	226.21		3	PANII	230	230.00	6	0.9868	226.97	
5	CHO	230	230.00	6	0.9897	227.63		103	COPE	230	230.00	6	0.9920	228.16	
105	PAN-AM	230	230.00	6	0.9897	227.64		115	PACORA	230	230.00	6	0.9966	229.22	

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:54
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT GUAS-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	PAN	115	115.00	6	1.0063	115.72		4	PANII	115	115.00	6	1.0019	115.22	
6	CHO	115	115.00	6	1.0298	118.43		9	LSA	115	115.00	6	1.0253	117.91	
12	M.N	115	115.00	6	1.0235	117.70		15	PRO	115	115.00	6	1.0275	118.16	
18	CAC	115	115.00	6	1.0060	115.69		20	CH.AZUL	115	115.00	6	1.0282	118.24	
23	CH	115	115.00	6	1.0069	115.80		33	STM	115	115.00	6	1.0046	115.52	
48	TINAJ	115	115.00	6	1.0041	115.48		50	M.O	115	115.00	6	1.0043	115.49	
54	LM	115	115.00	6	1.0264	118.04		55	LM	115	115.00	6	1.0275	118.16	
61	FFIELD	115	115.00	9	1.0231	117.66		87	CAL	115	115.00	6	1.0374	119.30	
88	EST	115	115.00	6	1.0400	119.60		92	L.V	115	115.00	6	1.0384	119.42	
109	STA RITA	115	115.00	6	1.0242	117.78		123	MIR	115	115.00	7	1.0086	115.99	
154	CEMPAN	115	115.00	6	1.0296	118.40		191	CHANG	115	115.00	6	1.0249	117.87	
522	TCATIVÁ	115	115.00	6	1.0272	118.13									

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)
19	C.V	115	115.00	6	0.9954	114.47		21	C.BAN	115	115.00	6	0.9964	114.59	
26	LOC	115	115.00	6	0.9976	114.72		30	MAR	115	115.00	6	0.9968	114.64	
37	SAN	115	115.00	6	0.9951	114.44		52	TOC	115	115.00	6	0.9994	114.93	

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:54
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT GUAS-VEL

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
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66	BLM13B	13.800	V2	38.0	11.3	25.0	0.0	1.0000	39.6	0.9586	47.0	1	6
67	BLM13C	13.800	V3	38.0	11.3	25.0	0.0	1.0000	39.6	0.9586	47.0	1	6
68	BLM13D	13.800	V4	38.0	11.7	25.0	0.0	1.0000	39.8	0.9556	47.0	1	6
90	EST-13L	13.800	E1	22.0	3.7	12.0	-5.0	1.0000	22.3	0.9860	27.0	1	6
91	EST-13T	13.800	E2	22.0	3.7	12.0	-5.0	1.0000	22.3	0.9860	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	4.3	12.0	-5.0	1.0000	24.4	0.9841	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	4.3	12.0	-5.0	1.0000	24.4	0.9841	27.0	1	6
97	FOR13A	13.800	F1	95.0	-15.7	50.0	-50.0	1.0000	96.3	0.9866	111.0	1	6
98	FOR13B	13.800	F2	95.0	-15.7	50.0	-50.0	1.0000	96.3	0.9866	111.0	1	6
99	FOR13C	13.800	F3	95.0	-15.7	50.0	-50.0	1.0000	96.3	0.9866	111.0	1	6
101	BAY13A	13.800	B1	75.9	26.7	50.0	-25.0	1.0000	80.5	0.9436	96.0	1	6
102	BAY13B	13.800	B2	71.3	26.2	50.0	-25.0	1.0000	76.0	0.9387	96.0	1	6
106	PANAM13A	13.800	M1	15.0	8.0	9.0	0.0	1.0000	17.0	0.8821	20.7	1	6
106	PANAM13A	13.800	M2	15.0	8.0	9.0	0.0	1.0000	17.0	0.8821	20.7	1	6
108	BAY13C	13.800	B3	71.3	26.2	50.0	-25.0	1.0000	76.0	0.9387	100.0	1	6
116	PACORA13	13.800	P1	17.0	5.9	8.8	0.0	1.0000	18.0	0.9454	21.7	1	6
142	CANJ13A	13.800	C1	55.0	14.0	29.0	-29.0	1.0000	56.8	0.9689	69.0	1	6
143	CANJ13B	13.800	C2	55.0	14.0	29.0	-29.0	1.0000	56.8	0.9689	69.0	1	6
204	BJOMIN13	13.800	G1	23.0	-8.8	13.0	-13.0	1.0000	24.6	0.9343	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-8.8	13.0	-13.0	1.0000	24.6	0.9343	28.9	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9591	11.2	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9572	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9892	9.5	0.9772	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1143	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1143	8.1	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0030	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0030	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0030	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0030	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9786	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9786	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9786	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9786	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9786	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9399	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9399	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9399	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9399	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9399	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0039	8.5	0.9363	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	1.0014	59.9	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1141.9	165.8	646.7	-383.0				1545.1		

SYST

 PII INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:54
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT GUAS-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	2.3	15.0	0.0	1.0000	35.1	0.9979	44.1			2	7	
130	MIR13F	13.800	G5	17.1	0.0	8.0	0.0	1.0071	17.0	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1			2	7	

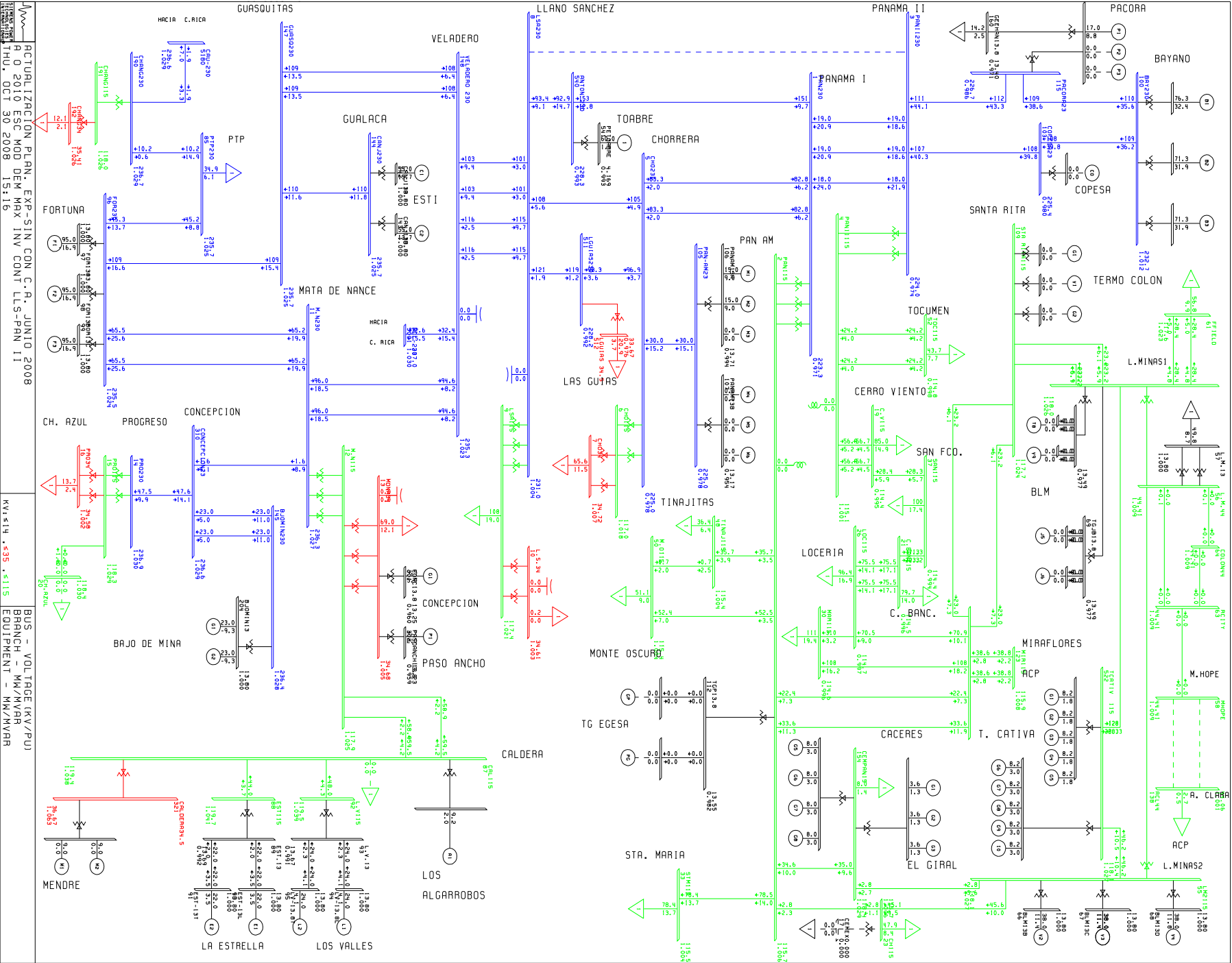
140	GAT6A	6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9976	4.1	2	7
141	GAT6B	6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9756	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9756	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9756	6.2	2	7
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0216	17.9	0.9281	23.0	2	7
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0307	17.8	0.9281	23.0	2	7
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0307	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS				120.5	19.7	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:55
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2010 ESC MOD DEM MAX INV CONT GUAS-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			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			1006.8	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	19.4	0.0
C.RICA	250.4	569.4	-236.3	0.0	469.9	29.6	357.6	
6	1141.9	1081.9	0.0	0.0	0.0	28.6	31.4	25.0
PANAMA	165.8	189.5	0.0	0.0	435.7	46.3	365.6	
7	120.5	42.0	0.0	0.0	0.0	77.3	1.2	50.0
ACANAL	19.7	7.4	0.0	0.0	0.0	-5.7	18.0	
9	0.0	106.6	0.0	0.0	0.0	-106.7	0.1	-75.0
COLON	0.0	18.7	0.0	0.0	1.1	-23.9	6.3	
TOTALS	6411.6	6282.0	0.0	0.0	0.0	0.0	129.6	0.0
	654.6	1831.9	-847.7	0.0	1985.6	0.0	1656.0	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2010 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA LLANO SÁNCHEZ-PANAMÁ II**



ACTUALIZATION PLAN. EXP-SIN CON C.R. JUNIO 2008
 R 0 2010 ESC MOD DEM MAX INV CONT LLS-PAN II
 THU, OCT 30 2008 15:16

KVS114 .K35 .L115
 BUS - VOLTAGE (KV/PU)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

67	BLM13C	13.800	V3	38.0	11.4	25.0	0.0	1.0000	39.7	0.9578	47.0	1	6
68	BLM13D	13.800	V4	38.0	11.8	25.0	0.0	1.0000	39.8	0.9548	47.0	1	6
90	EST-13L	13.800	E1	22.0	3.5	12.0	-5.0	1.0000	22.3	0.9878	27.0	1	6
91	EST-13T	13.800	E2	22.0	3.5	12.0	-5.0	1.0000	22.3	0.9878	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	4.1	12.0	-5.0	1.0000	24.3	0.9859	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	4.1	12.0	-5.0	1.0000	24.3	0.9859	27.0	1	6
97	FOR13A	13.800	F1	95.0	-16.9	50.0	-50.0	1.0000	96.5	0.9845	111.0	1	6
98	FOR13B	13.800	F2	95.0	-16.9	50.0	-50.0	1.0000	96.5	0.9845	111.0	1	6
99	FOR13C	13.800	F3	95.0	-16.9	50.0	-50.0	1.0000	96.5	0.9845	111.0	1	6
101	BAY13A	13.800	B1	76.3	32.4	50.0	-25.0	1.0000	82.9	0.9206	96.0	1	6
102	BAY13B	13.800	B2	71.3	31.9	50.0	-25.0	1.0000	78.1	0.9130	96.0	1	6
106	PANAM13A	13.800	M1	15.0	9.0	9.0	0.0	0.9936	17.6	0.8575	20.7	1	6
106	PANAM13A	13.800	M2	15.0	9.0	9.0	0.0	0.9936	17.6	0.8575	20.7	1	6
108	BAY13C	13.800	B3	71.3	31.9	50.0	-25.0	1.0000	78.1	0.9130	100.0	1	6
116	PACORA13	13.800	P1	17.0	8.8	8.8	0.0	0.9945	19.3	0.8874	21.7	1	6
142	CANJ13A	13.800	C1	55.0	13.7	29.0	-29.0	1.0000	56.7	0.9703	69.0	1	6
143	CANJ13B	13.800	C2	55.0	13.7	29.0	-29.0	1.0000	56.7	0.9703	69.0	1	6
204	BJOMIN13	13.800	G1	23.0	-9.3	13.0	-13.0	1.0000	24.8	0.9273	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-9.3	13.0	-13.0	1.0000	24.8	0.9273	28.9	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9604	11.2	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9586	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9901	9.5	0.9772	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1153	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1153	8.1	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0027	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0027	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0027	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0027	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9778	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9778	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9778	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9778	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9778	10.9	1	6
524	TCATIVÁ 13B	13.800	G1	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9387	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9387	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9387	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9387	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9387	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0035	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0035	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0035	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0035	8.5	0.9363	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9925	60.5	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1142.2	182.2	646.7	-383.0				1545.1		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:57
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT LLS-PAN 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	2.4	15.0	0.0	1.0000	35.1	0.9977	44.1	2	7					
130	MIR13F	13.800	G5	17.1	0.0	8.0	0.0	1.0068	17.0	1.0000	27.7	2	7					
140	GAT6A	6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9979	4.1	2	7					
140	GAT6A	6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9979	4.1	2	7					
140	GAT6A	6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9979	4.1	2	7					

141 GAT6B	6.9000 G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9759	5.6	2	7
141 GAT6B	6.9000 G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9759	6.2	2	7
141 GAT6B	6.9000 G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9759	6.2	2	7
170 MIR13G	13.800 M1	17.0	6.8	11.2	6.8	1.0213	17.9	0.9281	23.0	2	7
171 MIR13H	13.800 M1	17.0	6.8	11.2	6.8	1.0304	17.8	0.9281	23.0	2	7
171 MIR13H	13.800 M2	17.0	6.8	11.2	6.8	1.0304	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS		120.5	19.9	71.5	5.5				171.3		

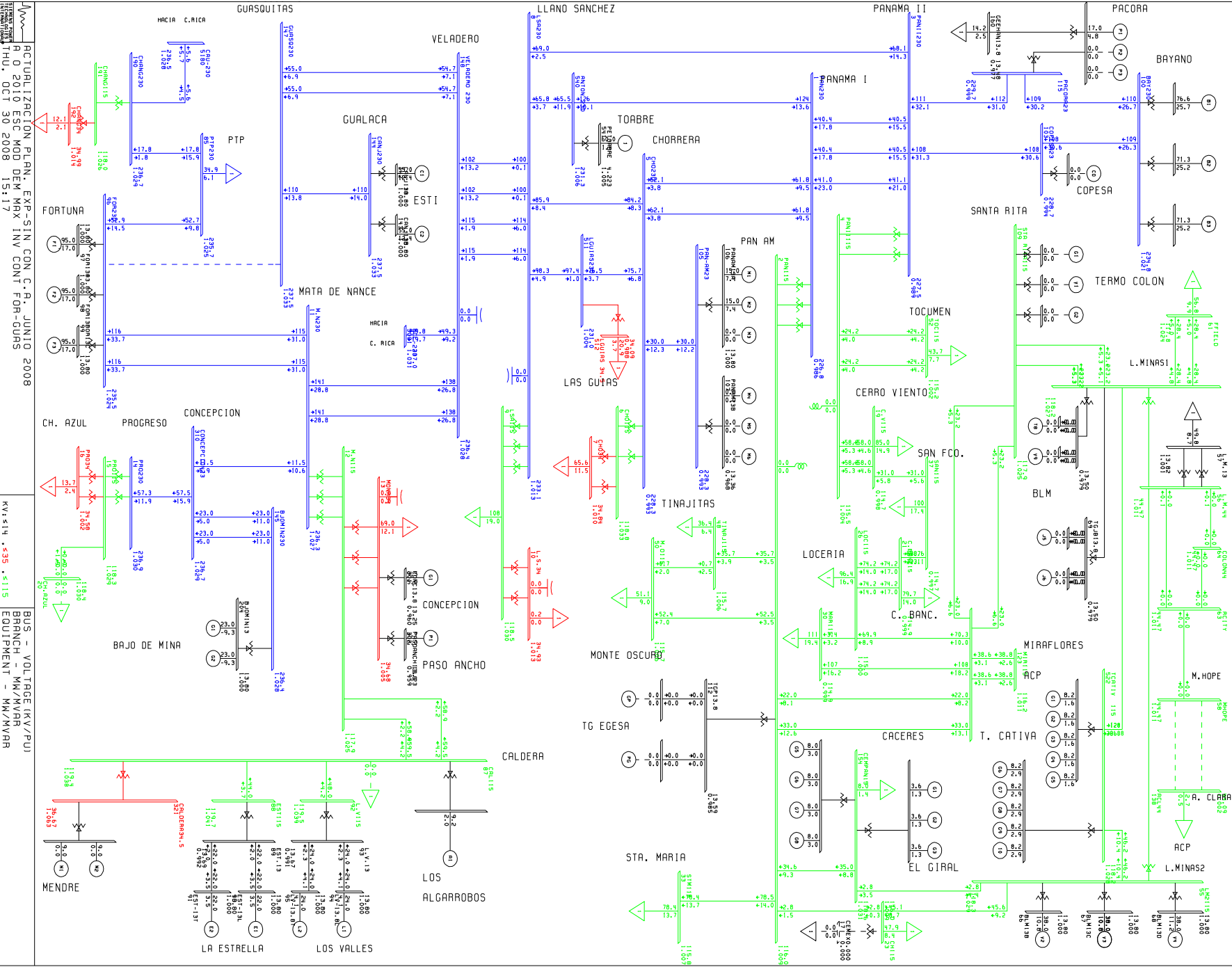
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 8:57
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2010 ESC MOD DEM MAX INV CONT LLS-PAN II IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	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	1006.8	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	-97.3	147.4	

5	1344.9	1324.8	0.0	0.0	0.0	0.8	19.3	0.0
C.RICA	248.4	569.4	-236.0	0.0	470.1	27.8	357.4	
6	1142.2	1081.9	0.0	0.0	0.0	28.6	31.8	25.0
PANAMA	182.2	189.5	0.0	0.0	424.4	48.0	369.1	
7	120.5	42.0	0.0	0.0	0.0	77.3	1.2	50.0
ACANAL	19.9	7.4	0.0	0.0	0.0	-5.5	18.0	
9	0.0	106.6	0.0	0.0	0.0	-106.7	0.1	-75.0
COLON	0.0	18.7	0.0	0.0	1.1	-23.9	6.4	
TOTALS	6412.0	6282.0	0.0	0.0	0.0	0.0	130.0	0.0
	669.2	1831.9	-847.5	0.0	1974.5	0.0	1659.3	

PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008

**AÑO 2010 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA FORTUNA-GUASQUITAS**



ACTUARILZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 R 0 2010 ESC MDD DEM MX INV CONT FOR-CUAS
 THU, OCT 30 2008 15:17

BRANCH - VOLTAGE KV/KV/PU
 EQUIPMENT - MM/MVAR

KV: 414, 535, 5115

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT FOR-GUAS

THU, OCT 30 2008 9:04

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	1.0133	233.07	11	M.N230			230.00	6	1.0274	236.30
14	PRO230			230.00	6	1.0299	236.88	85	PTP230			230.00	6	1.0246	235.65
96	FOR230			230.00	6	1.0241	235.54	100	BAY230			230.00	6	1.0207	234.76
144	CANJ230			230.00	6	1.0326	237.49	145	BJOMIN230			230.00	6	1.0280	236.44
147	GUASQ230			230.00	6	1.0326	237.50	148	VELADERO	230	230.00	6	1.0280	236.43	
190	CHANG230			230.00	6	1.0292	236.71	310	CONCEPCION23	230.00	6	1.0290	236.67		
511	LGUIAS230			230.00	6	1.0045	231.03	540	ANTON	230	230.00	6	1.0056	231.28	
6000	FRONTER			230.00	6	1.0304	236.98								

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	0.9860	226.77	3	PANII230			230.00	6	0.9892	227.51
5	CHO230			230.00	6	0.9926	228.29	103	COPESA23			230.00	6	0.9942	228.67
105	PAN-AM23			230.00	6	0.9926	228.31	115	PACORA23			230.00	6	0.9986	229.67

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT FOR-GUAS

THU, OCT 30 2008 9:04

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	1.0085	115.98	4	PANII115			115.00	6	1.0043	115.49
6	CHO115			115.00	6	1.0330	118.79	9	LSA115			115.00	6	1.0305	118.50
12	M.N115			115.00	6	1.0249	117.87	15	PRO115			115.00	6	1.0291	118.35
18	CAC115			115.00	6	1.0082	115.94	20	CH.AZUL			115.00	6	1.0299	118.44
23	CH115			115.00	6	1.0087	116.00	33	STM115			115.00	6	1.0068	115.78
48	TINAJ115			115.00	6	1.0064	115.73	50	M.O115			115.00	6	1.0065	115.75
52	TOC115			115.00	6	1.0018	115.20	54	LM115			115.00	6	1.0275	118.16
55	LM2115			115.00	6	1.0285	118.28	61	FFIELD			115.00	9	1.0242	117.78
87	CAL115			115.00	6	1.0384	119.41	88	EST115			115.00	6	1.0408	119.70
92	L.V115			115.00	6	1.0393	119.52	109	STA RITA115			115.00	6	1.0254	117.92
123	MIR115			115.00	7	1.0107	116.23	154	CEMPAN15			115.00	6	1.0310	118.56
191	CHANG115			115.00	6	1.0258	117.97	522	TCATIVÁ	115	115.00	6	1.0282	118.25	

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)
19	C.V115			115.00	6	0.9978	114.74	21	C.BAN115			115.00	6	0.9987	114.85
26	LOC115			115.00	6	0.9999	114.98	30	MAR115			115.00	6	0.9991	114.89
37	SAN115			115.00	6	0.9974	114.70								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT FOR-GUAS

THU, OCT 30 2008 9:04

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	38.0	10.8	25.0	0.0	1.0000	39.5	0.9617	47.0	1	6
67	BLM13C	13.800	V3	38.0	10.8	25.0	0.0	1.0000	39.5	0.9617	47.0	1	6
68	BLM13D	13.800	V4	38.0	11.2	25.0	0.0	1.0000	39.6	0.9590	47.0	1	6
90	EST-13L	13.800	E1	22.0	3.5	12.0	-5.0	1.0000	22.3	0.9879	27.0	1	6
91	EST-13T	13.800	E2	22.0	3.5	12.0	-5.0	1.0000	22.3	0.9879	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	4.1	12.0	-5.0	1.0000	24.3	0.9860	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	4.1	12.0	-5.0	1.0000	24.3	0.9860	27.0	1	6
97	FOR13A	13.800	F1	95.0	-17.0	50.0	-50.0	1.0000	96.5	0.9843	111.0	1	6
98	FOR13B	13.800	F2	95.0	-17.0	50.0	-50.0	1.0000	96.5	0.9843	111.0	1	6
99	FOR13C	13.800	F3	95.0	-17.0	50.0	-50.0	1.0000	96.5	0.9843	111.0	1	6
101	BAY13A	13.800	B1	76.6	25.7	50.0	-25.0	1.0000	80.8	0.9481	96.0	1	6
102	BAY13B	13.800	B2	71.3	25.2	50.0	-25.0	1.0000	75.7	0.9430	96.0	1	6
106	PANAM13A	13.800	M1	15.0	7.4	9.0	0.0	1.0000	16.7	0.8970	20.7	1	6
106	PANAM13A	13.800	M2	15.0	7.4	9.0	0.0	1.0000	16.7	0.8970	20.7	1	6
108	BAY13C	13.800	B3	71.3	25.2	50.0	-25.0	1.0000	75.7	0.9430	100.0	1	6
116	PACORA13	13.800	P1	17.0	4.8	8.8	0.0	1.0000	17.7	0.9623	21.7	1	6
142	CANJ13A	13.800	C1	55.0	12.4	29.0	-29.0	1.0000	56.4	0.9755	69.0	1	6
143	CANJ13B	13.800	C2	55.0	12.4	29.0	-29.0	1.0000	56.4	0.9755	69.0	1	6
204	BJOMIN13	13.800	G1	23.0	-9.3	13.0	-13.0	1.0000	24.8	0.9270	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-9.3	13.0	-13.0	1.0000	24.8	0.9270	28.9	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9605	11.2	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9586	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9901	9.5	0.9772	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1153	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1153	8.1	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0043	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0043	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0043	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0043	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9815	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9815	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9815	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9815	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.6	6.6	-6.6	0.9900	8.4	0.9815	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.2	2.9	6.6	-6.6	1.0000	8.7	0.9445	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	2.9	6.6	-6.6	1.0000	8.7	0.9445	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	2.9	6.6	-6.6	1.0000	8.7	0.9445	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	2.9	6.6	-6.6	1.0000	8.7	0.9445	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	2.9	6.6	-6.6	1.0000	8.7	0.9445	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0052	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0052	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0052	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0052	8.5	0.9363	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	1.0054	59.7	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1142.6	148.4	646.7	-383.0				1545.1		

SYST

 PII INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 9:04
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT FOR-GUAS

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	1.8	15.0	0.0	1.0000	35.0	0.9987	44.1			2	7	
130	MIR13F	13.800	G5	17.1	0.0	8.0	0.0	1.0083	17.0	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9967	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9967	4.1			2	7	

140	GAT6A	6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9967	4.1	2	7
141	GAT6B	6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9742	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9742	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9742	6.2	2	7
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0228	17.9	0.9281	23.0	2	7
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0319	17.8	0.9281	23.0	2	7
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0319	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS				120.5	19.1	71.5	5.5				171.3		

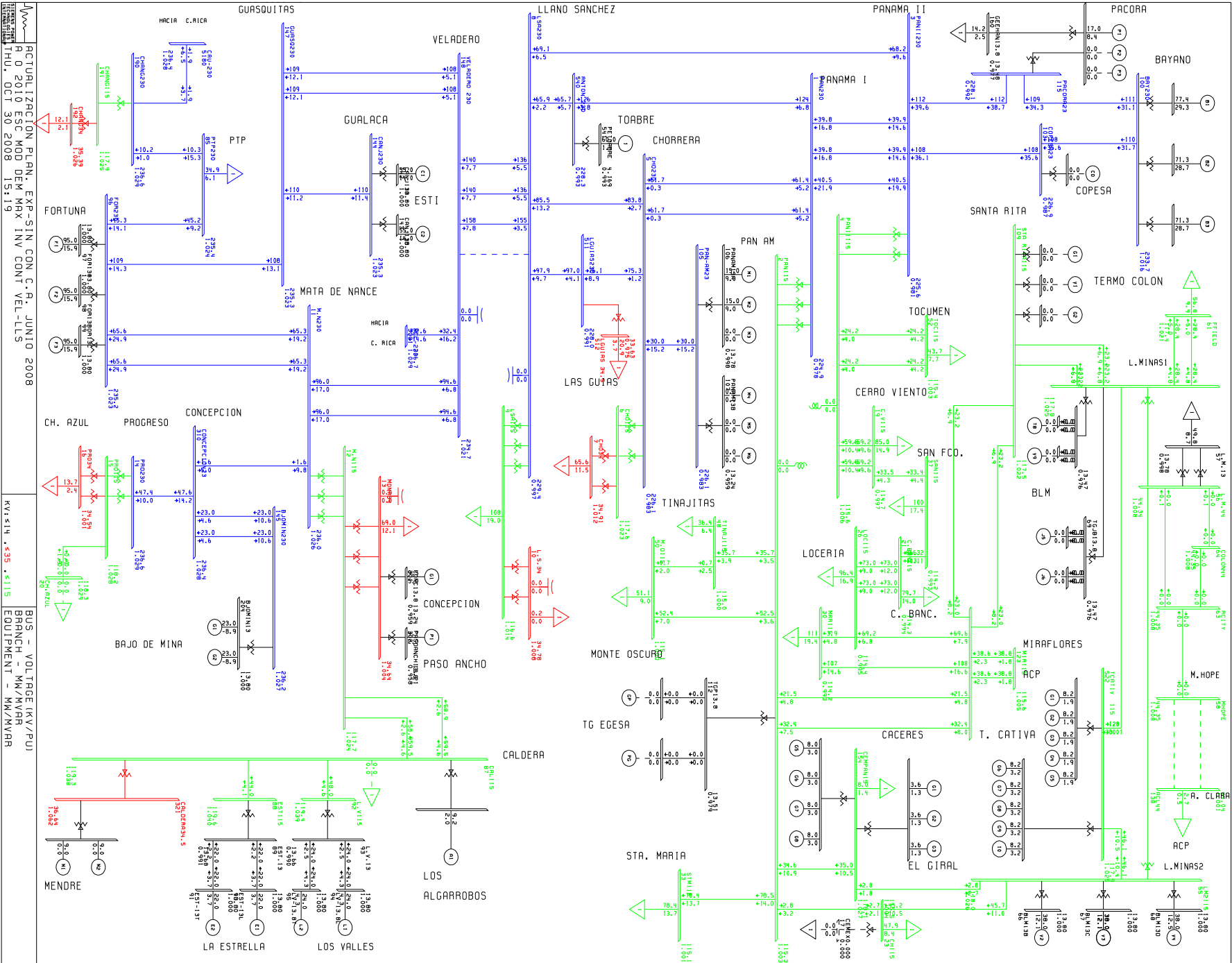
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 9:04
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2010 ESC MOD DEM MAX INV CONT FOR-GUAS IN MW/MVAR

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			1006.8	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	-97.3	147.4	

5	1344.9	1324.8	0.0	0.0	0.0	0.7	19.4	0.0
C.RICA	248.5	569.4	-236.0	0.0	470.1	27.2	357.9	
6	1142.6	1081.9	0.0	0.0	0.0	28.7	32.0	25.0
PANAMA	148.4	189.5	0.0	0.0	452.1	49.3	361.7	
7	120.5	42.0	0.0	0.0	0.0	77.3	1.2	50.0
ACANAL	19.1	7.4	0.0	0.0	0.0	-6.3	18.0	
9	0.0	106.6	0.0	0.0	0.0	-106.7	0.1	-75.0
COLON	0.0	18.7	0.0	0.0	1.1	-23.9	6.3	
TOTALS	6412.3	6282.0	0.0	0.0	0.0	0.0	130.3	0.0
	634.6	1831.9	-847.5	0.0	2002.2	0.0	1652.4	

PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008

**AÑO 2010 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA VELADERO-LLANO SÁNCHEZ**



ACTUALIZACION PLAN EXP-SIN CON C.R. JUNIO 2008
 R 0 2010 ESC MOD DEM INV CONT VEL-LLS
 ITHU, OCT 30 2008 15:19

BUS - VOLTAGE (KV/PUI)
 BRANCH - MW/MVA
 EQUIPMENT - MW/MVA

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT VEL-LLS

THU, OCT 30 2008 9:08

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	1.0259	235.96	14	PRO230			230.00	6	1.0287	236.59
85	PTP230			230.00	6	1.0235	235.41	96	FOR230			230.00	6	1.0228	235.24
100	BAY230			230.00	6	1.0160	233.68	144	CANJ230			230.00	6	1.0232	235.33
145	BJOMIN230			230.00	6	1.0269	236.18	147	GUASQ230			230.00	6	1.0231	235.32
148	VELADERO	230	230.00	6	1.0206	234.75	190	CHANG230			230.00	6	1.0285	236.57	
310	CONCEPCION23	230.00	6	1.0277	236.38	6000	FRONTER			230.00	6	1.0291	236.69		

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	0.9780	224.94	3	PANII230			230.00	6	0.9811	225.65
5	CHO230			230.00	6	0.9831	226.12	8	LSA230			230.00	6	0.9975	229.42
103	COPESA23			230.00	6	0.9866	226.92	105	PAN-AM23			230.00	6	0.9832	226.14
115	PACORA23			230.00	6	0.9919	228.13	511	LGUIAS230			230.00	6	0.9911	227.96
540	ANTON	230	230.00	6	0.9928	228.34									

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT VEL-LLS

THU, OCT 30 2008 9:09

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	PANII115			115.00	6	1.0056	115.64
6	CHO115			115.00	6	1.0229	117.63	9	LSA115			115.00	6	1.0140	116.61
12	M.N115			115.00	6	1.0238	117.74	15	PRO115			115.00	6	1.0279	118.20
18	CAC115			115.00	6	1.0023	115.26	20	CH.AZUL			115.00	6	1.0286	118.29
23	CH115			115.00	6	1.0040	115.46	33	STM115			115.00	6	1.0008	115.09
48	TINAJ115			115.00	6	1.0003	115.04	50	M.O115			115.00	6	1.0005	115.05
52	TOC115			115.00	6	1.0031	115.35	54	LM115			115.00	6	1.0246	117.83
55	LM2115			115.00	6	1.0257	117.95	61	FFIELD			115.00	9	1.0213	117.45
87	CAL115			115.00	6	1.0376	119.32	88	EST115			115.00	6	1.0402	119.62
92	L.V115			115.00	6	1.0386	119.44	109	STA RITA115			115.00	6	1.0222	117.55
123	MIR115			115.00	7	1.0051	115.59	154	CEMPAN15			115.00	6	1.0272	118.13
191	CHANG115			115.00	6	1.0252	117.89	522	TCATIVÁ	115	115.00	6	1.0254	117.92	

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)
19	C.V115			115.00	6	0.9970	114.66	21	C.BAN115			115.00	6	0.9936	114.26
26	LOC115			115.00	6	0.9945	114.37	30	MAR115			115.00	6	0.9934	114.24
37	SAN115			115.00	6	0.9927	114.16								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT VEL-LLS

THU, OCT 30 2008 9:08

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	38.0	12.1	25.0	0.0	1.0000	39.9	0.9531	47.0	1	6
67	BLM13C	13.800	V3	38.0	12.1	25.0	0.0	1.0000	39.9	0.9531	47.0	1	6
68	BLM13D	13.800	V4	38.0	12.5	25.0	0.0	1.0000	40.0	0.9498	47.0	1	6
90	EST-13L	13.800	E1	22.0	3.7	12.0	-5.0	1.0000	22.3	0.9865	27.0	1	6
91	EST-13T	13.800	E2	22.0	3.7	12.0	-5.0	1.0000	22.3	0.9865	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	4.3	12.0	-5.0	1.0000	24.4	0.9846	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	4.3	12.0	-5.0	1.0000	24.4	0.9846	27.0	1	6
97	FOR13A	13.800	F1	95.0	-15.9	50.0	-50.0	1.0000	96.3	0.9864	111.0	1	6
98	FOR13B	13.800	F2	95.0	-15.9	50.0	-50.0	1.0000	96.3	0.9864	111.0	1	6
99	FOR13C	13.800	F3	95.0	-15.9	50.0	-50.0	1.0000	96.3	0.9864	111.0	1	6
101	BAY13A	13.800	B1	77.4	29.3	50.0	-25.0	1.0000	82.8	0.9353	96.0	1	6
102	BAY13B	13.800	B2	71.3	28.7	50.0	-25.0	1.0000	76.9	0.9278	96.0	1	6
106	PANAM13A	13.800	M1	15.0	9.0	9.0	0.0	0.9982	17.5	0.8575	20.7	1	6
106	PANAM13A	13.800	M2	15.0	9.0	9.0	0.0	0.9982	17.5	0.8575	20.7	1	6
108	BAY13C	13.800	B3	71.3	28.7	50.0	-25.0	1.0000	76.9	0.9278	100.0	1	6
116	PACORA13	13.800	P1	17.0	8.4	8.8	0.0	1.0000	19.0	0.8960	21.7	1	6
142	CANJ13A	13.800	C1	55.0	14.0	29.0	-29.0	1.0000	56.7	0.9693	69.0	1	6
143	CANJ13B	13.800	C2	55.0	14.0	29.0	-29.0	1.0000	56.7	0.9693	69.0	1	6
204	BJOMIN13	13.800	G1	23.0	-8.9	13.0	-13.0	1.0000	24.7	0.9326	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-8.9	13.0	-13.0	1.0000	24.7	0.9326	28.9	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9594	11.2	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9576	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9894	9.5	0.9772	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1145	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1145	8.1	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0008	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0008	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0008	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0008	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9733	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9733	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9733	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9733	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.9	6.6	-6.6	0.9900	8.5	0.9733	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9319	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9319	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9319	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9319	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	3.2	6.6	-6.6	1.0000	8.8	0.9319	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0017	8.5	0.9363	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9926	60.5	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1143.4	181.4	646.7	-383.0				1545.1		

SYST

 PII INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 9:08
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT VEL-LLS

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	3.1	15.0	0.0	1.0000	35.1	0.9961	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0050	17.0	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9988	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9988	4.1			2	7	

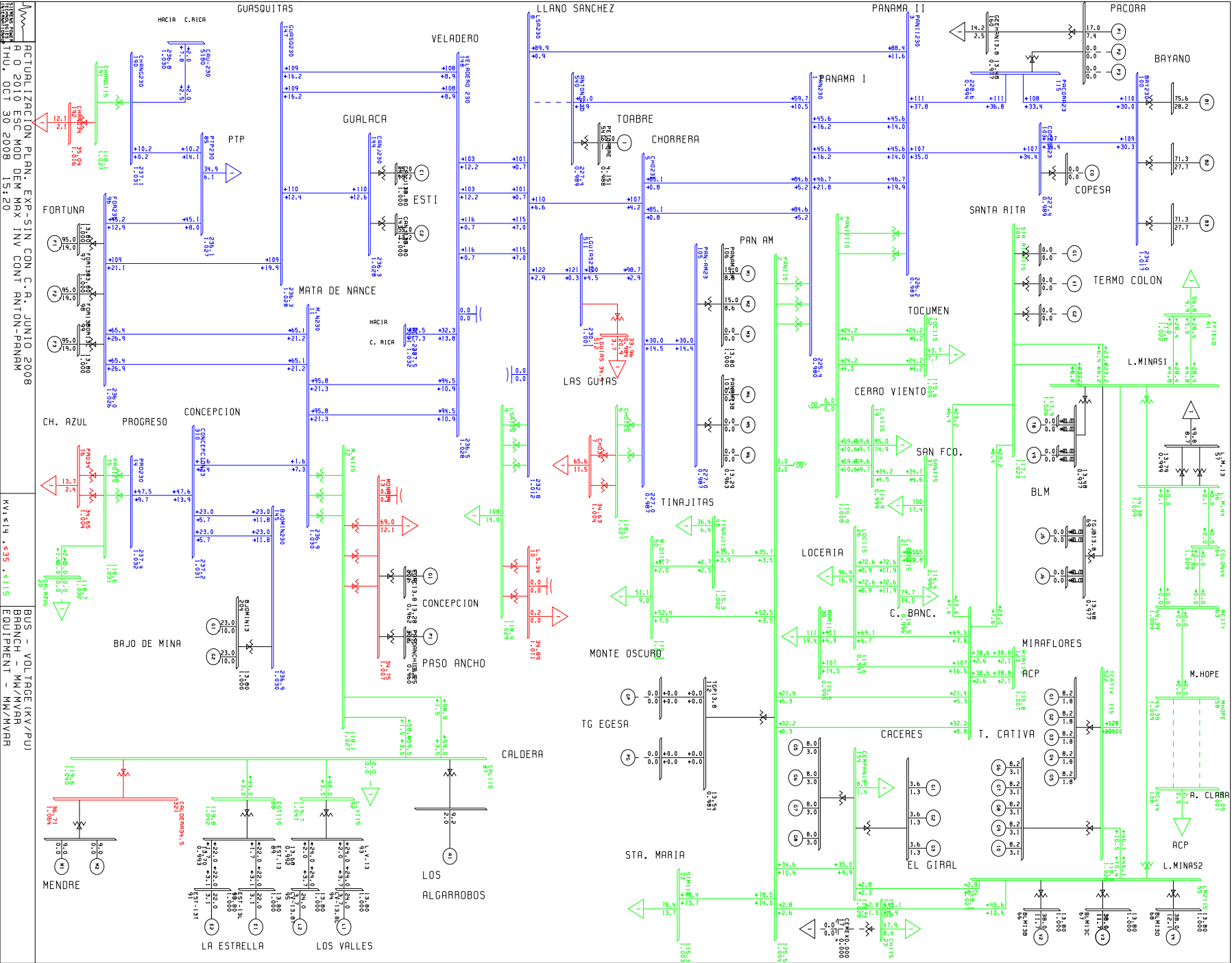
140	GAT6A	6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9988	4.1	2	7
141	GAT6B	6.9000	G4	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9777	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9777	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-0.8	3.0	-3.0	1.0000	4.0	0.9777	6.2	2	7
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0195	18.0	0.9281	23.0	2	7
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0286	17.8	0.9281	23.0	2	7
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0286	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS				120.5	20.8	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 9:09
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2010 ESC MOD DEM MAX INV CONT VEL-LLS IN MW/MVAR

X--	AREA	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	1006.8	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		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	249.7	569.4	-236.3	0.0	470.0	29.3	357.3	
6	1143.4	1081.9	0.0	0.0	0.0	28.6	32.9	25.0
PANAMA	181.4	189.5	0.0	0.0	427.8	45.6	374.1	
7	120.5	42.0	0.0	0.0	0.0	77.3	1.2	50.0
ACANAL	20.8	7.4	0.0	0.0	0.0	-4.6	18.1	
9	0.0	106.6	0.0	0.0	0.0	-106.7	0.1	-75.0
COLON	0.0	18.7	0.0	0.0	1.1	-23.9	6.4	
TOTALS	6413.1	6282.0	0.0	0.0	0.0	0.0	131.1	0.0
	670.6	1831.9	-847.8	0.0	1977.8	0.0	1664.3	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2010 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA ANTÓN-PANAMÁ**



ACTUALIZATION PLAN - EXP-SIN CON C.-R.- JUNIO 2008
 R 0 2010 ESC MOD DEM MAX INV CONT ANTON-PANAMA
 THU, OCT 30 2008 15:20

BUS - VOLTAGE (KV/PU)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

KVA:14 . *35 . *115

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ

THU, OCT 30 2008 9:12

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	1.0122	232.81	11	M.N230			230.00	6	1.0300	236.89
14	PRO230			230.00	6	1.0320	237.36	85	PTP230			230.00	6	1.0266	236.13
96	FOR230			230.00	6	1.0262	236.03	100	BAY230			230.00	6	1.0173	233.97
144	CANJ230			230.00	6	1.0276	236.34	145	BJOMIN230			230.00	6	1.0300	236.89
147	GUASQ230			230.00	6	1.0276	236.34	148	VELADERO	230	230.00	6	1.0281	236.45	
190	CHANG230			230.00	6	1.0307	237.07	310	CONCEPCION23	230.00	6	1.0311	237.16		
511	LGUIAS230			230.00	6	1.0006	230.13	6000	FRONTER			230.00	6	1.0324	237.45

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	0.9801	225.43	3	PANII230			230.00	6	0.9833	226.15
5	CHO230			230.00	6	0.9871	227.02	103	COPESA23			230.00	6	0.9887	227.40
105	PAN-AM23			230.00	6	0.9871	227.04	115	PACORA23			230.00	6	0.9937	228.55
540	ANTON	230		230.00	6	0.9886	227.37								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ

THU, OCT 30 2008 9:12

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	1.0045	115.51	4	PANII115			115.00	6	1.0078	115.90
6	CHO115			115.00	6	1.0270	118.11	9	LSA115			115.00	6	1.0293	118.37
12	M.N115			115.00	6	1.0269	118.09	15	PRO115			115.00	6	1.0312	118.59
18	CAC115			115.00	6	1.0042	115.48	20	CH.AZUL			115.00	6	1.0320	118.67
23	CH115			115.00	6	1.0055	115.63	33	STM115			115.00	6	1.0027	115.31
48	TINAJ115			115.00	6	1.0023	115.26	50	M.O115			115.00	6	1.0024	115.28
52	TOC115			115.00	6	1.0053	115.61	54	LM115			115.00	6	1.0256	117.94
55	LM2115			115.00	6	1.0266	118.06	61	FFIELD			115.00	9	1.0222	117.56
87	CAL115			115.00	6	1.0397	119.56	88	EST115			115.00	6	1.0420	119.83
92	L.V115			115.00	6	1.0406	119.67	109	STA RITA115			115.00	6	1.0232	117.67
123	MIR115			115.00	7	1.0069	115.80	154	CEMPAN15			115.00	6	1.0284	118.27
191	CHANG115			115.00	6	1.0274	118.15	522	TCATIVÁ	115	115.00	6	1.0263	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)
19	C.V115			115.00	6	0.9992	114.91	21	C.BAN115			115.00	6	0.9956	114.49
26	LOC115			115.00	6	0.9965	114.60	30	MAR115			115.00	6	0.9954	114.47
37	SAN115			115.00	6	0.9947	114.39								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ

THU, OCT 30 2008 9:12

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	38.0	11.7	25.0	0.0	1.0000	39.7	0.9560	47.0	1	6
67	BLM13C	13.800	V3	38.0	11.7	25.0	0.0	1.0000	39.7	0.9560	47.0	1	6
68	BLM13D	13.800	V4	38.0	12.1	25.0	0.0	1.0000	39.9	0.9528	47.0	1	6
90	EST-13L	13.800	E1	22.0	3.1	12.0	-5.0	1.0000	22.2	0.9901	27.0	1	6
91	EST-13T	13.800	E2	22.0	3.1	12.0	-5.0	1.0000	22.2	0.9901	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	3.7	12.0	-5.0	1.0000	24.3	0.9884	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	3.7	12.0	-5.0	1.0000	24.3	0.9884	27.0	1	6
97	FOR13A	13.800	F1	95.0	-19.0	50.0	-50.0	1.0000	96.9	0.9806	111.0	1	6
98	FOR13B	13.800	F2	95.0	-19.0	50.0	-50.0	1.0000	96.9	0.9806	111.0	1	6
99	FOR13C	13.800	F3	95.0	-19.0	50.0	-50.0	1.0000	96.9	0.9806	111.0	1	6
101	BAY13A	13.800	B1	75.6	28.2	50.0	-25.0	1.0000	80.6	0.9371	96.0	1	6
102	BAY13B	13.800	B2	71.3	27.7	50.0	-25.0	1.0000	76.5	0.9320	96.0	1	6
106	PANAM13A	13.800	M1	15.0	8.6	9.0	0.0	1.0000	17.3	0.8684	20.7	1	6
106	PANAM13A	13.800	M2	15.0	8.6	9.0	0.0	1.0000	17.3	0.8684	20.7	1	6
108	BAY13C	13.800	B3	71.3	27.7	50.0	-25.0	1.0000	76.5	0.9320	100.0	1	6
116	PACORA13	13.800	P1	17.0	7.4	8.8	0.0	1.0000	18.6	0.9161	21.7	1	6
142	CANJ13A	13.800	C1	55.0	13.2	29.0	-29.0	1.0000	56.6	0.9723	69.0	1	6
143	CANJ13B	13.800	C2	55.0	13.2	29.0	-29.0	1.0000	56.6	0.9723	69.0	1	6
204	BJOMIN13	13.800	G1	23.0	-10.0	13.0	-13.0	1.0000	25.1	0.9169	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-10.0	13.0	-13.0	1.0000	25.1	0.9169	28.9	1	6
301	CONC13.8	13.800	G1	9.5	5.0	5.0	-5.0	0.9623	11.2	0.8849	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9605	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9913	9.5	0.9772	13.5	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1168	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1168	8.1	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.3	2.8	1.3	1.0019	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.3	2.8	1.3	1.0019	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.3	2.8	1.3	1.0019	3.8	0.9404	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0019	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9761	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9761	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9761	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9761	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.8	6.6	-6.6	0.9900	8.5	0.9761	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9361	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9361	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9361	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9361	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	3.1	6.6	-6.6	1.0000	8.8	0.9361	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.0	6.4	3.0	1.0028	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.0	6.4	3.0	1.0028	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.0	6.4	3.0	1.0028	8.5	0.9363	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.0	6.4	3.0	1.0028	8.5	0.9363	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9884	60.7	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1141.5	158.9	646.7	-383.0				1545.1		

SYST

 PII INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 9:12
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2010 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ

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	2.7	15.0	0.0	1.0000	35.1	0.9971	44.1			2	7	
130	MIR13F	13.800	G5	17.1	0.0	8.0	0.0	1.0061	17.0	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9983	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9983	4.1			2	7	

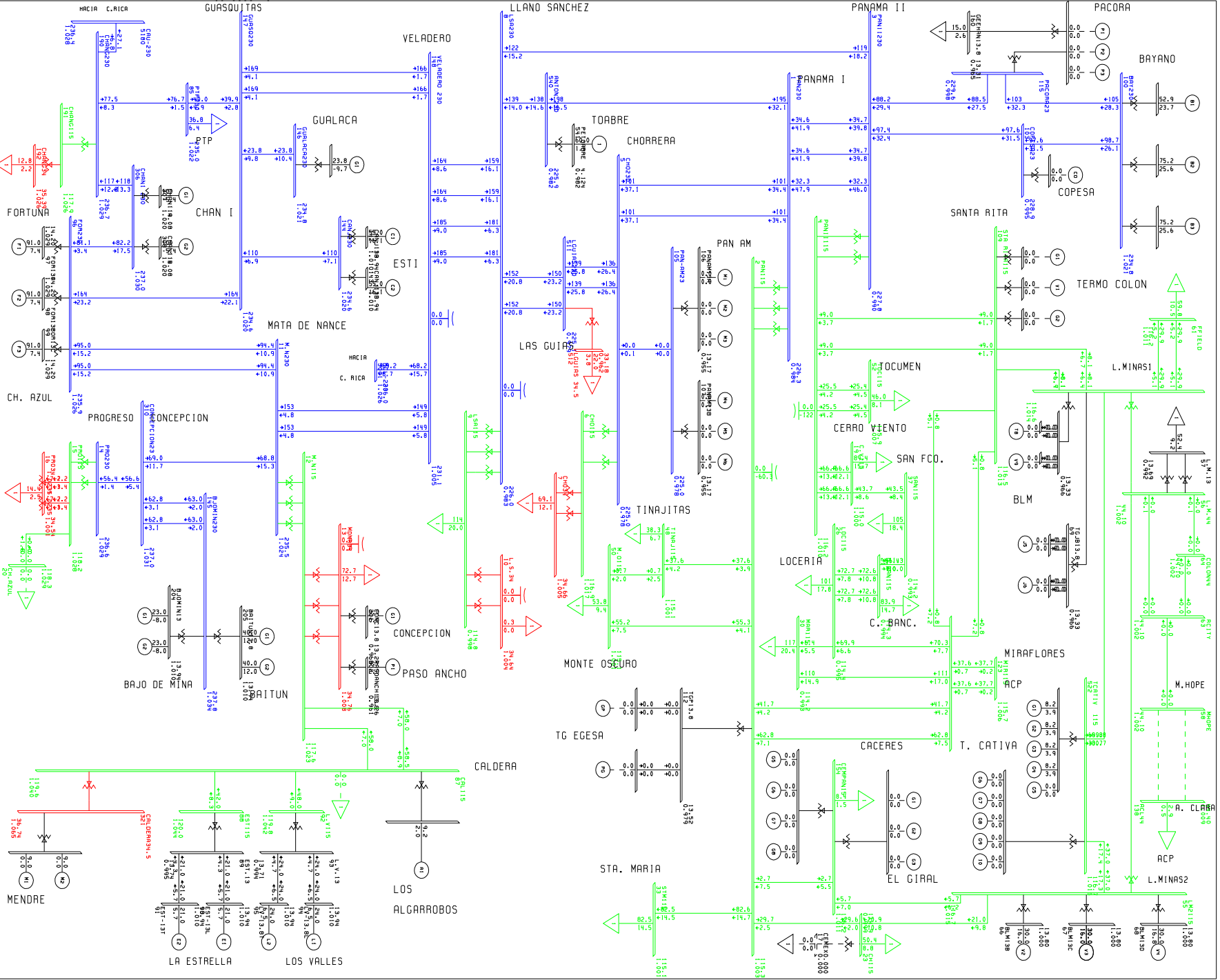
140	GAT6A	6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9983	4.1	2	7
141	GAT6B	6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9766	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9766	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9766	6.2	2	7
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0206	17.9	0.9281	23.0	2	7
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0297	17.8	0.9281	23.0	2	7
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0297	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS				120.5	20.2	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E THU, OCT 30 2008 9:12
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2010 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ 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			1006.8	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	0.8	19.3	0.0
C.RICA	245.1	569.4	-236.1	0.0	470.5	25.0	357.3	
6	1141.5	1081.9	0.0	0.0	0.0	28.6	31.0	25.0
PANAMA	158.9	189.5	0.0	0.0	443.2	50.5	362.1	
7	120.5	42.0	0.0	0.0	0.0	77.3	1.2	50.0
ACANAL	20.2	7.4	0.0	0.0	0.0	-5.2	18.1	
9	0.0	106.6	0.0	0.0	0.0	-106.7	0.1	-75.0
COLON	0.0	18.7	0.0	0.0	1.1	-23.9	6.4	
TOTALS	6411.2	6282.0	0.0	0.0	0.0	0.0	129.2	0.0
	642.8	1831.9	-847.6	0.0	1993.7	0.0	1652.2	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO**



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV

TUE, OCT 28 2008 17:03

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	1.0240	235.51	14	PRO230			230.00	6	1.0289	236.65
85	PTP230			230.00	6	1.0219	235.04	96	FOR230			230.00	6	1.0257	235.91
100	BAY230			230.00	6	1.0207	234.76	144	CANJ230			230.00	6	1.0199	234.58
145	BJOMIN230			230.00	6	1.0341	237.85	146	GUALACA230			230.00	6	1.0208	234.77
147	GUASQ230			230.00	6	1.0198	234.55	148	VELADERO 230	230.00	6	1.0047	231.09		
190	CHANG230			230.00	6	1.0292	236.72	306	CHAN1 230			230.00	6	1.0305	237.01
310	CONCEPCION23	230.00	6	1.0306	237.04	6000	FRONTER			230.00	6	1.0284	236.53		

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	0.9841	226.35	3	PANII230			230.00	6	0.9902	227.75
5	CHO230			230.00	6	0.9784	225.02	8	LSA230			230.00	6	0.9827	226.02
103	COPESA23			230.00	6	0.9952	228.89	105	PAN-AM23			230.00	6	0.9784	225.02
115	PACORA23			230.00	6	0.9983	229.60	511	LGUIAS230			230.00	6	0.9788	225.12
540	ANTON 230			230.00	6	0.9822	225.92								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV

TUE, OCT 28 2008 17:03

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	1.0029	115.33	4	PANII115			115.00	6	1.0101	116.16
6	CHO115			115.00	6	1.0168	116.94	12	M.N115			115.00	6	1.0227	117.61
15	PRO115			115.00	6	1.0280	118.22	18	CAC115			115.00	6	1.0025	115.29
20	CH.AZUL			115.00	6	1.0287	118.30	33	STM115			115.00	6	1.0010	115.12
48	TINAJ115			115.00	6	1.0006	115.07	50	M.O115			115.00	6	1.0007	115.08
52	TOC115			115.00	6	1.0074	115.85	54	LM115			115.00	6	1.0142	116.63
55	LM2115			115.00	6	1.0150	116.72	61	FFIELD			115.00	9	1.0106	116.22
87	CAL115			115.00	6	1.0403	119.64	88	EST115			115.00	6	1.0436	120.02
92	L.V115			115.00	6	1.0416	119.79	109	STA RITA115			115.00	6	1.0131	116.50
123	MIR115			115.00	7	1.0058	115.67	154	CEMPAN15			115.00	6	1.0107	116.23
191	CHANG115			115.00	6	1.0256	117.95	522	TCATIVÁ 115	115.00	6	1.0147	116.69		

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	0.9981	114.78	19	C.V115			115.00	6	0.9999	114.99
21	C.BAN115			115.00	6	0.9939	114.30	23	CH115			115.00	6	0.9994	114.93
26	LOC115			115.00	6	0.9948	114.40	30	MAR115			115.00	6	0.9934	114.24
37	SAN115			115.00	6	0.9932	114.21								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV

TUE, OCT 28 2008 17:03

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
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66	BLM13B	13.800	V2	30.0	16.0	25.0	0.0	1.0000	34.0	0.8819	47.0	1	6
67	BLM13C	13.800	V3	30.0	16.0	25.0	0.0	1.0000	34.0	0.8819	47.0	1	6
68	BLM13D	13.800	V4	30.0	16.8	25.0	0.0	1.0000	34.4	0.8729	47.0	1	6
90	EST-13L	13.800	E1	21.0	5.7	12.0	-5.0	1.0100	21.5	0.9654	27.0	1	6
91	EST-13T	13.800	E2	21.0	5.7	12.0	-5.0	1.0100	21.5	0.9654	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	6.5	12.0	-5.0	1.0100	24.6	0.9654	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	6.5	12.0	-5.0	1.0100	24.6	0.9654	27.0	1	6
97	FOR13A	13.800	F1	91.0	7.4	50.0	-50.0	1.0290	88.7	0.9967	111.0	1	6
98	FOR13B	13.800	F2	91.0	7.4	50.0	-50.0	1.0290	88.7	0.9967	111.0	1	6
99	FOR13C	13.800	F3	91.0	7.4	50.0	-50.0	1.0290	88.7	0.9967	111.0	1	6
101	BAY13A	13.800	B1	52.9	23.7	50.0	-25.0	1.0000	57.9	0.9127	96.0	1	6
102	BAY13B	13.800	B2	75.2	25.6	50.0	-25.0	1.0000	79.4	0.9468	96.0	1	6
108	BAY13C	13.800	B3	75.2	25.6	50.0	-25.0	1.0000	79.4	0.9468	100.0	1	6
142	CANJ13A	13.800	C1	55.0	16.1	29.0	-29.0	1.0100	56.7	0.9597	69.0	1	6
143	CANJ13B	13.800	C2	55.0	16.1	29.0	-29.0	1.0100	56.7	0.9597	69.0	1	6
151	GUALACA13.8	13.800	G1	23.8	-9.7	10.0	-10.0	1.0100	25.4	0.9266	26.7	1	6
204	BJOMIN13	13.800	G1	23.0	-8.0	13.0	-13.0	1.0100	24.1	0.9443	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-8.0	13.0	-13.0	1.0100	24.1	0.9443	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	12.0	26.6	-26.6	1.0100	41.3	0.9579	50.6	1	6
205	BAITUN13.8	13.800	G2	40.0	12.0	26.6	-26.6	1.0100	41.3	0.9579	50.6	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9609	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9920	9.5	0.9772	13.5	1	6
307	CHAN1 A	13.800	G1	100.0	-5.4	50.0	-50.0	1.0200	98.2	0.9986	118.6	1	6
308	CHAN1 B	13.800	G2	100.0	-5.4	50.0	-50.0	1.0200	98.2	0.9986	118.6	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1175	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1175	8.1	1.0000	35.3	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9046	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9046	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9046	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9046	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9820	61.1	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1240.8	210.8	701.9	-519.1				1705.0		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E TUE, OCT 28 2008 17:03
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 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	5.4	15.0	0.0	1.0100	35.1	0.9883	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.1	8.0	0.0	1.0100	16.9	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	0.0	2.0	-2.0	1.0100	1.9	1.0000	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	0.0	2.0	-2.0	1.0100	1.9	1.0000	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	0.0	2.0	-2.0	1.0100	1.9	1.0000	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9824	5.6			2	7	

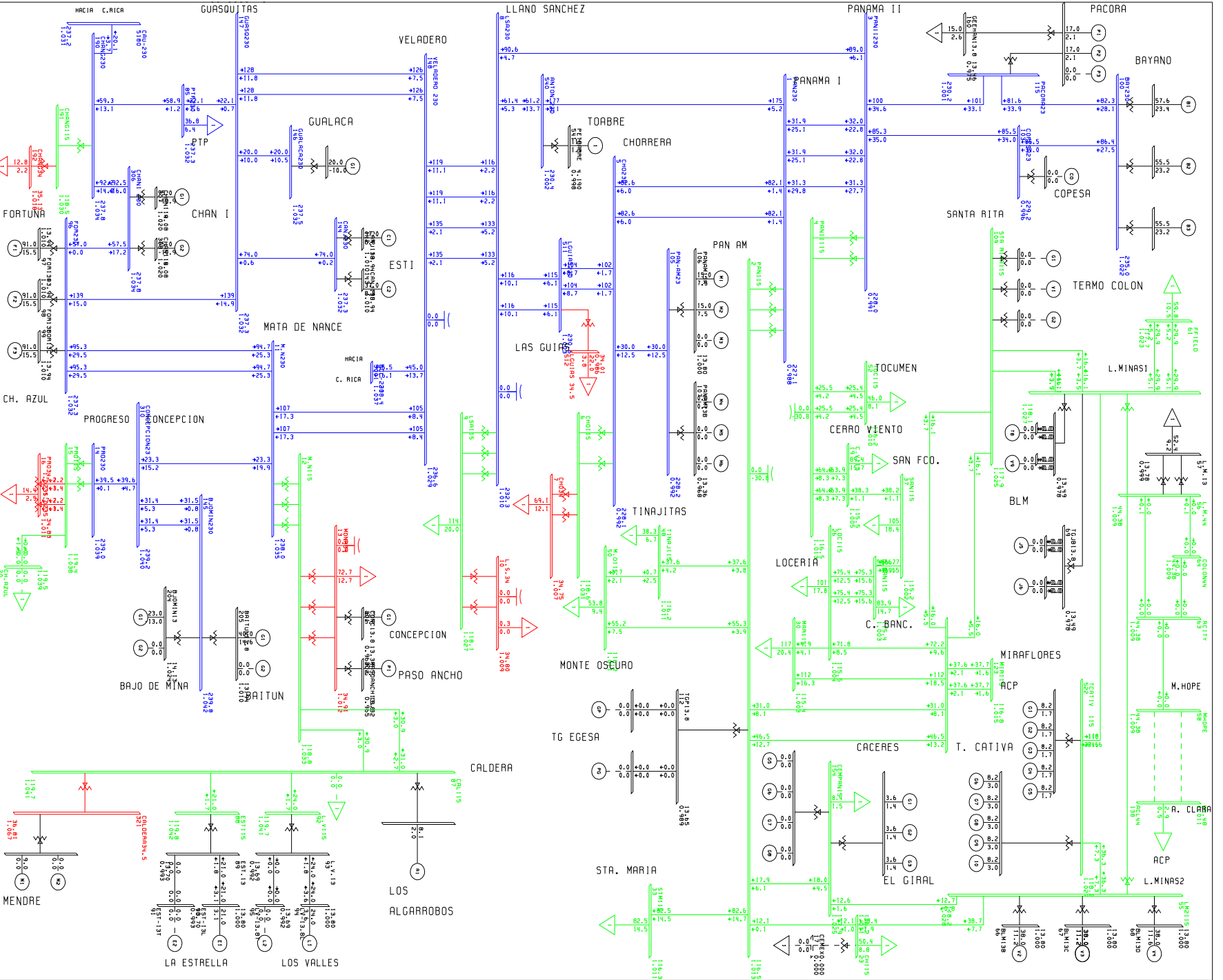
141 GAT6B	6.9000	G5	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9824	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9824	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0242	17.9	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0333	17.7	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0333	17.7	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	23.8	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV

TUE, OCT 28 2008 17:04
 AREA TOTALS
 IN MW/MVAR

X-- AREA	--X 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	1006.8	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	0.3	19.8	0.0
C.RICA	252.8	569.4	-237.4	0.0	469.5	30.4	359.9	
6	1240.8	1139.0	0.0	0.0	0.0	36.9	64.8	25.0
PANAMA	210.8	199.5	-182.8	0.0	474.1	42.9	625.2	
7	120.5	44.2	0.0	0.0	0.0	75.1	1.2	50.0
ACANAL	23.8	7.7	0.0	0.0	0.0	-1.3	17.4	
9	0.0	112.2	0.0	0.0	0.0	-112.3	0.1	-75.0
COLON	0.0	19.7	0.0	0.0	1.1	-25.7	7.2	
TOTALS	6510.5	6347.0	0.0	0.0	0.0	0.0	163.5	0.0
	706.3	1843.2	-1031.6	0.0	2023.5	0.0	1918.2	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÁXIMA VERANO**



66	BLM13B	13.800	V2	38.0	11.2	25.0	0.0	1.0000	39.6	0.9591	47.0	1	6
67	BLM13C	13.800	V3	38.0	11.2	25.0	0.0	1.0000	39.6	0.9591	47.0	1	6
68	BLM13D	13.800	V4	38.0	11.6	25.0	0.0	1.0000	39.7	0.9562	47.0	1	6
90	EST-13L	13.800	E1	21.0	3.1	12.0	-5.0	1.0000	21.2	0.9890	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	3.6	12.0	-5.0	1.0000	24.3	0.9891	27.0	1	6
97	FOR13A	13.800	F1	91.0	-15.5	50.0	-50.0	1.0100	91.4	0.9858	111.0	1	6
98	FOR13B	13.800	F2	91.0	-15.5	50.0	-50.0	1.0100	91.4	0.9858	111.0	1	6
99	FOR13C	13.800	F3	91.0	-15.5	50.0	-50.0	1.0100	91.4	0.9858	111.0	1	6
101	BAY13A	13.800	B1	57.6	23.4	50.0	-25.0	1.0000	62.2	0.9266	96.0	1	6
102	BAY13B	13.800	B2	55.5	23.2	50.0	-25.0	1.0000	60.2	0.9226	96.0	1	6
106	PANAM13A	13.800	M1	15.0	7.5	9.0	0.0	1.0000	16.8	0.8936	20.7	1	6
106	PANAM13A	13.800	M2	15.0	7.5	9.0	0.0	1.0000	16.8	0.8936	20.7	1	6
108	BAY13C	13.800	B3	55.5	23.2	50.0	-25.0	1.0000	60.2	0.9226	100.0	1	6
116	PACORA13	13.800	P1	17.0	2.1	8.8	0.0	1.0000	17.1	0.9924	21.7	1	6
116	PACORA13	13.800	P2	17.0	2.1	8.8	0.0	1.0000	17.1	0.9924	21.7	1	6
142	CANJ13A	13.800	C1	37.0	8.8	29.0	-29.0	1.0100	37.6	0.9730	69.0	1	6
143	CANJ13B	13.800	C2	37.0	8.8	29.0	-29.0	1.0100	37.6	0.9730	69.0	1	6
151	GUALACA13.8	13.800	G1	20.0	-10.0	10.0	-10.0	1.0216	21.9	0.8944	26.7	1	6
204	BJOMIN13	13.800	G1	23.0	-13.0	13.0	-13.0	1.0243	25.8	0.8706	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	14.6	26.6	-26.6	1.0100	42.2	0.9393	50.6	1	6
301	CONC13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9668	10.0	0.8566	13.5	1	6
302	PASOANCH13.8	13.800	P1	3.6	2.0	2.0	-2.0	0.9650	4.3	0.8742	6.2	1	6
304	ALGA13.8	13.800	A1	8.1	2.0	2.0	0.0	0.9924	8.4	0.9708	13.5	1	6
307	CHAN1 A	13.800	G1	75.0	-10.9	50.0	-50.0	1.0200	74.3	0.9897	118.6	1	6
308	CHAN1 B	13.800	G2	75.0	-10.9	50.0	-50.0	1.0200	74.3	0.9897	118.6	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1201	8.0	1.0000	35.3	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.4	2.8	1.3	1.0000	3.8	0.9353	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.4	2.8	1.3	1.0000	3.8	0.9353	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.4	2.8	1.3	1.0000	3.8	0.9353	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.0	1.3	2.8	1.3	1.0000	3.3	0.9173	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9793	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9793	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9793	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9793	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	1.7	6.6	-6.6	0.9900	8.5	0.9793	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9409	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9409	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9409	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9409	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	3.0	6.6	-6.6	1.0000	8.7	0.9409	10.9	1	6
541	PETOABRE	4.2000	1	116.3	1.4	1.4	1.4	0.9977	116.6	0.9999	136.0	1	6
SUBSYSTEM TOTALS				1212.7	109.7	729.6	-508.6				1719.5		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E TUE, OCT 28 2008 17:10
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 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	3.1	15.0	0.0	1.0100	34.8	0.9961	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0154	16.8	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0100	1.9	0.9989	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0100	1.9	0.9989	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.1	2.0	-2.0	1.0100	1.9	0.9989	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.8	3.0	-3.0	1.0100	3.9	0.9770	5.6			2	7	

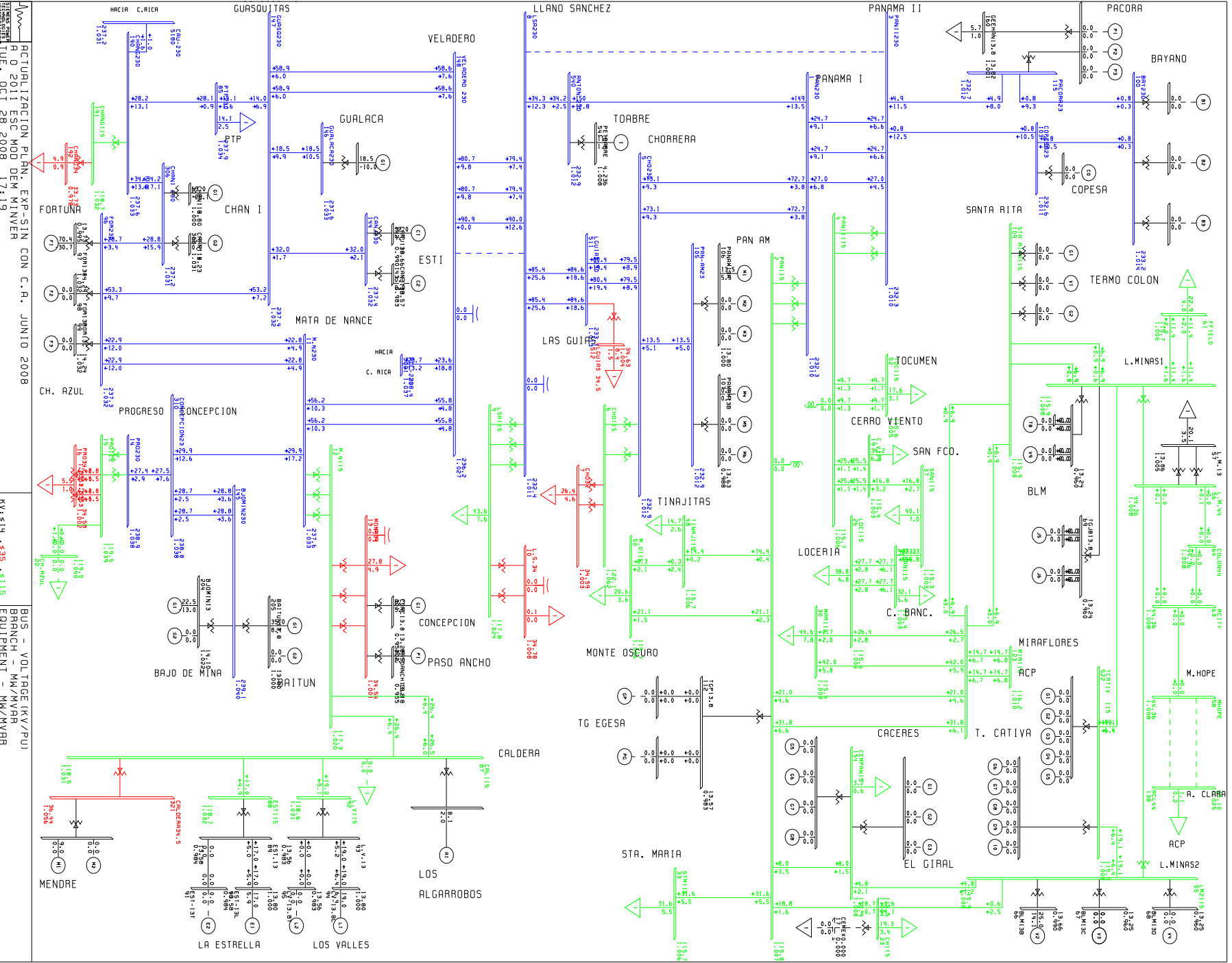
141 GAT6B	6.9000	G5	3.9	-0.8	3.0	-3.0	1.0100	3.9	0.9770	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.8	3.0	-3.0	1.0100	3.9	0.9770	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0298	17.8	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0388	17.6	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0388	17.6	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	20.8	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX VER

TUE, OCT 28 2008 17:10
 AREA TOTALS
 IN MW/MVAR

X-- AREA	--X GENERATION	FROM 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	1006.8	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	0.4	19.7	0.0
C.RICA	239.2	569.4	-236.4	0.0	471.1	18.1	359.2	
6	1212.7	1139.0	0.0	0.0	0.0	36.8	36.9	25.0
PANAMA	109.7	199.5	-61.6	0.0	483.8	58.3	397.3	
7	120.5	44.2	0.0	0.0	0.0	75.1	1.2	50.0
ACANAL	20.8	7.7	0.0	0.0	0.0	-4.2	17.2	
9	0.0	112.2	0.0	0.0	0.0	-112.3	0.1	-75.0
COLON	0.0	19.7	0.0	0.0	1.1	-25.6	7.1	
TOTALS	6482.5	6347.0	0.0	0.0	0.0	0.0	135.5	0.0
	588.1	1843.2	-909.4	0.0	2034.9	0.0	1689.2	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÍNIMA VERANO**



ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 R 0 2011 ESC MOD DEM MINVER
 TUE, OCT 28 2008 17:19
 KV1*115 *35 *115
 BUS - VOLTGE (KV/PU)
 BRANCH - MM/MVAR
 EQUIPMENT - MM/MVAR

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	1.0098	232.26	3		PANII230		230.00	6	1.0102	232.34
5		CHO230		230.00	6	1.0125	232.87	8		LSA230		230.00	6	1.0105	232.42
11		M.N230		230.00	6	1.0332	237.64	14		PRO230		230.00	6	1.0385	238.85
85		PTP230		230.00	6	1.0342	237.87	96		FOR230		230.00	6	1.0319	237.34
100		BAY230		230.00	6	1.0138	233.17	103		COPESA23		230.00	6	1.0112	232.58
105		PAN-AM23		230.00	6	1.0125	232.87	115		PACORA23		230.00	6	1.0116	232.68
144		CANJ230		230.00	6	1.0324	237.44	145		BJOMIN230		230.00	6	1.0398	239.15
146		GUALACA230		230.00	6	1.0330	237.59	147		GUASQ230		230.00	6	1.0323	237.43
148		VELADERO 230		230.00	6	1.0268	236.17	190		CHANG230		230.00	6	1.0331	237.62
306		CHAN1 230		230.00	6	1.0313	237.19	310		CONCEPCION23		230.00	6	1.0384	238.83
511		LGUIAS230		230.00	6	1.0134	233.09	540		ANTON 230		230.00	6	1.0124	232.86
6000		FRONTER		230.00	6	1.0383	238.80								

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 *															

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	1.0068	115.78	4		PANII115		115.00	6	1.0058	115.66
6		CHO115		115.00	6	1.0621	122.14	9		LSA115		115.00	6	1.0243	117.79
12		M.N115		115.00	6	1.0200	117.30	15		PRO115		115.00	6	1.0388	119.46
18		CAC115		115.00	6	1.0067	115.78	19		C.V115		115.00	6	1.0032	115.37
20		CH.AZUL		115.00	6	1.0396	119.55	21		C.BAN115		115.00	6	1.0035	115.40
23		CH115		115.00	6	1.0044	115.50	26		LOC115		115.00	6	1.0038	115.44
30		MAR115		115.00	6	1.0033	115.38	33		STM115		115.00	6	1.0061	115.70
37		SAN115		115.00	6	1.0030	115.34	48		TINAJ115		115.00	6	1.0062	115.71
50		M.O115		115.00	6	1.0062	115.72	52		TOC115		115.00	6	1.0048	115.55
54		LM1115		115.00	6	1.0076	115.88	55		LM2115		115.00	6	1.0079	115.91
61		FFIELD		115.00	9	1.0063	115.73	87		CAL115		115.00	6	1.0305	118.51
88		EST115		115.00	6	1.0322	118.70	92		L.V115		115.00	6	1.0311	118.58
109		STA RITA115		115.00	6	1.0078	115.89	123		MIR115		115.00	7	1.0104	116.20
154		CEMPAN15		115.00	6	1.0076	115.87	191		CHANG115		115.00	6	1.0319	118.67
522		TCATIVÁ		115.00	6	1.0078	115.89								

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/E TUE, OCT 28 2008 17:18
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MINVER

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	25.0	14.1	25.0	0.0	0.9900	29.0	0.8706	47.0			1	6	
90		EST-13L		13.800	E1	17.0	5.9	12.0	-5.0	1.0000	18.0	0.9445	27.0			1	6	
94		LV-13.8L		13.800	L1	19.0	6.4	12.0	-5.0	1.0000	20.0	0.9484	27.0			1	6	
97		FOR13A		13.800	F1	70.4	-30.7	50.0	-50.0	0.9950	77.2	0.9165	111.0			1	6	SYST
106		PANAM13A		13.800	M1	13.5	5.5	9.0	0.0	1.0000	14.6	0.9257	20.7			1	6	
142		CANJ13A		13.800	C1	32.0	4.3	29.0	-29.0	0.9900	32.6	0.9909	69.0			1	6	
151		GUALACA13.8		13.800	G1	18.5	-10.0	10.0	-10.0	1.0221	20.6	0.8797	26.7			1	6	
204		BJOMIN13		13.800	G1	22.5	-13.0	13.0	-13.0	1.0216	25.4	0.8659	28.9			1	6	
205		BAITUN13.8		13.800	G1	35.0	8.4	26.6	-26.6	1.0000	36.0	0.9723	50.6			1	6	
301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9567	10.1	0.8566	13.5			1	6	
302		PASOANCH13.8		13.800	P1	3.6	2.0	2.0	-2.0	0.9548	4.3	0.8742	6.2			1	6	
304		ALGA13.8		13.800	A1	8.1	2.0	2.0	0.0	0.9826	8.5	0.9708	13.5			1	6	
307		CHAN1 A		13.800	G1	63.0	-28.1	50.0	-50.0	1.0000	69.0	0.9133	118.6			1	6	
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.1090	8.1	1.0000	35.3			1	6	
541		PETOABRE		4.2000	1	116.3	1.4	1.4	1.4	1.0085	115.3	0.9999	136.0			1	6	
SUBSYSTEM TOTALS						461.1	-26.8	247.0	-194.3				731.0					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E TUE, OCT 28 2008 17:18
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MINVER

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	15.5	6.8	11.2	6.8	1.0430	16.2	0.9150	23.0			2	7	
171		MIR13H		13.800	M1	15.5	6.8	11.2	6.8	1.0521	16.1	0.9149	23.0			2	7	
171		MIR13H		13.800	M2	15.5	6.8	11.2	6.8	1.0521	16.1	0.9149	23.0			2	7	
SUBSYSTEM TOTALS						46.4	20.5	33.5	20.5				69.1					

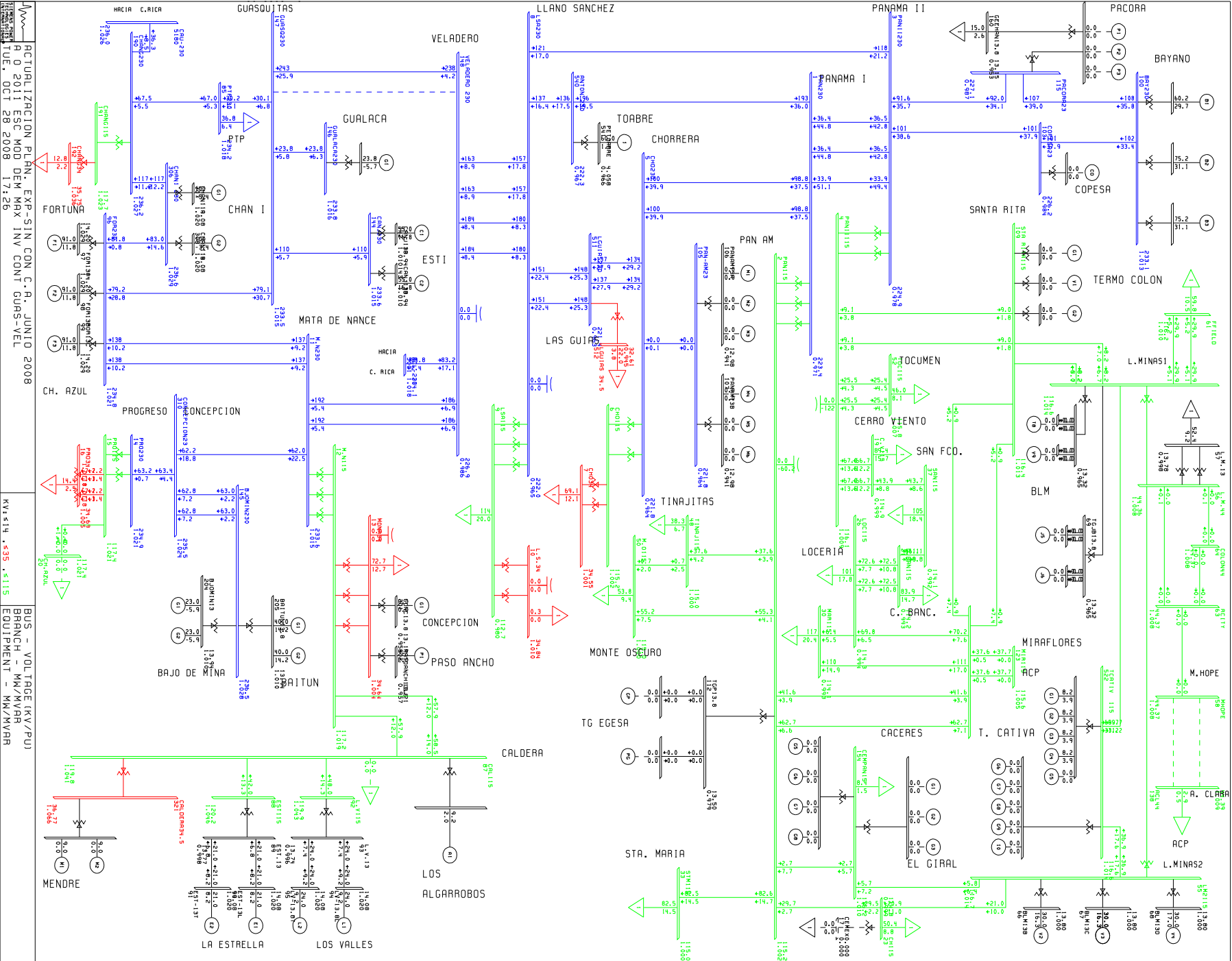
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E TUE, OCT 28 2008 17:19
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MINVER

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	1006.8	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	32.2	224.5	-98.9	0.0	143.3	-97.4	147.3	
5	1344.9	1324.8	0.0	0.0	0.0	0.7	19.4	0.0
C. RICA	239.0	569.4	-236.4	0.0	471.1	19.6	357.5	
6	461.1	435.6	0.0	0.0	0.0	12.8	12.8	25.0
PANAMA	-26.8	76.3	185.0	0.0	439.8	21.0	130.7	
7	46.4	16.9	0.0	0.0	0.0	29.4	0.1	50.0
ACANAL	20.5	3.0	0.0	0.0	0.0	13.4	4.1	
9	0.0	42.9	0.0	0.0	0.0	-42.9	0.0	-75.0
COLON	0.0	7.5	0.0	0.0	1.1	-7.5	1.0	
TOTALS	5656.8	5547.0	0.0	0.0	0.0	0.0	109.8	0.0
	451.0	1703.1	-663.0	0.0	1990.9	0.0	1401.8	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA GUASQUITAS-VELADERO**



ACTUALIZACION PLAN. EXP-STIN CON C.R. JUNIO 2008
 A 0 2011 ESC MOD DEM MAX INV CONT GUAS-YEL
 TUE. OCT 28 2008 17:26

KY:514 .435 .4115

BUS - VOLTAGE (KV/PU)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT GUAS-VEL

TUE, OCT 28 2008 17:25

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	1.0155	233.56	14	PRO230			230.00	6	1.0214	234.93
85	PTP230			230.00	6	1.0184	234.23	96	FOR230			230.00	6	1.0210	234.84
100	BAY230			230.00	6	1.0133	233.07	144	CANJ230			230.00	6	1.0155	233.56
145	BJOMIN230			230.00	6	1.0284	236.53	146	GUALACA230			230.00	6	1.0165	233.78
147	GUASQ230			230.00	6	1.0154	233.53	190	CHANG230			230.00	6	1.0270	236.22
306	CHAN1 230			230.00	6	1.0285	236.56	310	CONCEPCION23230.00			230.00	6	1.0237	235.45
6000	FRONTER			230.00	6	1.0208	234.78								

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	0.9713	223.40	3	PANII230			230.00	6	0.9779	224.92
5	CHO230			230.00	6	0.9643	221.78	8	LSA230			230.00	6	0.9654	222.04
103	COPESA23			230.00	6	0.9836	226.22	105	PAN-AM23			230.00	6	0.9643	221.78
115	PACORA23			230.00	6	0.9873	227.08	148	VELADERO 230230.00			230.00	6	0.9864	226.86
511	LGUIAS230			230.00	6	0.9626	221.40	540	ANTON 230			230.00	6	0.9665	222.30

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT GUAS-VEL

TUE, OCT 28 2008 17:25

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	1.0020	115.23	4	PANII115			115.00	6	1.0093	116.07
6	CHO115			115.00	6	1.0018	115.20	12	M.N115			115.00	6	1.0190	117.19
15	PRO115			115.00	6	1.0205	117.36	18	CAC115			115.00	6	1.0016	115.19
20	CH.AZUL			115.00	6	1.0213	117.44	33	STM115			115.00	6	1.0002	115.02
52	TOC115			115.00	6	1.0067	115.77	54	LM115			115.00	6	1.0137	116.57
55	LM2115			115.00	6	1.0144	116.66	61	FFIELD			115.00	9	1.0101	116.16
87	CAL115			115.00	6	1.0414	119.76	88	EST115			115.00	6	1.0456	120.25
92	L.V115			115.00	6	1.0430	119.94	109	STA RITA115			115.00	6	1.0125	116.44
123	MIR115			115.00	7	1.0050	115.58	154	CEMPAN15			115.00	6	1.0101	116.16
191	CHANG115			115.00	6	1.0235	117.70	522	TCATIVÁ 115			115.00	6	1.0142	116.63

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	0.9802	112.72	19	C.V115			115.00	6	0.9991	114.90
21	C.BAN115			115.00	6	0.9930	114.20	23	CH115			115.00	6	0.9987	114.85
26	LOC115			115.00	6	0.9939	114.30	30	MAR115			115.00	6	0.9925	114.14
37	SAN115			115.00	6	0.9923	114.11	48	TINAJ115			115.00	6	0.9997	114.96
50	M.O115			115.00	6	0.9998	114.98								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT GUAS-VEL

TUE, OCT 28 2008 17:25

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	16.3	25.0	0.0	1.0000	34.1	0.8792	47.0	1	6
67	BLM13C	13.800	V3	30.0	16.3	25.0	0.0	1.0000	34.1	0.8792	47.0	1	6
68	BLM13D	13.800	V4	30.0	17.0	25.0	0.0	1.0000	34.5	0.8701	47.0	1	6
90	EST-13L	13.800	E1	21.0	8.2	12.0	-5.0	1.0200	22.1	0.9310	27.0	1	6
91	EST-13T	13.800	E2	21.0	8.2	12.0	-5.0	1.0200	22.1	0.9310	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	9.2	12.0	-5.0	1.0200	25.2	0.9333	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	9.2	12.0	-5.0	1.0200	25.2	0.9333	27.0	1	6
97	FOR13A	13.800	F1	91.0	11.8	50.0	-50.0	1.0290	89.2	0.9917	111.0	1	6
98	FOR13B	13.800	F2	91.0	11.8	50.0	-50.0	1.0290	89.2	0.9917	111.0	1	6
99	FOR13C	13.800	F3	91.0	11.8	50.0	-50.0	1.0290	89.2	0.9917	111.0	1	6
101	BAY13A	13.800	B1	60.2	29.7	50.0	-25.0	1.0000	67.1	0.8966	96.0	1	6
102	BAY13B	13.800	B2	75.2	31.1	50.0	-25.0	1.0000	81.3	0.9242	96.0	1	6
108	BAY13C	13.800	B3	75.2	31.1	50.0	-25.0	1.0000	81.3	0.9242	100.0	1	6
142	CANJ13A	13.800	C1	55.0	16.8	29.0	-29.0	1.0100	57.0	0.9562	69.0	1	6
143	CANJ13B	13.800	C2	55.0	16.8	29.0	-29.0	1.0100	57.0	0.9562	69.0	1	6
151	GUALACA13.8	13.800	G1	23.8	-5.7	10.0	-10.0	1.0100	24.2	0.9727	26.7	1	6
204	BJOMIN13	13.800	G1	23.0	-5.9	13.0	-13.0	1.0100	23.5	0.9682	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-5.9	13.0	-13.0	1.0100	23.5	0.9682	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	14.2	26.6	-26.6	1.0100	42.0	0.9427	50.6	1	6
205	BAITUN13.8	13.800	G2	40.0	14.2	26.6	-26.6	1.0100	42.0	0.9427	50.6	1	6
302	PASOANCH13.8	13.800	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	9.2	2.0	2.0	0.0	0.9930	9.5	0.9772	13.5	1	6
307	CHAN1 A	13.800	G1	100.0	-3.4	50.0	-50.0	1.0200	98.1	0.9994	118.6	1	6
308	CHAN1 B	13.800	G2	100.0	-3.4	50.0	-50.0	1.0200	98.1	0.9994	118.6	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1186	8.0	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1186	8.0	1.0000	35.3	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9014	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9014	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9014	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	3.9	6.6	-6.6	0.9900	9.2	0.9014	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9662	62.1	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1248.0	270.5	701.9	-519.1				1705.0		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E TUE, OCT 28 2008 17:25
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT GUAS-VEL

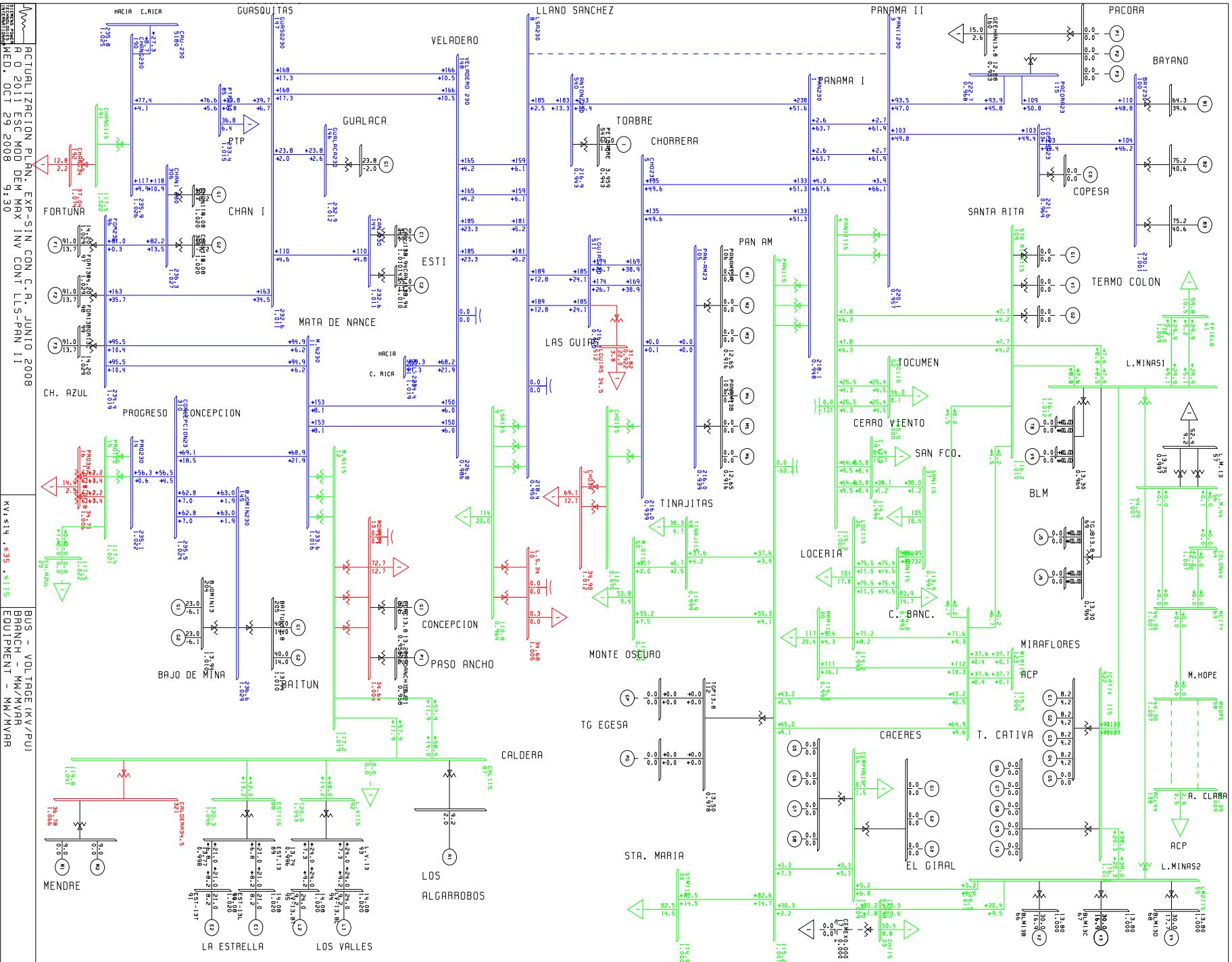
AREA 7 [ACANAL] MACHINE SUMMARY:																		
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	5.5	15.0	0.0	1.0100	35.1	0.9877	44.1					2	7	
130	MIR13F	13.800	G5	17.1	0.3	8.0	0.0	1.0100	16.9	0.9999	27.7					2	7	
140	GAT6A	6.9000	G1	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1					2	7	
140	GAT6A	6.9000	G2	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1					2	7	
140	GAT6A	6.9000	G3	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1					2	7	
141	GAT6B	6.9000	G4	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9827	5.6					2	7	
141	GAT6B	6.9000	G5	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9827	6.2					2	7	
141	GAT6B	6.9000	G6	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9827	6.2					2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0239	17.9	0.9281	23.0					2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0329	17.7	0.9281	23.0					2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0329	17.7	0.9281	23.0					2	7	
SUBSYSTEM TOTALS				120.5	24.2	71.5	5.5						171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT GUAS-VEL

TUE, OCT 28 2008 17:26
 AREA TOTALS
 IN MW/MVAR

X-- AREA	--X GENERATION	FROM 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	1006.8	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	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	0.0	20.1	0.0
C.RICA	264.5	569.4	-236.8	0.0	468.2	38.0	362.0	
6	1248.0	1139.0	0.0	0.0	0.0	37.2	71.8	25.0
PANAMA	270.5	199.5	-182.5	0.0	448.2	34.5	667.1	
7	120.5	44.2	0.0	0.0	0.0	75.1	1.2	50.0
ACANAL	24.2	7.7	0.0	0.0	0.0	-1.0	17.4	
9	0.0	112.2	0.0	0.0	0.0	-112.3	0.1	-75.0
COLON	0.0	19.7	0.0	0.0	1.1	-25.6	7.1	
TOTALS	6517.8	6347.0	0.0	0.0	0.0	0.0	170.8	0.0
	778.3	1843.2	-1030.7	0.0	1996.3	0.0	1962.2	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA LLANO SÁNCHEZ-PANAMÁ II**



ACTUALIZACION PLAN. EXP-SIN CON C.-R. JUNIO 2008

R A O 2011 ESC MOD DEM MAX INV CONT LLS-PAN II

CH. AZUL

9/30

BUS - VOL TAGE (KV/PV)

BRANCH - MM/MVAR

EQUIPMENT - MM/MVAR

9/30

67	BLM13C	13.800	V3	30.0	16.9	25.0	0.0	1.0000	34.4	0.8709	47.0	1	6
68	BLM13D	13.800	V4	30.0	17.7	25.0	0.0	1.0000	34.8	0.8613	47.0	1	6
90	EST-13L	13.800	E1	21.0	8.2	12.0	-5.0	1.0200	22.1	0.9314	27.0	1	6
91	EST-13T	13.800	E2	21.0	8.2	12.0	-5.0	1.0200	22.1	0.9314	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	9.2	12.0	-5.0	1.0200	25.2	0.9337	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	9.2	12.0	-5.0	1.0200	25.2	0.9337	27.0	1	6
97	FOR13A	13.800	F1	91.0	13.7	50.0	-50.0	1.0290	89.4	0.9889	111.0	1	6
98	FOR13B	13.800	F2	91.0	13.7	50.0	-50.0	1.0290	89.4	0.9889	111.0	1	6
99	FOR13C	13.800	F3	91.0	13.7	50.0	-50.0	1.0290	89.4	0.9889	111.0	1	6
101	BAY13A	13.800	B1	64.3	39.6	50.0	-25.0	1.0000	75.6	0.8514	96.0	1	6
102	BAY13B	13.800	B2	75.2	40.6	50.0	-25.0	1.0000	85.4	0.8796	96.0	1	6
108	BAY13C	13.800	B3	75.2	40.6	50.0	-25.0	1.0000	85.4	0.8796	100.0	1	6
142	CANJ13A	13.800	C1	55.0	17.5	29.0	-29.0	1.0100	57.2	0.9528	69.0	1	6
143	CANJ13B	13.800	C2	55.0	17.5	29.0	-29.0	1.0100	57.2	0.9528	69.0	1	6
151	GUALACA13.8	13.800	G1	23.8	-2.0	10.0	-10.0	1.0100	23.6	0.9967	26.7	1	6
204	BJOMIN13	13.800	G1	23.0	-6.1	13.0	-13.0	1.0100	23.6	0.9669	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-6.1	13.0	-13.0	1.0100	23.6	0.9669	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	14.0	26.6	-26.6	1.0100	42.0	0.9437	50.6	1	6
205	BAITUN13.8	13.800	G2	40.0	14.0	26.6	-26.6	1.0100	42.0	0.9437	50.6	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9575	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9931	9.5	0.9772	13.5	1	6
307	CHANI A	13.800	G1	100.0	-2.2	50.0	-50.0	1.0200	98.1	0.9998	118.6	1	6
308	CHANI B	13.800	G2	100.0	-2.2	50.0	-50.0	1.0200	98.1	0.9998	118.6	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1187	8.0	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1187	8.0	1.0000	35.3	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	4.2	6.6	-6.6	0.9900	9.3	0.8913	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	4.2	6.6	-6.6	0.9900	9.3	0.8913	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	4.2	6.6	-6.6	0.9900	9.3	0.8913	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	4.2	6.6	-6.6	0.9900	9.3	0.8913	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9426	63.7	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1252.2	315.0	701.9	-519.1				1705.0		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E WED, OCT 29 2008 9:17
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT LLS-PAN II

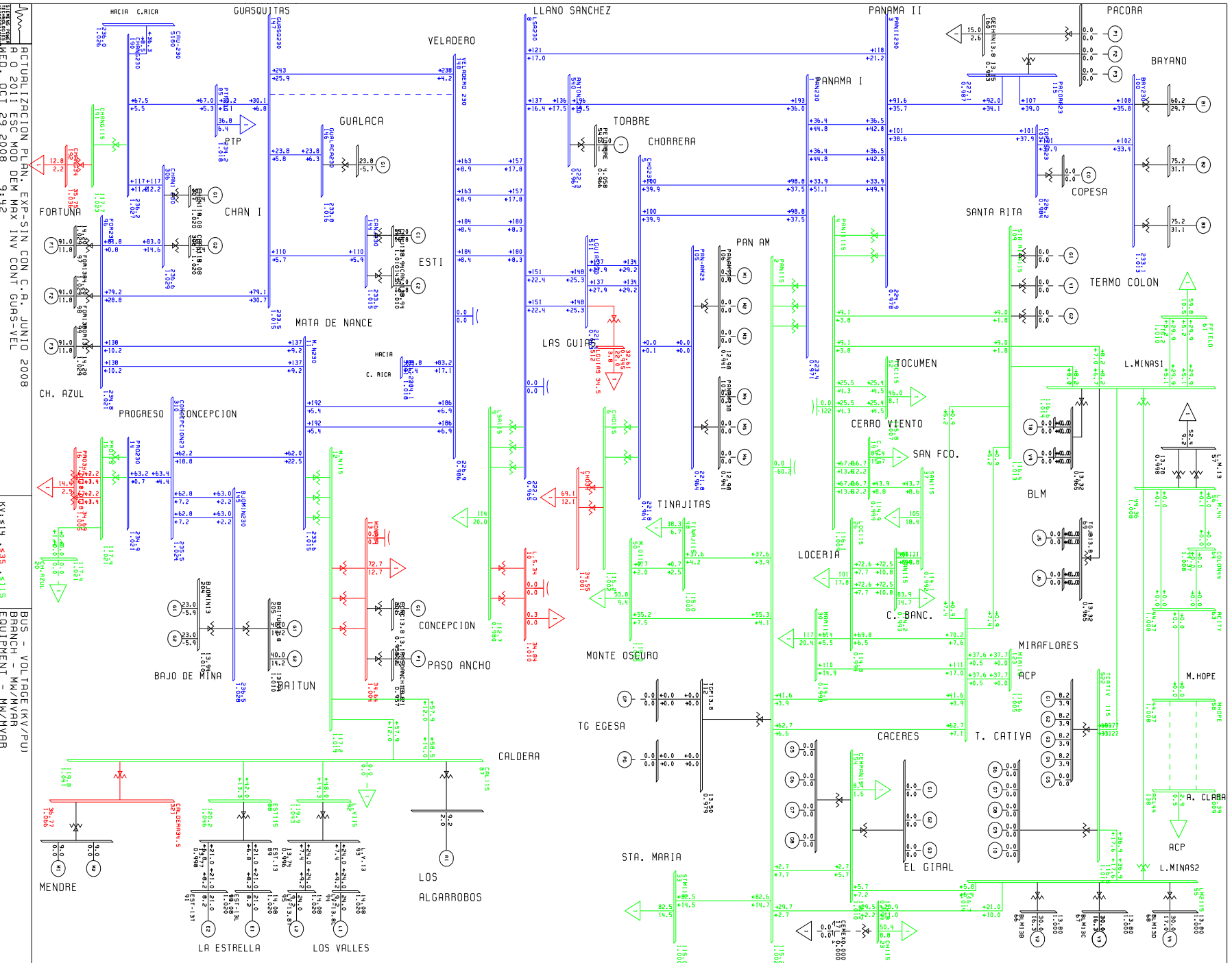
AREA 7 [ACANAL] MACHINE SUMMARY:																		
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	5.6	15.0	0.0	1.0100	35.1	0.9873	44.1	2	7					
130	MIR13F	13.800	G5	17.1	0.4	8.0	0.0	1.0100	16.9	0.9997	27.7	2	7					
140	GAT6A	6.9000	G1	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1	2	7					
140	GAT6A	6.9000	G2	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1	2	7					
140	GAT6A	6.9000	G3	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1	2	7					
141	GAT6B	6.9000	G4	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9830	5.6	2	7					
141	GAT6B	6.9000	G5	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9830	6.2	2	7					
141	GAT6B	6.9000	G6	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9830	6.2	2	7					
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0236	17.9	0.9281	23.0	2	7					
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0327	17.7	0.9281	23.0	2	7					
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0327	17.7	0.9281	23.0	2	7					
SUBSYSTEM TOTALS				120.5	24.4	71.5	5.5				171.3							

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E WED, OCT 29 2008 9:19
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2011 ESC MOD DEM MAX INV CONT LLS-PAN 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	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	1006.8	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	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	0.3	19.8	0.0
C.RICA	263.3	569.4	-236.9	0.0	468.3	38.8	360.4	
6	1252.2	1139.0	0.0	0.0	0.0	36.9	76.2	25.0
PANAMA	315.0	199.5	-180.8	0.0	432.7	33.6	695.4	
7	120.5	44.2	0.0	0.0	0.0	75.1	1.2	50.0
ACANAL	24.4	7.7	0.0	0.0	0.0	-0.8	17.5	
9	0.0	112.2	0.0	0.0	0.0	-112.3	0.1	-75.0
COLON	0.0	19.7	0.0	0.0	1.1	-25.7	7.1	
TOTALS	6522.0	6347.0	0.0	0.0	0.0	0.0	175.0	0.0
	821.9	1843.2	-1029.1	0.0	1981.0	0.0	1988.8	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA FORTUNA-GUASQUITAS**



ACTUALIZATION PLAN - EXP-SIN CON C-R JUNIO 2008
R 0 2011 ESC MOD DEM MAX INV CONT GUAS-VEL
MED. OCT 29 2008 9:42

KV:314 . *35 . *115

BUS - VOLTAGE (KV/PU)
BRANCH - MW/MVAR
EQUIPMENT - MW/MVAR

LA ESTRELLA
LOS VALLES
LOS ALGARROBOS
CALDERA
MONTA OSOIRO
TG EGESA
STA. MARIA

HACIA C. RICA
GUASQUITAS
VELADERO
GUALACA
ESTI
MATA DE NANCE
HACIA C. RICA
PROGRESO
CONCEPCION
BAJO DE TINA
LAITUN
MENDRE

GUASQUITAS
VELADERO
GUALACA
ESTI
MATA DE NANCE
PROGRESO
CONCEPCION
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CONCEPCION
BAJO DE TINA
LAITUN

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	1.0223	235.12	14	PRO230			230.00	6	1.0260	235.98
85	PTP230			230.00	6	1.0096	232.20	96	FOR230			230.00	6	1.0296	236.82
100	BAY230			230.00	6	1.0164	233.78	144	CANJ230			230.00	6	1.0059	231.36
145	BJOMIN230			230.00	6	1.0325	237.47	146	GUALACA230			230.00	6	1.0071	231.63
147	GUASQ230			230.00	6	1.0057	231.31	190	CHANG230			230.00	6	1.0246	235.66
306	CHAN1 230			230.00	6	1.0281	236.47	310	CONCEPCION230			230.00	6	1.0286	236.58
6000	FRONTER			230.00	6	1.0252	235.80								

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	0.9761	224.51	3	PANII230			230.00	6	0.9831	226.10
5	CHO230			230.00	6	0.9699	223.08	8	LSA230			230.00	6	0.9731	223.82
103	COPESA23			230.00	6	0.9884	227.33	105	PAN-AM23			230.00	6	0.9699	223.08
115	PACORA23			230.00	6	0.9919	228.13	148	VELADERO 230			230.00	6	0.9948	228.81
511	LGUIAS230			230.00	6	0.9696	223.00	540	ANTON 230			230.00	6	0.9732	223.84

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	1.0051	115.59	4	PANII115			115.00	6	1.0061	115.70
6	CHO115			115.00	6	1.0078	115.90	12	M.N115			115.00	6	1.0242	117.78
15	PRO115			115.00	6	1.0251	117.88	18	CAC115			115.00	6	1.0047	115.54
20	CH.AZUL			115.00	6	1.0258	117.97	23	CH115			115.00	6	1.0008	115.09
33	STM115			115.00	6	1.0033	115.38	48	TINAJ115			115.00	6	1.0028	115.32
50	M.O115			115.00	6	1.0029	115.34	52	TOC115			115.00	6	1.0034	115.39
54	LM115			115.00	6	1.0144	116.65	55	LM2115			115.00	6	1.0151	116.74
61	FFIELD			115.00	9	1.0108	116.24	87	CAL115			115.00	6	1.0448	120.15
88	EST115			115.00	6	1.0487	120.60	92	L.V115			115.00	6	1.0463	120.33
109	STA RITA115			115.00	6	1.0130	116.50	123	MIR115			115.00	7	1.0079	115.90
154	CEMPAN15			115.00	6	1.0115	116.32	191	CHANG115			115.00	6	1.0210	117.41
522	TCATIVÁ			115.00	6	1.0149	116.71								

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	0.9882	113.64	19	C.V115			115.00	6	0.9976	114.73
21	C.BAN115			115.00	6	0.9953	114.46	26	LOC115			115.00	6	0.9964	114.59
30	MAR115			115.00	6	0.9953	114.46	37	SAN115			115.00	6	0.9942	114.34

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	16.0	25.0	0.0	1.0000	34.0	0.8829	47.0			1	6		
67		BLM13C		13.800	V3	30.0	16.0	25.0	0.0	1.0000	34.0	0.8829	47.0			1	6		
68		BLM13D		13.800	V4	30.0	16.7	25.0	0.0	1.0000	34.3	0.8740	47.0			1	6		
90		EST-13L		13.800	E1	21.0	7.3	12.0	-5.0	1.0200	21.8	0.9443	27.0			1	6		
91		EST-13T		13.800	E2	21.0	7.3	12.0	-5.0	1.0200	21.8	0.9443	27.0			1	6		
94		LV-13.8L		13.800	L1	24.0	8.2	12.0	-5.0	1.0200	24.9	0.9457	27.0			1	6		
95		LV-13.8T		13.800	L2	24.0	8.2	12.0	-5.0	1.0200	24.9	0.9457	27.0			1	6		
97		FOR13A		13.800	F1	91.0	3.7	50.0	-50.0	1.0290	88.5	0.9992	111.0			1	6		
98		FOR13B		13.800	F2	91.0	3.7	50.0	-50.0	1.0290	88.5	0.9992	111.0			1	6		
99		FOR13C		13.800	F3	91.0	3.7	50.0	-50.0	1.0290	88.5	0.9992	111.0			1	6		
101		BAY13A		13.800	B1	59.0	27.3	50.0	-25.0	1.0000	65.0	0.9075	96.0			1	6	SYST	
102		BAY13B		13.800	B2	75.2	28.8	50.0	-25.0	1.0000	80.5	0.9340	96.0			1	6		
108		BAY13C		13.800	B3	75.2	28.8	50.0	-25.0	1.0000	80.5	0.9340	100.0			1	6		
142		CANJ13A		13.800	C1	55.0	18.5	29.0	-29.0	1.0100	57.4	0.9481	69.0			1	6		
143		CANJ13B		13.800	C2	55.0	18.5	29.0	-29.0	1.0100	57.4	0.9481	69.0			1	6		
151		GUALACA13.8		13.800	G1	23.8	3.0	10.0	-10.0	1.0100	23.8	0.9921	26.7			1	6		
204		BJOMIN13		13.800	G1	23.0	-7.4	13.0	-13.0	1.0100	23.9	0.9517	28.9			1	6		
204		BJOMIN13		13.800	G2	23.0	-7.4	13.0	-13.0	1.0100	23.9	0.9517	28.9			1	6		
205		BAITUN13.8		13.800	G1	40.0	12.6	26.6	-26.6	1.0100	41.5	0.9537	50.6			1	6		
205		BAITUN13.8		13.800	G2	40.0	12.6	26.6	-26.6	1.0100	41.5	0.9537	50.6			1	6		
302		PASOANCH13.8		13.800	P1	4.7	2.0	2.0	-2.0	0.9624	5.4	0.9216	6.2			1	6		
304		ALGA13.8		13.800	A1	9.2	2.0	2.0	0.0	0.9962	9.5	0.9772	13.5			1	6		
307		CHAN1 A		13.800	G1	100.0	-3.0	50.0	-50.0	1.0200	98.1	0.9995	118.6			1	6		
308		CHAN1 B		13.800	G2	100.0	-3.0	50.0	-50.0	1.0200	98.1	0.9995	118.6			1	6		
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.1223	8.0	1.0000	35.3			1	6		
317		MENDRE13.8		13.800	M2	9.0	0.0	0.0	0.0	1.1223	8.0	1.0000	35.3			1	6		
523		TCATIVÁ 13A		13.800	G1	8.2	3.8	6.6	-6.6	0.9900	9.1	0.9058	10.9			1	6		
523		TCATIVÁ 13A		13.800	G2	8.2	3.8	6.6	-6.6	0.9900	9.1	0.9058	10.9			1	6		
523		TCATIVÁ 13A		13.800	G3	8.2	3.8	6.6	-6.6	0.9900	9.1	0.9058	10.9			1	6		
523		TCATIVÁ 13A		13.800	G4	8.2	3.8	6.6	-6.6	0.9900	9.1	0.9058	10.9			1	6		
541		PETOABRE		4.2000	1	60.0	1.4	1.4	1.4	0.9730	61.7	0.9997	136.0			1	6		
SUBSYSTEM TOTALS						1246.9	240.7	701.9	-519.1				1705.0						

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	4.9	15.0	0.0	1.0100	35.0	0.9902	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0109	16.9	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	0.0	2.0	-2.0	1.0100	1.9	1.0000	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	0.0	2.0	-2.0	1.0100	1.9	1.0000	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	0.0	2.0	-2.0	1.0100	1.9	1.0000	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.8	3.0	-3.0	1.0100	3.9	0.9814	5.6			2	7	

141 GAT6B	6.9000 G5	3.9	-0.8	3.0	-3.0	1.0100	3.9	0.9814	6.2	2	7				
141 GAT6B	6.9000 G6	3.9	-0.8	3.0	-3.0	1.0100	3.9	0.9814	6.2	2	7				
170 MIR13G	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 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										120.5	23.1	71.5	5.5		171.3

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E WED, OCT 29 2008 9:40
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2011 ESC MOD DEM MAX INV CONT FOR-GUAS IN MW/MVAR

X-- AREA	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	1006.8	985.5	0.0	0.0	0.0	0.0	21.4	0.0

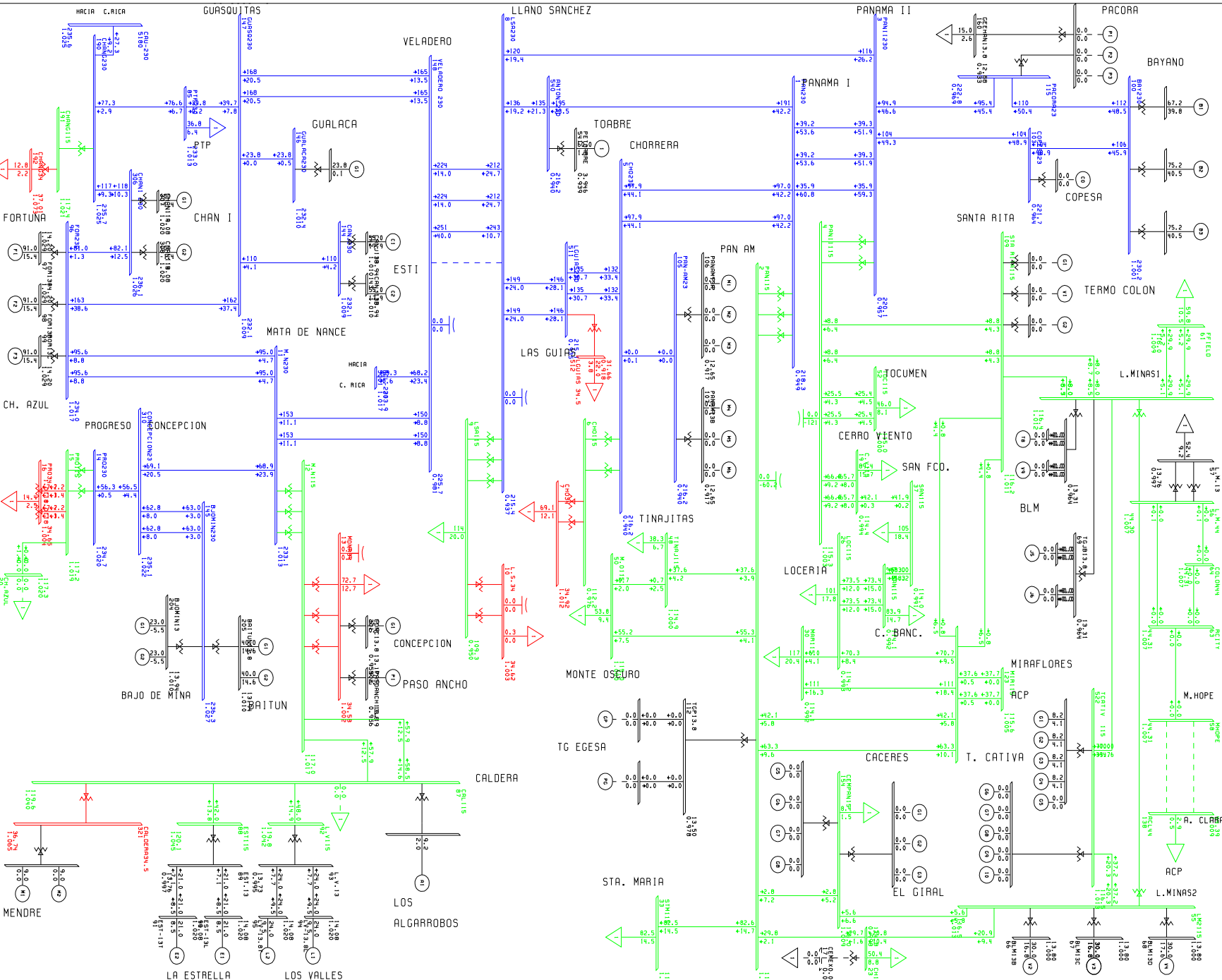
HONDURAS	55.7	290.6	-188.3	0.0	302.8	-5.2	261.6	
4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	32.8	224.5	-98.9	0.0	143.2	-97.0	147.4	
5	1344.9	1324.8	0.0	0.0	0.0	0.4	19.7	0.0
C.RICA	260.1	569.4	-237.1	0.0	468.8	37.0	359.5	
6	1246.9	1139.0	0.0	0.0	0.0	36.8	71.1	25.0
PANAMA	240.7	199.5	-182.1	0.0	465.0	36.7	651.5	
7	120.5	44.2	0.0	0.0	0.0	75.1	1.2	50.0
ACANAL	23.1	7.7	0.0	0.0	0.0	-2.0	17.4	
9	0.0	112.2	0.0	0.0	0.0	-112.3	0.1	-75.0
COLON	0.0	19.7	0.0	0.0	1.1	-25.7	7.2	
TOTALS	6516.6	6347.0	0.0	0.0	0.0	0.0	169.6	0.0
	742.9	1843.2	-1030.6	0.0	2013.7	0.0	1943.9	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA VELADERO-LLANO SÁNCHEZ**

ACTUALIZACION PLAN. EXP-STIN CON C.R. JUNIO 2008
 R.O 2011 ESC MOD DEM MAX INV CONT VEL-LLS
 MED. OCT 29 2008 10:01

KV:514 . 335 . 5115

BUS - VOLTAGE (KV/PU)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT VEL-LLS

WED, OCT 29 2008 9:59

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	1.0134	233.07	14	PRO230			230.00	6	1.0203	234.68
85	PTP230			230.00	6	1.0131	233.02	96	FOR230			230.00	6	1.0172	233.96
100	BAY230			230.00	6	1.0007	230.16	144	CANJ230			230.00	6	1.0091	232.10
145	BJOMIN230			230.00	6	1.0272	236.26	146	GUALACA230			230.00	6	1.0102	232.35
147	GUASQ230			230.00	6	1.0090	232.06	190	CHANG230			230.00	6	1.0246	235.66
306	CHAN1	230		230.00	6	1.0265	236.09	310	CONCEPCION23	230.00		6	1.0223	235.13	
6000	FRONTER			230.00	6	1.0198	234.54								

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	0.9489	218.25	3	PANII230			230.00	6	0.9570	220.10
5	CHO230			230.00	6	0.9399	216.18	8	LSA230			230.00	6	0.9367	215.44
103	COPESA23			230.00	6	0.9639	221.69	105	PAN-AM23			230.00	6	0.9399	216.18
115	PACORA23			230.00	6	0.9686	222.78	148	VELADERO	230	230.00	6	0.9813	225.69	
511	LGUIAS230			230.00	6	0.9352	215.10	540	ANTON	230	230.00	6	0.9398	216.15	

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT VEL-LLS

WED, OCT 29 2008 10:00

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	1.0018	115.21	4	PANII115			115.00	6	1.0030	115.35
12	M.N115			115.00	6	1.0174	117.00	15	PRO115			115.00	6	1.0194	117.23
18	CAC115			115.00	6	1.0014	115.16	20	CH.AZUL			115.00	6	1.0201	117.32
52	TOC115			115.00	6	1.0004	115.04	54	LM1115			115.00	6	1.0124	116.42
55	LM2115			115.00	6	1.0132	116.51	61	FFIELD			115.00	9	1.0088	116.01
87	CAL115			115.00	6	1.0403	119.63	88	EST115			115.00	6	1.0447	120.14
92	L.V115			115.00	6	1.0420	119.83	109	STA RITA115			115.00	6	1.0108	116.24
123	MIR115			115.00	7	1.0048	115.55	154	CEMPAN15			115.00	6	1.0091	116.05
191	CHANG115			115.00	6	1.0210	117.42	522	TCATIVÁ	115	115.00	6	1.0129	116.48	

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	0.9758	112.22	9	LSA115			115.00	6	0.9503	109.29
19	C.V115			115.00	6	0.9945	114.37	21	C.BAN115			115.00	6	0.9921	114.09
23	CH115			115.00	6	0.9980	114.77	26	LOC115			115.00	6	0.9931	114.21
30	MAR115			115.00	6	0.9920	114.08	33	STM115			115.00	6	1.0000	115.00
37	SAN115			115.00	6	0.9910	113.96	48	TINAJ115			115.00	6	0.9995	114.94
50	M.O115			115.00	6	0.9996	114.96								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT VEL-LLS

WED, OCT 29 2008 9:59

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	16.8	25.0	0.0	1.0000	34.4	0.8724	47.0	1	6
67	BLM13C	13.800	V3	30.0	16.8	25.0	0.0	1.0000	34.4	0.8724	47.0	1	6
68	BLM13D	13.800	V4	30.0	17.6	25.0	0.0	1.0000	34.8	0.8628	47.0	1	6
90	EST-13L	13.800	E1	21.0	8.5	12.0	-5.0	1.0200	22.2	0.9266	27.0	1	6
91	EST-13T	13.800	E2	21.0	8.5	12.0	-5.0	1.0200	22.2	0.9266	27.0	1	6
94	LV-13.8L	13.800	L1	24.0	9.5	12.0	-5.0	1.0200	25.3	0.9292	27.0	1	6
95	LV-13.8T	13.800	L2	24.0	9.5	12.0	-5.0	1.0200	25.3	0.9292	27.0	1	6
97	FOR13A	13.800	F1	91.0	15.4	50.0	-50.0	1.0290	89.7	0.9860	111.0	1	6
98	FOR13B	13.800	F2	91.0	15.4	50.0	-50.0	1.0290	89.7	0.9860	111.0	1	6
99	FOR13C	13.800	F3	91.0	15.4	50.0	-50.0	1.0290	89.7	0.9860	111.0	1	6
101	BAY13A	13.800	B1	67.2	39.8	50.0	-25.0	1.0000	78.1	0.8606	96.0	1	6
102	BAY13B	13.800	B2	75.2	40.5	50.0	-25.0	1.0000	85.4	0.8802	96.0	1	6
108	BAY13C	13.800	B3	75.2	40.5	50.0	-25.0	1.0000	85.4	0.8802	100.0	1	6
142	CANJ13A	13.800	C1	55.0	17.9	29.0	-29.0	1.0100	57.3	0.9509	69.0	1	6
143	CANJ13B	13.800	C2	55.0	17.9	29.0	-29.0	1.0100	57.3	0.9509	69.0	1	6
151	GUALACA13.8	13.800	G1	23.8	0.1	10.0	-10.0	1.0100	23.6	1.0000	26.7	1	6
204	BJOMIN13	13.800	G1	23.0	-5.5	13.0	-13.0	1.0100	23.4	0.9724	28.9	1	6
204	BJOMIN13	13.800	G2	23.0	-5.5	13.0	-13.0	1.0100	23.4	0.9724	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	14.6	26.6	-26.6	1.0100	42.2	0.9394	50.6	1	6
205	BAITUN13.8	13.800	G2	40.0	14.6	26.6	-26.6	1.0100	42.2	0.9394	50.6	1	6
302	PASOANCH13.8	13.800	P1	4.7	2.0	2.0	-2.0	0.9558	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9919	9.5	0.9772	13.5	1	6
307	CHAN1 A	13.800	G1	100.0	-1.4	50.0	-50.0	1.0200	98.0	0.9999	118.6	1	6
308	CHAN1 B	13.800	G2	100.0	-1.4	50.0	-50.0	1.0200	98.0	0.9999	118.6	1	6
317	MENDRE13.8	13.800	M1	9.0	0.0	0.0	0.0	1.1174	8.1	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.0	0.0	0.0	0.0	1.1174	8.1	1.0000	35.3	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	4.1	6.6	-6.6	0.9900	9.3	0.8932	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	4.1	6.6	-6.6	0.9900	9.3	0.8932	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	4.1	6.6	-6.6	0.9900	9.3	0.8932	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	4.1	6.6	-6.6	0.9900	9.3	0.8932	10.9	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9394	63.9	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1255.1	327.5	701.9	-519.1				1705.0		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E WED, OCT 29 2008 9:59
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT VEL-LLS

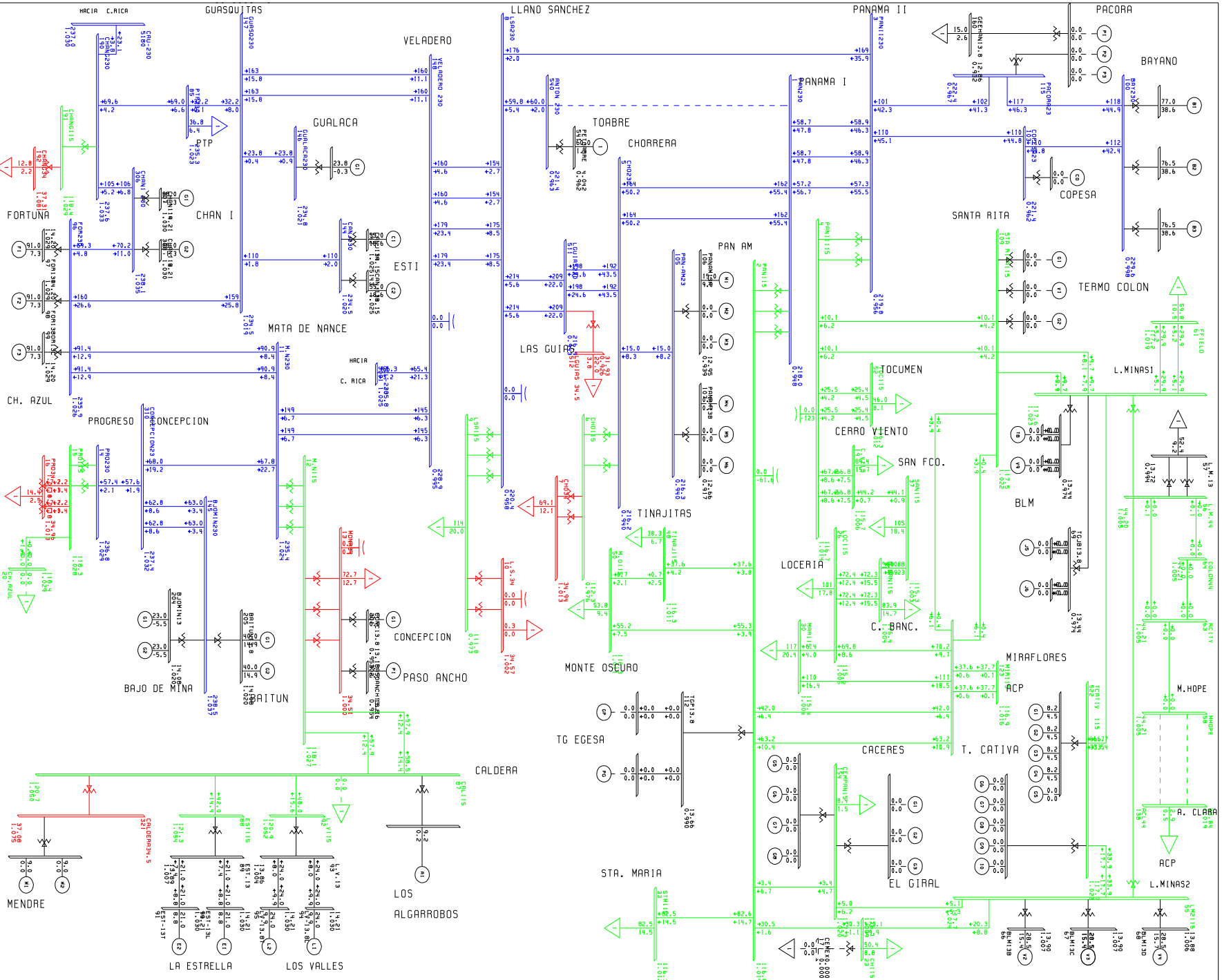
AREA 7 [ACANAL] MACHINE SUMMARY:																		
BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	5.6	15.0	0.0	1.0100	35.1	0.9876	44.1	2	7					
130	MIR13F	13.800	G5	17.1	0.3	8.0	0.0	1.0100	16.9	0.9998	27.7	2	7					
140	GAT6A	6.9000	G1	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1	2	7					
140	GAT6A	6.9000	G2	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1	2	7					
140	GAT6A	6.9000	G3	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9999	4.1	2	7					
141	GAT6B	6.9000	G4	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9828	5.6	2	7					
141	GAT6B	6.9000	G5	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9828	6.2	2	7					
141	GAT6B	6.9000	G6	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9828	6.2	2	7					
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0238	17.9	0.9281	23.0	2	7					
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0328	17.7	0.9281	23.0	2	7					
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0328	17.7	0.9281	23.0	2	7					
SUBSYSTEM TOTALS				120.5	24.3	71.5	5.5				171.3							

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT VEL-LLS

WED, OCT 29 2008 10:00
 AREA TOTALS
 IN MW/MVAR

X-- AREA	--X 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	1006.8	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	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	0.3	19.8	0.0
C.RICA	266.1	569.4	-236.8	0.0	468.0	41.0	360.5	
6	1255.1	1139.0	0.0	0.0	0.0	36.9	79.1	25.0
PANAMA	327.5	199.5	-180.9	0.0	434.0	31.4	711.5	
7	120.5	44.2	0.0	0.0	0.0	75.1	1.2	50.0
ACANAL	24.3	7.7	0.0	0.0	0.0	-0.9	17.4	
9	0.0	112.2	0.0	0.0	0.0	-112.3	0.1	-75.0
COLON	0.0	19.7	0.0	0.0	1.1	-25.7	7.1	
TOTALS	6524.8	6347.0	0.0	0.0	0.0	0.0	177.8	0.0
	837.1	1843.2	-1029.1	0.0	1982.0	0.0	2005.0	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2011 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA ANTÓN-PANAMÁ**



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	1.0235	235.41	14	PRO230			230.00	6	1.0294	236.75
85	PTP230			230.00	6	1.0231	235.31	96	FOR230			230.00	6	1.0258	235.93
144	CANJ230			230.00	6	1.0196	234.51	145	BJOMIN230			230.00	6	1.0370	238.52
146	GUALACA230			230.00	6	1.0207	234.75	147	GUASQ230			230.00	6	1.0194	234.47
190	CHANG230			230.00	6	1.0329	237.58	306	CHAN1 230			230.00	6	1.0351	238.08
310	CONCEPCION230			230.00	6	1.0320	237.36	6000	FRONTER			230.00	6	1.0285	236.56

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	0.9480	218.05	3	PANII230			230.00	6	0.9559	219.85
5	CHO230			230.00	6	0.9402	216.25	8	LSA230			230.00	6	0.9581	220.37
100	BAY230			230.00	6	0.9981	229.55	103	COPESA23			230.00	6	0.9625	221.37
105	PAN-AM23			230.00	6	0.9402	216.26	115	PACORA23			230.00	6	0.9670	222.42
148	VELADERO 230			230.00	6	0.9952	228.91	511	LGUIAS230			230.00	6	0.9431	216.91
540	ANTON 230			230.00	6	0.9626	221.40								

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	1.0135	116.56	4	PANII115			115.00	6	1.0144	116.65
12	M.N115			115.00	6	1.0274	118.15	15	PRO115			115.00	6	1.0284	118.27
18	CAC115			115.00	6	1.0131	116.51	19	C.V115			115.00	6	1.0060	115.69
20	CH.AZUL			115.00	6	1.0292	118.36	21	C.BAN115			115.00	6	1.0039	115.44
23	CH115			115.00	6	1.0093	116.07	26	LOC115			115.00	6	1.0049	115.57
30	MAR115			115.00	6	1.0038	115.44	33	STM115			115.00	6	1.0117	116.35
37	SAN115			115.00	6	1.0027	115.32	48	TINAJ115			115.00	6	1.0113	116.29
50	M.O115			115.00	6	1.0114	116.31	52	TOC115			115.00	6	1.0117	116.35
54	LM1115			115.00	6	1.0229	117.63	55	LM2115			115.00	6	1.0237	117.72
61	FFIELD			115.00	9	1.0194	117.23	87	CAL115			115.00	6	1.0499	120.74
88	EST115			115.00	6	1.0544	121.25	92	L.V115			115.00	6	1.0516	120.93
109	STA RITA115			115.00	6	1.0216	117.48	123	MIR115			115.00	7	1.0164	116.88
154	CEMPAN15			115.00	6	1.0200	117.30	191	CHANG115			115.00	6	1.0294	118.38
522	TCATIVÁ 115			115.00	6	1.0234	117.69								

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	0.9761	112.25	9	LSA115			115.00	6	0.9726	111.85

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ

WED, OCT 29 2008 10:56

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	28.5	15.4	25.0	0.0	1.0070	32.2	0.8792	47.0			1	6		
67		BLM13C		13.800	V3	28.5	15.4	25.0	0.0	1.0070	32.2	0.8792	47.0			1	6		
68		BLM13D		13.800	V4	28.5	15.7	25.0	0.0	1.0060	32.3	0.8763	47.0			1	6		
90		EST-13L		13.800	E1	21.0	8.8	12.0	-5.0	1.0300	22.1	0.9219	27.0			1	6		
91		EST-13T		13.800	E2	21.0	8.8	12.0	-5.0	1.0300	22.1	0.9219	27.0			1	6		
94		LV-13.8L		13.800	L1	24.0	9.9	12.0	-5.0	1.0300	25.2	0.9249	27.0			1	6		
95		LV-13.8T		13.800	L2	24.0	9.9	12.0	-5.0	1.0300	25.2	0.9249	27.0			1	6		
97		FOR13A		13.800	F1	91.0	7.3	50.0	-50.0	1.0290	88.7	0.9968	111.0			1	6		
98		FOR13B		13.800	F2	91.0	7.3	50.0	-50.0	1.0290	88.7	0.9968	111.0			1	6		
99		FOR13C		13.800	F3	91.0	7.3	50.0	-50.0	1.0290	88.7	0.9968	111.0			1	6		
101		BAY13A		13.800	B1	77.0	38.6	50.0	-25.0	0.9950	86.6	0.8939	96.0			1	6	SYST	
102		BAY13B		13.800	B2	76.5	38.6	50.0	-25.0	0.9950	86.1	0.8928	96.0			1	6		
106		PANAM13A		13.800	M1	15.0	9.0	9.0	0.0	0.9386	18.6	0.8575	20.7			1	6		
108		BAY13C		13.800	B3	76.5	38.6	50.0	-25.0	0.9950	86.1	0.8928	100.0			1	6		
142		CANJ13A		13.800	C1	55.0	18.6	29.0	-29.0	1.0250	56.6	0.9472	69.0			1	6		
143		CANJ13B		13.800	C2	55.0	18.6	29.0	-29.0	1.0250	56.6	0.9472	69.0			1	6		
151		GUALACA13.8		13.800	G1	23.8	-0.3	10.0	-10.0	1.0200	23.3	0.9999	26.7			1	6		
204		BJOMIN13		13.800	G1	23.0	-5.5	13.0	-13.0	1.0200	23.2	0.9724	28.9			1	6		
204		BJOMIN13		13.800	G2	23.0	-5.5	13.0	-13.0	1.0200	23.2	0.9724	28.9			1	6		
205		BAITUN13.8		13.800	G1	40.0	14.9	26.6	-26.6	1.0200	41.9	0.9368	50.6			1	6		
205		BAITUN13.8		13.800	G2	40.0	14.9	26.6	-26.6	1.0200	41.9	0.9368	50.6			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	9.2	0.2	2.0	0.0	1.0000	9.2	0.9997	13.5			1	6		
307		CHAN1 A		13.800	G1	88.0	-1.3	50.0	-50.0	1.0300	85.4	0.9999	118.6			1	6		
308		CHAN1 B		13.800	G2	88.0	-1.3	50.0	-50.0	1.0300	85.4	0.9999	118.6			1	6		
317		MENDRE13.8		13.800	M1	9.0	0.0	0.0	0.0	1.1278	8.0	1.0000	35.3			1	6		
317		MENDRE13.8		13.800	M2	9.0	0.0	0.0	0.0	1.1278	8.0	1.0000	35.3			1	6		
523		TCATIVÁ 13A		13.800	G1	8.2	4.5	6.6	-6.6	1.0020	9.3	0.8776	10.9			1	6		
523		TCATIVÁ 13A		13.800	G2	8.2	4.5	6.6	-6.6	1.0020	9.3	0.8776	10.9			1	6		
523		TCATIVÁ 13A		13.800	G3	8.2	4.5	6.6	-6.6	1.0020	9.3	0.8776	10.9			1	6		
523		TCATIVÁ 13A		13.800	G4	8.2	4.5	6.6	-6.6	1.0020	9.3	0.8776	10.9			1	6		
541		PETOABRE		4.2000	1	60.0	1.4	1.4	1.4	0.9623	62.4	0.9997	136.0			1	6		
SUBSYSTEM TOTALS						1254.0	305.4	710.9	-519.1					1725.7					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2011 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ

WED, OCT 29 2008 10:56

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	5.4	15.0	0.0	1.0200	34.7	0.9885	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0203	16.8	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	0.0	2.0	-2.0	1.0200	1.9	1.0000	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	0.0	2.0	-2.0	1.0200	1.9	1.0000	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	0.0	2.0	-2.0	1.0200	1.9	1.0000	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.8	3.0	-3.0	1.0200	3.9	0.9812	5.6			2	7	

141 GAT6B	6.9000 G5	3.9	-0.8	3.0	-3.0	1.0200	3.9	0.9812	6.2	2	7				
141 GAT6B	6.9000 G6	3.9	-0.8	3.0	-3.0	1.0200	3.9	0.9812	6.2	2	7				
170 MIR13G	13.800 M1	17.0	6.8	11.2	6.8	1.0346	17.7	0.9281	23.0	2	7				
171 MIR13H	13.800 M1	17.0	6.8	11.2	6.8	1.0436	17.6	0.9281	23.0	2	7				
171 MIR13H	13.800 M2	17.0	6.8	11.2	6.8	1.0436	17.6	0.9281	23.0	2	7				
SUBSYSTEM TOTALS										120.5	23.6	71.5	5.5		171.3

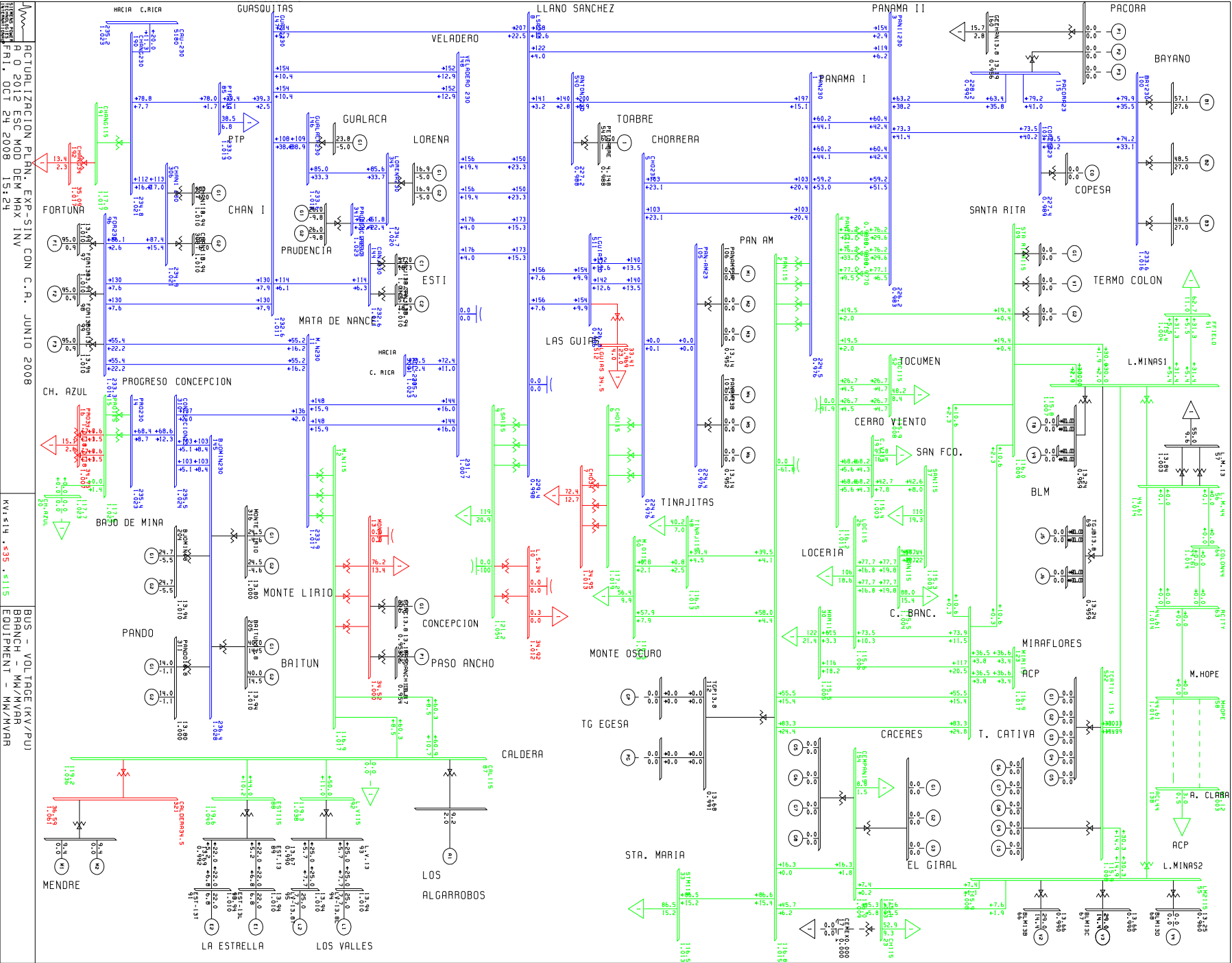
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E WED, OCT 29 2008 10:57
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2011 ESC MOD DEM MAX INV CONT ANTON-PANAMÁ IN MW/MVAR

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		1006.8	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	0.4	19.7	0.0
C.RICA	250.9	569.4	-237.4	0.0	469.6	29.2	359.3	
6	1254.0	1139.0	0.0	0.0	0.0	36.8	78.2	25.0
PANAMA	305.4	199.5	-185.1	0.0	448.1	43.9	695.1	
7	120.5	44.2	0.0	0.0	0.0	75.1	1.2	50.0
ACANAL	23.6	7.7	0.0	0.0	0.0	-1.3	17.1	
9	0.0	112.2	0.0	0.0	0.0	-112.3	0.1	-75.0
COLON	0.0	19.7	0.0	0.0	1.1	-25.7	7.1	
TOTALS	6523.8	6347.0	0.0	0.0	0.0	0.0	176.8	0.0
	798.7	1843.2	-1034.0	0.0	1997.6	0.0	1987.0	

PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008

AÑO 2012 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO



ACTUALIZACION PLAN. EXP-SIN CON C.R. JUNIO 2008
 A 0 2012 ESC MOD DEM MAX INV
 FRI. OCT 24 2008 15:24

KVS14 .K35 .L115

BUS - VOLTAGE (KV/PU)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

66	BLM13B	13.800	V2	29.0	14.4	25.0	0.0	0.9900	32.7	0.8953	47.0	1	6
67	BLM13C	13.800	V3	29.0	14.4	25.0	0.0	0.9900	32.7	0.8953	47.0	1	6
90	EST-13L	13.800	E1	22.0	6.8	12.0	-5.0	1.0100	22.8	0.9557	27.0	1	6
91	EST-13T	13.800	E2	22.0	6.8	12.0	-5.0	1.0100	22.8	0.9557	27.0	1	6
94	LV-13.8L	13.800	L1	25.0	7.7	12.0	-5.0	1.0100	25.9	0.9558	27.0	1	6
95	LV-13.8T	13.800	L2	25.0	7.7	12.0	-5.0	1.0100	25.9	0.9558	27.0	1	6
97	FOR13A	13.800	F1	95.0	0.9	50.0	-50.0	1.0100	94.1	1.0000	111.0	1	6
98	FOR13B	13.800	F2	95.0	0.9	50.0	-50.0	1.0100	94.1	1.0000	111.0	1	6
99	FOR13C	13.800	F3	95.0	0.9	50.0	-50.0	1.0100	94.1	1.0000	111.0	1	6
101	BAY13A	13.800	B1	57.1	27.6	50.0	-25.0	1.0000	63.5	0.9004	96.0	1	6
102	BAY13B	13.800	B2	48.5	27.0	50.0	-25.0	1.0000	55.5	0.8736	96.0	1	6
108	BAY13C	13.800	B3	48.5	27.0	550.0	-25.0	1.0000	55.5	0.8736	100.0	1	6
142	CANJ13A	13.800	C1	57.0	18.3	29.0	-29.0	1.0100	59.3	0.9521	69.0	1	6
143	CANJ13B	13.800	C2	57.0	18.3	29.0	-29.0	1.0100	59.3	0.9521	69.0	1	6
151	GUALACA13.8	13.800	G1	23.8	-5.0	10.0	-10.0	1.0100	24.1	0.9785	26.7	1	6
204	BJOMIN13	13.800	G1	24.7	-5.5	13.0	-13.0	1.0100	25.1	0.9757	28.9	1	6
204	BJOMIN13	13.800	G2	24.7	-5.5	13.0	-13.0	1.0100	25.1	0.9757	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	14.5	26.6	-26.6	1.0100	42.1	0.9405	50.6	1	6
205	BAITUN13.8	13.800	G2	40.0	14.5	26.6	-26.6	1.0100	42.1	0.9405	50.6	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9541	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9882	9.5	0.9772	13.5	1	6
307	CHANI A	13.800	G1	100.0	-6.0	50.0	-50.0	1.0100	99.2	0.9982	118.6	1	6
308	CHANI B	13.800	G2	100.0	-6.0	50.0	-50.0	1.0100	99.2	0.9982	118.6	1	6
311	PANDO13.8	13.800	G1	14.0	-1.1	10.0	-5.0	1.0000	14.0	0.9970	19.9	1	6
311	PANDO13.8	13.800	G2	14.0	-1.1	10.0	-5.0	1.0000	14.0	0.9970	19.9	1	6
316	MONTE LIRIO	13.800	G1	24.5	-4.6	12.0	-5.0	1.0000	24.9	0.9825	27.0	1	6
316	MONTE LIRIO	13.800	G2	24.5	-4.6	12.0	-5.0	1.0000	24.9	0.9825	27.0	1	6
317	MENDRE13.8	13.800	M1	9.4	0.0	0.0	0.0	1.1129	8.4	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.4	0.0	0.0	0.0	1.1129	8.4	1.0000	35.3	1	6
342	LORENA13.8	13.800	G1	16.9	-5.0	10.5	-5.0	1.0090	17.5	0.9589	19.9	1	6
342	LORENA13.8	13.800	G2	16.9	-5.0	10.5	-5.0	1.0090	17.5	0.9589	19.9	1	6
343	PRUDENCIA138	13.800	G1	26.0	-9.8	9.8	-9.8	1.0000	27.8	0.9362	33.0	1	6
343	PRUDENCIA138	13.800	G2	26.0	-9.8	9.8	-9.8	1.0000	27.8	0.9362	33.0	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9876	60.8	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1313.8	143.9	1235.2	-542.4				1813.8		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E FRI, OCT 24 2008 15:20
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 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	0.4	15.0	0.0	1.0000	35.0	0.9999	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0117	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	0.9946	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9946	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9946	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9716	5.6			2	7	

141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9716	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9716	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0262	17.8	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0353	17.7	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0353	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/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV

FRI, OCT 24 2008 15:21
 AREA TOTALS
 IN MW/MVAR

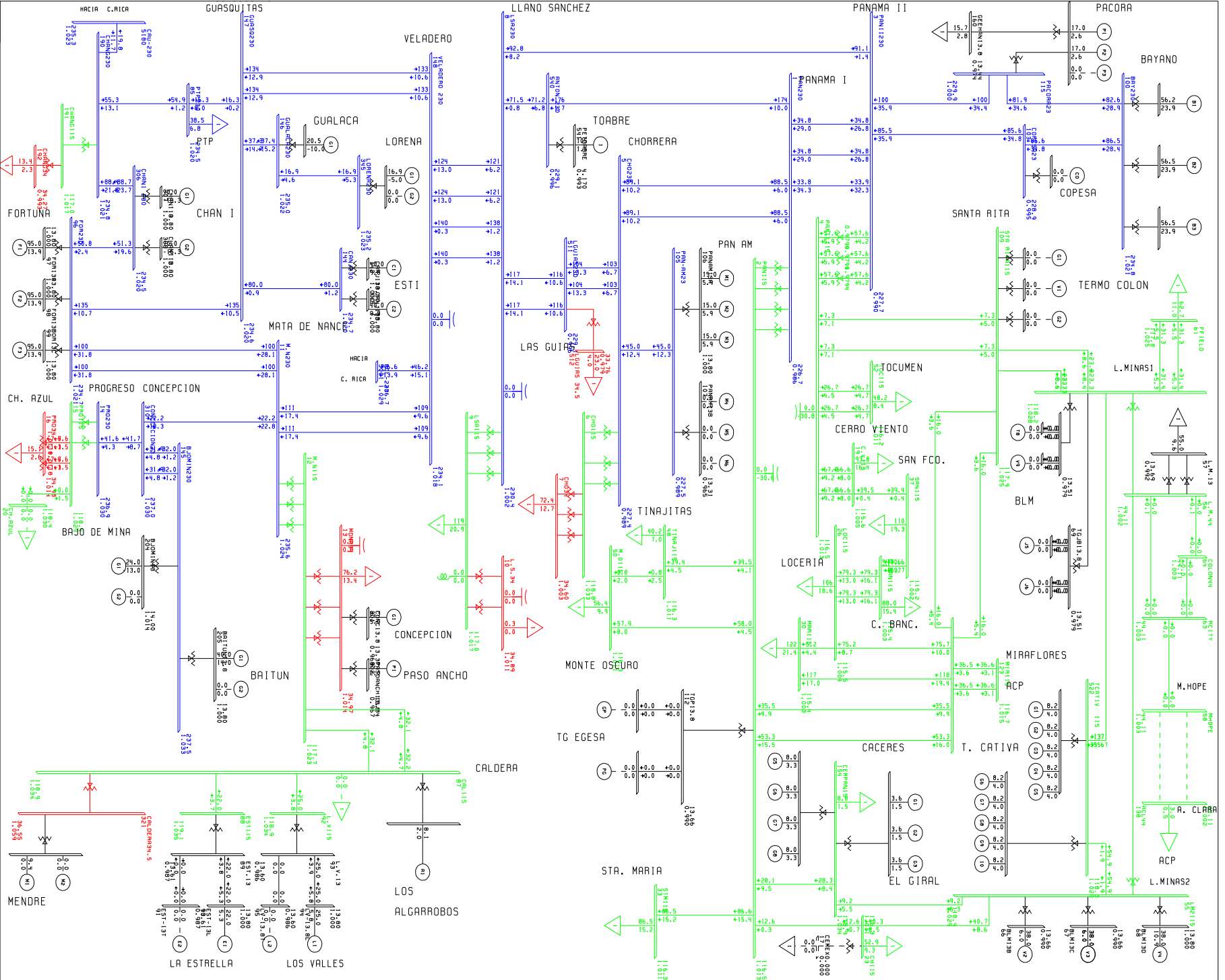
X-- AREA	--X GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1347.4	1312.2	0.0	0.0	0.0	0.0	35.2	0.0
GUATEMAL	29.8	349.5	-266.2	0.0	412.9	17.9	341.4	
2	911.8	902.0	0.0	0.0	0.0	0.0	9.8	0.0
SALVADOR	100.8	182.3	-58.1	0.0	219.9	38.4	158.1	
3	1006.8	985.5	0.0	0.0	0.0	0.0	21.4	0.0
HONDURAS	55.7	290.6	-188.3	0.0	302.8	-5.2	261.6	
4	538.2	527.1	0.0	0.0	0.0	0.0	11.1	0.0
NICA	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	0.5	19.7	0.0
C.RICA	261.9	569.4	-236.9	0.0	468.7	38.9	359.2	
6	1313.8	1194.2	0.0	0.0	0.0	44.3	75.3	25.0
PANAMA	143.9	209.2	-253.8	0.0	569.5	42.0	715.9	
7	120.5	46.3	0.0	0.0	0.0	73.0	1.2	50.0
ACANAL	17.4	8.1	0.0	0.0	0.0	-7.6	16.9	
9	0.0	117.6	0.0	0.0	0.0	-117.8	0.1	-75.0
COLON	0.0	20.6	0.0	0.0	1.1	-27.2	7.7	
TOTALS	6583.6	6409.7	0.0	0.0	0.0	0.0	173.9	0.0
	642.2	1854.2	-1102.1	0.0	2118.1	0.0	2008.1	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2012 ESCENARIO MODERADO DEMANDA MÁXIMA VERANO**

ACTUALIZACIÓN PLAN. EXP-SIN CON C.A. JUNIO 2008
 R 0 2012 ESC MOD DEM MAX VER
 TUE, NOV 11 2008 15:31

KV:514 .535 .5115

BUS - VOLTAGE (KV/PV)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR



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	1.0017	230.39	11	M.N230			230.00	6	1.0241	235.55
14	PRO230			230.00	6	1.0302	236.95	85	PTP230			230.00	6	1.0196	234.50
96	FOR230			230.00	6	1.0206	234.74	100	BAY230			230.00	6	1.0208	234.78
144	CANJ230			230.00	6	1.0202	234.65	145	BJOMIN230			230.00	6	1.0326	237.51
146	GUALACA230			230.00	6	1.0216	234.97	147	GUASQ230			230.00	6	1.0201	234.62
148	VELADERO 230			230.00	6	1.0179	234.12	190	CHANG230			230.00	6	1.0211	234.85
306	CHAN1 230			230.00	6	1.0195	234.49	310	CONCEPCION230			230.00	6	1.0304	237.00
345	LORENA230			230.00	6	1.0226	235.20	6000	FRONTER			230.00	6	1.0302	236.95

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	0.9856	226.69	3	PANII230			230.00	6	0.9901	227.72
5	CHO230			230.00	6	0.9889	227.44	103	COPESA23			230.00	6	0.9951	228.87
105	PAN-AM23			230.00	6	0.9889	227.45	115	PACORA23			230.00	6	0.9997	229.93
511	LGUIAS230			230.00	6	0.9963	229.14	540	ANTON 230			230.00	6	0.9960	229.09

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	1.0134	116.54	4	PANII115			115.00	6	1.0135	116.55
6	CHO115			115.00	6	1.0330	118.79	9	LSA115			115.00	6	1.0173	116.99
12	M.N115			115.00	6	1.0235	117.70	15	PRO115			115.00	6	1.0292	118.36
18	CAC115			115.00	6	1.0129	116.48	19	C.V115			115.00	6	1.0049	115.56
20	CH.AZUL			115.00	6	1.0299	118.44	21	C.BAN115			115.00	6	1.0031	115.35
23	CH115			115.00	6	1.0111	116.28	26	LOC115			115.00	6	1.0042	115.48
30	MAR115			115.00	6	1.0031	115.36	33	STM115			115.00	6	1.0115	116.32
37	SAN115			115.00	6	1.0019	115.21	48	TINAJ115			115.00	6	1.0110	116.26
50	M.O115			115.00	6	1.0111	116.28	52	TOC115			115.00	6	1.0107	116.23
54	LM115			115.00	6	1.0282	118.25	55	LM2115			115.00	6	1.0293	118.37
61	FFIELD			115.00	9	1.0245	117.82	87	CAL115			115.00	6	1.0336	118.86
88	EST115			115.00	6	1.0352	119.05	92	L.V115			115.00	6	1.0342	118.93
109	STA RITA115			115.00	6	1.0254	117.92	123	MIR115			115.00	7	1.0151	116.73
154	CEMPAN15			115.00	6	1.0336	118.86	191	CHANG115			115.00	6	1.0172	116.98
522	TCATIVÁ 115			115.00	6	1.0291	118.34								

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 *

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	38.0	6.0	25.0	0.0	0.9900	38.9	0.9879	47.0			1	6	

67	BLM13C	13.800	V3	38.0	6.0	25.0	0.0	0.9900	38.9	0.9879	47.0	1	6
68	BLM13D	13.800	V4	38.0	10.9	25.0	0.0	1.0000	39.5	0.9615	47.0	1	6
90	EST-13L	13.800	E1	22.0	5.3	12.0	-5.0	1.0000	22.6	0.9723	27.0	1	6
94	LV-13.8L	13.800	L1	25.0	5.8	12.0	-5.0	1.0000	25.7	0.9739	27.0	1	6
97	FOR13A	13.800	F1	95.0	-13.9	50.0	-50.0	1.0000	96.0	0.9895	111.0	1	6
98	FOR13B	13.800	F2	95.0	-13.9	50.0	-50.0	1.0000	96.0	0.9895	111.0	1	6
99	FOR13C	13.800	F3	95.0	-13.9	50.0	-50.0	1.0000	96.0	0.9895	111.0	1	6
101	BAY13A	13.800	B1	56.2	23.9	50.0	-25.0	1.0000	61.1	0.9205	96.0	1	6
102	BAY13B	13.800	B2	56.5	23.9	50.0	-25.0	1.0000	61.3	0.9210	96.0	1	6
106	PANAM13A	13.800	M1	15.0	5.9	9.0	0.0	1.0000	16.1	0.9305	20.7	1	6
106	PANAM13A	13.800	M2	15.0	5.9	9.0	0.0	1.0000	16.1	0.9305	20.7	1	6
106	PANAM13A	13.800	M3	15.0	5.9	9.0	0.0	1.0000	16.1	0.9305	20.7	1	6
108	BAY13C	13.800	B3	56.5	23.9	550.0	-25.0	1.0000	61.3	0.9210	100.0	1	6
116	PACORA13	13.800	P1	17.0	2.6	8.8	0.0	1.0000	17.2	0.9889	21.7	1	6
116	PACORA13	13.800	P2	17.0	2.6	8.8	0.0	1.0000	17.2	0.9889	21.7	1	6
142	CANJ13A	13.800	C1	40.0	9.8	29.0	-29.0	1.0000	41.2	0.9715	69.0	1	6
143	CANJ13B	13.800	C2	40.0	9.8	29.0	-29.0	1.0000	41.2	0.9715	69.0	1	6
151	GUALACA13.8	13.800	G1	20.5	-10.0	10.0	-10.0	1.0106	22.6	0.8988	26.7	1	6
204	BJOMIN13	13.800	G1	24.0	-13.0	13.0	-13.0	1.0142	26.9	0.8793	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	14.0	26.6	-26.6	1.0000	42.4	0.9440	50.6	1	6
301	CONC13.8	13.800	G1	8.3	5.0	5.0	-5.0	0.9685	10.0	0.8566	13.5	1	6
302	PASOANCH13.8	13.800	P1	3.7	2.0	2.0	-2.0	0.9667	4.4	0.8797	6.2	1	6
304	ALGA13.8	13.800	A1	8.1	2.0	2.0	0.0	0.9856	8.5	0.9708	13.5	1	6
307	CHAN1 A	13.800	G1	70.0	-16.3	50.0	-50.0	1.0000	71.9	0.9739	118.6	1	6
308	CHAN1 B	13.800	G2	70.0	-16.3	50.0	-50.0	1.0000	71.9	0.9739	118.6	1	6
317	MENDRE13.8	13.800	M1	9.4	0.0	0.0	0.0	1.1123	8.5	1.0000	35.3	1	6
342	LORENA13.8	13.800	G1	16.9	-5.0	10.5	-5.0	1.0171	17.3	0.9589	19.9	1	6
521	EGIRAL13.8	113.800	G1	3.6	1.5	2.8	1.3	1.0100	3.9	0.9243	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	1.5	2.8	1.3	1.0100	3.9	0.9243	4.8	1	6
521	EGIRAL13.8	113.800	G3	3.6	1.5	2.8	1.3	1.0100	3.9	0.9243	4.8	1	6
521	EGIRAL13.8	113.800	G4	3.6	1.5	2.8	1.3	1.0100	3.9	0.9243	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
524	TCATIVÁ 13B	13.800	G10	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.2	4.0	6.6	-6.6	1.0100	9.0	0.8973	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.0	3.3	6.4	3.0	1.0100	8.6	0.9251	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.0	3.3	6.4	3.0	1.0100	8.6	0.9251	10.9	1	6
531	EGIRAL13.8	213.800	G7	8.0	3.3	6.4	3.0	1.0100	8.6	0.9251	10.9	1	6
531	EGIRAL13.8	213.800	G8	8.0	3.3	6.4	3.0	1.0100	8.6	0.9251	10.9	1	6
541	PETOABRE	4.2000	1	105.0	1.4	1.4	1.4	0.9929	105.8	0.9999	136.0	1	6
SUBSYSTEM TOTALS				1278.4	129.5	1274.7	-501.6				1803.7		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E TUE, NOV 11 2008 15:29
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 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	17.1	0.0	8.0	0.0	1.0108	16.9	1.0000	27.7			2	7	

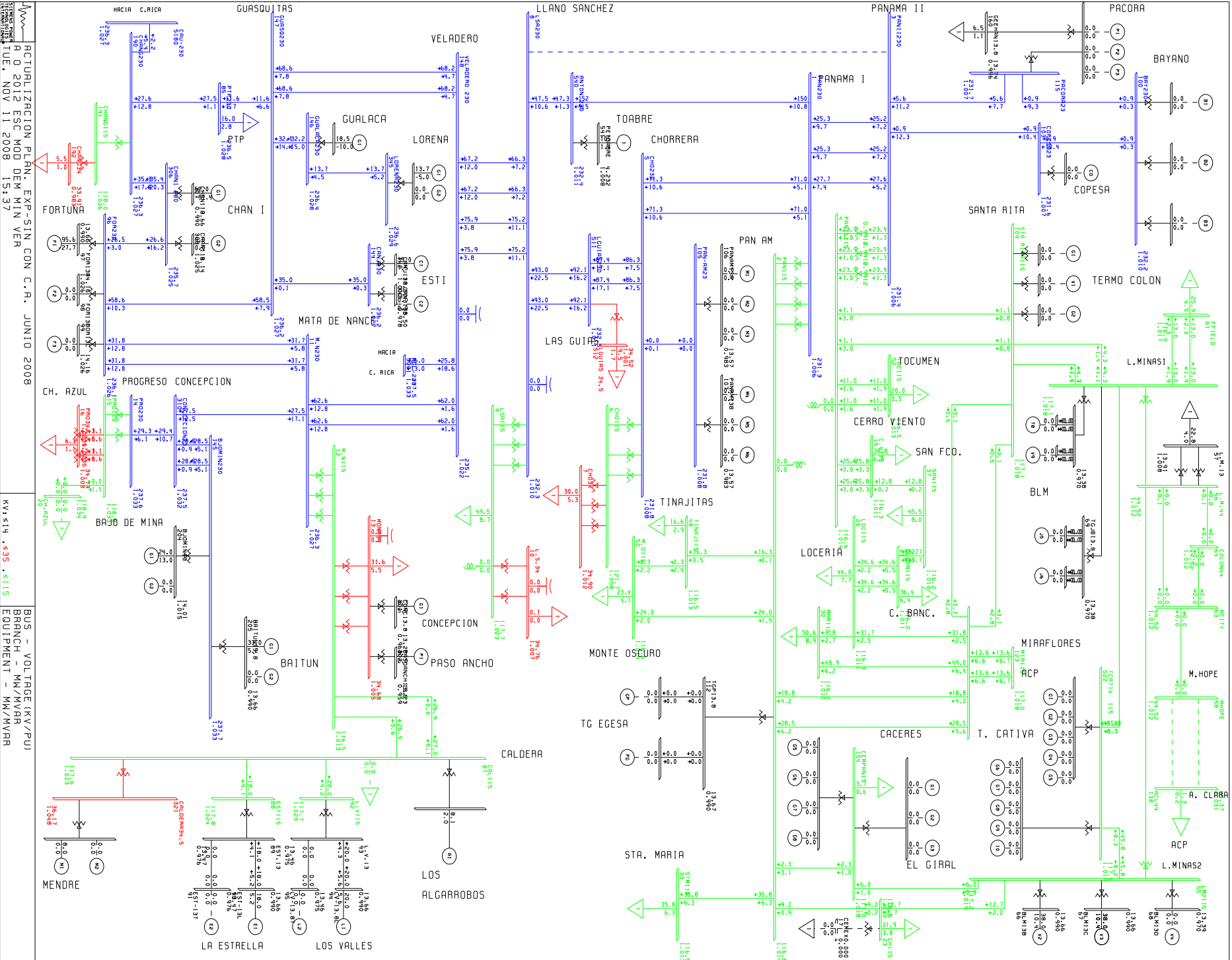
140	GAT6A	6.9000	G1	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9955	4.1	2	7
140	GAT6A	6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9955	4.1	2	7
140	GAT6A	6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9955	4.1	2	7
141	GAT6B	6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9726	5.6	2	7
141	GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9726	6.2	2	7
141	GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9726	6.2	2	7
170	MIR13G	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	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	2	7
SUBSYSTEM TOTALS				120.5	17.9	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX VER

TUE, NOV 11 2008 15:29
 AREA TOTALS
 IN MW/MVAR

X-- AREA	--X 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	1006.8	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	0.4	19.7	0.0
C.RICA	254.1	569.4	-237.4	0.0	469.7	32.8	359.0	
6	1278.4	1194.2	0.0	0.0	0.0	44.4	39.9	25.0
PANAMA	129.5	209.2	-61.6	0.0	481.8	48.0	415.8	
7	120.5	46.3	0.0	0.0	0.0	73.0	1.2	50.0
ACANAL	17.9	8.1	0.0	0.0	0.0	-7.2	16.9	
9	0.0	117.6	0.0	0.0	0.0	-117.8	0.1	-75.0
COLON	0.0	20.6	0.0	0.0	1.1	-27.4	7.9	
TOTALS	6548.2	6409.7	0.0	0.0	0.0	0.0	138.5	0.0
	620.3	1854.2	-910.5	0.0	2031.5	0.0	1708.1	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2012 ESCENARIO MODERADO DEMANDA MÍNIMA VERANO**



ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 R 0 2012 ESC MOD DEM MIN VER
 TUE, NOV 11 2008 15:37

KV:514 • 535 • 5115

BUS - VOLTAGE (KV/PV)
 BRANCH - MW/WVAR
 EQUIPMENT - MW/WVAR

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	1.0056	231.28	3	PANII230			230.00	6	1.0060	231.37
5	CHO230			230.00	6	1.0076	231.75	8	LSA230			230.00	6	1.0102	232.35
11	M.N230			230.00	6	1.0274	236.29	14	PRO230			230.00	6	1.0332	237.65
85	PTP230			230.00	6	1.0285	236.54	96	FOR230			230.00	6	1.0263	236.05
100	BAY230			230.00	6	1.0095	232.19	103	COPESA23			230.00	6	1.0070	231.61
105	PAN-AM23			230.00	6	1.0076	231.75	115	PACORA23			230.00	6	1.0074	231.69
144	CANJ230			230.00	6	1.0268	236.17	145	BJOMIN230			230.00	6	1.0334	237.67
146	GUALACA230			230.00	6	1.0280	236.44	147	GUASQ230			230.00	6	1.0268	236.15
148	VELADERO	230		230.00	6	1.0222	235.11	190	CHANG230			230.00	6	1.0274	236.31
306	CHAN1	230		230.00	6	1.0250	235.75	310	CONCEPCION23	230.00		6	1.0324	237.46	
345	LORENA230			230.00	6	1.0288	236.62	511	LGUIAS230			230.00	6	1.0109	232.51
540	ANTON	230		230.00	6	1.0106	232.44	6000	FRONTER			230.00	6	1.0333	237.66

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 *

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	1.0142	116.63	4	PANII115			115.00	6	1.0143	116.65
6	CHO115			115.00	6	1.0580	121.67	9	LSA115			115.00	6	1.0235	117.70
12	M.N115			115.00	6	1.0127	116.46	15	PRO115			115.00	6	1.0334	118.85
18	CAC115			115.00	6	1.0142	116.63	19	C.V115			115.00	6	1.0111	116.28
20	CH.AZUL			115.00	6	1.0342	118.93	21	C.BAN115			115.00	6	1.0105	116.21
23	CH115			115.00	6	1.0129	116.48	26	LOC115			115.00	6	1.0109	116.26
30	MAR115			115.00	6	1.0103	116.19	33	STM115			115.00	6	1.0134	116.54
37	SAN115			115.00	6	1.0101	116.16	48	TINAJ115			115.00	6	1.0135	116.55
50	M.O115			115.00	6	1.0135	116.56	52	TOC115			115.00	6	1.0132	116.52
54	LM115			115.00	6	1.0184	117.11	55	LM2115			115.00	6	1.0189	117.17
61	FFIELD			115.00	9	1.0169	116.94	87	CAL115			115.00	6	1.0225	117.59
88	EST115			115.00	6	1.0241	117.77	92	L.V115			115.00	6	1.0231	117.66
109	STA RITA115			115.00	6	1.0179	117.06	123	MIR115			115.00	7	1.0177	117.03
154	CEMPAN15			115.00	6	1.0175	117.01	191	CHANG115			115.00	6	1.0260	117.99
522	TCATIVÁ	115		115.00	6	1.0186	117.14								

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)

* NONE *

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MIN VER

TUE, NOV 11 2008 15:35

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	38.0	10.4	25.0	0.0	0.9900	39.8	0.9645	47.0			1	6		
67		BLM13C		13.800	V3	38.0	10.4	25.0	0.0	0.9900	39.8	0.9645	47.0			1	6		
90		EST-13L		13.800	E1	18.0	5.2	12.0	-5.0	0.9900	18.9	0.9608	27.0			1	6		
94		LV-13.8L		13.800	L1	20.0	5.6	12.0	-5.0	0.9900	21.0	0.9628	27.0			1	6		
97		FOR13A		13.800	F1	95.6	-27.7	50.0	-50.0	0.9900	100.5	0.9604	111.0			1	6	SYST	
142		CANJ13A		13.800	C1	35.0	7.5	29.0	-29.0	1.0000	35.8	0.9779	69.0			1	6		
151		GUALACA13.8		13.800	G1	18.5	-10.0	10.0	-10.0	1.0171	20.7	0.8797	26.7			1	6		
204		BJOMIN13		13.800	G1	24.0	-13.0	13.0	-13.0	1.0150	26.9	0.8793	28.9			1	6		
205		BAITUN13.8		13.800	G1	33.0	5.2	26.6	-26.6	0.9900	33.8	0.9876	50.6			1	6		
301		CONC13.8		13.800	G1	8.3	5.0	5.0	-5.0	0.9606	10.1	0.8566	13.5			1	6		
302		PASOANCH13.8		13.800	P1	3.7	2.0	2.0	-2.0	0.9587	4.4	0.8797	6.2			1	6		
304		ALGA13.8		13.800	A1	8.1	2.0	2.0	0.0	0.9751	8.6	0.9708	13.5			1	6		
307		CHAN1 A		13.800	G1	62.0	-31.4	50.0	-50.0	0.9900	70.2	0.8922	118.6			1	6		
317		MENDRE13.8		13.800	M1	8.0	0.0	0.0	0.0	1.1006	7.3	1.0000	35.3			1	6		
342		LORENA13.8		13.800	G1	13.7	-5.0	10.5	-5.0	1.0234	14.3	0.9394	19.9			1	6		
541		PETOABRE		4.2000	1	105.0	1.4	1.4	1.4	1.0076	104.2	0.9999	136.0			1	6		
SUBSYSTEM TOTALS						528.9	-32.4	273.5	-199.3				777.3						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MIN VER

TUE, NOV 11 2008 15:35

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	15.5	6.8	11.2	6.8	1.0496	16.1	0.9150	23.0			2	7		
171		MIR13H		13.800	M1	15.5	6.8	11.2	6.8	1.0588	16.0	0.9149	23.0			2	7		
171		MIR13H		13.800	M2	15.5	6.8	11.2	6.8	1.0588	16.0	0.9149	23.0			2	7		
SUBSYSTEM TOTALS						46.4	20.5	33.5	20.5				69.1						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MIN VER

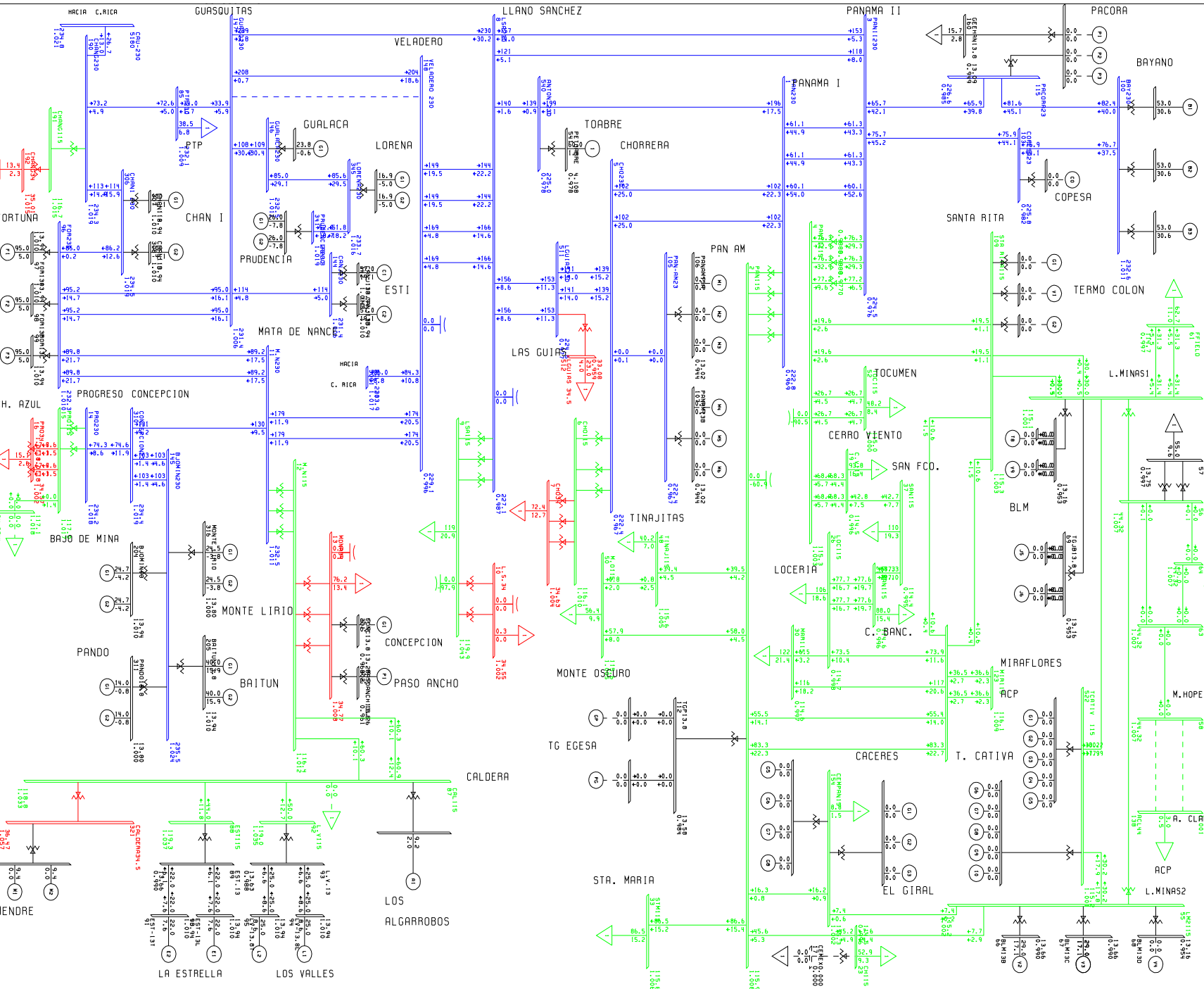
TUE, NOV 11 2008 15:36

AREA TOTALS
 IN MW/MVAR

FROM	TO	TO BUS	TO LINE	FROM	TO	DESIRE		
X-- AREA	--X GENERATION	LOAD	SHUNT	SHUNT	CHARGING	NET INT	LOSSES	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	1006.8	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	0.8	19.4	0.0
C.RICA	246.5	569.4	-236.9	0.0	470.4	26.9	357.4	
6	528.9	494.5	0.0	0.0	0.0	20.8	13.6	25.0
PANAMA	-32.4	86.6	184.7	0.0	462.9	15.0	144.2	
7	46.4	19.2	0.0	0.0	0.0	27.1	0.1	50.0
ACANAL	20.5	3.4	0.0	0.0	0.0	13.2	3.9	
9	0.0	48.7	0.0	0.0	0.0	-48.7	0.0	-75.0
COLON	0.0	8.5	0.0	0.0	1.1	-8.7	1.3	
TOTALS	5724.5	5613.9	0.0	0.0	0.0	0.0	110.6	0.0
	453.1	1714.8	-663.7	0.0	2013.3	0.0	1415.2	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2012 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA GUASQUITAS-VELADERO**



MON. OCT 27 2008 9:45
 R O 2012 ESC MOD DEM MAX INV
 ACTUALIZACION PLAN. EXP-SIN CON C.R. JUNIO 2008

KW:114.435.4115

BUS - VOLTAGE (KV/PV)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

Hacia C. RIERA
 GUASQUEGUAS
 LLANO SANCHEZ
 PANAMA I I
 PANAMA II
 PACORA
 BAYANO
 COPESA
 SANTA RITA
 THERMO COLON
 L. MINAS1
 SAN FCO.
 BLM
 C. BANC.
 MIRAFLORES
 PANDO
 CALDERA
 LOS VALLES
 LA ESTRELLA
 LOS ALGARROBOS
 STA. MARIA
 EL GIRAL
 T. CATIVA
 M. HOPE
 A. CLARA
 L. MINAS2

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT GUAS-VEL

MON, OCT 27 2008 9:40

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	1.0107	232.46	14	PRO230			230.00	6	1.0184	234.23
85	PTP230			230.00	6	1.0091	232.10	96	FOR230			230.00	6	1.0099	232.28
100	BAY230			230.00	6	1.0114	232.62	144	CANJ230			230.00	6	1.0062	231.44
145	BJOMIN230			230.00	6	1.0239	235.50	146	GUALACA230			230.00	6	1.0110	232.53
147	GUASQ230			230.00	6	1.0061	231.40	190	CHANG230			230.00	6	1.0187	234.31
306	CHAN1 230			230.00	6	1.0194	234.46	310	CONCEPCION230			230.00	6	1.0192	234.41
341	PRUDENCIA230			230.00	6	1.0185	234.26	345	LORENA230			230.00	6	1.0159	233.66
6000	FRONTER			230.00	6	1.0183	234.21								

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	0.9685	222.76	3	PANII230			230.00	6	0.9759	224.45
5	CHO230			230.00	6	0.9671	222.44	8	LSA230			230.00	6	0.9872	227.06
103	COPESA23			230.00	6	0.9817	225.78	105	PAN-AM23			230.00	6	0.9671	222.44
115	PACORA23			230.00	6	0.9854	226.64	148	VELADERO 230			230.00	6	0.9961	229.10
511	LGUIAS230			230.00	6	0.9765	224.60	540	ANTON 230			230.00	6	0.9784	225.04

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT GUAS-VEL

MON, OCT 27 2008 9:40

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	1.0075	115.86	4	PANII115			115.00	6	1.0030	115.35
6	CHO115			115.00	6	1.0099	116.14	9	LSA115			115.00	6	1.0429	119.93
12	M.N115			115.00	6	1.0118	116.36	15	PRO115			115.00	6	1.0173	116.99
18	CAC115			115.00	6	1.0068	115.78	20	CH.AZUL			115.00	6	1.0181	117.08
33	STM115			115.00	6	1.0056	115.64	48	TINAJ115			115.00	6	1.0051	115.58
50	M.O115			115.00	6	1.0052	115.60	52	TOC115			115.00	6	1.0002	115.02
54	LM115			115.00	6	1.0011	115.13	55	LM2115			115.00	6	1.0016	115.18
87	CAL115			115.00	6	1.0331	118.81	88	EST115			115.00	6	1.0372	119.28
92	L.V115			115.00	6	1.0347	118.99	109	STA RITA115			115.00	6	1.0025	115.29
123	MIR115			115.00	7	1.0093	116.07	154	CEMPAN15			115.00	6	1.0024	115.28
191	CHANG115			115.00	6	1.0149	116.71	522	TCATIVÁ 115			115.00	6	1.0014	115.16

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)
19	C.V115			115.00	6	0.9956	114.49	21	C.BAN115			115.00	6	0.9965	114.59
23	CH115			115.00	6	0.9960	114.54	26	LOC115			115.00	6	0.9977	114.74
30	MAR115			115.00	6	0.9968	114.63	37	SAN115			115.00	6	0.9950	114.42
61	FFIELD			115.00	9	0.9973	114.69								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT GUAS-VEL

MON, OCT 27 2008 9:40

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	29.0	17.1	25.0	0.0	0.9900	34.0	0.8620	47.0							1	6	

67	BLM13C	13.800	V3	29.0	17.1	25.0	0.0	0.9900	34.0	0.8620	47.0	1	6
90	EST-13L	13.800	E1	22.0	7.6	12.0	-5.0	1.0100	23.1	0.9447	27.0	1	6
91	EST-13T	13.800	E2	22.0	7.6	12.0	-5.0	1.0100	23.1	0.9447	27.0	1	6
94	LV-13.8L	13.800	L1	25.0	8.6	12.0	-5.0	1.0100	26.2	0.9455	27.0	1	6
95	LV-13.8T	13.800	L2	25.0	8.6	12.0	-5.0	1.0100	26.2	0.9455	27.0	1	6
97	FOR13A	13.800	F1	95.0	5.0	50.0	-50.0	1.0100	94.2	0.9986	111.0	1	6
98	FOR13B	13.800	F2	95.0	5.0	50.0	-50.0	1.0100	94.2	0.9986	111.0	1	6
99	FOR13C	13.800	F3	95.0	5.0	50.0	-50.0	1.0100	94.2	0.9986	111.0	1	6
101	BAY13A	13.800	B1	53.0	30.6	50.0	-25.0	1.0000	61.2	0.8658	96.0	1	6
102	BAY13B	13.800	B2	53.0	30.6	50.0	-25.0	1.0000	61.2	0.8658	96.0	1	6
108	BAY13C	13.800	B3	53.0	30.6	550.0	-25.0	1.0000	61.2	0.8658	100.0	1	6
142	CANJ13A	13.800	C1	57.0	19.1	29.0	-29.0	1.0100	59.5	0.9479	69.0	1	6
143	CANJ13B	13.800	C2	57.0	19.1	29.0	-29.0	1.0100	59.5	0.9479	69.0	1	6
151	GUALACA13.8	13.800	G1	23.8	-0.6	10.0	-10.0	1.0100	23.6	0.9996	26.7	1	6
204	BJOMIN13	13.800	G1	24.7	-4.2	13.0	-13.0	1.0100	24.8	0.9858	28.9	1	6
204	BJOMIN13	13.800	G2	24.7	-4.2	13.0	-13.0	1.0100	24.8	0.9858	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	15.9	26.6	-26.6	1.0100	42.6	0.9297	50.6	1	6
205	BAITUN13.8	13.800	G2	40.0	15.9	26.6	-26.6	1.0100	42.6	0.9297	50.6	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9611	5.4	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	0.9851	9.6	0.9772	13.5	1	6
307	CHAN1 A	13.800	G1	100.0	-4.1	50.0	-50.0	1.0100	99.1	0.9992	118.6	1	6
308	CHAN1 B	13.800	G2	100.0	-4.1	50.0	-50.0	1.0100	99.1	0.9992	118.6	1	6
311	PANDO13.8	13.800	G1	14.0	-0.8	10.0	-5.0	1.0000	14.0	0.9984	19.9	1	6
311	PANDO13.8	13.800	G2	14.0	-0.8	10.0	-5.0	1.0000	14.0	0.9984	19.9	1	6
316	MONTE LIRIO	13.800	G1	24.5	-3.8	12.0	-5.0	1.0000	24.8	0.9879	27.0	1	6
316	MONTE LIRIO	13.800	G2	24.5	-3.8	12.0	-5.0	1.0000	24.8	0.9879	27.0	1	6
317	MENDRE13.8	13.800	M1	9.4	0.0	0.0	0.0	1.1094	8.5	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.4	0.0	0.0	0.0	1.1094	8.5	1.0000	35.3	1	6
342	LORENA13.8	13.800	G1	16.9	-5.0	10.5	-5.0	1.0044	17.5	0.9589	19.9	1	6
342	LORENA13.8	13.800	G2	16.9	-5.0	10.5	-5.0	1.0044	17.5	0.9589	19.9	1	6
343	PRUDENCIA138	13.800	G1	26.0	-7.8	9.8	-9.8	1.0000	27.1	0.9583	33.0	1	6
343	PRUDENCIA138	13.800	G2	26.0	-7.8	9.8	-9.8	1.0000	27.1	0.9583	33.0	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9782	61.4	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1318.8	196.9	1235.2	-542.4				1813.8		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:40
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT GUAS-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	2.2	15.0	0.0	1.0000	35.1	0.9981	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0073	17.0	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9981	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9981	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.1	2.0	-2.0	1.0000	1.9	0.9981	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9763	5.6			2	7	

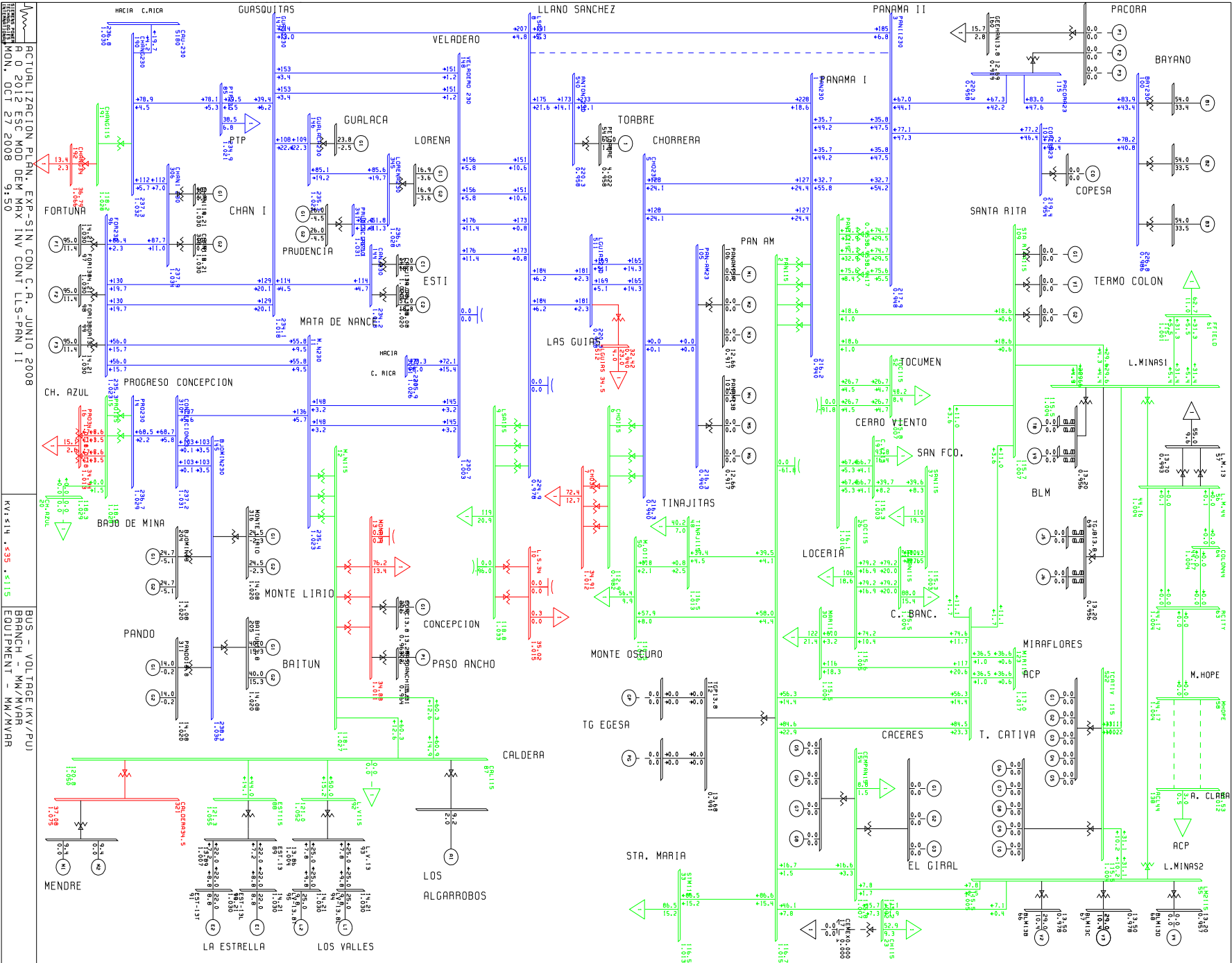
141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9763	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9763	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0218	17.9	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0309	17.8	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0309	17.8	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	19.7	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:41
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2012 ESC MOD DEM MAX INV CONT GUAS-VEL IN MW/MVAR

X-- AREA	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	1006.8	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	0.3	19.8	0.0
C.RICA	270.2	569.4	-236.5	0.0	467.8	44.5	360.6	
6	1318.8	1194.2	0.0	0.0	0.0	44.5	80.2	25.0
PANAMA	196.9	209.2	-249.3	0.0	545.3	34.1	748.2	
7	120.5	46.3	0.0	0.0	0.0	73.0	1.2	50.0
ACANAL	19.7	8.1	0.0	0.0	0.0	-5.4	17.0	
9	0.0	117.6	0.0	0.0	0.0	-117.8	0.1	-75.0
COLON	0.0	20.6	0.0	0.0	1.1	-27.4	7.8	
TOTALS	6588.6	6409.7	0.0	0.0	0.0	0.0	178.9	0.0
	706.1	1854.2	-1097.2	0.0	2093.0	0.0	2042.1	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2012 ESCENARIO MODERADO DEMANDA MÁXIMA DE INVIERNO
CONTINGENCIA LLANO SÁNCHEZ-PANAMÁ II**



ACTUALIZACION PLAN. EXP-SIN CON C.R. JUNIO 2008
 R D 2012 ESC MOD DEM MFX INV CONT LLS-PAN II
 MON. OCT 27 2008 9:50

KV1514 .435 .5115

BUS - VOLTAGE (KV/PUI)
 BRANCH - MW/MVAR
 EQUIPMENT - MW/MVAR

MENDRE

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:51
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT LLS-PAN 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	1.0235	235.40	14	PRO230	230.00	6	1.0291	236.69				
85	PTP230	230.00	6	1.0213	234.91	96	FOR230	230.00	6	1.0229	235.26				
144	CANJ230	230.00	6	1.0181	234.15	145	BJOMIN230	230.00	6	1.0362	238.32				
146	GUALACA230	230.00	6	1.0230	235.29	147	GUASQ230	230.00	6	1.0179	234.12				
148	VELADERO 230	230.00	6	1.0032	230.74	190	CHANG230	230.00	6	1.0318	237.31				
306	CHAN1 230	230.00	6	1.0341	237.85	310	CONCEPCION230	230.00	6	1.0312	237.17				
341	PRUDENCIA230	230.00	6	1.0310	237.14	345	LORENA230	230.00	6	1.0282	236.50				
6000	FRONTER	230.00	6	1.0285	236.55										

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)
1	PAN230	230.00	6	0.9402	216.24	3	PANII230	230.00	6	0.9476	217.94				
5	CHO230	230.00	6	0.9404	216.28	8	LSA230	230.00	6	0.9780	224.94				
100	BAY230	230.00	6	0.9860	226.77	103	COPESA23	230.00	6	0.9538	219.37				
105	PAN-AM23	230.00	6	0.9404	216.28	115	PACORA23	230.00	6	0.9578	220.30				
511	LGUIAS230	230.00	6	0.9577	220.28	540	ANTON 230	230.00	6	0.9580	220.34				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:51
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT LLS-PAN 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)
2	PAN115	115.00	6	1.0151	116.74	4	PANII115	115.00	6	1.0098	116.13				
9	LSA115	115.00	6	1.0329	118.79	12	M.N115	115.00	6	1.0270	118.11				
15	PRO115	115.00	6	1.0281	118.23	18	CAC115	115.00	6	1.0144	116.66				
19	C.V115	115.00	6	1.0027	115.31	20	CH.AZUL	115.00	6	1.0288	118.31				
21	C.BAN115	115.00	6	1.0041	115.47	23	CH115	115.00	6	1.0018	115.21				
26	LOC115	115.00	6	1.0054	115.62	30	MAR115	115.00	6	1.0045	115.51				
33	STM115	115.00	6	1.0132	116.52	37	SAN115	115.00	6	1.0026	115.30				
48	TINAJ115	115.00	6	1.0127	116.47	50	M.O115	115.00	6	1.0129	116.48				
52	TOC115	115.00	6	1.0070	115.81	54	LM1115	115.00	6	1.0043	115.49				
55	LM2115	115.00	6	1.0047	115.54	61	FFIELD	115.00	9	1.0005	115.06				
87	CAL115	115.00	6	1.0502	120.78	88	EST115	115.00	6	1.0547	121.29				
92	L.V115	115.00	6	1.0520	120.98	109	STA RITA115	115.00	6	1.0065	115.75				
123	MIR115	115.00	7	1.0175	117.01	154	CEMPAN15	115.00	6	1.0068	115.79				
191	CHANG115	115.00	6	1.0280	118.23	522	TCATIVÁ	115.00	6	1.0045	115.52				

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	0.9815	112.87										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:51
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT LLS-PAN 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	29.0	10.4	25.0	0.0	0.9783	31.5	0.9410	47.0	1	6
67	BLM13C	13.800	V3	29.0	10.4	25.0	0.0	0.9783	31.5	0.9410	47.0	1	6
90	EST-13L	13.800	E1	22.0	8.8	12.0	-5.0	1.0300	23.0	0.9287	27.0	1	6
91	EST-13T	13.800	E2	22.0	8.8	12.0	-5.0	1.0300	23.0	0.9287	27.0	1	6
94	LV-13.8L	13.800	L1	25.0	9.8	12.0	-5.0	1.0300	26.1	0.9306	27.0	1	6
95	LV-13.8T	13.800	L2	25.0	9.8	12.0	-5.0	1.0300	26.1	0.9306	27.0	1	6
97	FOR13A	13.800	F1	95.0	11.4	50.0	-50.0	1.0300	92.9	0.9929	111.0	1	6
98	FOR13B	13.800	F2	95.0	11.4	50.0	-50.0	1.0300	92.9	0.9929	111.0	1	6
99	FOR13C	13.800	F3	95.0	11.4	50.0	-50.0	1.0300	92.9	0.9929	111.0	1	6
101	BAY13A	13.800	B1	54.0	33.4	50.0	-25.0	0.9800	64.8	0.8501	96.0	1	6
102	BAY13B	13.800	B2	54.0	33.5	50.0	-25.0	0.9800	64.8	0.8502	96.0	1	6
108	BAY13C	13.800	B3	54.0	33.5	550.0	-25.0	0.9800	64.8	0.8502	100.0	1	6
142	CANJ13A	13.800	C1	57.0	18.8	29.0	-29.0	1.0200	58.8	0.9498	69.0	1	6
143	CANJ13B	13.800	C2	57.0	18.8	29.0	-29.0	1.0200	58.8	0.9498	69.0	1	6
151	GUALACA13.8	13.800	G1	23.8	-2.5	10.0	-10.0	1.0200	23.5	0.9945	26.7	1	6
204	BJOMIN13	13.800	G1	24.7	-5.1	13.0	-13.0	1.0200	24.7	0.9793	28.9	1	6
204	BJOMIN13	13.800	G2	24.7	-5.1	13.0	-13.0	1.0200	24.7	0.9793	28.9	1	6
205	BAITUN13.8	13.800	G1	40.0	15.3	26.6	-26.6	1.0200	42.0	0.9343	50.6	1	6
205	BAITUN13.8	13.800	G2	40.0	15.3	26.6	-26.6	1.0200	42.0	0.9343	50.6	1	6
302	PASOANCH13.8	13.800	P1	4.8	2.0	2.0	-2.0	0.9642	5.3	0.9216	6.2	1	6
304	ALGA13.8	13.800	A1	9.2	2.0	2.0	0.0	1.0014	9.4	0.9772	13.5	1	6
307	CHANI A	13.800	G1	100.0	0.8	50.0	-50.0	1.0300	97.1	1.0000	118.6	1	6
308	CHANI B	13.800	G2	100.0	0.8	50.0	-50.0	1.0300	97.1	1.0000	118.6	1	6
311	PANDO13.8	13.800	G1	14.0	-0.2	10.0	-5.0	1.0200	13.7	0.9999	19.9	1	6
311	PANDO13.8	13.800	G2	14.0	-0.2	10.0	-5.0	1.0200	13.7	0.9999	19.9	1	6
316	MONTE LIRIO	13.800	G1	24.5	-2.3	12.0	-5.0	1.0200	24.1	0.9957	27.0	1	6
316	MONTE LIRIO	13.800	G2	24.5	-2.3	12.0	-5.0	1.0200	24.1	0.9957	27.0	1	6
317	MENDRE13.8	13.800	M1	9.4	0.0	0.0	0.0	1.1280	8.3	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	9.4	0.0	0.0	0.0	1.1280	8.3	1.0000	35.3	1	6
342	LORENA13.8	13.800	G1	16.9	-3.6	10.5	-5.0	1.0200	16.9	0.9785	19.9	1	6
342	LORENA13.8	13.800	G2	16.9	-3.6	10.5	-5.0	1.0200	16.9	0.9785	19.9	1	6
343	PRUDENCIA138	13.800	G1	26.0	-4.5	9.8	-9.8	1.0200	25.9	0.9856	33.0	1	6
343	PRUDENCIA138	13.800	G2	26.0	-4.5	9.8	-9.8	1.0200	25.9	0.9856	33.0	1	6
541	PETOABRE	4.2000	1	60.0	1.4	1.4	1.4	0.9577	62.7	0.9997	136.0	1	6
SUBSYSTEM TOTALS				1321.8	234.0	1235.2	-542.4				1813.8		

SYST

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:51
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT LLS-PAN 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	5.5	15.0	0.0	1.0200	34.7	0.9878	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.0	8.0	0.0	1.0200	16.8	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.2	2.0	-2.0	1.0100	1.9	0.9963	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.2	2.0	-2.0	1.0100	1.9	0.9963	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.2	2.0	-2.0	1.0100	1.9	0.9963	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0100	3.9	0.9726	5.6			2	7	

141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0100	3.9	0.9726	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0100	3.9	0.9726	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0342	17.7	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0432	17.6	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0432	17.6	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	22.7	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:51
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2012 ESC MOD DEM MAX INV CONT LLS-PAN II IN MW/MVAR

X-- AREA	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	1006.8	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	0.5	19.7	0.0
C.RICA	250.5	569.4	-237.6	0.0	469.6	29.6	358.7	
6	1321.8	1194.2	0.0	0.0	0.0	44.3	83.3	25.0
PANAMA	234.0	209.2	-249.6	0.0	534.1	46.1	762.4	
7	120.5	46.3	0.0	0.0	0.0	73.0	1.2	50.0
ACANAL	22.7	8.1	0.0	0.0	0.0	-2.1	16.7	
9	0.0	117.6	0.0	0.0	0.0	-117.8	0.1	-75.0
COLON	0.0	20.6	0.0	0.0	1.1	-27.4	7.9	
TOTALS	6591.6	6409.7	0.0	0.0	0.0	0.0	181.9	0.0
	725.9	1854.2	-1098.7	0.0	2083.6	0.0	2054.1	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2012 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA FORTUNA-GUASQUITAS**

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	1.0164	233.78	14	PRO230			230.00	6	1.0228	235.24
85	PTP230			230.00	6	1.0111	232.56	96	FOR230			230.00	6	1.0144	233.30
100	BAY230			230.00	6	1.0151	233.47	144	CANJ230			230.00	6	1.0089	232.06
145	BJOMIN230			230.00	6	1.0272	236.25	146	GUALACA230			230.00	6	1.0136	233.12
147	GUASQ230			230.00	6	1.0088	232.02	148	VELADERO 230			230.00	6	1.0053	231.22
190	CHANG230			230.00	6	1.0202	234.64	306	CHAN1 230			230.00	6	1.0209	234.81
310	CONCEPCION230			230.00	6	1.0234	235.37	341	PRUDENCIA230			230.00	6	1.0209	234.80
345	LORENA230			230.00	6	1.0184	234.23	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	0.9749	224.23	3	PANII230			230.00	6	0.9821	225.88
5	CHO230			230.00	6	0.9741	224.05	8	LSA230			230.00	6	0.9957	229.02
103	COPESA23			230.00	6	0.9875	227.12	105	PAN-AM23			230.00	6	0.9741	224.05
115	PACORA23			230.00	6	0.9909	227.91	511	LGUIAS230			230.00	6	0.9845	226.44
540	ANTON 230			230.00	6	0.9862	226.82								

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	1.0139	116.60	4	PANII115			115.00	6	1.0093	116.07
6	CHO115			115.00	6	1.0174	117.00	9	LSA115			115.00	6	1.0521	120.99
12	M.N115			115.00	6	1.0162	116.86	15	PRO115			115.00	6	1.0218	117.50
18	CAC115			115.00	6	1.0132	116.52	19	C.V115			115.00	6	1.0020	115.23
20	CH.AZUL			115.00	6	1.0225	117.59	21	C.BAN115			115.00	6	1.0029	115.34
23	CH115			115.00	6	1.0019	115.22	26	LOC115			115.00	6	1.0042	115.48
30	MAR115			115.00	6	1.0033	115.38	33	STM115			115.00	6	1.0120	116.38
37	SAN115			115.00	6	1.0015	115.17	48	TINAJ115			115.00	6	1.0115	116.32
50	M.O115			115.00	6	1.0116	116.34	52	TOC115			115.00	6	1.0065	115.75
54	LM1115			115.00	6	1.0062	115.72	55	LM2115			115.00	6	1.0067	115.77
61	FFIELD			115.00	9	1.0025	115.29	87	CAL115			115.00	6	1.0360	119.14
88	EST115			115.00	6	1.0398	119.58	92	L.V115			115.00	6	1.0375	119.31
109	STA RITA115			115.00	6	1.0079	115.91	123	MIR115			115.00	7	1.0154	116.77
154	CEMPAN15			115.00	6	1.0079	115.91	191	CHANG115			115.00	6	1.0163	116.88
522	TCATIVÁ 115			115.00	6	1.0065	115.74								

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/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT FOR-GUAS

MON, OCT 27 2008 9:57

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	29.0	14.9	25.0	0.0	0.9900	32.9	0.8896	47.0			1	6		
67		BLM13C		13.800	V3	29.0	14.9	25.0	0.0	0.9900	32.9	0.8896	47.0			1	6		
90		EST-13L		13.800	E1	22.0	6.9	12.0	-5.0	1.0100	22.8	0.9546	27.0			1	6		
91		EST-13T		13.800	E2	22.0	6.9	12.0	-5.0	1.0100	22.8	0.9546	27.0			1	6		
94		LV-13.8L		13.800	L1	25.0	7.8	12.0	-5.0	1.0100	25.9	0.9548	27.0			1	6		
95		LV-13.8T		13.800	L2	25.0	7.8	12.0	-5.0	1.0100	25.9	0.9548	27.0			1	6		
97		FOR13A		13.800	F1	95.0	0.9	50.0	-50.0	1.0100	94.1	1.0000	111.0			1	6		
98		FOR13B		13.800	F2	95.0	0.9	50.0	-50.0	1.0100	94.1	1.0000	111.0			1	6		
99		FOR13C		13.800	F3	95.0	0.9	50.0	-50.0	1.0100	94.1	1.0000	111.0			1	6		
101		BAY13A		13.800	B1	58.2	28.3	50.0	-25.0	1.0000	64.7	0.8994	96.0			1	6	SYST	
102		BAY13B		13.800	B2	48.5	27.6	50.0	-25.0	1.0000	55.8	0.8691	96.0			1	6		
108		BAY13C		13.800	B3	48.5	27.6	550.0	-25.0	1.0000	55.8	0.8691	100.0			1	6		
142		CANJ13A		13.800	C1	57.0	18.7	29.0	-29.0	1.0100	59.4	0.9502	69.0			1	6		
143		CANJ13B		13.800	C2	57.0	18.7	29.0	-29.0	1.0100	59.4	0.9502	69.0			1	6		
151		GUALACA13.8		13.800	G1	23.8	-3.0	10.0	-10.0	1.0100	23.8	0.9922	26.7			1	6		
204		BJOMIN13		13.800	G1	24.7	-5.4	13.0	-13.0	1.0100	25.0	0.9770	28.9			1	6		
204		BJOMIN13		13.800	G2	24.7	-5.4	13.0	-13.0	1.0100	25.0	0.9770	28.9			1	6		
205		BAITUN13.8		13.800	G1	40.0	14.6	26.6	-26.6	1.0100	42.2	0.9392	50.6			1	6		
205		BAITUN13.8		13.800	G2	40.0	14.6	26.6	-26.6	1.0100	42.2	0.9392	50.6			1	6		
302		PASOANCH13.8		13.800	P1	4.8	2.0	2.0	-2.0	0.9654	5.3	0.9216	6.2			1	6		
304		ALGA13.8		13.800	A1	9.2	2.0	2.0	0.0	0.9879	9.5	0.9772	13.5			1	6		
307		CHAN1 A		13.800	G1	100.0	-5.6	50.0	-50.0	1.0100	99.2	0.9985	118.6			1	6		
308		CHAN1 B		13.800	G2	100.0	-5.6	50.0	-50.0	1.0100	99.2	0.9985	118.6			1	6		
311		PANDO13.8		13.800	G1	14.0	-1.1	10.0	-5.0	1.0000	14.0	0.9972	19.9			1	6		
311		PANDO13.8		13.800	G2	14.0	-1.1	10.0	-5.0	1.0000	14.0	0.9972	19.9			1	6		
316		MONTE LIRIO		13.800	G1	24.5	-4.6	12.0	-5.0	1.0000	24.9	0.9832	27.0			1	6		
316		MONTE LIRIO		13.800	G2	24.5	-4.6	12.0	-5.0	1.0000	24.9	0.9832	27.0			1	6		
317		MENDRE13.8		13.800	M1	9.4	0.0	0.0	0.0	1.1125	8.4	1.0000	35.3			1	6		
317		MENDRE13.8		13.800	M2	9.4	0.0	0.0	0.0	1.1125	8.4	1.0000	35.3			1	6		
342		LORENA13.8		13.800	G1	16.9	-5.0	10.5	-5.0	1.0069	17.5	0.9589	19.9			1	6		
342		LORENA13.8		13.800	G2	16.9	-5.0	10.5	-5.0	1.0069	17.5	0.9589	19.9			1	6		
343		PRUDENCIA138		13.800	G1	26.0	-8.8	9.8	-9.8	1.0000	27.5	0.9467	33.0			1	6		
343		PRUDENCIA138		13.800	G2	26.0	-8.8	9.8	-9.8	1.0000	27.5	0.9467	33.0			1	6		
541		PETOABRE		4.2000	1	60.0	1.4	1.4	1.4	0.9860	60.9	0.9997	136.0			1	6		
SUBSYSTEM TOTALS						1314.9	153.3	1235.2	-542.4				1813.8						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT FOR-GUAS

MON, OCT 27 2008 9:57

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	0.7	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	1.0110	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	0.9953	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9953	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9953	4.1			2	7	

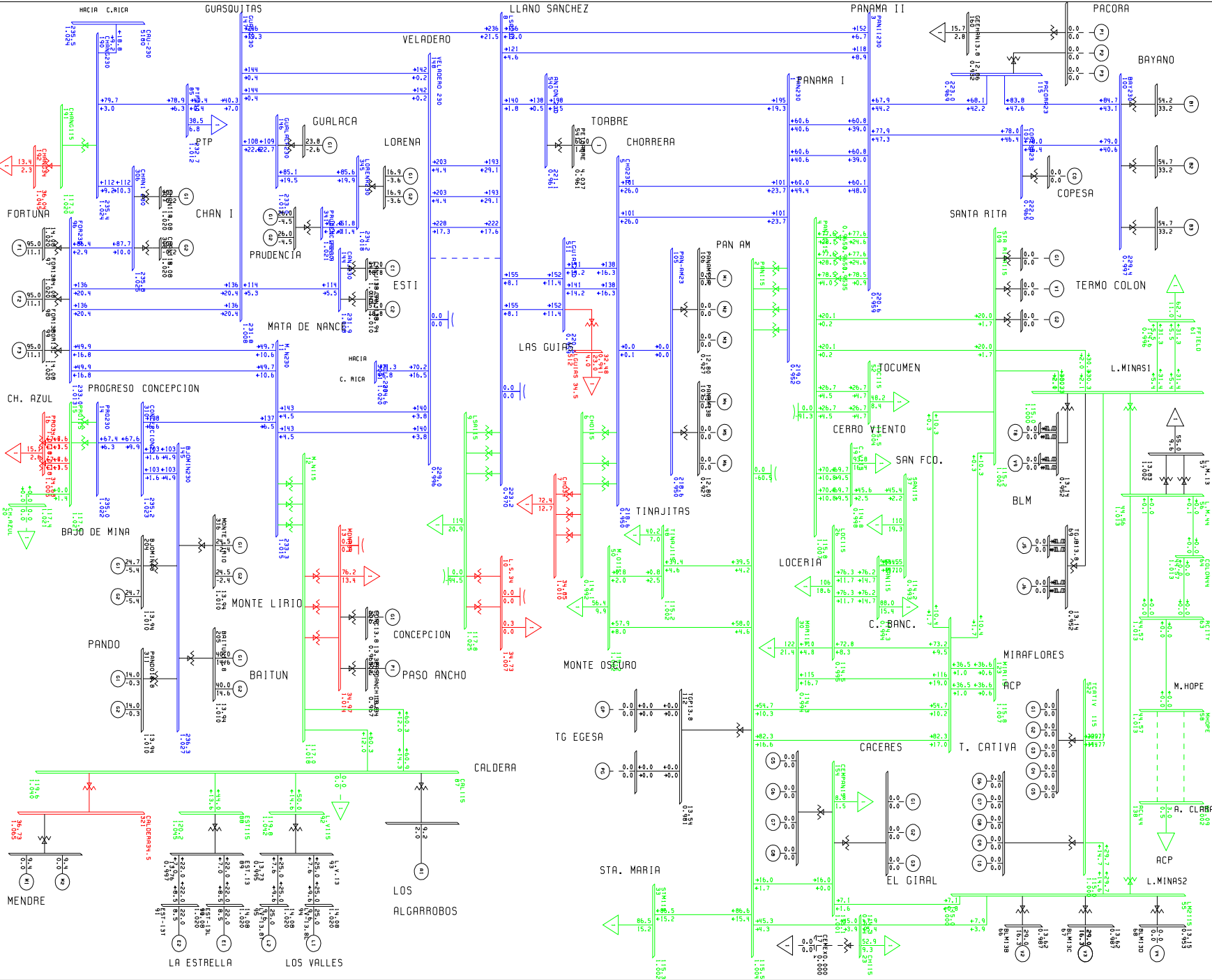
141 GAT6B	6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9725	5.6	2	7
141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9725	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9725	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0254	17.9	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0345	17.7	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0345	17.7	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	17.8	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 9:58
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2012 ESC MOD DEM MAX INV CONT FOR-GUAS IN MW/MVAR

X-- AREA	--X 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	1006.8	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	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	0.5	19.6	0.0
C.RICA	263.3	569.4	-236.8	0.0	468.6	40.1	359.2	
6	1314.9	1194.2	0.0	0.0	0.0	44.3	76.4	25.0
PANAMA	153.3	209.2	-253.0	0.0	564.9	40.4	721.7	
7	120.5	46.3	0.0	0.0	0.0	73.0	1.2	50.0
ACANAL	17.8	8.1	0.0	0.0	0.0	-7.2	16.9	
9	0.0	117.6	0.0	0.0	0.0	-117.8	0.1	-75.0
COLON	0.0	20.6	0.0	0.0	1.1	-27.3	7.7	
TOTALS	6584.6	6409.7	0.0	0.0	0.0	0.0	174.9	0.0
	653.6	1854.2	-1101.2	0.0	2113.4	0.0	2014.0	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2012 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA VELADERO-LLANO SÁNCHEZ**



ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 R 0 2012 ESC MOD DEM MAX INV CONT VEL-LLS
 MON. OCT 27 2008 10:07

KV<14 . <35 . <115

BUS - VOLTAGE (KV/P/U)
 BRANCH - MM/MVAR
 EQUIPMENT - MM/MVAR

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	1.0146	233.35	14	PRO230			230.00	6	1.0216	234.96
85	PTP230			230.00	6	1.0119	232.74	96	FOR230			230.00	6	1.0132	233.04
144	CANJ230			230.00	6	1.0081	231.87	145	BJOMIN230			230.00	6	1.0272	236.26
146	GUALACA230			230.00	6	1.0131	233.02	147	GUASQ230			230.00	6	1.0080	231.84
190	CHANG230			230.00	6	1.0236	235.42	306	CHAN1 230			230.00	6	1.0253	235.81
310	CONCEPCION230			230.00	6	1.0226	235.20	341	PRUDENCIA230			230.00	6	1.0212	234.89
345	LORENA230			230.00	6	1.0184	234.24	6000	FRONTER			230.00	6	1.0214	234.92

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	0.9523	219.03	3	PANII230			230.00	6	0.9592	220.62
5	CHO230			230.00	6	0.9504	218.58	8	LSA230			230.00	6	0.9702	223.16
100	BAY230			230.00	6	0.9972	229.36	103	COPESA23			230.00	6	0.9653	222.03
105	PAN-AM23			230.00	6	0.9504	218.58	115	PACORA23			230.00	6	0.9694	222.95
148	VELADERO 230			230.00	6	0.9957	229.02	511	LGUIAS230			230.00	6	0.9593	220.65
540	ANTON 230			230.00	6	0.9614	221.12								

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	1.0044	115.51	4	PANII115			115.00	6	1.0073	115.84
9	LSA115			115.00	6	1.0246	117.83	12	M.N115			115.00	6	1.0175	117.02
15	PRO115			115.00	6	1.0205	117.36	18	CAC115			115.00	6	1.0038	115.44
20	CH.AZUL			115.00	6	1.0213	117.45	33	STM115			115.00	6	1.0025	115.29
48	TINAJ115			115.00	6	1.0020	115.23	50	M.O115			115.00	6	1.0021	115.24
52	TOC115			115.00	6	1.0045	115.51	55	LM2115			115.00	6	1.0003	115.04
87	CAL115			115.00	6	1.0404	119.65	88	EST115			115.00	6	1.0448	120.15
92	L.V115			115.00	6	1.0421	119.84	109	STA RITA115			115.00	6	1.0017	115.19
123	MIR115			115.00	7	1.0069	115.79	154	CEMPAN15			115.00	6	1.0006	115.07
191	CHANG115			115.00	6	1.0198	117.27	522	TCATIVÁ 115			115.00	6	1.0001	115.01

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)
6	CHO115			115.00	6	0.9921	114.09	19	C.V115			115.00	6	0.9978	114.75
21	C.BAN115			115.00	6	0.9943	114.34	23	CH115			115.00	6	0.9936	114.27
26	LOC115			115.00	6	0.9954	114.47	30	MAR115			115.00	6	0.9941	114.32
37	SAN115			115.00	6	0.9932	114.22	54	LM1115			115.00	6	0.9999	114.99

61 FFIELD 115.00 9 0.9961 114.55

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 10:06
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT VEL-LLS

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	29.0	16.3	25.0	0.0	0.9873	33.7	0.8712	47.0			1	6		
67		BLM13C		13.800	V3	29.0	16.3	25.0	0.0	0.9873	33.7	0.8712	47.0			1	6		
90		EST-13L		13.800	E1	22.0	8.5	12.0	-5.0	1.0200	23.1	0.9322	27.0			1	6		
91		EST-13T		13.800	E2	22.0	8.5	12.0	-5.0	1.0200	23.1	0.9322	27.0			1	6		
94		LV-13.8L		13.800	L1	25.0	9.6	12.0	-5.0	1.0200	26.2	0.9338	27.0			1	6		
95		LV-13.8T		13.800	L2	25.0	9.6	12.0	-5.0	1.0200	26.2	0.9338	27.0			1	6		
97		FOR13A		13.800	F1	95.0	11.1	50.0	-50.0	1.0200	93.8	0.9932	111.0			1	6		
98		FOR13B		13.800	F2	95.0	11.1	50.0	-50.0	1.0200	93.8	0.9932	111.0			1	6		
99		FOR13C		13.800	F3	95.0	11.1	50.0	-50.0	1.0200	93.8	0.9932	111.0			1	6		
101		BAY13A		13.800	B1	54.2	33.2	50.0	-25.0	0.9900	64.2	0.8529	96.0			1	6	SYST	
102		BAY13B		13.800	B2	54.7	33.2	50.0	-25.0	0.9900	64.7	0.8546	96.0			1	6		
108		BAY13C		13.800	B3	54.7	33.2	550.0	-25.0	0.9900	64.7	0.8546	100.0			1	6		
142		CANJ13A		13.800	C1	57.0	18.8	29.0	-29.0	1.0100	59.4	0.9495	69.0			1	6		
143		CANJ13B		13.800	C2	57.0	18.8	29.0	-29.0	1.0100	59.4	0.9495	69.0			1	6		
151		GUALACA13.8		13.800	G1	23.8	-2.6	10.0	-10.0	1.0100	23.7	0.9941	26.7			1	6		
204		BJOMIN13		13.800	G1	24.7	-5.4	13.0	-13.0	1.0100	25.0	0.9768	28.9			1	6		
204		BJOMIN13		13.800	G2	24.7	-5.4	13.0	-13.0	1.0100	25.0	0.9768	28.9			1	6		
205		BAITUN13.8		13.800	G1	40.0	14.6	26.6	-26.6	1.0100	42.2	0.9394	50.6			1	6		
205		BAITUN13.8		13.800	G2	40.0	14.6	26.6	-26.6	1.0100	42.2	0.9394	50.6			1	6		
302		PASOANCH13.8		13.800	P1	4.8	2.0	2.0	-2.0	0.9667	5.3	0.9216	6.2			1	6		
304		ALGA13.8		13.800	A1	9.2	2.0	2.0	0.0	0.9921	9.5	0.9772	13.5			1	6		
307		CHANI A		13.800	G1	100.0	-0.2	50.0	-50.0	1.0200	98.0	1.0000	118.6			1	6		
308		CHANI B		13.800	G2	100.0	-0.2	50.0	-50.0	1.0200	98.0	1.0000	118.6			1	6		
311		PANDO13.8		13.800	G1	14.0	-0.3	10.0	-5.0	1.0100	13.9	0.9998	19.9			1	6		
311		PANDO13.8		13.800	G2	14.0	-0.3	10.0	-5.0	1.0100	13.9	0.9998	19.9			1	6		
316		MONTE LIRIO		13.800	G1	24.5	-2.4	12.0	-5.0	1.0100	24.4	0.9951	27.0			1	6		
316		MONTE LIRIO		13.800	G2	24.5	-2.4	12.0	-5.0	1.0100	24.4	0.9951	27.0			1	6		
317		MENDRE13.8		13.800	M1	9.4	0.0	0.0	0.0	1.1173	8.4	1.0000	35.3			1	6		
317		MENDRE13.8		13.800	M2	9.4	0.0	0.0	0.0	1.1173	8.4	1.0000	35.3			1	6		
342		LORENA13.8		13.800	G1	16.9	-3.6	10.5	-5.0	1.0100	17.1	0.9781	19.9			1	6		
342		LORENA13.8		13.800	G2	16.9	-3.6	10.5	-5.0	1.0100	17.1	0.9781	19.9			1	6		
343		PRUDENCIA138		13.800	G1	26.0	-4.5	9.8	-9.8	1.0100	26.1	0.9854	33.0			1	6		
343		PRUDENCIA138		13.800	G2	26.0	-4.5	9.8	-9.8	1.0100	26.1	0.9854	33.0			1	6		
541		PETOABRE		4.2000	1	60.0	1.4	1.4	1.4	0.9611	62.4	0.9997	136.0			1	6		
SUBSYSTEM TOTALS						1323.4	238.8	1235.2	-542.4				1813.8						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 10:06
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008
 AÑO 2012 ESC MOD DEM MAX INV CONT VEL-LLS

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	5.5	15.0	0.0	1.0100	35.1	0.9878	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.3	8.0	0.0	1.0100	16.9	0.9999	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9966	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9966	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	-0.2	2.0	-2.0	1.0000	1.9	0.9966	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9741	5.6			2	7	

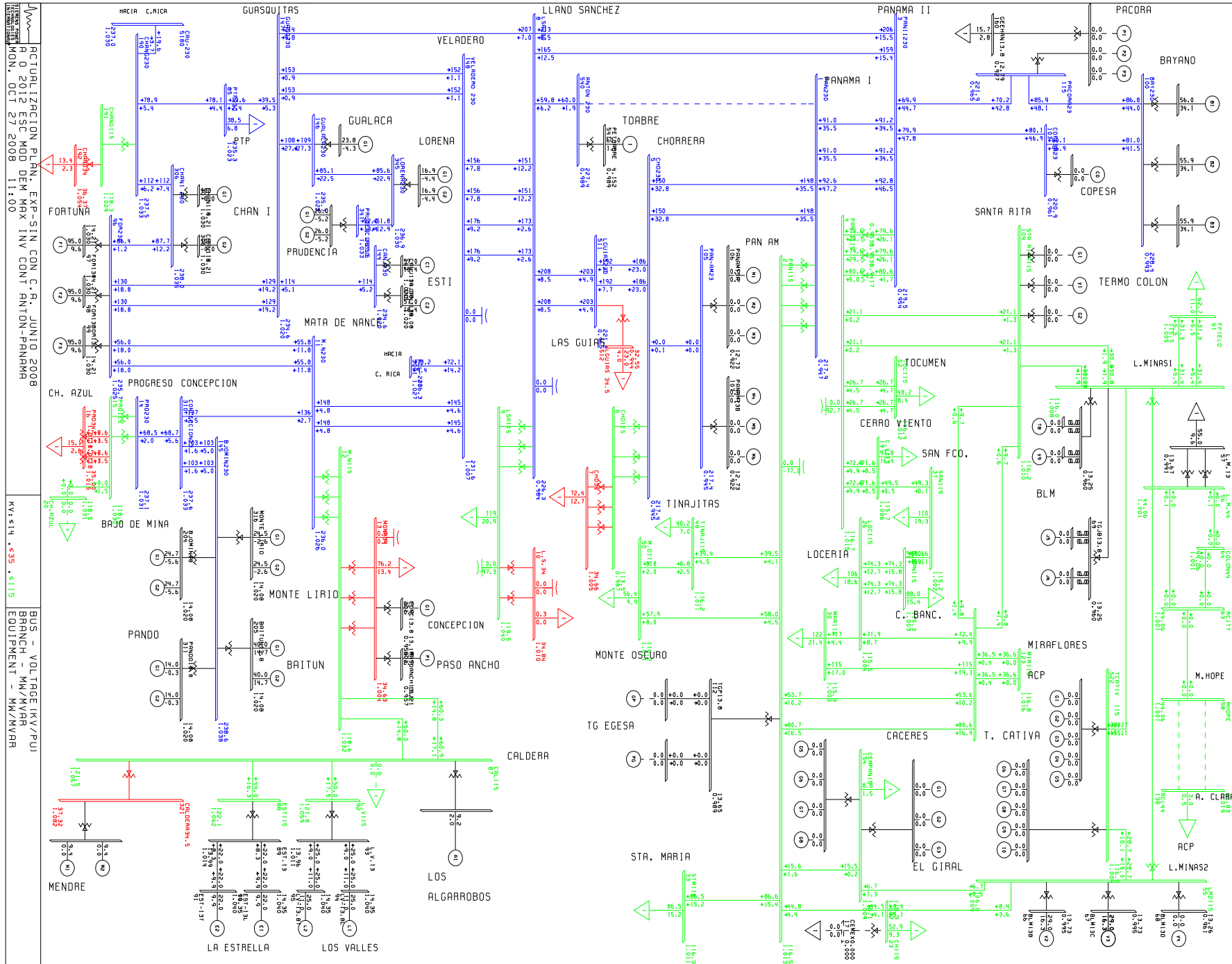
141 GAT6B	6.9000	G5	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9741	6.2	2	7
141 GAT6B	6.9000	G6	3.9	-0.9	3.0	-3.0	1.0000	4.0	0.9741	6.2	2	7
170 MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0239	17.9	0.9281	23.0	2	7
171 MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0330	17.7	0.9281	23.0	2	7
171 MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0330	17.7	0.9281	23.0	2	7
SUBSYSTEM TOTALS			120.5	23.1	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 10:07
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2012 ESC MOD DEM MAX INV CONT VEL-LLS IN MW/MVAR

X-- AREA	--X GENERATION	FROM 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	1006.8	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	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	0.5	19.6	0.0
C.RICA	263.1	569.4	-236.8	0.0	468.4	39.8	359.1	
6	1323.4	1194.2	0.0	0.0	0.0	44.3	84.9	25.0
PANAMA	238.8	209.2	-246.3	0.0	533.8	35.5	774.2	
7	120.5	46.3	0.0	0.0	0.0	73.0	1.2	50.0
ACANAL	23.1	8.1	0.0	0.0	0.0	-2.1	17.0	
9	0.0	117.6	0.0	0.0	0.0	-117.8	0.1	-75.0
COLON	0.0	20.6	0.0	0.0	1.1	-27.3	7.7	
TOTALS	6593.2	6409.7	0.0	0.0	0.0	0.0	183.5	0.0
	744.1	1854.2	-1094.5	0.0	2082.1	0.0	2066.5	

**PLAN DE EXPANSION DEL SIN CON CENTROAMERICA JUNIO DE 2008
AÑO 2012 ESCENARIO MODERADO DEMANDA MÁXIMA INVIERNO
CONTINGENCIA ANTÓN-PANAMÁ**



ACTUALIZACION PLAN. EXP-SIN CON C.R. JUNIO 2008
 R 0 2012 ESC-MOD DEM-KRX INV CONT ANTON-PANAMA
 11:00

KV=115 .535 .5115

BUS - VOLTAGE (KV/PV)
 BRANCH - KM/MVAR
 EQUIPMENT - KM/MVAR

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	29.0	16.3	25.0	0.0	0.9950	33.4	0.8719	47.0			1	6		
67		BLM13C		13.800	V3	29.0	16.3	25.0	0.0	0.9950	33.4	0.8719	47.0			1	6		
90		EST-13L		13.800	E1	22.0	9.9	12.0	-5.0	1.0400	23.2	0.9120	27.0			1	6		
91		EST-13T		13.800	E2	22.0	9.9	12.0	-5.0	1.0400	23.2	0.9120	27.0			1	6		
94		LV-13.8L		13.800	L1	25.0	11.0	12.0	-5.0	1.0400	26.3	0.9149	27.0			1	6		
95		LV-13.8T		13.800	L2	25.0	11.0	12.0	-5.0	1.0400	26.3	0.9149	27.0			1	6		
97		FOR13A		13.800	F1	95.0	9.6	50.0	-50.0	1.0300	92.7	0.9949	111.0			1	6		
98		FOR13B		13.800	F2	95.0	9.6	50.0	-50.0	1.0300	92.7	0.9949	111.0			1	6		
99		FOR13C		13.800	F3	95.0	9.6	50.0	-50.0	1.0300	92.7	0.9949	111.0			1	6		
101		BAY13A		13.800	B1	56.0	34.1	50.0	-25.0	0.9873	66.4	0.8537	96.0			1	6	SYST	
102		BAY13B		13.800	B2	55.9	34.1	50.0	-25.0	0.9873	66.4	0.8536	96.0			1	6		
108		BAY13C		13.800	B3	55.9	34.1	550.0	-25.0	0.9873	66.4	0.8536	100.0			1	6		
142		CANJ13A		13.800	C1	57.0	18.4	29.0	-29.0	1.0200	58.7	0.9514	69.0			1	6		
143		CANJ13B		13.800	C2	57.0	18.4	29.0	-29.0	1.0200	58.7	0.9514	69.0			1	6		
151		GUALACA13.8		13.800	G1	23.8	-4.3	10.0	-10.0	1.0200	23.7	0.9844	26.7			1	6		
204		BJOMIN13		13.800	G1	24.7	-5.6	13.0	-13.0	1.0200	24.8	0.9750	28.9			1	6		
204		BJOMIN13		13.800	G2	24.7	-5.6	13.0	-13.0	1.0200	24.8	0.9750	28.9			1	6		
205		BAITUN13.8		13.800	G1	40.0	14.7	26.6	-26.6	1.0200	41.8	0.9384	50.6			1	6		
205		BAITUN13.8		13.800	G2	40.0	14.7	26.6	-26.6	1.0200	41.8	0.9384	50.6			1	6		
302		PASOANCH13.8		13.800	P1	4.8	2.0	2.0	-2.0	0.9571	5.4	0.9216	6.2			1	6		
304		ALGA13.8		13.800	A1	9.2	2.0	2.0	0.0	1.0077	9.3	0.9772	13.5			1	6		
307		CHAN1 A		13.800	G1	100.0	0.0	50.0	-50.0	1.0300	97.1	1.0000	118.6			1	6		
308		CHAN1 B		13.800	G2	100.0	0.0	50.0	-50.0	1.0300	97.1	1.0000	118.6			1	6		
311		PANDO13.8		13.800	G1	14.0	-0.3	10.0	-5.0	1.0200	13.7	0.9997	19.9			1	6		
311		PANDO13.8		13.800	G2	14.0	-0.3	10.0	-5.0	1.0200	13.7	0.9997	19.9			1	6		
316		MONTE LIRIO		13.800	G1	24.5	-2.6	12.0	-5.0	1.0200	24.2	0.9945	27.0			1	6		
316		MONTE LIRIO		13.800	G2	24.5	-2.6	12.0	-5.0	1.0200	24.2	0.9945	27.0			1	6		
317		MENDRE13.8		13.800	M1	9.4	0.0	0.0	0.0	1.1352	8.3	1.0000	35.3			1	6		
317		MENDRE13.8		13.800	M2	9.4	0.0	0.0	0.0	1.1352	8.3	1.0000	35.3			1	6		
342		LORENA13.8		13.800	G1	16.9	-4.4	10.5	-5.0	1.0200	17.1	0.9682	19.9			1	6		
342		LORENA13.8		13.800	G2	16.9	-4.4	10.5	-5.0	1.0200	17.1	0.9682	19.9			1	6		
343		PRUDENCIA13813.800		13.800	G1	26.0	-5.2	9.8	-9.8	1.0200	26.0	0.9803	33.0			1	6		
343		PRUDENCIA13813.800		13.800	G2	26.0	-5.2	9.8	-9.8	1.0200	26.0	0.9803	33.0			1	6		
541		PETOABRE		4.2000	1	60.0	1.4	1.4	1.4	0.9885	60.7	0.9997	136.0			1	6		
SUBSYSTEM TOTALS						1327.6	236.8	1235.2	-542.4				1813.8						

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	5.5	15.0	0.0	1.0200	34.7	0.9877	44.1			2	7	
130		MIR13F		13.800	G5	17.1	0.1	8.0	0.0	1.0200	16.8	1.0000	27.7			2	7	
140		GAT6A		6.9000	G1	1.9	0.0	2.0	-2.0	1.0200	1.9	0.9999	4.1			2	7	
140		GAT6A		6.9000	G2	1.9	0.0	2.0	-2.0	1.0200	1.9	0.9999	4.1			2	7	
140		GAT6A		6.9000	G3	1.9	0.0	2.0	-2.0	1.0200	1.9	0.9999	4.1			2	7	
141		GAT6B		6.9000	G4	3.9	-0.7	3.0	-3.0	1.0200	3.9	0.9820	5.6			2	7	
141		GAT6B		6.9000	G5	3.9	-0.7	3.0	-3.0	1.0200	3.9	0.9820	6.2			2	7	

141 GAT6B	6.9000 G6	3.9	-0.7	3.0	-3.0	1.0200	3.9	0.9820	6.2	2	7
170 MIR13G	13.800 M1	17.0	6.8	11.2	6.8	1.0342	17.7	0.9281	23.0	2	7
171 MIR13H	13.800 M1	17.0	6.8	11.2	6.8	1.0432	17.6	0.9281	23.0	2	7
171 MIR13H	13.800 M2	17.0	6.8	11.2	6.8	1.0432	17.6	0.9281	23.0	2	7
SUBSYSTEM TOTALS		273.5	23.9	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS/E MON, OCT 27 2008 10:59
 ACTUALIZACION PLAN. EXP-SIN CON C.A. JUNIO 2008 AREA TOTALS
 AÑO 2012 ESC MOD DEM MAX INV CONT ANTON-PANAMA 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	1006.8	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	0.5	19.7	0.0
C.RICA	248.1	569.4	-237.6	0.0	469.9	27.5	358.7	
6	1327.6	1194.2	0.0	0.0	0.0	44.3	89.1	25.0
PANAMA	236.8	209.2	-267.0	0.0	548.0	47.0	795.5	
7	120.5	46.3	0.0	0.0	0.0	73.0	1.2	50.0
ACANAL	23.9	8.1	0.0	0.0	0.0	-0.8	16.6	
9	0.0	117.6	0.0	0.0	0.0	-117.8	0.1	-75.0
COLON	0.0	20.6	0.0	0.0	1.1	-27.4	7.9	
TOTALS	6597.3	6409.7	0.0	0.0	0.0	0.0	187.6	0.0
	727.5	1854.2	-1116.0	0.0	2097.8	0.0	2087.1	