

ANEXO 33 – ALTERNATIVA 4

RESULTADOS DE ANALISIS DE FLUJOS DE POTENCIA ESTABILIDAD TRANSITORIA CORTOCIRCUITO



de

RESULTADOS DE FLUJOS DE POTENCIA

INDICE GENERAL

Año 2012

Demanda Máxima de Verano
Demanda Mínima de Verano
Demanda Máxima de Invierno
 Contingencia Llano Sánchez – Panamá II
 Contingencia Veladero – Llano Sánchez

Año 2015

Demanda Máxima de Verano
Demanda Mínima de Verano
Demanda Máxima de Invierno
 Contingencia Antón-Panamá
 Contingencia Llano Sánchez-Panamá II

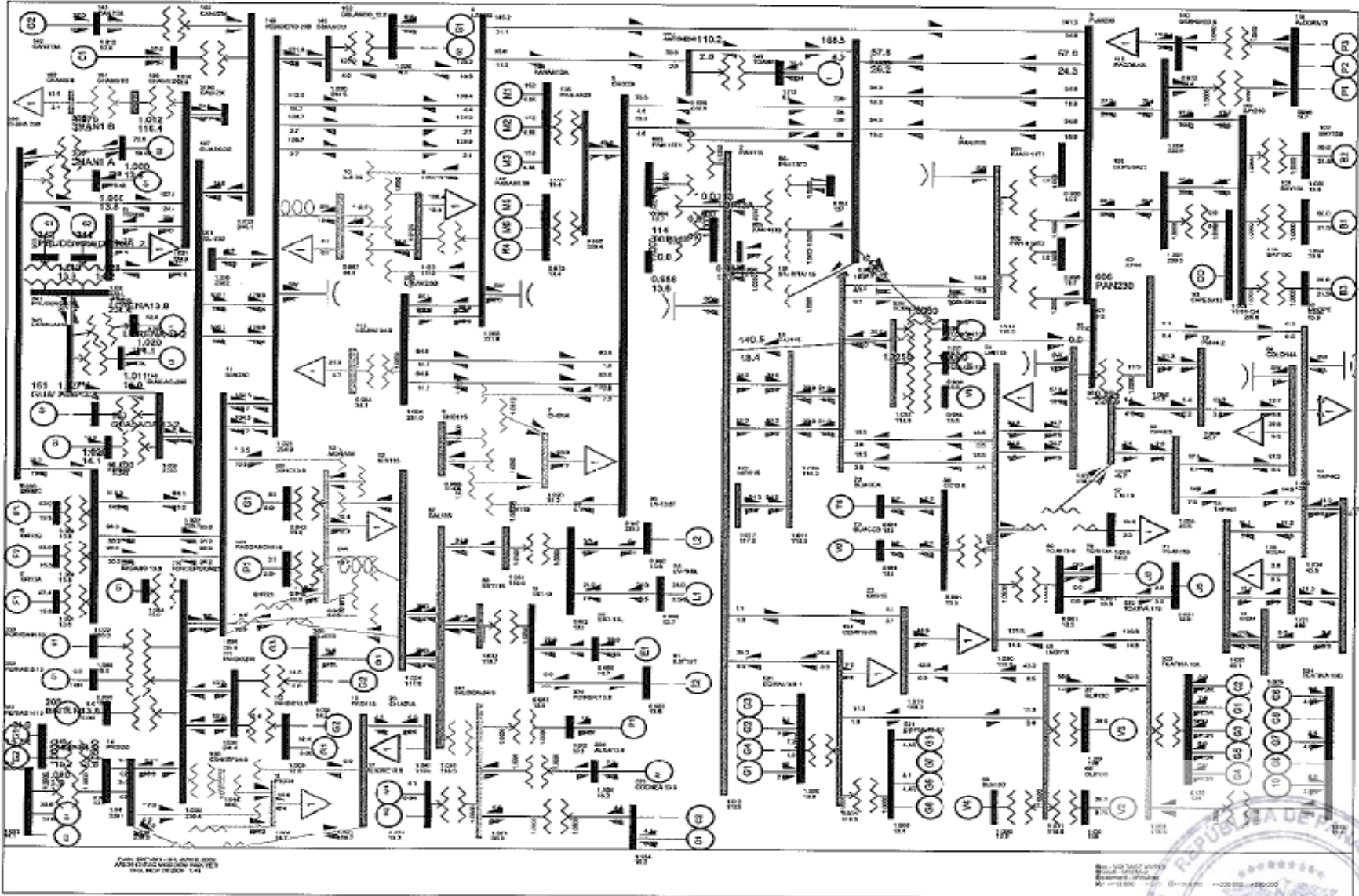
Año 2021

Demanda Máxima de Verano
Demanda Mínima de Verano
Demanda Máxima de Invierno
 Contingencia Antón- Panamá
 Contingencia Guasquita – Veladero
 Contingencia Llano Sánchez – Panamá II
 Contingencia Veladero – Llano Sánchez



de

Año 2012
Demanda Máxima de Verano



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

THU, NOV 26 2009 7:48

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
8	LSA230	230.00	6	1.0076	231.75		
14	PRO230	230.00	6	1.0392	239.01		
96	FOR230	230.00	6	1.0219	235.05		
103	COPESA23	230.00	6	1.0011	230.25		
144	CANJ230	230.00	6	1.0224	235.15		
146	GUALACA230	230.00	6	1.0245	235.64		
148	VELADERO 230	230.00	6	1.0213	234.89		
190	CHANG230	230.00	6	1.0211	234.85		
310	CONCEPCION23	230.00	6	1.0363	238.35		
341	PRUDENCIA230	230.00	6	1.0278	236.40		
511	LGUIAS230	230.00	6	1.0042	230.96		
6000	FRONTER	230.00	6	1.0384	238.84		

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.N230	230.00	6	1.0251	235.78		
85	PTP230	230.00	6	1.0231	235.32		
100	BAY230	230.00	6	1.0243	235.58		
115	PACORA23	230.00	6	1.0039	230.90		
145	BJOMIN230	230.00	6	1.0413	239.49		
147	GUASQ230	230.00	6	1.0222	235.10		
149	BBLANCO	230.00	6	1.0197	234.54		
306	CHAN1 230	230.00	6	1.0197	234.54		
311	PANDO230	230.00	6	1.0363	238.35		
345	LORENA230	230.00	6	1.0269	236.20		
540	ANTON 230	230.00	6	1.0088	232.02		

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN230	230.00	6	0.9928	228.35		
5	CHO230	230.00	6	0.9971	229.34		
606	PAN230	230.00	6	0.9936	228.52		

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
3	PANII230	230.00	6	0.9965	229.20		
105	PAN-AM23	230.00	6	0.9972	229.35		

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

THU, NOV 26 2009 7:49

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115	115.00	6	1.0116	116.33		
9	LSA115	115.00	6	1.0133	116.53		
15	PRO115	115.00	6	1.0410	119.72		
19	C.V115	115.00	6	1.0052	115.59		
21	C.BAN115	115.00	6	1.0024	115.28		
26	LOC115	115.00	6	1.0034	115.39		
33	STM115	115.00	6	1.0098	116.13		
48	TINAJ115	115.00	6	1.0094	116.08		
52	TOC115	115.00	6	1.0109	116.25		
55	LM2115	115.00	6	1.0311	118.58		
87	CAL115	115.00	6	1.0306	118.52		
92	L.V115	115.00	6	1.0310	118.57		
123	MIR115	115.00	7	1.0174	117.00		

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
4	PANII115	115.00	6	1.0135	116.55		
12	M.N115	115.00	6	1.0243	117.80		
18	CAC115	115.00	6	1.0113	116.30		
20	CH.AZUL	115.00	6	1.0418	119.81		
23	CH115	115.00	6	1.0115	116.32		
30	MAR115	115.00	6	1.0023	115.27		
37	SAN115	115.00	6	1.0014	115.16		
50	M.O115	115.00	6	1.0095	116.09		
54	LM1115	115.00	6	1.0301	118.46		
61	FFIELD	115.00	6	1.0273	118.14		
88	EST115	115.00	6	1.0318	118.66		
109	STA RITA115	115.00	6	1.0285	118.28		
154	CEMPAN15	115.00	6	1.0309	118.55		



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191 CHANG115 115.00 6 1.0120 116.38 522 TCATIVÁ 115 115.00 6 1.0307 118.54
 529 TCOLON 115 115.00 6 1.0329 118.78

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)
 6 CH0115 115.00 6 0.9983 114.80

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 7:50
 PLAN. EXP-SIN - C.A. JUNIO 2009
 Año 2012 ESC MOD DEM MAX VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	AREA	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	38.0	9.7	25.0	0.0	1.0000	39.2	0.9687	47.0			1	6	
67	BLM13C	13.800	V3	38.0	9.7	25.0	0.0	1.0000	39.2	0.9687	47.0			1	6	
68	BLM13D	13.800	V4	38.0	10.1	25.0	0.0	1.0000	39.3	0.9666	47.0			1	6	
90	EST-13L	13.800	E1	22.0	3.1	12.0	-5.0	0.9900	22.4	0.9901	27.0			1	6	
94	LV-13.8L	13.800	L1	24.0	3.5	12.0	-5.0	0.9900	24.5	0.9896	27.0			1	6	
97	FOR13A	13.800	F1	87.4	-15.8	50.0	-50.0	1.0000	88.8	0.9840	111.0			1	6	SYST
98	FOR13B	13.800	F2	93.0	-15.3	50.0	-50.0	1.0000	94.2	0.9868	111.0			1	6	
99	FOR13C	13.800	F3	93.0	-15.3	50.0	-50.0	1.0000	94.2	0.9868	111.0			1	6	
101	BAY13A	13.800	B1	60.0	21.5	50.0	-25.0	1.0000	63.7	0.9412	96.0			1	6	
102	BAY13B	13.800	B2	60.0	21.5	50.0	-25.0	1.0000	63.7	0.9412	96.0			1	6	
106	PANAM13A	13.800	M1	15.2	4.8	9.0	0.0	1.0000	15.9	0.9544	20.7			1	6	
106	PANAM13A	13.800	M2	15.2	4.8	9.0	0.0	1.0000	15.9	0.9544	20.7			1	6	
106	PANAM13A	13.800	M3	15.2	4.8	9.0	0.0	1.0000	15.9	0.9544	20.7			1	6	
108	BAY13C	13.800	B3	60.0	21.5	50.0	-25.0	1.0000	63.7	0.9412	100.0			1	6	
142	CANJ13A	13.800	C1	37.0	10.3	29.0	-29.0	1.0100	38.0	0.9633	69.0			1	6	
143	CANJ13B	13.800	C2	37.0	10.3	29.0	-29.0	1.0100	38.0	0.9633	69.0			1	6	
150	GUALACA 13	13.800	G2	13.0	-5.8	7.4	-7.4	1.0000	14.2	0.9133	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	6.6	0.0	6.1	0.0	1.0197	6.5	1.0000	11.6			1	6	
193	GEBOYIC	13.800	G1	8.3	-3.8	4.0	-4.0	1.0000	9.1	0.9112	35.3			1	6	
204	BJOMIN13	13.800	G1	23.0	-13.0	13.0	-13.0	1.0231	25.8	0.8706	28.9			1	6	
205	BAITUN13.8	13.800	G1	34.0	15.2	26.6	-26.6	1.0100	36.9	0.9128	50.6			1	6	
301	CONC13.8	13.800	G1	8.9	5.0	5.0	-5.0	0.9423	10.8	0.8707	13.5			1	6	
302	PASOANCH13.8	13.800	P1	3.7	2.0	2.0	-2.0	0.9404	4.5	0.8823	6.2			1	6	
304	ALGA13.8	13.800	A1	7.2	0.0	2.0	0.0	1.1037	6.5	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	14.0	-5.0	12.0	-5.0	1.0294	14.4	0.9417	20.6			1	6	
307	CHAN1 A	13.800	G1	72.0	-16.4	50.0	-50.0	1.0000	73.8	0.9751	118.6			1	6	
308	CHAN1 B	13.800	G2	72.0	-16.4	50.0	-50.0	1.0000	73.8	0.9751	118.6			1	6	
312	PANDO13.8	13.800	G1	12.4	-5.0	10.0	-5.0	1.0031	13.3	0.9274	19.9			1	6	
317	MENDRE13.8	13.800	M1	8.3	0.0	0.0	0.0	1.1035	7.5	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C1	4.4	0.0	0.0	0.0	1.1036	4.0	1.0000	35.3			1	6	
324	POTRER 13.8	13.800	P1	3.0	-1.8	2.0	-2.0	1.0000	3.5	0.8582	6.2			1	6	
340	PEDGALITO138	13.800	P1	16.0	7.8	12.0	-5.0	1.0100	17.6	0.8998	27.0			1	6	
342	LORENA13.8	13.800	L1	12.0	-2.2	10.5	-5.0	1.0200	12.0	0.9843	19.9			1	6	



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343	PRUDENCIA_1	13.800	G1	20.0	-9.8	9.8	-9.8	1.0096	22.0	0.8987	33.0	1	6
346	LORENA 13-2	13.800	L2	12.8	-5.0	10.5	-5.0	1.0114	13.5	0.9310	19.9	1	6
351	PERLAS N 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9900	10.4	0.8742	13.5	1	6
352	PERLAS S 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9900	10.4	0.8742	13.5	1	6
521	EGIRAL13.8	113.800	G1	3.6	2.0	2.8	1.3	1.0000	4.1	0.8766	4.8	1	6
521	EGIRAL13.8	113.800	G2	3.6	2.0	2.8	1.3	1.0000	4.1	0.8766	4.8	1	6
523	TCATIVÁ 13A	13.800	G1	7.6	-1.1	6.6	-6.6	0.9700	7.9	0.9898	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.0	-1.2	6.6	-6.6	0.9700	8.3	0.9898	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.0	-1.2	6.6	-6.6	0.9700	8.3	0.9898	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.0	-1.2	6.6	-6.6	0.9700	8.3	0.9898	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.0	-1.2	6.6	-6.6	0.9700	8.3	0.9898	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.0	3.9	6.6	-6.6	1.0000	8.9	0.8996	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.3	4.0	6.6	-6.6	1.0000	9.2	0.8996	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.3	4.0	6.6	-6.6	1.0000	9.2	0.8996	10.9	1	6
525	TCOLON 13A	13.800	G1	35.0	19.3	19.3	19.3	1.0211	39.1	0.8760	44.4	1	6
531	EGIRAL13.8	213.800	G5	8.1	4.4	6.4	3.0	1.0000	9.2	0.8792	10.9	1	6
531	EGIRAL13.8	213.800	G6	8.1	4.4	6.4	3.0	1.0000	9.2	0.8792	10.9	1	6
541	TOABRE	0.6000	1	75.0	0.0	0.0	0.0	1.0117	74.1	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1300.0	83.4	817.1	-522.4				2006.1		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 7:50
 PLAN. EXP-SIN - C.A. JUNIO 2009
 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	0.0	15.0	0.0	1.0114	34.6	1.0000	44.1			2	7		
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0245	16.6	1.0000	27.7			2	7		
140	GAT6A	6.9000	G1	1.9	-0.7	2.0	-2.0	1.0100	2.0	0.9411	4.1			2	7		
140	GAT6A	6.9000	G2	1.9	-0.7	2.0	-2.0	1.0100	2.0	0.9411	4.1			2	7		
140	GAT6A	6.9000	G3	1.9	-0.7	2.0	-2.0	1.0100	2.0	0.9411	4.1			2	7		
141	GAT6B	6.9000	G4	3.9	-1.5	3.0	-3.0	1.0100	4.1	0.9355	5.6			2	7		
141	GAT6B	6.9000	G5	3.9	-1.5	3.0	-3.0	1.0100	4.1	0.9355	6.2			2	7		
141	GAT6B	6.9000	G6	3.9	-1.5	3.0	-3.0	1.0100	4.1	0.9355	6.2			2	7		
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0387	17.6	0.9281	23.0			2	7		
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0477	17.5	0.9281	23.0			2	7		
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0477	17.5	0.9281	23.0			2	7		
SUBSYSTEM TOTALS				120.4	14.0	71.5	5.5				171.3						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 7:52
 PLAN. EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 Año 2012 ESC MOD DEM MAX VER 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
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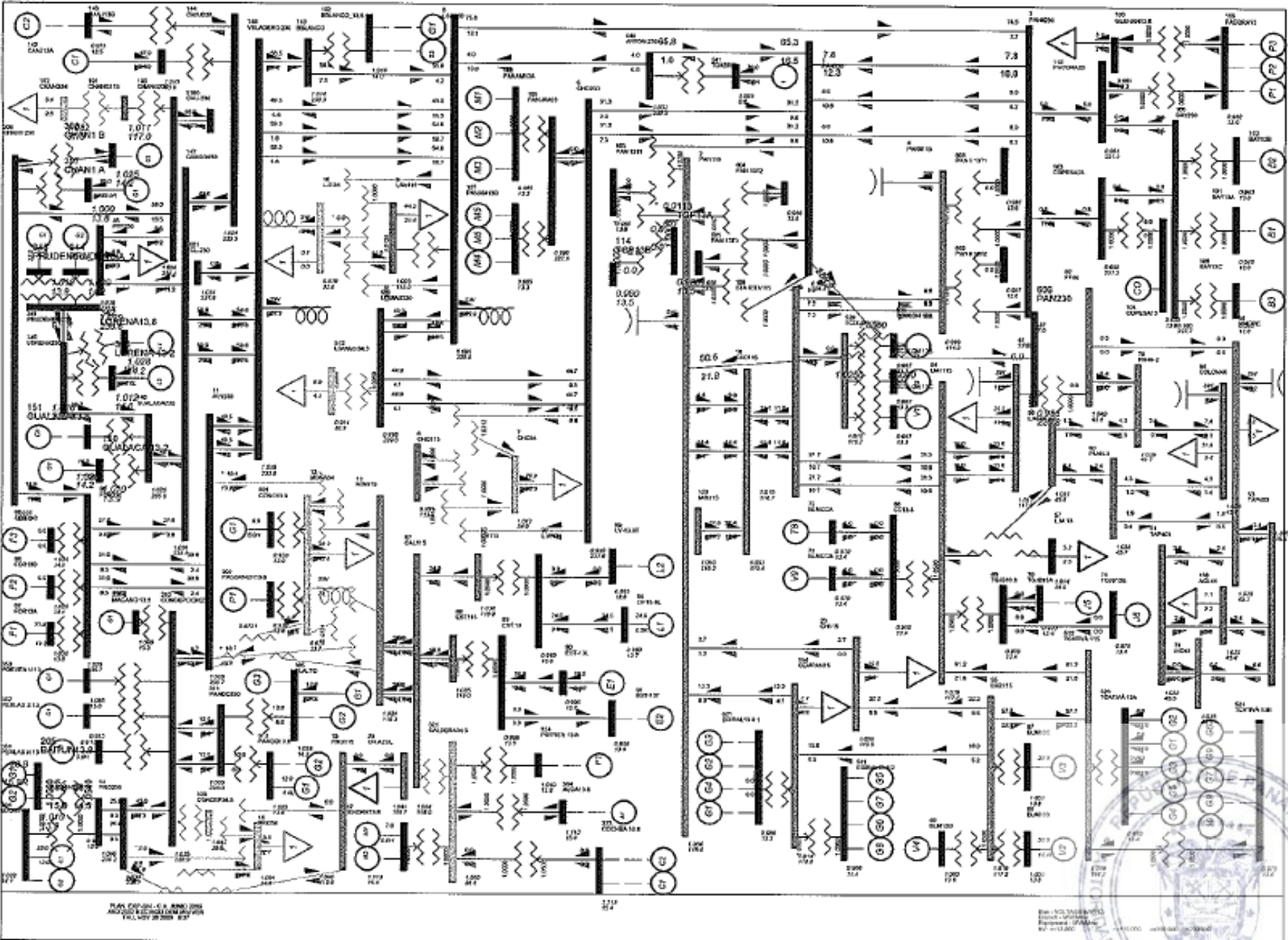
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1	1199.9	1312.2	0.0	0.0	0.0	-145.0	32.8	-145.0
GUATEMAL	59.0	349.5	-265.8	0.0	412.0	39.7	347.6	
2	913.4	902.0	0.0	0.0	0.0	0.0	11.4	0.0
SALVADOR	109.0	182.3	-58.0	0.0	219.4	38.1	166.1	
3	1009.2	985.5	0.0	0.0	0.0	0.1	23.6	0.0
HONDURAS	68.2	290.6	-187.9	0.0	301.9	-9.9	277.3	
4	536.7	527.1	0.0	0.0	0.0	0.0	9.6	0.0
NICA	41.7	224.5	-98.5	0.0	142.6	-83.1	141.4	
5	1345.1	1324.8	0.0	0.0	0.0	0.4	19.9	0.0
C. RICA	235.9	569.4	-236.8	0.0	478.6	24.2	357.7	
6	1300.0	1182.7	0.0	0.0	0.0	68.1	36.3	170.0
PANAMA	83.4	207.2	-15.8	0.0	475.5	-0.7	366.0	
7	120.4	42.8	0.0	0.0	0.0	76.4	1.2	50.0
ACANAL	14.0	7.5	0.0	0.0	0.0	-8.2	14.7	
9	0.0	13.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.3	0.0	0.0	0.0	0.0	0.0	
TOTALS	6424.7	6290.1	0.0	0.0	0.0	0.0	134.7	0.0
	611.2	1833.3	-862.8	0.0	2030.0	0.0	1670.8	



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Demanda Mínima de Verano



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

THU, NOV 26 2009 9:43

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.N230	230.00	6	1.0246	235.66		
85	PTP230	230.00	6	1.0266	236.12		
144	CANJ230	230.00	6	1.0240	235.51		
146	GUALACA230	230.00	6	1.0258	235.93		
148	VELADERO	230230.00	6	1.0158	233.64		
190	CHANG230	230.00	6	1.0265	236.09		
310	CONCEPCION230	230.00	6	1.0346	237.96		
341	PRUDENCIA230	230.00	6	1.0288	236.62		
540	ANTON	230	230.00	6	1.0022	230.51	

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
14	PRO230	230.00	6	1.0379	238.73		
96	FOR230	230.00	6	1.0247	235.67		
145	BJOMIN230	230.00	6	1.0401	239.22		
147	GUASQ230	230.00	6	1.0239	235.50		
149	BBLANCO	230.00	6	1.0144	233.32		
306	CHAN1	230	230.00	6	1.0255	235.86	
311	PANDO230	230.00	6	1.0346	237.95		
345	LORENA230	230.00	6	1.0278	236.38		
6000	FRONTER	230.00	6	1.0372	238.56		

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN230	230.00	6	0.9854	226.64		
5	CHO230	230.00	6	0.9896	227.60		
100	BAY230	230.00	6	0.9901	227.73		
105	PAN-AM23	230.00	6	0.9896	227.60		
511	LGUIAS230	230.00	6	0.9977	229.48		

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
3	PANII230	230.00	6	0.9868	226.97		
8	LSA230	230.00	6	0.9993	229.83		
103	COPESA23	230.00	6	0.9878	227.19		
115	PACORA23	230.00	6	0.9879	227.23		
606	PAN230	230.00	6	0.9861	226.80		

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

THU, NOV 26 2009 9:44

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115	115.00	6	1.0037	115.42		
12	M.N115	115.00	6	1.0285	118.28		
18	CAC115	115.00	6	1.0035	115.40		
23	CH115	115.00	6	1.0046	115.52		
48	TINAJ115	115.00	6	1.0022	115.26		
54	LM115	115.00	6	1.0181	117.09		
61	FFIELD	115.00	6	1.0170	116.96		
88	EST115	115.00	6	1.0349	119.01		
109	STA RITA115	115.00	6	1.0149	116.71		
154	CEMPAN15	115.00	6	1.0141	116.62		
522	TCATIVÁ	115	115.00	6	1.0186	117.14	

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115	115.00	6	1.0047	115.54		
15	PRO115	115.00	6	1.0398	119.58		
20	CH.AZUL	115.00	6	1.0406	119.67		
33	STM115	115.00	6	1.0025	115.29		
50	M.O115	115.00	6	1.0023	115.27		
55	LM2115	115.00	6	1.0190	117.19		
87	CAL115	115.00	6	1.0339	118.90		
92	L.V115	115.00	6	1.0343	118.94		
123	MIR115	115.00	7	1.0100	116.15		
191	CHANG115	115.00	6	1.0173	116.98		
529	TCOLON	115	115.00	6	1.0149	116.72	

BUSES WITH VOLTAGE LESS THAN 1.0000:



BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
4		PANII115		115.00	6	0.9985	114.83	6		CHO115		115.00	6	0.9906	113.92
19		C.V115		115.00	6	0.9946	114.38	21		C.BAN115		115.00	6	0.9967	114.62
26		LOC115		115.00	6	0.9976	114.72	30		MAR115		115.00	6	0.9973	114.68
37		SAN115		115.00	6	0.9956	114.49	52		TOC115		115.00	6	0.9967	114.62

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 9:46
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MIN VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING	
66		BLM13B		13.800	V2	32.0	14.4	25.0	0.0	1.0000	35.1	0.9116	47.0							1	6		
67		BLM13C		13.800	V3	32.0	14.4	25.0	0.0	1.0000	35.1	0.9116	47.0							1	6		
68		BLM13D		13.800	V4	32.0	15.1	25.0	0.0	1.0000	35.4	0.9048	47.0							1	6		
90		EST-13L		13.800	E1	19.0	2.0	12.0	-5.0	0.9900	19.3	0.9946	27.0							1	6		
94		LV-13.8L		13.800	L1	24.0	2.5	12.0	-5.0	0.9900	24.4	0.9946	27.0							1	6		
97		FOR13A		13.800	F1	77.8	-19.2	50.0	-50.0	1.0000	80.1	0.9710	111.0							1	6	SYST	
142		CANJ13A		13.800	C1	47.0	12.8	29.0	-29.0	1.0100	48.2	0.9651	69.0							1	6		
150		GUALACA	13-2	13.800	G2	10.0	-3.8	7.4	-7.4	1.0100	10.6	0.9350	14.8							1	6		
193		GEBOYIC		13.800	G1	8.3	-4.0	4.0	-4.0	1.0045	9.2	0.9014	35.3							1	6		
204		BJOMIN13		13.800	G1	23.0	-13.0	13.0	-13.0	1.0218	25.9	0.8706	28.9							1	6		
205		BAITUN13.8		13.800	G1	28.8	15.9	26.6	-26.6	1.0100	32.6	0.8754	50.6							1	6		
301		CONC13.8		13.800	G1	8.8	5.0	5.0	-5.0	0.9329	10.9	0.8706	13.5							1	6		
305		ELALTO		13.800	G1	12.0	-5.0	12.0	-5.0	1.0277	12.6	0.9231	20.6							1	6		
307		CHAN1 A		13.800	G1	70.0	-22.0	50.0	-50.0	1.0000	73.4	0.9539	118.6							1	6		
312		PANDO13.8		13.800	G1	12.0	-5.0	10.0	-5.0	1.0015	13.0	0.9231	19.9							1	6		
317		MENDRE13.8		13.800	M1	7.0	0.0	0.0	0.0	1.1130	6.3	1.0000	35.3							1	6		
340		PEDGALITO138		13.800	P1	16.0	8.2	12.0	-5.0	1.0100	17.8	0.8908	27.0							1	6		
343		PRUDENCIA_1		13.800	G1	23.0	-9.8	9.8	-9.8	1.0104	24.7	0.9205	33.0							1	6		
346		LORENA 13-2		13.800	L2	13.7	-5.0	10.5	-5.0	1.0121	14.5	0.9398	19.9							1	6		
351		PERLAS N 13		13.800	G1	8.9	5.0	5.0	-5.0	0.9884	10.3	0.8710	13.5							1	6		
523		TCATIVÁ 13A		13.800	G1	7.6	0.1	6.6	-6.6	0.9700	7.8	0.9999	10.9							1	6		
523		TCATIVÁ 13A		13.800	G2	8.0	0.1	6.6	-6.6	0.9700	8.2	0.9999	10.9							1	6		
523		TCATIVÁ 13A		13.800	G3	8.0	0.1	6.6	-6.6	0.9700	8.2	0.9999	10.9							1	6		
541		TOABRE		0.6000	1	70.0	0.0	0.0	0.0	1.0050	69.6	1.0000	166.7							1	6		
SUBSYSTEM TOTALS						598.9	8.9	363.0	-249.5				1005.5										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 9:46
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MIN VER

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X	T	R	A	N	GENTAP	ZONE	AREA	SWING
170		MIR13G		13.800	M1	16.5	6.8	11.2	6.8	1.0399	17.2	0.9242	23.0							2	7	



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171 MIR13H	13.800 M1	16.5	6.8	11.2	6.8	1.0490	17.0	0.9242	23.0	2	7
171 MIR13H	13.800 M2	16.5	6.8	11.2	6.8	1.0490	17.0	0.9242	23.0	2	7
SUBSYSTEM TOTALS		49.5	20.5	33.5	20.5				69.1		

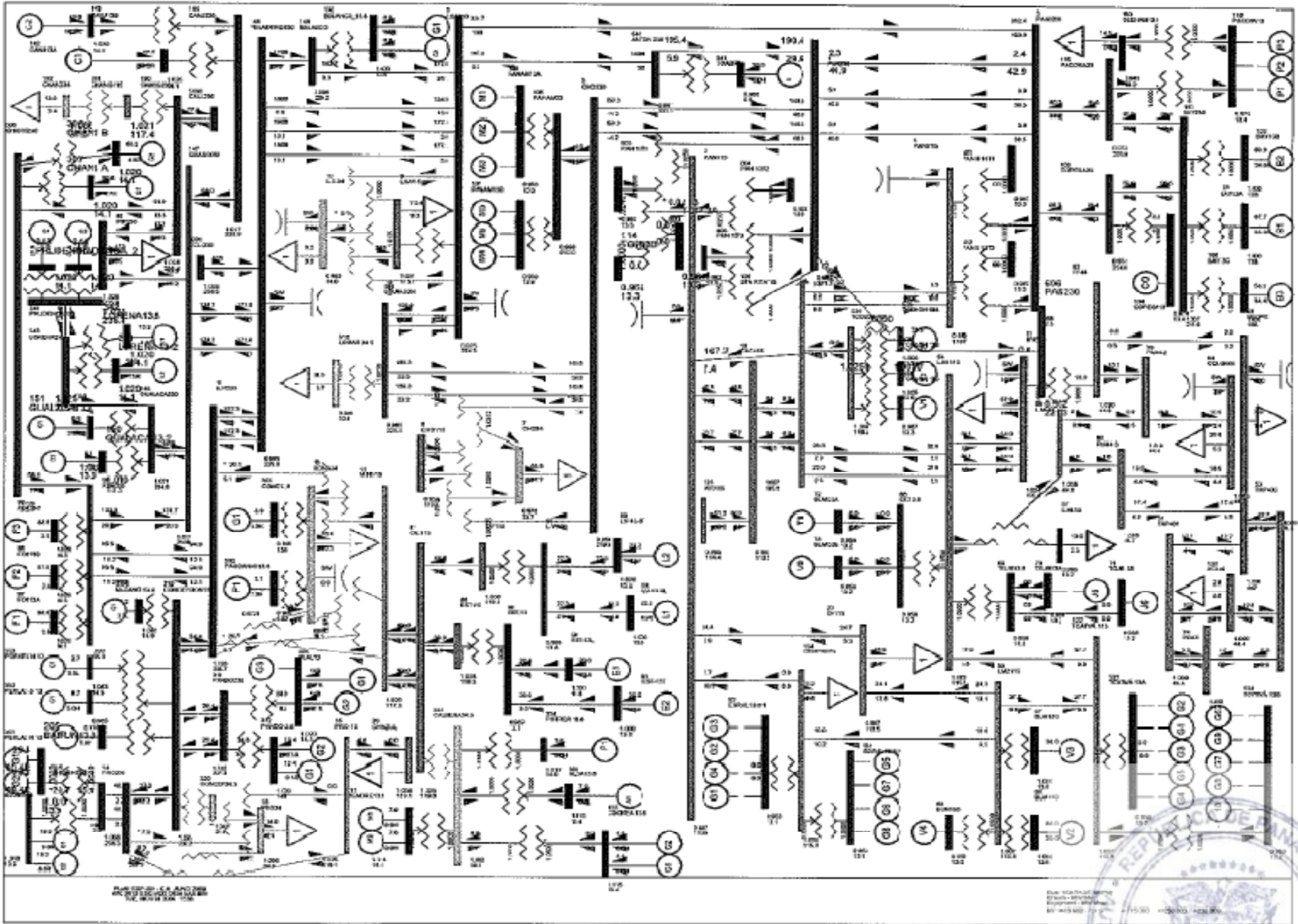
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 9:46
 PLAN. EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2012 ESC MOD DEM MIN VER IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1199.9	1312.2	0.0	0.0	0.0	-145.0	32.8	-145.0
GUATEMAL	59.0	349.5	-265.8	0.0	412.0	39.7	347.6	
2	913.4	902.0	0.0	0.0	0.0	0.0	11.4	0.0
SALVADOR	109.0	182.3	-58.0	0.0	219.4	38.1	166.1	
3	1009.2	985.5	0.0	0.0	0.0	0.1	23.6	0.0
HONDURAS	68.2	290.6	-187.9	0.0	301.9	-9.9	277.3	
4	536.7	527.1	0.0	0.0	0.0	0.0	9.6	0.0
NICA	41.6	224.5	-98.5	0.0	142.7	-83.1	141.4	
5	1345.1	1324.8	0.0	0.0	0.0	0.7	19.6	0.0
C.RICA	232.3	569.4	-236.9	0.0	478.7	22.8	355.7	
6	598.9	473.1	0.0	0.0	0.0	112.0	8.7	170.0
PANAMA	8.9	229.1	155.3	0.0	470.8	-14.8	107.6	
7	49.5	17.1	0.0	0.0	0.0	32.2	0.2	50.0
ACANAL	20.5	8.3	0.0	0.0	0.0	7.3	4.9	
9	0.0	5.2	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS	5652.7	5547.0	0.0	0.0	0.0	0.0	105.8	0.0
	539.5	1856.2	-691.8	0.0	2025.3	0.0	1400.4	



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Demanda Máxima de Invierno



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

TUE, NOV 24 2009 14:28

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	1.0003	230.06	3		PANII230		230.00	6	1.0036	230.82
5		CHO230		230.00	6	1.0003	230.06	8		LSA230		230.00	6	1.0135	233.11
11		M.N230		230.00	6	1.0303	236.96	14		PRO230		230.00	6	1.0395	239.10
85		PTP230		230.00	6	1.0285	236.55	96		FOR230		230.00	6	1.0291	236.68
100		BAY230		230.00	6	1.0284	236.54	103		COPESA23		230.00	6	1.0077	231.77
105		PAN-AM23		230.00	6	1.0003	230.06	115		PACORA23		230.00	6	1.0102	232.34
144		CANJ230		230.00	6	1.0255	235.87	145		BJOMIN230		230.00	6	1.0410	239.43
146		GUALACA230		230.00	6	1.0289	236.66	147		GUASQ230		230.00	6	1.0253	235.82
148		VELADERO	230230.00		6	1.0203	234.66	149		BBLANCO		230.00	6	1.0188	234.31
190		CHANG230		230.00	6	1.0312	237.19	306		CHAN1 230		230.00	6	1.0321	237.39
310		CONCEPCION23	230.00		6	1.0388	238.92	311		PANDO230		230.00	6	1.0388	238.93
341		PRUDENCIA23	230.00		6	1.0349	238.02	345		LORENA230		230.00	6	1.0328	237.55
511		LGUIAS230		230.00	6	1.0073	231.69	540		ANTON 230		230.00	6	1.0123	232.82
606		PAN230		230.00	6	1.0005	230.11	6000		FRONTER		230.00	6	1.0385	238.86

BUSES WITH VOLTAGE LESS THAN 1.0000:

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

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

TUE, NOV 24 2009 14:30

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	1.0245	117.82	4		PANII115		115.00	6	1.0252	117.90
6		CHO115		115.00	6	1.0014	115.16	9		LSA115		115.00	6	1.0403	119.64
12		M.N115		115.00	6	1.0260	117.99	15		PRO115		115.00	6	1.0414	119.76
18		CAC115		115.00	6	1.0242	117.78	19		C.V115		115.00	6	1.0174	117.00
20		CH.AZUL		115.00	6	1.0422	119.85	21		C.BAN115		115.00	6	1.0153	116.76
23		CH115		115.00	6	1.0209	117.40	26		LOC115		115.00	6	1.0163	116.87
30		MAR115		115.00	6	1.0153	116.76	33		STM115		115.00	6	1.0228	117.62
37		SAN115		115.00	6	1.0143	116.64	48		TINAJ115		115.00	6	1.0223	117.57
50		M.O115		115.00	6	1.0225	117.58	52		TOC115		115.00	6	1.0227	117.61
54		LM1115		115.00	6	1.0348	119.00	55		LM2115		115.00	6	1.0351	119.04
61		FFIELD		115.00	6	1.0320	118.68	87		CAL115		115.00	6	1.0387	119.45



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88 EST115	115.00	6	1.0411	119.72	92 L.V115	115.00	6	1.0397	119.56
109 STA RITA115	115.00	6	1.0369	119.24	123 MIR115	115.00	7	1.0299	118.44
154 CEMPAN15	115.00	6	1.0312	118.59	191 CHANG115	115.00	6	1.0234	117.69
522 TCATIVA 115	115.00	6	1.0349	119.02	529 TCOLON 115	115.00	6	1.0455	120.23

BUSES WITH VOLTAGE LESS THAN 1.0000:

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

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, NOV 24 2009 14:36
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	36.0	7.8	25.0	0.0	1.0000	36.8	0.9771	47.0			1	6	
67		BLM13C		13.800	V3	36.0	7.8	25.0	0.0	1.0000	36.8	0.9771	47.0			1	6	
90		EST-13L		13.800	E1	20.0	3.3	12.0	-5.0	1.0000	20.3	0.9870	27.0			1	6	
91		EST-13T		13.800	E2	20.0	3.3	12.0	-5.0	1.0000	20.3	0.9870	27.0			1	6	
94		LV-13.8L		13.800	L1	22.3	3.8	12.0	-5.0	1.0000	22.6	0.9856	27.0			1	6	
95		LV-13.8T		13.800	L2	22.3	3.8	12.0	-5.0	1.0000	22.6	0.9856	27.0			1	6	
97		FOR13A		13.800	F1	88.6	-4.3	50.0	-50.0	1.0200	86.9	0.9988	111.0			1	6	
98		FOR13B		13.800	F2	87.9	-4.3	50.0	-50.0	1.0200	86.3	0.9988	111.0			1	6	
99		FOR13C		13.800	F3	88.6	-4.3	50.0	-50.0	1.0200	87.0	0.9988	111.0			1	6	
101		BAY13A		13.800	B1	54.6	18.0	50.0	-25.0	1.0000	57.5	0.9496	96.0			1	6	SYST
102		BAY13B		13.800	B2	60.6	18.5	50.0	-25.0	1.0000	63.4	0.9565	96.0			1	6	
108		BAY13C		13.800	B3	58.2	18.3	50.0	-25.0	1.0000	61.0	0.9540	100.0			1	6	
142		CANJ13A		13.800	C1	49.0	14.8	29.0	-29.0	1.0200	50.2	0.9575	69.0			1	6	
143		CANJ13B		13.800	C2	49.0	14.8	29.0	-29.0	1.0200	50.2	0.9575	69.0			1	6	
150		GUALACA 13-213.800		G2		9.6	-4.6	7.4	-7.4	1.0100	10.5	0.9009	14.8			1	6	
151		GUALACA13.8		G1		9.5	-4.6	7.4	-7.4	1.0100	10.4	0.8990	14.8			1	6	
152		BBLANCO_13.8		G1		6.6	0.0	6.1	0.0	1.0186	6.5	1.0000	11.6			1	6	
152		BBLANCO_13.8		G2		6.6	0.0	6.1	0.0	1.0186	6.5	1.0000	11.6			1	6	
193		GEBONYIC		G1		8.3	-1.2	4.0	-4.0	1.0150	8.3	0.9900	35.3			1	6	
193		GEBONYIC		G2		8.1	-1.2	4.0	-4.0	1.0150	8.1	0.9900	35.3			1	6	
204		BJOMIN13		G1		19.6	-10.8	13.0	-13.0	1.0100	22.2	0.8754	28.9			1	6	
204		BJOMIN13		G2		19.2	-10.6	13.0	-13.0	1.0100	21.7	0.8754	28.9			1	6	
205		BAITUN13.8		G1		29.4	8.4	26.6	-26.6	1.0100	30.3	0.9611	50.6			1	6	
205		BAITUN13.8		G2		29.4	8.4	26.6	-26.6	1.0100	30.3	0.9611	50.6			1	6	
301		CONC13.8		G1		8.9	5.0	5.0	-5.0	0.9551	10.6	0.8707	13.5			1	6	
302		PASOANCH13.8		P1		3.7	2.0	2.0	-2.0	0.9532	4.5	0.8823	6.2			1	6	
304		ALGA13.8		A1		7.2	0.0	2.0	0.0	1.1189	6.4	1.0000	13.5			1	6	
305		ELALTO		G1		14.0	-5.0	12.0	-5.0	1.0245	14.5	0.9417	20.6			1	6	
305		ELALTO		G2		14.0	-5.0	12.0	-5.0	1.0245	14.5	0.9414	20.6			1	6	
307		CHAN1 A		G1		90.6	-7.9	50.0	-50.0	1.0200	89.1	0.9962	118.6			1	6	



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308	CHAN1 B	13.800	G2	90.2	-7.9	50.0	-50.0	1.0200	88.8	0.9962	118.6	1	6
312	PANDO13.8	13.800	G1	12.4	-0.7	10.0	-5.0	1.0200	12.2	0.9985	19.9	1	6
312	PANDO13.8	13.800	G2	12.4	-0.7	10.0	-5.0	1.0200	12.2	0.9985	19.9	1	6
317	MENDRE13.8	13.800	M1	7.6	0.0	0.0	0.0	1.1184	6.8	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	7.6	0.0	0.0	0.0	1.1184	6.8	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	4.4	0.0	0.0	0.0	1.1187	4.0	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C2	4.4	0.0	0.0	0.0	1.1187	4.0	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	3.6	2.0	2.0	-2.0	1.0160	4.1	0.8759	6.2	1	6
340	PEDGALITO13.8	13.800	P1	15.8	7.2	12.0	-5.0	1.0100	17.2	0.9111	27.0	1	6
342	LORENA13.8	13.800	L1	13.2	-4.1	10.5	-5.0	1.0200	13.6	0.9548	19.9	1	6
343	PRUDENCIA_1	13.800	G1	21.6	-7.9	9.8	-9.8	1.0200	22.6	0.9387	33.0	1	6
344	PRUDENCIA_2	13.800	G2	21.6	-7.9	9.8	-9.8	1.0200	22.6	0.9387	33.0	1	6
346	LORENA 13-2	13.800	L2	14.0	-4.1	10.5	-5.0	1.0200	14.3	0.9600	19.9	1	6
350	MACANO 13.8	13.800	G1	3.2	-2.0	2.0	-2.0	1.0895	3.5	0.8509	6.2	1	6
351	PERLAS N 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9923	10.1	0.8678	13.5	1	6
352	PERLAS S 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9923	10.1	0.8678	13.5	1	6
353	PORVEN N 13	13.800	G1	2.7	0.0	2.0	0.0	1.0907	2.5	1.0000	6.2	1	6
525	TCOLON 13A	13.800	G1	33.3	19.3	19.3	19.3	1.0330	37.2	0.8654	44.4	1	6
526	TCOLON 13B	13.800	G2	33.3	19.3	19.3	19.3	1.0330	37.2	0.8654	44.4	1	6
541	TOABRE	0.6000	1	30.0	0.0	0.0	0.0	1.0135	29.6	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1326.7	96.7	830.5	-542.1				2174.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, NOV 24 2009 14:36
PLAN. EXP-SIN - C.A. JUNIO 2009
AÑO 2012 ESC MOD DEM MAX INV

AREA 7 [ACANAL] MACHINE SUMMARY:																
BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	0.0	15.0	0.0	1.0229	34.2	1.0000	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0364	16.4	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.9	2.0	-2.0	1.0100	2.1	0.9081	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.9	2.0	-2.0	1.0100	2.1	0.9081	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.9	2.0	-2.0	1.0100	2.1	0.9081	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-1.7	3.0	-3.0	1.0100	4.2	0.9188	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-1.7	3.0	-3.0	1.0100	4.2	0.9188	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-1.7	3.0	-3.0	1.0100	4.2	0.9188	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0505	17.4	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0594	17.3	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0594	17.3	0.9281	23.0			2	7	
SUBSYSTEM TOTALS				120.4	12.8	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, NOV 24 2009 14:39
PLAN. EXP-SIN - C.A. JUNIO 2009 AREA TOTALS



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AÑO 2012 ESC MOD DEM MAX INV

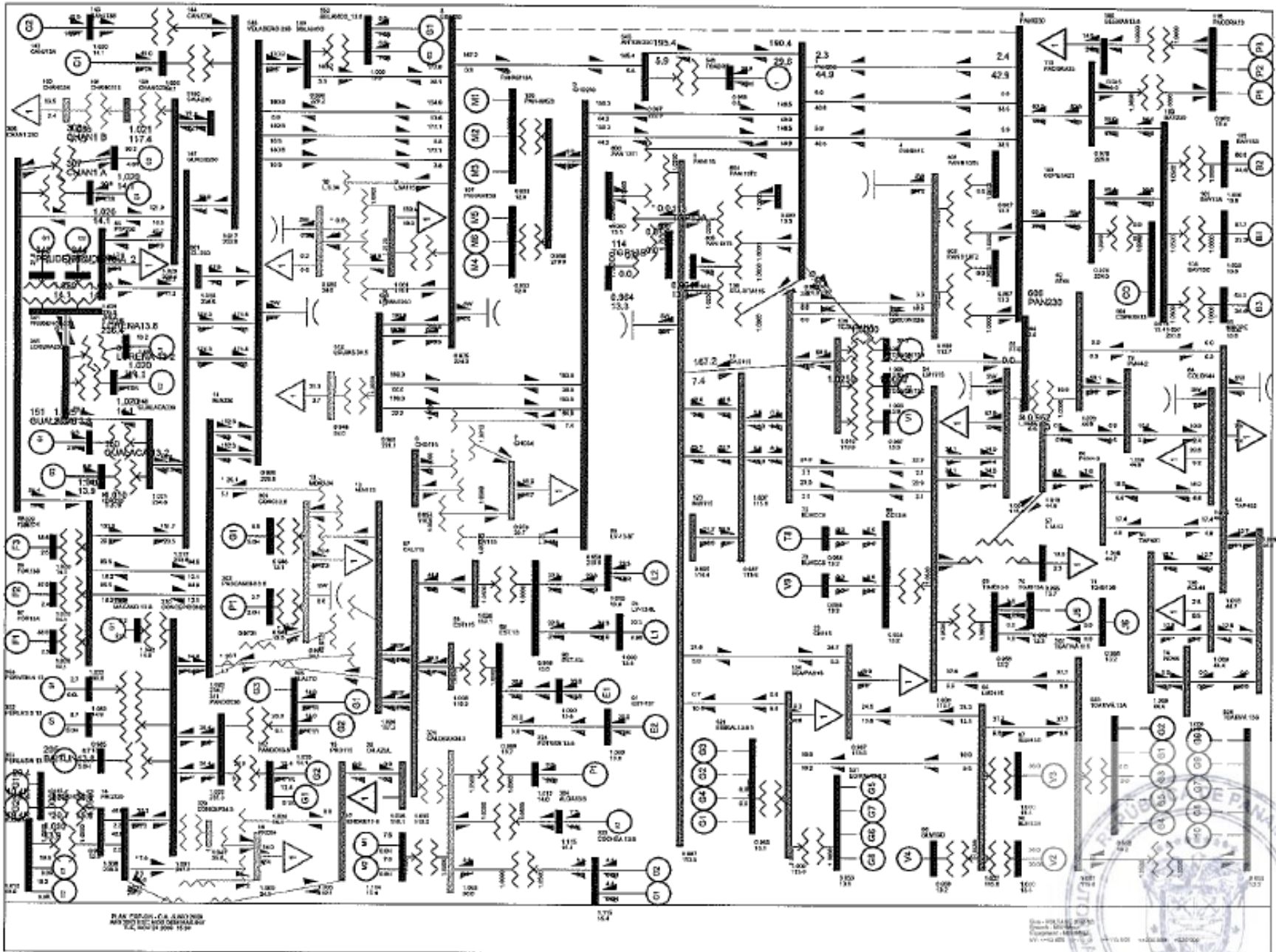
IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1 GUATEMAL	1199.9 59.0	1312.2 349.5	0.0 -265.8	0.0 0.0	0.0 412.0	-145.0 39.7	32.8 347.6	-145.0
2 SALVADOR	913.4 109.0	902.0 182.3	0.0 -58.0	0.0 0.0	0.0 219.4	0.0 38.0	11.4 166.1	0.0
3 HONDURAS	1009.2 68.2	985.5 290.6	0.0 -187.9	0.0 0.0	0.0 301.9	0.1 -9.9	23.6 277.3	0.0
4 NICA	536.7 41.6	527.1 224.5	0.0 -98.5	0.0 0.0	0.0 142.7	0.0 -83.1	9.6 141.4	0.0
5 C.RICA	1345.1 229.9	1324.8 569.4	0.0 -237.0	0.0 0.0	0.0 478.9	0.0 16.8	20.2 359.6	0.0
6 PANAMA	1326.7 96.7	1182.7 207.2	0.0 -199.3	0.0 0.0	0.0 479.8	68.6 7.7	62.5 558.7	170.0
7 ACANAL	120.4 12.8	42.8 7.5	0.0 0.0	0.0 0.0	0.0 0.0	76.3 -9.1	1.2 14.4	50.0
9 COLON	0.0 0.0	13.0 2.3	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	-75.0
TOTALS	6451.4 617.2	6290.1 1833.3	0.0 -1046.5	0.0 0.0	0.0 2034.6	0.0 0.0	161.4 1865.1	0.0



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Contingencia Llano Sánchez – Panamá II



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT. LLS-PA2

TUE, NOV 24 2009 14:53

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.N230	230.00	6	1.0204	234.70		
85	PTP230	230.00	6	1.0215	234.96		
100	BAY230	230.00	6	1.0068	231.57		
145	BJOMIN230	230.00	6	1.0359	238.26		
147	GUASQ230	230.00	6	1.0167	233.85		
306	CHAN1 230	230.00	6	1.0289	236.66		
311	PANDO230	230.00	6	1.0319	237.33		
345	LORENA230	230.00	6	1.0253	235.83		

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
14	PRO230	230.00	6	1.0334	237.68		
96	FOR230	230.00	6	1.0218	235.02		
144	CANJ230	230.00	6	1.0170	233.90		
146	GUALACA230	230.00	6	1.0209	234.81		
190	CHANG230	230.00	6	1.0277	236.37		
310	CONCEPCION230	230.00	6	1.0314	237.22		
341	PRUDENCIA230	230.00	6	1.0277	236.37		
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)
1	PAN230	230.00	6	0.9623	221.32		
5	CHO230	230.00	6	0.9562	219.93		
103	COPESA23	230.00	6	0.9739	223.99		
115	PACORA23	230.00	6	0.9781	224.97		
149	BBLANCO	230.00	6	0.9965	229.19		
540	ANTON 230	230.00	6	0.9667	222.33		

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
3	PANII230	230.00	6	0.9676	222.54		
8	LSA230	230.00	6	0.9754	224.34		
105	PAN-AM23	230.00	6	0.9562	219.93		
148	VELADERO 230	230.00	6	0.9992	229.82		
511	LGUIAS230	230.00	6	0.9613	221.10		
606	PAN230	230.00	6	0.9623	221.33		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT. LLS-PA2

TUE, NOV 24 2009 14:54

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115	115.00	6	1.0006	115.07		
15	PRO115	115.00	6	1.0353	119.05		
54	LM1115	115.00	6	1.0064	115.74		
61	FFIELD	115.00	6	1.0038	115.43		
88	EST115	115.00	6	1.0376	119.33		
109	STA RITA115	115.00	6	1.0069	115.79		
191	CHANG115	115.00	6	1.0209	117.41		
529	TCOLON 115	115.00	6	1.0157	116.80		

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
12	M.N115	115.00	6	1.0202	117.33		
20	CH.AZUL	115.00	6	1.0360	119.14		
55	LM2115	115.00	6	1.0069	115.79		
87	CAL115	115.00	6	1.0349	119.01		
92	L.V115	115.00	6	1.0359	119.13		
154	CEMPAN15	115.00	6	1.0003	115.03		
522	TCATIVÁ 115	115.00	6	1.0067	115.77		

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
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BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
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2	PAN115	115.00	6	0.9873	113.53	4	PANII115	115.00	6	0.9891	113.75
6	CHO115	115.00	6	0.9574	110.11	18	CAC115	115.00	6	0.9870	113.51
19	C.V115	115.00	6	0.9806	112.77	21	C.BAN115	115.00	6	0.9778	112.45
23	CH115	115.00	6	0.9871	113.52	26	LOC115	115.00	6	0.9788	112.56
30	MAR115	115.00	6	0.9778	112.44	33	STM115	115.00	6	0.9855	113.33
37	SAN115	115.00	6	0.9768	112.33	48	TINAJ115	115.00	6	0.9850	113.27
50	M.O115	115.00	6	0.9851	113.29	52	TOC115	115.00	6	0.9865	113.44
123	MIR115	115.00	7	0.9951	114.44						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, NOV 24 2009 14:56
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT. LLS-PA2

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVBASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B		13.800	V2	36.0	20.0	25.0	0.0	1.0000	41.2	0.8746	47.0			1	6	
67	BLM13C		13.800	V3	36.0	20.0	25.0	0.0	1.0000	41.2	0.8746	47.0			1	6	
90	EST-13L		13.800	E1	20.0	4.3	12.0	-5.0	1.0000	20.4	0.9780	27.0			1	6	
91	EST-13T		13.800	E2	20.0	4.3	12.0	-5.0	1.0000	20.4	0.9780	27.0			1	6	
94	LV-13.8L		13.800	L1	22.3	4.9	12.0	-5.0	1.0000	22.8	0.9766	27.0			1	6	
95	LV-13.8T		13.800	L2	22.3	4.9	12.0	-5.0	1.0000	22.8	0.9766	27.0			1	6	
97	FOR13A		13.800	F1	88.6	2.5	50.0	-50.0	1.0200	86.9	0.9996	111.0			1	6	
98	FOR13B		13.800	F2	87.9	2.4	50.0	-50.0	1.0200	86.2	0.9996	111.0			1	6	
99	FOR13C		13.800	F3	88.6	2.5	50.0	-50.0	1.0200	86.9	0.9996	111.0			1	6	
101	BAY13A		13.800	B1	67.7	35.2	50.0	-25.0	1.0000	76.3	0.8870	96.0			1	6	SYST
102	BAY13B		13.800	B2	60.6	34.6	50.0	-25.0	1.0000	69.8	0.8683	96.0			1	6	
108	BAY13C		13.800	B3	58.2	34.4	50.0	-25.0	1.0000	67.7	0.8607	100.0			1	6	
142	CANJ13A		13.800	C1	49.0	16.2	29.0	-29.0	1.0200	50.6	0.9495	69.0			1	6	
143	CANJ13B		13.800	C2	49.0	16.2	29.0	-29.0	1.0200	50.6	0.9495	69.0			1	6	
150	GUALACA	13-213.800	G2		9.6	-2.6	7.4	-7.4	1.0100	9.8	0.9656	14.8			1	6	
151	GUALACA	13.8	G1		9.5	-2.6	7.4	-7.4	1.0100	9.7	0.9649	14.8			1	6	
152	BBLANCO_13.8	13.800	G1		6.6	1.5	6.1	0.0	1.0000	6.8	0.9763	11.6			1	6	
152	BBLANCO_13.8	13.800	G2		6.6	1.5	6.1	0.0	1.0000	6.8	0.9763	11.6			1	6	
193	GEBONYIC		13.800	G1	8.3	-0.8	4.0	-4.0	1.0150	8.2	0.9957	35.3			1	6	
193	GEBONYIC		13.800	G2	8.1	-0.8	4.0	-4.0	1.0150	8.0	0.9957	35.3			1	6	
204	BJOMIN13		13.800	G1	19.6	-9.0	13.0	-13.0	1.0100	21.4	0.9093	28.9			1	6	
204	BJOMIN13		13.800	G2	19.2	-8.8	13.0	-13.0	1.0100	20.9	0.9093	28.9			1	6	
205	BAITUN13.8		13.800	G1	29.4	10.4	26.6	-26.6	1.0100	30.9	0.9432	50.6			1	6	
205	BAITUN13.8		13.800	G2	29.4	10.4	26.6	-26.6	1.0100	30.9	0.9432	50.6			1	6	
301	CONC13.8		13.800	G1	8.9	5.0	5.0	-5.0	0.9458	10.7	0.8707	13.5			1	6	
302	PASOANCH13.8		13.800	P1	3.7	2.0	2.0	-2.0	0.9439	4.5	0.8823	6.2			1	6	
304	ALGA13.8		13.800	A1	7.2	0.0	2.0	0.0	1.1147	6.4	1.0000	13.5			1	6	
305	ELALTO		13.800	G1	14.0	-4.1	12.0	-5.0	1.0200	14.3	0.9601	20.6			1	6	
305	ELALTO		13.800	G2	14.0	-4.1	12.0	-5.0	1.0200	14.3	0.9601	20.6			1	6	
307	CHAN1 A		13.800	G1	90.6	-4.7	50.0	-50.0	1.0200	88.9	0.9986	118.6			1	6	
308	CHAN1 B		13.800	G2	90.2	-4.8	50.0	-50.0	1.0200	88.6	0.9986	118.6			1	6	
312	PANDO13.8		13.800	G1	12.4	-0.1	10.0	-5.0	1.0200	12.2	1.0000	19.9			1	6	



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312	PANDOL	13.8	13.800	G2	12.4	-0.1	10.0	-5.0	1.0200	12.2	1.0000	19.9	1	6
317	MENDRE	13.8	13.800	M1	7.6	0.0	0.0	0.0	1.1142	6.8	1.0000	35.3	1	6
317	MENDRE	13.8	13.800	M2	7.6	0.0	0.0	0.0	1.1142	6.8	1.0000	35.3	1	6
323	COCHEA	13.8	13.800	C1	4.4	0.0	0.0	0.0	1.1145	4.0	1.0000	35.3	1	6
323	COCHEA	13.8	13.800	C2	4.4	0.0	0.0	0.0	1.1145	4.0	1.0000	35.3	1	6
324	POTRER	13.8	13.800	P1	3.6	2.0	2.0	-2.0	1.0123	4.1	0.8759	6.2	1	6
340	PEDGALITO	13.8	13.800	P1	15.8	8.9	12.0	-5.0	1.0100	18.0	0.8712	27.0	1	6
342	LORENA	13.8	13.800	L1	13.2	-1.6	10.5	-5.0	1.0200	13.0	0.9930	19.9	1	6
343	PRUDENCIA_1	13.8	13.800	G1	21.6	-3.9	9.8	-9.8	1.0200	21.5	0.9841	33.0	1	6
344	PRUDENCIA_2	13.8	13.800	G2	21.6	-3.9	9.8	-9.8	1.0200	21.5	0.9841	33.0	1	6
346	LORENA	13-2	13.800	L2	14.0	-1.5	10.5	-5.0	1.0200	13.8	0.9940	19.9	1	6
350	MACANO	13.8	13.800	G1	3.2	-2.0	2.0	-2.0	1.0818	3.5	0.8509	6.2	1	6
351	PERLAS N	13	13.800	G1	8.7	5.0	5.0	-5.0	0.9853	10.2	0.8678	13.5	1	6
352	PERLAS S	13	13.800	G1	8.7	5.0	5.0	-5.0	0.9853	10.2	0.8678	13.5	1	6
353	PORVEN N	13	13.800	G1	2.7	0.0	2.0	0.0	1.0830	2.5	1.0000	6.2	1	6
525	TCOLON 13A	13.8	13.800	G1	33.3	19.3	19.3	19.3	1.0055	38.2	0.8654	44.4	1	6
526	TCOLON 13B	13.8	13.800	G2	33.3	19.3	19.3	19.3	1.0055	38.2	0.8654	44.4	1	6
541	TOABRE	0.6000	1		30.0	0.0	0.0	0.0	0.9680	31.0	1.0000	166.7	1	6
SUBSYSTEM TOTALS					1339.8	237.3	830.5	-542.1				2174.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, NOV 24 2009 14:56
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT. LLS-PA2

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	5.1	15.0	0.0	1.0100	35.0	0.9896	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0105	16.8	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9998	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9998	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	0.0	2.0	-2.0	1.0100	1.9	0.9998	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9832	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9832	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-0.7	3.0	-3.0	1.0100	3.9	0.9832	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0249	17.9	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0340	17.7	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0340	17.7	0.9281	23.0			2	7	
SUBSYSTEM TOTALS				120.4	23.5	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, NOV 24 2009 14:59
 PLAN. EXP-SIN - C.A. JUNIO 2009
 AÑO 2012 ESC MOD DEM MAX INV CONT. LLS-PA2

X-- AREA	--X GENERATION	FROM	TO	TO BUS	TO LINE	FROM	TO	DESIRED	
			LOAD	SHUNT	SHUNT	CHARGING	NET INT	LOSSES	NET INT



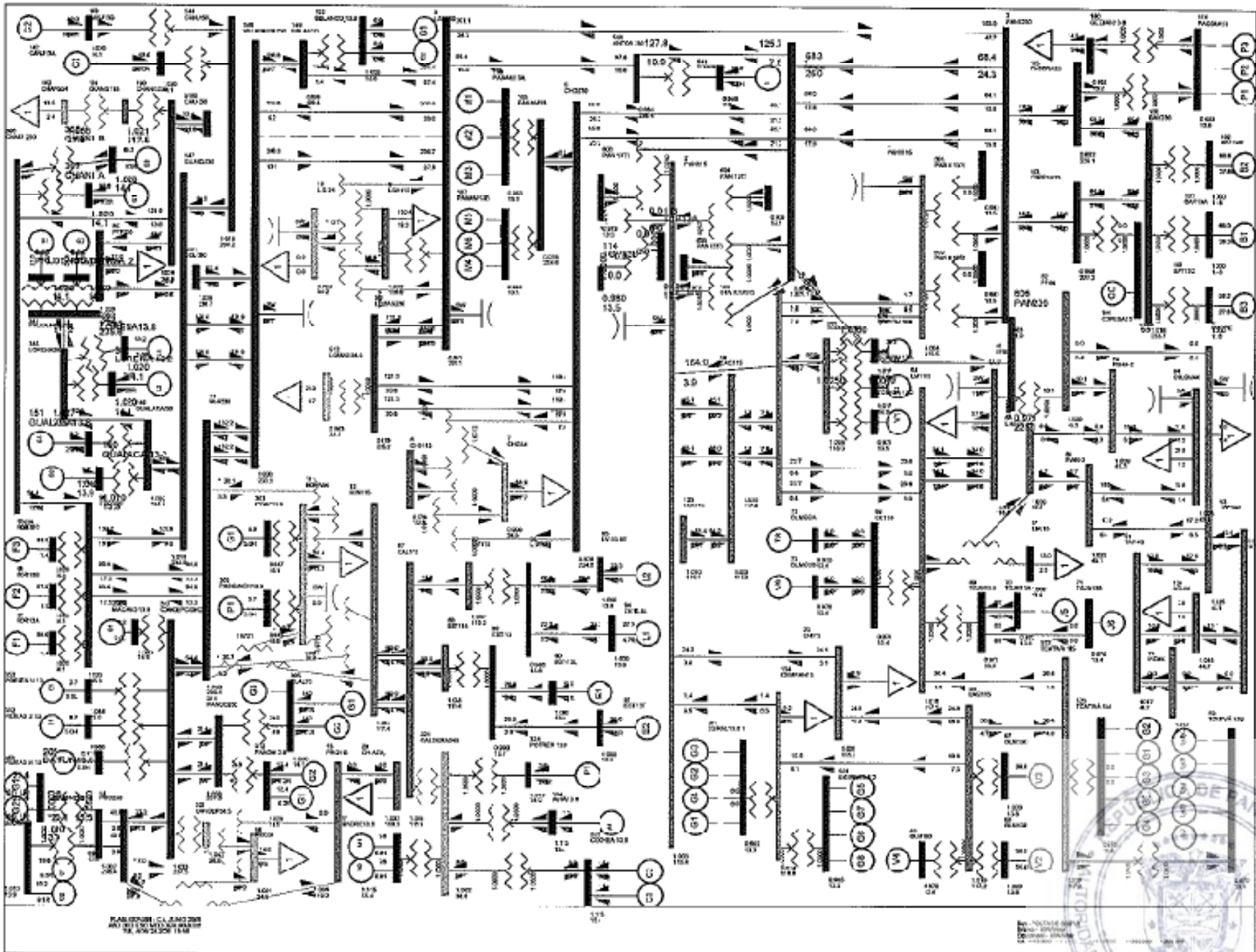
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1	1199.9	1312.2	0.0	0.0	0.0	-145.0	32.8	-145.0
GUATEMAL	59.0	349.5	-265.8	0.0	412.0	39.7	347.6	
2	913.4	902.0	0.0	0.0	0.0	0.0	11.4	0.0
SALVADOR	109.1	182.3	-58.0	0.0	219.4	38.1	166.1	
3	1009.2	985.5	0.0	0.0	0.0	0.1	23.6	0.0
HONDURAS	68.3	290.6	-187.8	0.0	301.9	-9.8	277.3	
4	536.7	527.1	0.0	0.0	0.0	0.0	9.6	0.0
NICA	41.9	224.5	-98.5	0.0	142.6	-82.9	141.4	
5	1345.1	1324.8	0.0	0.0	0.0	0.0	20.3	0.0
C. RICA	240.4	569.4	-236.5	0.0	477.7	24.9	360.2	
6	1339.8	1182.7	0.0	0.0	0.0	68.6	75.5	170.0
PANAMA	237.3	207.2	-185.5	0.0	432.9	-10.8	657.1	
7	120.4	42.8	0.0	0.0	0.0	76.3	1.3	50.0
ACANAL	23.5	7.5	0.0	0.0	0.0	0.9	15.1	
9	0.0	13.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.3	0.0	0.0	0.0	0.0	0.0	
TOTALS	6464.6	6290.1	0.0	0.0	0.0	0.0	174.5	0.0
	779.5	1833.3	-1032.2	0.0	1986.5	0.0	1964.9	



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Contingencia Veladero – Llano Sánchez



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

TUE, NOV 24 2009 15:15

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	1.0220	235.06	14	PRO	230		230.00	6	1.0344	237.90
85	PTP	230		230.00	6	1.0227	235.22	96	FOR	230		230.00	6	1.0230	235.29
100	BAY	230		230.00	6	1.0159	233.66	144	CANJ	230		230.00	6	1.0184	234.22
145	BJOMIN	230		230.00	6	1.0367	238.44	146	GUALACA	230		230.00	6	1.0222	235.11
147	GUASQ	230		230.00	6	1.0181	234.17	148	VELADERO	230		230.00	6	1.0027	230.62
190	CHANG	230		230.00	6	1.0283	236.50	306	CHAN1	230		230.00	6	1.0295	236.78
310	CONCEPCION	230		230.00	6	1.0325	237.48	311	PANDO	230		230.00	6	1.0328	237.55
341	PRUDENCIA	230		230.00	6	1.0289	236.64	345	LORENA	230		230.00	6	1.0266	236.11
6000	FRONTER			230.00	6	1.0332	237.63								

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)
1	PAN	230		230.00	6	0.9788	225.11	3	PANI	230		230.00	6	0.9826	226.01
5	CHO	230		230.00	6	0.9764	224.57	8	LSA	230		230.00	6	0.9831	226.12
103	COPESA	230		230.00	6	0.9880	227.25	105	PAN-AM	230		230.00	6	0.9764	224.57
115	PACORA	230		230.00	6	0.9916	228.06	149	BBLANCO			230.00	6	0.9992	229.81
511	LGUIAS	230		230.00	6	0.9793	225.24	540	ANTON	230		230.00	6	0.9844	226.41
606	PAN	230		230.00	6	0.9789	225.15								

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

TUE, NOV 24 2009 15:15

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	1.0032	115.37	4	PANI	115		115.00	6	1.0045	115.51
9	LSA	115		115.00	6	1.0087	116.00	12	M.N	115		115.00	6	1.0212	117.43
15	PRO	115		115.00	6	1.0362	119.16	18	CAC	115		115.00	6	1.0029	115.34
20	CH.	AZUL		115.00	6	1.0370	119.25	23	CH	115		115.00	6	1.0016	115.18
33	STM	115		115.00	6	1.0014	115.17	48	TINAJ	115		115.00	6	1.0010	115.12
50	M.O	115		115.00	6	1.0011	115.13	52	TOC	115		115.00	6	1.0019	115.22
54	LM	115		115.00	6	1.0186	117.13	55	LM2	115		115.00	6	1.0190	117.18
61	FFIELD			115.00	6	1.0158	116.82	87	CAL	115		115.00	6	1.0355	119.08
88	EST	115		115.00	6	1.0382	119.39	92	L.V	115		115.00	6	1.0365	119.20
109	STA RITA	115		115.00	6	1.0197	117.27	123	MIR	115		115.00	7	1.0096	116.10
154	CEMPAN	115		115.00	6	1.0135	116.55	191	CHANG	115		115.00	6	1.0213	117.45
522	TCATIVÁ	115		115.00	6	1.0188	117.16	529	TCOLON	115		115.00	6	1.0284	118.27

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	CHO	115		115.00	6	0.9776	112.42	19	C.V	115		115.00	6	0.9963	114.57
21	C.BAN	115		115.00	6	0.9939	114.29	26	LOC	115		115.00	6	0.9949	114.41
30	MAR	115		115.00	6	0.9938	114.29	37	SAN	115		115.00	6	0.9928	114.18



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AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	36.0	14.8	25.0	0.0	1.0000	38.9	0.9251	47.0			1	6	
67	BLM13C	13.800	V3	36.0	14.8	25.0	0.0	1.0000	38.9	0.9251	47.0			1	6	
90	EST-13L	13.800	E1	20.0	4.1	12.0	-5.0	1.0000	20.4	0.9796	27.0			1	6	
91	EST-13T	13.800	E2	20.0	4.1	12.0	-5.0	1.0000	20.4	0.9796	27.0			1	6	
94	LV-13.8L	13.800	L1	22.3	4.7	12.0	-5.0	1.0000	22.8	0.9782	27.0			1	6	
95	LV-13.8T	13.800	L2	22.3	4.7	12.0	-5.0	1.0000	22.8	0.9782	27.0			1	6	
97	FOR13A	13.800	F1	88.6	1.4	50.0	-50.0	1.0200	86.8	0.9999	111.0			1	6	
98	FOR13B	13.800	F2	87.9	1.3	50.0	-50.0	1.0200	86.2	0.9999	111.0			1	6	
99	FOR13C	13.800	F3	88.6	1.4	50.0	-50.0	1.0200	86.9	0.9999	111.0			1	6	
101	BAY13A	13.800	B1	66.0	28.3	50.0	-25.0	1.0000	71.8	0.9191	96.0			1	6	SYST
102	BAY13B	13.800	B2	60.6	27.8	50.0	-25.0	1.0000	66.7	0.9088	96.0			1	6	
108	BAY13C	13.800	B3	58.2	27.6	50.0	-25.0	1.0000	64.5	0.9034	100.0			1	6	
142	CANJ13A	13.800	C1	49.0	16.0	29.0	-29.0	1.0200	50.5	0.9508	69.0			1	6	
143	CANJ13B	13.800	C2	49.0	16.0	29.0	-29.0	1.0200	50.5	0.9508	69.0			1	6	
150	GUALACA	13-213.800	G2	9.6	-2.9	7.4	-7.4	1.0100	9.9	0.9568	14.8			1	6	
151	GUALACA13.8	13.800	G1	9.5	-2.9	7.4	-7.4	1.0100	9.8	0.9558	14.8			1	6	
152	BBLANCO_13.813.800	G1	6.6	0.4	6.1	0.0	1.0000	6.6	0.9983	11.6			1	6		
152	BBLANCO_13.813.800	G2	6.6	0.4	6.1	0.0	1.0000	6.6	0.9983	11.6			1	6		
193	GEBONYIC	13.800	G1	8.3	-0.8	4.0	-4.0	1.0150	8.2	0.9949	35.3			1	6	
193	GEBONYIC	13.800	G2	8.1	-0.8	4.0	-4.0	1.0150	8.0	0.9949	35.3			1	6	
204	BJOMIN13	13.800	G1	19.6	-9.3	13.0	-13.0	1.0100	21.5	0.9042	28.9			1	6	
204	BJOMIN13	13.800	G2	19.2	-9.1	13.0	-13.0	1.0100	21.0	0.9042	28.9			1	6	
205	BAITUN13.8	13.800	G1	29.4	10.1	26.6	-26.6	1.0100	30.8	0.9461	50.6			1	6	
205	BAITUN13.8	13.800	G2	29.4	10.1	26.6	-26.6	1.0100	30.8	0.9461	50.6			1	6	
301	CONC13.8	13.800	G1	8.9	5.0	5.0	-5.0	0.9473	10.7	0.8707	13.5			1	6	
302	PASOANCH13.813.800	P1	3.7	2.0	2.0	-2.0	0.9454	4.5	0.8823	6.2			1	6		
304	ALGA13.8	13.800	A1	7.2	0.0	2.0	0.0	1.1154	6.4	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	14.0	-4.4	12.0	-5.0	1.0200	14.4	0.9532	20.6			1	6	
305	ELALTO	13.800	G2	14.0	-4.4	12.0	-5.0	1.0200	14.4	0.9532	20.6			1	6	
307	CHAN1 A	13.800	G1	90.6	-5.2	50.0	-50.0	1.0200	88.9	0.9983	118.6			1	6	
308	CHAN1 B	13.800	G2	90.2	-5.3	50.0	-50.0	1.0200	88.6	0.9983	118.6			1	6	
312	PANDO13.8	13.800	G1	12.4	-0.2	10.0	-5.0	1.0200	12.2	0.9999	19.9			1	6	
312	PANDO13.8	13.800	G2	12.4	-0.2	10.0	-5.0	1.0200	12.2	0.9999	19.9			1	6	
317	MENDRE13.8	13.800	M1	7.6	0.0	0.0	0.0	1.1149	6.8	1.0000	35.3			1	6	
317	MENDRE13.8	13.800	M2	7.6	0.0	0.0	0.0	1.1149	6.8	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C1	4.4	0.0	0.0	0.0	1.1152	4.0	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C2	4.4	0.0	0.0	0.0	1.1152	4.0	1.0000	35.3			1	6	
324	POTRER 13.8	13.800	P1	3.6	2.0	2.0	-2.0	1.0129	4.1	0.8759	6.2			1	6	
340	PEDGALITO13813.800	P1	15.8	8.6	12.0	-5.0	1.0100	17.9	0.8774	27.0			1	6		
342	LORENA13.8	13.800	L1	13.2	-2.0	10.5	-5.0	1.0200	13.1	0.9889	19.9			1	6	
343	PRUDENCIA_1	13.800	G1	21.6	-4.6	9.8	-9.8	1.0200	21.7	0.9784	33.0			1	6	
344	PRUDENCIA_2	13.800	G2	21.6	-4.6	9.8	-9.8	1.0200	21.7	0.9784	33.0			1	6	
346	LORENA 13-2	13.800	L2	14.0	-2.0	10.5	-5.0	1.0200	13.9	0.9904	19.9			1	6	
350	MACANO 13.8	13.800	G1	3.2	-2.0	2.0	-2.0	1.0829	3.5	0.8509	6.2			1	6	
351	PERLAS N 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9864	10.2	0.8678	13.5			1	6	
352	PERLAS S 13	13.800	G1	8.7	5.0	5.0	-5.0	0.9864	10.2	0.8678	13.5			1	6	
353	PORVEN N 13	13.800	G1	2.7	0.0	2.0	0.0	1.0842	2.5	1.0000	6.2			1	6	
525	TCOLON 13A	13.800	G1	33.3	19.3	19.3	19.3	1.0172	37.8	0.8654	44.4			1	6	
526	TCOLON 13B	13.800	G2	33.3	19.3	19.3	19.3	1.0172	37.8	0.8654	44.4			1	6	
541	TOABRE	0.6000	1	30.0	0.0	0.0	0.0	0.9857	30.4	1.0000	166.7			1	6	
SUBSYSTEM TOTALS				1338.1	193.5	830.5	-542.1				2174.3					



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PLAN. EXP-SIN - C.A. JUNIO 2009
 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	1.4	15.0	0.0	1.0100	34.7	0.9991	44.1					2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0195	16.7	1.0000	27.7					2	7	
140	GAT6A	6.9000	G1	1.9	-0.3	2.0	-2.0	1.0100	1.9	0.9853	4.1					2	7	
140	GAT6A	6.9000	G2	1.9	-0.3	2.0	-2.0	1.0100	1.9	0.9853	4.1					2	7	
140	GAT6A	6.9000	G3	1.9	-0.3	2.0	-2.0	1.0100	1.9	0.9853	4.1					2	7	
141	GAT6B	6.9000	G4	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9622	5.6					2	7	
141	GAT6B	6.9000	G5	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9622	6.2					2	7	
141	GAT6B	6.9000	G6	3.9	-1.1	3.0	-3.0	1.0100	4.0	0.9622	6.2					2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0338	17.7	0.9281	23.0					2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0428	17.6	0.9281	23.0					2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0428	17.6	0.9281	23.0					2	7	
SUBSYSTEM TOTALS						120.4	17.6	71.5	5.5			171.3						

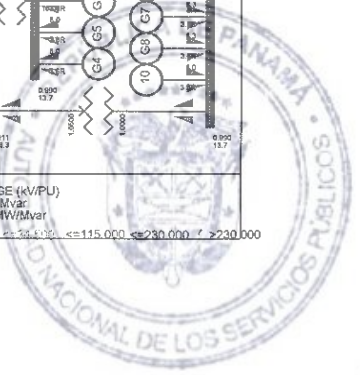
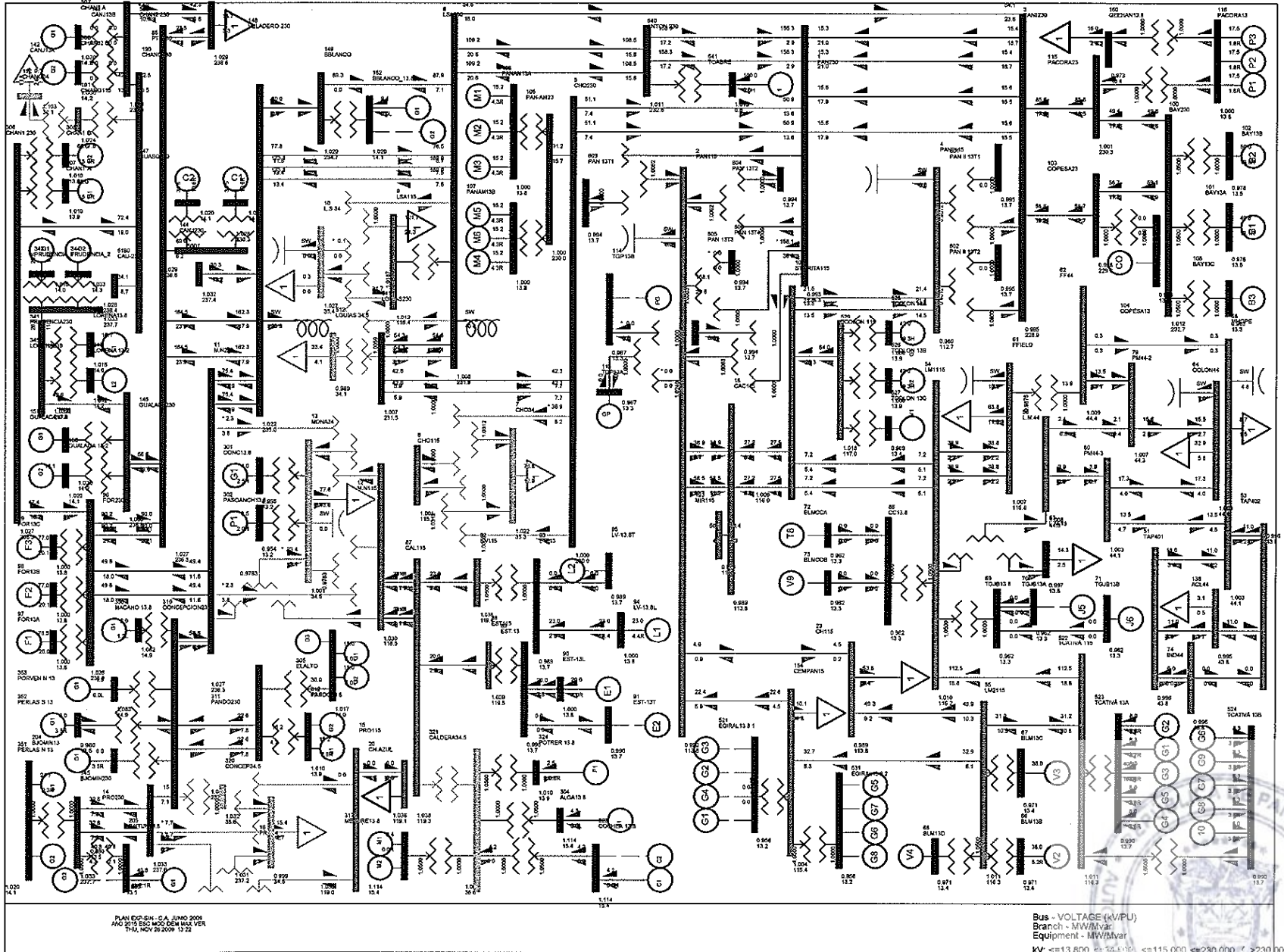
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E TUE, NOV 24 2009 15:15
 PLAN. EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2012 ESC MOD DEM MAX INV CONT. VEL-LLS IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1199.9	1312.2	0.0	0.0	0.0	-145.0	32.8	-145.0
			59.0	349.5	-265.8	0.0	412.0	39.7	347.6	
2	SALVADOR		913.4	902.0	0.0	0.0	0.0	0.0	11.4	0.0
			109.1	182.3	-58.0	0.0	219.4	38.1	166.1	
3	HONDURAS		1009.2	985.5	0.0	0.0	0.0	0.1	23.6	0.0
			68.3	290.6	-187.9	0.0	301.9	-9.8	277.3	
4	NICA		536.7	527.1	0.0	0.0	0.0	0.0	9.6	0.0
			41.8	224.5	-98.5	0.0	142.6	-82.9	141.4	
5	C.RICA		1345.1	1324.8	0.0	0.0	0.0	0.0	20.2	0.0
			238.7	569.4	-236.5	0.0	477.9	23.6	360.1	
6	PANAMA		1338.1	1182.7	0.0	0.0	0.0	68.6	73.9	170.0
			193.5	207.2	-190.3	0.0	444.3	-3.9	622.5	
7	ACANAL		120.4	42.8	0.0	0.0	0.0	76.3	1.3	50.0
			17.6	7.5	0.0	0.0	0.0	-4.7	14.8	
9	COLON		0.0	13.0	0.0	0.0	0.0	0.0	0.0	-75.0
			0.0	2.3	0.0	0.0	0.0	0.0	0.0	
TOTALS			6462.8	6290.1	0.0	0.0	0.0	0.0	172.8	0.0
			728.0	1833.3	-1037.0	0.0	1998.0	0.0	1929.8	



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Año 2015
Demanda Máxima de Verano



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 10:50
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
8		LSA230		230.00	6	1.0081	231.86	11		M.N230		230.00	6	1.0273	236.28
14		PRO230		230.00	6	1.0330	237.59	85		PTP230		230.00	6	1.0289	236.64
96		FOR230		230.00	6	1.0256	235.89	100		BAY230		230.00	6	1.0115	232.65
105		PAN-AM23		230.00	6	1.0001	230.02	115		PACORA23		230.00	6	1.0012	230.28
144		CANJ230		230.00	6	1.0276	236.34	145		BJOMIN230		230.00	6	1.0333	237.66
146		GUALACA230		230.00	6	1.0297	236.84	147		GUASQ230		230.00	6	1.0273	236.28
148		VELADERO 230		230.00	6	1.0217	234.98	149		BBLANCO		230.00	6	1.0205	234.71
155		TABASARAI		230.00	6	1.0218	235.02	190		CHANG230		230.00	6	1.0288	236.63
306		CHAN1 230		230.00	6	1.0272	236.26	310		CONCEPCION23		230.00	6	1.0313	237.19
311		PAND0230		230.00	6	1.0312	237.17	341		PRUDENCIA230		230.00	6	1.0333	237.67
345		LORENA230		230.00	6	1.0321	237.38	506		CHAN2 230		230.00	6	1.0298	236.85
511		LGUIAS230		230.00	6	1.0066	231.53	540		ANTON 230		230.00	6	1.0112	232.58
6000		FRONTIER		230.00	6	1.0331	237.60								

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		PAN230		230.00	6	0.9928	228.35	3		PANII230		230.00	6	0.9953	228.93
5		CHO230		230.00	6	1.0000	230.00	103		COFESA23		230.00	6	0.9982	229.59

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 10:50
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX VER

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
6		CHO115		115.00	6	1.0013	115.15	9		LSA115		115.00	6	1.0121	116.39
12		M.N115		115.00	6	1.0302	118.48	15		PRO115		115.00	6	1.0349	119.01
20		CH.AZUL		115.00	6	1.0356	119.10	54		LM1115		115.00	6	1.0104	116.20
55		LM2115		115.00	6	1.0112	116.29	61		FFIELD		115.00	6	1.0072	115.83
87		CAL115		115.00	6	1.0377	119.33	88		EST115		115.00	6	1.0390	119.49
92		L.V115		115.00	6	1.0382	119.39	109		STA RITA115		115.00	6	1.0090	116.03
154		CEMPAN15		115.00	6	1.0037	115.42	191		CHANG115		115.00	6	1.0243	117.80
522		TCATIVÁ 115		115.00	6	1.0111	116.27	529		TCOLON 115		115.00	6	1.0178	117.04

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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2	PAN115	115.00	6	0.9897	113.82	4	PANIII115	115.00	6	0.9796	112.66
18	CAC115	115.00	6	0.9893	113.77	19	C.V115	115.00	6	0.9735	111.95
21	C.BAN115	115.00	6	0.9776	112.42	23	CH115	115.00	6	0.9892	113.75
26	LOC115	115.00	6	0.9791	112.59	30	MAR115	115.00	6	0.9785	112.53
33	STM115	115.00	6	0.9877	113.59	37	SAN115	115.00	6	0.9758	112.22
48	TINAJ115	115.00	6	0.9872	113.52	50	M.O115	115.00	6	0.9873	113.54
52	TOC115	115.00	6	0.9767	112.32	123	MIR115	115.00	7	0.9957	114.50

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 10:50
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	38.0	5.2	25.0	0.0	0.9710	39.5	0.9908	47.0			1	6	
67	BLM13C	13.800	V3	38.0	5.2	25.0	0.0	0.9710	39.5	0.9908	47.0			1	6	
68	BLM13D	13.800	V4	38.0	5.3	25.0	0.0	0.9710	39.5	0.9904	47.0			1	6	
90	EST-13L	13.800	E1	20.0	4.0	12.0	-5.0	1.0000	20.4	0.9807	27.0			1	6	
94	LV-13.8L	13.800	L1	23.0	4.4	12.0	-5.0	1.0000	23.4	0.9818	27.0			1	6	
97	FOR13A	13.800	F1	78.5	-20.0	50.0	-50.0	1.0000	81.0	0.9692	111.0			1	6	SYST
98	FOR13B	13.800	F2	77.0	-20.1	50.0	-50.0	1.0000	79.6	0.9676	111.0			1	6	
99	FOR13C	13.800	F3	77.0	-20.1	50.0	-50.0	1.0000	79.6	0.9676	111.0			1	6	
101	BAY13A	13.800	B1	49.8	13.1	50.0	-25.0	0.9783	52.6	0.9670	96.0			1	6	
102	BAY13B	13.800	B2	59.0	13.8	50.0	-25.0	0.9783	61.9	0.9737	96.0			1	6	
106	PANAM13A	13.800	M1	15.2	4.3	9.0	0.0	1.0000	15.8	0.9616	20.7			1	6	
106	PANAM13A	13.800	M2	15.2	4.3	9.0	0.0	1.0000	15.8	0.9616	20.7			1	6	
106	PANAM13A	13.800	M3	15.2	4.3	9.0	0.0	1.0000	15.8	0.9616	20.7			1	6	
107	PANAM13B	13.800	M4	15.2	4.3	9.0	0.0	1.0000	15.8	0.9616	20.7			1	6	
107	PANAM13B	13.800	M5	15.2	4.3	9.0	0.0	1.0000	15.8	0.9616	20.7			1	6	
107	PANAM13B	13.800	M6	15.2	4.3	9.0	0.0	1.0000	15.8	0.9616	20.7			1	6	
116	PACORA13	13.800	P1	17.5	1.8	8.8	0.0	1.0000	17.6	0.9949	21.7			1	6	
116	PACORA13	13.800	P2	17.5	1.8	8.8	0.0	1.0000	17.6	0.9949	21.7			1	6	
116	PACORA13	13.800	P3	17.5	1.8	8.8	0.0	1.0000	17.6	0.9949	21.7			1	6	
142	CANJ13A	13.800	C1	34.5	10.6	29.0	-29.0	1.0200	35.4	0.9559	69.0			1	6	
143	CANJ13B	13.800	C2	34.5	10.6	29.0	-29.0	1.0200	35.4	0.9559	69.0			1	6	
150	GUALACA	13-213.800	G2	14.1	-2.1	7.4	-7.4	1.0200	14.0	0.9891	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	9.4	0.0	6.1	0.0	1.0204	9.2	1.0000	11.6			1	6	
193	GEBOYIC	13.800	G1	9.5	0.4	4.0	-4.0	1.0250	9.3	0.9992	35.3			1	6	
193	GEBOYIC	13.800	G2	9.5	0.4	4.0	-4.0	1.0250	9.3	0.9992	35.3			1	6	
204	BJOMIN13	13.800	G1	24.7	-9.3	13.0	-13.0	1.0200	25.9	0.9355	28.9			1	6	
205	BAITUN13.8	13.800	G1	40.8	-2.1	26.6	-26.6	0.9800	41.7	0.9987	50.6			1	6	
301	CONC13.8	13.800	G1	4.0	2.5	2.5	-2.5	0.9547	4.9	0.8518	13.5			1	6	
302	PASOANCH13.8	13.800	P1	3.5	2.0	2.0	-2.0	0.9544	4.2	0.8682	6.2			1	6	
304	ALGA13.8	13.800	A1	4.5	0.0	2.0	0.0	1.1140	4.0	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	15.0	-5.0	12.0	-5.0	1.0166	15.6	0.9487	20.6			1	6	
305	ELALTO	13.800	G2	15.0	-5.0	12.0	-5.0	1.0166	15.6	0.9487	20.6			1	6	
307	CHAN1 A	13.800	G1	60.0	-15.0	50.0	-50.0	1.0100	61.2	0.9703	118.6			1	6	



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308	CHAN1 B	13.800	G2	60.0	-15.0	50.0	-50.0	1.0100	61.2	0.9703	118.6	1	6
312	PAND013.8	13.800	G1	15.2	-2.8	10.0	-5.0	1.0100	15.3	0.9832	19.9	1	6
317	MENDRE13.8	13.800	M1	9.4	0.0	0.0	0.0	1.1139	8.4	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	4.2	0.0	0.0	0.0	1.1140	3.8	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	2.5	-0.8	2.0	-2.0	1.0100	2.6	0.9532	6.2	1	6
340	PEDGALITO138	13.800	P1	13.7	3.7	12.0	-5.0	0.9900	14.3	0.9647	27.0	1	6
342	LORENA13.8	13.800	L1	16.1	-5.0	10.5	-5.0	1.0162	16.5	0.9548	19.9	1	6
343	PRUDENCIA_1	13.800	G1	26.6	-9.8	9.8	-9.8	1.0148	27.9	0.9388	33.0	1	6
350	MACANO 13.8	13.800	G1	2.0	-1.2	1.2	-1.2	1.0821	2.2	0.8518	6.2	1	6
351	PERLAS N 13	13.800	G1	6.0	-3.5	5.0	-5.0	0.9800	7.1	0.8619	13.5	1	6
352	PERLAS S 13	13.800	G1	6.0	-3.5	5.0	-5.0	0.9800	7.1	0.8619	13.5	1	6
353	PORVEN N 13	13.800	G1	1.5	0.0	2.0	0.0	1.0828	1.4	1.0000	6.2	1	6
523	TCATIVÁ 13A	13.800	G1	8.3	3.7	6.6	-6.6	0.9900	9.1	0.9126	10.9	1	6
523	TCATIVÁ 13A	13.800	G2	8.0	3.6	6.6	-6.6	0.9900	8.9	0.9126	10.9	1	6
523	TCATIVÁ 13A	13.800	G3	8.0	3.6	6.6	-6.6	0.9900	8.9	0.9126	10.9	1	6
523	TCATIVÁ 13A	13.800	G4	8.0	3.6	6.6	-6.6	0.9900	8.9	0.9126	10.9	1	6
523	TCATIVÁ 13A	13.800	G5	8.0	3.6	6.6	-6.6	0.9900	8.9	0.9126	10.9	1	6
524	TCATIVÁ 13B	13.800	10	8.0	3.5	6.6	-6.6	0.9900	8.8	0.9151	10.9	1	6
524	TCATIVÁ 13B	13.800	G6	8.3	3.6	6.6	-6.6	0.9900	9.1	0.9151	10.9	1	6
524	TCATIVÁ 13B	13.800	G7	8.3	3.6	6.6	-6.6	0.9900	9.1	0.9151	10.9	1	6
524	TCATIVÁ 13B	13.800	G8	8.3	3.6	6.6	-6.6	0.9900	9.1	0.9151	10.9	1	6
524	TCATIVÁ 13B	13.800	G9	8.3	3.6	6.6	-6.6	0.9900	9.1	0.9151	10.9	1	6
525	TCOLON 13A	13.800	G1	42.0	19.3	19.3	19.3	1.0059	45.9	0.9089	44.4	1	6
526	TCOLON 13B	13.800	G2	42.0	19.3	19.3	19.3	1.0059	45.9	0.9089	44.4	1	6
541	TOABRE	0.6000	1	100.0	0.0	0.0	0.0	1.0150	98.5	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1349.4	47.0	840.8	-502.5				2116.4		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 10:50
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX VER

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVBASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	3.3	15.0	0.0	1.0000	35.2	0.9955	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0045	16.9	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.3	2.0	-2.0	0.9900	2.0	0.9845	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.3	2.0	-2.0	0.9900	2.0	0.9845	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.3	2.0	-2.0	0.9900	2.0	0.9845	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-1.1	3.0	-3.0	0.9900	4.1	0.9639	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-1.1	3.0	-3.0	0.9900	4.1	0.9639	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-1.1	3.0	-3.0	0.9900	4.1	0.9639	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0190	18.0	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0281	17.8	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0281	17.8	0.9281	23.0			2	7	
SUBSYSTEM TOTALS				120.4	19.5	71.5	5.5				171.3					



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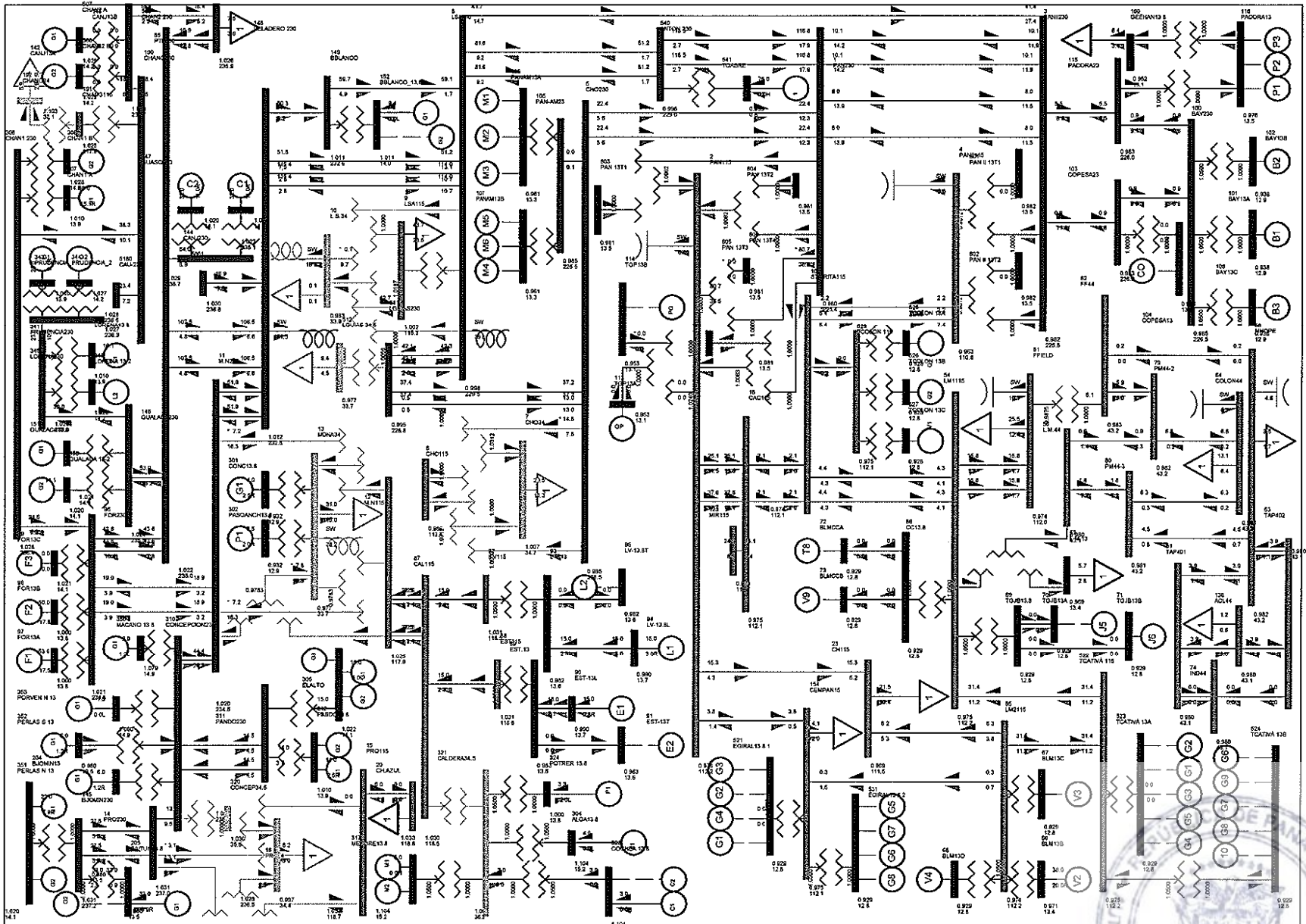
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 10:52
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2015 ESC MOD DEM MAX VER IN MW/MVAR

X--	AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
		30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	SALVADOR	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
		101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	HONDURAS	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
		57.1	290.6	-188.3	0.0	302.7	-7.6	265.2	
4	NICA	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
		32.0	224.5	-99.0	0.0	143.3	-93.0	142.8	
5	C.RICA	1343.8	1324.8	0.0	0.0	0.0	1.0	18.0	0.0
		233.2	569.4	-236.6	0.0	478.8	31.9	347.3	
6	PANAMA	1349.4	1303.2	0.0	0.0	0.0	-3.1	35.0	95.0
		47.0	228.3	38.8	0.0	536.7	4.8	309.4	
7	ACANAL	120.4	47.2	0.0	0.0	0.0	72.1	1.1	50.0
		19.5	8.3	0.0	0.0	0.0	-3.5	14.8	
9	COLON	0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
		0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS		6545.7	6416.2	0.0	0.0	0.0	0.0	129.5	0.0
		520.7	1855.4	-809.5	0.0	2094.4	0.0	1569.3	



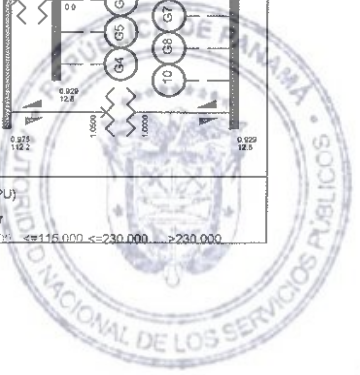
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Demanda Mínima de Verano



PLAN EXP-SIN - CA, JUNIO 2009
 AÑO 2010 ESC MOG DEM MIN VER
 T44, NOV 25 2009, 12:27

Bus - VOLTAGE (kV/FU)
 Branch - MW/Mvar
 Equipment - MW/Mvar
 kV <=13.800 <=15.000 <=16.000 <=17.000 <=18.000 <=19.000 <=20.000 <=21.000 <=22.000 <=23.000 >23.000



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MIN VER

THU, NOV 26 2009 10:53

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	1.0199	234.58	14	PRO230	230.00	6	1.0306	237.05				
85	PTP230	230.00	6	1.0258	235.94	96	FOR230	230.00	6	1.0210	234.83				
144	CANJ230	230.00	6	1.0220	235.06	145	BJOMIN230	230.00	6	1.0312	237.18				
146	GUALACA230	230.00	6	1.0240	235.52	147	GUASQ230	230.00	6	1.0217	234.99				
148	VELADERO 230	230.00	6	1.0124	232.85	149	BBLANCO	230.00	6	1.0112	232.58				
155	TABASARAI	230.00	6	1.0125	232.88	190	CHANG230	230.00	6	1.0290	236.67				
306	CHAN1 230	230.00	6	1.0280	236.44	310	CONCEPCION23	230.00	6	1.0282	236.49				
311	PANDO230	230.00	6	1.0286	236.58	341	PRUDENCIA230	230.00	6	1.0272	236.27				
345	LORENA230	230.00	6	1.0262	236.02	506	CHAN2 230	230.00	6	1.0292	236.73				
6000	FRONTER	230.00	6	1.0306	237.04										

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	0.9802	225.45	3	PANII230	230.00	6	0.9816	225.77				
5	CHO230	230.00	6	0.9849	226.53	8	LSA230	230.00	6	0.9976	229.46				
100	BAY230	230.00	6	0.9849	226.52	103	COPESA23	230.00	6	0.9826	226.00				
105	PAN-AM23	230.00	6	0.9849	226.53	115	PACORA23	230.00	6	0.9827	226.01				
511	LGUIAS230	230.00	6	0.9949	228.82	540	ANTON 230	230.00	6	0.9957	229.00				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MIN VER

THU, NOV 26 2009 10:53

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115	115.00	6	1.0022	115.26	12	M.N115	115.00	6	1.0250	117.87				
15	PRO115	115.00	6	1.0325	118.74	20	CH.AZUL	115.00	6	1.0333	118.83				
87	CAL115	115.00	6	1.0303	118.48	88	EST115	115.00	6	1.0313	118.60				
92	L.V115	115.00	6	1.0306	118.52	191	CHANG115	115.00	6	1.0249	117.87				

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115	115.00	6	0.9756	112.20	4	PANII115	115.00	6	0.9631	110.76				
6	CHO115	115.00	6	0.9861	113.40	18	CAC115	115.00	6	0.9752	112.15				



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19	C.V115	115.00	6	0.9604	110.44	21	C.BAN115	115.00	6	0.9666	111.16
23	CH115	115.00	6	0.9693	111.47	26	LOC115	115.00	6	0.9679	111.31
30	MAR115	115.00	6	0.9678	111.30	33	STM115	115.00	6	0.9743	112.05
37	SAN115	115.00	6	0.9650	110.98	48	TINAJ115	115.00	6	0.9739	112.00
50	M.O115	115.00	6	0.9740	112.01	52	TOC115	115.00	6	0.9610	110.52
54	LM1115	115.00	6	0.9753	112.16	55	LM2115	115.00	6	0.9757	112.21
61	FFIELD	115.00	6	0.9737	111.98	109	STA RITA115	115.00	6	0.9745	112.07
123	MIR115	115.00	7	0.9804	112.75	154	CEMPAN15	115.00	6	0.9751	112.13
522	TCATIVÁ 115	115.00	6	0.9755	112.18	529	TCOLON 115	115.00	6	0.9745	112.07

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 11:14
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MIN VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	38.0	20.0	25.0	0.0	0.9710	44.2	0.8848	47.0			1	6	
90	EST-13L	13.800	E1	15.0	2.8	12.0	-5.0	0.9900	15.4	0.9826	27.0			1	6	
94	LV-13.8L	13.800	L1	15.0	3.0	12.0	-5.0	0.9900	15.5	0.9800	27.0			1	6	
97	FOR13A	13.800	F1	53.6	-17.5	50.0	-50.0	1.0000	56.4	0.9504	111.0			1	6	SYST
98	FOR13B	13.800	F2	50.0	-17.8	50.0	-50.0	1.0000	53.1	0.9424	111.0			1	6	
142	CANJ13A	13.800	C1	32.0	11.0	29.0	-29.0	1.0200	33.2	0.9459	69.0			1	6	
143	CANJ13B	13.800	C2	32.0	11.0	29.0	-29.0	1.0200	33.2	0.9459	69.0			1	6	
150	GUALACA 13-2	13.800	G2	14.1	-0.6	7.4	-7.4	1.0200	13.8	0.9990	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	9.4	0.0	6.1	0.0	1.0112	9.3	1.0000	11.6			1	6	
193	GEBONYIC	13.800	G1	9.5	0.2	4.0	-4.0	1.0250	9.3	0.9999	35.3			1	6	
204	BJOMIN13	13.800	G1	22.0	-7.9	13.0	-13.0	1.0200	22.9	0.9416	28.9			1	6	
205	BAITUN13.8	13.800	G1	33.0	-0.9	26.6	-26.6	0.9800	33.7	0.9996	50.6			1	6	
301	CONC13.8	13.800	G1	4.0	2.5	2.5	-2.5	0.9319	5.0	0.8518	13.5			1	6	
302	PASOANCH13.8	13.800	P1	3.5	2.0	2.0	-2.0	0.9316	4.3	0.8682	6.2			1	6	
304	ALGA13.8	13.800	A1	4.0	0.0	2.0	0.0	1.1039	3.6	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	15.0	-5.0	12.0	-5.0	1.0216	15.5	0.9487	20.6			1	6	
307	CHAN1 A	13.800	G1	60.0	-15.7	50.0	-50.0	1.0100	61.4	0.9675	118.6			1	6	
312	PANDO13.8	13.800	G1	14.0	-2.5	10.0	-5.0	1.0100	14.1	0.9844	19.9			1	6	
317	MENDRE13.8	13.800	M1	5.0	0.0	0.0	0.0	1.1039	4.5	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C1	3.0	0.0	0.0	0.0	1.1039	2.7	1.0000	35.3			1	6	
324	POTRER 13.8	13.800	P1	3.2	-2.0	2.0	-2.0	1.0001	3.8	0.8517	6.2			1	6	
340	PEDGALITO13.8	13.800	P1	13.7	4.5	12.0	-5.0	0.9900	14.6	0.9511	27.0			1	6	
342	LORENA13.8	13.800	L1	16.1	-5.0	10.5	-5.0	1.0102	16.6	0.9548	19.9			1	6	
343	PRUDENCIA_1	13.800	G1	23.0	-9.1	9.8	-9.8	1.0100	24.5	0.9297	33.0			1	6	
350	MACANO 13.8	13.800	G1	2.0	-1.2	1.2	-1.2	1.0789	2.2	0.8518	6.2			1	6	
351	PERLAS N 13	13.800	G1	6.0	1.2	5.0	-5.0	0.9800	6.2	0.9797	13.5			1	6	
352	PERLAS S 13	13.800	G1	6.0	1.2	5.0	-5.0	0.9800	6.2	0.9797	13.5			1	6	
353	PORVEN N 13	13.800	G1	1.5	0.0	2.0	0.0	1.0796	1.4	1.0000	6.2			1	6	
541	TOABRE	0.6000	1	75.0	0.0	0.0	0.0	0.9987	75.1	1.0000	166.7			1	6	
SUBSYSTEM TOTALS				578.6	-25.9	390.1	-316.5				1157.6					



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 11:14
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 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	17.0	6.8	11.2	6.8	1.0066	18.2	0.9281	23.0							2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0157	18.0	0.9281	23.0							2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0157	18.0	0.9281	23.0							2	7	
SUBSYSTEM TOTALS						51.0	20.5	33.5	20.5				69.1									

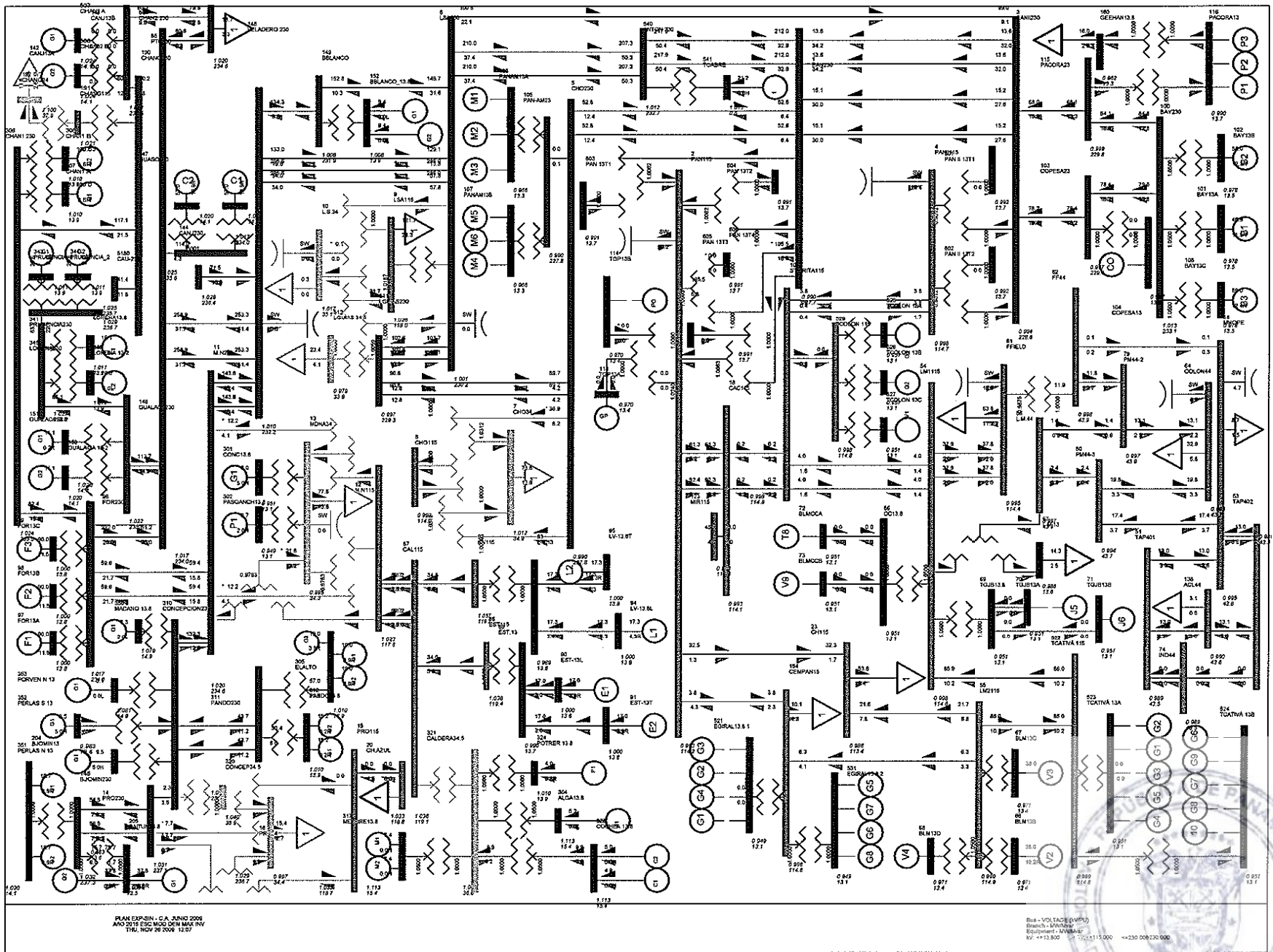
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 11:18
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MIN VER

AREA TOTALS IN MW/MVAR										
X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	GUATEMAL		1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
			30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	SALVADOR		912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
			101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	HONDURAS		1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
			57.1	290.6	-188.3	0.0	302.7	-7.6	265.2	
4	NICA		537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
			32.1	224.5	-99.0	0.0	143.3	-92.9	142.8	
5	C.RICA		1343.8	1324.8	0.0	0.0	0.0	1.2	17.9	0.0
			235.5	569.4	-236.5	0.0	478.4	34.4	346.6	
6	PANAMA		578.6	521.3	0.0	0.0	0.0	37.0	14.6	95.0
			-25.9	252.5	137.3	0.0	526.1	-7.4	115.2	
7	ACANAL		51.0	18.9	0.0	0.0	0.0	31.9	0.3	50.0
			20.5	9.1	0.0	0.0	0.0	6.1	5.3	
9	COLON		0.0	5.7	0.0	0.0	0.0	0.0	0.0	-75.0
			0.0	2.8	0.0	0.0	0.0	0.0	0.0	
TOTALS			5705.5	5597.4	0.0	0.0	0.0	0.0	108.1	0.0
			451.2	1880.7	-710.9	0.0	2083.4	0.0	1364.9	



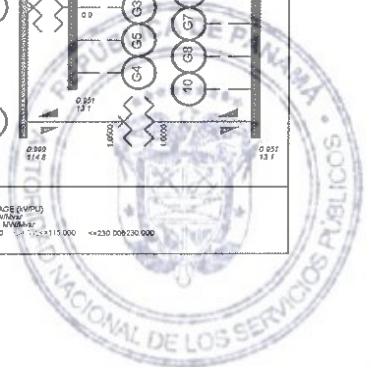
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Demanda Máxima de Invierno



PLAN EXPAN. C.A. JUNIO 2006
 AND 2010 ESC. MOD. DEM. MAR. 09
 TIR. NOV 28 2008 13:57

Bus - VOLTAGE (V) (V1)
 Branch - LINE (V2)
 Equipment - WVA (V3)
 WVA - 13.800 - 13.811.5.000 - +250 D08230.000



PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 9:59
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
8		LSA230		230.00	6	1.0008	230.20	11		M.N230		230.00	6	1.0199	234.57
14		PRO230		230.00	6	1.0307	237.05	85		PTP230		230.00	6	1.0200	234.60
96		FOR230		230.00	6	1.0175	234.02	100		BAY230		230.00	6	1.0134	233.09
144		CANJ230		230.00	6	1.0174	233.99	145		BJOMIN230		230.00	6	1.0319	237.34
146		GUALACA230		230.00	6	1.0221	235.09	147		GUASQ230		230.00	6	1.0172	233.96
148		VELADERO 230		230.00	6	1.0097	232.24	149		BBLANCO		230.00	6	1.0084	231.94
155		TABASARAI		230.00	6	1.0099	232.28	190		CHANG230		230.00	6	1.0245	235.64
306		CHAN1 230		230.00	6	1.0241	235.53	310		CONCEPCION23		230.00	6	1.0293	236.73
311		PANDO230		230.00	6	1.0293	236.73	341		PRUDENCIA230		230.00	6	1.0293	236.74
345		LORENA230		230.00	6	1.0268	236.16	506		CHAN2 230		230.00	6	1.0241	235.54
540		ANTON 230		230.00	6	1.0118	232.72	6000		FRONTER		230.00	6	1.0301	236.91

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9900	227.71	3		PANII230		230.00	6	0.9941	228.64
5		CHO230		230.00	6	0.9903	227.78	103		COPESA23		230.00	6	0.9974	229.40
105		PAN-AM23		230.00	6	0.9903	227.78	115		PACORA23		230.00	6	0.9990	229.77
511		LGUIAS230		230.00	6	0.9969	229.29								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 9:59
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9		LSA115		115.00	6	1.0263	118.02	12		M.N115		115.00	6	1.0227	117.61
15		PRO115		115.00	6	1.0325	118.74	20		CH.AZUL		115.00	6	1.0333	118.83
87		CAL115		115.00	6	1.0359	119.12	88		EST115		115.00	6	1.0384	119.41
92		L.V115		115.00	6	1.0368	119.23	191		CHANG115		115.00	6	1.0213	117.45

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)
2		PAN115		115.00	6	0.9931	114.20	4		PANII115		115.00	6	0.9976	114.72
6		CHO115		115.00	6	0.9916	114.04	18		CAC115		115.00	6	0.9926	114.15
19		C.V115		115.00	6	0.9875	113.57	21		C.BAN115		115.00	6	0.9828	113.03
23		CH115		115.00	6	0.9863	113.43	26		LOC115		115.00	6	0.9839	113.15
30		MAR115		115.00	6	0.9826	112.99	33		STM115		115.00	6	0.9911	113.98
37		SAN115		115.00	6	0.9819	112.92	48		TINAJ115		115.00	6	0.9905	113.91
50		M.O115		115.00	6	0.9907	113.93	52		TOC115		115.00	6	0.9947	114.39
54		LM1115		115.00	6	0.9982	114.79	55		LM2115		115.00	6	0.9992	114.90
61		FFIELD		115.00	6	0.9951	114.43	109		STA RITA115		115.00	6	0.9980	114.77
123		MIR115		115.00	7	0.9984	114.82	154		CEMPAN15		115.00	6	0.9963	114.58
522		TCATIVÁ 115		115.00	6	0.9987	114.85	529		TCOLON 115		115.00	6	0.9981	114.78

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 9:57



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AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVBASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	38.0	10.2	25.0	0.0	0.9710	40.5	0.9657	47.0			1	6	
67	BLM13C	13.800	V3	38.0	10.2	25.0	0.0	0.9710	40.5	0.9657	47.0			1	6	
68	BLM13D	13.800	V4	38.0	10.6	25.0	0.0	0.9710	40.6	0.9634	47.0			1	6	
90	EST-13L	13.800	E1	17.0	3.9	12.0	-5.0	1.0000	17.4	0.9752	27.0			1	6	
91	EST-13T	13.800	E2	17.0	3.9	12.0	-5.0	1.0000	17.4	0.9752	27.0			1	6	
94	LV-13.8L	13.800	L1	17.2	4.3	12.0	-5.0	1.0000	17.8	0.9699	27.0			1	6	
95	LV-13.8T	13.800	L2	17.2	4.3	12.0	-5.0	1.0000	17.8	0.9699	27.0			1	6	
97	FOR13A	13.800	F1	90.0	-11.5	50.0	-50.0	1.0000	90.7	0.9920	111.0			1	6	
98	FOR13B	13.800	F2	90.0	-11.5	50.0	-50.0	1.0000	90.7	0.9920	111.0			1	6	
99	FOR13C	13.800	F3	90.0	-11.5	50.0	-50.0	1.0000	90.7	0.9920	111.0			1	6	
101	BAY13A	13.800	B1	46.9	11.5	50.0	-25.0	0.9783	49.3	0.9710	96.0			1	6	SYST
102	BAY13B	13.800	B2	58.0	12.3	50.0	-25.0	0.9783	60.6	0.9782	96.0			1	6	
108	BAY13C	13.800	B3	59.0	12.4	50.0	-25.0	0.9783	61.6	0.9786	100.0			1	6	
142	CANJ13A	13.800	C1	57.0	18.9	29.0	-29.0	1.0200	58.9	0.9492	69.0			1	6	
143	CANJ13B	13.800	C2	57.0	18.9	29.0	-29.0	1.0200	58.9	0.9492	69.0			1	6	
150	GUALACA 13-2	13.800	G2	14.1	-0.2	7.4	-7.4	1.0200	13.8	0.9999	14.8			1	6	
151	GUALACA13.8	13.800	G1	14.1	-0.2	7.4	-7.4	1.0200	13.8	0.9999	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	9.4	0.0	6.1	0.0	1.0082	9.3	1.0000	11.6			1	6	
152	BBLANCO_13.8	13.800	G2	9.4	0.0	6.1	0.0	1.0082	9.3	1.0000	11.6			1	6	
193	GEBONYIC	13.800	G1	6.5	0.6	4.0	-4.0	1.0250	6.4	0.9959	35.3			1	6	
193	GEBONYIC	13.800	G2	6.5	0.6	4.0	-4.0	1.0250	6.4	0.9959	35.3			1	6	
193	GEBONYIC	13.800	G3	6.5	0.6	4.0	-4.0	1.0250	6.4	0.9959	35.3			1	6	
204	BJOMIN13	13.800	G1	18.7	-3.9	13.0	-13.0	1.0200	18.7	0.9790	28.9			1	6	
204	BJOMIN13	13.800	G2	18.7	-3.9	13.0	-13.0	1.0200	18.7	0.9790	28.9			1	6	
205	BAITUN13.8	13.800	G1	37.8	0.8	26.6	-26.6	0.9800	38.6	0.9998	50.6			1	6	
205	BAITUN13.8	13.800	G2	37.8	0.8	26.6	-26.6	0.9800	38.6	0.9998	50.6			1	6	
301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9505	10.8	0.8742	13.5			1	6	
302	PASOANCH13.8	13.800	P1	3.7	2.0	2.0	-2.0	0.9487	4.5	0.8823	6.2			1	6	
304	ALGA13.8	13.800	A1	5.2	0.0	2.0	0.0	1.1130	4.7	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	19.0	-3.9	12.0	-5.0	1.0100	19.2	0.9794	20.6			1	6	
305	ELALTO	13.800	G2	19.0	-3.9	12.0	-5.0	1.0100	19.2	0.9794	20.6			1	6	
305	ELALTO	13.800	G3	19.0	-3.9	12.0	-5.0	1.0100	19.2	0.9794	20.6			1	6	
307	CHAN1 A	13.800	G1	100.0	-8.6	50.0	-50.0	1.0100	99.4	0.9963	118.6			1	6	
308	CHAN1 B	13.800	G2	100.0	-8.6	50.0	-50.0	1.0100	99.4	0.9963	118.6			1	6	
312	PANDO13.8	13.800	G1	15.2	-0.2	10.0	-5.0	1.0100	15.1	0.9999	19.9			1	6	
312	PANDO13.8	13.800	G2	15.2	-0.2	10.0	-5.0	1.0100	15.1	0.9999	19.9			1	6	
317	MENDRE13.8	13.800	M1	7.4	0.0	0.0	0.0	1.1126	6.7	1.0000	35.3			1	6	
317	MENDRE13.8	13.800	M2	7.4	0.0	0.0	0.0	1.1126	6.7	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C1	4.9	0.0	0.0	0.0	1.1128	4.4	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C2	5.0	0.0	0.0	0.0	1.1128	4.5	1.0000	35.3			1	6	
324	POTRER 13.8	13.800	P1	4.0	0.8	2.0	-2.0	1.0100	4.0	0.9809	6.2			1	6	
340	PEDGALITO138	13.800	P1	22.8	10.0	12.0	-5.0	1.0100	24.6	0.9160	27.0			1	6	
342	LORENA13.8	13.800	L1	16.1	-5.0	10.5	-5.0	1.0108	16.6	0.9548	19.9			1	6	
343	PRUDENCIA_1	13.800	G1	26.6	-9.8	9.8	-9.8	1.0106	28.0	0.9388	33.0			1	6	
344	PRUDENCIA_2	13.800	G2	26.6	-9.8	9.8	-9.8	1.0106	28.0	0.9388	33.0			1	6	
346	LORENA 13-2	13.800	L2	16.0	-5.0	10.5	-5.0	1.0108	16.6	0.9547	19.9			1	6	
350	MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0795	3.5	0.8521	6.2			1	6	
351	PERLAS N 13	13.800	G1	9.5	5.0	5.0	-5.0	0.9833	10.9	0.8849	13.5			1	6	
352	PERLAS S 13	13.800	G1	9.5	5.0	5.0	-5.0	0.9833	10.9	0.8849	13.5			1	6	
353	PORVEN N 13	13.800	G1	3.1	0.0	2.0	0.0	1.0807	2.9	1.0000	6.2			1	6	
541	TOABRE	0.6000	1	21.2	0.0	0.0	0.0	1.0127	21.0	1.0000	166.7			1	6	
SUBSYSTEM TOTALS				1398.7	49.1	832.9	-589.6				2188.4					



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AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	2.6	15.0	0.0	1.0000	35.1	0.9974	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0064	16.9	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	0.0	2.0	-2.0	0.9900	2.0	0.9998	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	0.0	2.0	-2.0	0.9900	2.0	0.9998	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	0.0	2.0	-2.0	0.9900	2.0	0.9998	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-0.8	3.0	-3.0	0.9900	4.0	0.9813	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-0.8	3.0	-3.0	0.9900	4.0	0.9813	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-0.8	3.0	-3.0	0.9900	4.0	0.9813	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0209	17.9	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0300	17.8	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0300	17.8	0.9281	23.0			2	7	
SUBSYSTEM TOTALS				120.4	20.6	71.5	5.5				171.3					

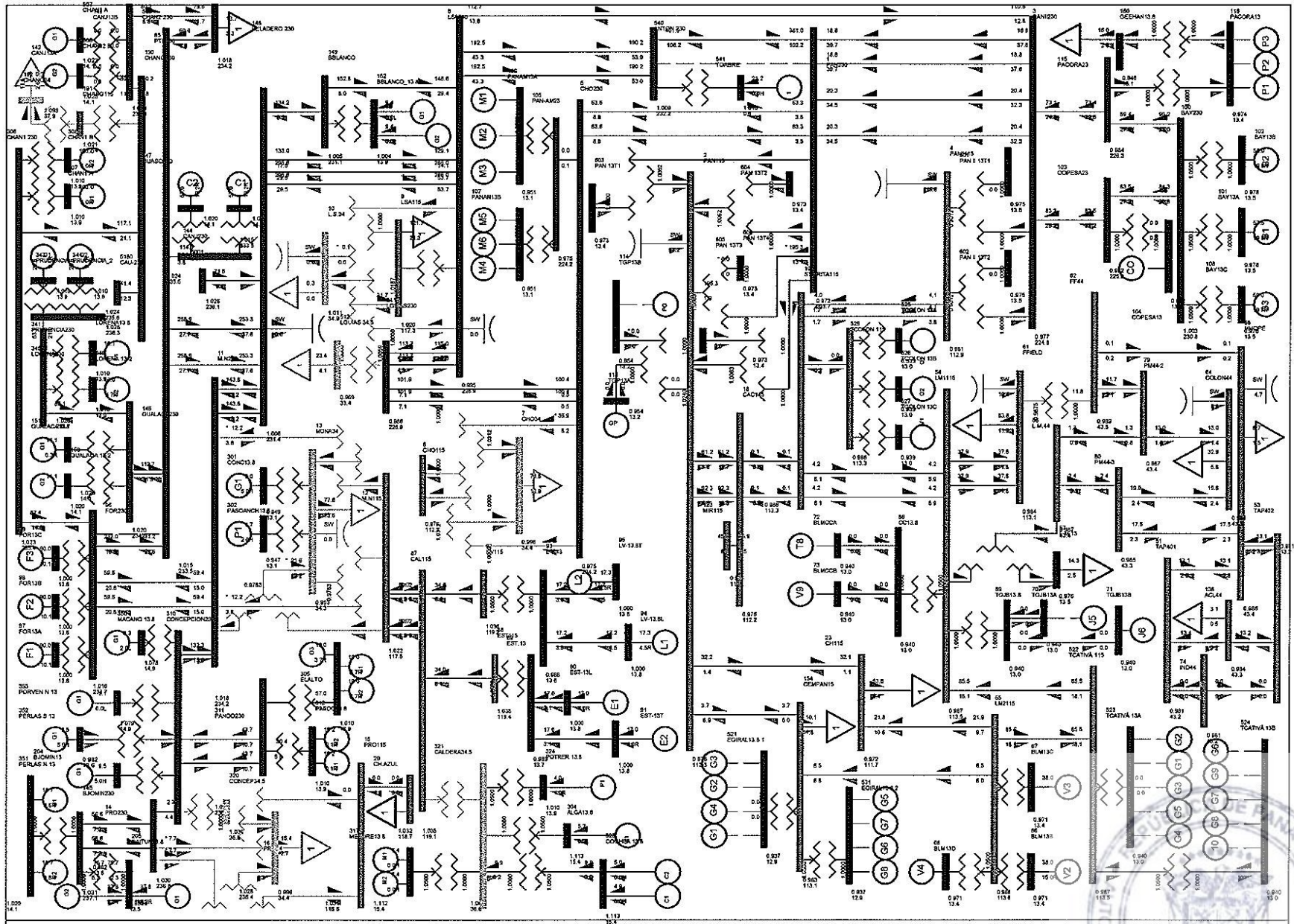
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 9:59
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 Año 2015 ESC MOD DEM MAX INV IN MW/MVAR

X-- AREA	--X GENERATION	FROM TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL	30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR	101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS	57.2	290.6	-188.3	0.0	302.7	-7.6	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	32.2	224.5	-99.0	0.0	143.3	-92.8	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	0.5	18.5	0.0
C.RICA	241.9	569.4	-236.2	0.0	477.8	36.3	350.3	
6	1398.7	1303.2	0.0	0.0	0.0	-2.4	83.6	95.0
PANAMA	49.1	228.3	-264.0	0.0	527.8	-1.0	611.2	
7	120.4	47.2	0.0	0.0	0.0	71.9	1.3	50.0
ACANAL	20.6	8.3	0.0	0.0	0.0	-2.3	14.7	
9	0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS	6595.0	6416.2	0.0	0.0	0.0	0.0	178.8	0.0
	532.9	1855.4	-1112.0	0.0	2084.6	0.0	1874.1	



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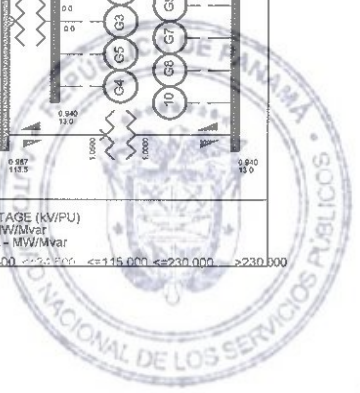
Contingencia línea Antón – Panamá



PLAN ESQUEMA - C.A. INICO 2009
 AND 2165 ESC. MOD. DEH. MAX. 044
 PHU. NOV 26 2009 13:14

Bus - VOLTAGE (kV/PU)
 Branch - MW/Mvar
 Equipment - MW/Mvar

kV <=13.800 <=23.000 <=115.000 <=230.000 >230.000



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:33
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA ANTON - PANAMA

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	1.0181	234.15	14	PRO230	230.00	6	1.0296	236.81				
85	PTP230	230.00	6	1.0184	234.23	96	FOR230	230.00	6	1.0159	233.67				
100	BAY230	230.00	6	1.0035	230.80	144	CANJ230	230.00	6	1.0153	233.53				
145	BJOMIN230	230.00	6	1.0311	237.15	146	GUALACA230	230.00	6	1.0202	234.64				
147	GUASQ230	230.00	6	1.0152	233.49	148	VELADERO 230	230.00	6	1.0062	231.42				
149	BBLANCO	230.00	6	1.0047	231.08	155	TABASARAI	230.00	6	1.0063	231.45				
190	CHANG230	230.00	6	1.0237	235.46	306	CHAN1 230	230.00	6	1.0234	235.37				
310	CONCEPCION23	230.00	6	1.0280	236.44	311	PANDO230	230.00	6	1.0282	236.48				
341	PRUDENCIA230	230.00	6	1.0275	236.33	345	LORENA230	230.00	6	1.0249	235.74				
506	CHAN2 230	230.00	6	1.0231	235.31	540	ANTON 230	230.00	6	1.0094	232.17				
6000	FRONTER	230.00	6	1.0290	236.67										

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN230	230.00	6	0.9725	223.67	3	PANII230	230.00	6	0.9773	224.79				
5	CHO230	230.00	6	0.9747	224.19	8	LSA230	230.00	6	0.9950	228.86				
103	COPESA23	230.00	6	0.9817	225.78	105	PAN-AM23	230.00	6	0.9747	224.19				
115	PACORA23	230.00	6	0.9841	226.35	511	LGUIAS230	230.00	6	0.9865	226.89				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:33
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA ANTON - PANAMA

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115	115.00	6	1.0202	117.32	12	M.N115	115.00	6	1.0218	117.50				
15	PRO115	115.00	6	1.0315	118.62	20	CH.AZUL	115.00	6	1.0322	118.71				
87	CAL115	115.00	6	1.0353	119.06	88	EST115	115.00	6	1.0378	119.35				
92	L.V115	115.00	6	1.0362	119.17	191	CHANG115	115.00	6	1.0208	117.39				

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115	115.00	6	0.9764	112.29	4	PANII115	115.00	6	0.9814	112.86				
6	CHO115	115.00	6	0.9761	112.25	18	CAC115	115.00	6	0.9760	112.24				
19	C.V115	115.00	6	0.9710	111.67	21	C.BAN115	115.00	6	0.9661	111.10				



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23	CH115	115.00	6	0.9717	111.75	26	LOC115	115.00	6	0.9671	111.22
30	MAR115	115.00	6	0.9658	111.07	33	STM115	115.00	6	0.9744	112.06
37	SAN115	115.00	6	0.9651	110.99	48	TINAJ115	115.00	6	0.9738	111.99
50	M.O115	115.00	6	0.9740	112.01	52	TOC115	115.00	6	0.9785	112.52
54	LM1115	115.00	6	0.9867	113.47	55	LM2115	115.00	6	0.9878	113.60
61	FFIELD	115.00	6	0.9836	113.12	109	STA RITA115	115.00	6	0.9856	113.34
123	MIR115	115.00	7	0.9836	113.11	154	CEMPAN15	115.00	6	0.9834	113.09
522	TCATIVÁ 115	115.00	6	0.9873	113.53	529	TCOLON 115	115.00	6	0.9856	113.34

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:33
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA ANTON - PANAMA

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	15.0	25.0	0.0	0.9710	42.1	0.9305	47.0			1	6	
67	BLM13C	13.800	V3	38.0	15.0	25.0	0.0	0.9710	42.1	0.9305	47.0			1	6	
68	BLM13D	13.800	V4	38.0	15.6	25.0	0.0	0.9710	42.3	0.9254	47.0			1	6	
90	EST-13L	13.800	E1	17.0	4.0	12.0	-5.0	1.0000	17.5	0.9733	27.0			1	6	
91	EST-13T	13.800	E2	17.0	4.0	12.0	-5.0	1.0000	17.5	0.9733	27.0			1	6	
94	LV-13.8L	13.800	L1	17.2	4.5	12.0	-5.0	1.0000	17.8	0.9677	27.0			1	6	
95	LV-13.8T	13.800	L2	17.2	4.5	12.0	-5.0	1.0000	17.8	0.9677	27.0			1	6	
97	FOR13A	13.800	F1	90.0	-10.1	50.0	-50.0	1.0000	90.6	0.9938	111.0			1	6	
98	FOR13B	13.800	F2	90.0	-10.1	50.0	-50.0	1.0000	90.6	0.9938	111.0			1	6	
99	FOR13C	13.800	F3	90.0	-10.1	50.0	-50.0	1.0000	90.6	0.9938	111.0			1	6	
101	BAY13A	13.800	B1	57.5	19.6	50.0	-25.0	0.9783	62.1	0.9466	96.0			1	6	SYST
102	BAY13B	13.800	B2	58.0	19.6	50.0	-25.0	0.9783	62.6	0.9473	96.0			1	6	
108	BAY13C	13.800	B3	59.0	19.7	50.0	-25.0	0.9783	63.6	0.9486	100.0			1	6	
142	CANJ13A	13.800	C1	57.0	19.2	29.0	-29.0	1.0200	59.0	0.9474	69.0			1	6	
143	CANJ13B	13.800	C2	57.0	19.2	29.0	-29.0	1.0200	59.0	0.9474	69.0			1	6	
150	GUALACA 13	213.800	G2	14.1	0.3	7.4	-7.4	1.0200	13.8	0.9997	14.8			1	6	
151	GUALACA13.8	13.800	G1	14.1	0.3	7.4	-7.4	1.0200	13.8	0.9997	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	9.4	0.0	6.1	0.0	1.0044	9.4	1.0000	11.6			1	6	
152	BBLANCO_13.8	13.800	G2	9.4	0.0	6.1	0.0	1.0044	9.4	1.0000	11.6			1	6	
193	GEBONYIC	13.800	G1	6.5	0.7	4.0	-4.0	1.0250	6.4	0.9950	35.3			1	6	
193	GEBONYIC	13.800	G2	6.5	0.7	4.0	-4.0	1.0250	6.4	0.9950	35.3			1	6	
193	GEBONYIC	13.800	G3	6.5	0.7	4.0	-4.0	1.0250	6.4	0.9950	35.3			1	6	
204	BJOMIN13	13.800	G1	18.7	-3.6	13.0	-13.0	1.0200	18.7	0.9822	28.9			1	6	
204	BJOMIN13	13.800	G2	18.7	-3.6	13.0	-13.0	1.0200	18.7	0.9822	28.9			1	6	
205	BAITUN13.8	13.800	G1	37.8	1.2	26.6	-26.6	0.9800	38.6	0.9995	50.6			1	6	
205	BAITUN13.8	13.800	G2	37.8	1.2	26.6	-26.6	0.9800	38.6	0.9995	50.6			1	6	
301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9488	10.9	0.8742	13.5			1	6	
302	PASOANCH13.8	13.800	P1	3.7	2.0	2.0	-2.0	0.9469	4.5	0.8823	6.2			1	6	
304	ALGA13.8	13.800	A1	5.2	0.0	2.0	0.0	1.1129	4.7	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	19.0	-3.7	12.0	-5.0	1.0100	19.2	0.9820	20.6			1	6	
305	ELALTO	13.800	G2	19.0	-3.7	12.0	-5.0	1.0100	19.2	0.9820	20.6			1	6	
305	ELALTO	13.800	G3	19.0	-3.7	12.0	-5.0	1.0100	19.2	0.9820	20.6			1	6	



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307	CHAN1 A	13.800	G1	100.0	-8.0	50.0	-50.0	1.0100	99.3	0.9969	118.6	1	6
308	CHAN1 B	13.800	G2	100.0	-8.0	50.0	-50.0	1.0100	99.3	0.9969	118.6	1	6
312	PANDO13.8	13.800	G1	15.2	-0.1	10.0	-5.0	1.0100	15.1	1.0000	19.9	1	6
312	PANDO13.8	13.800	G2	15.2	-0.1	10.0	-5.0	1.0100	15.1	1.0000	19.9	1	6
317	MENDRE13.8	13.800	M1	7.4	0.0	0.0	0.0	1.1124	6.7	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	7.4	0.0	0.0	0.0	1.1124	6.7	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	4.9	0.0	0.0	0.0	1.1127	4.4	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C2	5.0	0.0	0.0	0.0	1.1127	4.5	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	4.0	1.0	2.0	-2.0	1.0100	4.0	0.9700	6.2	1	6
340	PEDGALITO138	13.800	P1	22.8	10.3	12.0	-5.0	1.0100	24.8	0.9116	27.0	1	6
342	LORENA13.8	13.800	L1	16.1	-4.7	10.5	-5.0	1.0100	16.6	0.9604	19.9	1	6
343	PRUDENCIA_1	13.800	G1	26.6	-9.1	9.8	-9.8	1.0100	27.8	0.9461	33.0	1	6
344	PRUDENCIA_2	13.800	G2	26.6	-9.1	9.8	-9.8	1.0100	27.8	0.9461	33.0	1	6
346	LORENA 13-2	13.800	L2	16.0	-4.7	10.5	-5.0	1.0100	16.5	0.9604	19.9	1	6
350	MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0782	3.5	0.8521	6.2	1	6
351	PERLAS N 13	13.800	G1	9.5	5.0	5.0	-5.0	0.9821	10.9	0.8849	13.5	1	6
352	PERLAS S 13	13.800	G1	9.5	5.0	5.0	-5.0	0.9821	10.9	0.8849	13.5	1	6
353	PORVEN N 13	13.800	G1	3.1	0.0	2.0	0.0	1.0794	2.9	1.0000	6.2	1	6
541	TOABRE	0.6000	1	21.2	0.0	0.0	0.0	1.0103	21.0	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1409.3	99.0	832.9	-589.6				2188.4		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:33
PLAN EXP-SIN - C.A. JUNIO 2009
Año 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA ANTON - PANAMA

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	6.0	15.0	0.0	1.0000	35.5	0.9858	44.1			2	7	
130	MIR13F		13.800	G5	17.0	1.0	8.0	0.0	1.0000	17.0	0.9984	27.7			2	7	
140	GAT6A		6.9000	G1	1.9	0.3	2.0	-2.0	0.9900	2.0	0.9881	4.1			2	7	
140	GAT6A		6.9000	G2	1.9	0.3	2.0	-2.0	0.9900	2.0	0.9881	4.1			2	7	
140	GAT6A		6.9000	G3	1.9	0.3	2.0	-2.0	0.9900	2.0	0.9881	4.1			2	7	
141	GAT6B		6.9000	G4	3.9	-0.4	3.0	-3.0	0.9900	3.9	0.9944	5.6			2	7	
141	GAT6B		6.9000	G5	3.9	-0.4	3.0	-3.0	0.9900	3.9	0.9944	6.2			2	7	
141	GAT6B		6.9000	G6	3.9	-0.4	3.0	-3.0	0.9900	3.9	0.9944	6.2			2	7	
170	MIR13G		13.800	M1	17.0	6.8	11.2	6.8	1.0125	18.1	0.9281	23.0			2	7	
171	MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0217	17.9	0.9281	23.0			2	7	
171	MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0217	17.9	0.9281	23.0			2	7	
SUBSYSTEM TOTALS					120.4	27.1	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:33
PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
Año 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA ANTON - PANAMA IN MW/MVAR

X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	DESIRE	NET INT
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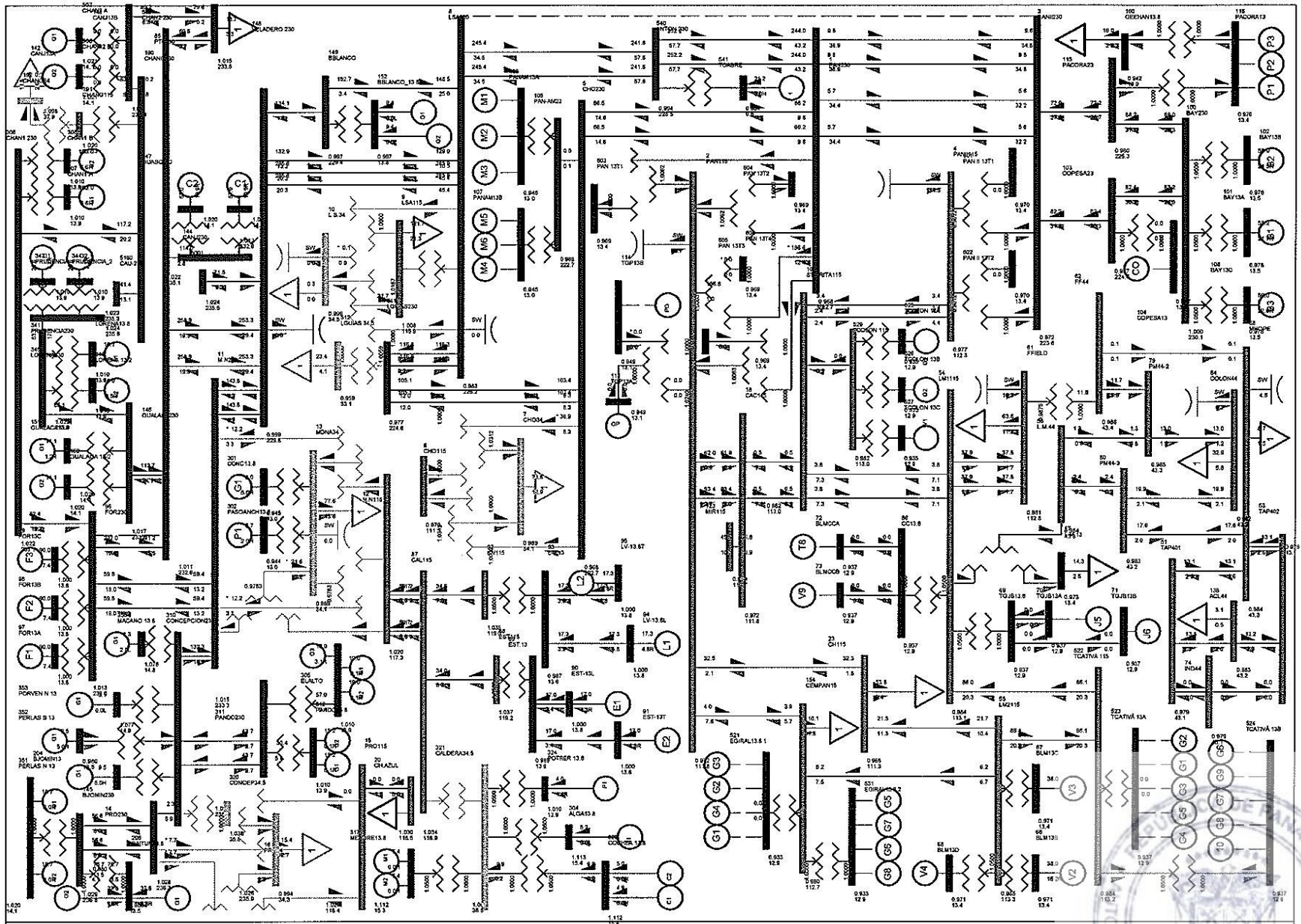
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1	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL	30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR	101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS	57.2	290.6	-188.3	0.0	302.7	-7.6	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	32.3	224.5	-99.0	0.0	143.3	-92.8	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	0.5	18.5	0.0
C. RICA	243.8	569.4	-236.2	0.0	477.6	37.8	350.4	
6	1409.3	1303.2	0.0	0.0	0.0	-2.4	94.2	95.0
PANAMA	99.0	228.3	-257.0	0.0	498.3	-8.6	632.1	
7	120.4	47.2	0.0	0.0	0.0	71.9	1.4	50.0
ACANAL	27.1	8.3	0.0	0.0	0.0	3.7	15.1	
9	0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS	6605.6	6416.2	0.0	0.0	0.0	0.0	189.4	0.0
	591.2	1855.4	-1104.9	0.0	2054.8	0.0	1895.	



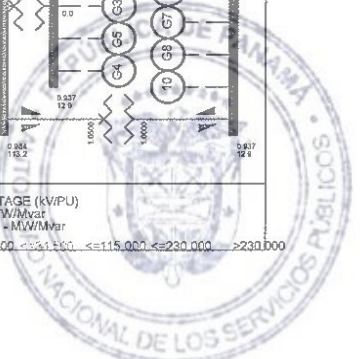
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Contingencia Llano Sánchez- Panamá II



Plan Exp-SN - C.A. JUNIO 2009
 RFO 2015 EDC 100.15M MVA RW
 RAJ, NOV 26 2009 13:16

Bus - VOLTAGE (KV/PU)
 Branch - MW/Mvar
 Equipment = MW/Mvar
 KV: <13,800 <<13,800 <<15,000 <<230,000 >230,000



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:36
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA LLANO SANCHEZ - PANAMA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
11	M.N230	230.00	6	1.0145	233.35	14	PRO230	230.00	6	1.0276	236.34				
85	PTP230	230.00	6	1.0153	233.52	96	FOR230	230.00	6	1.0130	232.99				
100	BAY230	230.00	6	1.0004	230.09	144	CANJ230	230.00	6	1.0115	232.65				
145	BJOMIN230	230.00	6	1.0294	236.76	146	GUALACA230	230.00	6	1.0166	233.82				
147	GUASQ230	230.00	6	1.0113	232.60	190	CHANG230	230.00	6	1.0222	235.12				
306	CHAN1 230	230.00	6	1.0220	235.07	310	CONCEPCION230	230.00	6	1.0255	235.88				
311	PANDO230	230.00	6	1.0260	235.98	341	PRUDENCIA230	230.00	6	1.0243	235.59				
345	LORENA230	230.00	6	1.0216	234.97	506	CHAN2 230	230.00	6	1.0212	234.88				
6000	FRONTER	230.00	6	1.0269	236.18										

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	0.9681	222.67	3	PANII230	230.00	6	0.9723	223.63				
5	CHO230	230.00	6	0.9684	222.74	8	LSA230	230.00	6	0.9833	226.16				
103	COPESA23	230.00	6	0.9769	224.69	105	PAN-AM23	230.00	6	0.9684	222.74				
115	PACORA23	230.00	6	0.9796	225.31	148	VELADERO 230	230.00	6	0.9991	229.78				
149	BBLANCO	230.00	6	0.9972	229.36	155	TABASARAI	230.00	6	0.9992	229.82				
511	LGUIAS230	230.00	6	0.9767	224.64	540	ANTON 230	230.00	6	0.9935	228.51				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:36
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA LLANO SANCHEZ - PANAMA II

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115	115.00	6	1.0080	115.92	12	M.N115	115.00	6	1.0199	117.29				
15	PRO115	115.00	6	1.0294	118.39	20	CH.AZUL	115.00	6	1.0302	118.47				
87	CAL115	115.00	6	1.0341	118.93	88	EST115	115.00	6	1.0368	119.24				
92	L.V115	115.00	6	1.0352	119.04	191	CHANG115	115.00	6	1.0197	117.27				

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115	115.00	6	0.9723	111.81	4	PANII115	115.00	6	0.9767	112.32				
6	CHO115	115.00	6	0.9698	111.52	18	CAC115	115.00	6	0.9718	111.76				
19	C.V115	115.00	6	0.9665	111.14	21	C.BAN115	115.00	6	0.9618	110.60				
23	CH115	115.00	6	0.9680	111.32	26	LOC115	115.00	6	0.9628	110.73				
30	MAR115	115.00	6	0.9615	110.58	33	STM115	115.00	6	0.9702	111.58				
37	SAN115	115.00	6	0.9608	110.49	48	TINAJ115	115.00	6	0.9696	111.51				
50	M.O115	115.00	6	0.9698	111.52	52	TOC115	115.00	6	0.9738	111.98				
54	LM1115	115.00	6	0.9837	113.13	55	LM2115	115.00	6	0.9848	113.25				
61	FFIELD	115.00	6	0.9806	112.77	109	STA RITA115	115.00	6	0.9822	112.96				
123	MIR115	115.00	7	0.9799	112.69	154	CEMPAN15	115.00	6	0.9800	112.70				
522	TCATIVÁ	115 115.00	6	0.9842	113.19	529	TCOLON 115	115.00	6	0.9822	112.96				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:36
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA LLANO SANCHEZ - PANAMA II



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AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	38.0	16.2	25.0	0.0	0.9710	42.6	0.9197	47.0			1	6	
67	BLM13C	13.800	V3	38.0	16.2	25.0	0.0	0.9710	42.6	0.9197	47.0			1	6	
68	BLM13D	13.800	V4	38.0	16.9	25.0	0.0	0.9710	42.8	0.9139	47.0			1	6	
90	EST-13L	13.800	E1	17.0	4.3	12.0	-5.0	1.0000	17.5	0.9694	27.0			1	6	
91	EST-13T	13.800	E2	17.0	4.3	12.0	-5.0	1.0000	17.5	0.9694	27.0			1	6	
94	LV-13.8L	13.800	L1	17.2	4.8	12.0	-5.0	1.0000	17.9	0.9633	27.0			1	6	
95	LV-13.8T	13.800	L2	17.2	4.8	12.0	-5.0	1.0000	17.9	0.9633	27.0			1	6	
97	FOR13A	13.800	F1	90.0	-7.4	50.0	-50.0	1.0000	90.3	0.9966	111.0			1	6	
98	FOR13B	13.800	F2	90.0	-7.4	50.0	-50.0	1.0000	90.3	0.9966	111.0			1	6	
99	FOR13C	13.800	F3	90.0	-7.4	50.0	-50.0	1.0000	90.3	0.9966	111.0			1	6	
101	BAY13A	13.800	B1	55.2	21.7	50.0	-25.0	0.9783	60.7	0.9310	96.0			1	6	SYST
102	BAY13B	13.800	B2	58.0	21.9	50.0	-25.0	0.9783	63.4	0.9357	96.0			1	6	
108	BAY13C	13.800	B3	59.0	22.0	50.0	-25.0	0.9783	64.3	0.9372	100.0			1	6	
142	CANJ13A	13.800	C1	57.0	19.9	29.0	-29.0	1.0200	59.2	0.9441	69.0			1	6	
143	CANJ13B	13.800	C2	57.0	19.9	29.0	-29.0	1.0200	59.2	0.9441	69.0			1	6	
150	GUALACA 13-2	13.800	G2	14.1	1.2	7.4	-7.4	1.0200	13.8	0.9961	14.8			1	6	
151	GUALACA13.8	13.800	G1	14.1	1.2	7.4	-7.4	1.0200	13.8	0.9961	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	9.4	0.0	6.1	0.0	0.9969	9.4	1.0000	11.6			1	6	
152	BBLANCO_13.8	13.800	G2	9.4	0.0	6.1	0.0	0.9969	9.4	1.0000	11.6			1	6	
193	GEBONYIC	13.800	G1	6.5	0.8	4.0	-4.0	1.0250	6.4	0.9931	35.3			1	6	
193	GEBONYIC	13.800	G2	6.5	0.8	4.0	-4.0	1.0250	6.4	0.9931	35.3			1	6	
193	GEBONYIC	13.800	G3	6.5	0.8	4.0	-4.0	1.0250	6.4	0.9931	35.3			1	6	
204	BJOMIN13	13.800	G1	18.7	-3.0	13.0	-13.0	1.0200	18.6	0.9877	28.9			1	6	
204	BJOMIN13	13.800	G2	18.7	-3.0	13.0	-13.0	1.0200	18.6	0.9877	28.9			1	6	
205	BAITUN13.8	13.800	G1	37.8	1.8	26.6	-26.6	0.9800	38.7	0.9989	50.6			1	6	
205	BAITUN13.8	13.800	G2	37.8	1.8	26.6	-26.6	0.9800	38.7	0.9989	50.6			1	6	
301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9455	10.9	0.8742	13.5			1	6	
302	PASOANCH13.8	13.800	P1	3.7	2.0	2.0	-2.0	0.9436	4.5	0.8823	6.2			1	6	
304	ALGA13.8	13.800	A1	5.2	0.0	2.0	0.0	1.1126	4.7	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	19.0	-3.1	12.0	-5.0	1.0100	19.1	0.9867	20.6			1	6	
305	ELALTO	13.800	G2	19.0	-3.1	12.0	-5.0	1.0100	19.1	0.9867	20.6			1	6	
305	ELALTO	13.800	G3	19.0	-3.1	12.0	-5.0	1.0100	19.1	0.9867	20.6			1	6	
307	CHAN1 A	13.800	G1	100.0	-6.6	50.0	-50.0	1.0100	99.2	0.9978	118.6			1	6	
308	CHAN1 B	13.800	G2	100.0	-6.6	50.0	-50.0	1.0100	99.2	0.9978	118.6			1	6	
312	PANDO13.8	13.800	G1	15.2	0.1	10.0	-5.0	1.0100	15.0	1.0000	19.9			1	6	
312	PANDO13.8	13.800	G2	15.2	0.1	10.0	-5.0	1.0100	15.0	1.0000	19.9			1	6	
317	MENDRE13.8	13.800	M1	7.4	0.0	0.0	0.0	1.1122	6.7	1.0000	35.3			1	6	
317	MENDRE13.8	13.800	M2	7.4	0.0	0.0	0.0	1.1122	6.7	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C1	4.9	0.0	0.0	0.0	1.1124	4.4	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C2	5.0	0.0	0.0	0.0	1.1124	4.5	1.0000	35.3			1	6	
324	POTRER 13.8	13.800	P1	4.0	1.4	2.0	-2.0	1.0100	4.2	0.9431	6.2			1	6	
340	PEDGALITO13.8	13.800	P1	22.8	10.9	12.0	-5.0	1.0100	25.0	0.9027	27.0			1	6	
342	LORENA13.8	13.800	L1	16.1	-3.5	10.5	-5.0	1.0100	16.3	0.9766	19.9			1	6	
343	PRUDENCIA_1	13.800	G1	26.6	-7.3	9.8	-9.8	1.0100	27.3	0.9641	33.0			1	6	
344	PRUDENCIA_2	13.800	G2	26.6	-7.3	9.8	-9.8	1.0100	27.3	0.9641	33.0			1	6	
346	LORENA 13-2	13.800	L2	16.0	-3.5	10.5	-5.0	1.0100	16.3	0.9766	19.9			1	6	
350	MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0756	3.6	0.8521	6.2			1	6	
351	PERLAS N 13	13.800	G1	9.5	5.0	5.0	-5.0	0.9798	11.0	0.8849	13.5			1	6	
352	PERLAS S 13	13.800	G1	9.5	5.0	5.0	-5.0	0.9798	11.0	0.8849	13.5			1	6	
353	PORVEN N 13	13.800	G1	3.1	0.0	2.0	0.0	1.0768	2.9	1.0000	6.2			1	6	
541	TOABRE	0.6000	1	21.2	0.0	0.0	0.0	0.9945	21.3	1.0000	166.7			1	6	
SUBSYSTEM TOTALS				1407.1	135.9	832.9	-589.6				2188.4					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:36
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 AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA LLANO SANCHEZ - PANAMA II

AREA 7 [ACANAL] MACHINE SUMMARY:



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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	6.6	15.0	0.0	1.0000	35.6	0.9826	44.1			2	7	
130	MIR13F	13.800	G5	17.0	1.7	8.0	0.0	1.0000	17.1	0.9948	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	0.4	2.0	-2.0	0.9900	2.0	0.9807	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	0.4	2.0	-2.0	0.9900	2.0	0.9807	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	0.4	2.0	-2.0	0.9900	2.0	0.9807	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-0.3	3.0	-3.0	0.9900	3.9	0.9965	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-0.3	3.0	-3.0	0.9900	3.9	0.9965	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-0.3	3.0	-3.0	0.9900	3.9	0.9965	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0109	18.1	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0200	18.0	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0200	18.0	0.9281	23.0			2	7	
SUBSYSTEM TOTALS				120.4	29.0	71.5	5.5				171.3					

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E WED, NOV 25 2009 10:36
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2015 ESC MOD DEM MAX INV CONTINGENCIA LINEA LLANO SANCHEZ - PANAMA II 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		1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL		30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2		912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR		101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3		1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS		57.2	290.6	-188.3	0.0	302.7	-7.6	265.2	
4		537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA		32.4	224.5	-98.9	0.0	143.3	-92.7	142.8	
5		1343.8	1324.8	0.0	0.0	0.0	0.5	18.5	0.0
C.RICA		247.5	569.4	-236.0	0.0	477.2	40.7	350.6	
6		1407.1	1303.2	0.0	0.0	0.0	-2.4	92.0	95.0
PANAMA		135.9	228.3	-253.8	0.0	470.3	-13.4	642.7	
7		120.4	47.2	0.0	0.0	0.0	71.9	1.4	50.0
ACANAL		29.0	8.3	0.0	0.0	0.0	5.5	15.2	
9		0.0	14.3	0.0	0.0	0.0	0.0	0.0	-75.0
COLON		0.0	2.5	0.0	0.0	0.0	0.0	0.0	
TOTALS		6603.4	6416.2	0.0	0.0	0.0	0.0	187.2	0.0
		633.9	1855.4	-1101.5	0.0	2026.4	0.0	1906.5	



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:45
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 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)
8		LSA230		230.00	6	1.0164	233.78	11		M.N230		230.00	6	1.0253	235.81
14		PRO230		230.00	6	1.0349	238.02	85		PTP230		230.00	6	1.0306	237.05
96		FOR230		230.00	6	1.0266	236.12	100		BAY230		230.00	6	1.0136	233.13
115		PACORA23		230.00	6	1.0000	230.01	144		CANJ230		230.00	6	1.0281	236.47
145		BJOMIN230		230.00	6	1.0349	238.03	146		GUALACA230		230.00	6	1.0293	236.74
147		GUASQ230		230.00	6	1.0279	236.43	148		VELADERO 230		230.00	6	1.0239	235.50
149		BBLANCO		230.00	6	1.0233	235.35	155		TABASARAI		230.00	6	1.0244	235.61
190		CHANG230		230.00	6	1.0315	237.25	306		CHAN1 230		230.00	6	1.0291	236.70
310		CONCEPCION23		230.00	6	1.0340	237.82	311		PANDO230		230.00	6	1.0338	237.78
341		PRUDENCIA230		230.00	6	1.0314	237.23	345		LORENA230		230.00	6	1.0307	237.05
506		CHAN2 230		230.00	6	1.0345	237.95	511		LGUIAS230		230.00	6	1.0098	232.26
540		ANTON 230		230.00	6	1.0138	233.18	6000		FRONTER		230.00	6	1.0349	238.02

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	0.9908	227.88	3		PANII230		230.00	6	0.9930	228.40
5		CHO230		230.00	6	0.9986	229.68	103		COPESA23		230.00	6	0.9965	229.19
105		PAN-AM23		230.00	6	0.9987	229.70	325		STA RITA230		230.00	6	0.9838	226.27

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:45
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 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)
6		CHO115		115.00	6	1.0002	115.02	9		LSA115		115.00	6	1.0189	117.17
12		M.N115		115.00	6	1.0235	117.70	15		PRO115		115.00	6	1.0368	119.23
20		CH.AZUL		115.00	6	1.0375	119.32	54		LM1115		115.00	6	1.0158	116.82
55		LM2115		115.00	6	1.0171	116.96	61		FFIELD		115.00	6	1.0114	116.31
87		CAL115		115.00	6	1.0290	118.33	88		EST115		115.00	6	1.0296	118.41
92		L.V115		115.00	6	1.0292	118.36	109		STA RITA115		115.00	6	1.0226	117.60
154		CEMPAN15		115.00	6	1.0185	117.12	191		CHANG115		115.00	6	1.0245	117.81
522		TCATIVÁ 115		115.00	6	1.0167	116.92	529		TCOLON 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)
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2	PAN115	115.00	6	0.9893	113.77	4	PANIII115	115.00	6	0.9777	112.43
18	CAC115	115.00	6	0.9889	113.73	19	C.V115	115.00	6	0.9837	113.13
21	C.BAN115	115.00	6	0.9772	112.37	23	CH115	115.00	6	0.9895	113.80
26	LOC115	115.00	6	0.9784	112.52	30	MAR115	115.00	6	0.9769	112.34
33	STM115	115.00	6	0.9869	113.49	37	SAN115	115.00	6	0.9760	112.24
48	TINAJ115	115.00	6	0.9861	113.40	50	M.O115	115.00	6	0.9863	113.42
52	TOC115	115.00	6	0.9742	112.03	123	MIR115	115.00	7	0.9944	114.35

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:45
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 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	11.2	25.0	0.0	0.9900	40.0	0.9594	47.0			1	6	
67	BLM13C	13.800	V3	38.0	11.2	25.0	0.0	0.9900	40.0	0.9594	47.0			1	6	
68	BLM13D	13.800	V4	38.0	11.6	25.0	0.0	0.9900	40.1	0.9565	47.0			1	6	
90	EST-13L	13.800	E1	19.0	0.4	12.0	-5.0	0.9800	19.4	0.9998	27.0			1	6	
94	LV-13.8L	13.800	L1	20.0	0.6	12.0	-5.0	0.9800	20.4	0.9996	27.0			1	6	
97	FOR13A	13.800	F1	70.9	-12.6	50.0	-50.0	1.0100	71.3	0.9846	111.0			1	6	SYST
98	FOR13B	13.800	F2	60.0	-13.3	50.0	-50.0	1.0100	60.9	0.9761	111.0			1	6	
99	FOR13C	13.800	F3	60.0	-13.3	50.0	-50.0	1.0100	60.9	0.9761	111.0			1	6	
101	BAY13A	13.800	B1	55.0	12.0	50.0	-25.0	0.9783	57.5	0.9771	96.0			1	6	
102	BAY13B	13.800	B2	55.9	12.0	50.0	-25.0	0.9783	58.5	0.9776	96.0			1	6	
106	PANAM13A	13.800	M1	15.2	4.5	9.0	0.0	1.0000	15.9	0.9582	20.7			1	6	
106	PANAM13A	13.800	M2	15.2	4.5	9.0	0.0	1.0000	15.9	0.9582	20.7			1	6	
106	PANAM13A	13.800	M3	15.2	4.5	9.0	0.0	1.0000	15.9	0.9582	20.7			1	6	
107	PANAM13B	13.800	M4	15.2	4.5	9.0	0.0	1.0000	15.9	0.9582	20.7			1	6	
107	PANAM13B	13.800	M5	15.2	4.5	9.0	0.0	1.0000	15.9	0.9582	20.7			1	6	
107	PANAM13B	13.800	M6	15.2	4.5	9.0	0.0	1.0000	15.9	0.9582	20.7			1	6	
108	BAY13C	13.800	B3	55.9	12.0	50.0	-25.0	0.9783	58.5	0.9776	100.0			1	6	
116	PACORA13	13.800	P1	17.5	2.4	8.8	0.0	1.0000	17.6	0.9908	21.7			1	6	
116	PACORA13	13.800	P2	17.5	2.4	8.8	0.0	1.0000	17.6	0.9908	21.7			1	6	
116	PACORA13	13.800	P3	17.5	2.4	8.8	0.0	1.0000	17.6	0.9908	21.7			1	6	
119	CB250B-1	13.800	C1	110.0	13.3	75.6	0.0	0.9900	111.9	0.9928	143.5			1	6	
120	CB250B-2	13.800	C2	110.0	28.0	75.6	0.0	1.0000	113.5	0.9690	143.5			1	6	
142	CANJ13A	13.800	C1	35.0	8.9	29.0	-29.0	1.0100	35.8	0.9690	69.0			1	6	
143	CANJ13B	13.800	C2	35.0	8.9	29.0	-29.0	1.0100	35.8	0.9690	69.0			1	6	
150	GUALACA	13-213.800	G2	8.5	-4.7	7.4	-7.4	1.0100	9.6	0.8738	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	7.5	0.0	6.1	0.0	1.0232	7.3	1.0000	11.6			1	6	
156	TABASARAI	13.800	G1	11.0	0.2	5.7	0.2	1.0246	10.7	0.9997	20.5			1	6	
193	GEBOYIC	13.800	G1	8.0	-1.4	4.0	-4.0	1.0200	8.0	0.9857	35.3			1	6	
204	BJOMIN13	13.800	G1	21.0	-13.0	13.0	-13.0	1.0167	24.3	0.8503	28.9			1	6	
205	BAITUN13.8	13.800	G1	25.5	1.5	26.6	-26.6	0.9870	25.9	0.9983	50.6			1	6	
301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9388	11.0	0.8742	13.5			1	6	
302	PASOANCH13.8	13.800	P1	4.5	2.0	2.0	-2.0	0.9369	5.3	0.9138	6.2			1	6	
303	SIND13.8	13.800	G1	8.0	0.0	5.0	0.0	1.1095	7.2	1.0000	13.5			1	6	
304	ALGA13.8	13.800	A1	7.0	0.0	2.0	0.0	1.1097	6.3	1.0000	13.5			1	6	



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305	ELALTO	13.800	G1	14.0	-5.0	12.0	-5.0	1.0268	14.5	0.9417	20.6	1	6	
307	CHAN1 A	13.800	G1	62.5	-16.6	50.0	-50.0	1.0100	64.0	0.9664	118.6	1	6	
308	CHAN1 B	13.800	G2	62.5	-16.6	50.0	-50.0	1.0100	64.0	0.9664	118.6	1	6	
312	PANDO13.8	13.800	G1	9.0	-3.7	10.0	-5.0	1.0100	9.6	0.9248	19.9	1	6	
316	MONTE LIRIO	13.800	G1	17.0	-5.0	12.0	-5.0	1.0218	17.3	0.9594	27.0	1	6	
317	MENDRE13.8	13.800	M1	7.0	0.0	0.0	0.0	1.1096	6.3	1.0000	35.3	1	6	
323	COCHEA	13.8	13.800	C1	5.2	0.0	0.0	1.1096	4.7	1.0000	35.3	1	6	
324	POTRER	13.8	13.800	P1	4.0	2.0	2.0	-2.0	1.0077	4.4	0.8929	6.2	1	6
340	PEDGALITO138	13.800	P1	19.0	8.5	12.0	-5.0	1.0100	20.6	0.9124	27.0	1	6	
342	LORENA13.8	13.800	L1	10.0	-5.0	10.5	-5.0	1.0155	11.0	0.8944	19.9	1	6	
344	PRUDENCIA_2	13.800	G2	16.0	-6.2	9.8	-9.8	1.0200	16.8	0.9326	33.0	1	6	
350	MACANO	13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0845	3.5	0.8521	6.2	1	6
351	PERLAS N	13	13.800	G1	9.0	5.0	5.0	-5.0	0.9878	10.4	0.8742	13.5	1	6
352	PERLAS S	13	13.800	G1	9.0	5.0	5.0	-5.0	0.9878	10.4	0.8742	13.5	1	6
353	PORVEN N	13	13.800	G1	2.9	0.0	2.0	0.0	1.0857	2.6	1.0000	6.2	1	6
507	CHAN2 A	13.800	G1	60.0	10.3	50.0	-50.0	1.0180	59.8	0.9855	118.6	1	6	
521	EGIRAL13.8	113.800	G1	3.7	1.7	2.8	1.3	1.0000	4.1	0.9048	4.8	1	6	
521	EGIRAL13.8	113.800	G2	3.6	1.7	2.8	1.3	1.0000	4.0	0.9048	4.8	1	6	
521	EGIRAL13.8	113.800	G3	3.6	1.7	2.8	1.3	1.0000	4.0	0.9048	4.8	1	6	
521	EGIRAL13.8	113.800	G4	3.6	1.7	2.8	1.3	1.0000	4.0	0.9048	4.8	1	6	
523	TCATIVÁ	13A	13.800	G1	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
523	TCATIVÁ	13A	13.800	G2	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
523	TCATIVÁ	13A	13.800	G3	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
523	TCATIVÁ	13A	13.800	G4	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
523	TCATIVÁ	13A	13.800	G5	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
524	TCATIVÁ	13B	13.800	10	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
524	TCATIVÁ	13B	13.800	G6	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
524	TCATIVÁ	13B	13.800	G7	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
524	TCATIVÁ	13B	13.800	G8	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
524	TCATIVÁ	13B	13.800	G9	8.2	3.0	6.6	-6.6	0.9900	8.8	0.9408	10.9	1	6
531	EGIRAL13.8	213.800	G5	8.1	3.8	6.4	3.0	1.0000	8.9	0.9058	10.9	1	6	
531	EGIRAL13.8	213.800	G6	8.1	3.8	6.4	3.0	1.0000	8.9	0.9058	10.9	1	6	
531	EGIRAL13.8	213.800	G7	8.1	3.8	6.4	3.0	1.0000	8.9	0.9058	10.9	1	6	
531	EGIRAL13.8	213.800	G8	8.1	3.8	6.4	3.0	1.0000	8.9	0.9058	10.9	1	6	
541	TOABRE	0.6000	1	112.0	0.0	0.0	0.0	1.0180	110.0	1.0000	166.7	1	6	
SUBSYSTEM TOTALS				1605.5	137.1	1100.3	-597.9				2601.4			

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:45
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 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	4.3	15.0	0.0	1.0000	35.3	0.9924	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0020	17.0	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.5	2.0	-2.0	0.9800	2.1	0.9626	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.5	2.0	-2.0	0.9800	2.1	0.9626	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.5	2.0	-2.0	0.9800	2.1	0.9626	4.1			2	7	



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141 GAT6B	6.9000 G4	3.9	-1.3	3.0	-3.0	0.9800	4.2	0.9513	5.6	2	7
141 GAT6B	6.9000 G5	3.9	-1.3	3.0	-3.0	0.9800	4.2	0.9513	6.2	2	7
141 GAT6B	6.9000 G6	3.9	-1.3	3.0	-3.0	0.9800	4.2	0.9513	6.2	2	7
170 MIR13G	13.800 M1	17.0	6.8	11.2	6.8	1.0165	18.0	0.9281	23.0	2	7
171 MIR13H	13.800 M1	17.0	6.8	11.2	6.8	1.0256	17.9	0.9281	23.0	2	7
171 MIR13H	13.800 M2	17.0	6.8	11.2	6.8	1.0256	17.9	0.9281	23.0	2	7
SUBSYSTEM TOTALS		120.4	19.4	71.5	5.5				171.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:45
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2021 ESC MOD DEM MAX VER IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL	30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR	101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS	57.1	290.6	-188.3	0.0	302.8	-7.7	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	32.0	224.5	-99.0	0.0	143.3	-93.0	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	0.9	18.1	0.0
C.RICA	230.1	569.4	-236.8	0.0	479.1	28.8	347.7	
6	1605.5	1550.2	0.0	0.0	0.0	6.0	32.3	95.0
PANAMA	137.1	271.6	78.8	0.0	599.2	9.1	373.8	
7	120.4	56.1	0.0	0.0	0.0	63.1	1.2	50.0
ACANAL	19.4	9.8	0.0	0.0	0.0	-4.8	14.3	
9	0.0	17.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	3.0	0.0	0.0	0.0	0.0	0.0	
TOTALS	6801.8	6674.9	0.0	0.0	0.0	0.0	126.9	0.0
	607.5	1900.7	-769.7	0.0	2157.2	0.0	1633.7	



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MIN VER

THU, NOV 26 2009 15:48

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	1.0203	234.67	11	M.N230	230.00	6	1.0346	237.96				
14	PRO230	230.00	6	1.0409	239.42	85	PTP230	230.00	6	1.0395	239.08				
96	FOR230	230.00	6	1.0364	238.37	144	CANJ230	230.00	6	1.0373	238.57				
145	BJOMIN230	230.00	6	1.0404	239.30	146	GUALACA230	230.00	6	1.0383	238.82				
147	GUASQ230	230.00	6	1.0371	238.53	148	VELADERO 230	230.00	6	1.0306	237.05				
149	BBLANCO	230.00	6	1.0299	236.87	155	TABASARAI	230.00	6	1.0311	237.15				
190	CHANG230	230.00	6	1.0387	238.91	306	CHAN1 230	230.00	6	1.0373	238.58				
310	CONCEPCION23	230.00	6	1.0414	239.51	311	PANDO230	230.00	6	1.0410	239.43				
341	PRUDENCIA230	230.00	6	1.0402	239.24	345	LORENA230	230.00	6	1.0396	239.10				
506	CHAN2 230	230.00	6	1.0413	239.50	511	LGUIAS230	230.00	6	1.0111	232.56				
540	ANTON 230	230.00	6	1.0144	233.31	6000	FRONTER	230.00	6	1.0407	239.35				

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)
1	PAN230	230.00	6	0.9838	226.29	3	PANII230	230.00	6	0.9837	226.25				
5	CHO230	230.00	6	0.9941	228.64	100	BAY230	230.00	6	0.9869	226.99				
103	COPESA23	230.00	6	0.9847	226.48	105	PAN-AM23	230.00	6	0.9941	228.65				
115	PACORA23	230.00	6	0.9846	226.46	325	STA RITA230	230.00	6	0.9653	222.02				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MIN VER

THU, NOV 26 2009 15:48

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115	115.00	6	1.0238	117.73	12	M.N115	115.00	6	1.0299	118.44				
15	PRO115	115.00	6	1.0429	119.93	20	CH.AZUL	115.00	6	1.0436	120.02				
87	CAL115	115.00	6	1.0340	118.91	88	EST115	115.00	6	1.0344	118.95				
92	L.V115	115.00	6	1.0341	118.93	109	STA RITA115	115.00	6	1.0019	115.22				
191	CHANG115	115.00	6	1.0297	118.42	529	TCOLON 115	115.00	6	1.0019	115.22				

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2	PAN115	115.00	6	0.9817	112.90	4	PANII115	115.00	6	0.9675	111.26				
6	CHO115	115.00	6	0.9955	114.48	18	CAC115	115.00	6	0.9815	112.87				
19	C.V115	115.00	6	0.9737	111.98	21	C.BAN115	115.00	6	0.9728	111.88				



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23	CH115	115.00	6	0.9795	112.64	26	LOC115	115.00	6	0.9739	112.00
30	MAR115	115.00	6	0.9733	111.93	33	STM115	115.00	6	0.9802	112.72
37	SAN115	115.00	6	0.9717	111.74	48	TINAJ115	115.00	6	0.9797	112.66
50	M.O115	115.00	6	0.9798	112.67	52	TOC115	115.00	6	0.9650	110.97
54	LM1115	115.00	6	0.9943	114.34	55	LM2115	115.00	6	0.9945	114.37
61	FFIELD	115.00	6	0.9920	114.08	123	MIR115	115.00	7	0.9862	113.41
154	CEMPAN15	115.00	6	0.9900	113.85	522	TCATIVÁ 115	115.00	6	0.9944	114.36

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:48
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MIN VER

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66	BLM13B	13.800	V2	38.0	20.8	25.0	0.0	0.9900	43.7	0.8774	47.0			1	6	
90	EST-13L	13.800	E1	19.0	-1.0	12.0	-5.0	0.9800	19.4	0.9985	27.0			1	6	
94	LV-13.8L	13.800	L1	20.0	-0.9	12.0	-5.0	0.9800	20.4	0.9990	27.0			1	6	
97	FOR13A	13.800	F1	39.2	-18.9	50.0	-50.0	1.0150	42.9	0.9002	111.0			1	6	SYST
106	PANAM13A	13.800	M1	15.2	5.2	9.0	0.0	1.0000	16.1	0.9464	20.7			1	6	
106	PANAM13A	13.800	M2	15.2	5.2	9.0	0.0	1.0000	16.1	0.9464	20.7			1	6	
106	PANAM13A	13.800	M3	15.2	5.2	9.0	0.0	1.0000	16.1	0.9464	20.7			1	6	
142	CANJ13A	13.800	C1	32.0	6.8	29.0	-29.0	1.0100	32.4	0.9780	69.0			1	6	
143	CANJ13B	13.800	C2	32.0	6.8	29.0	-29.0	1.0100	32.4	0.9780	69.0			1	6	
150	GUALACA 13-2	13.800	G2	8.5	-4.5	7.4	-7.4	1.0200	9.4	0.8821	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	7.5	0.0	6.1	0.0	1.0298	7.3	1.0000	11.6			1	6	
156	TABASARAI13	13.800	G1	11.0	0.2	5.7	0.2	1.0314	10.7	0.9997	20.5			1	6	
193	GEBONYIC	13.800	G1	8.0	-3.1	4.0	-4.0	1.0200	8.4	0.9325	35.3			1	6	
204	BJOMIN13	13.800	G1	21.0	-13.0	13.0	-13.0	1.0223	24.2	0.8503	28.9			1	6	
205	BAITUN13.8	13.800	G1	25.5	-2.6	26.6	-26.6	0.9870	26.0	0.9950	50.6			1	6	
301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9473	10.9	0.8742	13.5			1	6	
302	PASOANCH13.8	13.800	P1	4.5	2.0	2.0	-2.0	0.9454	5.2	0.9138	6.2			1	6	
303	SIND13.8	13.800	G1	8.0	0.0	5.0	0.0	1.1150	7.2	1.0000	13.5			1	6	
304	ALGA13.8	13.800	A1	7.0	0.0	2.0	0.0	1.1151	6.3	1.0000	13.5			1	6	
305	ELALTO	13.800	G1	14.0	-5.0	12.0	-5.0	1.0341	14.4	0.9417	20.6			1	6	
307	CHAN1 A	13.800	G1	62.5	-24.6	50.0	-50.0	1.0100	66.5	0.9305	118.6			1	6	
312	PAND013.8	13.800	G1	9.0	-4.9	10.0	-5.0	1.0100	10.1	0.8785	19.9			1	6	
316	MONTE LIRIO	13.800	G1	17.0	-5.0	12.0	-5.0	1.0291	17.2	0.9594	27.0			1	6	
317	MENDRE13.8	13.800	M1	7.0	0.0	0.0	0.0	1.1150	6.3	1.0000	35.3			1	6	
323	COCHEA 13.8	13.800	C1	5.2	0.0	0.0	0.0	1.1151	4.7	1.0000	35.3			1	6	
324	POTRER 13.8	13.800	P1	4.0	2.0	2.0	-2.0	1.0126	4.4	0.8929	6.2			1	6	
340	PEDGALITO138	13.800	P1	19.0	6.8	12.0	-5.0	1.0100	20.0	0.9420	27.0			1	6	
342	LORENA13.8	13.800	L1	10.0	-5.0	10.5	-5.0	1.0245	10.9	0.8944	19.9			1	6	
344	PRUDENCIA_2	13.800	G2	16.0	-9.8	9.8	-9.8	1.0224	18.3	0.8537	33.0			1	6	
350	MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0922	3.5	0.8521	6.2			1	6	
351	PERLAS N 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9948	10.3	0.8742	13.5			1	6	
352	PERLAS S 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9948	10.3	0.8742	13.5			1	6	



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353 PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0934	2.6	1.0000	6.2	1	6
507 CHAN2 A	13.800	G1	60.0	3.9	50.0	-50.0	1.0180	59.1	0.9979	118.6	1	6
541 TOABRE	0.6000	1	100.0	0.0	0.0	0.0	1.0182	98.2	1.0000	166.7	1	6
SUBSYSTEM TOTALS			683.6	-20.5	443.1	-324.5				1288.3		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:48
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 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	17.0	6.8	11.2	6.8	1.0113	18.1	0.9281	23.0							2	7	
171		MIR13H		13.800	M1	17.0	6.8	11.2	6.8	1.0205	17.9	0.9281	23.0							2	7	
171		MIR13H		13.800	M2	17.0	6.8	11.2	6.8	1.0205	17.9	0.9281	23.0							2	7	
SUBSYSTEM TOTALS						51.0	20.5	33.5	20.5				69.1									

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:48
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MIN VER

AREA TOTALS IN MW/MVAR											
X--	AREA	--X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT	
	1		1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0	
	GUATEMAL		30.5	349.5	-266.4	0.0	413.0	30.1	330.3		
	2		912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0	
	SALVADOR		101.4	182.3	-58.1	0.0	219.8	37.4	159.6		
	3		1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0	
	HONDURAS		57.0	290.6	-188.3	0.0	302.8	-7.7	265.2		
	4		537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0	
	NICA		31.7	224.5	-99.0	0.0	143.3	-93.2	142.8		
	5		1343.8	1324.8	0.0	0.0	0.0	1.0	18.0	0.0	
	C.RICA		218.6	569.4	-237.2	0.0	480.3	20.3	346.4		
	6		683.6	620.1	0.0	0.0	0.0	40.7	16.0	95.0	
	PANAMA		-20.5	300.3	101.1	0.0	601.0	8.7	167.2		
	7		51.0	22.5	0.0	0.0	0.0	28.3	0.3	50.0	
	ACANAL		20.5	10.9	0.0	0.0	0.0	4.5	5.1		
	9		0.0	6.8	0.0	0.0	0.0	0.0	0.0	-75.0	
	COLON		0.0	3.3	0.0	0.0	0.0	0.0	0.0		



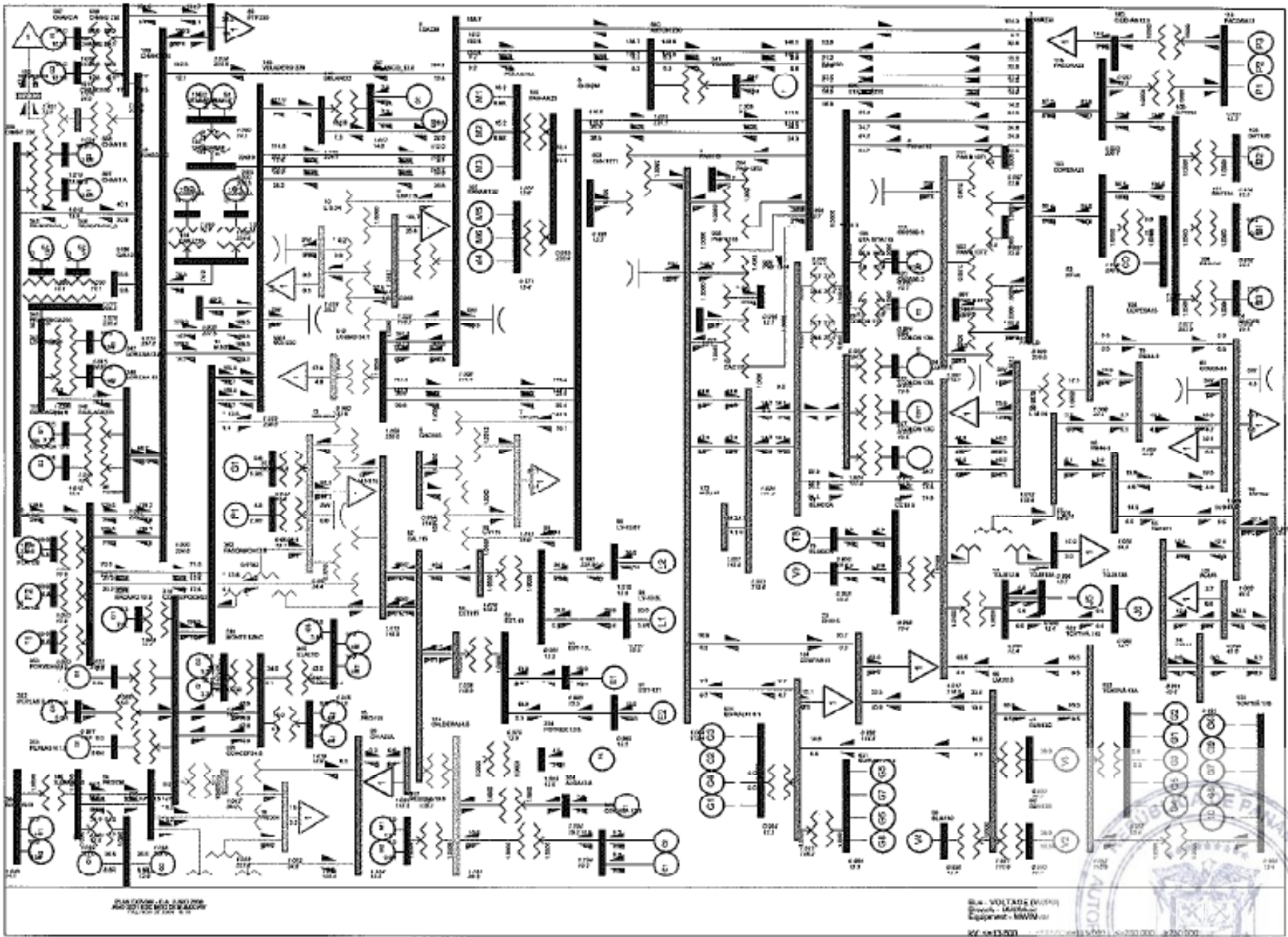
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TOTALS	5810.5	5700.9	0.0	0.0	0.0	0.0	109.6	0.0
	439.2	1930.8	-747.9	0.0	2160.2	0.0	1416.5	



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Demanda Máxima de Invierno



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV

THU, NOV 26 2009 15:40

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)
8	LSA230	230.00	6	1.0083	231.92	11	M.N230	230.00	6	1.0231	235.32				
14	PRO230	230.00	6	1.0365	238.39	85	PTP230	230.00	6	1.0238	235.47				
96	FOR230	230.00	6	1.0209	234.82	100	BAY230	230.00	6	1.0169	233.89				
103	COPESA23	230.00	6	1.0020	230.46	115	PACORA23	230.00	6	1.0031	230.72				
144	CANJ230	230.00	6	1.0202	234.64	145	BJOMIN230	230.00	6	1.0392	239.02				
146	GUALACA230	230.00	6	1.0230	235.28	147	GUASQ230	230.00	6	1.0199	234.59				
148	VELADERO 230	230.00	6	1.0188	234.33	149	BBLANCO	230.00	6	1.0176	234.05				
155	TABASARAI	230.00	6	1.0196	234.50	190	CHANG230	230.00	6	1.0312	237.17				
306	CHAN1 230	230.00	6	1.0282	236.48	310	CONCEPCION23	230.00	6	1.0330	237.60				
311	PANDO230	230.00	6	1.0325	237.47	341	PRUDENCIA230	230.00	6	1.0277	236.37				
345	LORENA230	230.00	6	1.0260	235.99	506	CHAN2 230	230.00	6	1.0348	238.01				
511	LGUIAS230	230.00	6	1.0002	230.04	540	ANTON 230	230.00	6	1.0046	231.07				
6000	FRONTIER	230.00	6	1.0357	238.20										

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	0.9963	229.14	3	PANII230	230.00	6	0.9990	229.78				
5	CHO230	230.00	6	0.9952	228.89	105	PAN-AM23	230.00	6	0.9952	228.91				
325	STA RITA230	230.00	6	0.9840	226.33										

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV

THU, NOV 26 2009 15:40

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	1.0036	115.41	4	PANII115	115.00	6	1.0011	115.13				
9	LSA115	115.00	6	1.0324	118.72	12	M.N115	115.00	6	1.0154	116.77				
15	PRO115	115.00	6	1.0384	119.41	18	CAC115	115.00	6	1.0031	115.35				
20	CH.AZUL	115.00	6	1.0391	119.50	33	STM115	115.00	6	1.0012	115.14				
48	TINAJ115	115.00	6	1.0005	115.06	50	M.O115	115.00	6	1.0007	115.08				
54	LM1115	115.00	6	1.0166	116.91	55	LM2115	115.00	6	1.0173	116.99				
61	FFIELD	115.00	6	1.0122	116.40	87	CAL115	115.00	6	1.0271	118.12				
88	EST115	115.00	6	1.0285	118.28	92	L.V115	115.00	6	1.0283	118.25				
109	STA RITA115	115.00	6	1.0244	117.81	123	MIR115	115.00	7	1.0071	115.81				
154	CEMPAN15	115.00	6	1.0120	116.37	191	CHANG115	115.00	6	1.0235	117.71				
522	TCATIVÁ 115	115.00	6	1.0169	116.95	529	TCOLON 115	115.00	6	1.0245	117.81				



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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	0.9968	114.63	19		C.V115		115.00	6	0.9967	114.62
21		C.BAN115		115.00	6	0.9914	114.01	23		CH115		115.00	6	0.9982	114.80
26		LOC115		115.00	6	0.9926	114.15	30		MAR115		115.00	6	0.9912	113.98
37		SAN115		115.00	6	0.9902	113.87	52		TOC115		115.00	6	0.9977	114.74

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:40
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV

AREA 6 [PANAMA] MACHINE SUMMARY:

BUS#	X--	NAME	--X	BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
66		BLM13B		13.800	V2	38.0	11.1	25.0	0.0	0.9900	40.0	0.9599	47.0			1	6	
67		BLM13C		13.800	V3	38.0	11.1	25.0	0.0	0.9900	40.0	0.9599	47.0			1	6	
68		BLM13D		13.800	V4	38.0	11.5	25.0	0.0	0.9900	40.1	0.9571	47.0			1	6	
90		EST-13L		13.800	E1	19.0	0.8	12.0	-5.0	0.9800	19.4	0.9992	27.0			1	6	
91		EST-13T		13.800	E2	19.0	0.8	12.0	-5.0	0.9800	19.4	0.9992	27.0			1	6	
94		LV-13.8L		13.800	L1	20.0	0.4	12.0	-5.0	0.9800	20.4	0.9998	27.0			1	6	
95		LV-13.8T		13.800	L2	20.0	10.7	12.0	-5.0	1.0100	22.4	0.8826	27.0			1	6	
97		FOR13A		13.800	F1	89.0	-5.8	50.0	-50.0	1.0100	88.3	0.9979	111.0			1	6	
98		FOR13B		13.800	F2	89.0	-5.8	50.0	-50.0	1.0100	88.3	0.9979	111.0			1	6	
99		FOR13C		13.800	F3	89.0	-5.8	50.0	-50.0	1.0100	88.3	0.9979	111.0			1	6	
101		BAY13A		13.800	B1	64.2	10.3	50.0	-25.0	0.9783	66.4	0.9874	96.0			1	6	SYST
102		BAY13B		13.800	B2	72.0	11.0	50.0	-25.0	0.9783	74.5	0.9885	96.0			1	6	
106		PANAM13A		13.800	M1	15.2	6.9	9.0	0.0	1.0000	16.7	0.9116	20.7			1	6	
106		PANAM13A		13.800	M2	15.2	6.9	9.0	0.0	1.0000	16.7	0.9116	20.7			1	6	
108		BAY13C		13.800	B3	72.0	11.0	50.0	-25.0	0.9783	74.5	0.9885	100.0			1	6	
119		CB250B-1		13.800	C1	95.0	11.9	75.6	0.0	0.9900	96.7	0.9923	143.5			1	6	
142		CANJ13A		13.800	C1	37.0	10.7	29.0	-29.0	1.0100	38.1	0.9608	69.0			1	6	
143		CANJ13B		13.800	C2	37.0	10.7	29.0	-29.0	1.0100	38.1	0.9608	69.0			1	6	
150		GUALACA	13-2	13.800	G2	8.5	-3.1	7.4	-7.4	1.0100	9.0	0.9383	14.8			1	6	
151		GUALACA	13.8	13.800	G1	8.5	-3.1	7.4	-7.4	1.0100	9.0	0.9383	14.8			1	6	
152		BBLANCO_13.8	13.800	G1	7.5	0.0	6.1	0.0	1.0175	7.4	1.0000	11.6			1	6		
152		BBLANCO_13.8	13.800	G2	7.5	0.0	6.1	0.0	1.0175	7.4	1.0000	11.6			1	6		
156		TABASARAI	13.800	G1	11.0	0.4	5.7	0.2	1.0200	10.8	0.9995	20.5			1	6		
156		TABASARAI	13.800	G2	11.0	0.4	5.7	0.2	1.0200	10.8	0.9995	20.5			1	6		
193		GEBOYIC		13.800	G1	8.0	-0.1	4.0	-4.0	1.0200	7.8	0.9999	35.3			1	6	
193		GEBOYIC		13.800	G2	8.0	-0.1	4.0	-4.0	1.0200	7.8	0.9999	35.3			1	6	
193		GEBOYIC		13.800	G3	8.0	-0.1	4.0	-4.0	1.0200	7.8	0.9999	35.3			1	6	
204		BJOMIN13		13.800	G1	19.0	-6.5	13.0	-13.0	1.0200	19.7	0.9454	28.9			1	6	
204		BJOMIN13		13.800	G2	19.0	-6.5	13.0	-13.0	1.0200	19.7	0.9454	28.9			1	6	
205		BAITUN13.8		13.800	G1	25.5	8.8	26.6	-26.6	1.0100	26.7	0.9448	50.6			1	6	
205		BAITUN13.8		13.800	G2	25.5	8.8	26.6	-26.6	1.0100	26.7	0.9448	50.6			1	6	
301		CONC13.8		13.800	G1	9.0	5.0	5.0	-5.0	0.9529	10.8	0.8742	13.5			1	6	
302		PASOANCH	13.8	13.800	F1	4.5	2.0	2.0	-2.0	0.9511	5.2	0.9138	6.2			1	6	



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303	SIND13.8	13.800	G1	8.0	0.0	5.0	0.0	1.1041	7.2	1.0000	13.5	1	6
304	ALGA13.8	13.800	A1	7.0	0.0	2.0	0.0	1.1042	6.3	1.0000	13.5	1	6
305	ELALTO	13.800	G1	14.0	-3.8	12.0	-5.0	1.0150	14.3	0.9644	20.6	1	6
305	ELALTO	13.800	G2	14.0	-3.8	12.0	-5.0	1.0150	14.3	0.9644	20.6	1	6
305	ELALTO	13.800	G3	14.0	-3.8	12.0	-5.0	1.0150	14.3	0.9644	20.6	1	6
307	CHAN1 A	13.800	G1	90.0	-13.6	50.0	-50.0	1.0100	90.1	0.9888	118.6	1	6
308	CHAN1 B	13.800	G2	90.0	-13.6	50.0	-50.0	1.0100	90.1	0.9888	118.6	1	6
312	PANDO13.8	13.800	G1	9.0	-1.4	10.0	-5.0	1.0100	9.0	0.9884	19.9	1	6
312	PANDO13.8	13.800	G2	9.0	-1.4	10.0	-5.0	1.0100	9.0	0.9884	19.9	1	6
316	MONTE LIRIO	13.800	G1	17.0	-3.2	12.0	-5.0	1.0150	17.0	0.9826	27.0	1	6
316	MONTE LIRIO	13.800	G2	17.0	-3.2	12.0	-5.0	1.0150	17.0	0.9826	27.0	1	6
317	MENDRE13.8	13.800	M1	7.0	0.0	0.0	0.0	1.1038	6.3	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	7.0	0.0	0.0	0.0	1.1038	6.3	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	5.2	0.0	0.0	0.0	1.1040	4.8	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C2	5.2	0.0	0.0	0.0	1.1040	4.8	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	4.0	2.0	2.0	-2.0	1.0028	4.4	0.8929	6.2	1	6
340	PEDGALITO13.8	13.800	P1	19.0	8.8	12.0	-5.0	1.0100	20.7	0.9082	27.0	1	6
342	LORENA13.8	13.800	L1	10.0	-3.6	10.5	-5.0	1.0150	10.5	0.9411	19.9	1	6
343	PRUDENCIA_1	13.800	G1	16.0	-4.1	9.8	-9.8	1.0200	16.2	0.9686	33.0	1	6
344	PRUDENCIA_2	13.800	G2	16.0	-4.1	9.8	-9.8	1.0200	16.2	0.9686	33.0	1	6
346	LORENA 13-2	13.800	L2	10.0	-1.9	10.5	-5.0	1.0200	10.0	0.9822	19.9	1	6
350	MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0835	3.5	0.8521	6.2	1	6
351	PERLAS N 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9869	10.4	0.8742	13.5	1	6
352	PERLAS S 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9869	10.4	0.8742	13.5	1	6
353	PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0847	2.6	1.0000	6.2	1	6
507	CHAN2 A	13.800	G1	90.0	12.3	50.0	-50.0	1.0180	89.2	0.9907	118.6	1	6
508	CHAN32 B	13.800	G2	90.0	12.3	50.0	-50.0	1.0180	89.2	0.9907	118.6	1	6
541	TOABRE	0.6000	1	20.2	0.0	0.0	0.0	1.0055	20.1	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1659.9	95.6	1066.8	-699.1				2719.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:40
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AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVBASE	X T R A N	GENTAP	ZONE	AREA	SWING	
129	MIR13D	13.800	G4	35.0	1.1	15.0	0.0	1.0000	35.0	0.9995	44.1			2	7		
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0099	16.8	1.0000	27.7			2	7		
140	GAT6A	6.9000	G1	1.9	-0.6	2.0	-2.0	0.9800	2.1	0.9530	4.1			2	7		
140	GAT6A	6.9000	G2	1.9	-0.6	2.0	-2.0	0.9800	2.1	0.9530	4.1			2	7		
140	GAT6A	6.9000	G3	1.9	-0.6	2.0	-2.0	0.9800	2.1	0.9530	4.1			2	7		
141	GAT6B	6.9000	G4	3.9	-1.3	3.0	-3.0	0.9800	4.2	0.9460	5.6			2	7		
141	GAT6B	6.9000	G5	3.9	-1.3	3.0	-3.0	0.9800	4.2	0.9460	6.2			2	7		
141	GAT6B	6.9000	G6	3.9	-1.3	3.0	-3.0	0.9800	4.2	0.9460	6.2			2	7		
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0244	17.9	0.9281	23.0			2	7		
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0335	17.7	0.9281	23.0			2	7		
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0335	17.7	0.9281	23.0			2	7		
SUBSYSTEM TOTALS				120.4	15.8	71.5	5.5				171.3						



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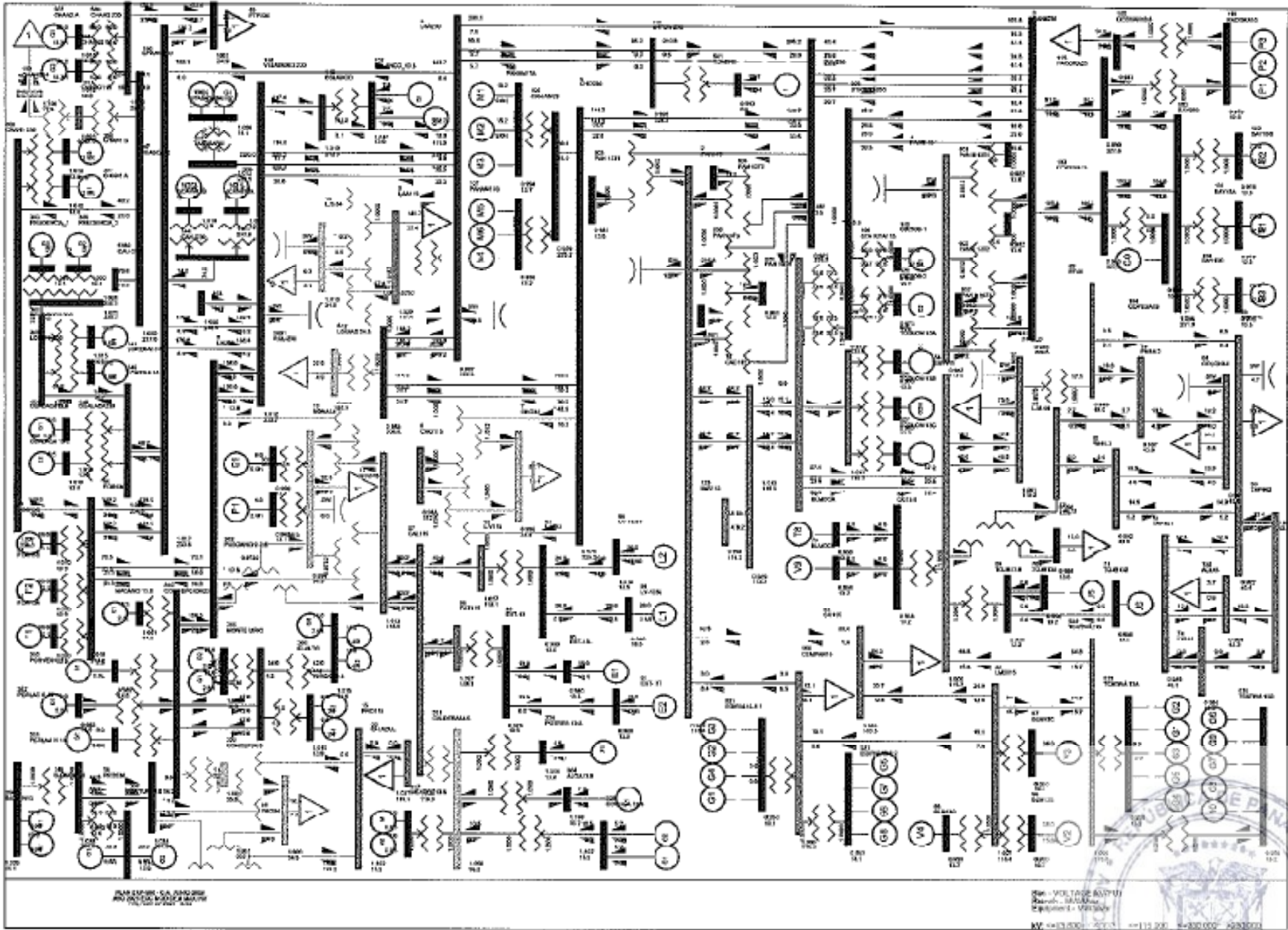
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:41
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2021 ESC MOD DEM MAX INV IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1 GUATEMAL	1275.4 30.5	1312.2 349.5	0.0 -266.4	0.0 0.0	0.0 413.0	-70.0 30.1	33.2 330.3	-70.0
2 SALVADOR	912.1 101.4	902.0 182.3	0.0 -58.1	0.0 0.0	0.0 219.8	0.0 37.4	10.1 159.6	0.0
3 HONDURAS	1007.3 57.1	985.5 290.6	0.0 -188.3	0.0 0.0	0.0 302.7	0.0 -7.6	21.9 265.2	0.0
4 NICA	537.2 32.1	527.1 224.5	0.0 -99.0	0.0 0.0	0.0 143.3	0.0 -93.0	10.1 142.8	0.0
5 C.RICA	1343.8 234.9	1324.8 569.4	0.0 -236.5	0.0 0.0	0.0 478.7	0.0 27.3	19.0 353.3	0.0
6 PANAMA	1659.9 95.6	1550.2 271.6	0.0 -358.3	0.0 0.0	0.0 596.0	7.0 14.0	85.7 761.4	95.0
7 ACANAL	120.4 15.8	56.1 9.8	0.0 0.0	0.0 0.0	0.0 0.0	63.0 -8.3	1.3 14.2	50.0
9 COLON	0.0 0.0	17.0 3.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	-75.0
TOTALS	6856.2 567.3	6674.9 1900.7	0.0 -1206.6	0.0 0.0	0.0 2153.6	0.0 0.0	181.3 2026.8	0.0



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Contingencia Antón- Panamá



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV CONT. ANT-PAN

THU, NOV 26 2009 15:53

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	1.0196	234.51	14	PRO230	230.00	6	1.0345	237.93				
85	PTP230	230.00	6	1.0214	234.91	96	FOR230	230.00	6	1.0180	234.15				
100	BAY230	230.00	6	1.0083	231.92	144	CANJ230	230.00	6	1.0168	233.87				
145	BJOMIN230	230.00	6	1.0376	238.65	146	GUALACA230	230.00	6	1.0198	234.56				
147	GUASQ230	230.00	6	1.0166	233.81	148	VELADERO 230	230.00	6	1.0116	232.67				
149	BBLANCO	230.00	6	1.0101	232.31	155	TABASARAI	230.00	6	1.0127	232.93				
190	CHANG230	230.00	6	1.0302	236.95	306	CHAN1 230	230.00	6	1.0272	236.25				
310	CONCEPCION23	230.00	6	1.0307	237.06	311	PANDO230	230.00	6	1.0305	237.02				
341	PRUDENCIA230	230.00	6	1.0249	235.73	345	LORENA230	230.00	6	1.0231	235.32				
506	CHAN2 230	230.00	6	1.0338	237.78	6000	FRONTER	230.00	6	1.0336	237.73				

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)
1	PAN230	230.00	6	0.9812	225.69	3	PANII230	230.00	6	0.9848	226.51				
5	CHO230	230.00	6	0.9791	225.20	8	LSA230	230.00	6	0.9970	229.30				
103	COPESA23	230.00	6	0.9886	227.39	105	PAN-AM23	230.00	6	0.9792	225.22				
115	PACORA23	230.00	6	0.9904	227.80	325	STA RITA230	230.00	6	0.9733	223.86				
511	LGUIAS230	230.00	6	0.9847	226.48	540	ANTON 230	230.00	6	0.9926	228.30				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV CONT. ANT-PAN

THU, NOV 26 2009 15:53

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA115	115.00	6	1.0205	117.35	12	M.N115	115.00	6	1.0133	116.53				
15	PRO115	115.00	6	1.0364	119.19	20	CH.AZUL	115.00	6	1.0372	119.27				
54	LM1115	115.00	6	1.0058	115.66	55	LM2115	115.00	6	1.0066	115.76				
61	FFIELD	115.00	6	1.0014	115.16	87	CAL115	115.00	6	1.0257	117.96				
88	EST115	115.00	6	1.0272	118.13	92	L.V115	115.00	6	1.0269	118.10				
109	STA RITA115	115.00	6	1.0132	116.52	154	CEMPAN15	115.00	6	1.0002	115.02				
191	CHANG115	115.00	6	1.0229	117.63	522	TCATIVÁ 115	115.00	6	1.0062	115.71				
529	TCOLON 115	115.00	6	1.0132	116.52										

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)
------	-----	------	-----	-------	------	-------	-------	------	-----	------	-----	-------	------	-------	-------



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2	PAN115	115.00	6	0.9892	113.76	4	PANII115	115.00	6	0.9873	113.54
6	CHO115	115.00	6	0.9808	112.79	18	CAC115	115.00	6	0.9888	113.71
19	C.V115	115.00	6	0.9837	113.12	21	C.BAN115	115.00	6	0.9770	112.36
23	CH115	115.00	6	0.9852	113.30	26	LOC115	115.00	6	0.9783	112.50
30	MAR115	115.00	6	0.9767	112.32	33	STM115	115.00	6	0.9868	113.49
37	SAN115	115.00	6	0.9759	112.23	48	TINAJ115	115.00	6	0.9861	113.40
50	M.O115	115.00	6	0.9862	113.42	52	TOC115	115.00	6	0.9838	113.14
123	MIR115	115.00	7	0.9940	114.32						

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:53
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX INV CONT. ANT-PAN

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	15.6	25.0	0.0	0.9900	41.5	0.9247	47.0			1	6	
67	BLM13C	13.800	V3	38.0	15.6	25.0	0.0	0.9900	41.5	0.9247	47.0			1	6	
68	BLM13D	13.800	V4	38.0	16.3	25.0	0.0	0.9900	41.8	0.9191	47.0			1	6	
90	EST-13L	13.800	E1	19.0	1.1	12.0	-5.0	0.9800	19.4	0.9983	27.0			1	6	
91	EST-13T	13.800	E2	19.0	1.1	12.0	-5.0	0.9800	19.4	0.9983	27.0			1	6	
94	LV-13.8L	13.800	L1	20.0	0.8	12.0	-5.0	0.9800	20.4	0.9993	27.0			1	6	
95	LV-13.8T	13.800	L2	20.0	11.0	12.0	-5.0	1.0100	22.6	0.8753	27.0			1	6	
97	FOR13A	13.800	F1	89.0	-3.1	50.0	-50.0	1.0100	88.2	0.9994	111.0			1	6	
98	FOR13B	13.800	F2	89.0	-3.1	50.0	-50.0	1.0100	88.2	0.9994	111.0			1	6	
99	FOR13C	13.800	F3	89.0	-3.1	50.0	-50.0	1.0100	88.2	0.9994	111.0			1	6	
101	BAY13A	13.800	B1	72.0	17.3	50.0	-25.0	0.9783	75.7	0.9724	96.0			1	6	SYST
102	BAY13B	13.800	B2	72.0	17.3	50.0	-25.0	0.9783	75.7	0.9724	96.0			1	6	
106	PANAM13A	13.800	M1	15.2	9.0	9.0	0.0	0.9944	17.8	0.8605	20.7			1	6	
106	PANAM13A	13.800	M2	15.2	9.0	9.0	0.0	0.9944	17.8	0.8605	20.7			1	6	
108	BAY13C	13.800	B3	72.0	17.3	50.0	-25.0	0.9783	75.7	0.9724	100.0			1	6	
119	CB250B-1	13.800	C1	95.0	27.5	75.6	0.0	0.9900	99.9	0.9606	143.5			1	6	
142	CANJ13A	13.800	C1	37.0	11.2	29.0	-29.0	1.0100	38.3	0.9570	69.0			1	6	
143	CANJ13B	13.800	C2	37.0	11.2	29.0	-29.0	1.0100	38.3	0.9570	69.0			1	6	
150	GUALACA 13-2	13.800	G2	8.5	-2.3	7.4	-7.4	1.0100	8.7	0.9642	14.8			1	6	
151	GUALACA13.8	13.800	G1	8.5	-2.3	7.4	-7.4	1.0100	8.7	0.9642	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	7.5	0.0	6.1	0.0	1.0099	7.4	1.0000	11.6			1	6	
152	BBLANCO_13.8	13.800	G2	7.5	0.0	6.1	0.0	1.0099	7.4	1.0000	11.6			1	6	
156	TABASARAI13	13.800	G1	11.0	1.9	5.7	0.2	1.0200	10.9	0.9851	20.5			1	6	
156	TABASARAI13	13.800	G2	11.0	1.9	5.7	0.2	1.0200	10.9	0.9851	20.5			1	6	
193	GEBONYIC	13.800	G1	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
193	GEBONYIC	13.800	G2	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
193	GEBONYIC	13.800	G3	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
204	BJOMIN13	13.800	G1	19.0	-6.0	13.0	-13.0	1.0200	19.5	0.9543	28.9			1	6	
204	BJOMIN13	13.800	G2	19.0	-6.0	13.0	-13.0	1.0200	19.5	0.9543	28.9			1	6	
205	BAITUN13.8	13.800	G1	25.5	9.5	26.6	-26.6	1.0100	26.9	0.9377	50.6			1	6	
205	BAITUN13.8	13.800	G2	25.5	9.5	26.6	-26.6	1.0100	26.9	0.9377	50.6			1	6	
301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9496	10.8	0.8742	13.5			1	6	



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302 PASOANCH13.8	13.800	P1	4.5	2.0	2.0	-2.0	0.9477	5.2	0.9138	6.2	1	6
303 SIND13.8	13.800	G1	8.0	0.0	5.0	0.0	1.1026	7.3	1.0000	13.5	1	6
304 ALGA13.8	13.800	A1	7.0	0.0	2.0	0.0	1.1027	6.3	1.0000	13.5	1	6
305 ELALTO	13.800	G1	14.0	-3.4	12.0	-5.0	1.0150	14.2	0.9723	20.6	1	6
305 ELALTO	13.800	G2	14.0	-3.4	12.0	-5.0	1.0150	14.2	0.9723	20.6	1	6
305 ELALTO	13.800	G3	14.0	-3.4	12.0	-5.0	1.0150	14.2	0.9723	20.6	1	6
307 CHAN1 A	13.800	G1	90.0	-12.6	50.0	-50.0	1.0100	90.0	0.9903	118.6	1	6
308 CHAN1 B	13.800	G2	90.0	-12.6	50.0	-50.0	1.0100	90.0	0.9903	118.6	1	6
312 PANDO13.8	13.800	G1	9.0	-1.2	10.0	-5.0	1.0100	9.0	0.9909	19.9	1	6
312 PANDO13.8	13.800	G2	9.0	-1.2	10.0	-5.0	1.0100	9.0	0.9909	19.9	1	6
316 MONTE LIRIO	13.800	G1	17.0	-2.8	12.0	-5.0	1.0150	17.0	0.9869	27.0	1	6
316 MONTE LIRIO	13.800	G2	17.0	-2.8	12.0	-5.0	1.0150	17.0	0.9869	27.0	1	6
317 MENDRE13.8	13.800	M1	7.0	0.0	0.0	0.0	1.1023	6.4	1.0000	35.3	1	6
317 MENDRE13.8	13.800	M2	7.0	0.0	0.0	0.0	1.1023	6.4	1.0000	35.3	1	6
323 COCHEA 13.8	13.800	C1	5.2	0.0	0.0	0.0	1.1025	4.8	1.0000	35.3	1	6
323 COCHEA 13.8	13.800	C2	5.2	0.0	0.0	0.0	1.1025	4.8	1.0000	35.3	1	6
324 POTRER 13.8	13.800	P1	4.0	2.0	2.0	-2.0	1.0014	4.4	0.8929	6.2	1	6
340 PEDGALITO13.8	13.800	P1	19.0	9.3	12.0	-5.0	1.0100	20.9	0.8980	27.0	1	6
342 LORENA13.8	13.800	L1	10.0	-2.6	10.5	-5.0	1.0150	10.2	0.9678	19.9	1	6
343 PRUDENCIA_1	13.800	G1	16.0	-2.5	9.8	-9.8	1.0200	15.9	0.9878	33.0	1	6
344 PRUDENCIA_2	13.800	G2	16.0	-2.5	9.8	-9.8	1.0200	15.9	0.9878	33.0	1	6
346 LORENA 13-2	13.800	L2	10.0	-0.9	10.5	-5.0	1.0200	9.8	0.9958	19.9	1	6
350 MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0810	3.5	0.8521	6.2	1	6
351 PERLAS N 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9847	10.5	0.8742	13.5	1	6
352 PERLAS S 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9847	10.5	0.8742	13.5	1	6
353 PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0822	2.7	1.0000	6.2	1	6
507 CHAN2 A	13.800	G1	90.0	13.3	50.0	-50.0	1.0180	89.4	0.9892	118.6	1	6
508 CHAN32 B	13.800	G2	90.0	13.3	50.0	-50.0	1.0180	89.4	0.9892	118.6	1	6
541 TOABRE	0.6000	1	20.2	0.0	0.0	0.0	0.9935	20.4	1.0000	166.7	1	6
SUBSYSTEM TOTALS			1667.7	179.1	1066.8	-699.1				2719.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:53
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX INV CONT. ANT-PAN

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	4.4	15.0	0.0	1.0000	35.3	0.9922	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0018	17.0	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.3	2.0	-2.0	0.9800	2.0	0.9885	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.3	2.0	-2.0	0.9800	2.0	0.9885	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.3	2.0	-2.0	0.9800	2.0	0.9885	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-1.0	3.0	-3.0	0.9800	4.1	0.9681	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-1.0	3.0	-3.0	0.9800	4.1	0.9681	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-1.0	3.0	-3.0	0.9800	4.1	0.9681	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0163	18.0	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0255	17.9	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0255	17.9	0.9281	23.0			2	7	



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SUBSYSTEM TOTALS

120.4 21.0 71.5 5.5

171.3

 PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:54
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2021 ESC MOD DEM MAX INV CONT. ANT-PAN IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1 GUATEMAL	1275.4 30.5	1312.2 349.5	0.0 -266.4	0.0 0.0	0.0 413.0	-70.0 30.1	33.2 330.3	-70.0
2 SALVADOR	912.1 101.4	902.0 182.3	0.0 -58.1	0.0 0.0	0.0 219.8	0.0 37.4	10.1 159.6	0.0
3 HONDURAS	1007.3 57.1	985.5 290.6	0.0 -188.3	0.0 0.0	0.0 302.7	0.0 -7.6	21.9 265.2	0.0
4 NICA	537.2 32.2	527.1 224.5	0.0 -99.0	0.0 0.0	0.0 143.3	0.0 -92.9	10.1 142.8	0.0
5 C.RICA	1343.8 238.2	1324.8 569.4	0.0 -236.4	0.0 0.0	0.0 478.3	0.0 29.9	19.0 353.5	0.0
6 PANAMA	1667.7 179.1	1550.2 271.6	0.0 -349.0	0.0 0.0	0.0 563.4	7.0 6.3	93.5 810.7	95.0
7 ACANAL	120.4 21.0	56.1 9.8	0.0 0.0	0.0 0.0	0.0 0.0	63.0 -3.2	1.3 14.4	50.0
9 COLON	0.0 0.0	17.0 3.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	-75.0
TOTALS	6864.0 659.4	6674.9 1900.7	0.0 -1197.1	0.0 0.0	0.0 2120.7	0.0 0.0	189.2 2076.	0.0



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV CONT. GUA-VEL

THU, NOV 26 2009 15:56

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	1.0014	230.32	11		M.N230		230.00	6	1.0179	234.11
14		PRO230		230.00	6	1.0333	237.67	85		PTP230		230.00	6	1.0212	234.87
96		FOR230		230.00	6	1.0175	234.03	100		BAY230		230.00	6	1.0147	233.39
144		CANJ230		230.00	6	1.0162	233.74	145		BJOMIN230		230.00	6	1.0366	238.43
146		GUALACA230		230.00	6	1.0193	234.43	147		GUASQ230		230.00	6	1.0160	233.68
148		VELADERO 230		230.00	6	1.0107	232.47	149		BBLANCO		230.00	6	1.0096	232.22
155		TABASARAI		230.00	6	1.0119	232.74	190		CHANG230		230.00	6	1.0300	236.89
306		CHAN1 230		230.00	6	1.0270	236.20	310		CONCEPCION23		230.00	6	1.0295	236.79
311		PANDO230		230.00	6	1.0295	236.78	341		PRUDENCIA230		230.00	6	1.0244	235.61
345		LORENA230		230.00	6	1.0226	235.20	506		CHAN2 230		230.00	6	1.0337	237.75
6000		FRONTER		230.00	6	1.0323	237.44								

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1		PAN230		230.00	6	0.9924	228.26	3		PANII230		230.00	6	0.9954	228.94
5		CHO230		230.00	6	0.9908	227.89	103		COPESA23		230.00	6	0.9986	229.67
105		PAN-AM23		230.00	6	0.9909	227.91	115		PACORA23		230.00	6	0.9999	229.97
325		STA RITA230		230.00	6	0.9813	225.69	511		LGUIAS230		230.00	6	0.9942	228.68
540		ANTON 230		230.00	6	0.9986	229.69								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV CONT. GUA-VEL

THU, NOV 26 2009 15:56

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9		LSA115		115.00	6	1.0251	117.89	12		M.N115		115.00	6	1.0123	116.42
15		PRO115		115.00	6	1.0352	119.05	20		CH.AZUL		115.00	6	1.0360	119.14
54		LM1115		115.00	6	1.0138	116.59	55		LM2115		115.00	6	1.0145	116.67
61		FFIELD		115.00	6	1.0094	116.08	87		CAL115		115.00	6	1.0251	117.88
88		EST115		115.00	6	1.0266	118.06	92		L.V115		115.00	6	1.0263	118.02
109		STA RITA115		115.00	6	1.0216	117.48	123		MIR115		115.00	7	1.0037	115.43
154		CEMPAN15		115.00	6	1.0089	116.03	191		CHANG115		115.00	6	1.0227	117.61
522		TCATIVÁ 115		115.00	6	1.0142	116.63	529		TCOLON 115		115.00	6	1.0216	117.48

BUSES WITH VOLTAGE LESS THAN 1.0000:



Handwritten signature or initials.

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	0.9999	114.99	4		PANII115		115.00	6	0.9976	114.72
6		CHO115		115.00	6	0.9925	114.13	18		CAC115		115.00	6	0.9994	114.93
19		C.V115		115.00	6	0.9934	114.24	21		C.BAN115		115.00	6	0.9877	113.59
23		CH115		115.00	6	0.9949	114.42	26		LOC115		115.00	6	0.9890	113.73
30		MAR115		115.00	6	0.9875	113.56	33		STM115		115.00	6	0.9976	114.72
37		SAN115		115.00	6	0.9865	113.45	48		TINAJ115		115.00	6	0.9968	114.64
50		M.O115		115.00	6	0.9970	114.65	52		TOC115		115.00	6	0.9941	114.33

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:56
PLAN EXP-SIN - C.A. JUNIO 2009
Año 2021 ESC MOD DEM MAX INV CONT. GUA-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
66		BLM13B		13.800	V2	38.0	12.3	25.0	0.0	0.9900	40.3	0.9517	47.0			1	6	
67		BLM13C		13.800	V3	38.0	12.3	25.0	0.0	0.9900	40.3	0.9517	47.0			1	6	
68		BLM13D		13.800	V4	38.0	12.7	25.0	0.0	0.9900	40.5	0.9482	47.0			1	6	
90		EST-13L		13.800	E1	19.0	1.3	12.0	-5.0	0.9800	19.4	0.9977	27.0			1	6	
91		EST-13T		13.800	E2	19.0	1.3	12.0	-5.0	0.9800	19.4	0.9977	27.0			1	6	
94		LV-13.8L		13.800	L1	20.0	1.0	12.0	-5.0	0.9800	20.4	0.9989	27.0			1	6	
95		LV-13.8T		13.800	L2	20.0	11.2	12.0	-5.0	1.0100	22.7	0.8718	27.0			1	6	
97		FOR13A		13.800	F1	89.0	-2.6	50.0	-50.0	1.0100	88.2	0.9996	111.0			1	6	
98		FOR13B		13.800	F2	89.0	-2.6	50.0	-50.0	1.0100	88.2	0.9996	111.0			1	6	
99		FOR13C		13.800	F3	89.0	-2.6	50.0	-50.0	1.0100	88.2	0.9996	111.0			1	6	
101		BAY13A		13.800	B1	69.3	12.4	50.0	-25.0	0.9783	71.9	0.9845	96.0			1	6	SYST
102		BAY13B		13.800	B2	72.0	12.6	50.0	-25.0	0.9783	74.7	0.9850	96.0			1	6	
106		PANAM13A		13.800	M1	15.2	7.8	9.0	0.0	1.0000	17.1	0.8903	20.7			1	6	
106		PANAM13A		13.800	M2	15.2	7.8	9.0	0.0	1.0000	17.1	0.8903	20.7			1	6	
108		BAY13C		13.800	B3	72.0	12.6	50.0	-25.0	0.9783	74.7	0.9850	100.0			1	6	
119		CB250B-1		13.800	C1	95.0	15.9	75.6	0.0	0.9900	97.3	0.9863	143.5			1	6	
142		CANJ13A		13.800	C1	37.0	11.3	29.0	-29.0	1.0100	38.3	0.9563	69.0			1	6	
143		CANJ13B		13.800	C2	37.0	11.3	29.0	-29.0	1.0100	38.3	0.9563	69.0			1	6	
150		GUALACA 13-213.800		G2		8.5	-2.2	7.4	-7.4	1.0100	8.7	0.9681	14.8			1	6	
151		GUALACA13.8		13.800	G1	8.5	-2.2	7.4	-7.4	1.0100	8.7	0.9681	14.8			1	6	
152		BBLANCO_13.813.800		G1		7.5	0.0	6.1	0.0	1.0095	7.4	1.0000	11.6			1	6	
152		BBLANCO_13.813.800		G2		7.5	0.0	6.1	0.0	1.0095	7.4	1.0000	11.6			1	6	
156		TABASARAI1313.800		G1		11.0	2.1	5.7	0.2	1.0200	11.0	0.9821	20.5			1	6	
156		TABASARAI1313.800		G2		11.0	2.1	5.7	0.2	1.0200	11.0	0.9821	20.5			1	6	
193		GEBONYIC		13.800	G1	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
193		GEBONYIC		13.800	G2	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
193		GEBONYIC		13.800	G3	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
204		BJOMIN13		13.800	G1	19.0	-5.6	13.0	-13.0	1.0200	19.4	0.9592	28.9			1	6	
204		BJOMIN13		13.800	G2	19.0	-5.6	13.0	-13.0	1.0200	19.4	0.9592	28.9			1	6	
205		BAITUN13.8		13.800	G1	25.5	9.8	26.6	-26.6	1.0100	27.1	0.9333	50.6			1	6	
205		BAITUN13.8		13.800	G2	25.5	9.8	26.6	-26.6	1.0100	27.1	0.9333	50.6			1	6	



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301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9480	10.9	0.8742	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.5	2.0	2.0	-2.0	0.9461	5.2	0.9138	6.2	1	6
303	SIND13.8	13.800	G1	8.0	0.0	5.0	0.0	1.1018	7.3	1.0000	13.5	1	6
304	ALGA13.8	13.800	A1	7.0	0.0	2.0	0.0	1.1020	6.4	1.0000	13.5	1	6
305	ELALTO	13.800	G1	14.0	-3.1	12.0	-5.0	1.0150	14.1	0.9761	20.6	1	6
305	ELALTO	13.800	G2	14.0	-3.1	12.0	-5.0	1.0150	14.1	0.9761	20.6	1	6
305	ELALTO	13.800	G3	14.0	-3.1	12.0	-5.0	1.0150	14.1	0.9761	20.6	1	6
307	CHAN1 A	13.800	G1	90.0	-12.4	50.0	-50.0	1.0100	90.0	0.9906	118.6	1	6
308	CHAN1 B	13.800	G2	90.0	-12.4	50.0	-50.0	1.0100	90.0	0.9906	118.6	1	6
312	PANDO13.8	13.800	G1	9.0	-1.1	10.0	-5.0	1.0100	9.0	0.9921	19.9	1	6
312	PANDO13.8	13.800	G2	9.0	-1.1	10.0	-5.0	1.0100	9.0	0.9921	19.9	1	6
316	MONTE LIRIO	13.800	G1	17.0	-2.6	12.0	-5.0	1.0150	16.9	0.9889	27.0	1	6
316	MONTE LIRIO	13.800	G2	17.0	-2.6	12.0	-5.0	1.0150	16.9	0.9889	27.0	1	6
317	MENDRE13.8	13.800	M1	7.0	0.0	0.0	0.0	1.1016	6.4	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	7.0	0.0	0.0	0.0	1.1016	6.4	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	5.2	0.0	0.0	0.0	1.1017	4.8	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C2	5.2	0.0	0.0	0.0	1.1017	4.8	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	4.0	2.0	2.0	-2.0	1.0007	4.4	0.8929	6.2	1	6
340	PEDGALITO138	13.800	P1	19.0	9.6	12.0	-5.0	1.0100	21.1	0.8926	27.0	1	6
342	LORENA13.8	13.800	L1	10.0	-2.4	10.5	-5.0	1.0150	10.1	0.9717	19.9	1	6
343	PRUDENCIA_1	13.800	G1	16.0	-2.2	9.8	-9.8	1.0200	15.8	0.9903	33.0	1	6
344	PRUDENCIA_2	13.800	G2	16.0	-2.2	9.8	-9.8	1.0200	15.8	0.9903	33.0	1	6
346	LORENA 13-2	13.800	L2	10.0	-0.7	10.5	-5.0	1.0200	9.8	0.9973	19.9	1	6
350	MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0798	3.5	0.8521	6.2	1	6
351	PERLAS N 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9835	10.5	0.8742	13.5	1	6
352	PERLAS S 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9835	10.5	0.8742	13.5	1	6
353	PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0810	2.7	1.0000	6.2	1	6
507	CHAN2 A	13.800	G1	90.0	13.5	50.0	-50.0	1.0180	89.4	0.9890	118.6	1	6
508	CHAN32 B	13.800	G2	90.0	13.5	50.0	-50.0	1.0180	89.4	0.9890	118.6	1	6
541	TOABRE	0.6000	1	20.2	0.0	0.0	0.0	0.9995	20.2	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1665.0	148.2	1066.8	-699.1				2719.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:56
 PLAN EXP-SIN - C.A. JUNIO 2009
 Año 2021 ESC MOD DEM MAX INV CONT. GUA-VEL

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	2.0	15.0	0.0	1.0000	35.1	0.9984	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0078	16.9	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.5	2.0	-2.0	0.9800	2.0	0.9640	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.5	2.0	-2.0	0.9800	2.0	0.9640	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.5	2.0	-2.0	0.9800	2.0	0.9640	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-1.2	3.0	-3.0	0.9800	4.1	0.9521	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-1.2	3.0	-3.0	0.9800	4.1	0.9521	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-1.2	3.0	-3.0	0.9800	4.1	0.9521	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0223	17.9	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0314	17.8	0.9281	23.0			2	7	



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171 MIR13H 13.800 M2 17.0 6.8 11.2 6.8 1.0314 17.8 0.9281 23.0
 SUBSYSTEM TOTALS 120.4 17.1 71.5 5.5 171.3

2 7

 PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 15:56
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2021 ESC MOD DEM MAX INV CONT. GUA-VEL IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL	30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR	101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS	57.2	290.6	-188.3	0.0	302.7	-7.6	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	32.2	224.5	-99.0	0.0	143.3	-92.8	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	-0.3	19.3	0.0
C.RICA	241.2	569.4	-236.2	0.0	478.0	30.4	355.6	
6	1665.0	1550.2	0.0	0.0	0.0	7.3	90.5	95.0
PANAMA	148.2	271.6	-355.2	0.0	574.5	9.5	793.8	
7	120.4	56.1	0.0	0.0	0.0	63.0	1.3	50.0
ACANAL	17.1	9.8	0.0	0.0	0.0	-7.0	14.2	
9	0.0	17.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	3.0	0.0	0.0	0.0	0.0	0.0	
TOTALS	6861.3	6674.9	0.0	0.0	0.0	0.0	186.4	0.0
	627.8	1900.7	-1203.1	0.0	2131.4	0.0	2061.5	



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX INV CONT. LLS-PA2

THU, NOV 26 2009 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)
11	M.N230	230.00	6	1.0161	233.70	14	PRO230	230.00	6	1.0325	237.48				
85	PTP230	230.00	6	1.0189	234.35	96	FOR230	230.00	6	1.0152	233.49				
100	BAY230	230.00	6	1.0028	230.64	144	CANJ230	230.00	6	1.0135	233.10				
145	BJOMIN230	230.00	6	1.0360	238.27	146	GUALACA230	230.00	6	1.0167	233.84				
147	GUASQ230	230.00	6	1.0132	233.04	148	VELADERO 230	230.00	6	1.0044	231.01				
149	BBLANCO	230.00	6	1.0025	230.58	155	TABASARAI	230.00	6	1.0059	231.36				
190	CHANG230	230.00	6	1.0293	236.74	306	CHAN1 230	230.00	6	1.0262	236.03				
310	CONCEPCION23	230.00	6	1.0284	236.53	311	PANDO230	230.00	6	1.0286	236.57				
341	PRUDENCIA230	230.00	6	1.0221	235.08	345	LORENA230	230.00	6	1.0202	234.65				
506	CHAN2 230	230.00	6	1.0328	237.54	6000	FRONTER	230.00	6	1.0316	237.26				

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	0.9716	223.47	3	PANII230	230.00	6	0.9755	224.37				
5	CHO230	230.00	6	0.9675	222.54	8	LSA230	230.00	6	0.9857	226.70				
103	COPESA23	230.00	6	0.9799	225.38	105	PAN-AM23	230.00	6	0.9676	222.55				
115	PACORA23	230.00	6	0.9822	225.89	325	STA RITA230	230.00	6	0.9664	222.28				
511	LGUIAS230	230.00	6	0.9718	223.51	540	ANTON 230	230.00	6	0.9763	224.55				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX INV CONT. LLS-PA2

THU, NOV 26 2009 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)
9	LSA115	115.00	6	1.0086	115.99	12	M.N115	115.00	6	1.0113	116.30				
15	PRO115	115.00	6	1.0344	118.96	20	CH.AZUL	115.00	6	1.0352	119.05				
87	CAL115	115.00	6	1.0244	117.80	88	EST115	115.00	6	1.0260	117.99				
92	L.V115	115.00	6	1.0256	117.94	109	STA RITA115	115.00	6	1.0059	115.68				
191	CHANG115	115.00	6	1.0222	117.56	529	TCOLON 115	115.00	6	1.0060	115.69				

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)
2	PAN115	115.00	6	0.9801	112.71	4	PANII115	115.00	6	0.9782	112.49				
6	CHO115	115.00	6	0.9692	111.46	18	CAC115	115.00	6	0.9797	112.67				



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19	C.V115	115.00	6	0.9753	112.15	21	C.BAN115	115.00	6	0.9680	111.32
23	CH115	115.00	6	0.9770	112.35	26	LOC115	115.00	6	0.9692	111.46
30	MAR115	115.00	6	0.9676	111.27	33	STM115	115.00	6	0.9777	112.44
37	SAN115	115.00	6	0.9669	111.19	48	TINAJ115	115.00	6	0.9769	112.35
50	M.O115	115.00	6	0.9771	112.37	52	TOC115	115.00	6	0.9747	112.09
54	LM1115	115.00	6	0.9988	114.86	55	LM2115	115.00	6	0.9997	114.97
61	FFIELD	115.00	6	0.9945	114.36	123	MIR115	115.00	7	0.9860	113.39
154	CEMPAN15	115.00	6	0.9926	114.15	522	TCATIVÁ 115	115.00	6	0.9993	114.91

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:02
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX INV CONT. LLS-PA2

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	18.6	25.0	0.0	0.9900	42.7	0.8984	47.0			1	6	
67	BLM13C	13.800	V3	38.0	18.6	25.0	0.0	0.9900	42.7	0.8984	47.0			1	6	
68	BLM13D	13.800	V4	38.0	19.4	25.0	0.0	0.9900	43.1	0.8910	47.0			1	6	
90	EST-13L	13.800	E1	19.0	1.5	12.0	-5.0	0.9800	19.4	0.9970	27.0			1	6	
91	EST-13T	13.800	E2	19.0	1.5	12.0	-5.0	0.9800	19.4	0.9970	27.0			1	6	
94	LV-13.8L	13.800	L1	20.0	1.1	12.0	-5.0	0.9800	20.4	0.9984	27.0			1	6	
95	LV-13.8T	13.800	L2	20.0	11.4	12.0	-5.0	1.0100	22.8	0.8681	27.0			1	6	
97	FOR13A	13.800	F1	89.0	-0.5	50.0	-50.0	1.0100	88.1	1.0000	111.0			1	6	
98	FOR13B	13.800	F2	89.0	-0.5	50.0	-50.0	1.0100	88.1	1.0000	111.0			1	6	
99	FOR13C	13.800	F3	89.0	-0.5	50.0	-50.0	1.0100	88.1	1.0000	111.0			1	6	
101	BAY13A	13.800	B1	76.8	21.9	50.0	-25.0	0.9783	81.6	0.9618	96.0			1	6	SYST
102	BAY13B	13.800	B2	72.0	21.4	50.0	-25.0	0.9783	76.8	0.9586	96.0			1	6	
106	PANAM13A	13.800	M1	15.2	9.0	9.0	0.0	0.9835	18.0	0.8605	20.7			1	6	
106	PANAM13A	13.800	M2	15.2	9.0	9.0	0.0	0.9835	18.0	0.8605	20.7			1	6	
108	BAY13C	13.800	B3	72.0	21.4	50.0	-25.0	0.9783	76.8	0.9586	100.0			1	6	
119	CB250B-1	13.800	C1	95.0	37.5	75.6	0.0	0.9900	103.2	0.9300	143.5			1	6	
142	CANJ13A	13.800	C1	37.0	11.8	29.0	-29.0	1.0100	38.4	0.9531	69.0			1	6	
143	CANJ13B	13.800	C2	37.0	11.8	29.0	-29.0	1.0100	38.4	0.9531	69.0			1	6	
150	GUALACA 13-2	13.800	G2	8.5	-1.5	7.4	-7.4	1.0100	8.6	0.9839	14.8			1	6	
151	GUALACA13.8	13.800	G1	8.5	-1.5	7.4	-7.4	1.0100	8.6	0.9839	14.8			1	6	
152	BBLANCO_13.8	13.800	G1	7.5	0.0	6.1	0.0	1.0024	7.5	1.0000	11.6			1	6	
152	BBLANCO_13.8	13.800	G2	7.5	0.0	6.1	0.0	1.0024	7.5	1.0000	11.6			1	6	
156	TABASARAI13	13.800	G1	11.0	3.5	5.7	0.2	1.0200	11.3	0.9535	20.5			1	6	
156	TABASARAI13	13.800	G2	11.0	3.5	5.7	0.2	1.0200	11.3	0.9535	20.5			1	6	
193	GEBONYIC	13.800	G1	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
193	GEBONYIC	13.800	G2	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
193	GEBONYIC	13.800	G3	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3			1	6	
204	BJOMIN13	13.800	G1	19.0	-5.4	13.0	-13.0	1.0200	19.4	0.9624	28.9			1	6	
204	BJOMIN13	13.800	G2	19.0	-5.4	13.0	-13.0	1.0200	19.4	0.9624	28.9			1	6	
205	BAITUN13.8	13.800	G1	25.5	10.1	26.6	-26.6	1.0100	27.1	0.9302	50.6			1	6	
205	BAITUN13.8	13.800	G2	25.5	10.1	26.6	-26.6	1.0100	27.1	0.9302	50.6			1	6	
301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9463	10.9	0.8742	13.5			1	6	



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302 PASOANCH13.8	13.800	P1	4.5	2.0	2.0	-2.0	0.9444	5.2	0.9138	6.2	1	6
303 SIND13.8	13.800	G1	8.0	0.0	5.0	0.0	1.1011	7.3	1.0000	13.5	1	6
304 ALGA13.8	13.800	A1	7.0	0.0	2.0	0.0	1.1012	6.4	1.0000	13.5	1	6
305 ELALTO	13.800	G1	14.0	-2.9	12.0	-5.0	1.0150	14.1	0.9793	20.6	1	6
305 ELALTO	13.800	G2	14.0	-2.9	12.0	-5.0	1.0150	14.1	0.9793	20.6	1	6
305 ELALTO	13.800	G3	14.0	-2.9	12.0	-5.0	1.0150	14.1	0.9793	20.6	1	6
307 CHAN1 A	13.800	G1	90.0	-11.7	50.0	-50.0	1.0100	89.9	0.9917	118.6	1	6
308 CHAN1 B	13.800	G2	90.0	-11.7	50.0	-50.0	1.0100	89.9	0.9917	118.6	1	6
312 PANDO13.8	13.800	G1	9.0	-1.1	10.0	-5.0	1.0100	9.0	0.9932	19.9	1	6
312 PANDO13.8	13.800	G2	9.0	-1.1	10.0	-5.0	1.0100	9.0	0.9932	19.9	1	6
316 MONTE LIRIO	13.800	G1	17.0	-2.4	12.0	-5.0	1.0150	16.9	0.9906	27.0	1	6
316 MONTE LIRIO	13.800	G2	17.0	-2.4	12.0	-5.0	1.0150	16.9	0.9906	27.0	1	6
317 MENDRE13.8	13.800	M1	7.0	0.0	0.0	0.0	1.1008	6.4	1.0000	35.3	1	6
317 MENDRE13.8	13.800	M2	7.0	0.0	0.0	0.0	1.1008	6.4	1.0000	35.3	1	6
323 COCHEA 13.8	13.800	C1	5.2	0.0	0.0	0.0	1.1010	4.8	1.0000	35.3	1	6
323 COCHEA 13.8	13.800	C2	5.2	0.0	0.0	0.0	1.1010	4.8	1.0000	35.3	1	6
324 POTRER 13.8	13.800	P1	4.0	2.0	2.0	-2.0	1.0000	4.4	0.8929	6.2	1	6
340 PEDGALITO13.8	13.800	P1	19.0	9.9	12.0	-5.0	1.0100	21.2	0.8875	27.0	1	6
342 LORENA13.8	13.800	L1	10.0	-1.6	10.5	-5.0	1.0150	10.0	0.9872	19.9	1	6
343 PRUDENCIA_1	13.800	G1	16.0	-1.0	9.8	-9.8	1.0200	15.7	0.9982	33.0	1	6
344 PRUDENCIA_2	13.800	G2	16.0	-1.0	9.8	-9.8	1.0200	15.7	0.9982	33.0	1	6
346 LORENA 13-2	13.800	L2	10.0	0.1	10.5	-5.0	1.0200	9.8	1.0000	19.9	1	6
350 MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0786	3.5	0.8521	6.2	1	6
351 PERLAS N 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9825	10.5	0.8742	13.5	1	6
352 PERLAS S 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9825	10.5	0.8742	13.5	1	6
353 PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0798	2.7	1.0000	6.2	1	6
507 CHAN2 A	13.800	G1	90.0	14.3	50.0	-50.0	1.0180	89.5	0.9876	118.6	1	6
508 CHAN32 B	13.800	G2	90.0	14.3	50.0	-50.0	1.0180	89.5	0.9876	118.6	1	6
541 TOABRE	0.6000	1	20.2	0.0	0.0	0.0	0.9772	20.7	1.0000	166.7	1	6
SUBSYSTEM TOTALS			1672.5	240.8	1066.8	-699.1				2719.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:02
PLAN EXP-SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX INV CONT. LLS-PA2

AREA 7 [ACANAL] MACHINE SUMMARY:

BUS#	X-- NAME	--X BASKV	ID	MW	MVAR	QMAX	QMIN	ETERM	CURRENT	PF	MVABASE	X T R A N	GENTAP	ZONE	AREA	SWING
129	MIR13D	13.800	G4	35.0	6.1	15.0	0.0	1.0000	35.5	0.9853	44.1			2	7	
130	MIR13F	13.800	G5	17.0	1.1	8.0	0.0	1.0000	17.0	0.9979	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.1	2.0	-2.0	0.9800	2.0	0.9987	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.1	2.0	-2.0	0.9800	2.0	0.9987	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.1	2.0	-2.0	0.9800	2.0	0.9987	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-0.8	3.0	-3.0	0.9800	4.0	0.9792	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-0.8	3.0	-3.0	0.9800	4.0	0.9792	5.6			2	7	
141	GAT6B	6.9000	G6	3.9	-0.8	3.0	-3.0	0.9800	4.0	0.9792	5.6			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0122	18.1	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0214	17.9	0.9281	23.0			2	7	
171	MIR13H	13.800	M2	17.0	6.8	11.2	6.8	1.0214	17.9	0.9281	23.0			2	7	



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SUBSYSTEM TOTALS

120.4 24.9 71.5 5.5

171.3

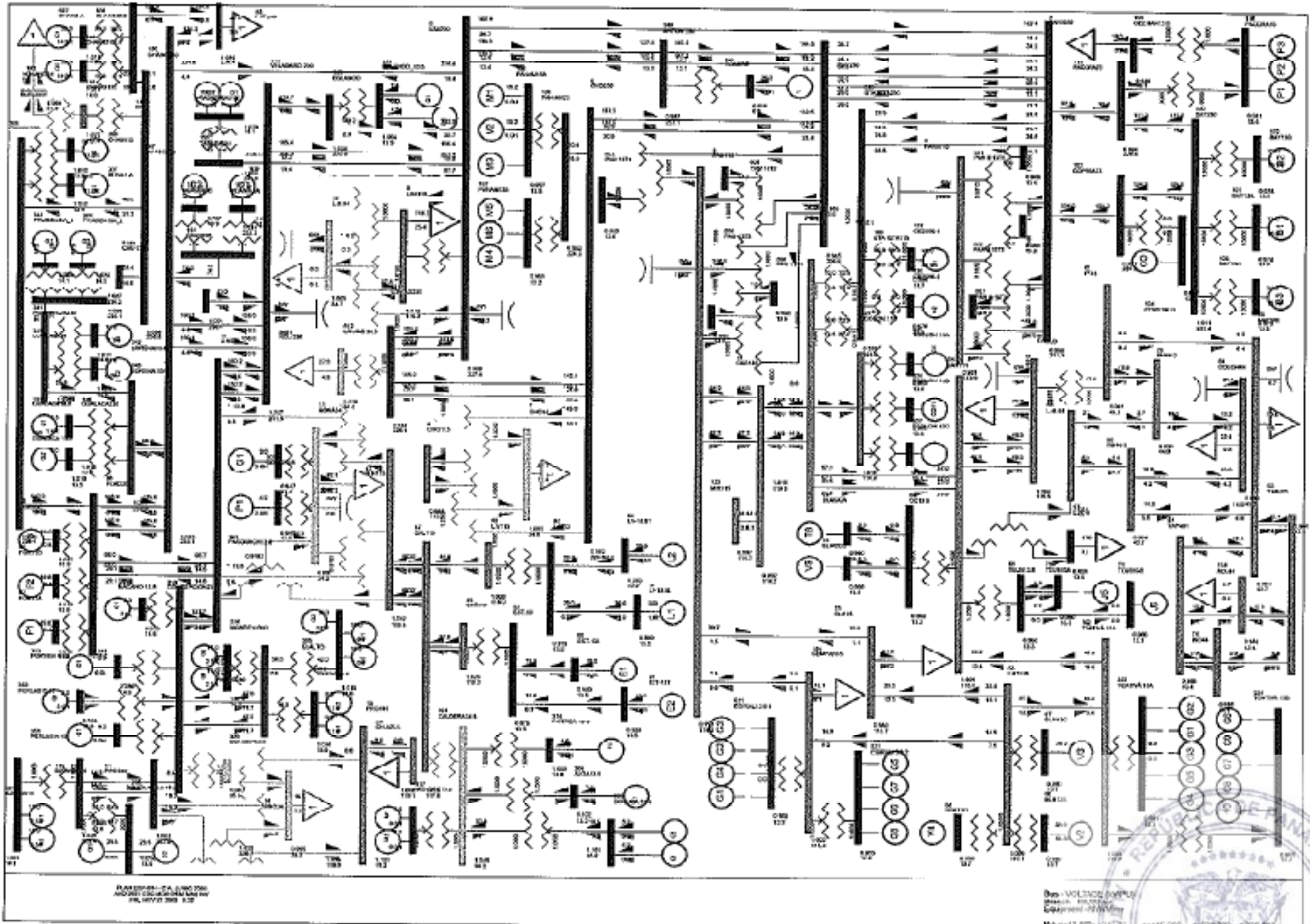
PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:04
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2021 ESC MOD DEM MAX INV CONT. LLS-PA2 IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1 GUATEMAL	1275.4 30.5	1312.2 349.5	0.0 -266.4	0.0 0.0	0.0 413.0	-70.0 30.1	33.2 330.3	-70.0
2 SALVADOR	912.1 101.4	902.0 182.3	0.0 -58.1	0.0 0.0	0.0 219.8	0.0 37.4	10.1 159.6	0.0
3 HONDURAS	1007.3 57.2	985.5 290.6	0.0 -188.3	0.0 0.0	0.0 302.7	0.0 -7.6	21.9 265.2	0.0
4 NICA	537.2 32.2	527.1 224.5	0.0 -99.0	0.0 0.0	0.0 143.3	0.0 -92.8	10.1 142.8	0.0
5 C.RICA	1343.8 241.5	1324.8 569.4	0.0 -236.2	0.0 0.0	0.0 477.9	0.0 32.5	19.0 353.7	0.0
6 PANAMA	1672.5 240.8	1550.2 271.6	0.0 -342.3	0.0 0.0	0.0 532.8	7.0 -0.1	98.3 841.5	95.0
7 ACANAL	120.4 24.9	56.1 9.8	0.0 0.0	0.0 0.0	0.0 0.0	63.0 0.5	1.3 14.6	50.0
9 COLON	0.0 0.0	17.0 3.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	-75.0
TOTALS	6868.8 728.5	6674.9 1900.7	0.0 -1190.2	0.0 0.0	0.0 2089.6	0.0 0.0	194.0 2107.6	0.0



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Contingencia Veladero – Llano Sánchez



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PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:05
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV CONT. VEL-LLS

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	1.0170	233.91	14	PRO	230		230.00	6	1.0332	237.62
85	PTP	230		230.00	6	1.0190	234.38	96	FOR	230		230.00	6	1.0155	233.56
100	BAY	230		230.00	6	1.0105	232.42	144	CANJ	230		230.00	6	1.0137	233.15
145	BJOMIN	230		230.00	6	1.0365	238.39	146	GUALACA	230		230.00	6	1.0169	233.88
147	GUASQ	230		230.00	6	1.0134	233.09	148	VELADERO	230		230.00	6	1.0066	231.52
149	BBLANCO	230		230.00	6	1.0041	230.95	155	TABASARAI	230		230.00	6	1.0080	231.84
190	CHANG	230		230.00	6	1.0294	236.76	306	CHAN1	230		230.00	6	1.0263	236.05
310	CONCEPCION	230		230.00	6	1.0290	236.68	311	PANDO	230		230.00	6	1.0291	236.69
341	PRUDENCIA	230		230.00	6	1.0223	235.12	345	LORENA	230		230.00	6	1.0204	234.69
506	CHAN2	230		230.00	6	1.0329	237.56	6000	FRONTER	230		230.00	6	1.0322	237.41

BUSES WITH VOLTAGE LESS THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
1	PAN	230		230.00	6	0.9851	226.57	3	PANII	230		230.00	6	0.9884	227.33
5	CHO	230		230.00	6	0.9824	225.96	8	LSA	230		230.00	6	0.9886	227.39
103	COPESA	230		230.00	6	0.9920	228.16	105	PAN-AM	230		230.00	6	0.9825	225.97
115	PACORA	230		230.00	6	0.9936	228.53	325	STA RITA	230		230.00	6	0.9760	224.48
511	LGUIAS	230		230.00	6	0.9831	226.11	540	ANTON	230		230.00	6	0.9874	227.11

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:05
 PLAN EXP-SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX INV CONT. VEL-LLS

BUSES WITH VOLTAGE GREATER THAN 1.0000:

BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
9	LSA	115		115.00	6	1.0117	116.35	12	M.	N115		115.00	6	1.0118	116.36
15	PRO	115		115.00	6	1.0351	119.03	20	CH.	AZUL		115.00	6	1.0358	119.12
54	LM	115		115.00	6	1.0085	115.98	55	LM	2115		115.00	6	1.0093	116.07
61	FFIELD	115		115.00	6	1.0041	115.48	87	CAL	115		115.00	6	1.0247	117.84
88	EST	115		115.00	6	1.0263	118.03	92	L.	V115		115.00	6	1.0259	117.98
109	STA RITA	115		115.00	6	1.0161	116.85	154	CEMPAN	115		115.00	6	1.0032	115.36
191	CHANG	115		115.00	6	1.0223	117.56	522	TCATIVÁ	115		115.00	6	1.0089	116.02
529	TCOLON	115		115.00	6	1.0161	116.85								

BUSES WITH VOLTAGE LESS THAN 1.0000:



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BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)	BUS#	X--	NAME	--X	BASKV	AREA	V(PU)	V(KV)
2		PAN115		115.00	6	0.9929	114.18	4		PANIII115		115.00	6	0.9908	113.94
6		CHO115		115.00	6	0.9841	113.17	18		CAC115		115.00	6	0.9924	114.13
19		C.V115		115.00	6	0.9870	113.50	21		C.BAN115		115.00	6	0.9807	112.78
23		CH115		115.00	6	0.9886	113.68	26		LOC115		115.00	6	0.9820	112.93
30		MAR115		115.00	6	0.9804	112.75	33		STM115		115.00	6	0.9905	113.91
37		SAN115		115.00	6	0.9796	112.65	48		TINAJ115		115.00	6	0.9898	113.82
50		M.O115		115.00	6	0.9899	113.84	52		TOC115		115.00	6	0.9873	113.54
123		MIR115		115.00	7	0.9974	114.70								

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:05
PLAN EXP-SIN - C.A. JUNIO 2009
Año 2021 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	38.0	14.5	25.0	0.0	0.9900	41.1	0.9344	47.0								1	6
67		BLM13C		13.800	V3	38.0	14.5	25.0	0.0	0.9900	41.1	0.9344	47.0								1	6
68		BLM13D		13.800	V4	38.0	15.1	25.0	0.0	0.9900	41.3	0.9295	47.0								1	6
90		EST-13L		13.800	E1	19.0	1.4	12.0	-5.0	0.9800	19.4	0.9974	27.0								1	6
91		EST-13T		13.800	E2	19.0	1.4	12.0	-5.0	0.9800	19.4	0.9974	27.0								1	6
94		LV-13.8L		13.800	L1	20.0	1.0	12.0	-5.0	0.9800	20.4	0.9986	27.0								1	6
95		LV-13.8T		13.800	L2	20.0	11.3	12.0	-5.0	1.0100	22.8	0.8700	27.0								1	6
97		FOR13A		13.800	F1	89.0	-0.8	50.0	-50.0	1.0100	88.1	1.0000	111.0								1	6
98		FOR13B		13.800	F2	89.0	-0.8	50.0	-50.0	1.0100	88.1	1.0000	111.0								1	6
99		FOR13C		13.800	F3	89.0	-0.8	50.0	-50.0	1.0100	88.1	1.0000	111.0								1	6
101		BAY13A		13.800	B1	74.0	15.9	50.0	-25.0	0.9783	77.3	0.9777	96.0								1	6
102		BAY13B		13.800	B2	72.0	15.7	50.0	-25.0	0.9783	75.3	0.9771	96.0								1	6
106		PANAM13A		13.800	M1	15.2	9.0	9.0	0.0	0.9975	17.7	0.8605	20.7								1	6
106		PANAM13A		13.800	M2	15.2	9.0	9.0	0.0	0.9975	17.7	0.8605	20.7								1	6
108		BAY13C		13.800	B3	72.0	15.7	50.0	-25.0	0.9783	75.3	0.9771	100.0								1	6
119		CB250B-1		13.800	C1	95.0	23.6	75.6	0.0	0.9900	98.9	0.9706	143.5								1	6
142		CANJ13A		13.800	C1	37.0	11.7	29.0	-29.0	1.0100	38.4	0.9533	69.0								1	6
143		CANJ13B		13.800	C2	37.0	11.7	29.0	-29.0	1.0100	38.4	0.9533	69.0								1	6
150		GUALACA 13-213.800		G2		8.5	-1.6	7.4	-7.4	1.0100	8.6	0.9829	14.8								1	6
151		GUALACA13.8		13.800	G1	8.5	-1.6	7.4	-7.4	1.0100	8.6	0.9829	14.8								1	6
152		BBLANCO_13.813.800		G1		7.5	0.0	6.1	0.0	1.0039	7.5	1.0000	11.6								1	6
152		BBLANCO_13.813.800		G2		7.5	0.0	6.1	0.0	1.0039	7.5	1.0000	11.6								1	6
156		TABASARAI1313.800		G1		11.0	3.0	5.7	0.2	1.0200	11.2	0.9647	20.5								1	6
156		TABASARAI1313.800		G2		11.0	3.0	5.7	0.2	1.0200	11.2	0.9647	20.5								1	6
193		GEBONYIC		13.800	G1	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3								1	6
193		GEBONYIC		13.800	G2	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3								1	6
193		GEBONYIC		13.800	G3	8.0	0.0	4.0	-4.0	1.0200	7.8	1.0000	35.3								1	6
204		BJOMIN13		13.800	G1	19.0	-5.5	13.0	-13.0	1.0200	19.4	0.9600	28.9								1	6
204		BJOMIN13		13.800	G2	19.0	-5.5	13.0	-13.0	1.0200	19.4	0.9600	28.9								1	6
205		BAITUN13.8		13.800	G1	25.5	9.9	26.6	-26.6	1.0100	27.1	0.9325	50.6								1	6
205		BAITUN13.8		13.800	G2	25.5	9.9	26.6	-26.6	1.0100	27.1	0.9325	50.6								1	6



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301	CONC13.8	13.800	G1	9.0	5.0	5.0	-5.0	0.9472	10.9	0.8742	13.5	1	6
302	PASOANCH13.8	13.800	P1	4.5	2.0	2.0	-2.0	0.9453	5.2	0.9138	6.2	1	6
303	SIND13.8	13.800	G1	8.0	0.0	5.0	0.0	1.1015	7.3	1.0000	13.5	1	6
304	ALGA13.8	13.800	A1	7.0	0.0	2.0	0.0	1.1016	6.4	1.0000	13.5	1	6
305	ELALTO	13.800	G1	14.0	-3.0	12.0	-5.0	1.0150	14.1	0.9775	20.6	1	6
305	ELALTO	13.800	G2	14.0	-3.0	12.0	-5.0	1.0150	14.1	0.9775	20.6	1	6
305	ELALTO	13.800	G3	14.0	-3.0	12.0	-5.0	1.0150	14.1	0.9775	20.6	1	6
307	CHAN1 A	13.800	G1	90.0	-11.8	50.0	-50.0	1.0100	89.9	0.9915	118.6	1	6
308	CHAN1 B	13.800	G2	90.0	-11.8	50.0	-50.0	1.0100	89.9	0.9915	118.6	1	6
312	PANDO13.8	13.800	G1	9.0	-1.1	10.0	-5.0	1.0100	9.0	0.9926	19.9	1	6
312	PANDO13.8	13.800	G2	9.0	-1.1	10.0	-5.0	1.0100	9.0	0.9926	19.9	1	6
316	MONTE LIRIO	13.800	G1	17.0	-2.5	12.0	-5.0	1.0150	16.9	0.9896	27.0	1	6
316	MONTE LIRIO	13.800	G2	17.0	-2.5	12.0	-5.0	1.0150	16.9	0.9896	27.0	1	6
317	MENDRE13.8	13.800	M1	7.0	0.0	0.0	0.0	1.1012	6.4	1.0000	35.3	1	6
317	MENDRE13.8	13.800	M2	7.0	0.0	0.0	0.0	1.1012	6.4	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C1	5.2	0.0	0.0	0.0	1.1014	4.8	1.0000	35.3	1	6
323	COCHEA 13.8	13.800	C2	5.2	0.0	0.0	0.0	1.1014	4.8	1.0000	35.3	1	6
324	POTRER 13.8	13.800	P1	4.0	2.0	2.0	-2.0	1.0004	4.4	0.8929	6.2	1	6
340	PEDGALITO138	13.800	P1	19.0	9.7	12.0	-5.0	1.0100	21.1	0.8905	27.0	1	6
342	LORENA13.8	13.800	L1	10.0	-1.7	10.5	-5.0	1.0150	10.0	0.9863	19.9	1	6
343	PRUDENCIA_1	13.800	G1	16.0	-1.0	9.8	-9.8	1.0200	15.7	0.9979	33.0	1	6
344	PRUDENCIA_2	13.800	G2	16.0	-1.0	9.8	-9.8	1.0200	15.7	0.9979	33.0	1	6
346	LORENA 13-2	13.800	L2	10.0	0.0	10.5	-5.0	1.0200	9.8	1.0000	19.9	1	6
350	MACANO 13.8	13.800	G1	3.3	-2.0	2.0	-2.0	1.0793	3.5	0.8521	6.2	1	6
351	PERLAS N 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9831	10.5	0.8742	13.5	1	6
352	PERLAS S 13	13.800	G1	9.0	5.0	5.0	-5.0	0.9831	10.5	0.8742	13.5	1	6
353	PORVEN N 13	13.800	G1	2.9	0.0	2.0	0.0	1.0805	2.7	1.0000	6.2	1	6
507	CHAN2 A	13.800	G1	90.0	14.2	50.0	-50.0	1.0180	89.5	0.9877	118.6	1	6
508	CHAN32 B	13.800	G2	90.0	14.2	50.0	-50.0	1.0180	89.5	0.9877	118.6	1	6
541	TOABRE	0.6000	1	20.2	0.0	0.0	0.0	0.9883	20.5	1.0000	166.7	1	6
SUBSYSTEM TOTALS				1669.7	192.3	1066.8	-699.1				2719.0		

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:05
 PLAN EXP-SIN - C.A. JUNIO 2009
 Año 2021 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	3.6	15.0	0.0	1.0000	35.2	0.9948	44.1			2	7	
130	MIR13F	13.800	G5	17.0	0.0	8.0	0.0	1.0038	16.9	1.0000	27.7			2	7	
140	GAT6A	6.9000	G1	1.9	-0.4	2.0	-2.0	0.9800	2.0	0.9816	4.1			2	7	
140	GAT6A	6.9000	G2	1.9	-0.4	2.0	-2.0	0.9800	2.0	0.9816	4.1			2	7	
140	GAT6A	6.9000	G3	1.9	-0.4	2.0	-2.0	0.9800	2.0	0.9816	4.1			2	7	
141	GAT6B	6.9000	G4	3.9	-1.1	3.0	-3.0	0.9800	4.1	0.9630	5.6			2	7	
141	GAT6B	6.9000	G5	3.9	-1.1	3.0	-3.0	0.9800	4.1	0.9630	6.2			2	7	
141	GAT6B	6.9000	G6	3.9	-1.1	3.0	-3.0	0.9800	4.1	0.9630	6.2			2	7	
170	MIR13G	13.800	M1	17.0	6.8	11.2	6.8	1.0184	18.0	0.9281	23.0			2	7	
171	MIR13H	13.800	M1	17.0	6.8	11.2	6.8	1.0275	17.8	0.9281	23.0			2	7	



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171 MIR13H 13.800 M2 17.0 6.8 11.2 6.8 1.0275 17.8 0.9281 23.0
 SUBSYSTEM TOTALS 120.4 19.6 71.5 5.5 171.3

2 7

 PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:06
 PLAN EXP-SIN - C.A. JUNIO 2009 AREA TOTALS
 AÑO 2021 ESC MOD DEM MAX INV CONT. VEL-LLS IN MW/MVAR

X-- AREA --X	FROM GENERATION	TO LOAD	TO BUS SHUNT	TO LINE SHUNT	FROM CHARGING	TO NET INT	LOSSES	DESIRED NET INT
1	1275.4	1312.2	0.0	0.0	0.0	-70.0	33.2	-70.0
GUATEMAL	30.5	349.5	-266.4	0.0	413.0	30.1	330.3	
2	912.1	902.0	0.0	0.0	0.0	0.0	10.1	0.0
SALVADOR	101.4	182.3	-58.1	0.0	219.8	37.4	159.6	
3	1007.3	985.5	0.0	0.0	0.0	0.0	21.9	0.0
HONDURAS	57.1	290.6	-188.3	0.0	302.7	-7.6	265.2	
4	537.2	527.1	0.0	0.0	0.0	0.0	10.1	0.0
NICA	32.2	224.5	-99.0	0.0	143.3	-92.8	142.8	
5	1343.8	1324.8	0.0	0.0	0.0	0.1	18.9	0.0
C.RICA	240.3	569.4	-236.3	0.0	478.0	31.9	353.3	
6	1669.7	1550.2	0.0	0.0	0.0	6.9	95.5	95.0
PANAMA	192.3	271.6	-349.3	0.0	563.1	5.5	824.6	
7	120.4	56.1	0.0	0.0	0.0	63.0	1.3	50.0
ACANAL	19.6	9.8	0.0	0.0	0.0	-4.5	14.3	
9	0.0	17.0	0.0	0.0	0.0	0.0	0.0	-75.0
COLON	0.0	3.0	0.0	0.0	0.0	0.0	0.0	
TOTALS	6866.0	6674.9	0.0	0.0	0.0	0.0	191.1	0.0
	673.5	1900.7	-1197.2	0.0	2120.0	0.0	2090.1	



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Resultados de Estabilidad Transitoria

RESUMEN GENERAL

Año 2012

Falla y apertura de un circuito de Llano Sánchez – Panamá II
Falla y apertura de un circuito de Veladero – Llano Sánchez

Año 2015

Falla y Apertura de la línea Antón – Panamá
Falla y Apertura de la línea Llano Sánchez – Panamá II

Año 2021

Falla y Apertura de la línea Antón – Panamá
Falla y Apertura de la línea Guasquita – Veladero
Falla y Apertura de la línea Llano Sánchez – Panamá II
Falla y Apertura de la línea Veladero – Llano Sánchez

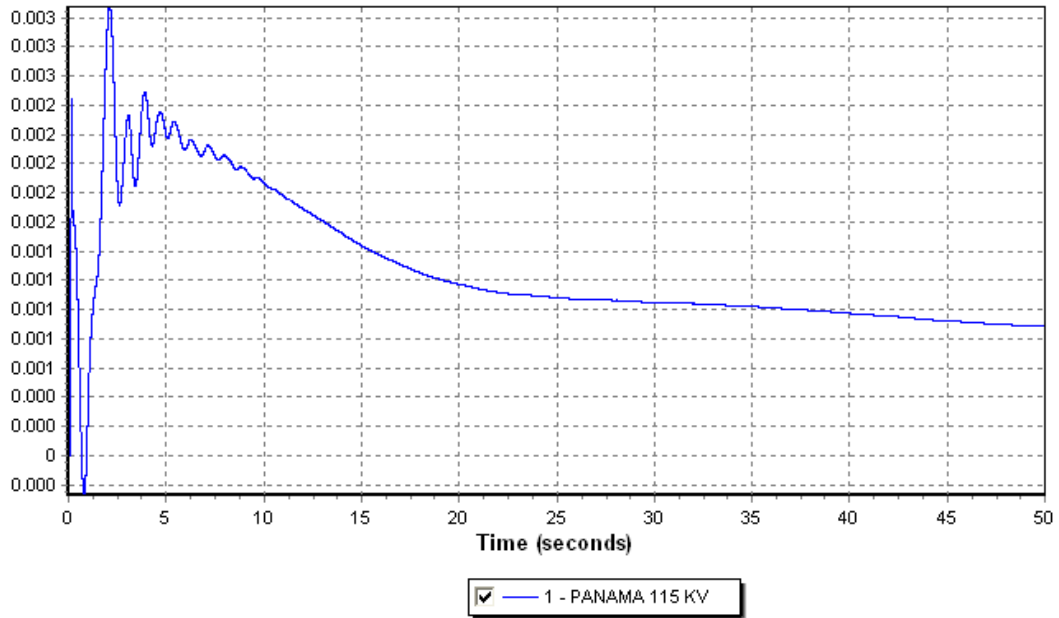


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AÑO 2012
Falla y Apertura de la línea Llano Sánchez – Panamá

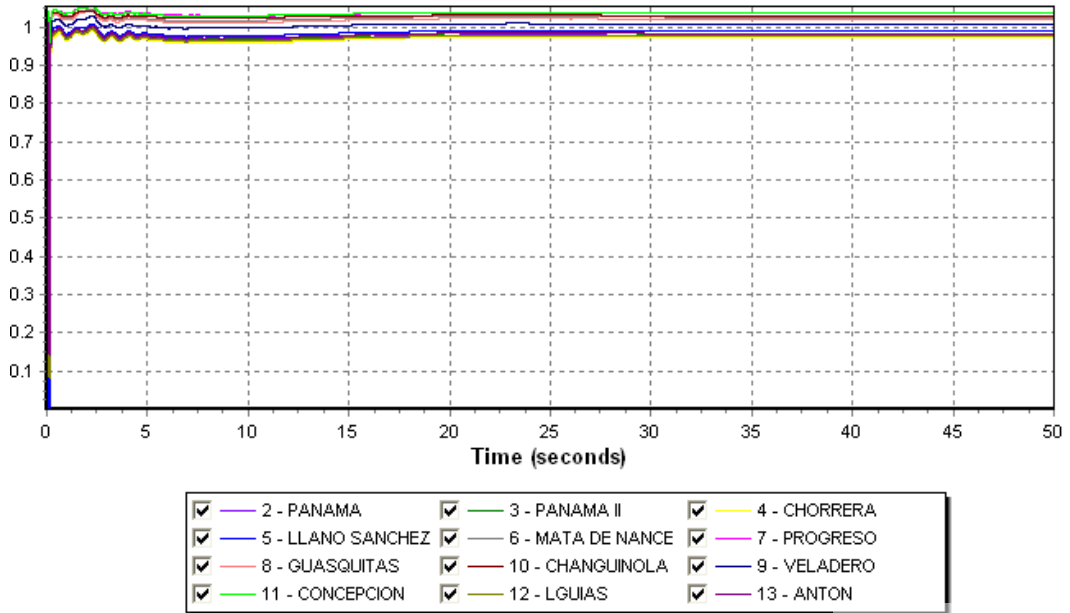
PLAN DE EXPANSIÓN DEL SINI - C.A. JUNIO 2009
AÑO 2012 ESC MOD DEM MAX IIV

Frecuencia - Falla y Apertura de la línea Llano Sánchez - Panama II



PLAN DE EXPANSIÓN DEL SINI - C.A. JUNIO 2009
AÑO 2012 ESC MOD DEM MAX IIV

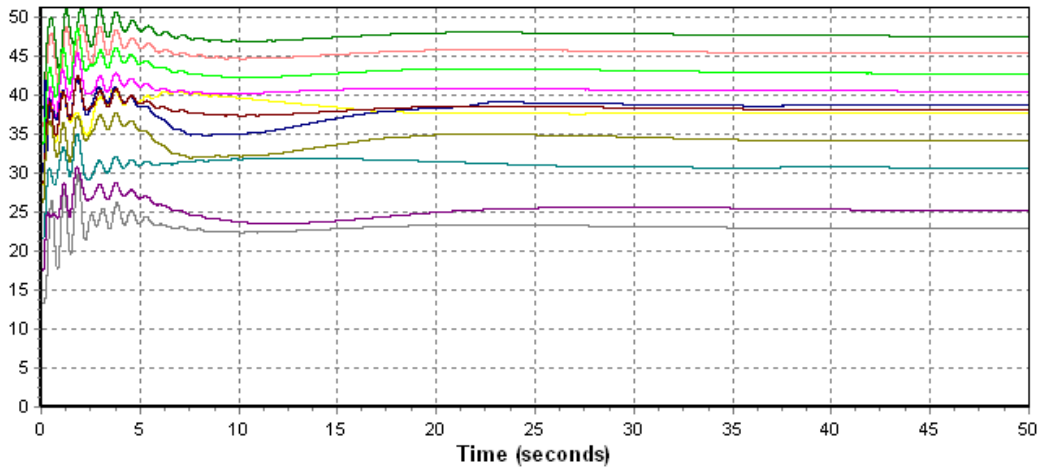
Voltajes 230 KV - Falla y Apertura de la línea Llano Sánchez - Panama II



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PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2012 ESC MOD DEM MAX IIV

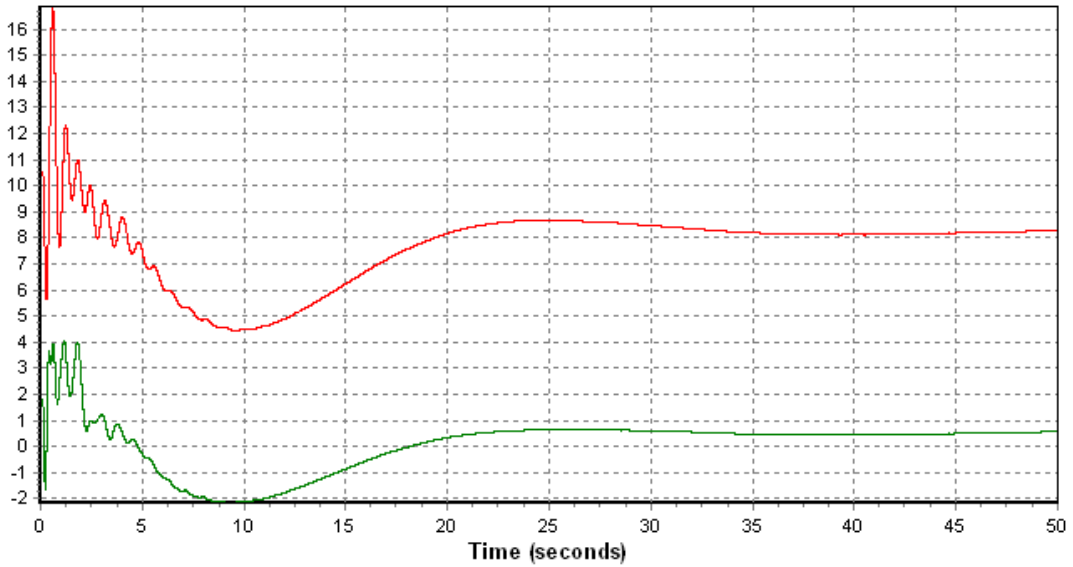
Angulo de Unidades - Falla y Apertura de la línea Llano Sánchez - Panama II



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<input checked="" type="checkbox"/> 18 - BAYANO 1	<input checked="" type="checkbox"/> 19 - GEBONYIC 1	<input checked="" type="checkbox"/> 21 - BJOMIN
<input checked="" type="checkbox"/> 23 - BAITUN	<input checked="" type="checkbox"/> 25 - EL ALTO 1	<input checked="" type="checkbox"/> 28 - PANDO 1
<input checked="" type="checkbox"/> 27 - CHANI 1	<input checked="" type="checkbox"/> 30 - LORENA 1	<input checked="" type="checkbox"/> 31 - MACANO 1

PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2012 ESC MOD DEM MAX IIV

Angulo de Unidades - Falla y Apertura de la línea Llano Sánchez - Panama II



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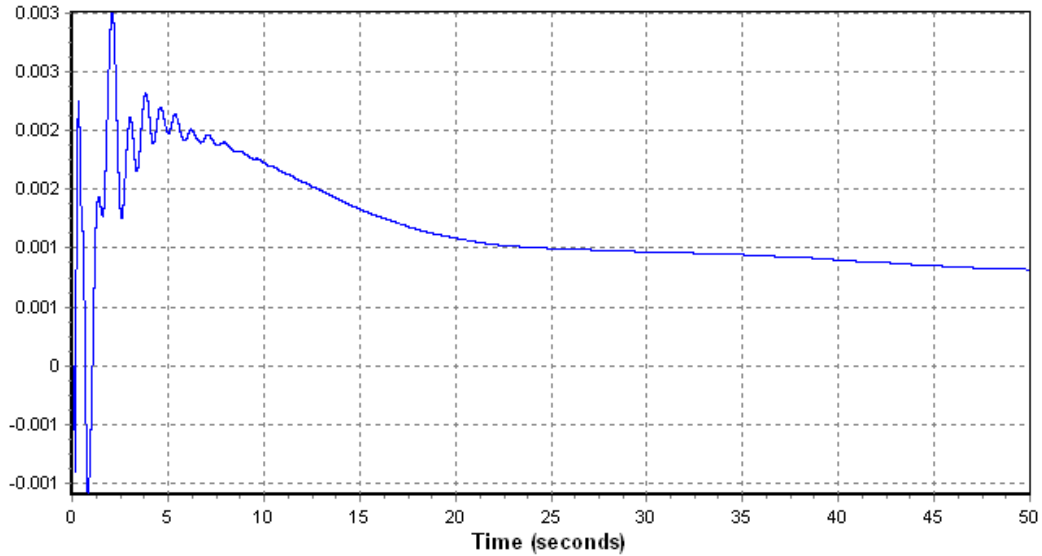


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Falla y Apertura de línea Veladero – Llano Sánchez

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AÑO 2012 ESC MOD DEM MAX IIV

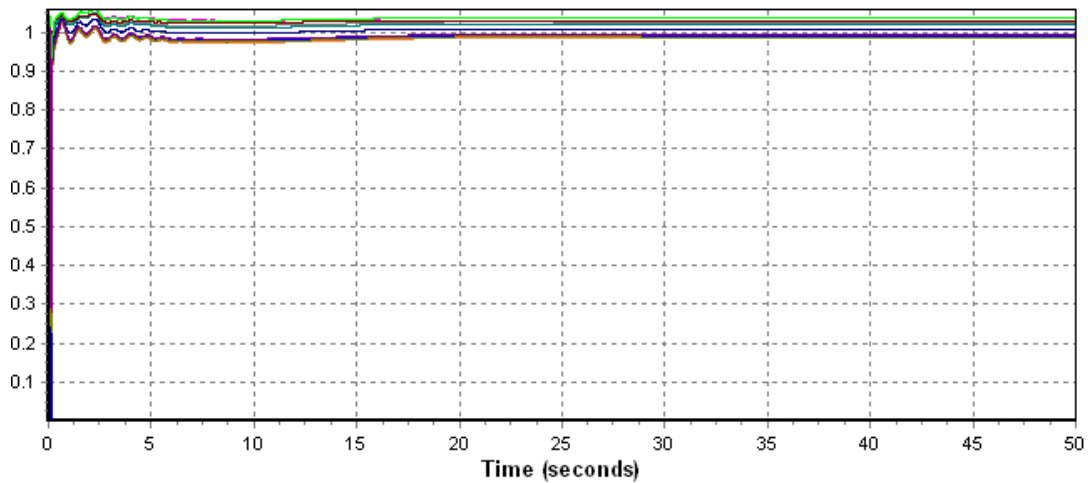
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1 - PAN 115 KV : 1012MaxInvSinCompensacionCont2

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AÑO 2012 ESC MOD DEM MAX IIV

Voltajes 230 KV - Falla y Apertura de la Línea Veladero - Llano Sanchez



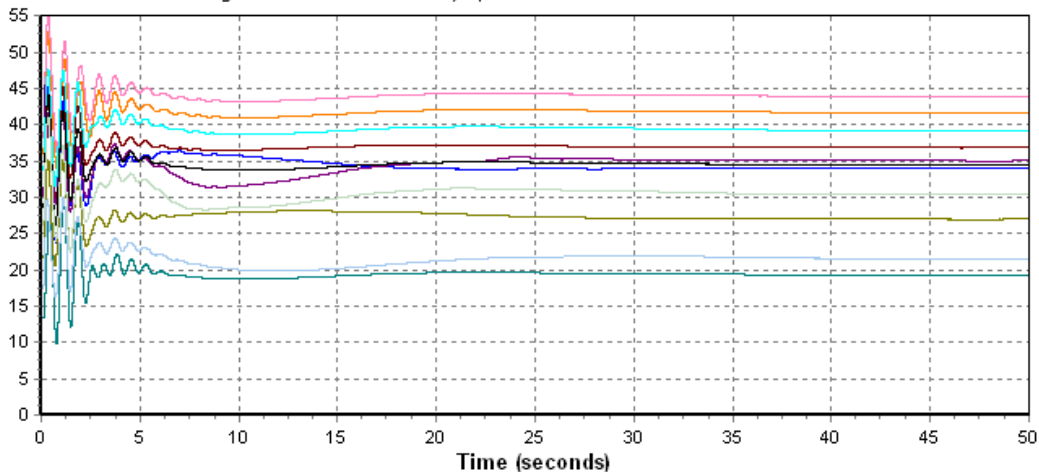
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AÑO 2012 ESC MOD DEM MAX IIV

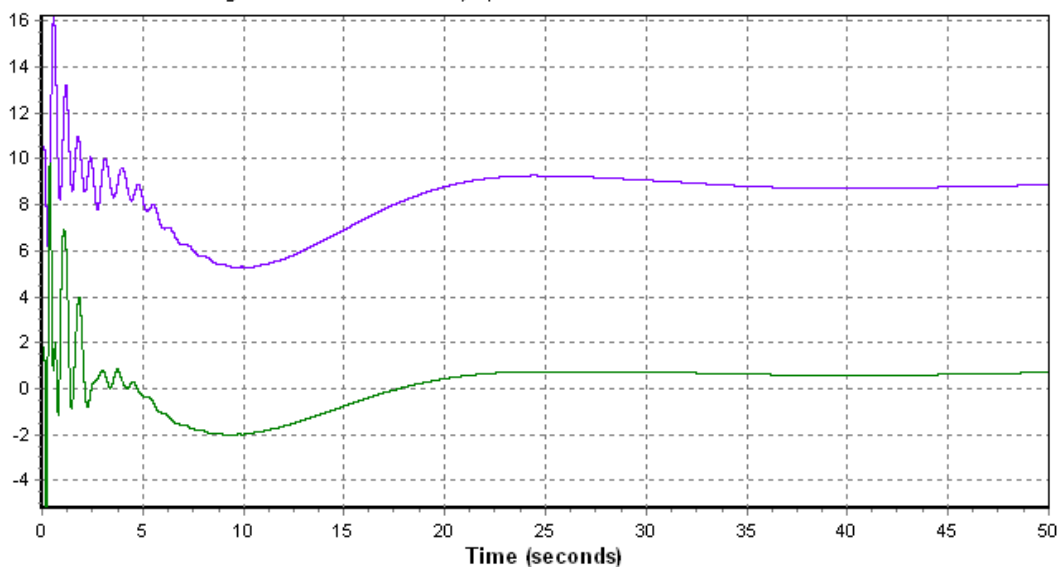
Angulos de las Unidades - Falla y Apertura de la Línea Veladero - Llano Sanchez



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<input checked="" type="checkbox"/> 29 - PANDO 1	<input checked="" type="checkbox"/> 31 - LORENA	<input checked="" type="checkbox"/> 32 - MACANO

PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2012 ESC MOD DEM MAX IIV

Angulos de las Unidades - Falla y Apertura de la Línea Veladero - Llano Sanchez



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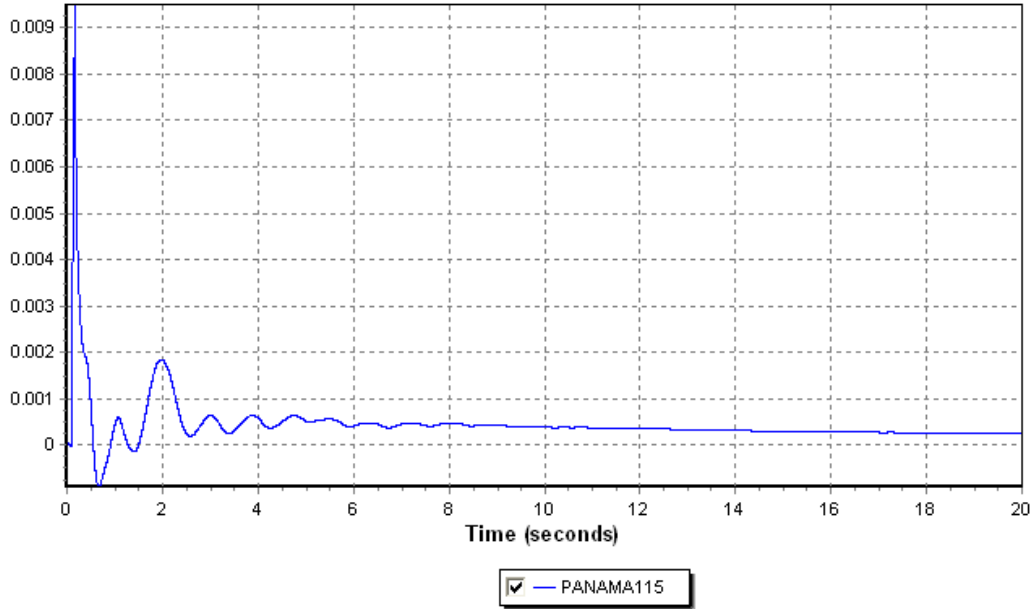


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Año 2015
Falla y Apertura de la línea Antón – Panamá

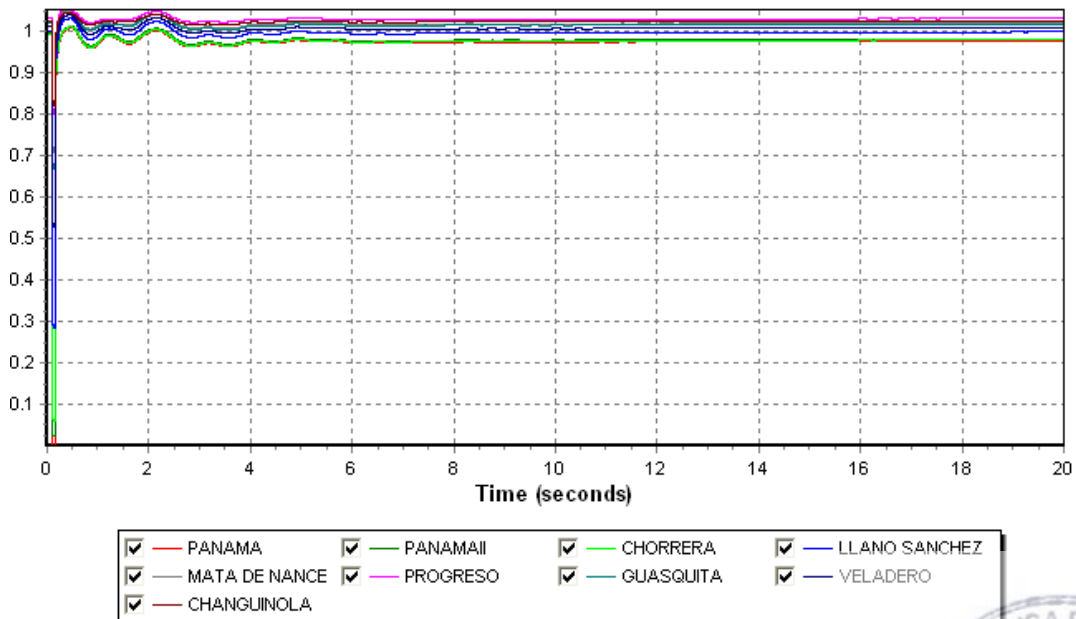
PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

Frecuencia - Falla y Apertura de la Línea Antón - Panama



PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

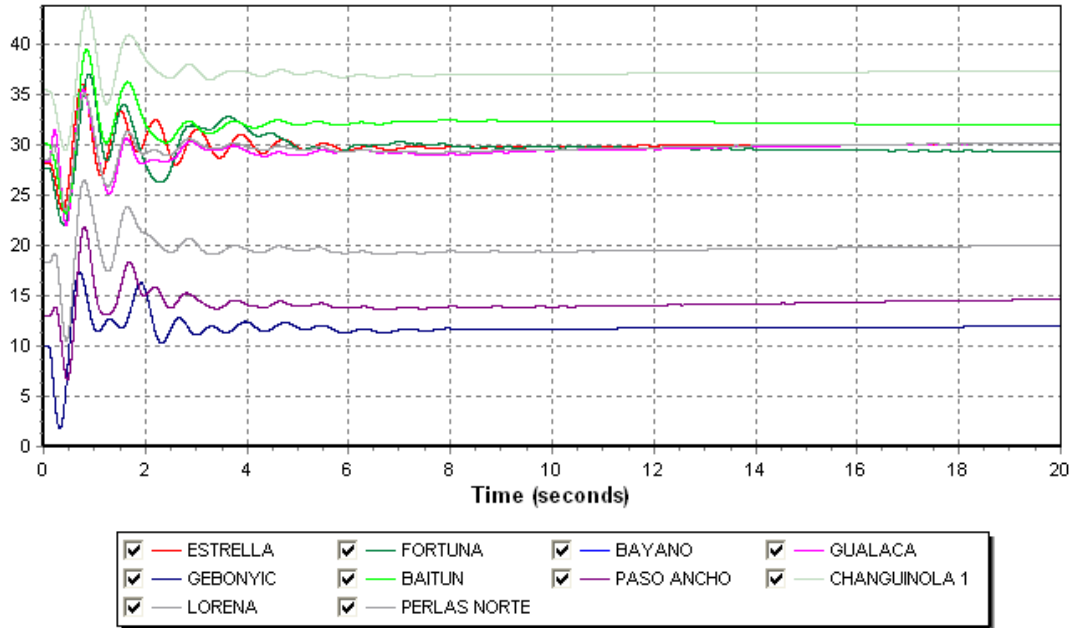
Voltajes 230KV- Falla y Apertura de la Línea Antón - Panama



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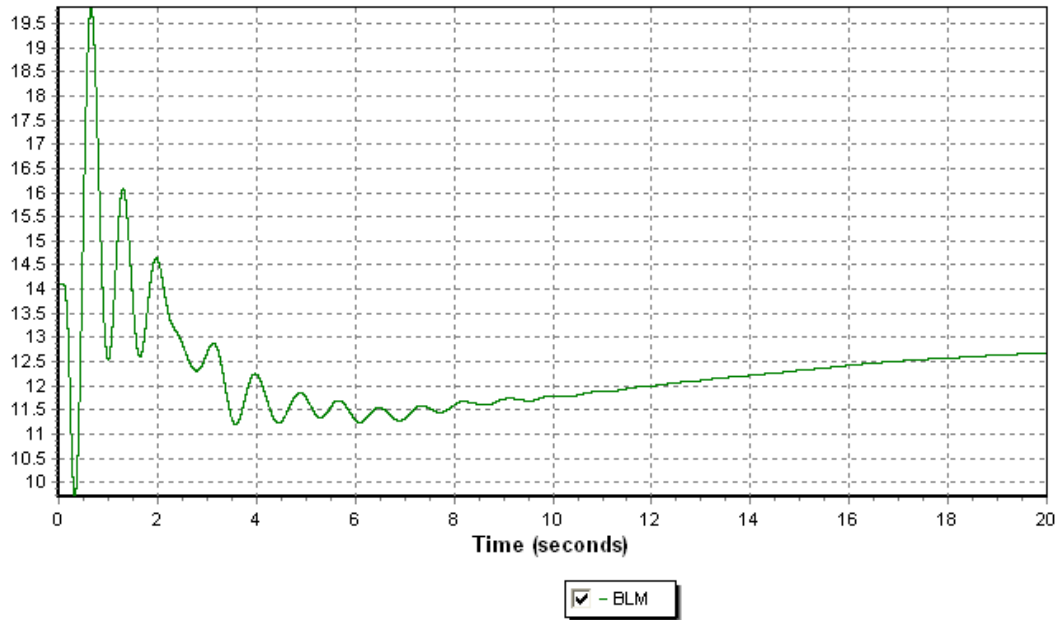
PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

Angulos de Unidades - Falla y Apertura de la Línea Anton - Panama



PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

Angulos de Unidades - Falla y Apertura de la Línea Anton - Panama

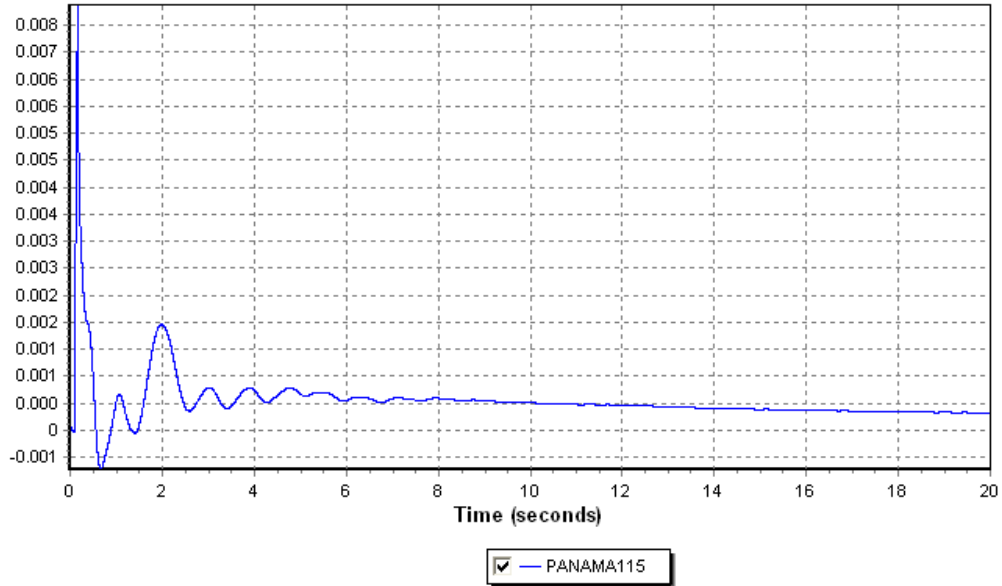


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Falla y Apertura de la línea Llano Sánchez – Panamá II

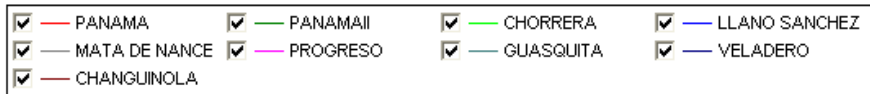
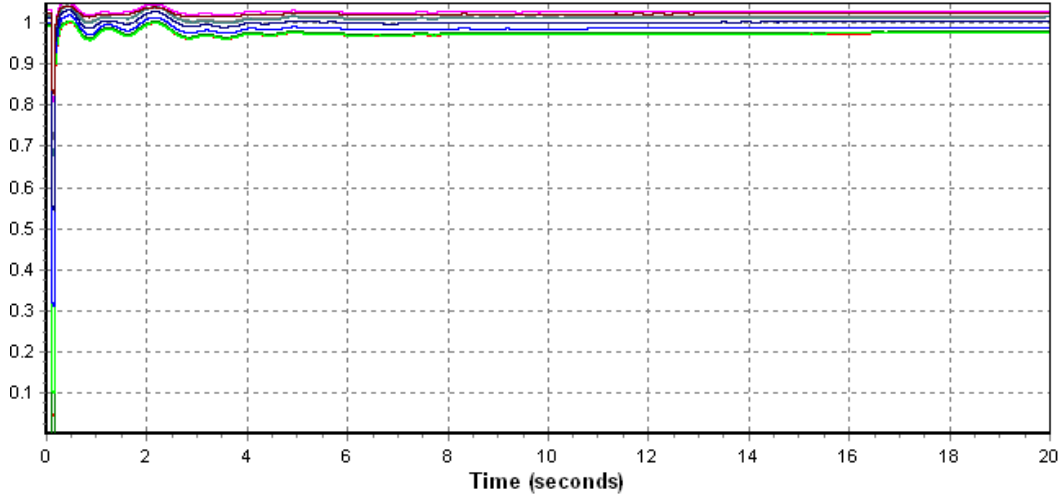
PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV

Frecuencia - Falla y Apertura de Línea Llano Sanchez - Panamall



PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2015 ESC MOD DEM MAX INV

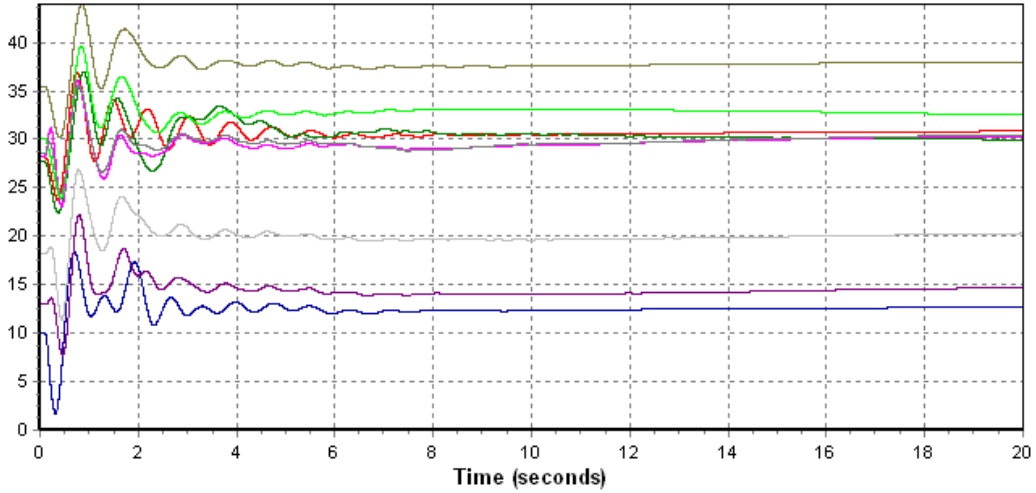
Voltajes 230Kv - Falla y Apertura de Línea Llano Sanchez - Panamall



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PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

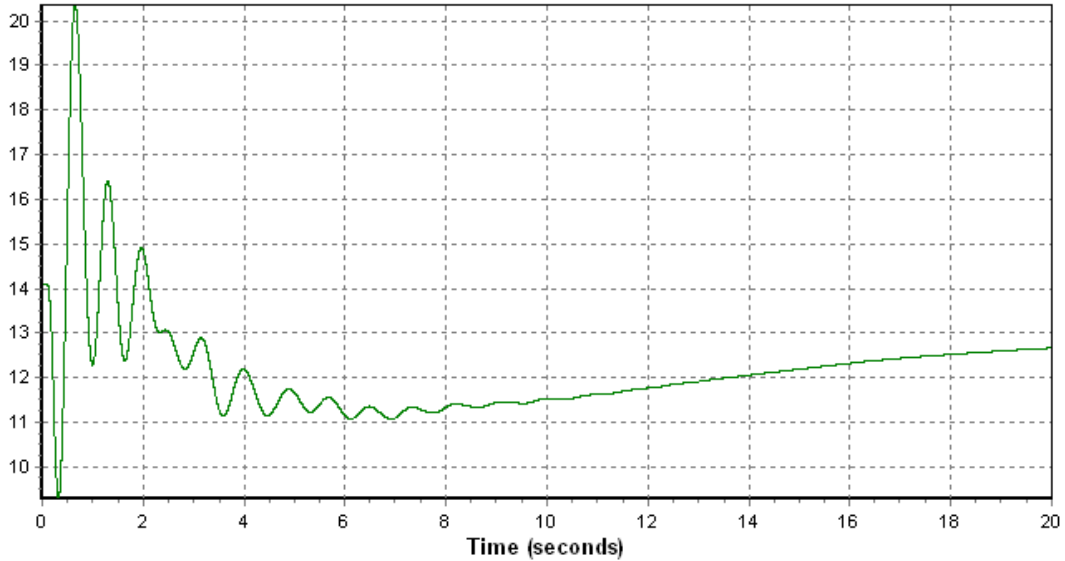
Angulos de Unidades - Falla y Apertura de Línea Llano Sanchez - Panamall



- | | | | |
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| <input checked="" type="checkbox"/> LORENA | <input checked="" type="checkbox"/> PERLAS NORTE | | |

PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2015 ESC MOD DEM MAX INV

Angulos de Unidades - Falla y Apertura de Línea Llano Sanchez - Panamall



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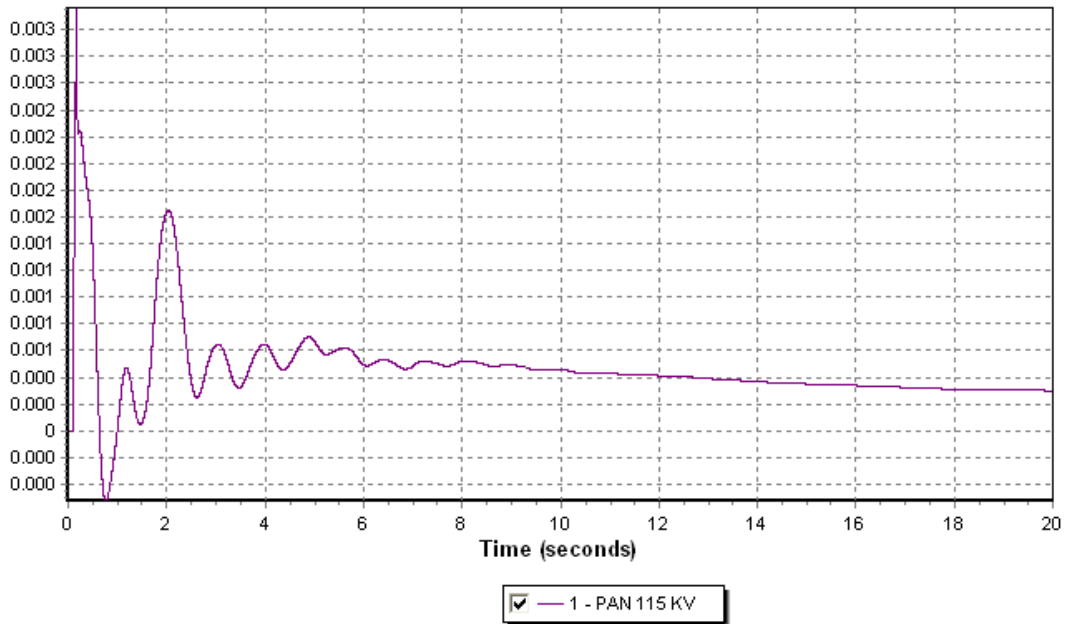
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Año 2021

Falla y Apertura de la líneas Antón - Panamá

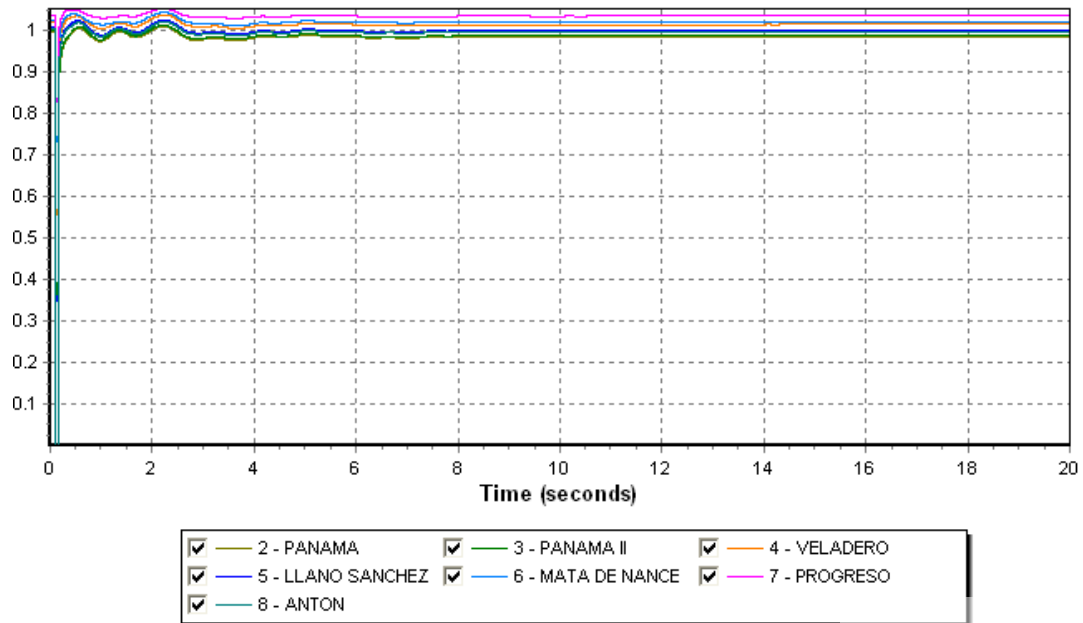
PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV

Frecuencia - Apertura y Falla de la Línea Anton - Panama



PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV

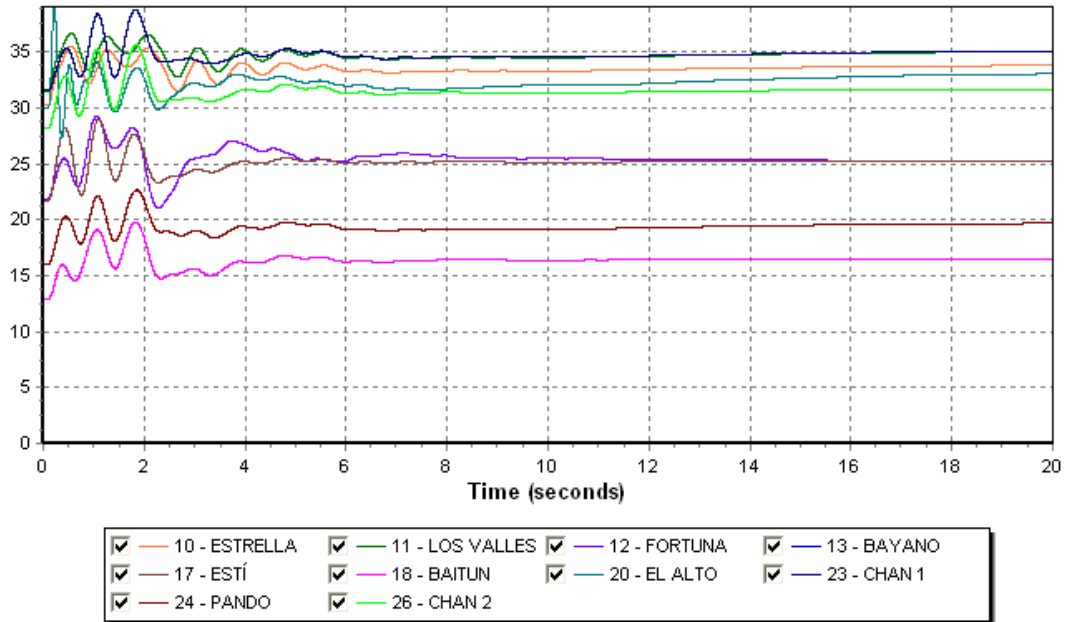
Voltajes 230 KV - Apertura y Falla de la Línea Anton - Panama



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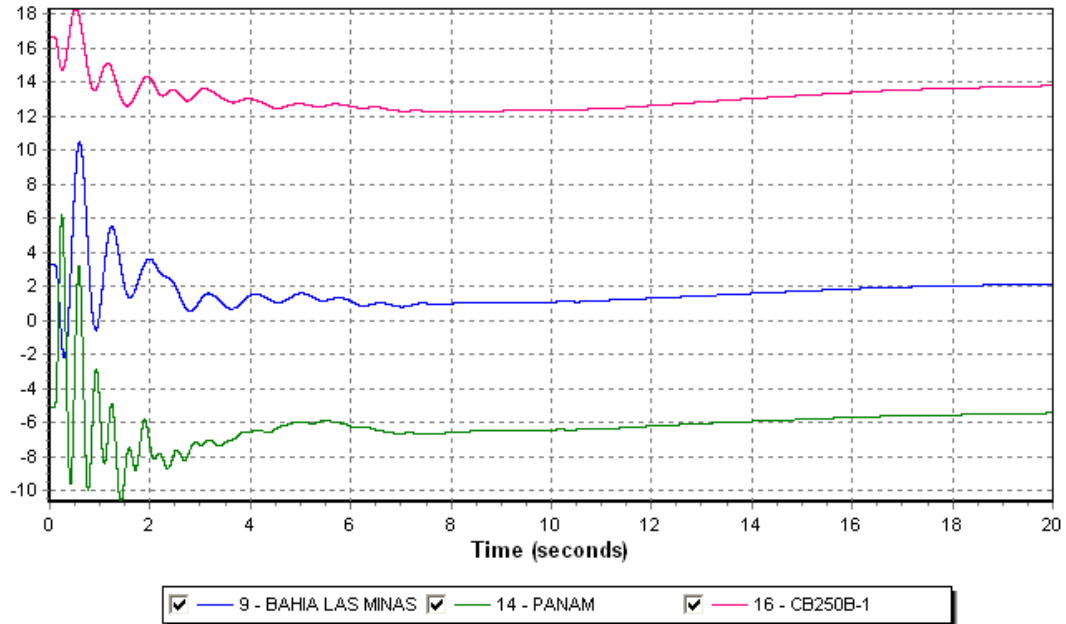
**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Apertura y Falla de la Línea Anton - Panama



**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Apertura y Falla de la Línea Anton - Panama

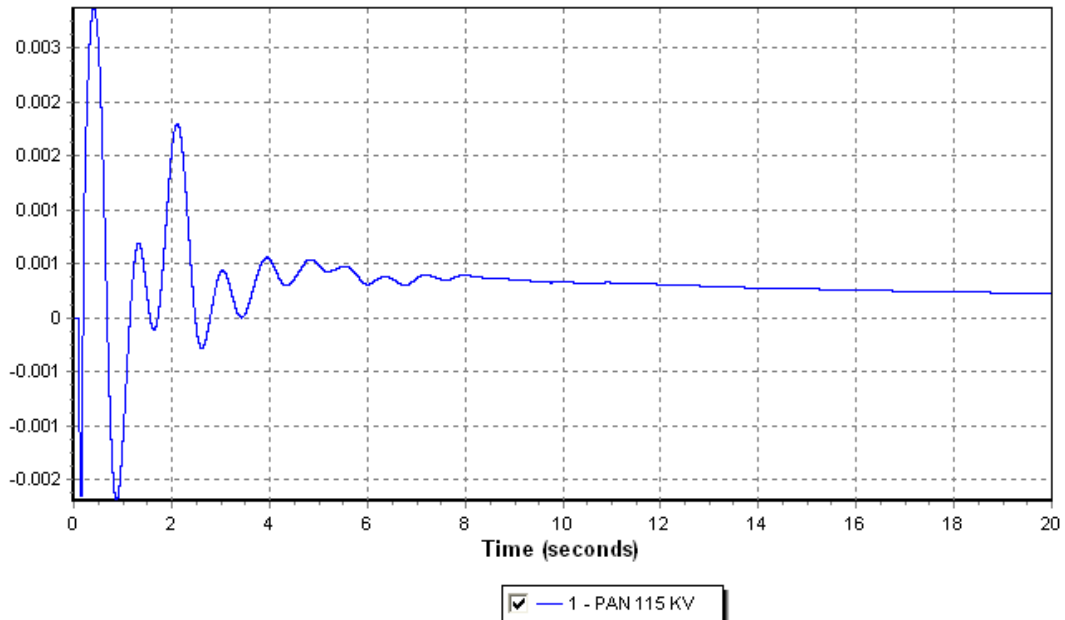


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Falla y Apertura de las línea Guasquita – Veladero

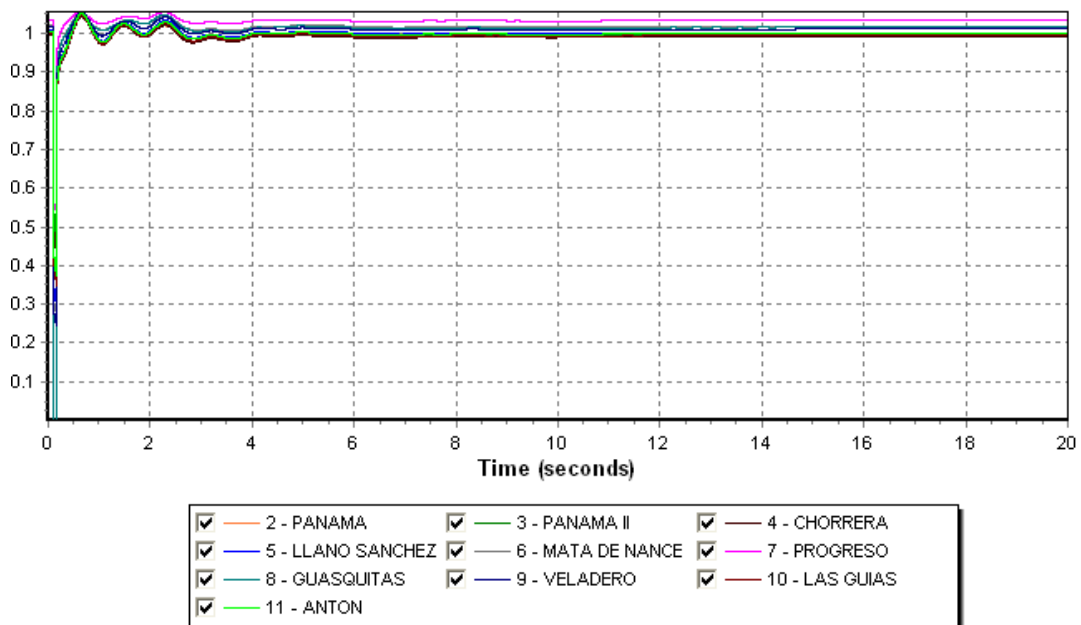
PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV

Frecuencia - Falla y Apertura de un Circuito de Guasquitas - Veladero



PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV

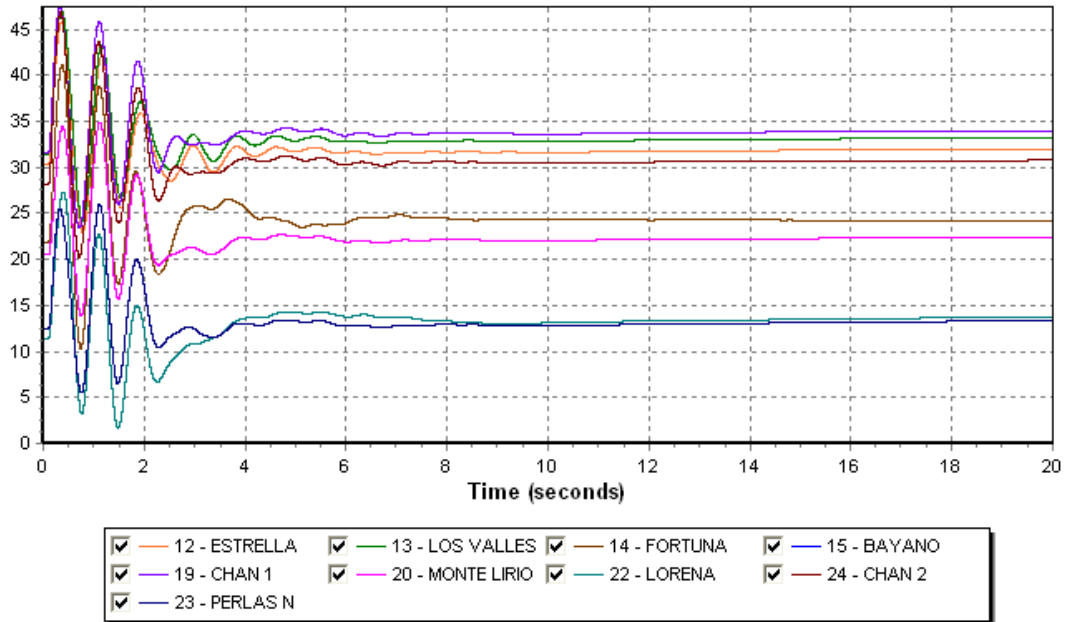
Voltajes 230 KV - Falla y Apertura de un Circuito de Guasquitas - Veladero



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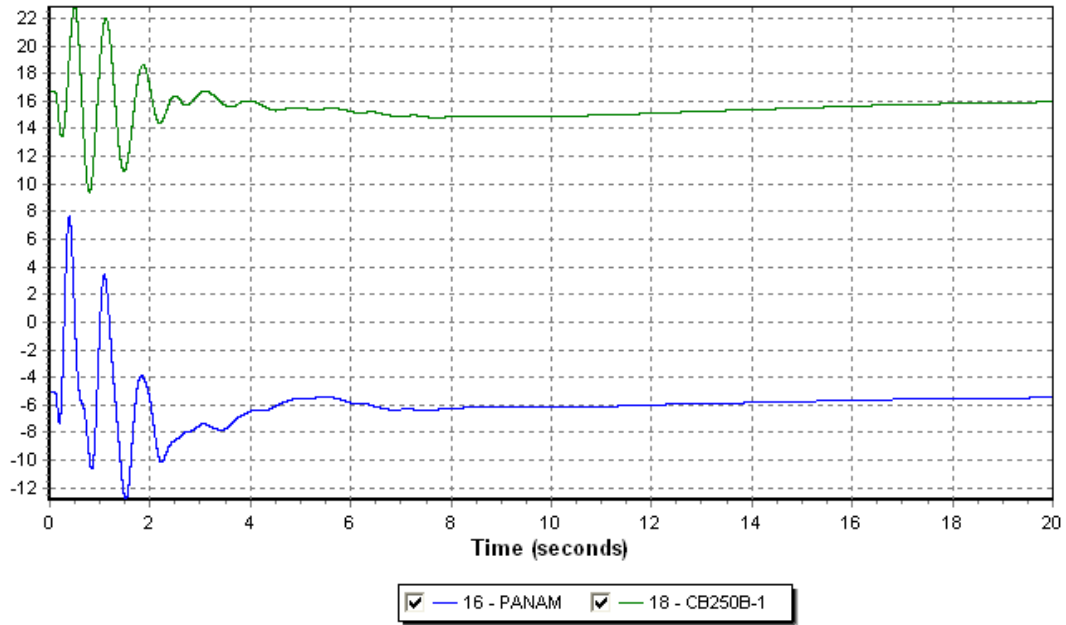
**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Falla y Apertura de un Circuito de Guasquitas - Veladero



**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Falla y Apertura de un Circuito de Guasquitas - Veladero

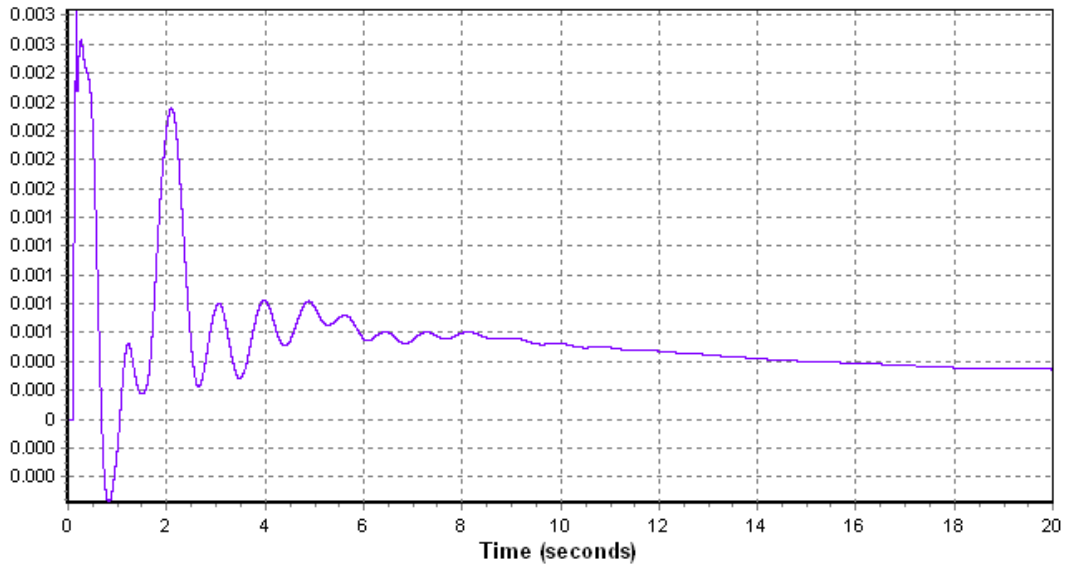


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Falla y Apertura de la líneas Llano Sánchez – Panamá II

PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX IIV

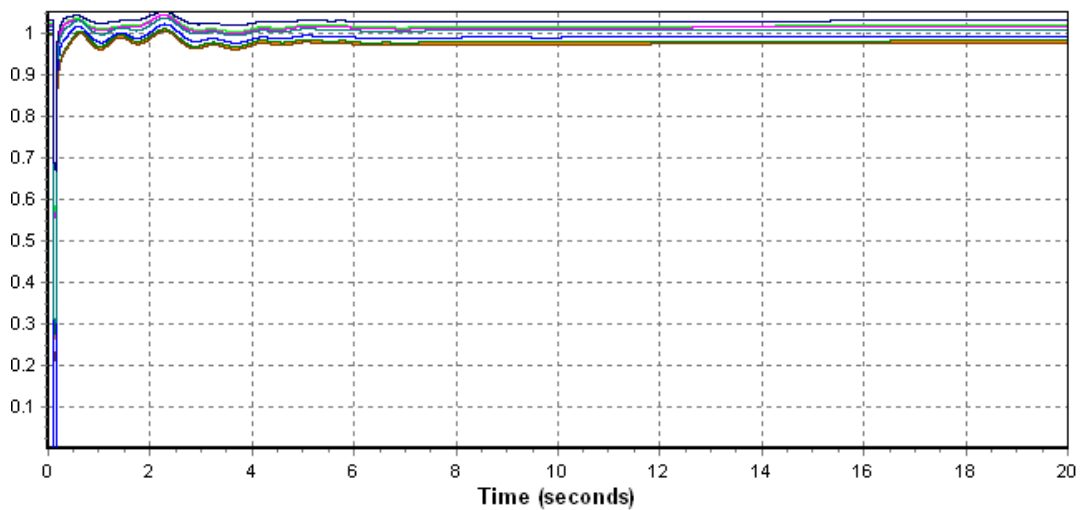
Frecuencia - Fala y Apertura de un Circuito de Llano sanchez - Panama II



1 - PAN 115 KV

PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX IIV

Voltajes 230 KV - Fala y Apertura de un Circuito de Llano Sanchez - Panama II



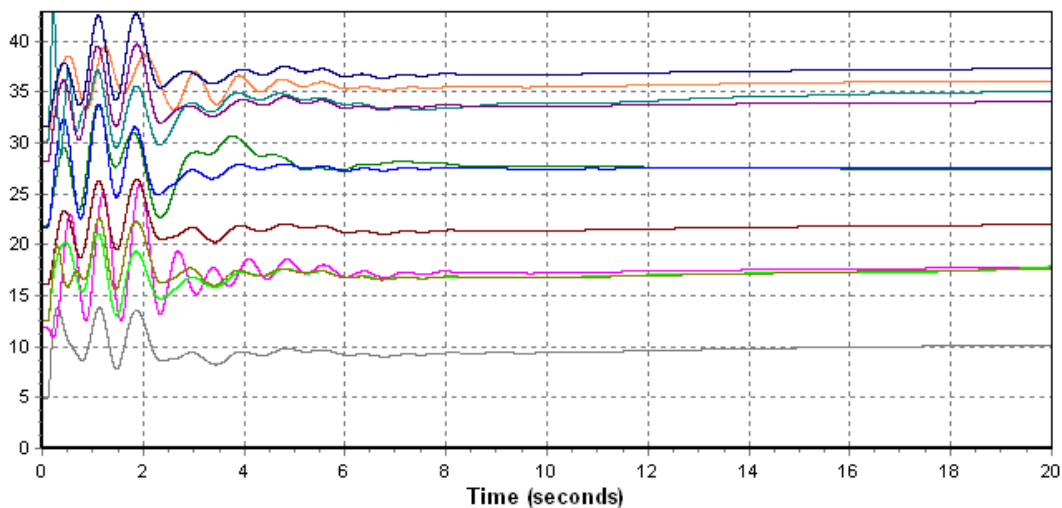
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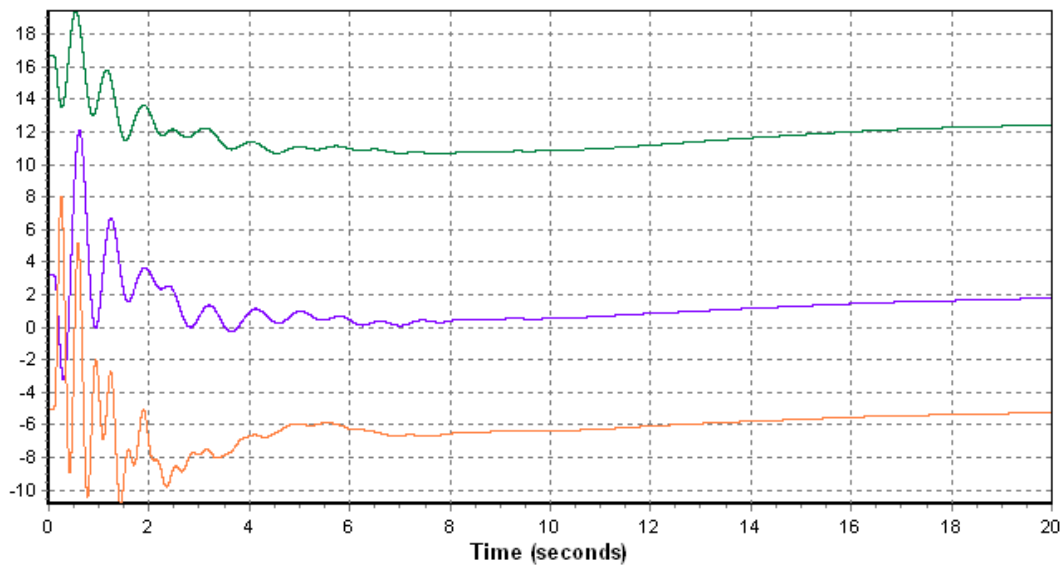
**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Falla y Apertura de un Circuito de Llano Sanchez - Panama II



**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Falla y Apertura de un Circuito de Llano Sanchez - Panama II

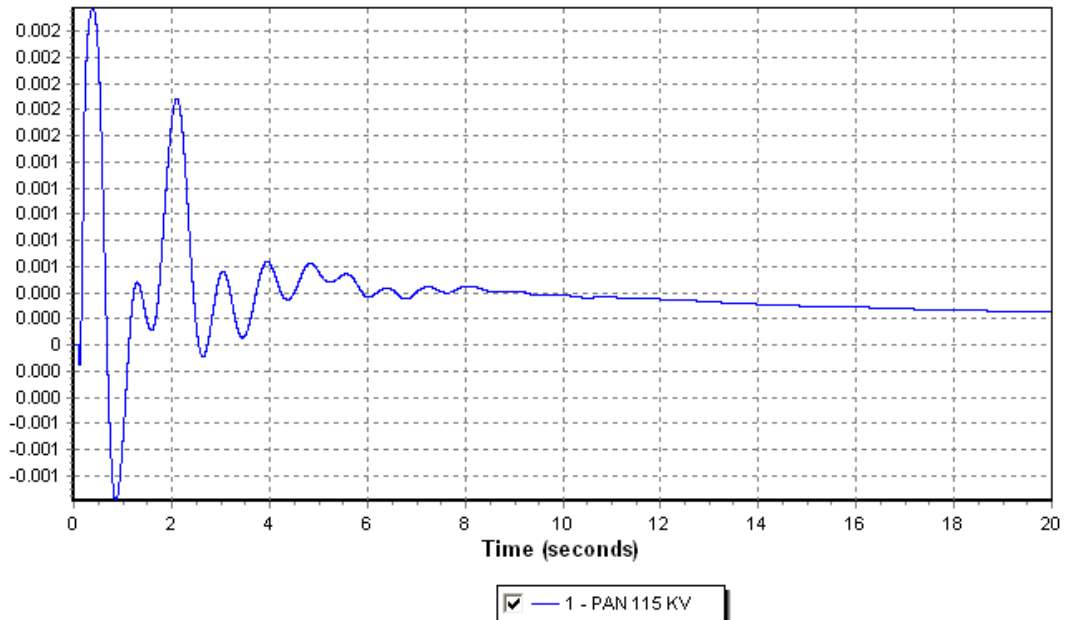


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Falla y Apertura de la línea Veladero – Llano Sánchez

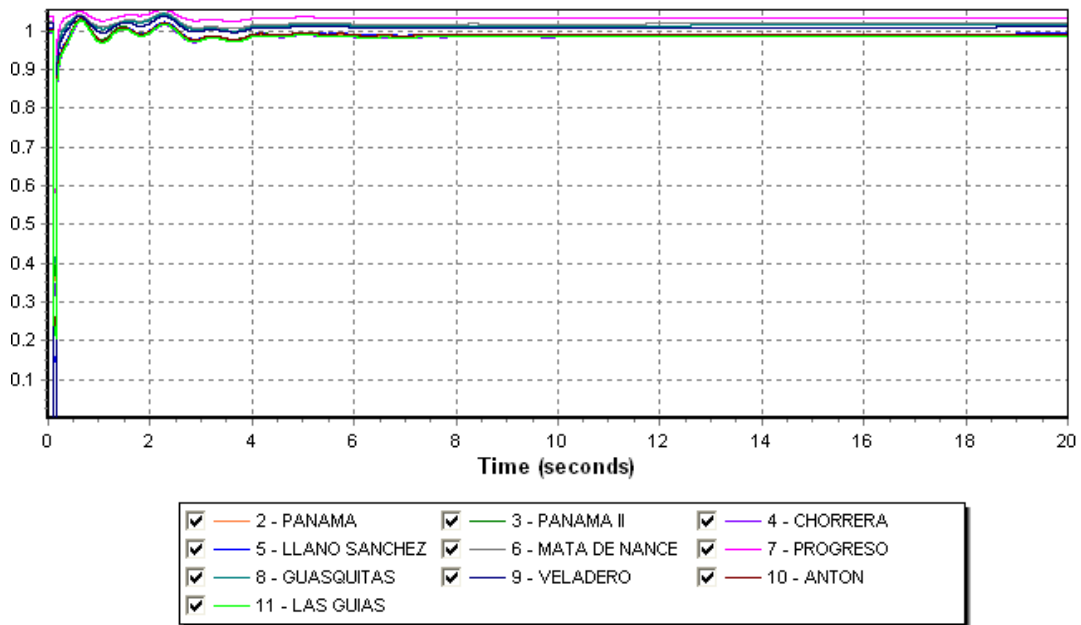
PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX IIV

Frecuencias - Falla y Apertura de un Circuito de Veladero - Llano Sanchez



PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
 AÑO 2021 ESC MOD DEM MAX IIV

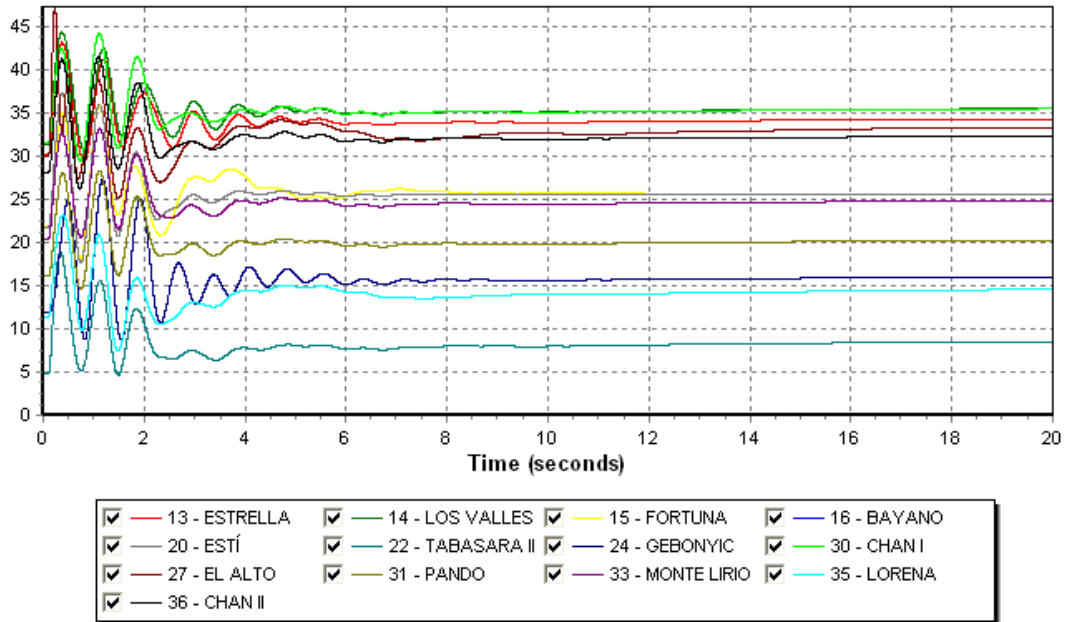
Voltajes 230 KV - Falla y Apertura de un Circuito de Veladero - Llano Sanchez



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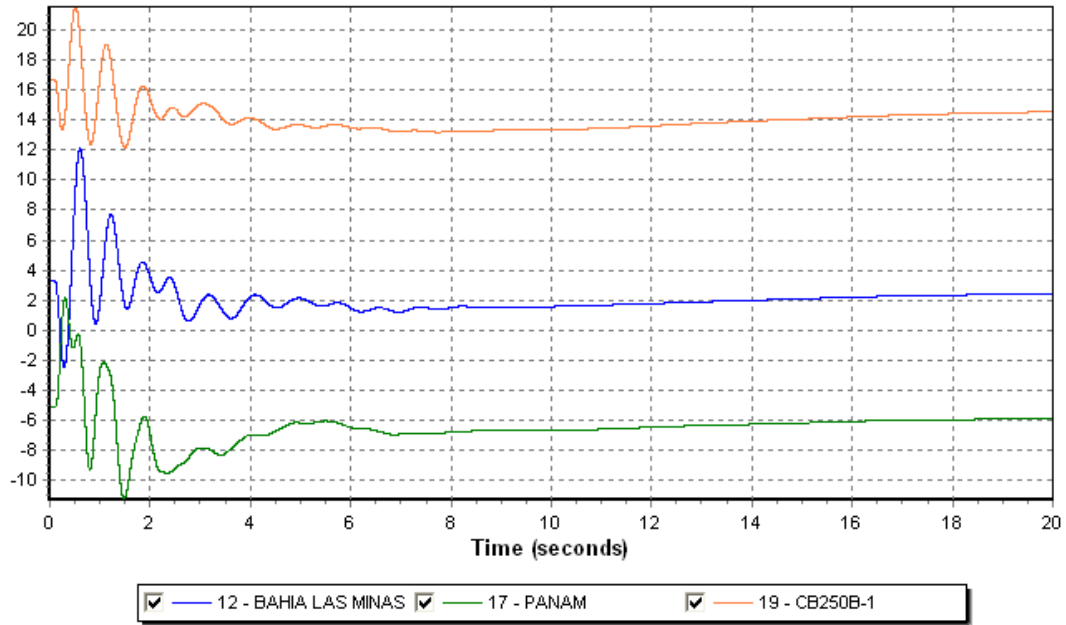
**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Falla y Apertura de un Circuito de Veladero - Llano Sanchez



**PLAN DE EXPANSION DEL SIN - C.A. JUNIO 2009
AÑO 2021 ESC MOD DEM MAX IIV**

Angulo de Unidades - Falla y Apertura de un Circuito de Veladero - Llano Sanchez



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RESULTADOS DE CORTOCIRCUITO

INDICE GENERAL

Año 2012

Año 2015

Año 2021



de

Año 2012
Análisis de Cortocircuito

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, NOV 27 2009 8:10
 PLAN. EXP-SIN - C.A. JUNIO 2009 SHORT CIRCUIT
 Año 2012 ESC MOD DEM MAX INV FAULT CURRENTS
 OUTPUT FOR AREA 6 [PANAMA]

X-----	BUS	-----X	THREE PHASE FAULT		ONE PHASE FAULT		
			/I+/ AN(I+)	/IA/ AN(IA)			
1	[PAN230	230.00]	AMPS	6434.1	-71.47	4739.7	-78.53
2	[PAN115	115.00]	AMPS	12008.1	-72.48	8601.8	-79.88
3	[PANII230	230.00]	AMPS	6367.5	-71.98	5420.4	-78.45
4	[PANIII115	115.00]	AMPS	9653.4	-77.10	3501.1	-81.40
5	[CHO230	230.00]	AMPS	5174.2	-72.09	4605.3	-78.37
6	[CHO115	115.00]	AMPS	3034.3	-87.24	0.0	0.00
8	[LSA230	230.00]	AMPS	6327.4	-65.09	4291.2	-67.59
9	[LSA115	115.00]	AMPS	6734.2	-71.95	3845.2	-76.67
11	[M.N230	230.00]	AMPS	9434.4	-54.09	6192.1	-50.55
12	[M.N115	115.00]	AMPS	6327.4	-52.80	3739.9	-42.24
14	[PRO230	230.00]	AMPS	6320.5	-53.85	4112.7	-54.11
15	[PRO115	115.00]	AMPS	3310.2	-60.13	0.0	0.00
18	[CAC115	115.00]	AMPS	11888.5	-72.70	8668.8	-79.99
19	[C.V115	115.00]	AMPS	8595.2	-76.70	3882.0	-81.92
20	[CH.AZUL	115.00]	AMPS	1962.2	-56.28	0.0	0.00
21	[C.BAN115	115.00]	AMPS	10492.2	-73.26	6216.6	-79.13
23	[CH115	115.00]	AMPS	6146.8	-79.85	4113.9	-83.36
26	[LOC115	115.00]	AMPS	10792.8	-72.90	6984.4	-78.48
30	[MAR115	115.00]	AMPS	9625.7	-73.80	6028.2	-79.72
33	[STM115	115.00]	AMPS	10776.8	-73.31	7465.9	-80.14
37	[SAN115	115.00]	AMPS	9990.9	-73.98	5416.8	-80.13
48	[TINAJ115	115.00]	AMPS	9159.2	-75.56	5531.8	-81.58
50	[M.O115	115.00]	AMPS	9731.5	-74.91	6098.6	-81.34
52	[TOC115	115.00]	AMPS	7620.6	-78.82	2812.5	-81.82
54	[LM1115	115.00]	AMPS	9625.4	-80.67	11736.7	-83.80
55	[LM2115	115.00]	AMPS	9591.0	-80.62	11710.7	-83.77
61	[FFIELD	115.00]	AMPS	7539.4	-81.74	7927.2	-79.91
85	[PTP230	230.00]	AMPS	4957.0	-52.83	0.0	0.00
87	[CAL115	115.00]	AMPS	6346.1	-49.94	8265.7	-49.04
88	[EST115	115.00]	AMPS	5551.7	-48.47	7684.4	-48.56
92	[L.V115	115.00]	AMPS	6043.2	-49.35	8327.4	-49.39
96	[FOR230	230.00]	AMPS	10229.4	-54.10	10646.4	-52.88
100	[BAY230	230.00]	AMPS	4826.9	-78.16	5373.3	-81.46
103	[COPESA23	230.00]	AMPS	5458.2	-74.23	5170.9	-79.63
105	[PAN-AM23	230.00]	AMPS	5134.0	-72.21	4586.3	-78.47
109	[STA RITA115	115.00]	AMPS	9895.8	-80.61	9146.3	-82.37
115	[PACORA23	230.00]	AMPS	5017.1	-75.34	4825.8	-80.12
144	[CANJ230	230.00]	AMPS	8510.2	-54.92	7711.5	-54.03
145	[BJOMIN230	230.00]	AMPS	5079.3	-53.49	3921.4	-55.12
146	[GUALACA230	230.00]	AMPS	8140.4	-48.15	7723.8	-49.10
147	[GUASQ230	230.00]	AMPS	9017.3	-54.96	8387.5	-54.28
148	[VELADERO 230	230.00]	AMPS	8035.4	-58.84	5302.6	-58.19
149	[BBLANCO	230.00]	AMPS	6726.7	-59.43	0.0	0.00
154	[CEMPAN15	115.00]	AMPS	6131.4	-81.32	6113.1	-85.16
190	[CHANG230	230.00]	AMPS	5672.1	-51.36	3479.9	-50.71
191	[CHANG115	115.00]	AMPS	3510.8	-55.91	3961.4	-55.89
306	[CHAN1 230	230.00]	AMPS	5702.1	-50.65	6158.9	-47.43
310	[CONCEPCION230	230.00]	AMPS	7482.3	-54.04	3839.9	-50.90
311	[PANDO230	230.00]	AMPS	5730.3	-53.53	0.0	0.00
341	[PRUDENCIA230	230.00]	AMPS	6124.9	-35.19	5844.4	-35.53
345	[LORENA230	230.00]	AMPS	7034.1	-41.00	6677.5	-41.34
511	[LGUIAS230	230.00]	AMPS	4852.3	-69.16	3863.6	-73.26
522	[TCATIVÁ 115	115.00]	AMPS	9607.8	-80.64	11738.6	-83.83
529	[TCOLON 115	115.00]	AMPS	8108.0	-83.56	0.0	0.00
540	[ANTON 230	230.00]	AMPS	3942.6	-73.61	2514.1	-73.53
606	[PAN230	230.00]	AMPS	1051.1	-91.69	0.0	0.00
6000	[FRONTER	230.00]	AMPS	5947.0	-53.99	3677.4	-53.53

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E FRI, NOV 27 2009 8:10
 PLAN. EXP-SIN - C.A. JUNIO 2009 SHORT CIRCUIT
 Año 2012 ESC MOD DEM MAX INV FAULT CURRENTS
 OUTPUT FOR AREA 7 [ACANAL]

X-----	BUS	-----X	THREE PHASE FAULT		ONE PHASE FAULT		
			/I+/ AN(I+)	/IA/ AN(IA)			
123	[MIR115	115.00]	AMPS	7657.5	-79.33	6947.7	-84.53



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X-----	BUS	-----X	/I+/ 7979.8	AN(I+) -79.40	/IA/ 7109.3	AN(IA) -84.95
123	[MIR115	115.00] AMPS				

Año 2021 Análisis de Corto Circuito

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:13
 PLAN EXP-SIN - C.A. JUNIO 2009 SHORT CIRCUIT
 AÑO 2021 ESC MOD DEM MAX INV FAULT CURRENTS
 OUTPUT FOR AREA 6 [PANAMA]

X-----	BUS	-----X	THREE PHASE FAULT		ONE PHASE FAULT	
			/I+/ 7946.7	AN(I+) -73.59	/IA/ 6330.8	AN(IA) -80.63
1	[PAN230	230.00] AMPS	14265.0	-74.91	9310.0	-83.16
2	[PAN115	115.00] AMPS	7886.3	-74.21	6679.7	-80.77
3	[PANII230	230.00] AMPS	11516.7	-79.93	2785.5	-83.73
4	[PANIII115	115.00] AMPS	6313.1	-74.96	5464.3	-80.95
5	[CHO230	230.00] AMPS	3260.7	-90.56	0.0	0.00
6	[CHO115	115.00] AMPS	8350.7	-68.24	4599.7	-70.29
8	[LSA230	230.00] AMPS	7864.0	-75.72	4022.7	-79.81
9	[LSA115	115.00] AMPS	10563.2	-61.18	6507.5	-57.82
11	[M.N230	230.00] AMPS	6446.5	-60.76	3765.8	-50.10
12	[M.N115	115.00] AMPS	6773.9	-60.29	4245.6	-60.61
14	[PRO230	230.00] AMPS	3383.6	-66.72	0.0	0.00
15	[PRO115	115.00] AMPS	14060.4	-75.15	9379.2	-83.24
18	[CAC115	115.00] AMPS	10953.1	-78.68	3619.4	-84.81
19	[C.V115	115.00] AMPS	1992.6	-62.80	0.0	0.00
20	[CH.AZUL	115.00] AMPS	12308.6	-75.88	6388.3	-82.27
21	[C.BAN115	115.00] AMPS	6664.5	-82.28	4278.3	-86.27
23	[CH115	115.00] AMPS	12681.8	-75.46	7331.0	-81.57
26	[LOC115	115.00] AMPS	11065.6	-76.57	6314.0	-82.99
30	[MAR115	115.00] AMPS	12575.2	-75.95	7999.9	-83.45
33	[STM115	115.00] AMPS	11701.7	-76.70	5418.3	-83.35
37	[SAN115	115.00] AMPS	10442.7	-78.59	5828.8	-84.97
48	[TINAJ115	115.00] AMPS	11187.3	-77.84	6457.5	-84.73
50	[M.O115	115.00] AMPS	8739.2	-81.63	2329.8	-84.16
52	[TOC115	115.00] AMPS	12391.7	-79.86	14504.6	-84.17
54	[LM1115	115.00] AMPS	12280.9	-79.84	14409.5	-84.13
55	[LM2115	115.00] AMPS	9125.8	-82.08	9066.1	-80.59
61	[FFIELD	115.00] AMPS	5707.2	-58.75	0.0	0.00
85	[PTP230	230.00] AMPS	6428.5	-57.93	8354.0	-57.01
87	[CAL115	115.00] AMPS	5594.9	-56.45	7736.1	-56.54
88	[EST115	115.00] AMPS	6113.1	-57.34	8412.8	-57.39
92	[L.V115	115.00] AMPS	11785.5	-61.62	11871.0	-60.69
96	[FOR230	230.00] AMPS	5311.0	-80.21	5778.5	-83.63
100	[BAY230	230.00] AMPS	6481.5	-76.82	6021.8	-82.20
103	[COPESA23	230.00] AMPS	6260.4	-75.10	5435.2	-81.07
105	[PAN-AM23	230.00] AMPS	11997.9	-80.24	10859.1	-82.99
109	[STA RITA115	115.00] AMPS	5823.0	-77.97	5467.3	-82.73
115	[PACORA23	230.00] AMPS	10355.1	-62.40	9255.8	-61.53
144	[CANJ230	230.00] AMPS	5347.2	-60.05	4034.7	-61.76
145	[BJOMIN230	230.00] AMPS	9705.7	-53.95	9176.3	-55.12
146	[GUALACA230	230.00] AMPS	11126.1	-62.35	10275.6	-61.75
147	[GUASQ230	230.00] AMPS	9531.0	-65.53	5709.9	-64.96
148	[VELADERO 230	230.00] AMPS	7727.3	-66.06	0.0	0.00
149	[BBLANCO	230.00] AMPS	6803.2	-83.04	6562.5	-87.45
154	[CEMPAN15	115.00] AMPS	6637.9	-65.96	4483.4	-65.21
155	[TABASARAI	230.00] AMPS	6853.8	-55.64	3767.1	-54.44
190	[CHANG230	230.00] AMPS	3827.7	-59.43	4242.7	-59.37
191	[CHANG115	115.00] AMPS	6467.6	-55.30	6739.0	-51.62
306	[CHAN1 230	230.00] AMPS	8452.9	-61.01	4005.0	-57.65
310	[CONCEPCION23	230.00] AMPS	6657.2	-60.71	0.0	0.00
311	[PANDO230	230.00] AMPS	6401.3	-80.22	5180.7	-83.91
325	[STA RITA230	230.00] AMPS	6831.0	-39.88	6525.4	-40.41
341	[PRUDENCIA230	230.00] AMPS	8056.2	-45.89	7644.1	-46.45
345	[LORENA230	230.00] AMPS	6375.9	-55.68	0.0	0.00
506	[CHAN2 230	230.00] AMPS	5868.4	-72.24	4302.7	-76.21
511	[LGUIAS230	230.00] AMPS	12335.2	-79.84	14478.7	-84.19
522	[TCATIVÁ 115	115.00] AMPS	8169.6	-83.43	0.0	0.00
529	[TCOLON 115	115.00] AMPS	6126.4	-74.60	3208.3	-75.71
540	[ANTON 230	230.00] AMPS	6313.5	-60.23	3777.3	-59.80
6000	[FRONTER	230.00] AMPS				

PTI INTERACTIVE POWER SYSTEM SIMULATOR--PSS(R)E THU, NOV 26 2009 16:13
 PLAN EXP-SIN - C.A. JUNIO 2009 SHORT CIRCUIT
 AÑO 2021 ESC MOD DEM MAX INV FAULT CURRENTS



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OUTPUT FOR AREA 7 [ACANAL]

X-----	BUS	-----X	THREE PHASE FAULT		ONE PHASE FAULT		
			/I+/	AN(I+)	/IA/	AN(IA)	
123	[MIR115	115.00]	AMPS	8335.4	-82.49	7309.3	-87.93



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