



**ANEXO III-8  
RESULTADOS DE CORTOCIRCUITO  
ALTERNATIVA CON CENTROAMÉRICA Y COLOMBIA**



## ÍNDICE GENERAL

1. **Instructivo de Interpretación a las Salidas del PSS/E**
2. **Cortocircuito Año 2015**
3. **Cortocircuito Año 2017**
4. **Cortocircuito Año 2020**

## Instructivo de Interpretación a las Salidas del PSS/E

PSS/E ASOC SHORT CIRCUIT CURRENTS		WED, APR 13 2011 10:16	
SISTEMA INTERCONECTADO NACIONAL			
EPOCA LLUVIOSA DEL AÑO 2011 - DEMANDA MÁXIMA			
OUTPUT FOR AREA 6 [PANAMA ]			
<-SCMVA-> <-Sym I''k rms-->			
X----- BUS -----X			
6000 [FRONTIER 230.00]	3PH	MVA	/I/
	LG	1814.79	AMP
		1665.87	4181.7
			AN(I)
			DEG
			-69.13
			-71.10
THEVENIN IMPEDANCE, X/R (OHM)		Z+:/30.127/79.478, 5.38416	Z-:/29.332/80.481, 5.96349
			Z0:/39.055/83.698, 9.05445

1. Título o identificador del caso en estudio. Muestra la época (lluviosa o seca), el año en estudio y la demanda modelada.
2. Número de bus en el análisis de cortocircuito.
3. Nombre del bus correspondiente al número identificado en (2).
4. Tipo de falla simulada. La superior corresponde a una falla trifásica y la inferior es monofásica (línea a tierra).
5. Potencia de cortocircuito en MVA. (Trifásica superior y monofásica inferior).
6. Corriente de cortocircuito (valor sub-transitorio en rms) en Amperios.
7. Ángulo correspondiente a la corriente de cortocircuito (sólo en coordenadas polares).
8. Impedancia de Thevenin de secuencia positiva en Ohms (Coordenadas polares: Primer valor numérico es el módulo y el segundo es el ángulo).
9. Relación X/R correspondiente a la impedancia de secuencia positiva.



10. Impedancia de Thevenin de secuencia negativa en Ohms (Coordenadas polares: Primer valor numérico es el módulo y el segundo es el ángulo).
11. Relación X/R correspondiente a la impedancia de secuencia negativa.
12. Impedancia de Thevenin de secuencia cero en Ohms (Coordenadas polares: Primer valor numérico es el módulo y el segundo es el ángulo).
13. Relación X/R correspondiente a la impedancia de secuencia cero.





THEVENIN IMPEDANCE, X/R (OHM) Z+:/19.985/73.219, 3.31605 Z-:/19.654/76.010, 4.01379 Z0:/31.132/77.523, 4.51918

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6011 [MDN230      230.00] 3PH  3787.54  9507.6  -55.52  
   LG      3141.41  7885.6  -53.54  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/14.053/81.590, 6.76414 Z-:/13.797/82.774, 7.88750 Z0:/23.044/76.513, 4.16961

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6014 [PRO230      230.00] 3PH  3124.14  7842.3  -54.56  
   LG      3476.06  8725.7  -54.56  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/17.185/82.878, 8.00382 Z-:/16.934/83.444, 8.70078 Z0:/12.218/82.126, 7.23109

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6096 [FOR230      230.00] 3PH  3733.52  9371.9  -55.68  
   LG      4095.63  10280.9  -55.10  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/14.271/82.489, 7.58398 Z-:/14.108/83.293, 8.50408 Z0:/10.664/79.301, 5.29278

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6100 [BAY230      230.00] 3PH  1550.97  3893.3  -77.65  
   LG      1888.04  4739.4  -82.01  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/35.012/72.041, 3.08528 Z-:/33.386/75.147, 3.77077 Z0:/18.314/87.105, 19.77398

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6103 [COP230      230.00] 3PH  1809.92  4543.3  -74.45  
   LG      2054.72  5157.8  -79.47  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/29.684/66.797, 2.33283 Z-:/28.655/70.779, 2.86830 Z0:/20.461/80.601, 6.04107

-----  
 <-SCMVA-> <-Sym I''k rms-->



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```

X----- BUS -----X
 6105 [PAM230      230.00] 3PH
                               LG
MVA      /I/      AN(I)
1879.86  AMP      DEG
2071.79  4718.8   -71.39
5200.6   4718.8   -78.60
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/27.794/64.731, 2.11853  Z-:/26.853/70.663, 2.84959  Z0:/21.626/82.826, 7.94430

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
 6171 [PAC230      230.00] 3PH
                               LG
MVA      /I/      AN(I)
1673.93  AMP      DEG
1860.26  4201.9   -75.46
4669.6   4201.9   -80.34
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/32.119/67.973, 2.47179  Z-:/31.040/71.605, 3.00690  Z0:/23.915/81.033, 6.33733

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
 6178 [EST230      230.00] 3PH
                               LG
MVA      /I/      AN(I)
3455.71  AMP      DEG
3427.39  8674.6   -56.44
8603.5   8674.6   -56.38
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/15.355/82.766, 7.87790  Z-:/15.230/83.470, 8.73562  Z0:/15.864/81.911, 7.03592

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
 6179 [GUA230      230.00] 3PH
                               LG
MVA      /I/      AN(I)
3667.57  AMP      DEG
3597.58  9206.4   -56.48
9030.7   9206.4   -56.01
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/14.471/82.682, 7.78731  Z-:/14.344/83.435, 8.68895  Z0:/15.451/80.632, 6.06126

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
 6182 [VEL230      230.00] 3PH
                               LG
MVA      /I/      AN(I)
3441.88  AMP      DEG
2001.10  8639.9   -59.95
5023.2   8639.9   -48.61
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/15.432/79.037, 5.16221  Z-:/15.254/80.515, 5.98536  Z0:/50.036/60.330, 1.75534

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
 6240 [LGU 230      230.00] 3PH
                               LG
MVA      /I/      AN(I)
1963.18  AMP      DEG
1700.87  4928.0   -68.78
4269.6   4928.0   -73.27

```



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THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.656/70.315, 2.79520 Z-:/26.190/73.841, 3.45128 Z0:/39.622/78.461, 4.89789

<-SCMVA-> <-Sym I''k rms-->  
/I/ AN(I)

X----- BUS -----X MVA AMP DEG  
6260 [CHA 230 230.00] 3PH 2284.58 5734.8 -53.80  
LG 2008.12 5040.8 -51.42

THEVENIN IMPEDANCE, X/R (OHM) Z+:/23.509/82.363, 7.45819 Z-:/23.410/82.523, 7.61953 Z0:/33.421/76.537, 4.17724

<-SCMVA-> <-Sym I''k rms-->  
/I/ AN(I)

X----- BUS -----X MVA AMP DEG  
6263 [ESP230 230.00] 3PH 2304.53 5784.9 -52.70  
LG 2471.08 6203.0 -49.17

THEVENIN IMPEDANCE, X/R (OHM) Z+:/23.328/83.297, 8.50926 Z-:/23.245/83.460, 8.72309 Z0:/19.013/70.907, 2.88895

<-SCMVA-> <-Sym I''k rms-->  
/I/ AN(I)

X----- BUS -----X MVA AMP DEG  
6330 [BAI230 230.00] 3PH 2528.75 6347.7 -53.74  
LG 2856.62 7170.7 -54.48

THEVENIN IMPEDANCE, X/R (OHM) Z+:/21.213/82.953, 8.08909 Z-:/20.985/83.354, 8.58179 Z0:/14.145/85.309, 12.18592

<-SCMVA-> <-Sym I''k rms-->  
/I/ AN(I)

X----- BUS -----X MVA AMP DEG  
6340 [CAN 230 230.00] 3PH 1990.07 4995.5 -54.72  
LG 1832.35 4599.6 -48.91

THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.807/81.476, 6.67170 Z-:/26.696/81.772, 6.91550 Z0:/34.576/66.438, 2.29301

<-SCMVA-> <-Sym I''k rms-->  
/I/ AN(I)

X----- BUS -----X MVA AMP DEG  
6360 [GLA230 230.00] 3PH 3367.82 8454.0 -50.93  
LG 3102.94 7789.1 -51.90

THEVENIN IMPEDANCE, X/R (OHM) Z+:/15.830/77.456, 4.49436 Z-:/15.680/78.028, 4.71605 Z0:/20.038/79.493, 5.39203

<-SCMVA-> <-Sym I''k rms-->  
/I/ AN(I)

X----- BUS -----X MVA AMP DEG





6363 [ZAM230 230.00] 3PH 2945.97 7395.0 -44.46  
 LG 2581.87 6481.1 -47.63  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/18.182/71.309, 2.95588 Z-:/18.014/71.695, 3.02276 Z0:/26.158/78.592, 4.95592

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6366 [EVA230 230.00] 3PH 2569.81 6450.8 -38.55  
 LG 2215.74 5562.0 -44.02  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/20.899/65.571, 2.20153 Z-:/20.720/65.843, 2.22953 Z0:/31.515/78.093, 4.74256

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6380 [BOQIII 230 230.00] 3PH 3106.24 7797.4 -54.35  
 LG 2484.49 6236.6 -51.97  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/17.212/82.261, 7.35878 Z-:/17.003/82.876, 8.00150 Z0:/30.423/76.851, 4.28056

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6400 [FRONTCHA 230.00] 3PH 2038.27 5116.5 -54.18  
 LG 1519.31 3813.8 -50.90  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.361/81.895, 7.02232 Z-:/26.244/82.021, 7.13417 Z0:/53.668/75.334, 3.82109

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6430 [ANTON230 230.00] 3PH 1695.46 4256.0 -74.71  
 LG 2117.76 5316.0 -76.21  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/31.653/75.556, 3.88244 Z-:/31.253/78.076, 4.73530 Z0:/13.135/78.254, 4.80932

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6500 [FRONTDOM 230.00] 3PH 2436.84 6117.0 -57.67  
 LG 2688.88 6749.7 -56.95  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/22.234/82.170, 7.27210 Z-:/22.172/82.387, 7.48158 Z0:/16.062/79.179, 5.23179



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```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6590 [24DIC230   230.00] 3PH   1825.26  4581.8  -74.22
                               LG    2029.83  5095.3  -79.22
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/29.401/66.420, 2.29112  Z-:/28.379/70.439, 2.81434  Z0:/21.864/79.441, 5.36488

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6680 [BFRI0230   230.00] 3PH   2770.87  6955.5  -46.59
                               LG    2878.81  7226.5  -48.30
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/19.427/75.080, 3.75302  Z-:/19.156/75.448, 3.85240  Z0:/17.557/80.155, 5.76265

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6690 [DOM230     230.00] 3PH   2377.82  5968.8  -57.88
                               LG    2964.56  7441.7  -57.95
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/22.804/82.401, 7.49584  Z-:/22.741/82.620, 7.72060  Z0:/9.327/82.307, 7.40287

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6691 [ALTO230    230.00] 3PH   2163.87  5431.8  -51.59
                               LG    2775.70  6967.6  -53.07
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/25.099/76.121, 4.04716  Z-:/25.027/76.299, 4.10195  Z0:/8.675/85.670, 13.20812

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6695 [PANDO230   230.00] 3PH   1792.77  4500.2  -57.87
                               LG    2339.80  5873.4  -58.30
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/30.263/82.678, 7.78268  Z-:/30.203/82.834, 7.95397  Z0:/9.106/85.502, 12.71262

```

```

-----
<-SCMVA-> <-Sym I''k rms-->

```



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```

X----- BUS -----X
6698 [MLIRIO230 230.00] 3PH 1953.43 4903.5 -57.88
                               LG 2624.18 6587.3 -58.38
THEVENIN IMPEDANCE, X/R (OHM) Z+:/27.769/82.593, 7.69251 Z-:/27.708/82.767, 7.87874 Z0:/6.550/86.594, 16.80437

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                               /I/ AN(I)
X----- BUS -----X
6760 [SBA230 230.00] 3PH 2076.90 5213.5 -64.32
                               LG 1048.80 2632.7 -57.78
THEVENIN IMPEDANCE, X/R (OHM) Z+:/25.552/79.945, 5.63977 Z-:/25.375/81.164, 6.43249 Z0:/101.470/69.815, 2.72016

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                               /I/ AN(I)
X----- BUS -----X
6790 [SMA230 230.00] 3PH 2389.42 5998.0 -60.76
                               LG 1999.80 5019.9 -65.29
THEVENIN IMPEDANCE, X/R (OHM) Z+:/22.167/68.634, 2.55616 Z-:/21.740/71.015, 2.90666 Z0:/35.728/77.285, 4.43182

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                               /I/ AN(I)
X----- BUS -----X
6840 [BUR230 230.00] 3PH 2408.50 6045.9 -54.43
                               LG 3090.63 7758.1 -55.37
THEVENIN IMPEDANCE, X/R (OHM) Z+:/22.341/82.928, 8.06080 Z-:/22.098/83.344, 8.56939 Z0:/7.816/88.031, 29.08999

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                               /I/ AN(I)
X----- BUS -----X
6860 [BBL230 230.00] 3PH 2782.61 6985.0 -60.45
                               LG 1699.31 4265.6 -51.69
THEVENIN IMPEDANCE, X/R (OHM) Z+:/19.093/78.725, 5.01589 Z-:/18.911/79.997, 5.66940 Z0:/56.643/63.677, 2.02126

```



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PSS@E ASCC SHORT CIRCUIT CURRENTS

THU, MAY 19 2011 14:49

PLAN DE EXPANSIÓN DEL SISTEMA INTERCONECTADO NACIONAL  
 INTERCONEXIÓN COL-PAN - DEMANDA MÁXIMA - ÉPOCA HÚMEDA 2015

OUTPUT FOR AREA 7 [ACANAL ]

```

<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6002 [PAN115      115.00] 3PH   1978.28  9931.8  -71.60
                               LG    2384.29 11970.2 -78.64
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/6.803/59.448, 1.69417  Z-:/6.577/63.972, 2.04780  Z0:/3.782/83.777, 9.17036
  
```

```

<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6004 [PANII115    115.00] 3PH   1657.09  8319.3  -76.40
                               LG    1470.00 7380.1  -85.11
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/8.142/65.115, 2.15581  Z-:/7.933/68.936, 2.59640  Z0:/11.739/83.176, 8.35648
  
```

```

<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6006 [CHO115      115.00] 3PH   1247.37  6262.3  -78.67
                               LG    1044.31 5242.9  -89.94
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/10.324/69.265, 2.64152  Z-:/9.783/77.961, 4.68886  Z0:/17.273/88.715, 44.59631
  
```

```

<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6009 [LSA115      115.00] 3PH   1402.95  7043.4  -71.99
                               LG    943.09  4734.7  -78.20
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/9.590/76.986, 4.32664  Z-:/9.424/78.893, 5.09360  Z0:/23.931/87.370, 21.77127
  
```

```

<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6012 [MDN115      115.00] 3PH   1978.21  9931.5  -56.28
                               LG    1641.18 8239.4  -57.65
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/6.775/84.607, 10.59317  Z-:/6.385/86.962, 18.84307  Z0:/11.342/86.240, 15.21673
  
```



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```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6015 [PRO115      115.00] 3PH   1148.61  5766.5  -58.74
              LG          1258.51  6318.3  -59.67
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/11.630/86.786, 17.81016  Z-:/11.121/87.775, 25.73759  Z0:/9.095/88.823, 48.68116

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6018 [CAC115      115.00] 3PH   1961.67  9848.4  -71.81
              LG          2358.30  11839.7 -78.58
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/6.858/59.574, 1.70266  Z-:/6.635/64.038, 2.05379  Z0:/3.829/82.654, 7.75725

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6019 [CVI115A     115.00] 3PH   1495.01  7505.6  -76.29
              LG          1418.85  7123.3  -84.38
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/8.963/63.562, 2.01116  Z-:/8.772/67.014, 2.35741  Z0:/10.896/82.086, 7.19342

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6024 [CHI115      115.00] 3PH   1104.49  5545.0  -80.22
              LG          846.34  4249.0  -85.57
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/12.046/66.244, 2.27204  Z-:/11.845/68.785, 2.57616  Z0:/23.400/75.769, 3.94310

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6027 [LOC115A     115.00] 3PH   1817.72  9125.8  -72.14
              LG          2123.36  10660.2 -79.52
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/7.355/58.714, 1.64564  Z-:/7.146/62.867, 1.95136  Z0:/4.660/82.909, 8.03854

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)

```





THEVENIN IMPEDANCE, X/R (OHM) Z+:/9.933/66.881, 2.34235 Z-:/9.745/70.033, 2.75234 Z0:/16.801/82.111, 7.21670

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6059 [LM1115      115.00] 3PH  1555.54  7809.5  -80.26
                                LG  1915.38  9616.0  -85.51
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.606/66.846, 2.33833 Z-:/8.277/70.376, 2.80462 Z0:/4.253/86.182, 14.98314

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6060 [LM2115      115.00] 3PH  1556.56  7814.6  -80.30
                                LG  1928.11  9679.9  -85.54
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.601/66.900, 2.34441 Z-:/8.271/70.426, 2.81234 Z0:/4.128/86.594, 16.79962

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6066 [FFIELD      115.00] 3PH  1265.29  6352.3  -81.56
                                LG  1140.01  5723.4  -86.29
THEVENIN IMPEDANCE, X/R (OHM) Z+:/10.562/67.432, 2.40617 Z-:/10.237/70.368, 2.80344 Z0:/14.459/76.894, 4.29521

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6074 [LMDIST      115.00] 3PH  1555.14  7807.5  -80.33
                                LG  1921.02  9644.4  -85.58
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.608/66.917, 2.34641 Z-:/8.278/70.448, 2.81585 Z0:/4.189/86.464, 16.18373

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6087 [CAL115      115.00] 3PH  1568.55  7874.8  -52.81
                                LG   697.02  3499.4  -44.73
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.561/85.375, 12.36073 Z-:/8.331/86.261, 15.30185 Z0:/41.168/73.808, 3.44376
-----

```



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```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6088 [LES115      115.00] 3PH    1304.31  6548.2  -51.58
                LG      574.57  2884.6  -44.04
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/10.320/84.640, 10.65732  Z-:/10.108/85.258, 12.05533  Z0:/50.120/73.914, 3.46779

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6092 [LVA115      115.00] 3PH    1465.19  7355.9  -52.28
                LG      648.69  3256.7  -44.43
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/9.165/85.057, 11.56178  Z-:/8.941/85.832, 13.72305  Z0:/44.258/73.846, 3.45240

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6170 [CPA115      115.00] 3PH    1083.55  5439.9  -82.02
                LG      1204.18  6045.5  -86.84
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/12.365/68.811, 2.57964  Z-:/12.111/71.304, 2.95507  Z0:/9.087/83.349, 8.57640

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6173 [STR115      115.00] 3PH    1537.90  7720.9  -79.93
                LG      1484.24  7451.5  -84.58
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/8.722/66.855, 2.33938  Z-:/8.433/70.340, 2.79903  Z0:/10.027/76.530, 4.17491

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6174 [PM115-1A    115.00] 3PH    1087.96  5462.1  -83.18
                LG      903.40  4535.5  -85.69
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/12.347/70.479, 2.82057  Z-:/12.152/73.032, 3.27734  Z0:/20.130/74.495, 3.60463

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG

```





6175 [PM115-2A 115.00] 3PH 1087.96 5462.1 -83.18  
 LG 903.40 4535.5 -85.69  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/12.347/70.479, 2.82057 Z-:/12.152/73.032, 3.27734 Z0:/20.130/74.495, 3.60463

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6210 [TIN115 115.00] 3PH 1588.48 7974.9 -74.90  
 LG 1560.62 7835.0 -84.08  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.441/62.192, 1.89606 Z-:/8.249/65.878, 2.23324 Z0:/9.476/84.401, 10.20141

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6211 [PM115-9 115.00] 3PH 1530.08 7681.7 -75.51  
 LG 0.00 0.0 0.00  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.769/62.824, 1.94783 Z-:/8.581/66.386, 2.28740 Z0:/0.13E+09/90.000, 9999.999

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6230 [CBA115 115.00] 3PH 1762.17 8846.9 -72.54  
 LG 1940.03 9739.8 -80.30  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/7.579/58.895, 1.65742 Z-:/7.374/62.926, 1.95639 Z0:/5.976/81.232, 6.48389

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6261 [CHA 115 115.00] 3PH 727.74 3653.6 -58.16  
 LG 854.76 4291.3 -58.18  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/18.314/87.109, 19.80396 Z-:/18.297/87.153, 20.10492 Z0:/10.166/87.109, 19.80034

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6270 [CAT 115 115.00] 3PH 1551.46 7789.0 -80.15  
 LG 1906.65 9572.2 -85.19  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.629/66.742, 2.32666 Z-:/8.298/70.254, 2.78591 Z0:/4.287/84.991, 11.40931



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```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
    6280 [GIR 115      115.00] 3PH      1003.92  5040.1  -82.68
                        LG      1158.04  5813.9  -87.41
THEVENIN IMPEDANCE, X/R (OHM) Z+:/13.346/69.474, 2.67088 Z-:/13.098/71.792, 3.04010 Z0:/8.485/85.410, 12.45589
-----

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
    6290 [CATII 11      115.00] 3PH      1522.85  7645.4  -80.47
                        LG      1899.71  9537.4  -86.21
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.793/67.096, 2.36684 Z-:/8.470/70.557, 2.83287 Z0:/4.117/90.000, 9999.999
-----

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
    6331 [BAI115      115.00] 3PH      677.81   3402.9  -55.14
                        LG      1.08     5.4   123.22
THEVENIN IMPEDANCE, X/R (OHM) Z+:/19.540/88.373, 35.20634 Z-:/19.499/88.467, 37.36795 Z0:/36727.398/-89.996, 9999.999
-----

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
    6332 [BAM115      115.00] 3PH      492.13   2470.7  -50.13
                        LG      1.09     5.5   126.16
THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.999/86.305, 15.48427 Z-:/26.965/86.354, 15.69300 Z0:/36727.398/-89.996, 9999.999
-----

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
    6350 [PM115-8      115.00] 3PH      1564.49  7854.4  -74.90
                        LG      1587.24  7968.6  -81.66
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.565/61.875, 1.87083 Z-:/8.375/65.489, 2.19316 Z0:/8.586/78.497, 4.91400
-----

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
    6550 [CHAZ115      115.00] 3PH      1138.65  5716.5  -58.65
                        LG      1511.10  7586.4  -59.51
THEVENIN IMPEDANCE, X/R (OHM) Z+:/11.732/86.701, 17.34849 Z-:/11.223/87.677, 24.64914 Z0:/3.571/90.000, 9999.999
-----

```





6003 [PANII230 230.00] 3PH 2584.46 6487.6 -71.61  
 LG 2995.03 7518.2 -76.80  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/20.673/64.844, 2.12935 Z-:/20.143/68.798, 2.57783 Z0:/12.997/80.248, 5.81856

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6005 [CHO230 230.00] 3PH 2169.76 5446.6 -71.14  
 LG 2287.13 5741.2 -78.37  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/23.938/65.444, 2.18858 Z-:/23.469/70.949, 2.89590 Z0:/21.252/82.768, 7.88041

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6008 [LSA230 230.00] 3PH 3010.64 7557.4 -64.02  
 LG 2514.76 6312.6 -67.37  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/17.747/72.695, 3.20963 Z-:/17.551/75.333, 3.82086 Z0:/28.500/78.568, 4.94517

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6011 [MDN230 230.00] 3PH 4001.31 10044.2 -49.11  
 LG 3268.24 8204.0 -47.24  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/13.220/81.693, 6.84884 Z-:/13.016/82.806, 7.92193 Z0:/22.371/77.000, 4.33152

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6014 [PRO230 230.00] 3PH 3299.32 8282.0 -46.90  
 LG 3618.36 9082.9 -46.84  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/16.299/83.070, 8.22729 Z-:/16.086/83.605, 8.92254 Z0:/12.203/82.138, 7.24149

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6096 [FOR230 230.00] 3PH 3947.89 9910.1 -48.93  
 LG 4286.81 10760.8 -47.98  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/13.412/82.667, 7.77035 Z-:/13.290/83.381, 8.61752 Z0:/10.378/78.349, 4.84952



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```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6100 [BAY230      230.00] 3PH   1764.48  4429.2  -77.71
                        LG      2081.00  5223.8  -81.90
THEVENIN IMPEDANCE, X/R (OHM) Z+:/30.795/72.992, 3.26921 Z-:/29.646/75.465, 3.85688 Z0:/18.260/87.078, 19.58847

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6103 [COP230      230.00] 3PH   2186.42  5488.4  -74.07
                        LG      2371.51  5953.0  -79.05
THEVENIN IMPEDANCE, X/R (OHM) Z+:/24.511/67.613, 2.42776 Z-:/23.944/70.915, 2.89031 Z0:/19.646/80.869, 6.22143

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6105 [PAM230      230.00] 3PH   2152.52  5403.3  -71.29
                        LG      2264.34  5684.0  -78.48
THEVENIN IMPEDANCE, X/R (OHM) Z+:/24.130/65.596, 2.20410 Z-:/23.666/71.060, 2.91409 Z0:/21.546/82.774, 7.88717

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6171 [PAC230      230.00] 3PH   1979.39  4968.7  -75.23
                        LG      2101.74  5275.8  -79.97
THEVENIN IMPEDANCE, X/R (OHM) Z+:/27.103/68.869, 2.58743 Z-:/26.484/71.820, 3.04508 Z0:/23.297/81.170, 6.43744

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6178 [EST230      230.00] 3PH   3661.00  9189.9  -49.98
                        LG      3613.12  9069.7  -49.69
THEVENIN IMPEDANCE, X/R (OHM) Z+:/14.401/83.024, 8.17263 Z-:/14.314/83.622, 8.94630 Z0:/15.066/81.592, 6.76563

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->

```



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```

X----- BUS -----X           /I/   AN(I)
      MVA   AMP   DEG
6179 [GUA230      230.00] 3PH   3903.09  9797.6  -50.04
      LG     3819.11  9586.8  -49.32
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/13.510/82.957, 8.09441  Z-:/13.421/83.600, 8.91451  Z0:/14.502/80.317, 5.86042

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      3826.39  9605.1  -55.72
6182 [VEL230      230.00] 3PH   2447.35  6143.4  -49.03
      LG
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/13.779/79.444, 5.36642  Z-:/13.671/80.742, 6.13477  Z0:/37.571/67.397, 2.40199

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      2146.00  5386.9  -68.17
6240 [LGU 230      230.00] 3PH   1797.50  4512.1  -72.54
      LG
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/24.464/70.634, 2.84499  Z-:/24.236/73.762, 3.43359  Z0:/39.072/78.495, 4.91273

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      2568.26  6446.9  -44.44
6260 [CHA 230      230.00] 3PH   2478.27  6221.0  -42.85
      LG
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/20.851/83.120, 8.28836  Z-:/20.784/83.236, 8.43150  Z0:/23.238/78.583, 4.95186

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      2460.95  6177.5  -43.56
6263 [ESP230      230.00] 3PH   2651.99  6657.1  -39.93
      LG
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/21.727/83.616, 8.93720  Z-:/21.670/83.738, 9.11311  Z0:/17.405/70.748, 2.86331

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      2631.34  6605.2  -46.00
6330 [BAI230      230.00] 3PH

```



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LG 2942.49 7386.3 -46.72  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/20.415/83.054, 8.20805 Z-:/20.220/83.428, 8.67952 Z0:/14.140/85.309, 12.18620

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6340 [CAN 230 230.00] 3PH 2124.74 5333.6 -46.81  
 LG 1989.32 4993.6 -41.30  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/24.957/81.804, 6.94332 Z-:/24.883/82.038, 7.15009 Z0:/30.757/67.165, 2.37481

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6360 [GLA230 230.00] 3PH 3552.84 8918.4 -43.91  
 LG 3257.34 8176.6 -44.88  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/14.917/77.102, 4.36675 Z-:/14.808/77.589, 4.54402 Z0:/19.091/79.198, 5.24097

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6363 [ZAM230 230.00] 3PH 3071.74 7710.7 -37.01  
 LG 2679.49 6726.1 -40.41  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/17.341/70.498, 2.82363 Z-:/17.216/70.826, 2.87582 Z0:/25.212/78.334, 4.84343

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6366 [EVA230 230.00] 3PH 2656.62 6668.7 -30.95  
 LG 2282.97 5730.7 -36.75  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/20.107/64.593, 2.10537 Z-:/19.972/64.825, 2.12752 Z0:/30.571/77.865, 4.65080

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6380 [BOQIII 230 230.00] 3PH 3234.27 8118.7 -47.23  
 LG 2542.63 6382.6 -44.80  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/16.494/82.329, 7.42405 Z-:/16.324/82.890, 8.01748 Z0:/30.200/76.960, 4.31781



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```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6400 [FRONTCHA      230.00] 3PH      2218.34      5568.5      -44.57
                        LG      1756.30      4408.7      -41.63
THEVENIN IMPEDANCE, X/R (OHM) Z+:/24.161/82.399, 7.49317 Z-:/24.074/82.487, 7.58282 Z0:/43.453/76.149, 4.05555

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6430 [ANTON230      230.00] 3PH      1836.00      4608.8      -74.44
                        LG      2257.34      5666.4      -75.59
THEVENIN IMPEDANCE, X/R (OHM) Z+:/29.341/76.371, 4.12445 Z-:/29.159/78.387, 4.86602 Z0:/13.103/78.153, 4.76700

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6500 [FRONTDOM      230.00] 3PH      2660.57      6678.6      -49.82
                        LG      2870.36      7205.2      -48.91
THEVENIN IMPEDANCE, X/R (OHM) Z+:/20.459/82.660, 7.76319 Z-:/20.419/82.832, 7.95094 Z0:/16.034/79.222, 5.25319

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6590 [24DIC230      230.00] 3PH      2210.12      5547.9      -73.81
                        LG      2342.90      5881.2      -78.78
THEVENIN IMPEDANCE, X/R (OHM) Z+:/24.215/67.188, 2.37752 Z-:/23.655/70.527, 2.82813 Z0:/20.943/79.753, 5.53154

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6680 [BFRIO230      230.00] 3PH      2905.68      7293.9      -38.48
                        LG      2974.90      7467.6      -40.32
THEVENIN IMPEDANCE, X/R (OHM) Z+:/18.556/74.814, 3.68416 Z-:/18.324/75.161, 3.77439 Z0:/17.542/80.162, 5.76628

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)

```









LG 2758.98 13851.3 -78.72  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/5.622/60.341, 1.75611 Z-:/5.506/64.167, 2.06556 Z0:/3.780/83.766, 9.15437

<-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6004 [PAN1115      115.00] 3PH  2192.75  11008.5  -75.95  
   LG      1819.53  9134.8  -84.72  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.129/66.608, 2.31180 Z-:/6.027/69.860, 2.72669 Z0:/10.214/83.885, 9.33392

<-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6006 [CHO115      115.00] 3PH  1356.63  6810.9  -78.90  
   LG      1081.43  5429.3  -90.16  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/9.404/70.016, 2.74982 Z-:/9.062/78.787, 5.04416 Z0:/17.261/88.710, 44.41716

<-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6009 [LSA115      115.00] 3PH  1502.16  7541.5  -71.32  
   LG      984.62  4943.2  -77.95  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/9.018/76.753, 4.24787 Z-:/8.895/78.528, 4.92764 Z0:/23.522/87.753, 25.48693

<-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6012 [MDN115      115.00] 3PH  2010.22  10092.2  -49.92  
   LG      1655.60  8311.8  -51.49  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.630/84.517, 10.41742 Z-:/6.269/87.070, 19.53452 Z0:/11.254/86.452, 16.12905

<-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6015 [PRO115      115.00] 3PH  1170.85  5878.2  -51.03  
   LG      1275.73  6404.7  -51.97  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/11.422/86.845, 18.14186 Z-:/10.937/87.901, 27.28784 Z0:/9.094/88.826, 48.80104



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```

-----
                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6018 [CAC115      115.00] 3PH    2380.47 11951.0 -71.66
                                LG      2724.34 13677.4 -78.64
THEVENIN IMPEDANCE, X/R (OHM) Z+:/5.677/60.508, 1.76810 Z-:/5.562/64.270, 2.07510 Z0:/3.826/82.644, 7.74571
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6019 [CVI115A    115.00] 3PH    1839.68 9236.0  -76.21
                                LG      1624.61 8156.3  -84.06
THEVENIN IMPEDANCE, X/R (OHM) Z+:/7.259/65.053, 2.14971 Z-:/7.170/67.834, 2.45455 Z0:/10.453/81.842, 6.97595
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6024 [CHI115     115.00] 3PH    1241.00 6230.4  -80.45
                                LG      895.34 4495.0  -85.00
THEVENIN IMPEDANCE, X/R (OHM) Z+:/10.751/67.927, 2.46605 Z-:/10.640/69.820, 2.72079 Z0:/23.398/75.767, 3.94240
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6027 [LOC115A   115.00] 3PH    2186.22 10975.8 -72.06
                                LG      2426.45 12181.8 -79.69
THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.127/59.624, 1.70610 Z-:/6.024/63.062, 1.96785 Z0:/4.652/82.873, 7.99779
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
 6032 [MAR115A   115.00] 3PH    1800.69 9040.3  -74.29
                                LG      1830.79 9191.3  -81.45
THEVENIN IMPEDANCE, X/R (OHM) Z+:/7.419/61.489, 1.84095 Z-:/7.331/64.338, 2.08136 Z0:/7.369/80.205, 5.79246
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)

```





2173

THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.949/69.516, 2.67685 Z-:/6.726/72.312, 3.13569 Z0:/4.251/86.175, 14.95718

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6060 [LM2115      115.00] 3PH   1930.88   9693.9   -80.90
                               LG    2276.01  11426.6  -85.88
THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.940/69.587, 2.68703 Z-:/6.717/72.380, 3.14864 Z0:/4.127/86.587, 16.76748

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6066 [FFIELD      115.00] 3PH   1505.21   7556.8   -81.84
                               LG    1252.70  6289.1   -85.71
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.842/69.692, 2.70219 Z-:/8.620/71.928, 3.06449 Z0:/14.458/76.891, 4.29426

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6074 [LMDIST      115.00] 3PH   1927.90   9678.9   -80.93
                               LG    2265.36  11373.1  -85.92
THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.950/69.606, 2.68977 Z-:/6.727/72.404, 3.15314 Z0:/4.188/86.458, 16.15382

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6087 [CAL115      115.00] 3PH   1578.26   7923.5   -46.45
                               LG    697.59   3502.2   -38.44
THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.481/85.292, 12.14345 Z-:/8.265/86.260, 15.29582 Z0:/41.074/73.838, 3.45065

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6088 [LES115      115.00] 3PH   1309.67   6575.1   -45.22
                               LG    574.71   2885.3   -37.75
THEVENIN IMPEDANCE, X/R (OHM) Z+:/10.248/84.564, 10.50930 Z-:/10.049/85.244, 12.01998 Z0:/50.026/73.940, 3.47356

```



2174

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6092 [LVA115      115.00] 3PH    1473.03  7395.2  -45.92
                LG      649.06  3258.6  -38.14
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/9.087/84.976, 11.37523  Z-:/8.878/85.825, 13.69800  Z0:/44.164/73.875, 3.45885

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6170 [CPA115      115.00] 3PH    1231.31  6181.7  -82.17
                LG      1316.35  6608.7  -86.53
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/10.905/70.756, 2.86449  Z-:/10.745/72.592, 3.18942  Z0:/9.087/83.348, 8.57464

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6173 [STR115      115.00] 3PH    1880.55  9441.2  -80.53
                LG      1672.68  8397.6  -84.27
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/7.138/69.409, 2.66170  Z-:/6.954/72.141, 3.10368  Z0:/10.016/76.522, 4.17230

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6174 [PM115-1A    115.00] 3PH    1223.88  6144.4  -83.64
                LG      961.59  4827.6  -85.08
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/11.006/72.508, 3.17318  Z-:/10.899/74.401, 3.58193  Z0:/20.124/74.490, 3.60340

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
6175 [PM115-2A    115.00] 3PH    1223.88  6144.4  -83.64
                LG      961.59  4827.6  -85.08
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/11.006/72.508, 3.17318  Z-:/10.899/74.401, 3.58193  Z0:/20.124/74.490, 3.60340

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG

```







2176

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6290 [CATII 11      115.00] 3PH  1875.30  9414.8  -81.06
              LG      2231.57  11203.5  -86.64
THEVENIN IMPEDANCE, X/R (OHM) Z+:/7.146/69.745, 2.70993 Z-:/6.930/72.470, 3.16576 Z0:/4.117/90.000, 9999.999

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6331 [BAI115      115.00] 3PH  683.79  3432.9  -47.37
              LG      1.08      5.4    131.06
THEVENIN IMPEDANCE, X/R (OHM) Z+:/19.390/88.438, 36.66427 Z-:/19.355/88.522, 38.76166 Z0:/36727.398/-89.996, 9999.999

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6332 [BAM115      115.00] 3PH  494.75  2483.8  -42.32
              LG      1.09      5.5    134.00
THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.878/86.323, 15.55902 Z-:/26.849/86.367, 15.74825 Z0:/36727.398/-89.996, 9999.999

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6350 [PM115-8      115.00] 3PH  1822.83  9151.4  -75.09
              LG      1747.33  8772.4  -81.68
THEVENIN IMPEDANCE, X/R (OHM) Z+:/7.373/63.064, 1.96808 Z-:/7.284/65.968, 2.24270 Z0:/8.583/78.486, 4.90902

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6550 [CHAZ115      115.00] 3PH  1160.52  5826.3  -50.94
              LG      1535.55  7709.1  -51.83
THEVENIN IMPEDANCE, X/R (OHM) Z+:/11.524/86.758, 17.65191 Z-:/11.038/87.800, 26.03446 Z0:/3.571/90.000, 9999.999

```

```

-----
<-SCMVA-> <-Sym I''k rms-->

```



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```

                /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6580 [LBO115      115.00] 3PH  1677.30  8420.8  -77.20
                        LG      0.00      0.0      0.00
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/7.957/65.985, 2.24445  Z-:/7.875/68.527, 2.54211  Z0:/0.13E+09/90.000, 9999.999

```

-----  
 <-SCMVA-> <-Sym I''k rms-->

```

                /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6123 [MIR115      115.00] 3PH  1520.84  7635.3  -78.65
                        LG      1439.48  7226.8  -83.31
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/8.976/68.258, 2.50757  Z-:/8.907/70.300, 2.79282  Z0:/10.666/79.050, 5.16860

```



2178

# Cortocircuito Año 2020

PSS@E ASCC SHORT CIRCUIT CURRENTS

MON, MAY 23 2011 9:21

PLAN DE EXPANSIÓN DEL SISTEMA INTERCONECTADO NACIONAL  
 INTERCONEXIÓN COL-PAN - DEMANDA MÁXIMA - ÉPOCA HÚMEDA 2020  
 OUTPUT FOR AREA 11 [COLOMBIA ]

```

    <-SCMVA-> <-Sym I''k rms-->
                /I/    AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6000 [FRONTER  230.00] 3PH    3014.15  7566.2  -50.09
                                LG     3073.33  7714.7  -49.62
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/17.792/82.247, 7.34504  Z-:/17.635/82.658, 7.76054  Z0:/16.929/80.366, 5.89126
  
```

```

    <-SCMVA-> <-Sym I''k rms-->
                /I/    AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6001 [PAN230  230.00] 3PH    3556.14  8926.7  -75.88
                                LG     3572.74  8968.4  -82.17
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/14.741/66.581, 2.30881  Z-:/14.583/69.606, 2.68984  Z0:/15.006/82.240, 7.33843
  
```

```

    <-SCMVA-> <-Sym I''k rms-->
                /I/    AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6003 [PANII230 230.00] 3PH    3607.83  9056.4  -76.54
                                LG     3820.01  9589.1  -80.97
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/14.809/68.496, 2.53813  Z-:/14.619/71.163, 2.93125  Z0:/12.684/80.149, 5.75852
  
```

```

    <-SCMVA-> <-Sym I''k rms-->
                /I/    AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6005 [CHO230  230.00] 3PH    2674.09  6712.5  -76.08
                                LG     2609.13  6549.5  -82.51
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/19.335/68.714, 2.56672  Z-:/19.226/73.249, 3.32234  Z0:/21.206/82.726, 7.83481
  
```

```

    <-SCMVA-> <-Sym I''k rms-->
                /I/    AN(I)
  
```



X----- BUS -----X  
 6008 [LSA230 230.00] 3PH 3407.45 8553.4 -68.40  
 LG 2682.82 6734.5 -70.68  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/15.679/74.783, 3.67628 Z-:/15.597/76.615, 4.20235 Z0:/28.488/78.561, 4.94187

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)

X----- BUS -----X  
 6011 [MDN230 230.00] 3PH 4241.92 10648.1 -51.66  
 LG 3367.22 8452.5 -49.49  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/12.449/82.126, 7.23041 Z-:/12.287/83.144, 8.31710 Z0:/22.371/77.000, 4.33152

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)

X----- BUS -----X  
 6014 [PRO230 230.00] 3PH 3237.64 8127.2 -49.83  
 LG 3563.72 8945.7 -49.82  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/16.537/82.908, 8.03752 Z-:/16.333/83.461, 8.72444 Z0:/12.203/82.138, 7.24149

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)

X----- BUS -----X  
 6096 [FOR230 230.00] 3PH 4380.51 10996.0 -51.40  
 LG 4613.44 11580.7 -50.05  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/12.087/83.523, 8.80813 Z-:/11.998/84.109, 9.69208 Z0:/10.378/78.349, 4.84952

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)

X----- BUS -----X  
 6100 [BAY230 230.00] 3PH 2070.49 5197.4 -81.27  
 LG 2338.45 5870.0 -84.80  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.248/75.613, 3.89850 Z-:/25.464/77.121, 4.37374 Z0:/18.248/87.061, 19.47764

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)

X----- BUS -----X  
 6103 [COP230 230.00] 3PH 2837.17 7121.9 -78.79  
 LG 2828.67 7100.6 -82.77



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THEVENIN IMPEDANCE, X/R (OHM) Z+:/18.888/71.113, 2.92299 Z-:/18.650/73.193, 3.31067 Z0:/19.449/80.791, 6.16834

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6105 [PAM230      230.00] 3PH  2647.38  6645.5  -76.24
                        LG      2579.13  6474.2  -82.61
THEVENIN IMPEDANCE, X/R (OHM) Z+:/19.531/68.870, 2.58755 Z-:/19.425/73.360, 3.34584 Z0:/21.501/82.733, 7.84220

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6171 [PAC230      230.00] 3PH  2474.72  6212.1  -79.67
                        LG      2436.19  6115.4  -83.41
THEVENIN IMPEDANCE, X/R (OHM) Z+:/21.671/72.094, 3.09502 Z-:/21.377/73.895, 3.46343 Z0:/23.149/81.112, 6.39476

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6178 [EST230      230.00] 3PH  3887.49  9758.4  -52.45
                        LG      3753.34  9421.7  -51.87
THEVENIN IMPEDANCE, X/R (OHM) Z+:/13.544/83.637, 8.96720 Z-:/13.481/84.085, 9.65203 Z0:/15.066/81.592, 6.76564

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6179 [GUA230      230.00] 3PH  4163.92  10452.4 -52.56
                        LG      3977.79  9985.1  -51.51
THEVENIN IMPEDANCE, X/R (OHM) Z+:/12.646/83.617, 8.93911 Z-:/12.582/84.101, 9.67793 Z0:/14.502/80.317, 5.86042

```

```

-----
                <-SCMVA-> <-Sym I''k rms-->
                        /I/      AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6182 [VEL230      230.00] 3PH  4086.40  10257.7 -59.02
                        LG      2513.34  6309.0  -51.41
THEVENIN IMPEDANCE, X/R (OHM) Z+:/12.883/80.521, 5.98909 Z-:/12.815/81.431, 6.63641 Z0:/37.571/67.397, 2.40200
-----

```



2181

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
  6240 [LGU 230      230.00] 3PH   2440.29  6125.7  -72.58
                LG      1919.02  4817.2  -75.84
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/21.455/72.879, 3.24629  Z-:/21.405/75.125, 3.76486  Z0:/39.059/78.484, 4.90805

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
  6260 [CHA 230      230.00] 3PH   2578.86  6473.5  -47.05
                LG      2483.41  6233.9  -45.47
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/20.741/83.064, 8.21975  Z-:/20.682/83.150, 8.32482  Z0:/23.238/78.583, 4.95186

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
  6263 [ESP230      230.00] 3PH   2489.06  6248.1  -46.00
                LG      2672.69  6709.0  -42.33
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/21.469/83.616, 8.93758  Z-:/21.422/83.707, 9.06793  Z0:/17.405/70.748, 2.86331

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
  6330 [BAI230      230.00] 3PH   2594.31  6512.3  -48.97
                LG      2908.38  7300.7  -49.72
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/20.629/82.948, 8.08308  Z-:/20.443/83.337, 8.56035  Z0:/14.140/85.309, 12.18620

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
  6340 [CAN 230      230.00] 3PH   2173.64  5456.3  -49.10
                LG      2016.33  5061.4  -43.44
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/24.367/81.928, 7.05136  Z-:/24.311/82.098, 7.20469  Z0:/30.757/67.165, 2.37481

```

```

<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG

```



6360 [GLA230 230.00] 3PH 3757.58 9432.4 -45.70  
 LG 3365.27 8447.6 -46.67  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/14.081/77.060, 4.35228 Z-:/14.002/77.419, 4.48085 Z0:/19.091/79.198, 5.24098

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6363 [ZAM230 230.00] 3PH 3212.20 8063.3 -38.30  
 LG 2746.95 6895.4 -42.00  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/16.559/69.942, 2.73878 Z-:/16.468/70.176, 2.77395 Z0:/25.212/78.334, 4.84343

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6366 [EVA230 230.00] 3PH 2754.99 6915.6 -32.05  
 LG 2329.63 5847.9 -38.29  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/19.362/63.838, 2.03568 Z-:/19.265/63.999, 2.05025 Z0:/30.571/77.865, 4.65080

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6380 [BOQIII 230 230.00] 3PH 3271.95 8213.3 -49.91  
 LG 2553.69 6410.3 -47.41  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/16.257/82.403, 7.49763 Z-:/16.109/82.929, 8.06214 Z0:/30.200/76.960, 4.31781

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6400 [FRONTCHA 230.00] 3PH 2223.66 5581.9 -47.33  
 LG 1757.12 4410.8 -44.40  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/24.068/82.356, 7.45126 Z-:/23.989/82.424, 7.51906 Z0:/43.453/76.149, 4.05555

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6430 [ANTON230 230.00] 3PH 2068.60 5192.6 -78.83  
 LG 2482.11 6230.6 -79.13  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.064/78.970, 5.13040 Z-:/26.018/80.167, 5.76979 Z0:/13.089/78.094, 4.74274



2183

```

-----
<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6500 [FRONTDOM   230.00] 3PH   2583.83   6486.0   -53.05
                                LG   2805.31   7041.9   -52.19
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/20.940/82.526, 7.62290  Z-:/20.907/82.675, 7.77976  Z0:/16.034/79.222, 5.25319

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6590 [24DIC230   230.00] 3PH   2879.98   7229.4   -78.53
                                LG   2791.01   7006.1   -82.45
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/18.576/70.648, 2.84734  Z-:/18.344/72.758, 3.22220  Z0:/20.720/79.678, 5.49056

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6680 [BFRIO230   230.00] 3PH   2856.24   7169.8   -41.54
                                LG   2935.71   7369.3   -43.38
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/18.795/74.795, 3.67930  Z-:/18.570/75.166, 3.77572  Z0:/17.542/80.162, 5.76628

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6690 [DOM230     230.00] 3PH   2533.82   6360.4   -53.33
                                LG   3123.48   7840.6   -53.32
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/21.369/82.798, 7.91385  Z-:/21.336/82.945, 8.08004  Z0:/9.300/82.390, 7.48489

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
                /I/   AN(I)
X----- BUS -----X      MVA      AMP      DEG
  6691 [ALTO230    230.00] 3PH   2312.43   5804.7   -47.21
                                LG   2935.32   7368.3   -48.66
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/23.481/76.737, 4.24245  Z-:/23.442/76.857, 4.28254  Z0:/8.660/85.709, 13.32782

```

```

-----
<-SCMVA-> <-Sym I''k rms-->

```





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```

X----- BUS -----X
6695 [PANDO230 230.00] 3PH 1875.57 4708.1 -53.20
                           LG 2431.97 6104.8 -53.59
THEVENIN IMPEDANCE, X/R (OHM) Z+:/28.901/82.951, 8.08658 Z-:/28.869/83.053, 8.20715 Z0:/9.104/85.504, 12.71688

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
6698 [MLIRIO230 230.00] 3PH 2053.92 5155.8 -53.25
                           LG 2742.85 6885.2 -53.70
THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.383/82.900, 8.02797 Z-:/26.351/83.014, 8.16082 Z0:/6.547/86.600, 16.82935

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
6760 [SBA230 230.00] 3PH 2320.30 5824.5 -64.62
                           LG 1101.67 2765.4 -58.72
THEVENIN IMPEDANCE, X/R (OHM) Z+:/22.751/81.206, 6.46375 Z-:/22.701/81.895, 7.02186 Z0:/98.697/72.421, 3.15644

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
6790 [SMA230 230.00] 3PH 2988.74 7502.4 -62.11
                           LG 2341.51 5877.7 -67.12
THEVENIN IMPEDANCE, X/R (OHM) Z+:/17.892/68.571, 2.54785 Z-:/17.745/70.107, 2.76359 Z0:/33.081/78.159, 4.76984

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
6840 [BUR230 230.00] 3PH 2471.12 6203.1 -49.68
                           LG 3155.15 7920.1 -50.63
THEVENIN IMPEDANCE, X/R (OHM) Z+:/21.716/82.943, 8.07843 Z-:/21.518/83.347, 8.57310 Z0:/7.814/88.030, 29.07382

```

<-SCMVA-> <-Sym I''k rms-->

```

X----- BUS -----X
6860 [BBL230 230.00] 3PH 3191.37 8011.0 -59.53

```



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LG 2024.02 5080.7 -53.78  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/16.507/79.899, 5.61334 Z-:/16.439/80.650, 6.07336 Z0:/45.460/69.721, 2.70638

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6870 [TABII230 230.00] 3PH 2854.46 7165.3 -58.55  
 LG 1926.02 4834.7 -55.46  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/18.462/80.268, 5.83053 Z-:/18.393/80.870, 6.22231 Z0:/45.346/74.428, 3.58826

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6880 [CHAI230 230.00] 3PH 2308.45 5794.7 -47.02  
 LG 2469.93 6200.1 -47.19  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/23.174/83.095, 8.25757 Z-:/23.124/83.183, 8.36475 Z0:/18.680/83.562, 8.86231

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6920 [STR230 230.00] 3PH 3997.04 10033.4 -86.61  
 LG 4690.50 11774.2 -88.23  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/13.580/82.622, 7.72259 Z-:/13.496/83.498, 8.77477 Z0:/7.667/88.420, 36.24949

-----  
 PSS@E ASCC SHORT CIRCUIT CURRENTS MON, MAY 23 2011 9:29  
 PLAN DE EXPANSIÓN DEL SISTEMA INTERCONECTADO NACIONAL  
 INTERCONEXIÓN COL-PAN - DEMANDA MÁXIMA - ÉPOCA HÚMEDA 2020  
 OUTPUT FOR AREA 7 [ACANAL ]

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6002 [PAN115 115.00] 3PH 3291.33 16523.9 -76.32  
 LG 3448.31 17312.0 -83.12  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/4.134/64.320, 2.07973 Z-:/4.103/66.813, 2.33467 Z0:/3.727/83.499, 8.77537

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)





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THEVENIN IMPEDANCE, X/R (OHM) Z+:/4.183/64.529, 2.09926 Z-:/4.153/66.957, 2.35098 Z0:/3.772/82.396, 7.49057

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6019 [CVI115A      115.00] 3PH  2255.76  11324.9  -80.97  
   LG      1803.84  9056.1   -87.94  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/5.973/68.284, 2.51080 Z-:/5.954/69.884, 2.73027 Z0:/10.628/82.174, 7.27541

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6024 [CHI115      115.00] 3PH  1889.01  9483.6   -82.34  
   LG      1083.19  5438.1   -85.41  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/7.150/70.972, 2.89962 Z-:/7.118/72.159, 3.10694 Z0:/23.164/75.563, 3.88421

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6027 [LOC115A      115.00] 3PH  2880.87  14463.2  -76.85  
   LG      2928.99  14704.8  -84.02  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/4.664/63.170, 1.97708 Z-:/4.640/65.306, 2.17478 Z0:/4.620/82.708, 7.81521

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6032 [MAR115A      115.00] 3PH  2245.79  11274.9  -78.84  
   LG      2102.50  10555.5  -85.19  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/5.959/64.761, 2.12134 Z-:/5.942/66.425, 2.29164 Z0:/7.342/80.093, 5.72575

-----  
 <-SCMVA-> <-Sym I''k rms-->  
   /I/      AN(I)  
 X----- BUS -----X          MVA      AMP      DEG  
   6036 [SMA115      115.00] 3PH  2852.90  14322.8  -77.36  
   LG      2757.86  13845.7  -83.71  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/4.762/65.142, 2.15847 Z-:/4.735/67.305, 2.39113 Z0:/5.394/80.807, 6.17904

-----



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```

<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
 6040 [SFR115      115.00] 3PH   2539.79 12750.9 -78.20
              LG      2268.88 11390.8 -85.91
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/5.267/63.969, 2.04753  Z-:/5.247/65.833, 2.22851  Z0:/7.353/81.408, 6.61876
-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
 6047 [CLA115      115.00] 3PH   1705.58 8562.8 -82.88
              LG      805.52 4044.1 -87.43
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/7.920/71.351, 2.96298  Z-:/7.895/72.470, 3.16586  Z0:/34.552/77.730, 4.59784
-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
 6055 [MOS115B     115.00] 3PH   2507.61 12589.3 -79.17
              LG      1966.70 9873.7 -86.33
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/5.407/66.584, 2.30909  Z-:/5.387/68.488, 2.53712  Z0:/10.022/80.450, 5.94390
-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
 6057 [TOC115      115.00] 3PH   2021.24 10147.5 -82.87
              LG      1378.19 6919.1 -89.07
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/6.718/71.600, 3.00607  Z-:/6.698/73.016, 3.27415  Z0:/16.254/82.333, 7.42841
-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG
 6059 [LM1115      115.00] 3PH   2987.48 14998.5 -84.87
              LG      3275.84 16446.1 -87.66
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/4.527/76.722, 4.23755  Z-:/4.432/78.132, 4.75855  Z0:/3.450/84.949, 11.31350
-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA      AMP      DEG

```



6060 [LM2115 115.00] 3PH 2980.66 14964.2 -84.87  
 LG 3285.54 16494.8 -87.72  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/4.538/76.715, 4.23509 Z-:/4.442/78.125, 4.75569 Z0:/3.396/85.295, 12.15118

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6066 [FFIELD 115.00] 3PH 2076.13 10423.1 -84.21  
 LG 1517.73 7619.7 -84.94  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.454/75.097, 3.75742 Z-:/6.353/76.108, 4.04319 Z0:/13.680/76.044, 4.02395

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6074 [LMDIST 115.00] 3PH 2979.44 14958.1 -84.95  
 LG 3276.82 16451.1 -87.78  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/4.540/76.795, 4.26186 Z-:/4.443/78.209, 4.79043 Z0:/3.424/85.214, 11.94360

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6087 [CAL115 115.00] 3PH 1590.40 7984.5 -48.89  
 LG 698.16 3505.0 -40.95  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/8.403/85.197, 11.90103 Z-:/8.204/86.296, 15.44835 Z0:/41.074/73.838, 3.45065

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6088 [LES115 115.00] 3PH 1316.82 6611.0 -47.68  
 LG 574.91 2886.3 -40.27  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/10.178/84.480, 10.34795 Z-:/9.994/85.259, 12.05855 Z0:/50.026/73.940, 3.47356

-----  
 <-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6092 [LVA115 115.00] 3PH 1483.03 7445.5 -48.37  
 LG 649.47 3260.6 -40.66  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/9.013/84.884, 11.16931 Z-:/8.819/85.852, 13.78757 Z0:/44.164/73.875, 3.45885



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```

-----
                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6170 [CPA115      115.00] 3PH   1532.38  7693.2  -84.30
                                LG      1529.68  7679.6  -87.35
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/8.833/74.857, 3.69506  Z-:/8.766/75.660, 3.91163  Z0:/9.002/83.094, 8.25620
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6173 [STR115      115.00] 3PH   3213.83 16134.9 -85.63
                                LG      3373.05 16934.2 -88.20
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/4.224/78.322, 4.83824  Z-:/4.161/79.592, 5.44402  Z0:/3.704/85.310, 12.18970
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6174 [PM115-1A    115.00] 3PH   1537.27  7717.8  -86.98
                                LG      1150.47  5775.9  -85.83
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/8.846/77.584, 4.54236  Z-:/8.813/78.404, 4.87313  Z0:/17.816/74.879, 3.70078
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6175 [PM115-2A    115.00] 3PH   1537.27  7717.8  -86.98
                                LG      1150.47  5775.9  -85.83
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/8.846/77.584, 4.54236  Z-:/8.813/78.404, 4.87313  Z0:/17.816/74.879, 3.70078
-----

                                <-SCMVA-> <-Sym I''k rms-->
                                /I/      AN(I)
X----- BUS -----X          MVA      AMP      DEG
  6210 [TIN115      115.00] 3PH   2327.30 11684.0 -79.87
                                LG      1946.11  9770.3  -88.04
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/5.817/67.219, 2.38108  Z-:/5.799/68.985, 2.60307  Z0:/9.465/84.358, 10.12246
-----

                                <-SCMVA-> <-Sym I''k rms-->

```



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```

X----- BUS -----X           /I/   AN(I)
      MVA   AMP   DEG
6211 [PM115-9   115.00] 3PH   2203.17  11060.9  -80.48
      LG           0.00   0.0   0.00
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/6.150/67.857, 2.45745  Z-:/6.133/69.532, 2.67918  Z0:/0.13E+09/90.000, 9999.999

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      6230 [CBA115   115.00] 3PH   2747.77  13795.0  -77.29
      LG           2592.82  13017.1  -84.63
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/4.880/63.321, 1.99009  Z-:/4.858/65.351, 2.17923  Z0:/5.935/81.070, 6.36406

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      6261 [CHA 115   115.00] 3PH   745.87   3744.6  -51.02
      LG           883.14   4433.7  -51.21
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/17.811/87.343, 21.55044  Z-:/17.801/87.365, 21.72929  Z0:/9.517/88.175, 31.37888

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      6270 [CAT 115   115.00] 3PH   2969.79  14909.6  -84.57
      LG           3230.72  16219.6  -86.93
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/4.555/76.419, 4.13963  Z-:/4.458/77.817, 4.63164  Z0:/3.562/83.013, 8.15919

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      6280 [GIR 115   115.00] 3PH   1377.82   6917.3  -84.59
      LG           1454.20   7300.7  -87.87
THEVENIN IMPEDANCE, X/R (OHM)  Z+:/9.823/75.150, 3.77148  Z-:/9.757/75.873, 3.97330  Z0:/8.426/85.210, 11.93391

```

```

-----
<-SCMVA-> <-Sym I''k rms-->
              /I/   AN(I)
X----- BUS -----X           MVA   AMP   DEG
      6290 [CATII 11   115.00] 3PH   2894.35  14530.9  -85.03

```





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LG 3050.26 15313.6 -89.49  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/4.675/76.979, 4.32418 Z-:/4.583/78.318, 4.83667 Z0:/4.117/90.000, 9999.999

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6331 [BAI115 115.00] 3PH 680.44 3416.1 -50.40  
 LG 1.08 5.4 128.00  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/19.429/88.405, 35.90153 Z-:/19.397/88.492, 37.99580 Z0:/36727.398/-89.996, 9999.999

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6332 [BAM115 115.00] 3PH 493.08 2475.5 -45.35  
 LG 1.09 5.4 130.94  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/26.911/86.309, 15.50035 Z-:/26.883/86.355, 15.69789 Z0:/36727.398/-89.996, 9999.999

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6350 [PM115-8 115.00] 3PH 2282.24 11457.8 -79.80  
 LG 1997.70 10029.3 -85.20  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/5.912/66.686, 2.32038 Z-:/5.894/68.391, 2.52449 Z0:/8.545/78.371, 4.85923

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6550 [CHAZ115 115.00] 3PH 1151.77 5782.4 -53.93  
 LG 1524.30 7652.6 -54.91  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/11.570/86.527, 16.47787 Z-:/11.092/87.733, 25.26470 Z0:/3.571/90.000, 9999.999

<-SCMVA-> <-Sym I''k rms-->  
 /I/ AN(I)  
 X----- BUS -----X MVA AMP DEG  
 6580 [LBO115 115.00] 3PH 2016.60 10124.2 -81.80  
 LG 0.00 0.0 0.00  
 THEVENIN IMPEDANCE, X/R (OHM) Z+:/6.676/69.024, 2.60841 Z-:/6.660/70.456, 2.81698 Z0:/0.13E+09/90.000, 9999.999



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-----  
<-SCMVA-> <-Sym I''k rms-->  
                                  /I/      AN(I)  
X----- BUS -----X          MVA          AMP          DEG  
  6910 [GON115      115.00] 3PH  2110.03  10593.3  -82.18  
                                  LG      1292.23   6487.6   -88.00  
THEVENIN IMPEDANCE, X/R  (OHM)  Z+:/6.431/71.010, 2.90581  Z-:/6.408/72.455, 3.16300  Z0:/18.751/80.322, 5.86382  
-----

-----  
<-SCMVA-> <-Sym I''k rms-->  
                                  /I/      AN(I)  
X----- BUS -----X          MVA          AMP          DEG  
  6123 [MIR115      115.00] 3PH  1771.73  8894.8  -82.43  
                                  LG      1579.14   7928.0   -85.93  
THEVENIN IMPEDANCE, X/R  (OHM)  Z+:/7.741/71.168, 2.93214  Z-:/7.727/72.271, 3.12788  Z0:/10.639/78.979, 5.13448