

Balancing Authority ACE Limit Proof-of-Concept Field Trial

Eastern Interconnection Update Discussion

September 27, 2010

Starting at 2:30 PM EDT

Doug Hils – Duke Energy

Balancing Authority Reliability-based Control Standard Drafting Team

Balancing Authority ACE Limit Proof-of-Concept Field Trial

Eastern Interconnection Field Trial Participation

Participation reflects approximately 67% of the projected 2010 peak load for the Eastern Interconnection

Eastern Interconnection Balancing Authority Participants	2010 Frequency Bias	Region	Reliability Coordinator	Start Date
American Electric Power (CSWS)	-103.4	SPP	SPP	September 1, 2005
Associated Electric Cooperative, Inc. (AECI)	-45	SERC	TVA	April 1, 2010
Duke Energy Carolinas (DUK)	-196	SERC	VACS	April 1, 2009
East Kentucky Power Cooperative (EKPC)	-42.73	SERC	TVA	July 6, 2005
Entergy (EES)	-227.1	SERC	ICTE	July 6, 2005
EON-US (LGEE)	-74	SERC	TVA	April 1, 2008
Independent Electricity System Operator (IESO)	-245.8	NPCC	IESO	March 1, 2008
Manitoba Hydro (MHEB)	-43.3	MRO	MISO	July 6, 2005
Midwest Independent Transmission System Operator (MISO)	-1038.6	MRO, RFC, SERC	MISO	January 6, 2009
PJM Interconnection (PJM)	-1358	RFC	PJM	August 1, 2005
Santee Cooper (SC)	-61.52	SERC	VACS	March 1, 2006
Southern Company (SOCO)	-445	SERC	SOCO	October 15, 2005
Tennessee Valley Authority (TVA)	-317.6	SERC	TVA	October 1, 2005

Balancing Authority ACE Limit Proof-of-Concept Field Trial

The Balancing Authority ACE Limit (BAAL) shall not be exceeded for more than 30 consecutive clock-minutes*

	Longest exceedance of the Balancing Authority ACE Limit since starting operation under the Field Trial		August 2010 Performance under BAL-007	
	Max MinCtLow	Max MinCtHigh	Max MinCtLow	Max MinCtHigh
BA01	26	16	8	11
BA02	17	17	11	9
BA03	19	19	11	10
BA04	10	20	6	13
BA05	28	21	25	21
BA06	16	22	11	15
BA07	15	23	6	9
BA08	20	24	8	9
BA09	28	26	20	9
BA10	21	31	13	15
BA11	14	32	5	5
BA12	29	40	14	15
BA13	28	43	14	14

MinCtLow = Count of consecutive clock-minutes BAAL_Low was exceeded

MinCtHigh = Count of consecutive clock-minutes BAAL_High was exceeded

*BAAL being exceeded for more than 30 consecutive clock-minutes would be a violation under the proposed BAL-007 standard.

Frequency Statistics

Eastern Interconnection

Year	Month	Total Minutes FTL_Low at 59.98 Hz SF	Total Minutes FTL_Low at 60 Hz SF	Total FTL_Low Minutes	Percentage Low During TEC	FTL_Low Events	FTL_Low Max Duration	Total Minutes FTL_High at 60.02 Hz SF	Total Minutes FTL_High at 60 Hz SF	Total FTL_High Minutes	Percentage High During TEC	FTL_High Events	FTL_High Max Duration	Total FTL_Low and FTL_High Minutes at 60 Hz SF	Total FTL_Low and FTL_High Minutes
2005	7	28	30	58	48.28%	32	5	0	16	16	0.00%	11	3	46	74
2005	8	47	91	138	34.06%	56	10	0	35	35	0.00%	21	5	126	173
2005	9	32	39	71	45.07%	33	8	0	39	39	0.00%	21	7	78	110
2005	10	42	48	90	46.67%	43	11	0	33	33	0.00%	23	5	81	123
2005	11	65	43	108	60.19%	58	6	0	35	35	0.00%	22	7	78	143
2005	12	37	36	73	50.68%	41	7	0	27	27	0.00%	19	3	63	100
2006	1	42	33	75	56.00%	43	6	0	61	61	0.00%	27	5	94	136
2006	2	0	64	64	0.00%	39	6	2	43	45	4.44%	24	4	107	109
2006	3	28	51	79	35.44%	50	4	17	37	54	31.48%	33	8	88	133
2006	4	19	86	105	18.10%	58	5	0	76	76	0.00%	46	8	162	181
2006	5	52	67	119	43.70%	54	8	0	72	72	0.00%	39	5	139	191
2006	6	45	34	79	56.96%	41	5	0	59	59	0.00%	24	10	93	138
2006	7	31	40	71	43.66%	34	9	0	50	50	0.00%	29	4	90	121
2006	8	16	85	101	15.84%	49	5	0	58	58	0.00%	26	8	143	159
2006	9	19	60	79	24.05%	39	6	0	53	53	0.00%	33	4	113	132
2006	10	53	42	95	55.79%	51	6	0	54	54	0.00%	28	8	96	149
2006	11	56	35	91	61.54%	47	5	1	36	37	2.70%	22	3	71	128
2006	12	34	18	52	65.38%	34	4	0	54	54	0.00%	29	6	72	106
2007	1	59	29	88	67.05%	44	7	0	55	55	0.00%	31	7	84	143
2007	2	17	31	48	35.42%	33	3	0	39	39	0.00%	21	4	70	87
2007	3	75	83	158	47.47%	76	15	0	78	78	0.00%	38	8	161	236
2007	4	36	41	77	46.75%	45	5	0	58	58	0.00%	31	4	99	135
2007	5	70	46	116	60.34%	64	5	0	95	95	0.00%	49	7	141	211
2007	6	62	30	92	67.39%	47	6	0	51	51	0.00%	25	7	81	143
2007	7	47	20	67	70.15%	33	6	0	39	39	0.00%	20	4	59	106
2007	8	37	25	62	59.68%	31	6	1	55	56	1.79%	32	5	80	118
2007	9	20	75	95	21.05%	41	8	0	27	27	0.00%	16	5	102	122
2007	10	57	65	122	46.72%	73	5	1	56	57	1.75%	36	5	121	179
2007	11	74	21	95	77.89%	60	4	0	34	34	0.00%	24	5	55	129
2007	12	37	22	59	62.71%	38	6	0	61	61	0.00%	38	4	83	120
2008	1	0	75	75	0.00%	34	8	0	48	48	0.00%	24	4	123	123
2008	2	18	71	89	20.22%	46	8	0	51	51	0.00%	24	8	122	140
2008	3	37	65	102	36.27%	55	6	0	40	40	0.00%	34	2	105	142
2008	4	41	65	106	38.68%	60	5	0	59	59	0.00%	33	6	124	165
2008	5	67	39	106	63.21%	63	4	0	40	40	0.00%	20	5	79	146
2008	6	40	21	61	65.57%	34	5	0	35	35	0.00%	19	5	56	96
2008	7	42	17	59	71.19%	29	7	0	17	17	0.00%	12	3	34	76
2008	8	41	19	60	68.33%	35	5	0	29	29	0.00%	17	6	48	89
2008	9	25	44	69	36.23%	39	4	0	55	55	0.00%	21	11	99	124
2008	10	35	33	68	51.47%	38	5	0	27	27	0.00%	19	3	60	95
2008	11	13	9	22	59.09%	13	5	0	13	13	0.00%	9	4	22	35
2008	12	16	34	50	32.00%	35	4	0	11	11	0.00%	8	3	45	61
2009	1	2	26	28	7.14%	16	4	0	19	19	0.00%	9	3	45	47
2009	2	0	34	34	0.00%	18	4	0	18	18	0.00%	11	6	52	52
2009	3	0	41	41	0.00%	23	5	0	25	25	0.00%	11	9	66	66
2009	4	0	59	59	0.00%	37	5	0	27	27	0.00%	20	3	86	86
2009	5	8	35	43	18.60%	31	4	0	27	27	0.00%	15	8	62	70
2009	6	30	28	58	51.72%	28	5	0	25	25	0.00%	16	3	53	83
2009	7	14	22	36	38.89%	22	3	0	28	28	0.00%	16	6	50	64
2009	8	16	10	26	61.54%	20	2	0	13	13	0.00%	10	2	23	39
2009	9	11	22	33	33.33%	21	3	0	20	20	0.00%	14	4	42	53
2009	10	44	45	89	49.44%	44	6	0	18	18	0.00%	10	3	63	107
2009	11	30	19	49	61.22%	33	3	0	34	34	0.00%	21	4	53	83
2009	12	11	23	34	32.35%	20	5	0	22	22	0.00%	15	3	45	56
2010	1	36	26	62	58.06%	35	6	0	16	16	0.00%	9	3	42	78
2010	2	23	16	39	58.97%	24	3	0	26	26	0.00%	16	2	42	65
2010	3	38	71	109	34.86%	65	6	0	40	40	0.00%	22	6	111	149
2010	4	63	38	101	62.38%	65	5	0	54	54	0.00%	34	6	92	155
2010	5	72	30	102	70.59%	60	6	0	40	40	0.00%	29	4	70	142
2010	6	10	28	38	26.32%	27	2	0	10	10	0.00%	9	2	38	48
2010	7	8	19	27	29.63%	17	4	0	30	30	0.00%	13	5	49	57
2010	8	16	29	45	35.56%	24	4	0	17	17	0.00%	11	3	46	62

This chart is a summary of frequency-related statistics gathered since the start of the Field Trial. Of particular interest is the drop in operation outside of the FTL bounds, trending lower in the latter part of 2008 with November 2008 having the least number of clock-minutes of operation outside the FTL bounds, followed by August 2009, over the dataset.

Frequency Statistics

Eastern Interconnection

Year	Month	Total Minutes FTL_Low at 59.98 Hz SF	Total Minutes FTL_Low at 60 Hz SF	FTL_Low at 59.98 Hz SF	Total Minutes FTL_Low at 60 Hz SF	Total FTL_Low Minutes	Percentage Low During TEC	FTL_Low Events	FTL_Low Max Duration	FTL_High Max Duration	Total FTL_Low and FTL_High Minutes at 60 Hz SF	Total FTL_Low and FTL_High Minutes
2007	7	26	75	95	21.05%	41	8	74	178			
2007	8	47	65	122	46.72%	73	5	172	172			
2007	9	32	75	95	21.05%	41	8	172	172			
2007	10	44	65	122	46.72%	73	5	172	172			
2007	11	85	21	95	77.89%	60	4	172	172			
2007	12	37	22	59	62.71%	38	6	172	172			
2008	1	0	75	75	0.00%	34	8	172	172			
2008	2	18	71	89	20.22%	46	8	172	172			
2008	3	37	65	102	36.27%	55	6	172	172			
2008	4	41	65	106	38.68%	60	5	172	172			
2008	5	67	39	106	63.21%	63	4	172	172			
2008	6	40	21	61	65.57%	34	5	172	172			
2008	7	42	17	59	71.19%	29	7	172	172			
2008	8	41	19	60	68.33%	35	5	172	172			
2008	9	25	44	69	36.23%	39	4	172	172			
2008	10	35	33	68	51.47%	38	5	172	172			
2008	11	13	9	22	59.09%	13	5	172	172			
2008	12	16	34	50	32.00%	35	4	172	172			
2009	1	2	26	28	7.14%	16	4	172	172			
2009	2	0	34	34	0.00%	18	4	172	172			
2009	3	0	41	41	0.00%	23	5	172	172			
2009	4	0	59	59	0.00%	37	5	172	172			
2009	5	8	35	43	18.60%	31	4	172	172			
2009	6	30	28	58	51.72%	28	5	172	172			
2009	7	14	22	36	38.89%	22	3	172	172			
2009	8	16	10	26	61.54%	20	2	172	172			
2009	9	11	22	33	33.33%	21	3	172	172			
2009	10	44	45	89	49.44%	44	6	172	172			
2009	11	30	19	49	61.22%	33	3	172	172			
2009	12	11	23	34	32.35%	20	5	172	172			
2010	1	36	26	62	58.06%	35	6	172	172			
2010	2	23	16	39	58.97%	24	3	172	172			
2010	3	38	71	109	34.86%	65	6	172	172			
2010	4	63	38	101	62.38%	65	5	172	172			
2010	5	72	30	102	70.59%	60	6	172	172			
2010	6	10	28	38	26.32%	27	2	172	172			
2010	7	8	19	27	29.63%	17	4	172	172			
2010	8	16	29	45	35.56%	24	4	172	172			

This chart is a summary of frequency-related statistics gathered since the start of the Field Trial. Of particular interest is the drop in operation outside of the FTL bounds, trending lower in the latter part of 2008 with November 2008 having the least number of clock-minutes of operation outside the FTL bounds, followed by August 2009, over the dataset.

Frequency Statistics

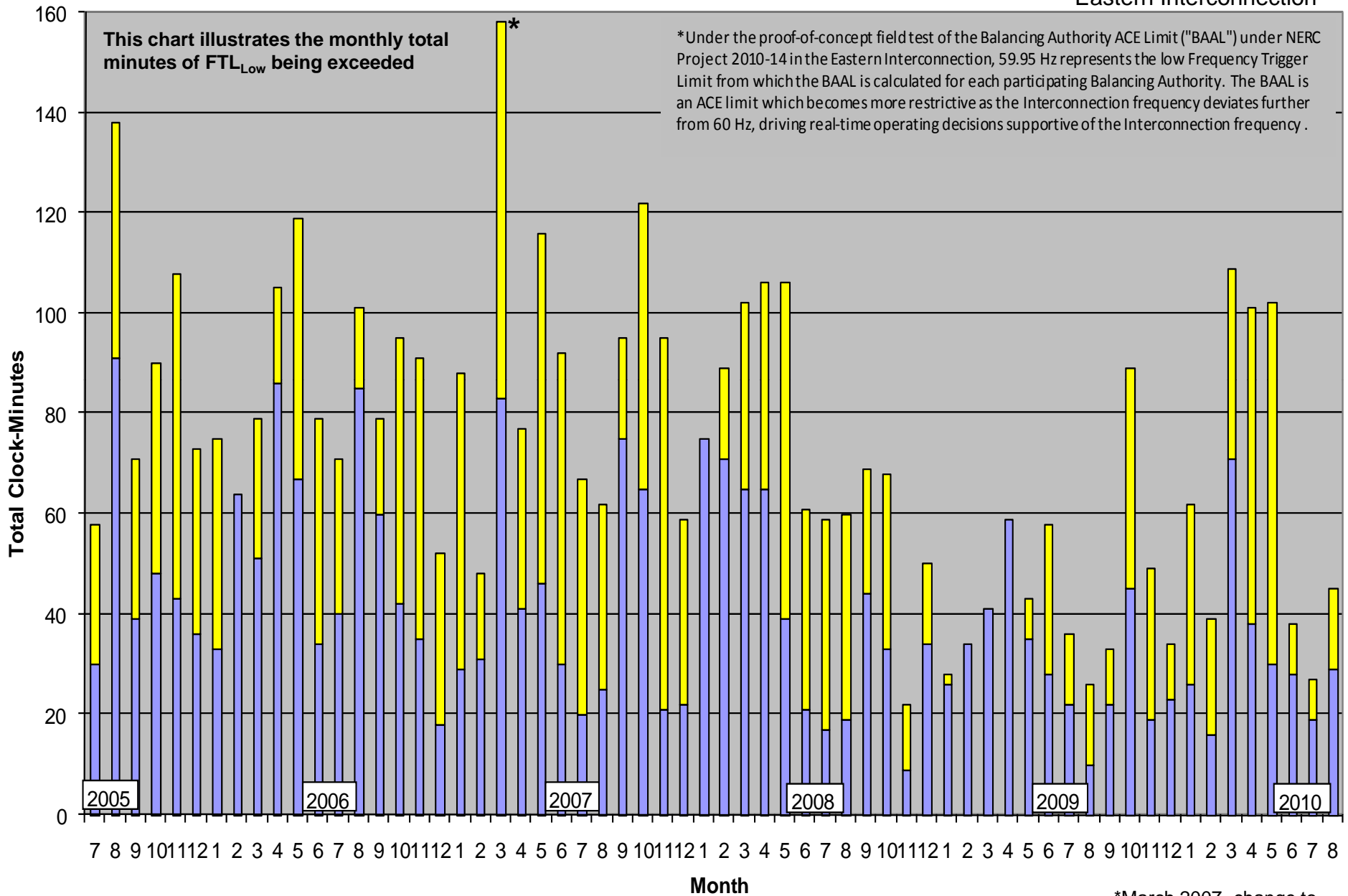
Eastern Interconnection

Year	Month	Total Minutes FTL_High at 60.02 Hz SF	Total Minutes FTL_High at 60 Hz SF	Total FTL_High Minutes	Percentage High During TEC	FTL_High Events	FTL_High Max Duration	Total FTL_Low and FTL_High Minutes at 60 Hz SF	Total FTL_Low and FTL_High Minutes
2007	7	0	27	27	0.00%	16	5	102	122
2007	8	0	27	27	0.00%	16	5	102	122
2007	9	0	27	27	0.00%	16	5	102	122
2007	10	1	56	57	1.75%	36	5	121	179
2007	11	0	34	34	0.00%	24	5	55	129
2007	12	0	61	61	0.00%	38	4	83	120
2008	1	0	48	48	0.00%	24	4	123	123
2008	2	0	51	51	0.00%	24	8	122	140
2008	3	0	40	40	0.00%	34	2	105	142
2008	4	0	59	59	0.00%	33	6	124	165
2008	5	0	40	40	0.00%	20	5	79	146
2008	6	0	35	35	0.00%	19	5	56	96
2008	7	0	17	17	0.00%	12	3	34	76
2008	8	0	29	29	0.00%	17	6	48	89
2008	9	0	55	55	0.00%	21	11	99	124
2008	10	0	27	27	0.00%	19	3	60	95
2008	11	0	13	13	0.00%	9	4	22	35
2008	12	0	11	11	0.00%	8	3	45	61
2009	1	0	19	19	0.00%	9	3	45	47
2009	2	0	18	18	0.00%	11	6	52	52
2009	3	0	25	25	0.00%	11	9	66	66
2009	4	0	27	27	0.00%	20	3	86	86
2009	5	0	27	27	0.00%	15	8	62	70
2009	6	0	25	25	0.00%	16	3	53	83
2009	7	0	28	28	0.00%	16	6	50	64
2009	8	0	13	13	0.00%	10	2	23	39
2009	9	0	20	20	0.00%	14	4	42	53
2009	10	0	18	18	0.00%	10	3	63	107
2009	11	0	34	34	0.00%	21	4	53	83
2009	12	0	22	22	0.00%	15	3	45	56
2010	1	0	16	16	0.00%	9	3	42	78
2010	2	0	26	26	0.00%	16	2	42	65
2010	3	0	40	40	0.00%	22	6	111	149
2010	4	0	54	54	0.00%	34	6	92	155
2010	5	0	40	40	0.00%	29	4	70	142
2010	6	0	10	10	0.00%	9	2	38	48
2010	7	0	30	30	0.00%	13	5	49	57
2010	8	0	17	17	0.00%	11	3	46	62

This chart is a summary of frequency-related statistics gathered since the start of the Field Trial. Of particular interest is the drop in operation outside of the FTL bounds, trending lower in the latter part of 2008 with November 2008 having the least number of clock-minutes of operation outside the FTL bounds, followed by August 2009, over the dataset.

Total Clock-Minutes of Frequency below 59.95 Hz*

Eastern Interconnection

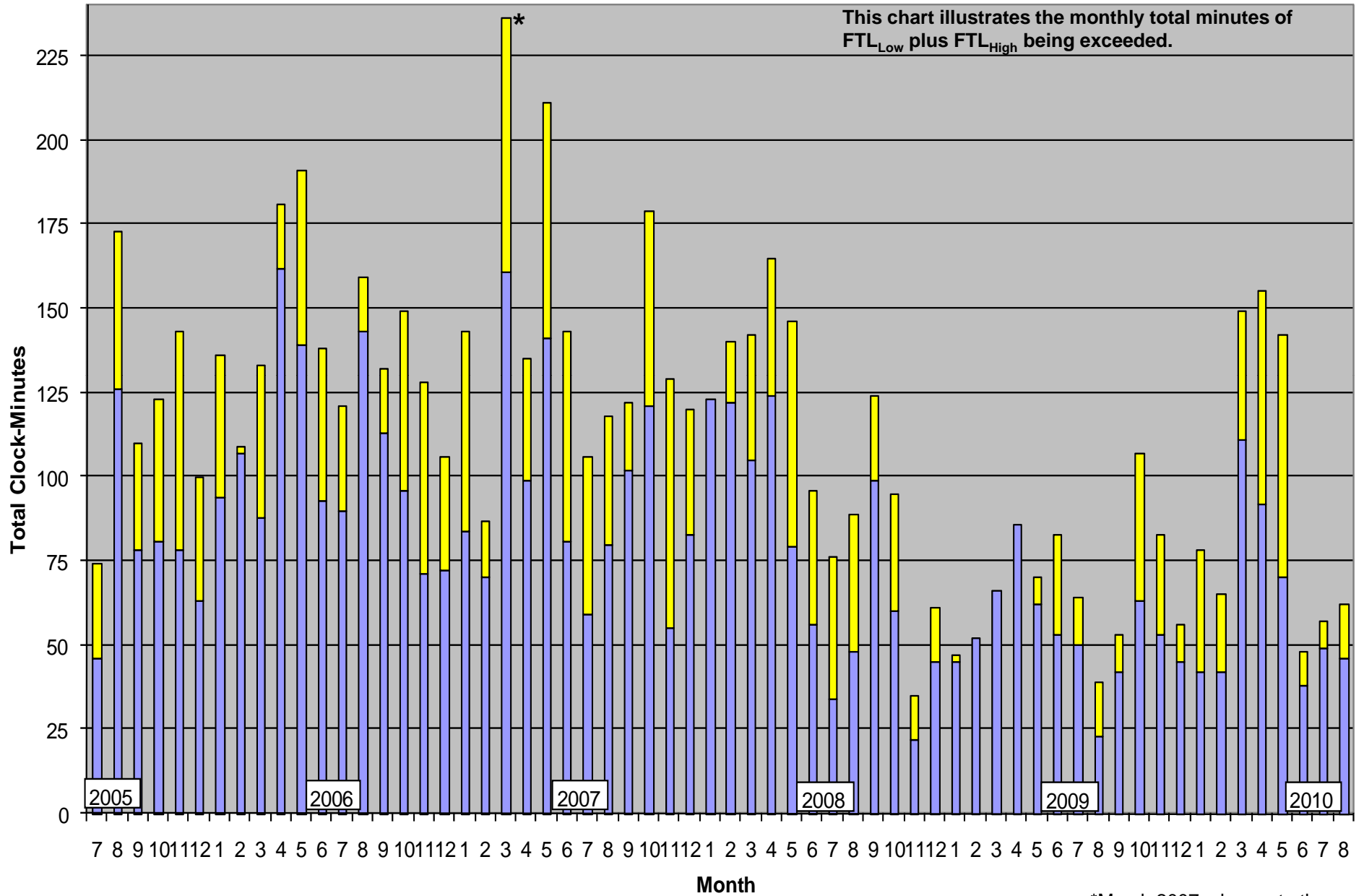


■ Total Minutes at 60 Hz
 ■ Addition Minutes During Time-Error Corrections

*March 2007- change to the new Daylight Saving Time.

Total Clock-Minutes less than 59.95 Hz or greater than 60.05 Hz

Eastern Interconnection



*March 2007- change to the new Daylight Saving Time.

■ Total Minutes at 60 Hz
 ■ Addition Minutes During Time-Error Corrections

DateTime_EDT	ActualFreq	SchedFreq	MinCtLow	MinCtHigh	DateTimeGMT_shift
8/27/10 5:14	59.98	60	16	0	8/27/10 9:14
8/27/10 5:15	59.989	60	17	0	8/27/10 9:15
8/27/10 5:16	59.99	60	18	0	8/27/10 9:16
8/27/10 5:17	59.984	60	19	0	8/27/10 9:17
8/27/10 5:18	59.976	60	20	0	8/27/10 9:18
8/30/10 6:14	59.968	60	16	0	8/30/10 10:14
8/30/10 6:15	59.982	60	17	0	8/30/10 10:15
8/19/10 9:23	59.9886	60	16	0	8/19/10 13:23
8/19/10 9:24	59.9856	60	17	0	8/19/10 13:24
8/19/10 9:25	59.9831	60	18	0	8/19/10 13:25
8/19/10 9:26	59.9757	60	19	0	8/19/10 13:26
8/19/10 9:27	59.9885	60	20	0	8/19/10 13:27
8/19/10 9:28	59.9873	60	21	0	8/19/10 13:28
8/19/10 9:29	59.9755	60	22	0	8/19/10 13:29
8/19/10 9:30	59.9718	60	23	0	8/19/10 13:30
8/19/10 9:31	59.9798	60	24	0	8/19/10 13:31
8/19/10 9:32	59.9759	60	25	0	8/19/10 13:32
8/22/10 7:02	60.0378	60	0	16	8/22/10 11:02
8/22/10 7:03	60.0295	60	0	17	8/22/10 11:03
8/22/10 7:04	60.0319	60	0	18	8/22/10 11:04
8/22/10 7:05	60.0233	60	0	19	8/22/10 11:05
8/22/10 7:06	60.0335	60	0	20	8/22/10 11:06
8/22/10 7:07	60.0268	60	0	21	8/22/10 11:07
8/23/10 22:52	60.0433	60	0	16	8/24/10 2:52
8/23/10 22:53	60.0413	60	0	17	8/24/10 2:53
8/23/10 22:54	60.0355	60	0	18	8/24/10 2:54
8/23/10 22:55	60.0423	60	0	19	8/24/10 2:55
8/23/10 22:56	60.0413	60	0	20	8/24/10 2:56
8/23/10 22:57	60.0316	60	0	21	8/24/10 2:57
8/26/10 15:37	59.9722	59.98	16	0	8/26/10 19:37
8/26/10 15:38	59.9626	59.98	17	0	8/26/10 19:38
8/26/10 15:39	59.9742	59.98	18	0	8/26/10 19:39
8/26/10 15:40	59.9745	59.98	19	0	8/26/10 19:40
8/26/10 15:41	59.969	59.98	20	0	8/26/10 19:41
8/26/10 15:42	59.9563	59.98	21	0	8/26/10 19:42
8/26/10 15:43	59.9608	59.98	22	0	8/26/10 19:43

Periods of the BAAL being exceeded for more than 15 consecutive clock-minutes noted on left.

Periods of the FTL being exceeded for this presentation:

DateTime_EDT	ActualFreq	SchedFreq	MinuteCount
8/12/10 6:57	60.051	60	1
8/12/10 6:58	60.0564	60	2
8/12/10 6:59	60.0603	60	3
8/23/10 6:02	59.945	60	1
8/23/10 6:03	59.9402	60	2
8/23/10 6:04	59.9361	60	3
8/23/10 6:05	59.9383	60	4

DateTime_EDT	ActualFreq	SchedFreq	MinCtLow	MinCtHigh	DateTimeGMT_shift
8/27/10 5:14	59.99	59.98	16	0	8/27/10 9:14
8/27/10 5:15					
8/27/10 5:16					
8/27/10 5:17					
8/27/10 5:18					
8/30/10 6:14					
8/30/10 6:15					
8/19/10 9:23					
8/19/10 9:24					
8/19/10 9:25					
8/19/10 9:26					
8/19/10 9:27					
8/19/10 9:28					
8/19/10 9:29					
8/19/10 9:30					
8/19/10 9:31					
8/19/10 9:32					
8/22/10 7:02					
8/22/10 7:03					
8/22/10 7:04					
8/22/10 7:05					
8/22/10 7:06					
8/22/10 7:07					
8/23/10 22:52					
8/23/10 22:53					
8/23/10 22:54					
8/23/10 22:55					
8/23/10 22:56					
8/23/10 22:57					
8/26/10 15:37					
8/26/10 15:38					
8/26/10 15:39					
8/26/10 15:40					
8/26/10 15:41					
8/26/10 15:42	59.9563	59.98	21	0	8/26/10 19:42
8/26/10 15:43	59.9608	59.98	22	0	8/26/10 19:43

Periods of the BAAL being exceeded for clock-minutes

Dates in this presentation:

Clock-minute Frequency greater than the FTL_{High} on August 12, 2010, ending 6:59 EDT: 3 consecutive clock-minutes

Clock-minute Frequency less than the FTL_{Low} on August 23, 2010, ending 6:05 EDT: 4 consecutive clock-minutes

Clock-minute ACE less than the $BAAL_{Low}$ on August 19, 2010, ending 9:31 EDT: 25 consecutive clock-minutes

Clock-minute ACE greater than the $BAAL_{High}$ on August 22, 2010, ending 7:06 EDT: 21 consecutive clock-minutes

Clock-minute ACE greater than the $BAAL_{High}$ on August 23, 2010, ending 22:56 EDT: 21 consecutive clock-minutes

Under draft BAL-007, a proposed $BAAL_{Low}$ violation would occur when the ACE is lower than $BAAL_{Low}$ for more than 30 consecutive clock-minutes and a proposed $BAAL_{High}$ violation would occur when the ACE is greater than $BAAL_{High}$ for more than 30 consecutive clock-minutes.

Under draft BAL-008, a proposed FTL_{Low} violation would occur when the Frequency is lower than FTL_{Low} for more than 30 consecutive clock-minutes and a proposed FTL_{High} violation would occur when the Frequency is greater than FTL_{High} for more than 30 consecutive clock-minutes.

exceeded for

eq	MinuteCount
60	1
60	2
60	3
60	1
60	2
60	3
60	4

8/12/2010 ending 6:59 EDT

3-minute duration above FTL_{High}

EI Clock-Minute Average Frequency

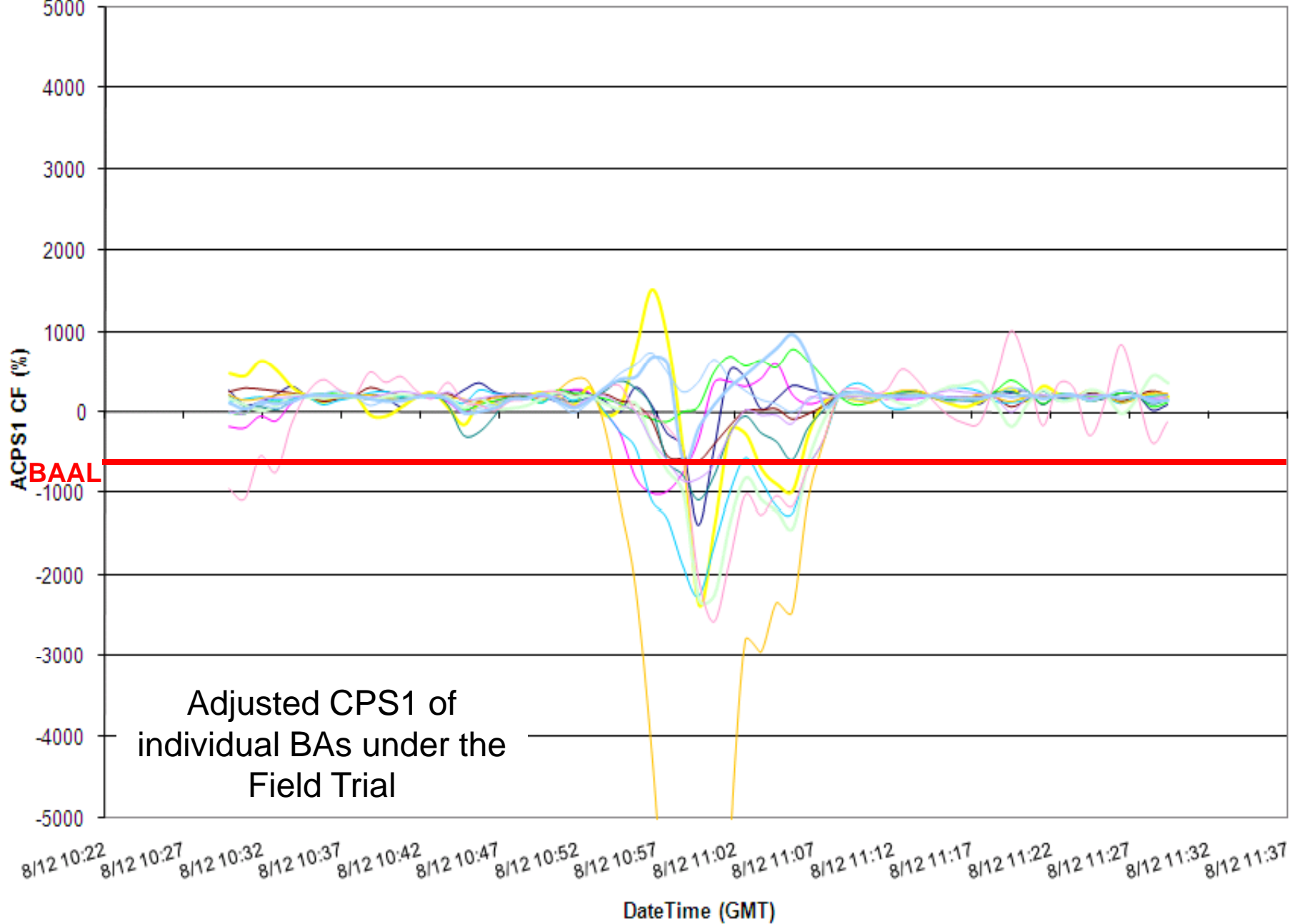


Clock-minute Actual Frequency of Participants

8/12/2010 ending 6:59 EDT

3-minute duration above FTL_{High}

ACPS1 Clock-Minute Averages

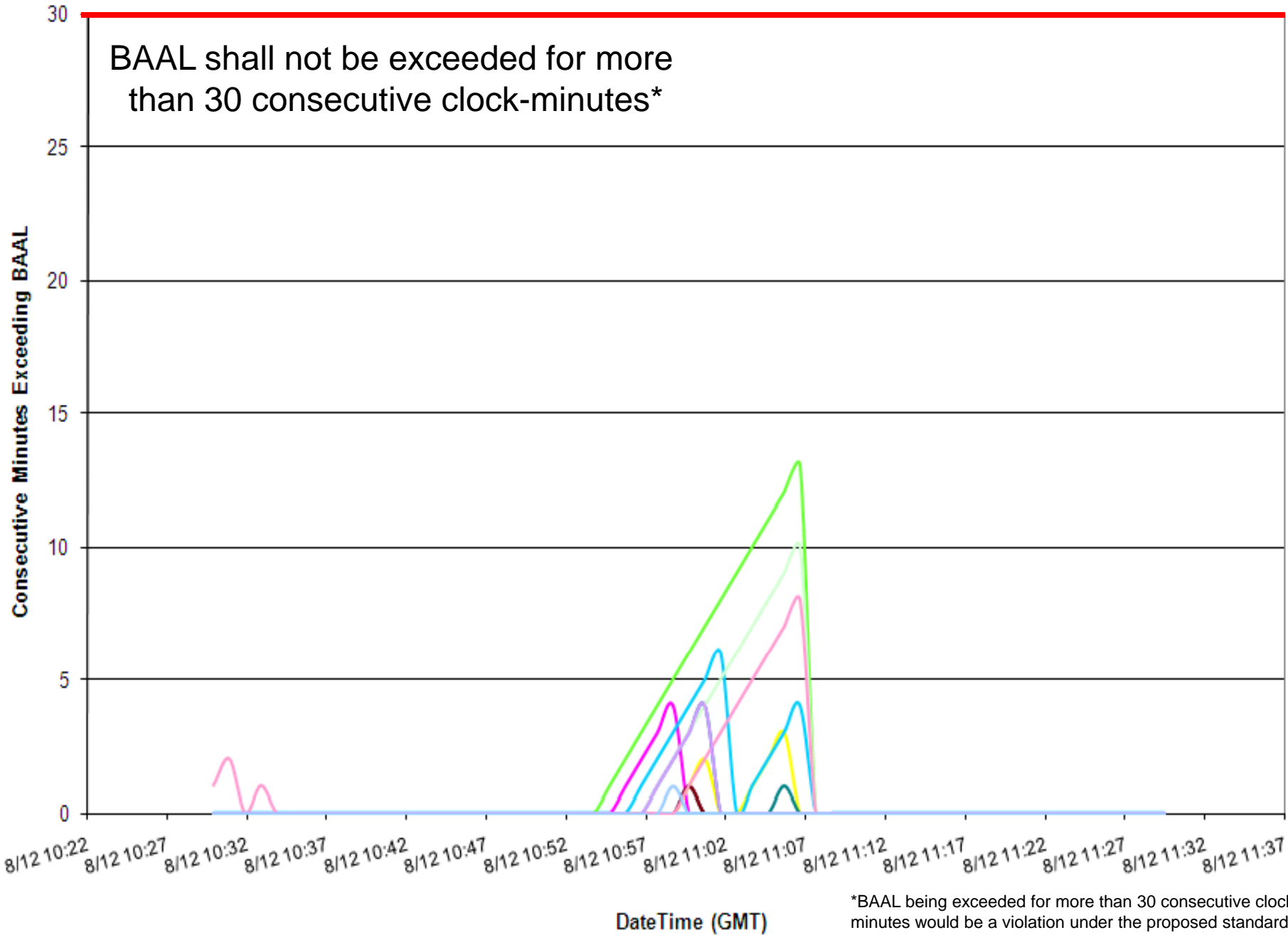


8/12/2010 ending 6:59 EDT

3-minute duration above FTL_{High}

Consecutive Minutes Exceeding BAAL

BAAL Violation*

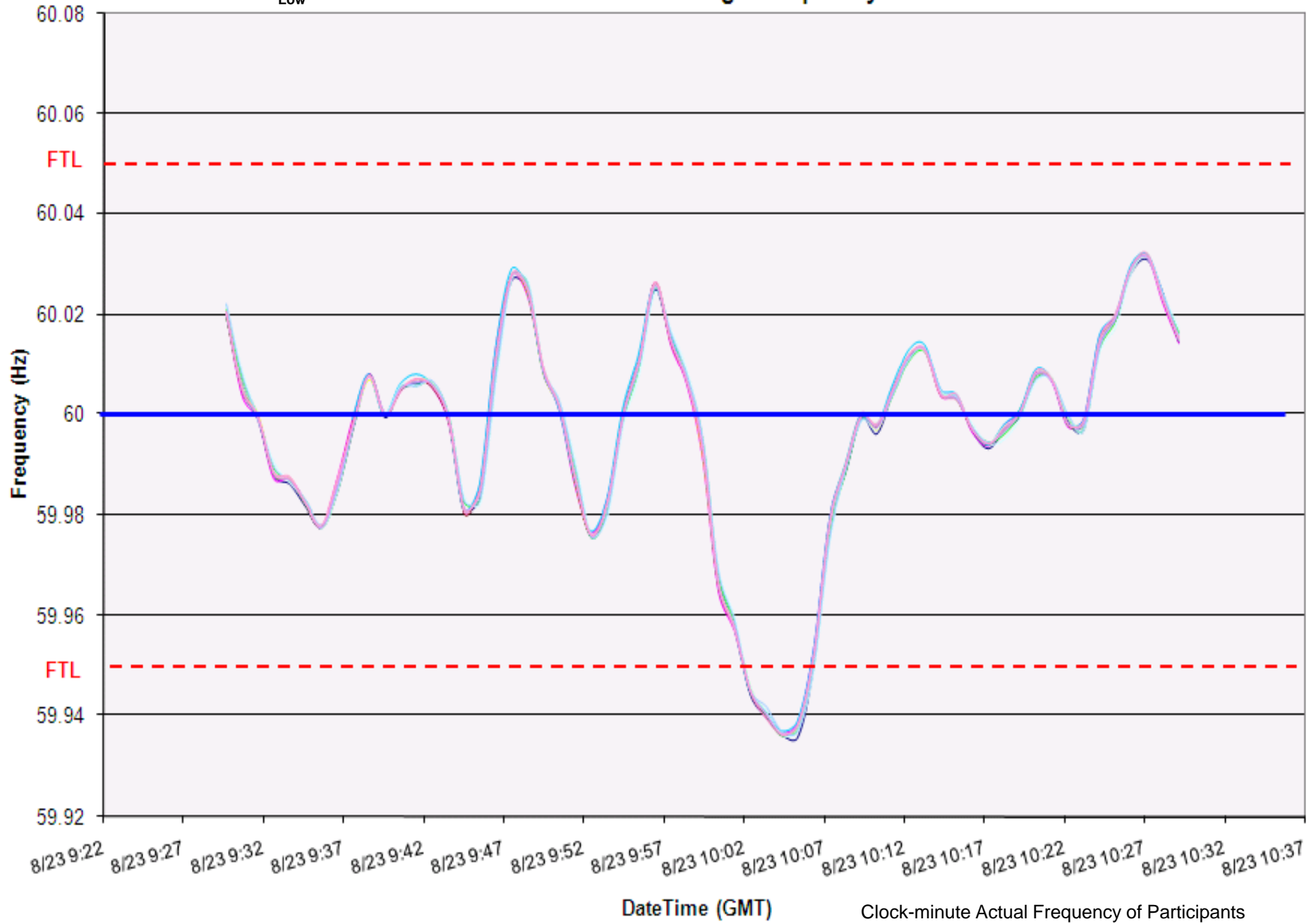


*BAAL being exceeded for more than 30 consecutive clock-minutes would be a violation under the proposed standard.

8/23/2010 ending 6:05 EDT

4-minute duration below FTL_{Low}

EI Clock-Minute Average Frequency

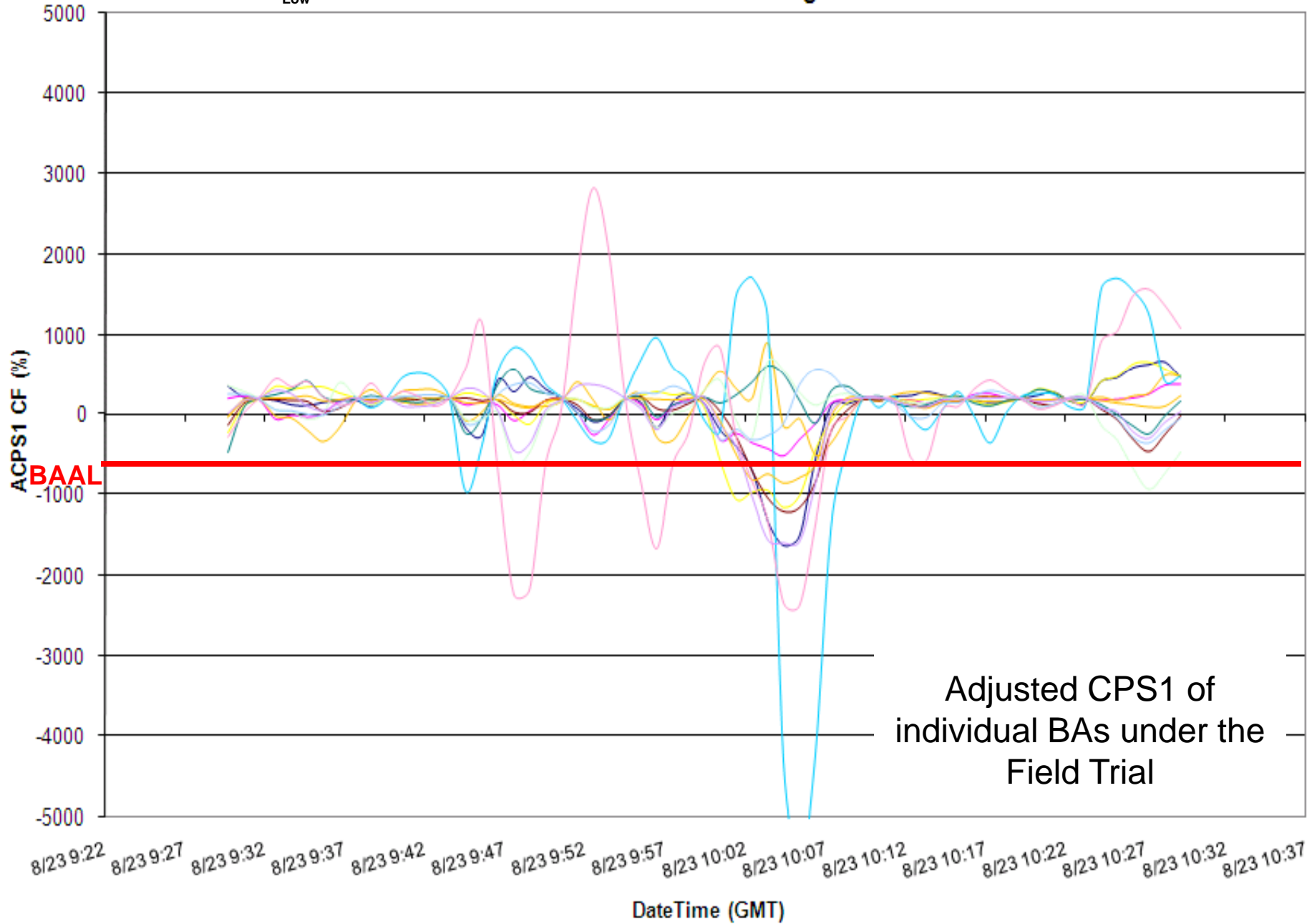


Clock-minute Actual Frequency of Participants

8/23/2010 ending 6:05 EDT

4-minute duration below FTL_{Low}

ACPS1 Clock-Minute Averages



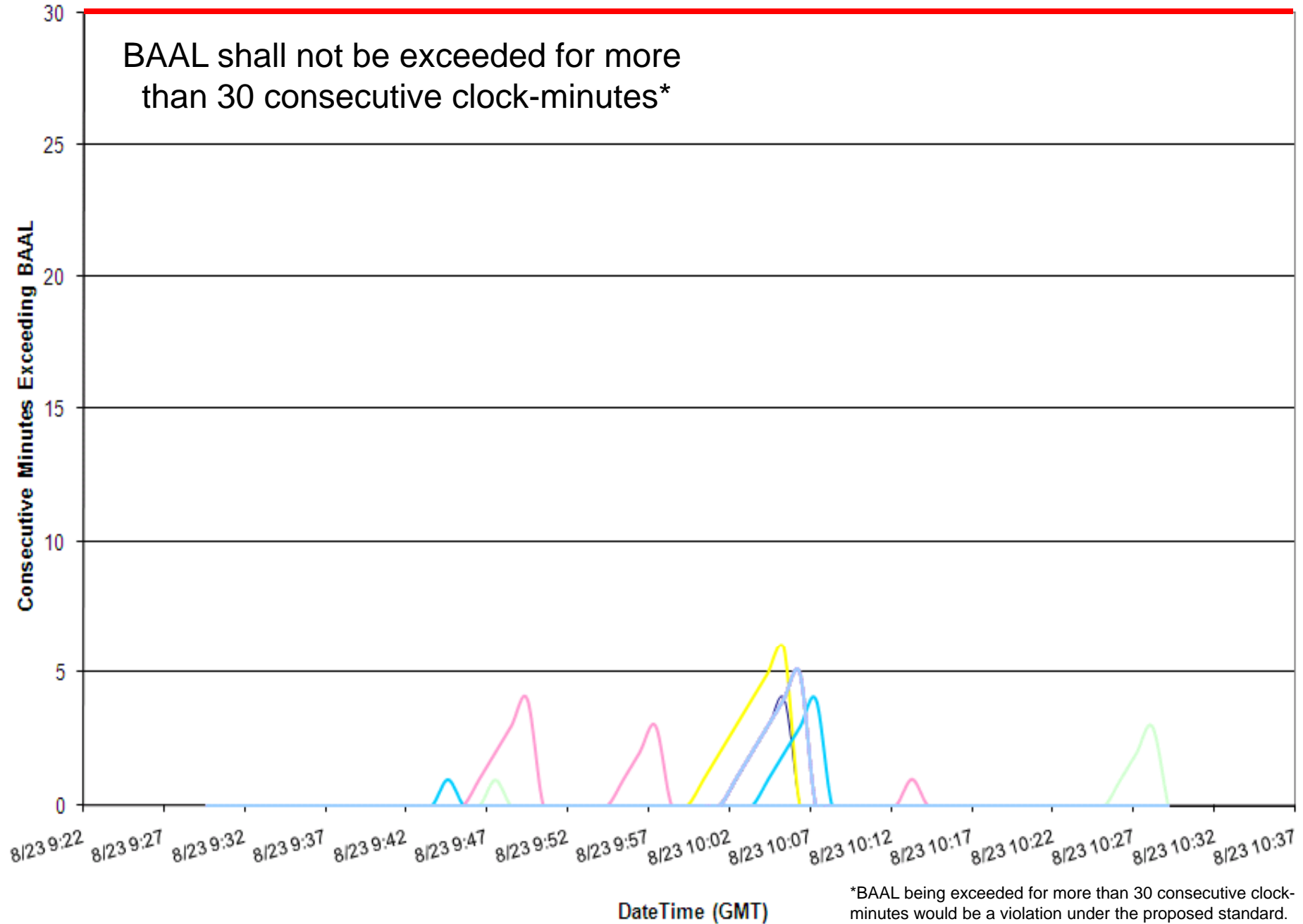
Adjusted CPS1 of
individual BAs under the
Field Trial

8/23/2010 ending 6:05 EDT

4-minute duration below FTL_{Low}

Consecutive Minutes Exceeding BAAL

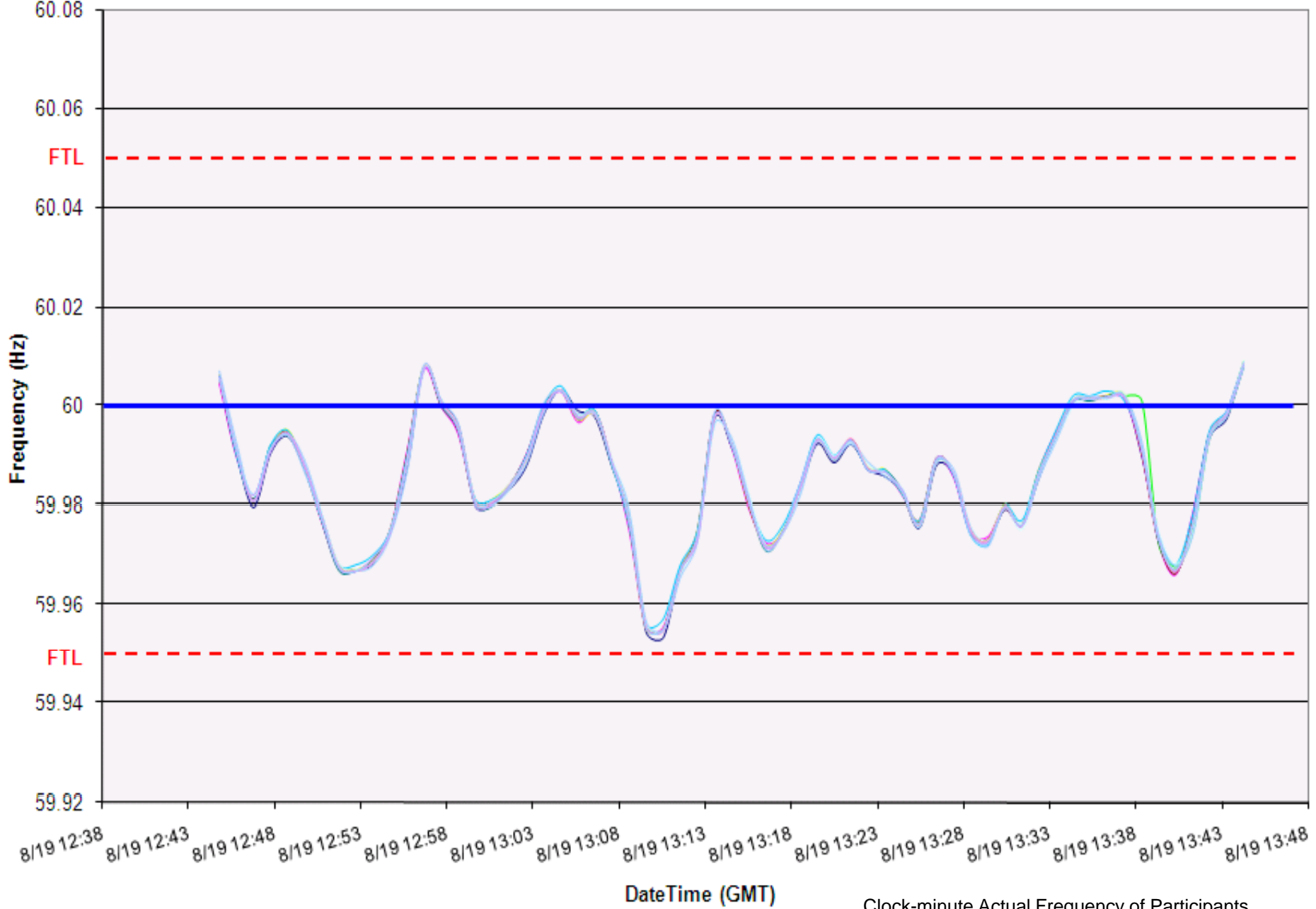
BAAL Violation*



*BAAL being exceeded for more than 30 consecutive clock-minutes would be a violation under the proposed standard.

8/19/2010 ending 9:31 EDT
25-minute duration below BAAL_{Low}

EI Clock-Minute Average Frequency

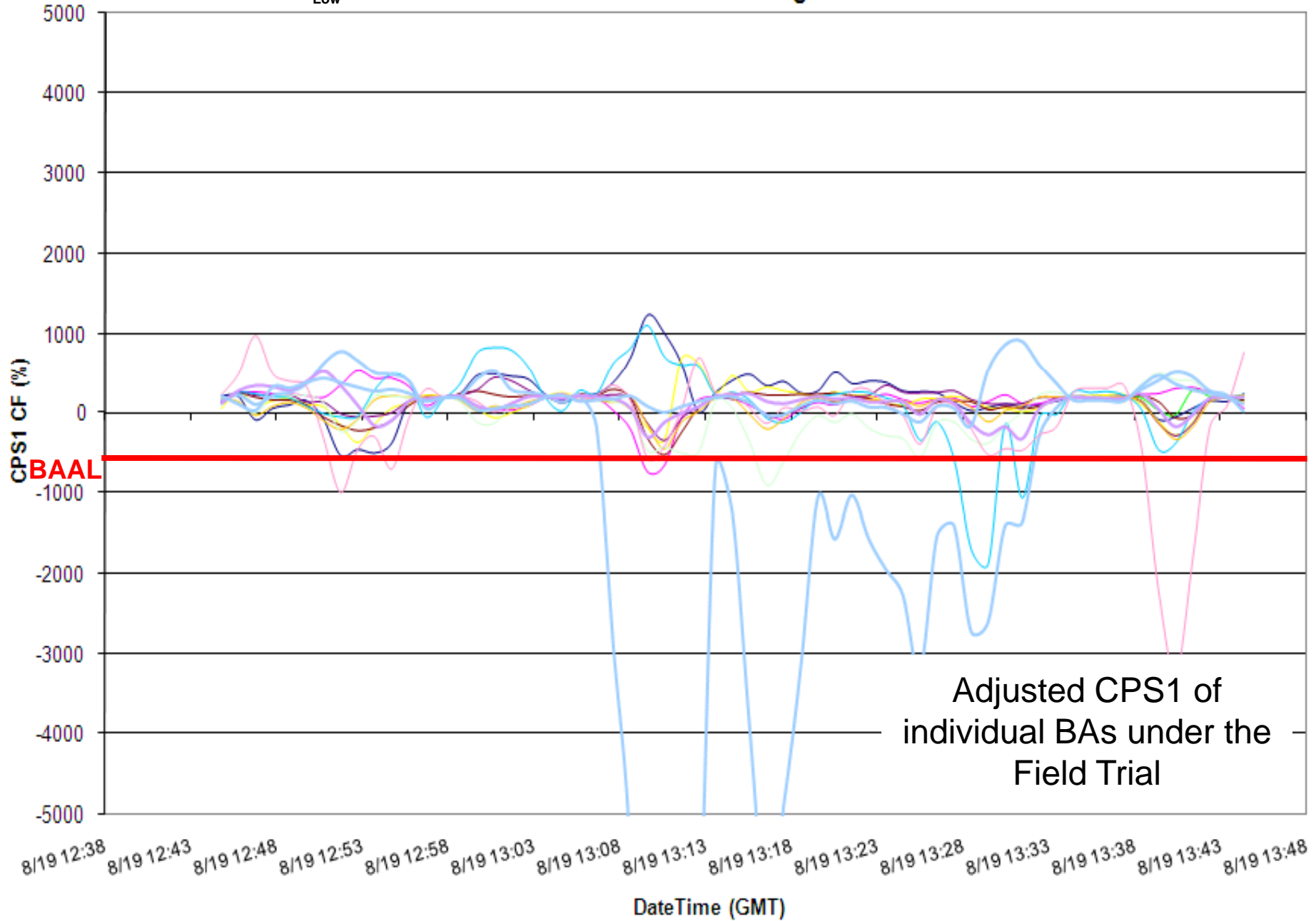


Clock-minute Actual Frequency of Participants

8/19/2010 ending 9:31 EDT

25-minute duration below BAAL_{Low}

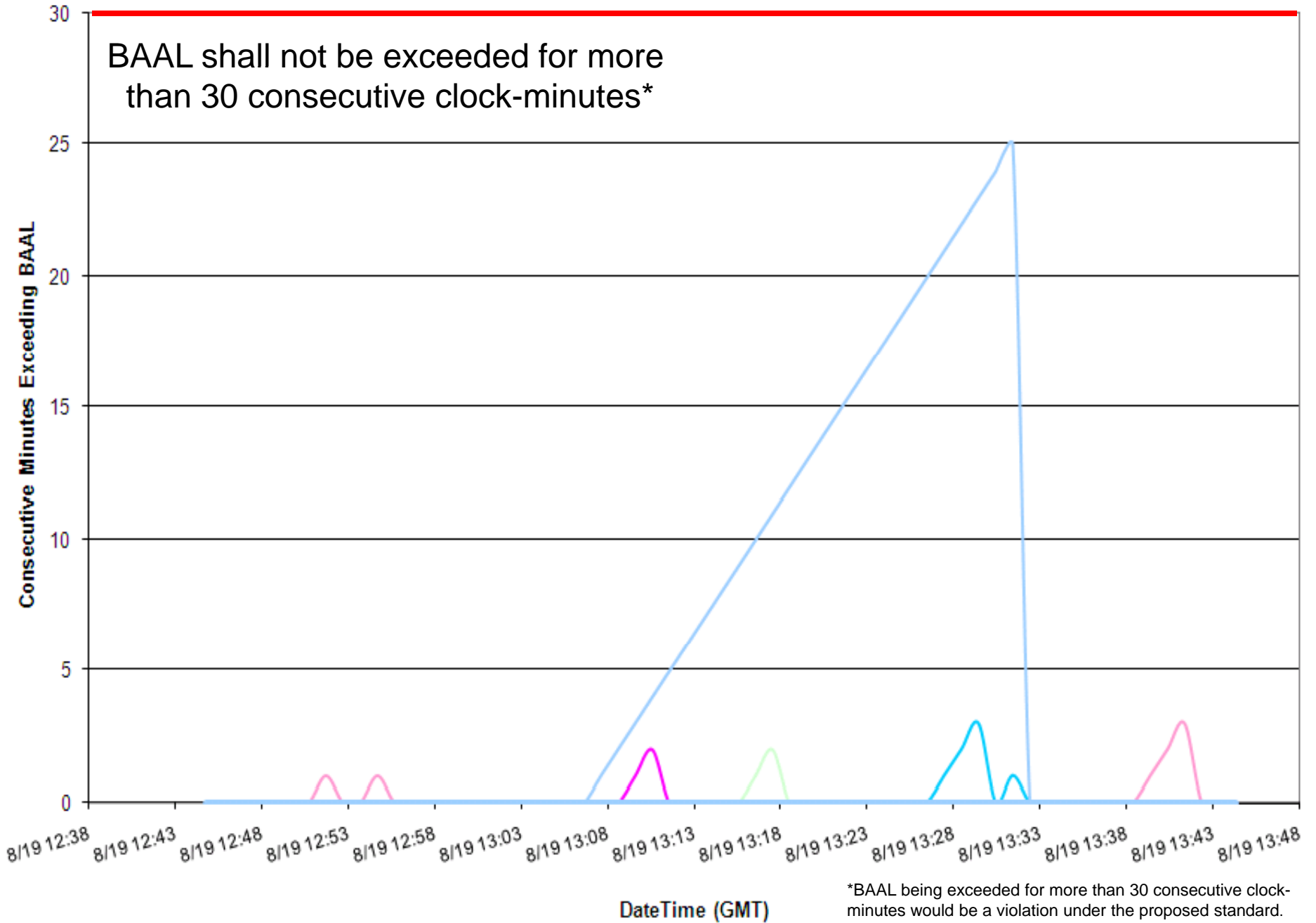
ACPS1 One-Minute Averages



8/19/2010 ending 9:31 EDT
25-minute duration below BAAL_{Low}

Consecutive Minutes Exceeding BAAL

BAAL Violation*



8/22/2010 ending 7:06 EDT
21-minute duration above BAAL_{High}

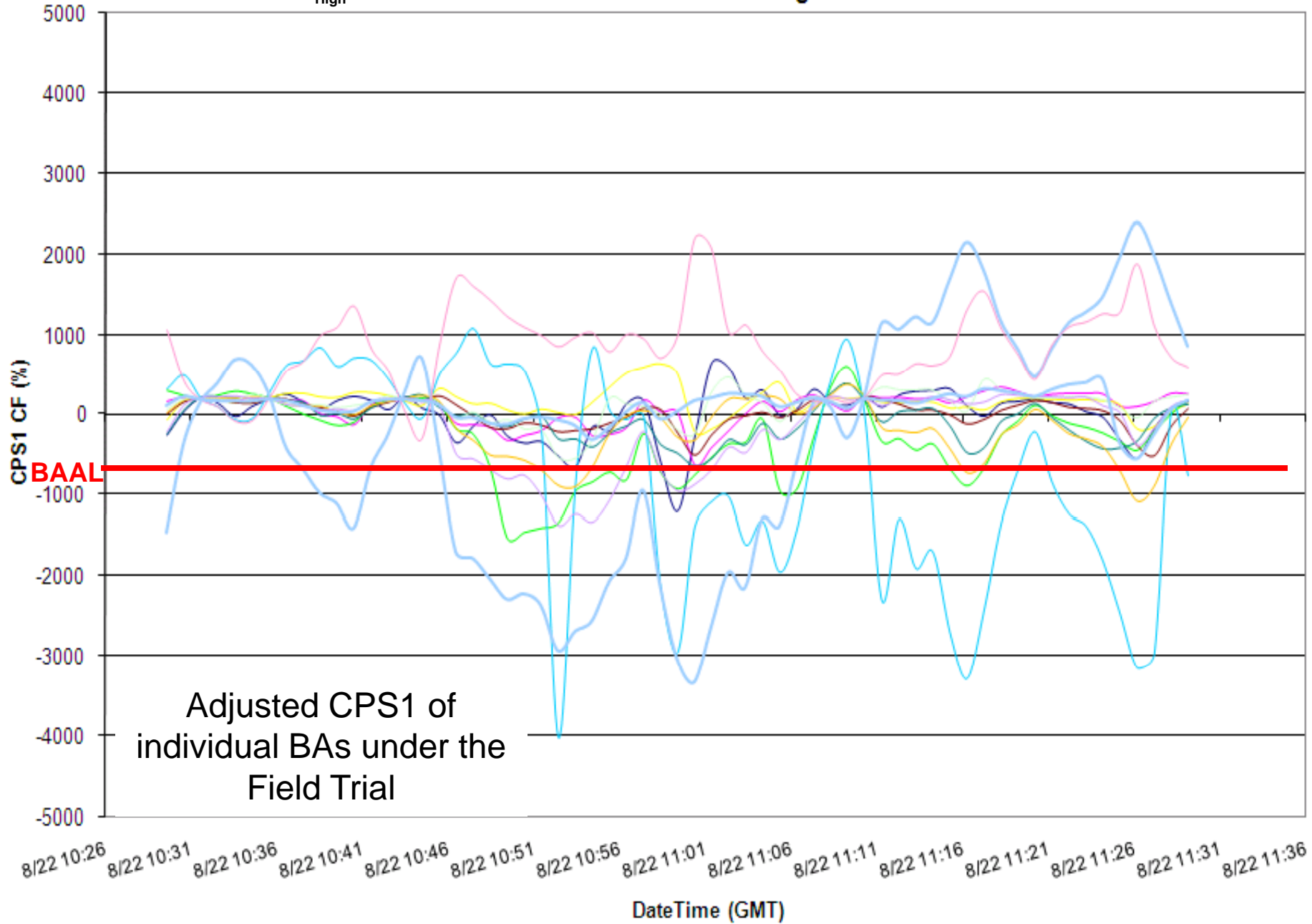
El Clock-Minute Average Frequency



Clock-minute Actual Frequency of Participants

8/22/2010 ending 7:06 EDT
21-minute duration above BAAL_{High}

ACPS1 One-Minute Averages



8/22/2010 ending 7:06 EDT
21-minute duration above BAAL_{High}

Consecutive Minutes Exceeding BAAL

BAAL Violation*



*BAAL being exceeded for more than 30 consecutive clock-minutes would be a violation under the proposed standard.

8/23/2010 ending 22:56 EDT
21-minute duration above BAAL_{High}

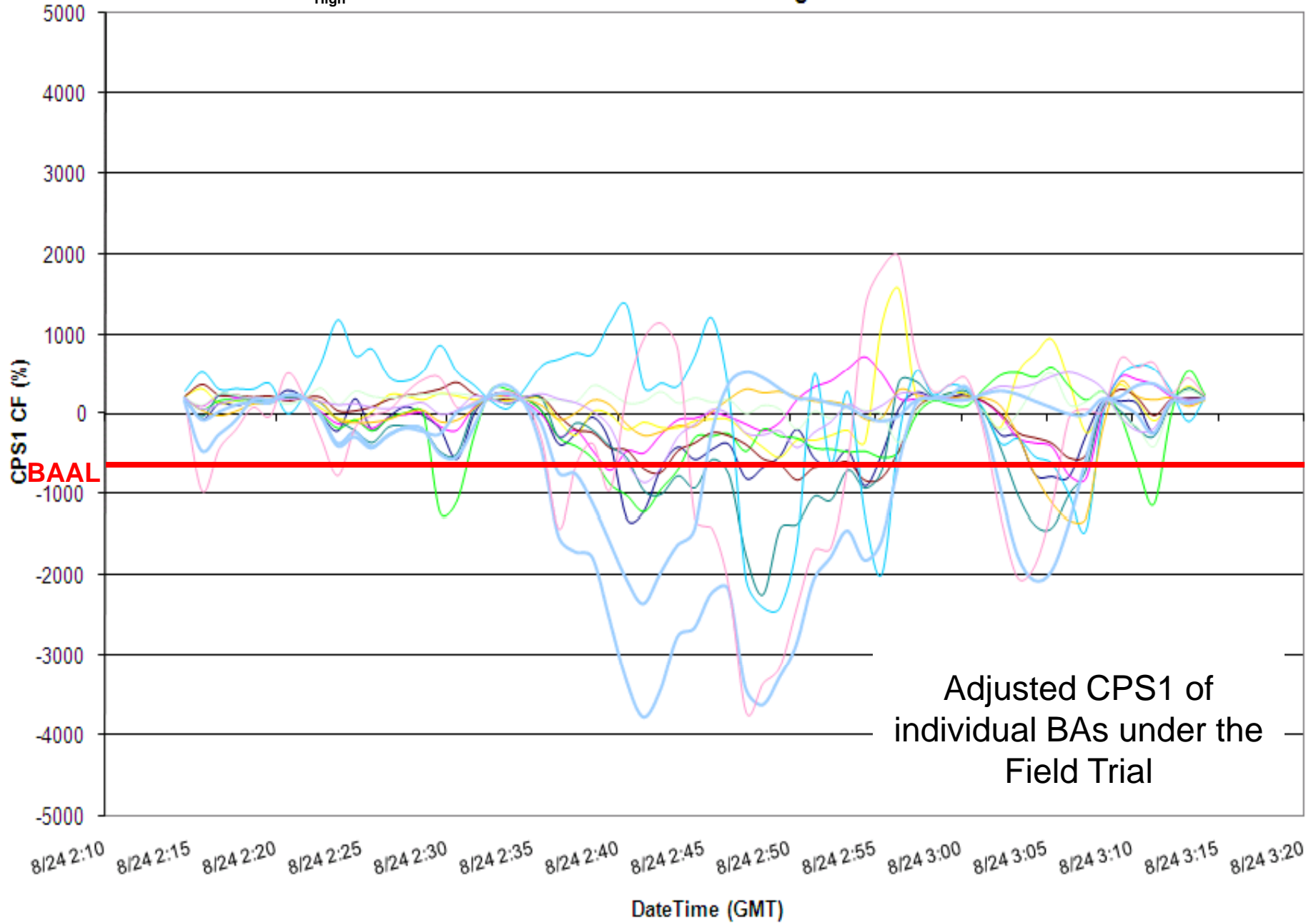
EI Clock-Minute Average Frequency



Clock-minute Actual Frequency of Participants

8/23/2010 ending 22:56 EDT
21-minute duration above BAAL_{High}

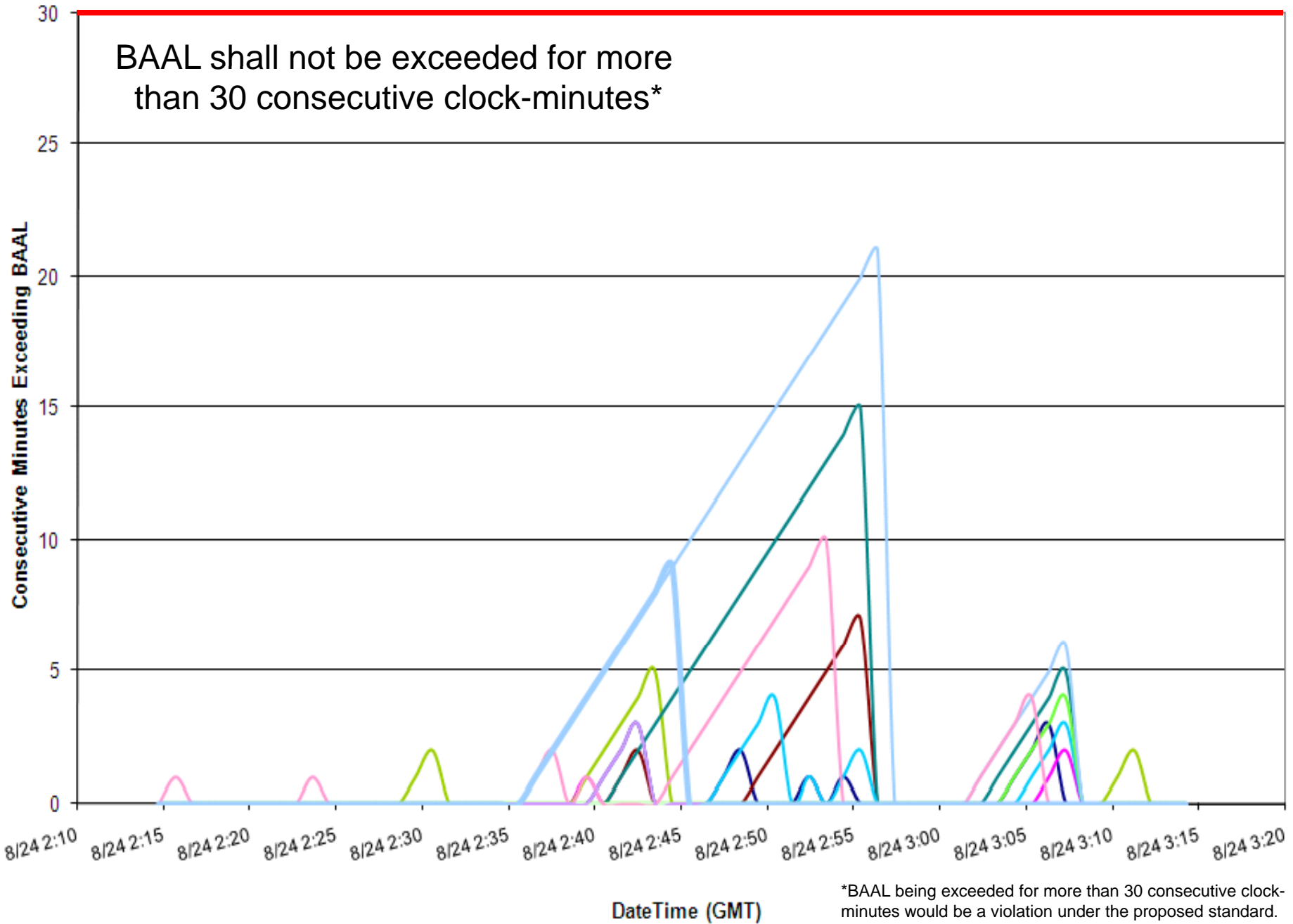
ACPS1 One-Minute Averages



8/23/2010 ending 22:56 EDT
21-minute duration above BAAL_{High}

Consecutive Minutes Exceeding BAAL

BAAL Violation*



Balancing Authority ACE Limit Proof-of-Concept Field Trial

Examples of circumstances when BAAL was exceeded and actions taken if appropriate

Clock-minute of ACE exceeding the BAAL (mm/dd/yy hh:mm)	Clock-minute of ACE returning within the BAAL (mm/dd/yy hh:mm)	TimeZone	Total duration of ACE exceeding the BAAL (minutes)	Event associated with a DCS-Reportable Event? (0=No, 1=Yes)	Event associated with a resource loss other than a DCS-Reportable Event? (0=No, 1=Yes)	Brief explanation of circumstances and notable actions taken if applicable
7/3/10 5:32	7/3/10 5:33	CDT	0:10	0	0	Inexperienced dual rated supervisor on desk had not noticed that he hit the bottom limit of his regulating units, because he was looking at ACE and didn't immediately panic as load was going to be picking up. Started making adjustment after reading instruction but it was already too late to avoid problem.
7/15/10 22:19	7/15/10 22:33	EDT	0:14	0	0	Primary demand reduced faster than expected. Resources were dispatched down and regulation was placed on manual basepoint.
7/18/10 6:35	7/18/10 6:46	EPT	0:11	0	0	IPP Generation not matching scheduled output
7/24/10 10:33	7/24/10 10:50	CDT	0:17	0	0	A 250 MW combined cycle unit's expected output was sold while still in simple cycle mode. The system was short when the unit failed to go into combined cycle mode. A 110 MW peaker was requested to start at 10:49 and synchronized at 10:55. BAAL corrected due to average frequency returning above 60 HZ
7/29/10 6:56	7/29/10 7:07	EDT	0:11	0	0	A large reduction in exports and load coming in lighter than expected caused an overgenerated situation. No notable actions were taken
7/29/10 6:57	7/29/10 7:08	EDT	0:11	0	0	IPP Generation not matching scheduled output
7/31/10 12:44	7/31/10 13:01	EST	0:17	0	0	Generation was unable to keep up with the non-conforming load. The operator contacted the load to inform them of the situation and requested a 2 minute interruption to bring ACE back within compliance.

Balancing Authority ACE Limit Proof-of-Concept Field Trial

Discussion

Doug Hils

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