IEEE WGOT
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Training Exercise for Loss of EMS
Handout # 4

Timing of your phone calls for the tie line information is important.

Determine which of your interfaces has the highest loading and call for that information as close to the target time as possible.

Be sure that your generation changes have had time to ramp in. Ask the plants to verify when they have completed the dispatch.

In the examples below, note how the timing and sequence of your calls affects the accuracy of the total interchange.

Remember: As your load increased, you interchange becomes more negative.

Example 1: your interchange = -1000MW at the top of the hour and your load ramp is +100MW/min. Start your calls at the top of the hour with the heaviest loaded lines first. Assume you make only one phone call every thirty seconds.

interface	% total interchange	Time	interchange	Flow on the tie line	
A	50%	00:00	-1000	-500	
B	20%	00:30	-1050	-210	
C	15%	01:00	-1100	-165	
D	10%	01:30	-1150	-115	
E	5%	02:00	-1200	-60	
total	100%	-	-	-1050	5% error

Example 2: same interchange, load ramp, and phone call timing. Start your calls at the top of the hour, but this time with the lightest loaded lines first

interface	% total interchange	Time	interchange	Flow on the tie line	
E	5%	00:00	-1000	-50	
D	10%	00:30	-1050	-105	
C	15%	01:00	-1100	-165	
B	20%	01:30	-1150	-230	
A	50%	02:00	-1200	-600	
total	100%	-	-	-1150	15% error

Example 3: Same interchange, load ramp, and phone call timing. Start your calls one minute before the hour with your heaviest loaded lines as close to the top of the hour as possible.

interface	% total interchange	Time	interchange	Flow on the tie line	
D	10%	59:00	-900	-90	
B	20%	59:30	-950	-190	
A	50%	00:00	-1000	-500	
C	15%	00:30	-1050	-156	
E	5%	01:00	-1100	-55	
total	100%	-	-	-991	-0.9% error

In the preceding examples you can improve the accuracy of your manual interchange calculation by almost 15% by paying attention to the sequence and timing of your phone calls when you are gathering interface loading information.

Using this same format you can experiment with different system load ramps (load may be going down!) and interchange values and distributions over your actual system.

Get your folks to practice by recording actual information off of your EMS and staggering the order and timing for different load ramps. Compare their calculated interchange with the one on their screen.