

Case ID: 6BusCase_networkdata.xlsx

radial_bus_location =

Empty matrix: 0-by-1

B_diag =

(1,1)	5.0000
(2,2)	5.0000
(3,3)	3.3333
(4,4)	4.0000
(5,5)	10.0000
(6,6)	3.3333
(7,7)	5.0000
(8,8)	3.8462
(9,9)	10.0000
(10,10)	2.5000
(11,11)	3.3333

A_alt =

(1,1)	1
(2,1)	1
(3,1)	1
(1,2)	-1
(4,2)	1
(5,2)	1
(6,2)	1
(7,2)	1
(4,3)	-1
(8,3)	1
(9,3)	1
(2,4)	-1
(5,4)	-1
(10,4)	1
(3,5)	-1
(6,5)	-1
(8,5)	-1
(10,5)	-1
(11,5)	1
(7,6)	-1
(9,6)	-1
(11,6)	-1

AFACT MATRIX
Monitored GENERATOR
Line

		1	2	3	4	5	6
1 to 2		0.0000	-0.4706	-0.4026	-0.3149	-0.3217	-0.4064
1 to 4		0.0000	-0.3149	-0.2949	-0.5044	-0.2711	-0.2960
1 to 5		0.0000	-0.2145	-0.3026	-0.1807	-0.4072	-0.2976
2 to 3		0.0000	0.0544	-0.3416	0.0160	-0.1057	-0.1907
2 to 4		0.0000	0.3115	0.2154	-0.3790	0.1013	0.2208
2 to 5		0.0000	0.0993	-0.0342	0.0292	-0.1927	-0.0266
2 to 6		0.0000	0.0642	-0.2422	0.0189	-0.1246	-0.4100
3 to 5		0.0000	0.0622	0.2890	0.0183	-0.1207	0.1526
3 to 6		0.0000	-0.0077	0.3695	-0.0023	0.0150	-0.3433
4 to 5		0.0000	-0.0034	-0.0795	0.1166	-0.1698	-0.0752
5 to 6		0.0000	-0.0565	-0.1273	-0.0166	0.1096	-0.2467

POWER TRANSFER DISTRIBUTION FACTOR (PTDF) MATRIX

Monitored	Transaction						
Line	From(Sell) - To(Buy)						
	1 to 2	1 to 4	1 to 5	2 to 3	2 to 4	2 to 5	2 ✓
to 6	3 to 5	3 to 6	4 to 5	5 to 6			
1 to 2	0.4706	0.3149	0.3217	-0.0681	-0.1557	-0.1489	✓
-0.0642	-0.0808	0.0039	0.0068	0.0847			
1 to 4	0.3149	0.5044	0.2711	-0.0200	0.1895	-0.0438	✓
-0.0189	-0.0238	0.0011	-0.2333	0.0249			
1 to 5	0.2145	0.1807	0.4072	0.0881	-0.0338	0.1927	✓
0.0831	0.1046	-0.0050	0.2264	-0.1096			
2 to 3	-0.0544	-0.0160	0.1057	0.3960	0.0384	0.1601	✓
0.2451	-0.2359	-0.1509	0.1217	0.0850			
2 to 4	-0.3115	0.3790	-0.1013	0.0961	0.6904	0.2102	✓
0.0906	0.1141	-0.0055	-0.4802	-0.1196			
2 to 5	-0.0993	-0.0292	0.1927	0.1335	0.0701	0.2919	✓
0.1259	0.1585	-0.0076	0.2219	-0.1661			
2 to 6	-0.0642	-0.0189	0.1246	0.3064	0.0453	0.1888	✓
0.4742	-0.1176	0.1678	0.1435	0.2854			
3 to 5	-0.0622	-0.0183	0.1207	-0.2268	0.0439	0.1829	✓
-0.0905	0.4097	0.1363	0.1390	-0.2733			
3 to 6	0.0077	0.0023	-0.0150	-0.3772	-0.0055	-0.0227	✓
0.3356	0.3545	0.7128	-0.0173	0.3583			
4 to 5	0.0034	-0.1166	0.1698	0.0761	-0.1201	0.1664	✓
0.0717	0.0903	-0.0043	0.2865	-0.0947			
5 to 6	0.0565	0.0166	-0.1096	0.0708	-0.0399	-0.1661	✓
0.1902	-0.2369	0.1194	-0.1262	0.3563			

LINE OUTAGE DISTRIBUTION FACTOR (LODF) MATRIX

Monitored	Outage of one circuit						
Line	From - To						
	1 to 2	1 to 4	1 to 5	2 to 3	2 to 4	2 to 5	2 ✓

to 6	3 to 5	3 to 6	4 to 5	5 to 6		
1 to 2	0.0000	0.6353	0.5427	-0.1127	-0.5031	-0.2103✓
-0.1221	-0.1369	0.0135	0.0096	0.1316		
1 to 4	0.5948	0.0000	0.4573	-0.0331	0.6121	-0.0618✓
-0.0359	-0.0403	0.0040	-0.3269	0.0387		
1 to 5	0.4052	0.3647	0.0000	0.1458	-0.1090	0.2721✓
0.1580	0.1772	-0.0174	0.3174	-0.1703		
2 to 3	-0.1029	-0.0323	0.1783	0.0000	0.1242	0.2262✓
0.4662	-0.3995	-0.5253	0.1706	0.1320		
2 to 4	-0.5884	0.7647	-0.1708	0.1591	0.0000	0.2969✓
0.1724	0.1933	-0.0190	-0.6731	-0.1858		
2 to 5	-0.1875	-0.0589	0.3250	0.2209	0.2264	0.0000✓
0.2394	0.2685	-0.0264	0.3110	-0.2580		
2 to 6	-0.1213	-0.0381	0.2102	0.5073	0.1464	0.2667✓
0.0000	-0.1992	0.5842	0.2011	0.4433		
3 to 5	-0.1175	-0.0369	0.2036	-0.3755	0.1418	0.2583✓
-0.1720	0.0000	0.4747	0.1948	-0.4246		
3 to 6	0.0146	0.0046	-0.0253	-0.6245	-0.0176	-0.0321✓
0.6382	0.6005	0.0000	-0.0242	0.5567		
4 to 5	0.0065	-0.2353	0.2865	0.1259	-0.3879	0.2350✓
0.1365	0.1530	-0.0150	0.0000	-0.1471		
5 to 6	0.1067	0.0335	-0.1849	0.1172	-0.1288	-0.2346✓
0.3618	-0.4013	0.4158	-0.1769	0.0000		

```
Elapsed time is 0.298329 seconds.
>> PTDF_for_any_bus_to_bus
Enter the bus number where power is being injected: 1
Enter the bus number where power is being removed: 6
Warning: Self connecting nodes are not allowed, ignoring the diagonal of CM.
> In biograph (line 158)
    In PTDF_for_any_bus_to_bus (line 37)

Distance from bus 1 to bus 6 is: 2

Path from bus 1 to bus 6 is:
1 2 6
```

POWER TRANSFER DISTRIBUTION FACTOR (PTDF) VECTOR		
Monitored	Transaction	
Line	From(Sell) - To(Buy)	
	1 to 6	
1 to 2	0.4064	
1 to 4	0.2960	
1 to 5	0.2976	
2 to 3	0.1907	
2 to 4	-0.2208	
2 to 5	0.0266	

2 to 6	0.4100
3 to 5	-0.1526
3 to 6	0.3433
4 to 5	0.0752
5 to 6	0.2467

>>