

# **Balancing Authority ACE Limit Proof-of-Concept Field Trial Project 2010-14**

WECC Update Discussion  
May 31, 2011

**DISCUSSION STARTING AT 3:30 PM EDT**

Bob Klueber- Midwest ISO

Balancing Authority Reliability-based Control Standard Drafting Team  
(BARCSDT)

# Balancing Authority ACE Limit Proof-of-Concept Field Trial

## Western Interconnection Field Trial Participation

Western Interconnection Balancing Authority Participants	2010 Frequency Bias	WECC Region	Reliability Coordinator	Start Date
Alberta Electric System Operator (AESO)	-125	NWPP	WECC	March 1, 2010
Arizona Public Service Company (AZPS)	-74.5	AZNMSNV	WECC	March 1, 2010
Bonneville Power Administration (BPAT)	-157.3	NWPP	WECC	March 1, 2010
British Columbia Transmission Corporation (BCTC)	-118	NWPP	WECC	April 1, 2010
California Independent System Operator (CISO)	-485	CAMX	WECC	March 1, 2010
El Paso Electric Company (EPE)	-19	AZNMSNV	WECC	March 1, 2010
NaturEner Power Watch , LLC(GWA)	-2.1	NWPP	WECC	March 1, 2010
Idaho Power Company (IPCO)	-40	NWPP	WECC	March 1, 2010
Los Angeles Department of Water and Power (LDWP)	-62.3	CAMX	WECC	March 1, 2010
Nevada Power Company (NEVP)	-62.29	AZNMSNV	WECC	March 1, 2010
PacifiCorp East (PACE)	-77	NWPP	WECC	March 1, 2010
PacifiCorp West (PACW)	-45	NWPP	WECC	March 1, 2010
Portland General Electric (PGE)	-50	NWPP	WECC	April 1, 2010
Public Service Company of Colorado (PSCO)	-80	RMPA	WECC	March 1, 2010
Public Utility District No.1 of Chelan County(CHPD)	-12	NWPP	WECC	March 1, 2010
Public Utility District No.1 of Douglas County (DOPD)	-7	NWPP	WECC	April 1, 2010
Public Utility District No.2 of Grant County (GCPD)	-25	NWPP	WECC	March 1, 2010
Seattle City Light (SCL)	-40	NWPP	WECC	March 1, 2010
Sacramento Municipal Utility District (SMUD)	-45.18	NWPP	WECC	March 1, 2010
Salt River Project (SRP)	-65.2	AZNMSNV	WECC	May 1, 2010
Sierra Pacific Power Company (SPPC)	-20.04	NWPP	WECC	March 1, 2010
Tucson Electric Power (TEPC)	-30.4	AZNMSNV	WECC	March 1, 2010
Turlock Irrigation District (TIDC)	-6.7	NWPP	WECC	March 1, 2010
Western Area Power Administration – Rocky Mountain Region (WACM)	-55	RMPA	WECC	March 1, 2010
Western Area Power Administration- Desert Southwest Region (WALC)	-54.8	AZNMSNV	WECC	March 1, 2010

## Clock-Minute Frequency Below 59.932 Hz $FTL_{Low}$ or Above 60.068 Hz $FTL_{High}$

PrevailingTime	PTimeZone	FreqError	ActualFreq	SchedFreq
4/12/11 6:06	PDT	-0.0722	59.9278	60
PrevailingTime	PTimeZone	FreqError	ActualFreq	SchedFreq
4/13/11 5:56	PDT	0.0695	60.0695	60

04/12/2011 – Large BA in SW region under-generating during ramp period

04/13/2011 – Total over-generation of 1300 MW in NW region, and 300 MW in SW region.

# 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\*

BA_Number	Performance Since Entering the Field Trial				Current Month Statistics					
	BAAL <sub>Low</sub> Max_MinCtLow	BAAL <sub>High</sub> Max_MinCtHigh	ATL <sub>Low</sub> Max_MinCtLow2	ATL <sub>High</sub> Max_MinCtHigh2	BAAL <sub>Low</sub> Max_MinCtLow	BAAL <sub>High</sub> Max_MinCtHigh	ATL <sub>Low</sub> Max_MinCtLow2	ATL <sub>High</sub> Max_MinCtHigh2	BAAL <sub>Low</sub> or ATL <sub>Low</sub> Max_LowLimitCt	BAAL <sub>High</sub> or ATL <sub>High</sub> Max_HighLimitCt
BA05	44	42	58	49	27	21	0	0	27	21
BA06	16	15	13	15	5	9	0	0	5	9
BA07	25	36	29	41	18	14	0	0	18	14
BA08	22	41	19	34	10	4	0	0	10	4
BA09	11	9	15	55	2	1	0	0	3	2
BA11	10	14	16	7	9	7	0	0	9	7
BA12	14	13	14	17	3	7	0	0	3	7
BA13	7	27	12	45	4	4	0	0	4	4
BA14	23	31	13	55	5	5	0	0	5	5
BA15	5	7	7	5	0	0	0	0	0	0
BA16	14	20	25	34	11	14	0	0	11	14
BA18	10	13	25	15	1	2	0	0	1	2
BA19	23	26	30	34	4	21	0	0	4	21
BA22	7	10	15	14	5	5	0	0	5	5
BA23	20	18	13	27	8	8	0	0	8	8
BA25	15	22	21	14	12	14	0	0	12	14
BA26	19	23	43	41	19	7	0	0	19	7
BA27	23	22	16	15	3	2	0	0	3	2
BA28	22	24	38	39	22	22	0	0	22	22
BA29	17	9	16	16	5	7	0	0	5	7
BA30	19	18	47	39	2	18	0	0	2	18
BA31	20	23	29	28	12	23	0	0	12	23
BA33	26	16	28	58	4	9	0	0	4	9
BA34	16	17	23	29	12	10	0	0	12	10
BA36	69	33	114	25	22	33	0	0	22	33

MinCtLow = Count of consecutive clock-minutes BAAL<sub>Low</sub> was exceeded  
 MinCtHigh = Count of consecutive clock-minutes BAAL<sub>High</sub> was exceeded  
 MinCtLow2 = Count of consecutive clock-minutes ATL<sub>Low</sub> was exceeded  
 MinCtHigh2 = Count of consecutive clock-minutes ATL<sub>High</sub> was exceeded

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

## Statistics of BAAL being exceeded > 20 consecutive clock-minutes :

Date	Time	TimeZone	ActualFreq	SchedFreq	MinCtLow	MinCtHigh	CPS1	ACPS1	MinCtLow2	MinCtHigh2	LowLimitCt	HighLimitCt
04/01/11	6:35	MDT	59.9704	60	21	0	-10442.36029	-10442.36029	0	0	21	0
04/01/11	6:36	MDT	59.9687	60	22	0	-10955.23256	-10955.23256	0	0	22	0
04/01/11	6:37	MDT	59.9731	60	23	0	-8827.579915	-8827.579915	0	0	23	0
04/01/11	6:38	MDT	59.9663	60	24	0	-4380.782732	-4380.782732	0	0	24	0
04/01/11	18:52	MDT	59.9835	60	21	0	-15275.97475	-15275.97475	0	0	21	0
04/01/11	18:53	MDT	59.9847	60	22	0	-13725.6175	-13725.6175	0	0	22	0
04/01/11	18:54	MDT	59.9897	60	23	0	-8964.915212	-8964.915212	0	0	23	0
04/01/11	18:55	MDT	59.9892	60	24	0	-9181.865849	-9181.865849	0	0	24	0
04/01/11	18:56	MDT	59.986	60	25	0	-11299.26901	-11299.26901	0	0	25	0
04/01/11	18:57	MDT	59.9879	60	26	0	-5204.556713	-5204.556713	0	0	26	0
04/01/11	18:58	MDT	59.9905	60	27	0	-1532.821637	-1532.821637	0	0	27	0
04/02/11	8:18	PDT	60.0253	60	0	21	-853.0133206	-853.0133206	0	0	0	21
04/02/11	8:32	MDT	59.9712	60	21	0	-1919.482918	-1919.482918	0	0	21	0
04/02/11	8:33	MDT	59.971	60	22	0	-814.70141	-814.70141	0	0	22	0
04/02/11	8:34	MDT	59.9655	60	23	0	-718.9558326	-718.9558326	0	0	23	0
04/04/11	8:25	MDT	59.9832	60	21	0	-2940.827947	-2940.827947	0	0	21	0
04/04/11	8:26	MDT	59.9806	60	22	0	-3634.243137	-3634.243137	0	0	22	0
04/04/11	8:27	MDT	59.985	60	23	0	-1592.447127	-1592.447127	0	0	23	0
04/04/11	8:28	MDT	59.9764	60	24	0	-2885.417491	-2885.417491	0	0	24	0
04/04/11	8:29	MDT	59.9862	60	25	0	-1705.441235	-1705.441235	0	0	25	0
04/04/11	8:30	MDT	59.981	60	26	0	-3047.389307	-3047.389307	0	0	26	0
04/05/11	0:21	PDT	60.0134	60	0	21	-847.2926285	-847.2926285	0	0	0	21
04/05/11	0:22	PDT	60.0194	60	0	22	-1304.633389	-1304.633389	0	0	0	22
04/05/11	0:23	PDT	60.018	60	0	23	-1130.554637	-1130.554637	0	0	0	23
04/06/11	6:30	MDT	59.9629	60	21	0	-4430.703037	-4430.703037	0	0	21	0
04/06/11	6:31	MDT	59.9731	60	22	0	-2730.636899	-2730.636899	0	0	22	0
04/06/11	6:32	MDT	59.9741	60	23	0	-1394.146917	-1394.146917	0	0	23	0
04/06/11	6:33	MDT	59.9678	60	24	0	-930.473479	-930.473479	0	0	24	0
04/06/11	17:03	MDT	59.9819	60	21	0	-4495.262004	-4495.262004	0	0	21	0
04/06/11	17:04	MDT	59.9687	60	22	0	-7043.47803	-7043.47803	0	0	22	0
04/06/11	17:05	MDT	59.9829	60	23	0	-3231.469298	-3231.469298	0	0	23	0
04/06/11	17:06	MDT	59.9834	60	24	0	-4738.392949	-4738.392949	0	0	24	0

## Statistics of BAAL being exceeded > 20 consecutive clock-minutes :

Date	Time	TimeZone	ActualFreq	SchedFreq	MinCtLow	MinCtHigh	CPS1	ACPS1	MinCtLow2	MinCtHigh2	LowLimitCt	HighLimitCt
04/08/11	8:41	PDT	60.0396	60.02	0	21	-915.8561609	-2054.484896	0	0	0	21
04/08/11	8:42	PDT	60.0428	60.02	0	22	-1033.291562	-2115.126266	0	0	0	22
04/08/11	8:43	PDT	60.0368	60.02	0	23	-679.501385	-1726.526843	0	0	0	23
04/08/11	8:44	PDT	60.0372	60.02	0	24	-663.4158496	-1667.387768	0	0	0	24
04/08/11	8:45	PDT	60.0354	60.02	0	25	-496.1757464	-1400.300092	0	0	0	25
04/08/11	8:46	PDT	60.0364	60.02	0	26	-462.511542	-1270.452447	0	0	0	26
04/08/11	8:47	PDT	60.0339	60.02	0	27	-362.7922145	-1172.565185	0	0	0	27
04/08/11	8:48	PDT	60.0357	60.02	0	28	-720.4297293	-1892.951677	0	0	0	28
04/08/11	8:49	PDT	60.0226	60.02	0	29	80.20123408	-841.3277345	0	0	0	29
04/08/11	10:40	PDT	60.0422	60.02	0	21	-902.2072726	-1895.186797	0	0	0	21
04/08/11	10:41	PDT	60.0447	60.02	0	22	-1079.500835	-2115.533901	0	0	0	22
04/08/11	10:42	PDT	60.0459	60.02	0	23	-1103.702421	-2110.422438	0	0	0	23
04/08/11	10:43	PDT	60.037	60.02	0	24	-669.7273154	-1692.935922	0	0	0	24
04/08/11	10:44	PDT	60.0299	60.02	0	25	-311.9294948	-1346.130494	0	0	0	25
04/08/11	10:45	PDT	60.0388	60.02	0	26	-819.5078339	-1904.090636	0	0	0	26
04/08/11	10:46	PDT	60.0384	60.02	0	27	-800.3444283	-1887.675329	0	0	0	27
04/08/11	10:47	PDT	60.0394	60.02	0	28	-794.2894517	-1819.330124	0	0	0	28
04/08/11	10:48	PDT	60.0321	60.02	0	29	-319.2852379	-1177.607945	0	0	0	29
04/08/11	10:49	PDT	60.0282	60.02	0	30	-89.94269299	-797.119993	0	0	0	30
04/08/11	10:50	PDT	60.035	60.02	0	31	-257.5583696	-867.6361958	0	0	0	31
04/08/11	10:51	PDT	60.0279	60.02	0	32	-91.27552067	-828.6819021	0	0	0	32
04/08/11	10:52	PDT	60.0289	60.02	0	33	-129.3687435	-869.5232233	0	0	0	33
04/09/11	3:28	MDT	59.9964	60	21	0	-1259.98549	-1259.98549	0	0	21	0
04/09/11	14:39	MDT	60.0217	60.02	0	21	128.6278562	-711.0444239	0	0	0	21
04/09/11	20:46	MDT	59.9645	60	21	0	-2794.592201	-2794.592201	0	0	21	0
04/11/11	19:32	PDT	59.9736	60	21	0	-1419.069604	-1419.069604	0	0	21	0
04/11/11	19:33	PDT	59.9697	60	22	0	-1465.347579	-1465.347579	0	0	22	0
04/12/11	6:22	PDT	59.9543	60	21	0	-1240.028312	-1240.028312	0	0	21	0
04/12/11	6:23	PDT	59.9545	60	22	0	-1211.587392	-1211.587392	0	0	22	0
04/12/11	20:17	MDT	60.0122	60	0	21	-836.7156927	-836.7156927	0	0	0	21
04/13/11	6:25	MDT	59.9927	60	21	0	-1014.072095	-1014.072095	0	0	21	0
04/13/11	21:24	MDT	59.9804	60	21	0	-22756.49174	-22756.49174	0	0	21	0
04/13/11	21:25	MDT	59.9871	60	22	0	-3854.505507	-3854.505507	0	0	22	0
04/13/11	21:26	MDT	59.9801	60	23	0	-1156.606062	-1156.606062	0	0	23	0
04/14/11	6:23	MDT	59.9664	60	21	0	-1727.269929	-1727.269929	0	0	21	0
04/14/11	6:24	MDT	59.9577	60	22	0	-2208.664754	-2208.664754	0	0	22	0
04/14/11	6:25	MDT	59.9651	60	23	0	-924.8803661	-924.8803661	0	0	23	0
04/14/11	6:26	MDT	59.9657	60	24	0	-722.080512	-722.080512	0	0	24	0

## Statistics of BAAL being exceeded > 20 consecutive clock-minutes :

Date	Time	TimeZone	ActualFreq	SchedFreq	MinCtLow	MinCtHigh	CPS1	ACPS1	MinCtLow2	MinCtHigh2	LowLimitCt	HighLimitCt
04/14/11	19:48	MDT	59.9706	60	21	0	-22887.66544	-22887.66544	0	0	21	0
04/14/11	19:49	MDT	59.9656	60	22	0	-25897.02766	-25897.02766	0	0	22	0
04/14/11	19:50	MDT	59.9701	60	23	0	-7350.51252	-7350.51252	0	0	23	0
04/14/11	19:51	MDT	59.9686	60	24	0	-2454.806974	-2454.806974	0	0	24	0
04/15/11	3:10	MDT	59.9868	60	21	0	-4686.797036	-4686.797036	0	0	21	0
04/15/11	3:11	MDT	59.9896	60	22	0	-3563.119788	-3563.119788	0	0	22	0
04/15/11	3:12	MDT	59.9936	60	23	0	-1999.55151	-1999.55151	0	0	23	0
04/15/11	3:13	MDT	59.9948	60	24	0	-1663.092307	-1663.092307	0	0	24	0
04/15/11	3:14	MDT	59.9937	60	25	0	-1663.100185	-1663.100185	0	0	25	0
04/15/11	5:49	MDT	59.9692	60	21	0	-1230.242639	-1230.242639	0	0	21	0
04/15/11	5:50	MDT	59.9699	60	22	0	-959.5099774	-959.5099774	0	0	22	0
04/15/11	20:50	MDT	59.9932	60	21	0	-1243.980932	-1243.980932	0	0	21	0
04/15/11	20:51	MDT	59.9817	60	22	0	-3284.892879	-3284.892879	0	0	22	0
04/16/11	9:22	MDT	59.9898	60	21	0	-834.0863123	-834.0863123	0	0	21	0
04/16/11	9:23	MDT	59.9815	60	22	0	-1705.222211	-1705.222211	0	0	22	0
04/16/11	9:24	MDT	59.9892	60	23	0	-904.4222398	-904.4222398	0	0	23	0
04/16/11	9:25	MDT	59.9872	60	24	0	-1106.517756	-1106.517756	0	0	24	0
04/16/11	18:24	MDT	59.9919	60	21	0	-3900.447665	-3900.447665	0	0	21	0
04/16/11	18:25	MDT	59.9824	60	22	0	-8992.978059	-8992.978059	0	0	22	0
04/17/11	7:50	MDT	59.9661	60	21	0	-2011.817372	-2011.817372	0	0	21	0
04/18/11	5:55	PDT	60.0502	60	0	21	-1418.995325	-1418.995325	0	0	0	21
04/18/11	5:56	PDT	60.0481	60	0	22	-923.2431364	-923.2431364	0	0	0	22
04/21/11	21:00	MDT	59.9933	60	21	0	-2240.010937	-2240.010937	0	0	21	0
04/21/11	21:01	MDT	59.9957	60	22	0	-1423.863845	-1423.863845	0	0	22	0
04/21/11	22:50	MST	60.02319944	60	0	21	-1357.878919	-1357.878919	0	0	0	21
04/24/11	21:39	MDT	59.9817	60	21	0	-1573.031262	-1573.031262	0	0	21	0
04/25/11	20:47	MDT	59.9827	60	21	0	-829.3657206	-829.3657206	0	0	21	0
04/25/11	20:48	MDT	59.9753	60	22	0	-1019.632414	-1019.632414	0	0	22	0
04/25/11	20:49	MDT	59.9822	60	23	0	-1074.396151	-1074.396151	0	0	23	0
04/25/11	20:50	MDT	59.9744	60	24	0	-1076.712248	-1076.712248	0	0	24	0
04/29/11	2:57	MDT	59.9708	59.98	21	0	-538.1817116	-2142.924563	0	0	21	0
04/30/11	11:17	MDT	60.0138	60	0	21	-3624.383327	-3624.383327	0	0	0	21
04/30/11	11:44	MDT	60.0255	60	0	21	-2007.503408	-2007.503408	0	0	0	21

# EXAMPLE 1

04/12/11 ending 06:06 PDT

1 minute duration below  $FTL_{Low}$

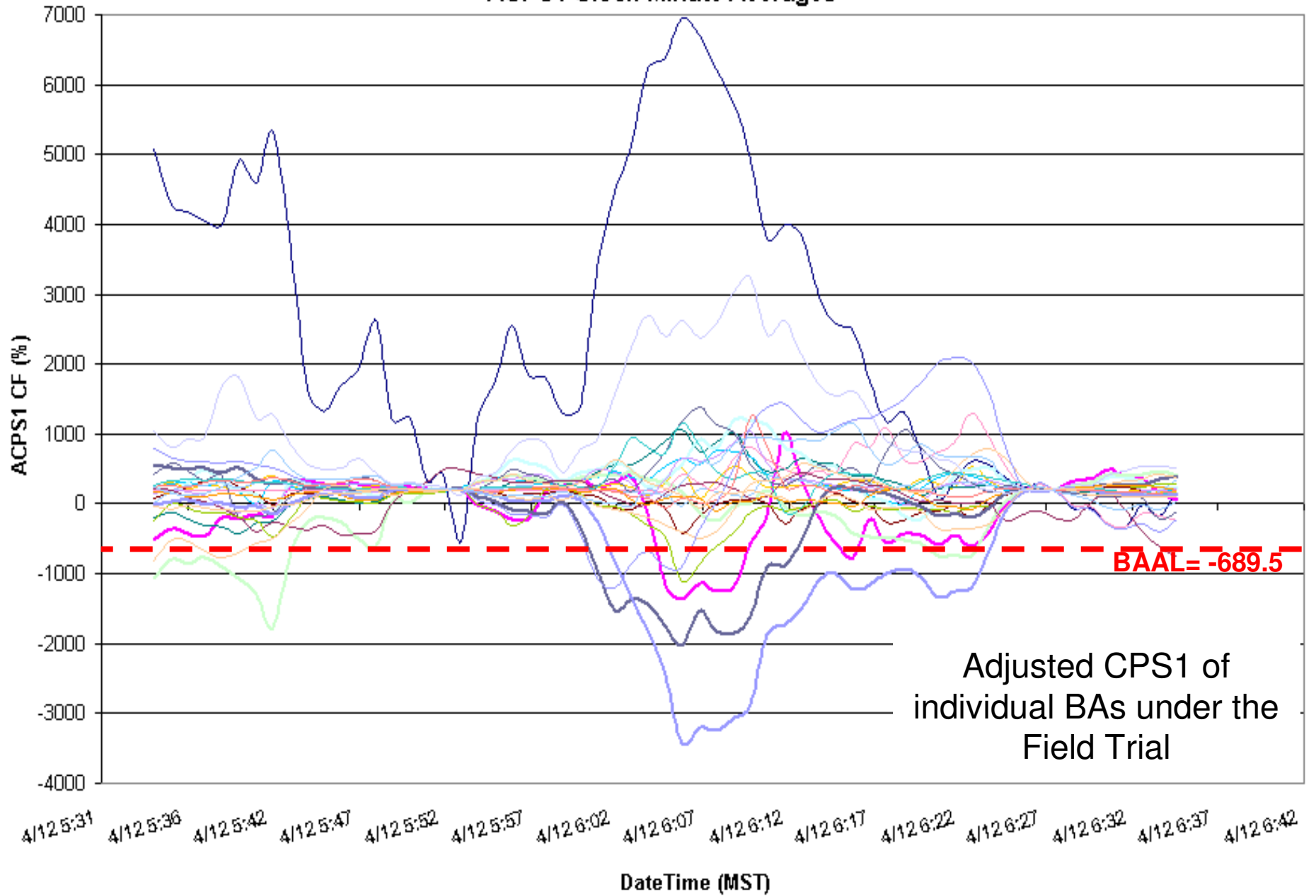
### Clock-Minute Average Frequency



Clock-minute Actual Frequency of Participants

04/12/11 ending 06:06 PDT  
1 minute duration below  $FTL_{Low}$

### ACPS1 Clock-Minute Averages

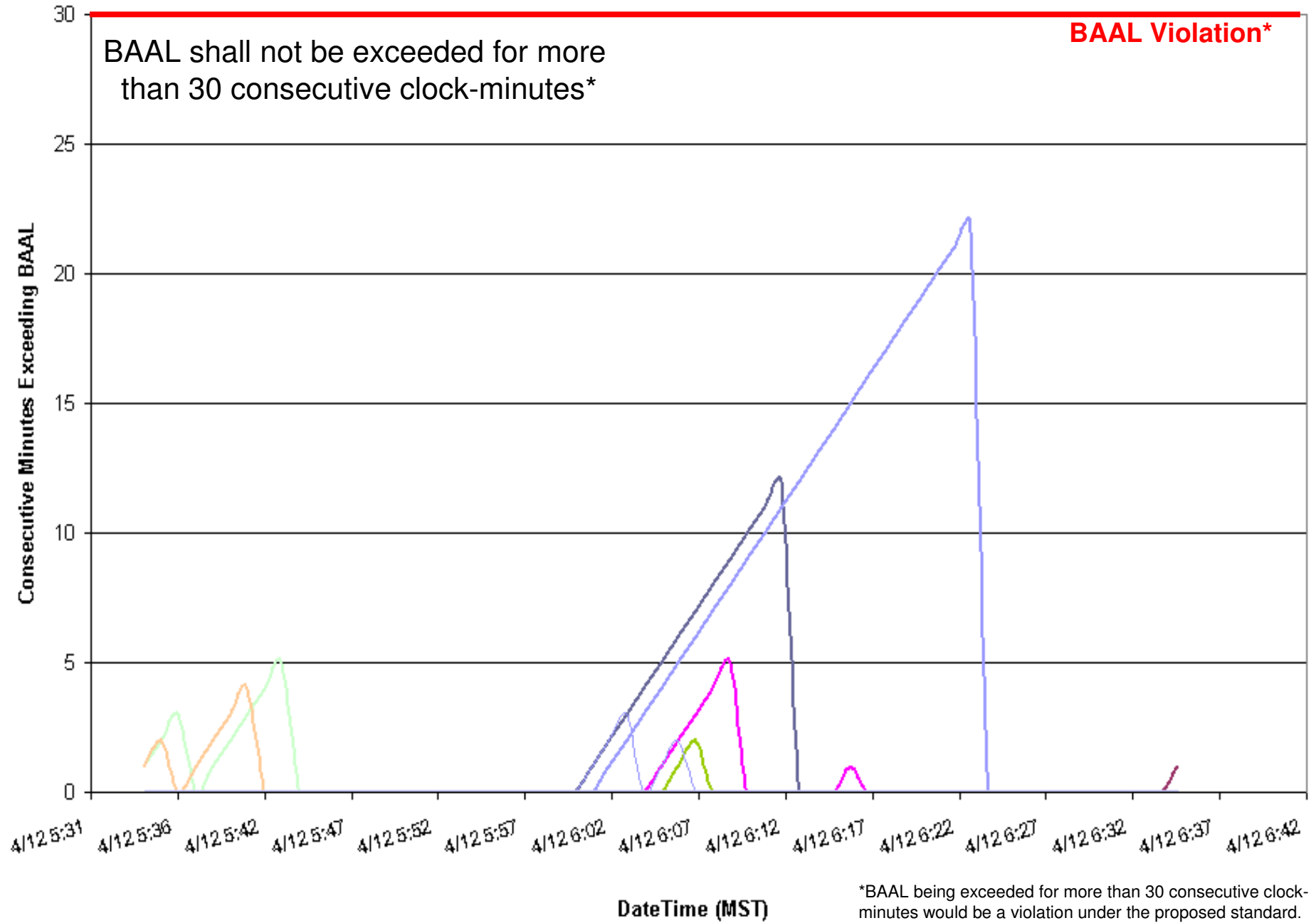


Adjusted CPS1 of  
individual BAs under the  
Field Trial

04/12/11 ending 06:06 PDT

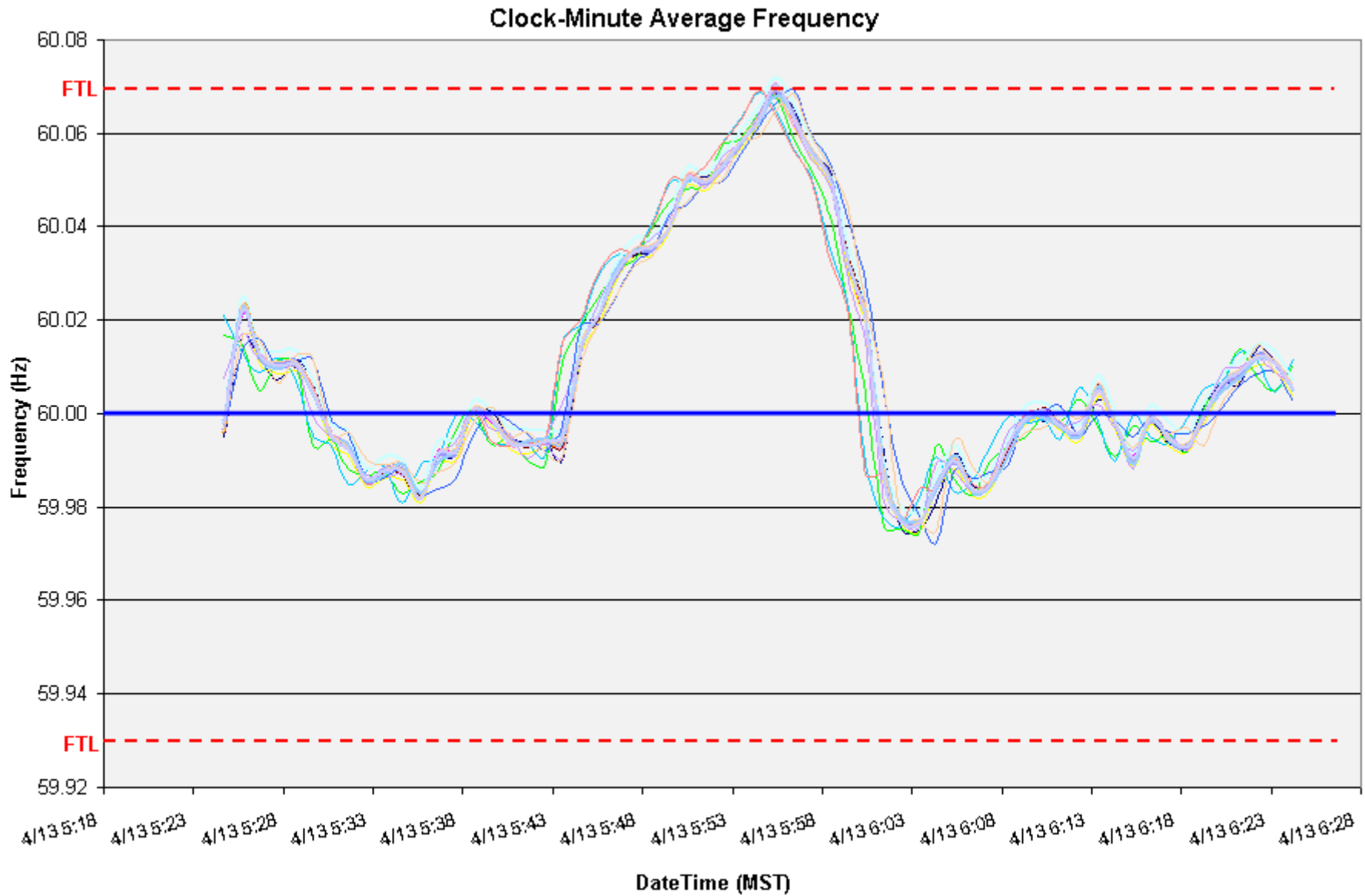
1 minute duration below  $FTL_{Low}$

### Consecutive Minutes Exceeding BAAL



# EXAMPLE 2

04/13/11 ending 05:56 PDT  
1 minute duration above  $FTL_{\text{high}}$

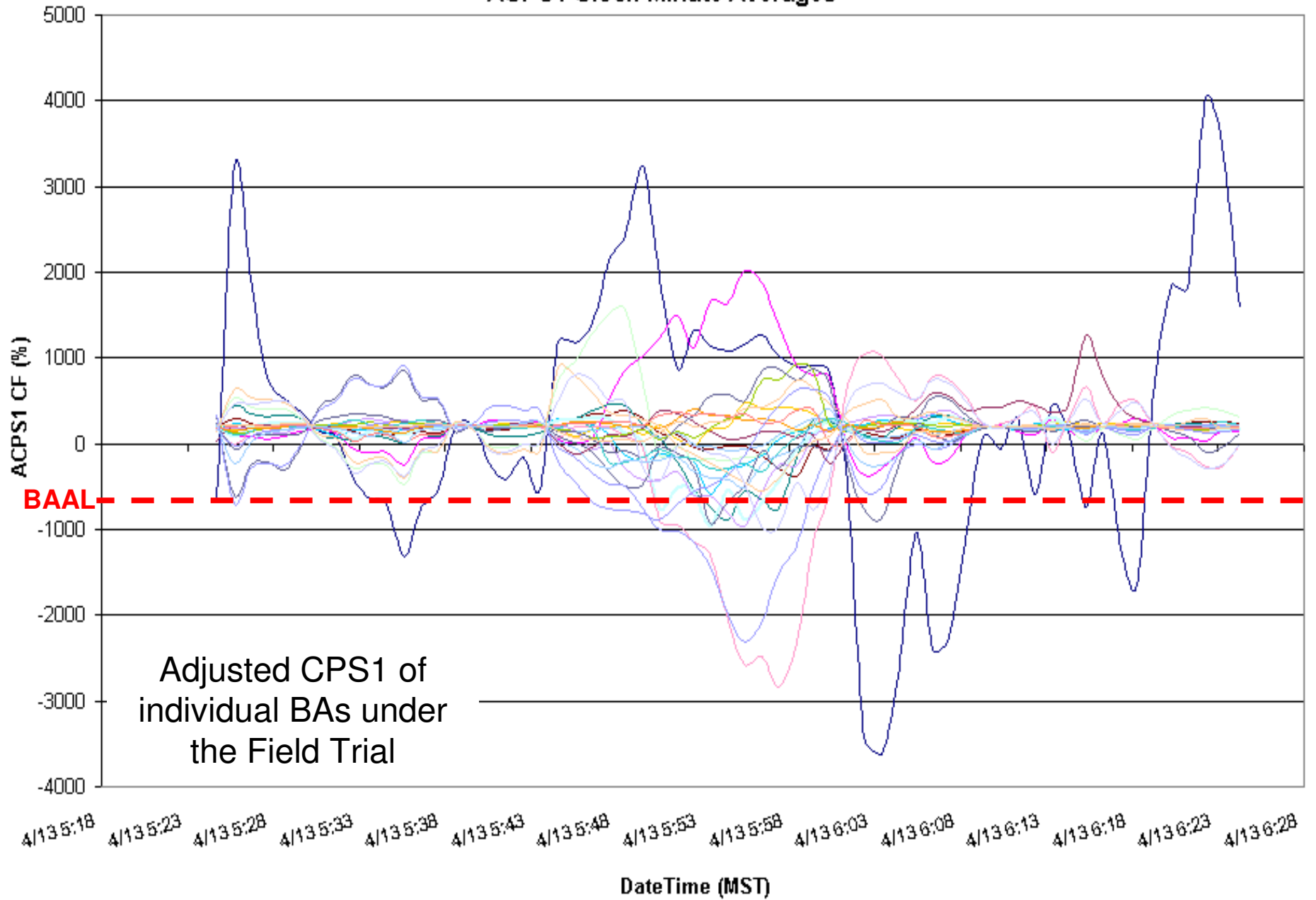


Clock-minute Actual Frequency of Participants

04/13/11 ending 05:56 PDT

1 minute duration above  $FTL_{High}$

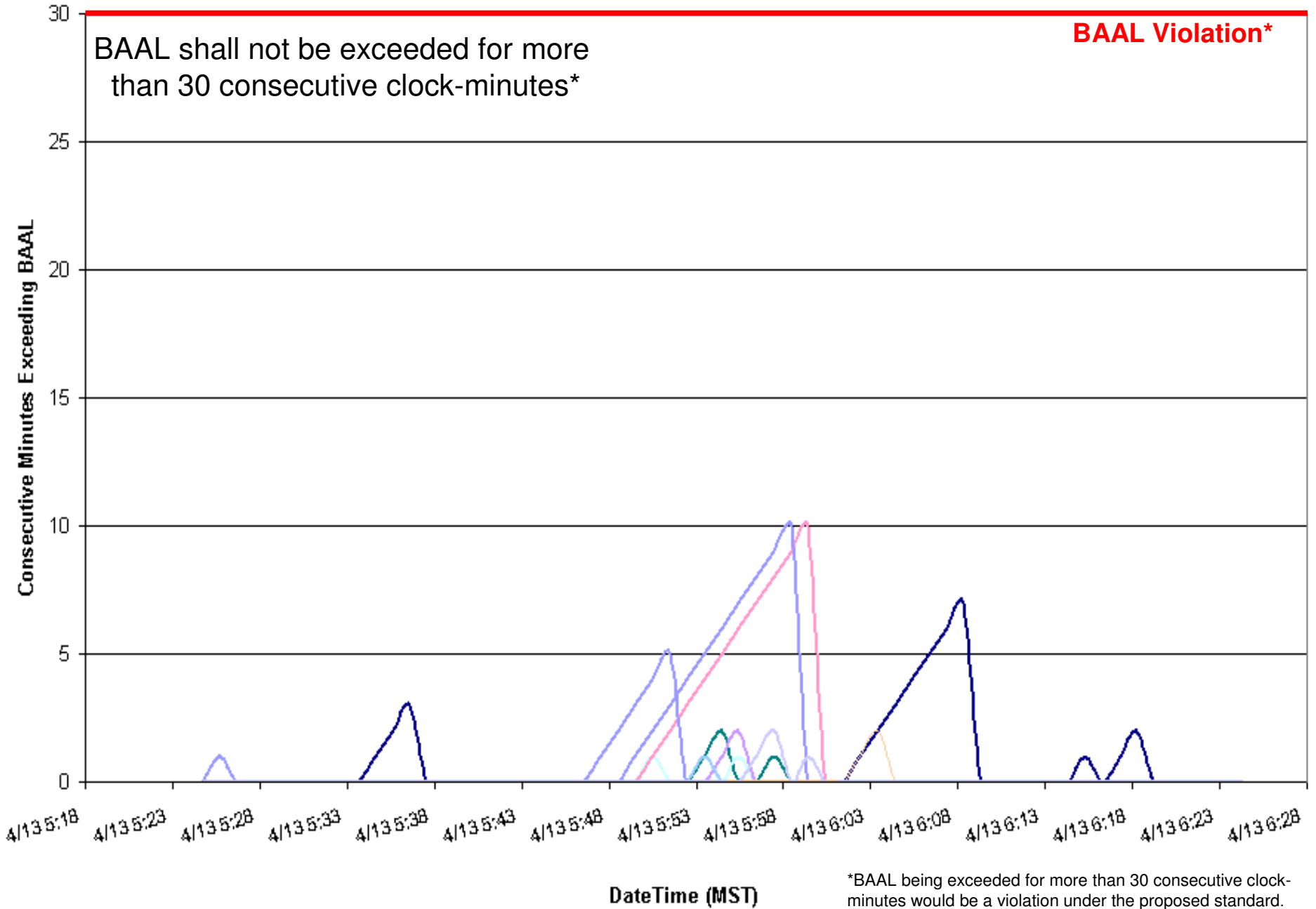
### ACPS1 Clock-Minute Averages



04/13/11 ending 05:56 PDT

1 minute duration above  $FTL_{High}$

### Consecutive Minutes Exceeding BAAL



# EXAMPLE 3

04/01/11 ending 18:58 MDT  
27 minutes below BAAL<sub>Low</sub>

### Clock-Minute Average Frequency

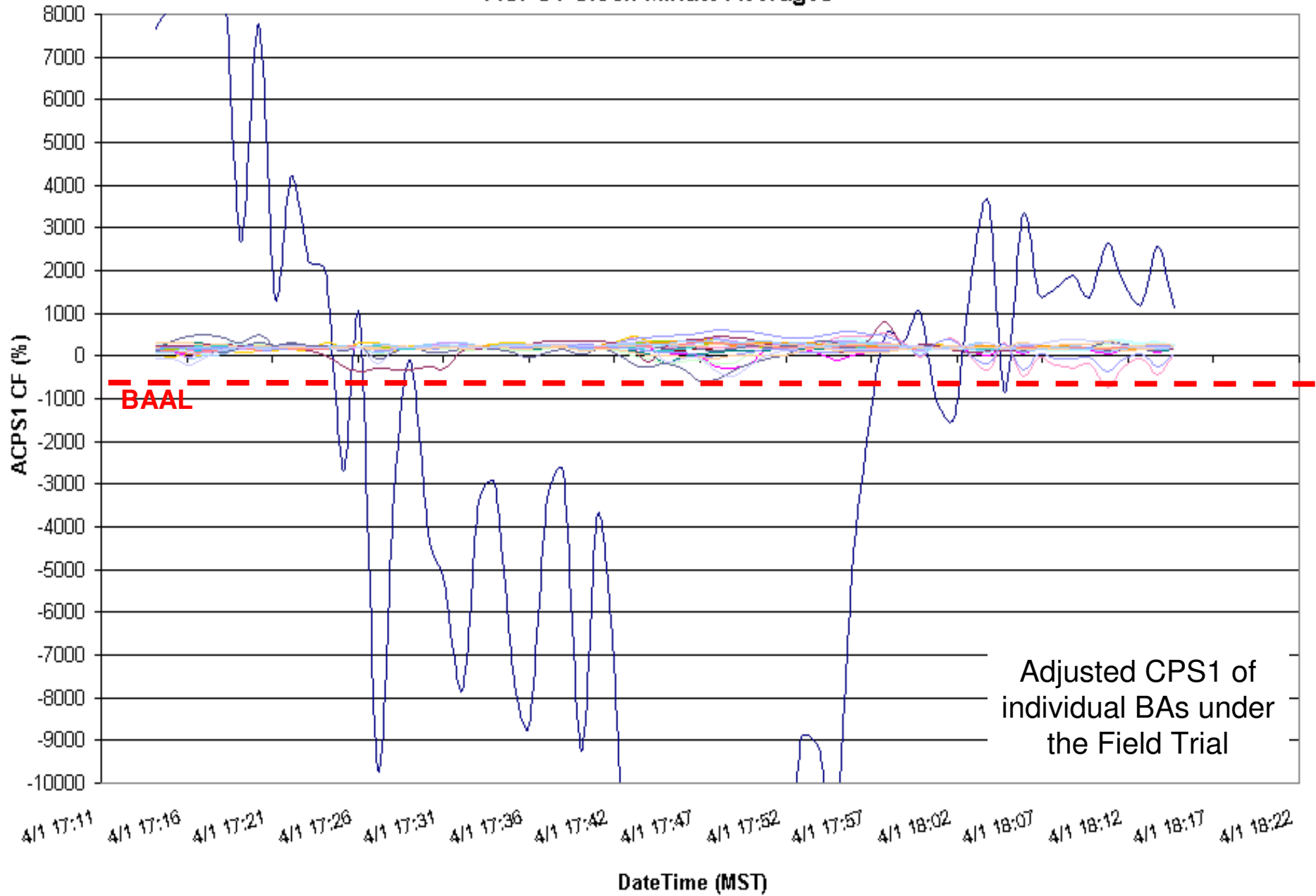


Clock-minute Actual Frequency of Participants

04/01/11 ending 18:58 MDT

27 minutes below BAAL<sub>Low</sub>

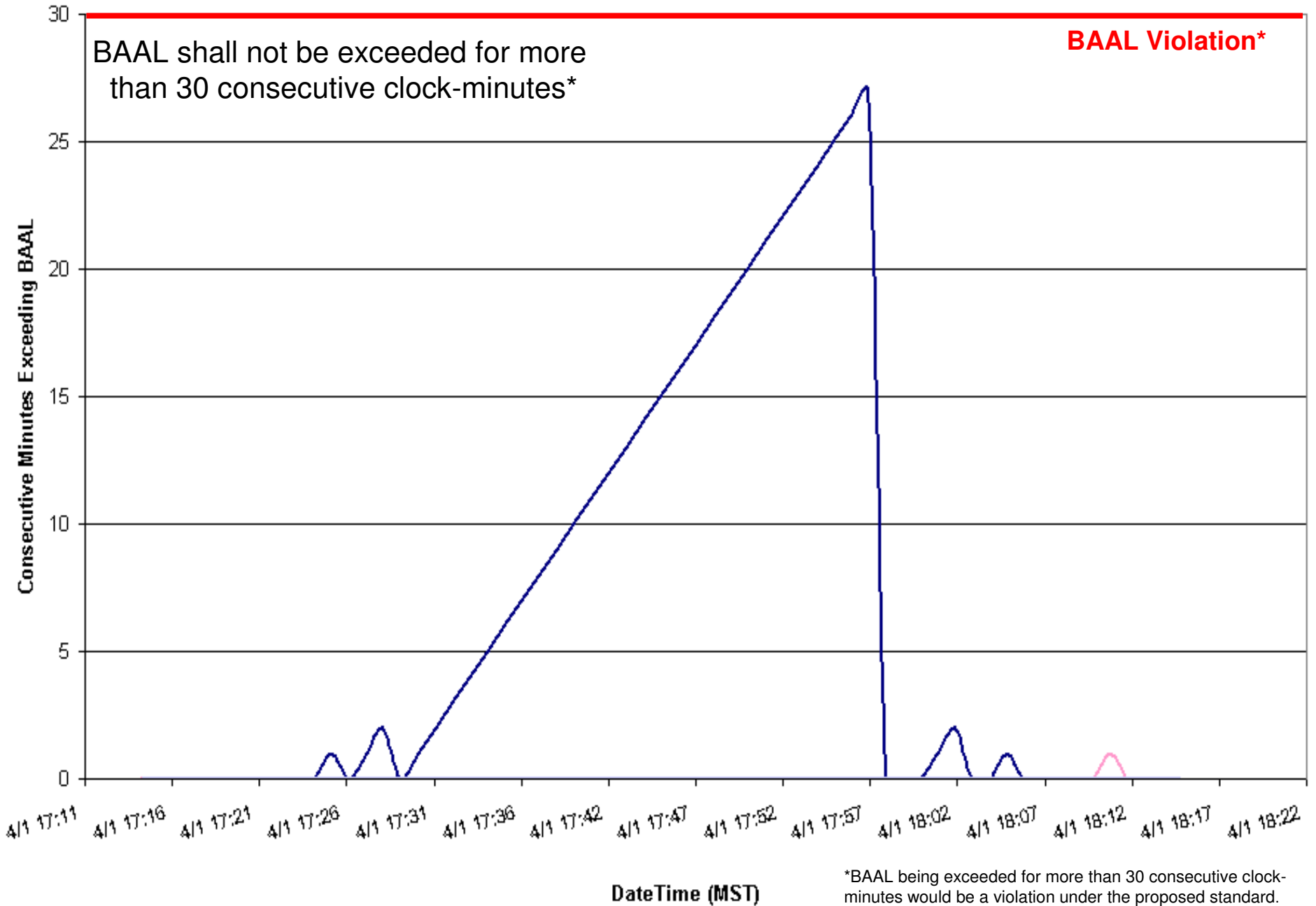
### ACPS1 Clock-Minute Averages



04/01/11 ending 18:58 MDT

27 minutes below BAAL<sub>Low</sub>

### Consecutive Minutes Exceeding BAAL

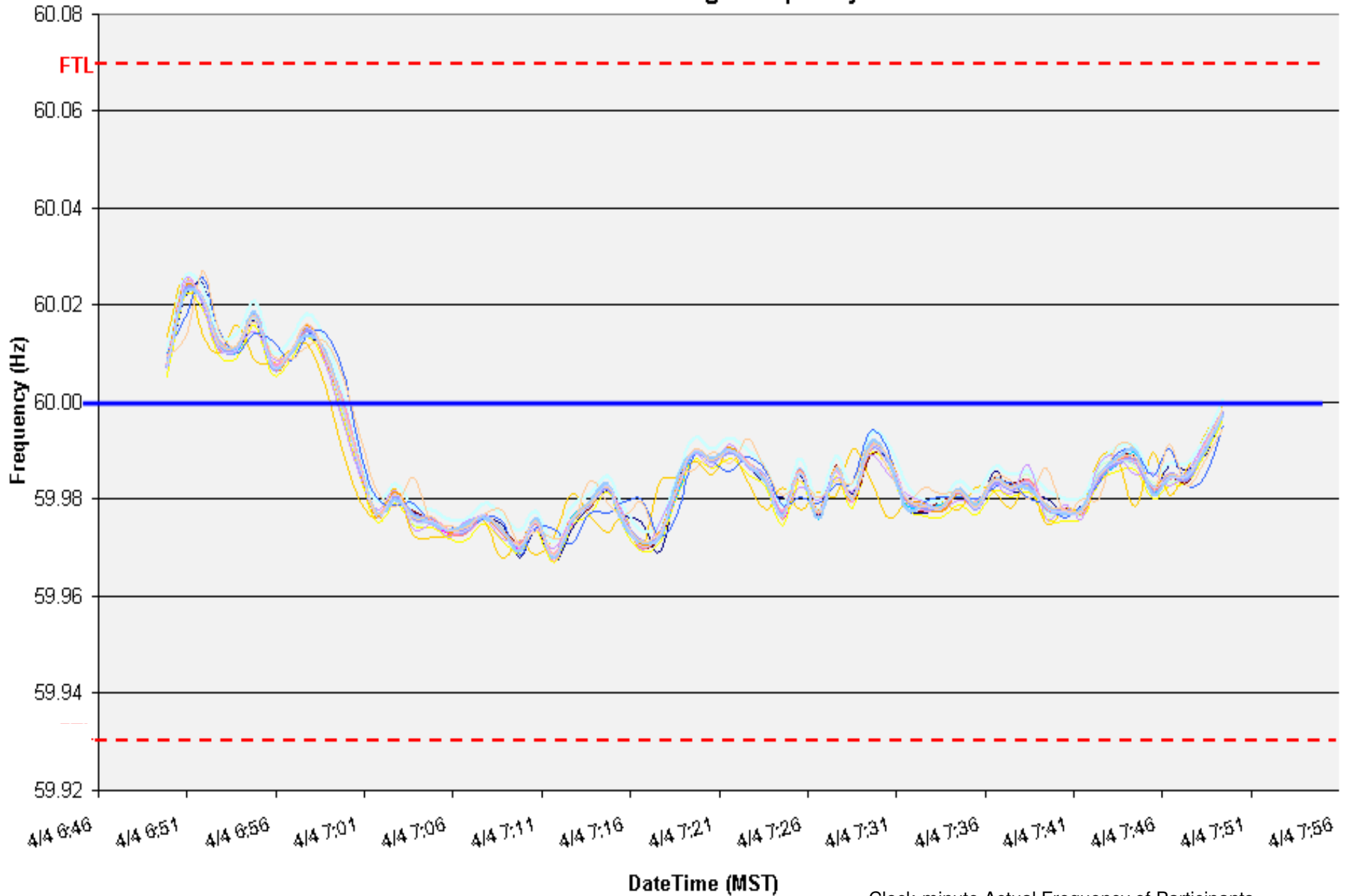


# EXAMPLE 4

04/04/11 ending 08:30 MDT

26 minute duration below BAAL<sub>Low</sub>

### Clock-Minute Average Frequency

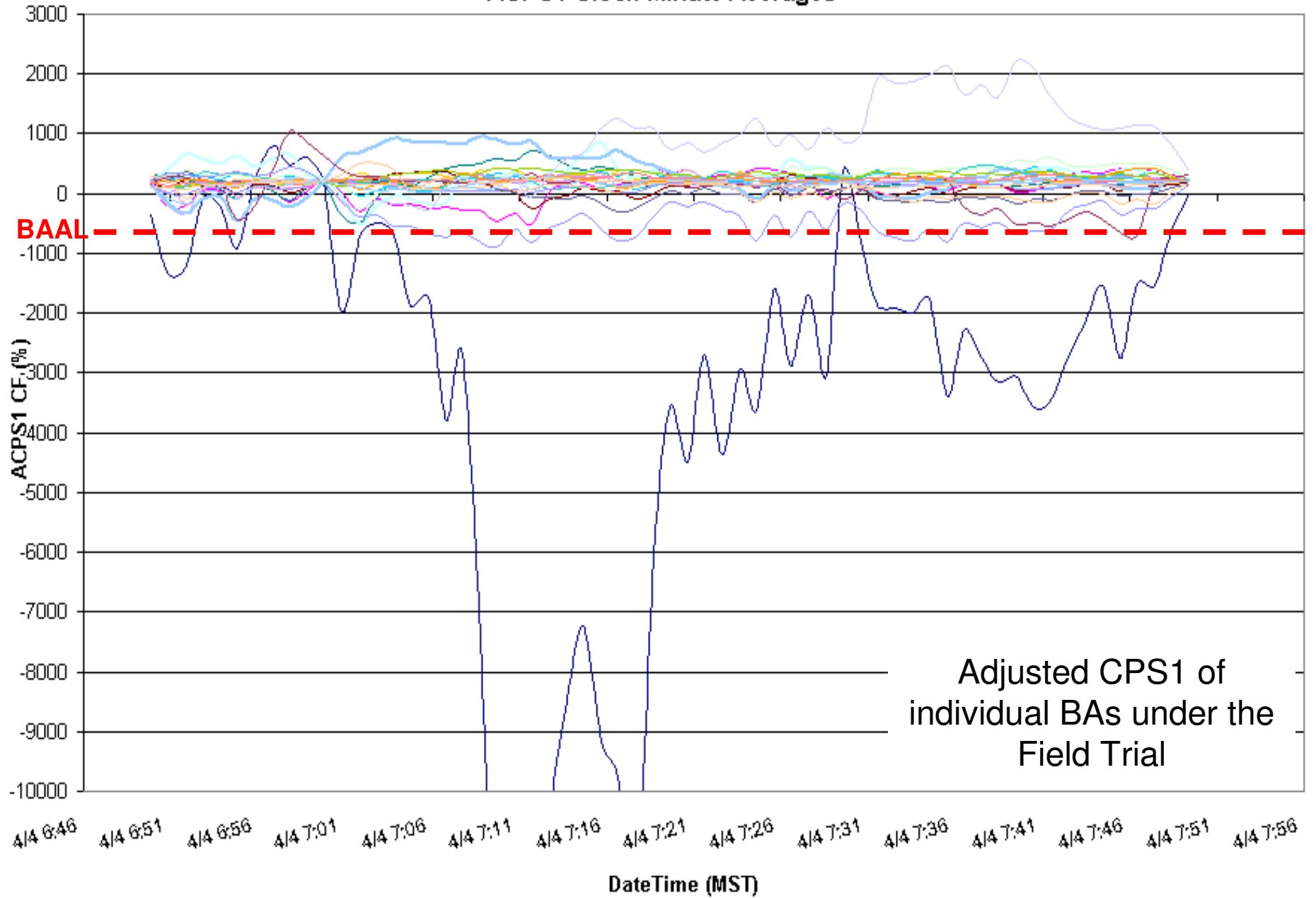


Clock-minute Actual Frequency of Participants

04/04/11 ending 08:30 MDT

26 minute duration below BAAL<sub>Low</sub>

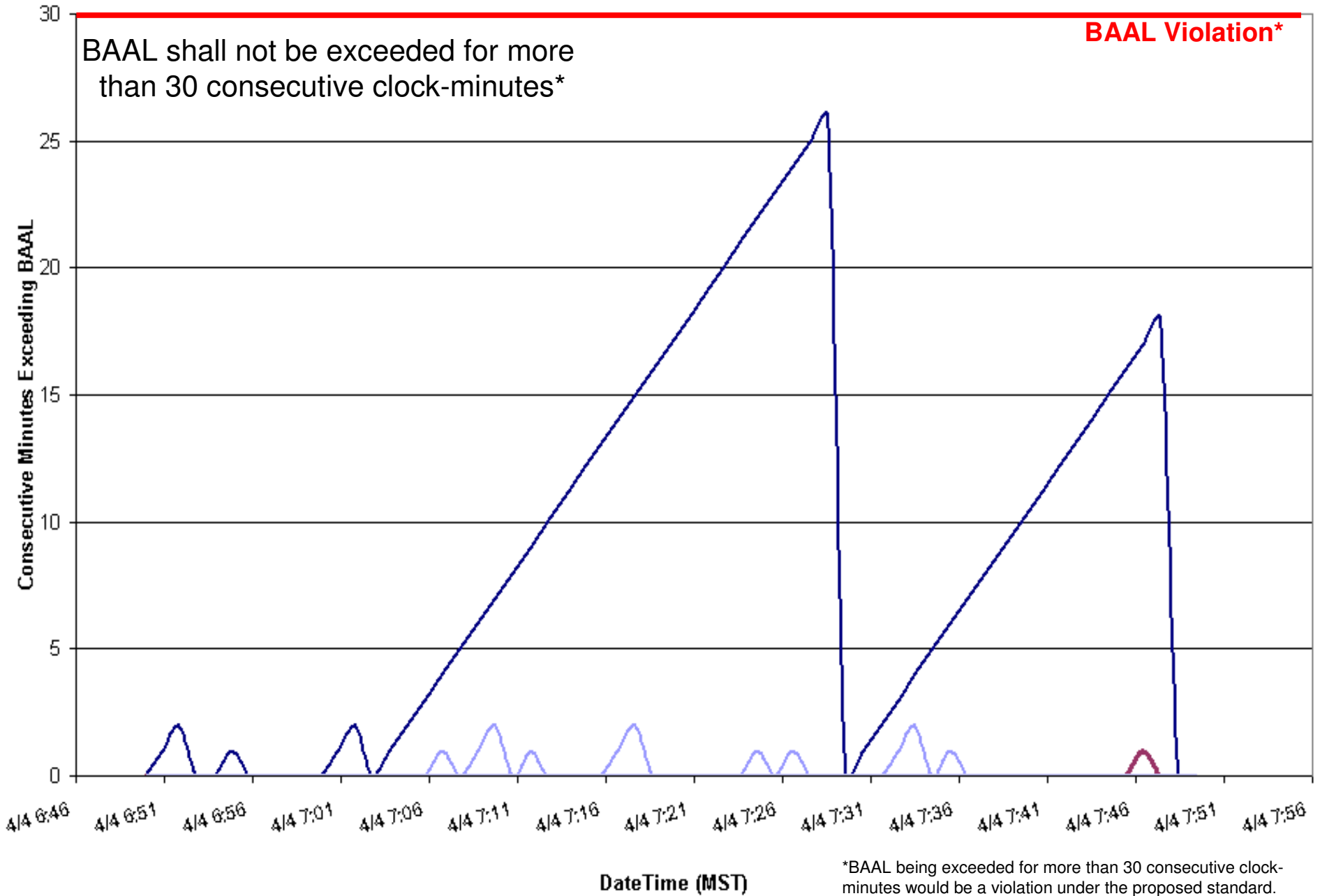
### ACPS1 Clock-Minute Averages



04/04/11 ending 08:30 MDT

26 minute duration below BAAL<sub>Low</sub>

### Consecutive Minutes Exceeding BAAL

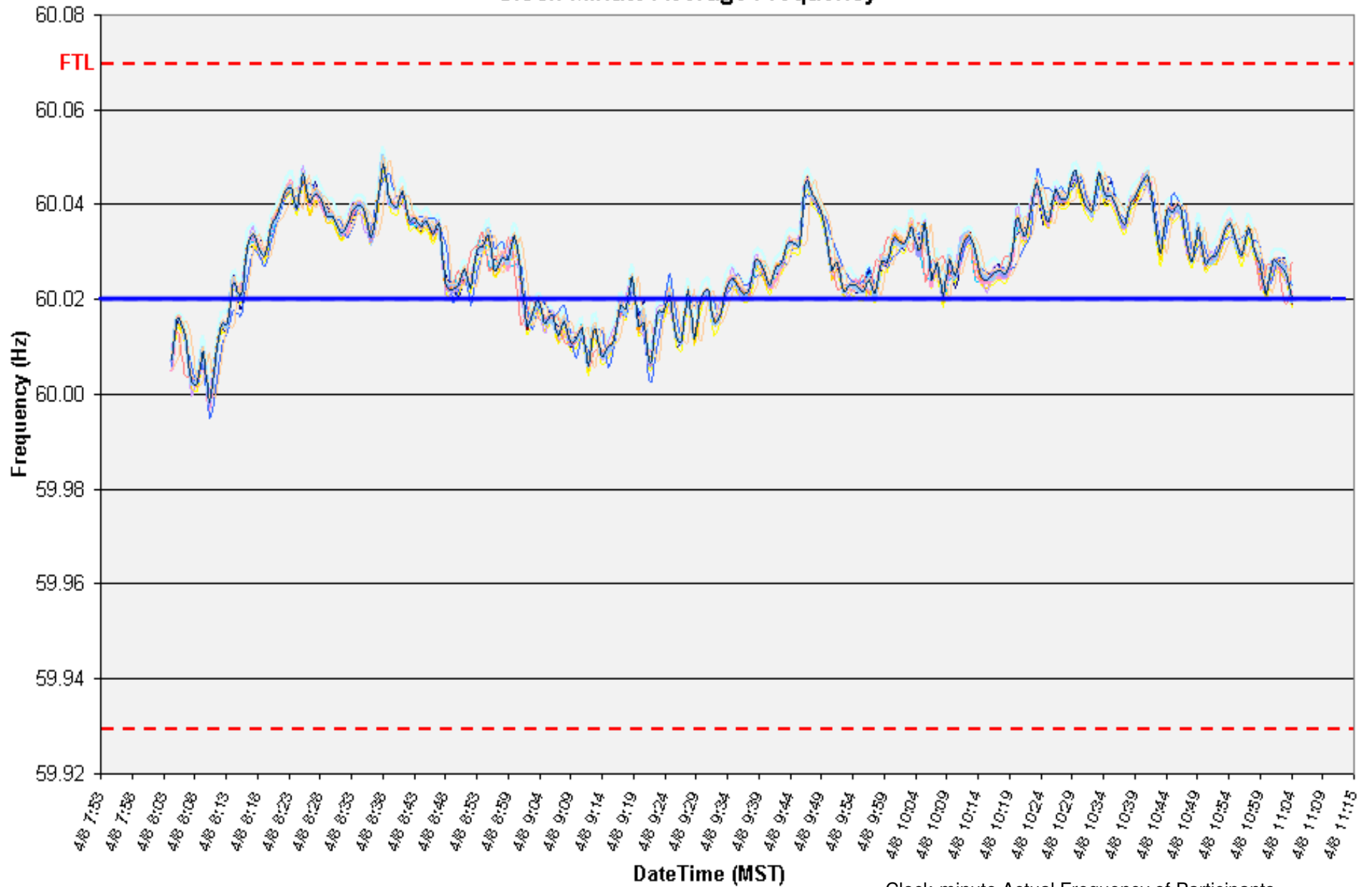


# EXAMPLE 5

04/08/11 ending 08:49 PDT  
29 minute duration above BAAL<sub>High</sub>  
60.02 Scheduled Frequency TEC

04/08/11 ending 10:52 PDT  
33 minute duration above BAAL<sub>High</sub>  
60.02 Scheduled Frequency TEC

### Clock-Minute Average Frequency

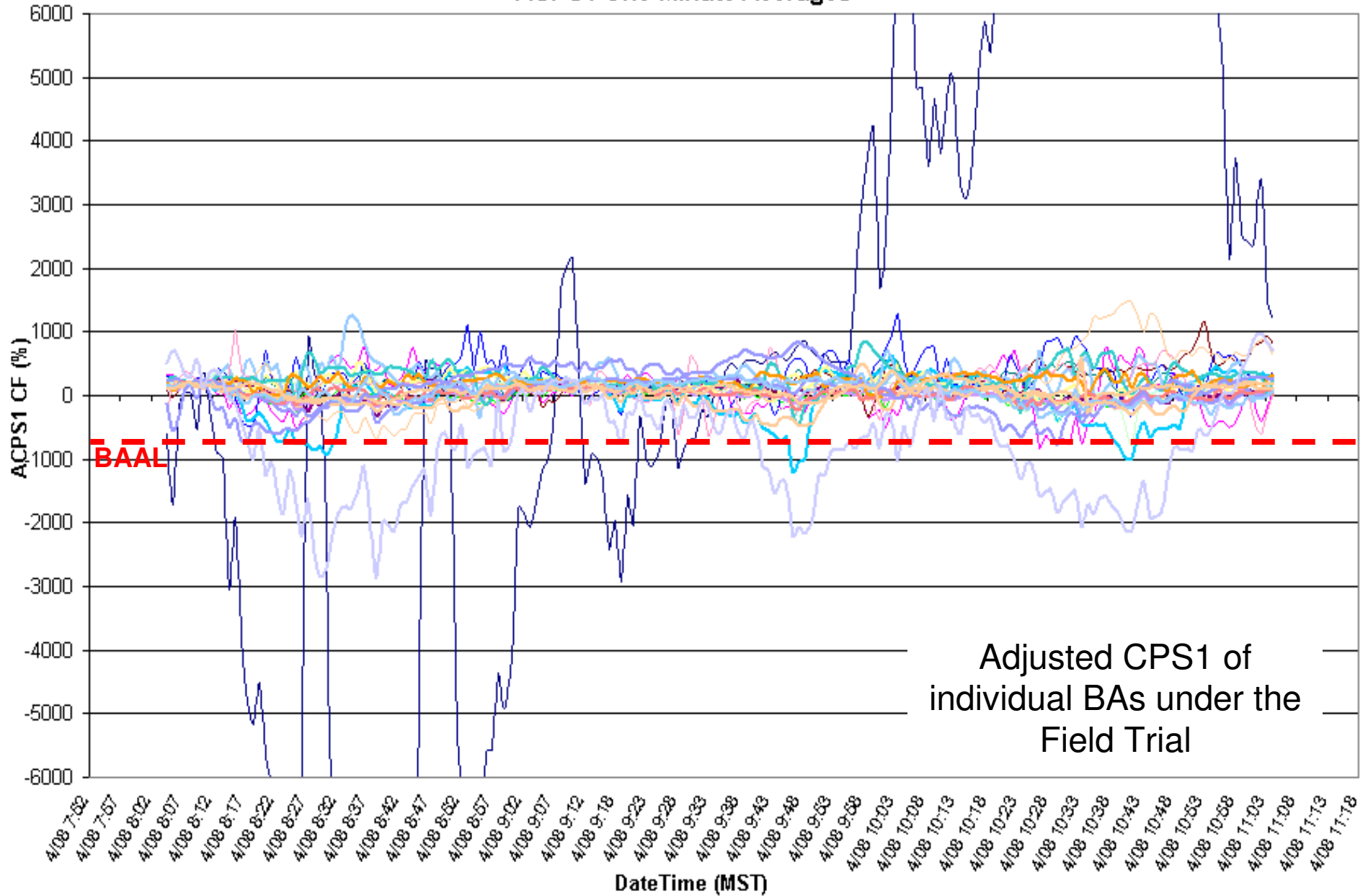


Clock-minute Actual Frequency of Participants

04/08/11 ending 08:49 PDT  
29 minute duration above BAAL<sub>High</sub>  
60.02 Scheduled Frequency TEC

04/08/11 ending 10:52 PDT  
33 minute duration above BAAL<sub>High</sub>  
60.02 Scheduled Frequency TEC

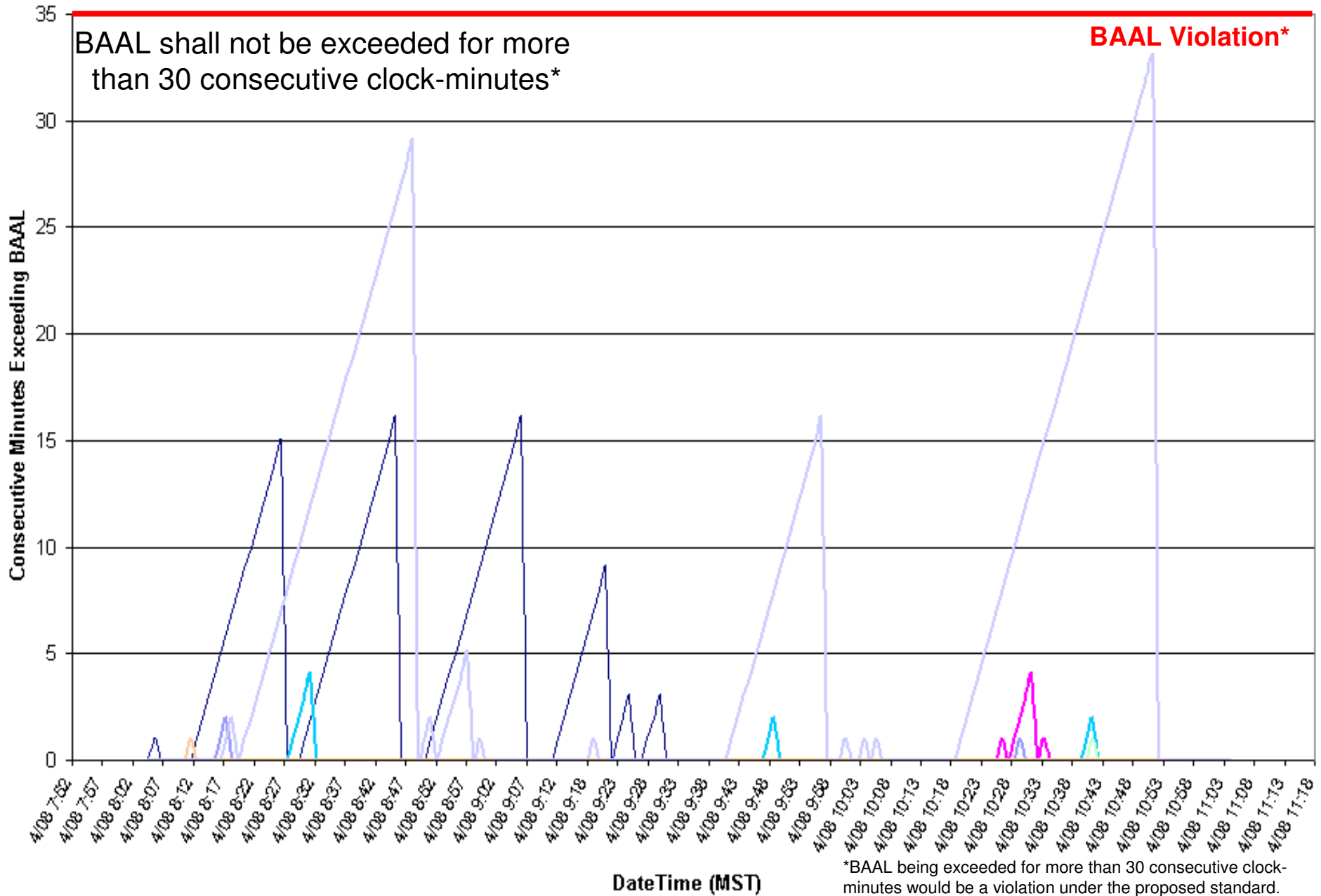
### ACPS1 One-Minute Averages



04/08/11 ending 08:49 PDT  
29 minute duration above BAAL<sub>High</sub>  
60.02 Scheduled Frequency TEC

### Consecutive Minutes Exceeding BAAL

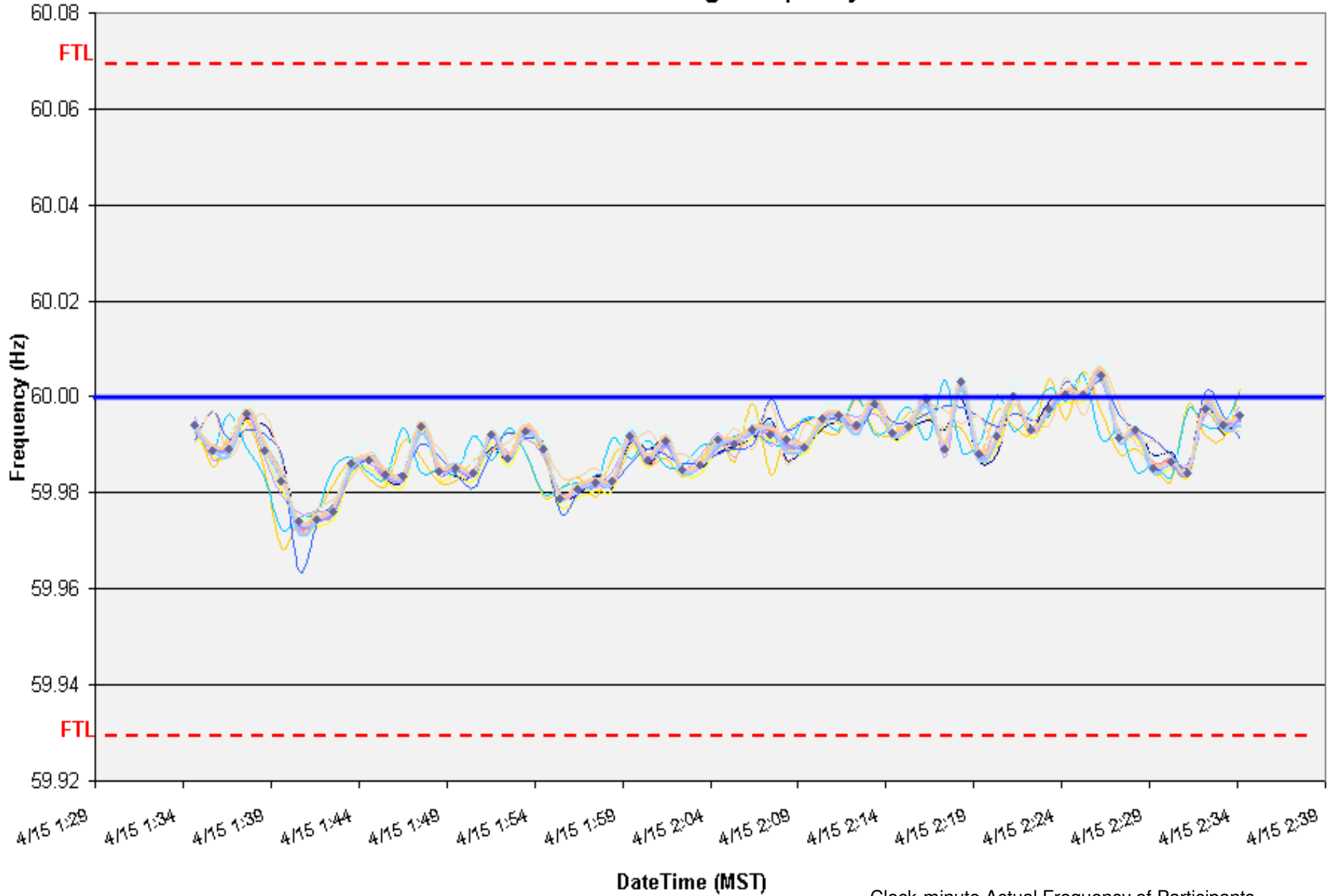
04/08/11 ending 10:52 PDT  
33 minute duration above BAAL<sub>High</sub>  
60.02 Scheduled Frequency TEC



# EXAMPLE 6

04/15/11 ending 03:14 MDT  
25 minute duration above BAAL<sub>High</sub>

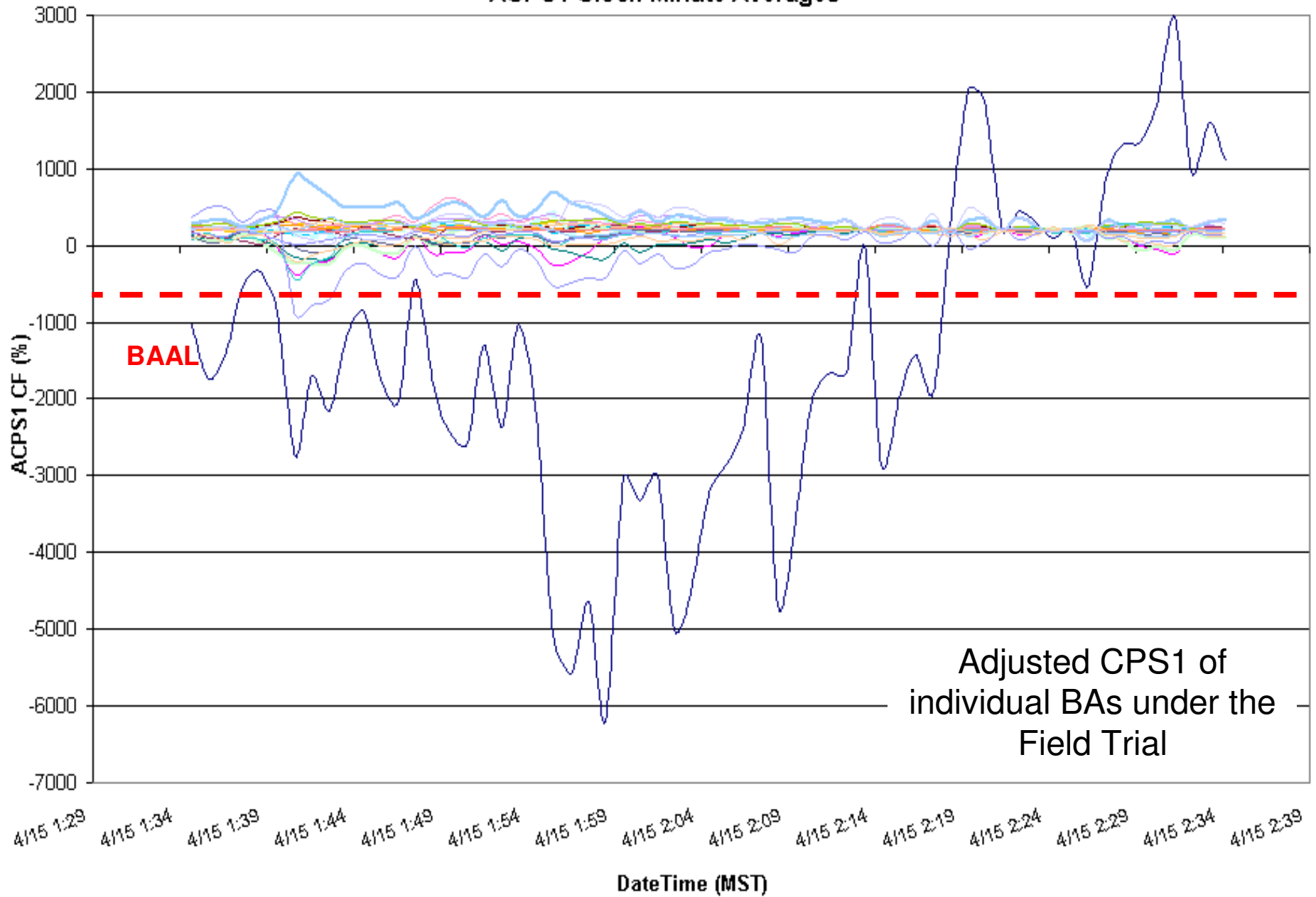
### Clock-Minute Average Frequency



Clock-minute Actual Frequency of Participants

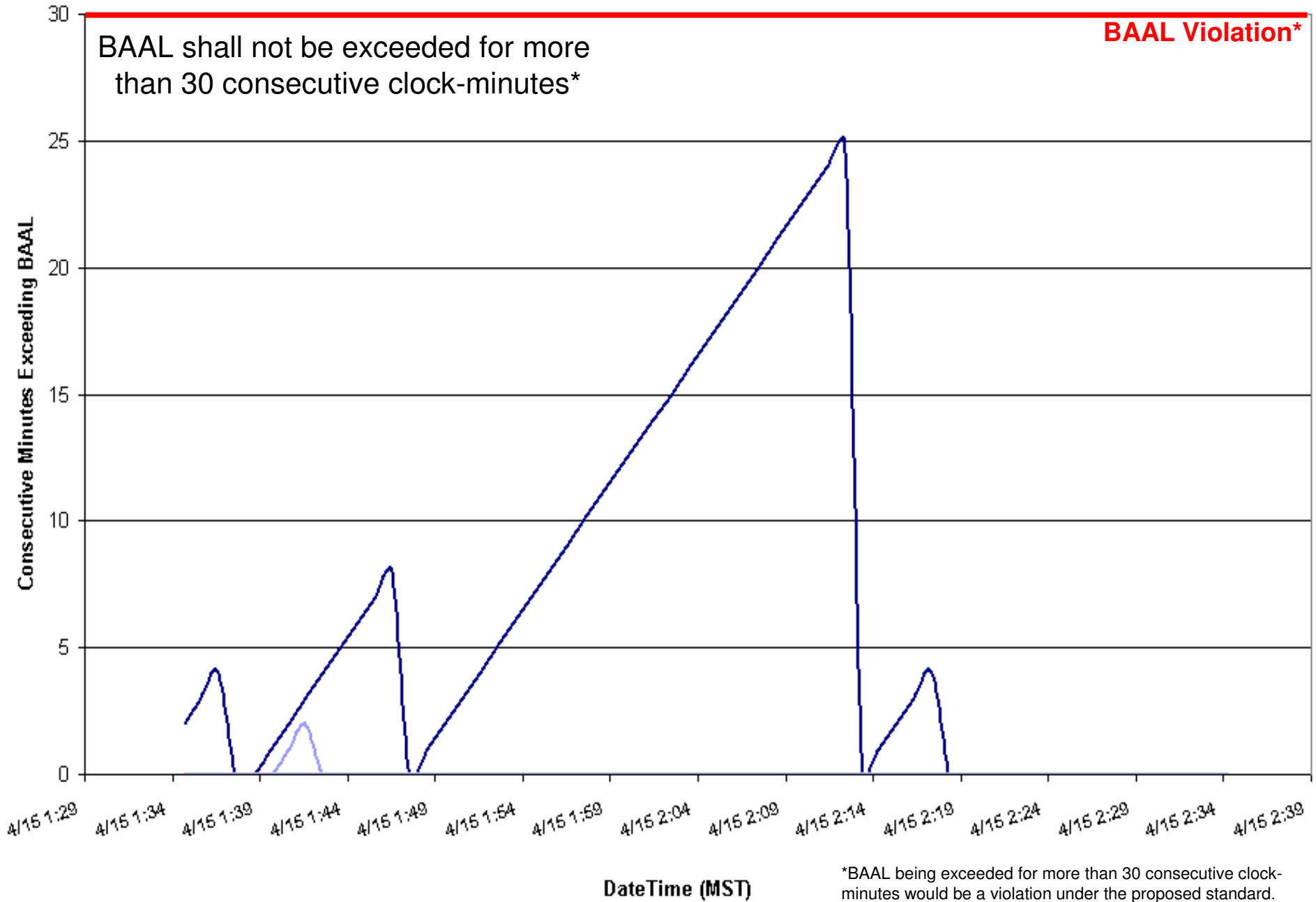
04/15/11 ending 03:14 MDT  
25 minute duration above BAAL<sub>High</sub>

### ACPS1 Clock-Minute Averages



04/15/11 ending 03:14 MDT  
25 minute duration above BAAL<sub>High</sub>

### Consecutive Minutes Exceeding BAAL



# Balancing Authority ACE Limit Proof-of-Concept Field Trial

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

On a monthly basis, each Balancing Authority will review its performance for the prior month and identify any periods where the ACE exceeded the low BAAL ("BAAL<sub>Low</sub>"), the high BAAL ("BAAL<sub>High</sub>"), the low ATL or high ATL for more than 30 consecutive clock-minutes. To help the RBCSDT gain a better understanding of the circumstances that all Balancing Authorities may be faced while operating under BAL-007, each Balancing Authority will provide a brief explanation of the circumstances related to any periods where the duration of consecutive clock-minutes exceeded 30 minutes. In the event that no period exceeded 30 minutes in the prior month, but the longest duration exceeded 25 minutes, the Balancing Authority will provide a brief explanation of the circumstances related to that longest-duration event.

Limit Exceeded (Enter one of the following: BAAL high, BAAL low, ATL high, ATL low)	Clock-minute of ACE exceeding the BAAL or ATL (mm/dd/yy hh:mm)	Clock-minute of ACE returning within the BAAL or ATL (mm/dd/yy hh:mm)	TimeZone	Total duration of ACE exceeding the BAAL or ATL (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
BAAL Low	4/1/11 18:32	4/1/11 18:59	MDT	27	0	0	Wind speed dropped earlier than was forecast causing generation to decrease with frequency trending below 60.00 Hz. Operator deployed all available INC resources to attempt to recover ACE to zero. Wind speed continued to fall and operator was forced to curtail NF schedules to recover ACE to zero.
BAAL high	4/21/11 22:30	4/21/11 22:51	MST	21	0	0	An error in an EMS entry occurred caused ACE to be high.
BAAL high	04/08/11 08:21	04/08/11 08:50	PDT	29	0	0	Generation Desk noticed the NIs was off 269mw from what he had expected. He was unable to resolve it until the next ramp (at 08:50).
BAAL high	04/08/11 10:20	04/08/11 10:53	PDT	33	0	0	Generation Desk noticed the NIs was off 215mw from what he had expected. He was unable to resolve it until the next ramp (at 10:50).

# **Balancing Authority ACE Limit Proof-of-Concept Field Trial Project 2010-14**

## Discussion

Bob Klueber- Midwest ISO

Balancing Authority Reliability-based Control Standard Drafting Team (BARCSDT)

[bklueber@midwestiso.org](mailto:bklueber@midwestiso.org)