

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

WECC Update Discussion  
September, 2011

CERTS-EPG

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

From December 2010, NERC 1-minute ACE and Frequency Data are used  
to generate the report

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

## Western Interconnection Field Trial Participation

Western Interconnection Balancing Authority Participants	2011 Frequency Bias	Region	Reliability Coordinator	Start Date
Alberta Electric System Operator (AESO)	-125	NWPP	WECC	March 1, 2010
Arizona Public Service Company (AZPS)	-72.6	AZNMSNV	WECC	March 1, 2010
Bonneville Power Administration (BPAT)	-156.1	NWPP	WECC	March 1, 2010
British Columbia Transmission Corporation (BCTC)	-122	NWPP	WECC	April 1, 2010
California Independent System Operator (CISO)	-486.5	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)	-44	NWPP	WECC	March 1, 2010
Los Angeles Department of Water and Power (LDWP)	-67	CAMX	WECC	March 1, 2010
Nevada Power Company (NEVP)	-60.75	AZNMSNV	WECC	March 1, 2010
PacifiCorp-East (PACE)	-79.4	NWPP	WECC	March 1, 2010
PacifiCorp-West (PACW)	-42	NWPP	WECC	March 1, 2010
Portland General Electric (PGE)	-50	NWPP	WECC	April 1, 2010
Public Service Company of Colorado (PSCO)	-110	RMPA	WECC	March 1, 2010
PUD No. 1 of Chelan County (CHPD)	-12	NWPP	WECC	March 1, 2010
PUD No. 1 of Douglas County (DOPD)	-7	NWPP	WECC	April 1, 2010
PUD No. 2 of Grant County (GCPD)	-25	NWPP	WECC	March 1, 2010
Seattle Department of Lighting (SCL)	-40	NWPP	WECC	March 1, 2010
Sacramento Municipal Utility District (SMUD)	-44.99	NWPP	WECC	March 1, 2010
Salt River Project (SRP)	-64.1	AZNMSNV	WECC	May 1, 2010
Sierra Pacific Power Company (SPPC)	-19.44	NWPP	WECC	March 1, 2010
Tucson Electric Power Company (TEPC)	-30.1	AZNMSNV	WECC	March 1, 2010
Turlock Irrigation District (TIDC)	-6.5	NWPP	WECC	March 1, 2010
Western Area Power Administration - Colorado Missouri (WACM)	-54	RMPA	WECC	March 1, 2010
Western Area Power Administration - Lower Colorado (WALC)	-51.6	AZNMSNV	WECC	March 1, 2010

# Clock-Minute Frequency Below 59.932 Hz FTL<sub>Low</sub> or Above 60.068 Hz FTL<sub>High</sub>

date_time	freq	schedfreq	FTLLowDur	FTLHighDur
9/8/2011 17:41	59.932	60	1	0
9/8/2011 17:48	60.068	60	0	1
9/8/2011 17:49	60.082	60	0	2
9/8/2011 17:50	60.089	60	0	3
9/8/2011 17:51	60.087	60	0	4
9/8/2011 17:52	60.098	60	0	5
9/8/2011 17:53	60.099	60	0	6
9/8/2011 17:54	60.098	60	0	7
9/8/2011 17:55	60.092	60	0	8
9/8/2011 17:57	60.081	60	0	1
9/8/2011 17:58	60.08	60	0	2
9/8/2011 17:59	60.072	60	0	3
9/8/2011 18:02	60.072	60	0	1
9/9/2011 22:10	59.931	60	1	0
9/9/2011 22:12	59.932	60	1	0

# 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 CERTS-EPG Starting Creating the Report				Current Month Statistics	
	BAAL <sub>Low</sub> Max_MinCTLow	BAAL <sub>High</sub> Max_MinCTLow	ATL <sub>Low</sub> Max_MinCTLow2	ATL <sub>High</sub> Max_MinCTLow2	BAAL <sub>Low</sub> Max_MinCTLow	BAAL <sub>High</sub> Max_MinCTLow
W-01	22	20	25	58	18	19
W-02	20	31	14	19	20	13
W-03	15	7	20	12	15	7
W-04	26	28	25	23	17	26
W-05	16	18	17	4	3	7
W-06	33	24	1	1	13	9
W-07	8	7	9	5	4	0
W-08	18	17	13	3	10	5
W-09	7	3	7	2	1	0
W-10	18	27	16	22	10	16
W-11	6	7	4	2	4	7
W-12	26	48	21	50	26	32
W-13	5	12	2	2	2	6
W-14						
W-15	20	42	20	70	4	7
W-16	19	36	21	52	7	18
W-17	24	30	14	26	10	10
W-18	21	24	23	53	21	20
W-19	8	14	8	12	4	6
W-20	26	37	20	27	18	23
W-21	12	13	6	13	4	10
W-22	19	18	9	2	19	6
W-23					0	1
W-24	12	10	11	0	6	10
W-25	47	34	32	36	29	25

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

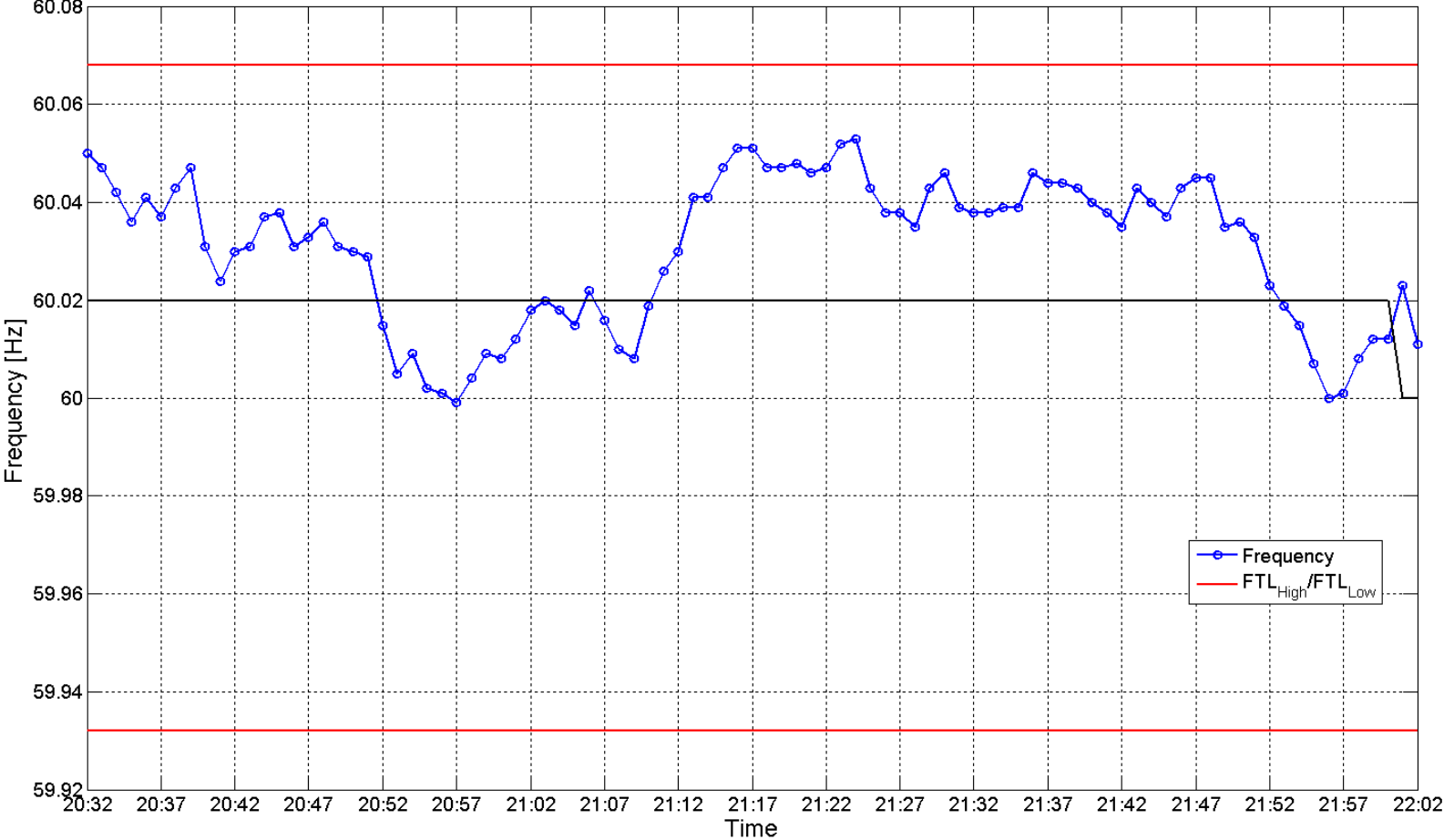
**\*BAAL being exceeded for more than 30 consecutive clock-minutes would be a violation under the draft BAAL Standard.**

## Statistics of BAAL being exceeded > 25 consecutive clock-minutes :

date_time	freq	schedfreq	BAALLowDur	BAALHighDur
9/1/2011 21:39	60.043	60.02	0	25
9/1/2011 21:40	60.04	60.02	0	26
9/1/2011 21:44	60.04	60.02	0	25
9/1/2011 21:45	60.037	60.02	0	26
9/1/2011 21:46	60.043	60.02	0	27
9/1/2011 21:47	60.045	60.02	0	28
9/1/2011 21:48	60.045	60.02	0	29
9/1/2011 21:49	60.035	60.02	0	30
9/1/2011 21:50	60.036	60.02	0	31
9/1/2011 21:51	60.033	60.02	0	32
9/20/2011 8:44	60.03	60	0	25
9/20/2011 8:45	60.025	60	0	26
9/20/2011 8:46	60.032	60	0	27
9/20/2011 8:47	60.027	60	0	28
9/20/2011 8:48	60.021	60	0	29
9/20/2011 8:49	60.032	60	0	30
9/20/2011 8:50	60.021	60	0	31
9/22/2011 7:26	59.955	59.98	25	0
9/22/2011 7:27	59.951	59.98	26	0
9/2/2011 4:43	59.988	60	25	0
9/2/2011 4:44	59.991	60	26	0
9/2/2011 13:21	59.983	60	25	0
9/2/2011 13:22	59.976	60	26	0
9/2/2011 13:23	59.976	60	27	0
9/2/2011 13:24	59.972	60	28	0
9/2/2011 13:25	59.977	60	29	0
9/12/2011 20:34	60.06	60.02	0	25
9/17/2011 22:24	59.993	60	25	0
9/17/2011 22:25	59.995	60	26	0
9/22/2011 19:05	59.976	60	25	0

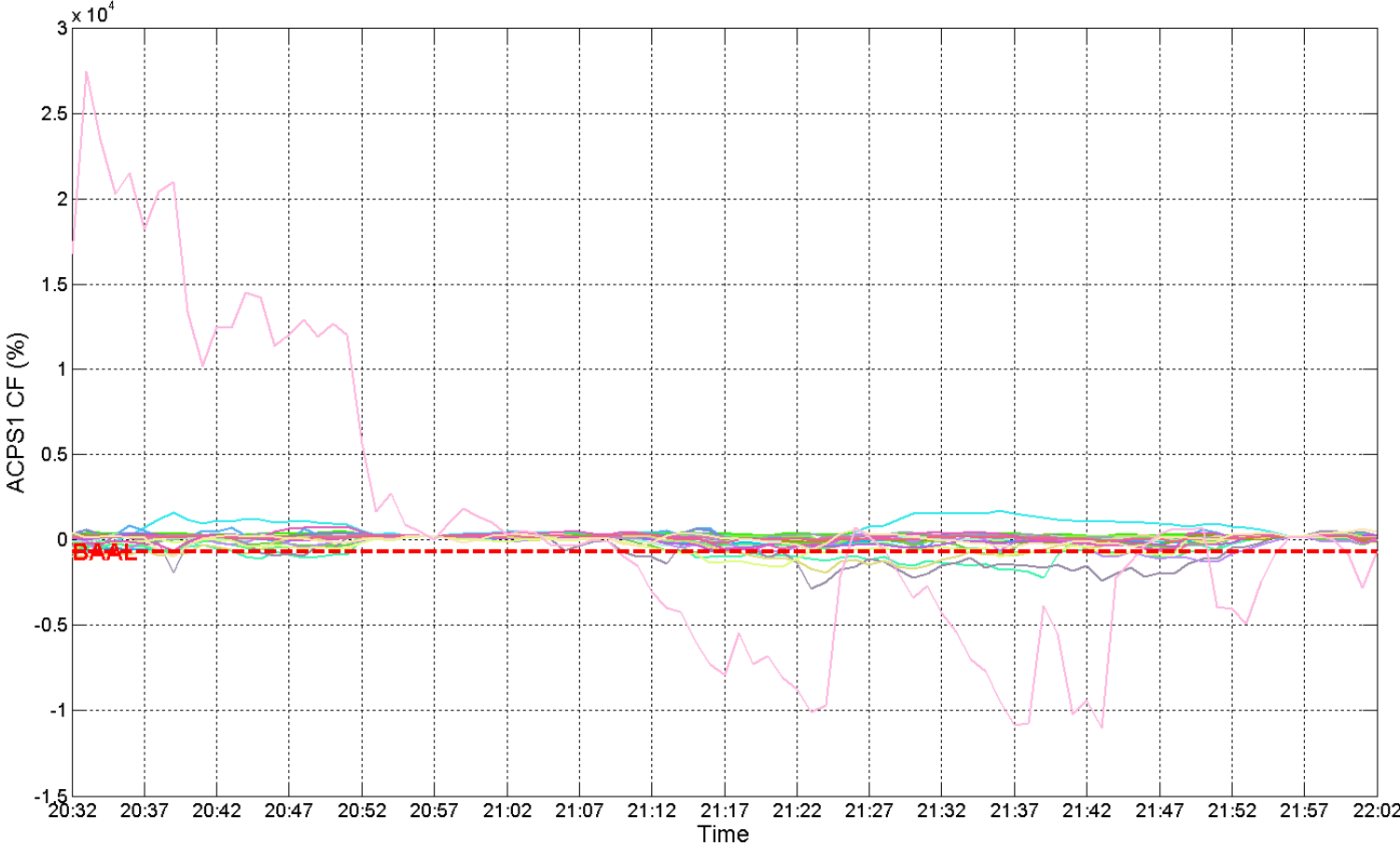
9/1/2011 ending 21:52 PST

32 minute duration above BAAL<sub>High</sub>



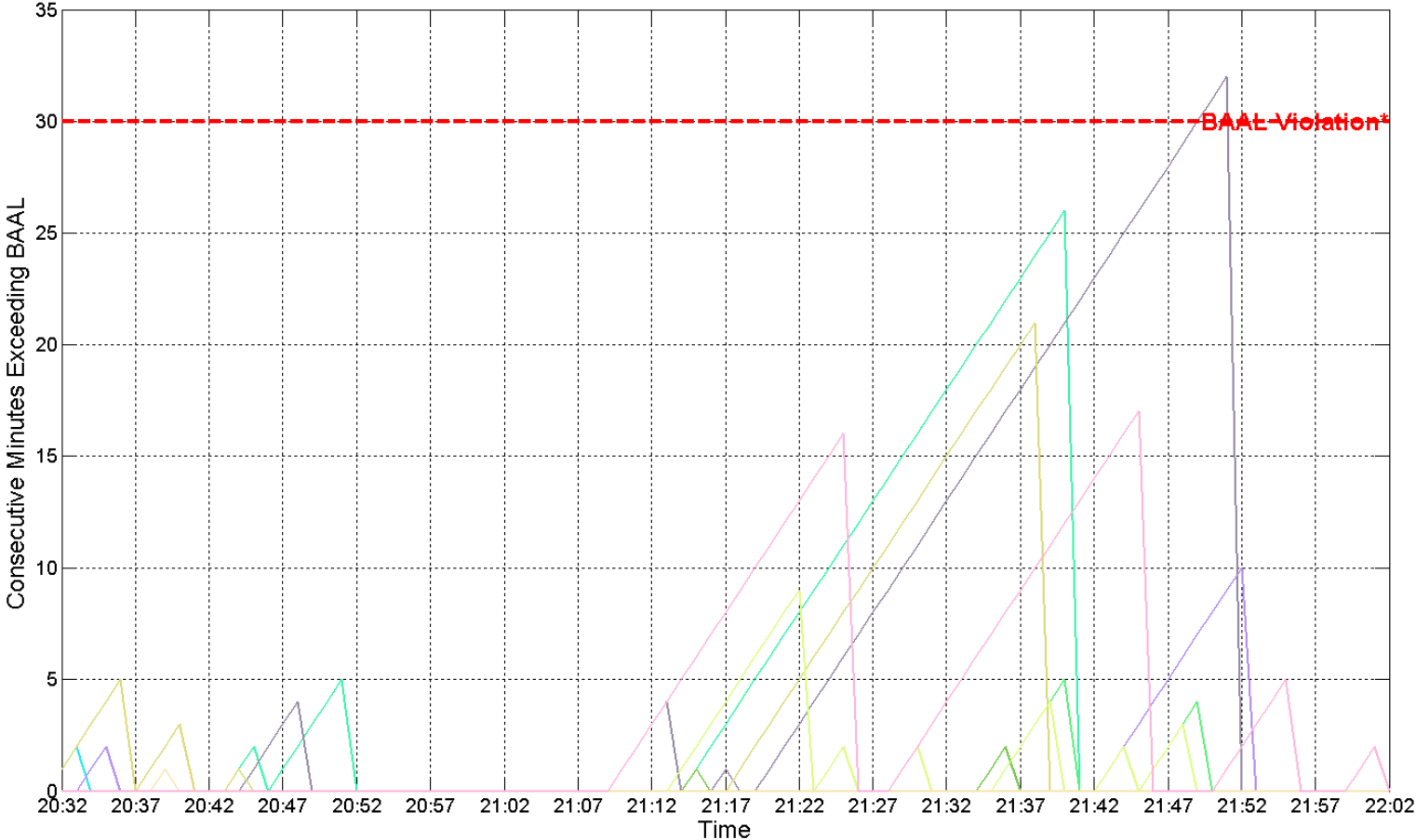
9/1/2011 ending 21:52 PST

32 minute duration above BAAL<sub>High</sub>



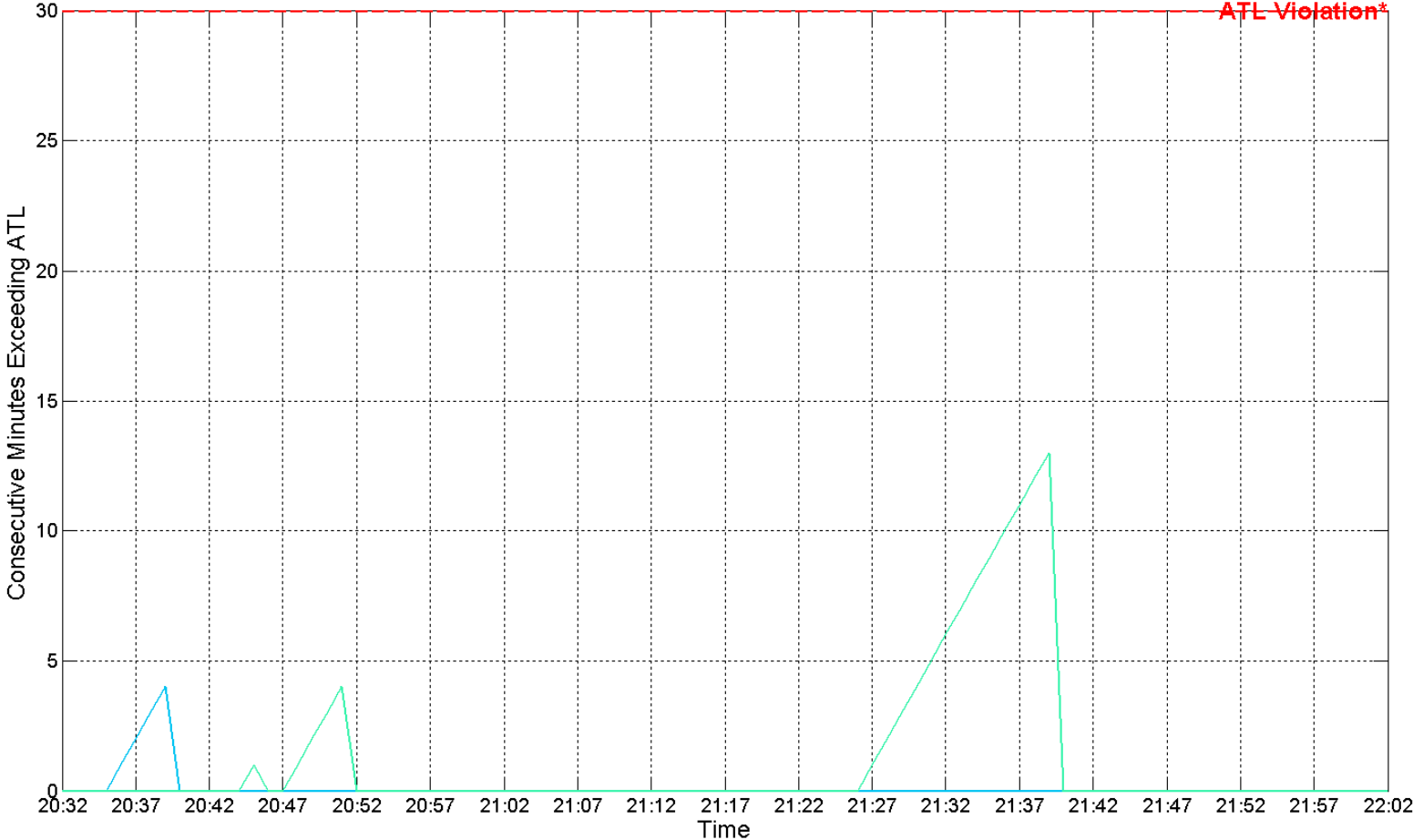
9/1/2011 ending 21:20 PST

32 minute duration above BAAL<sub>High</sub>



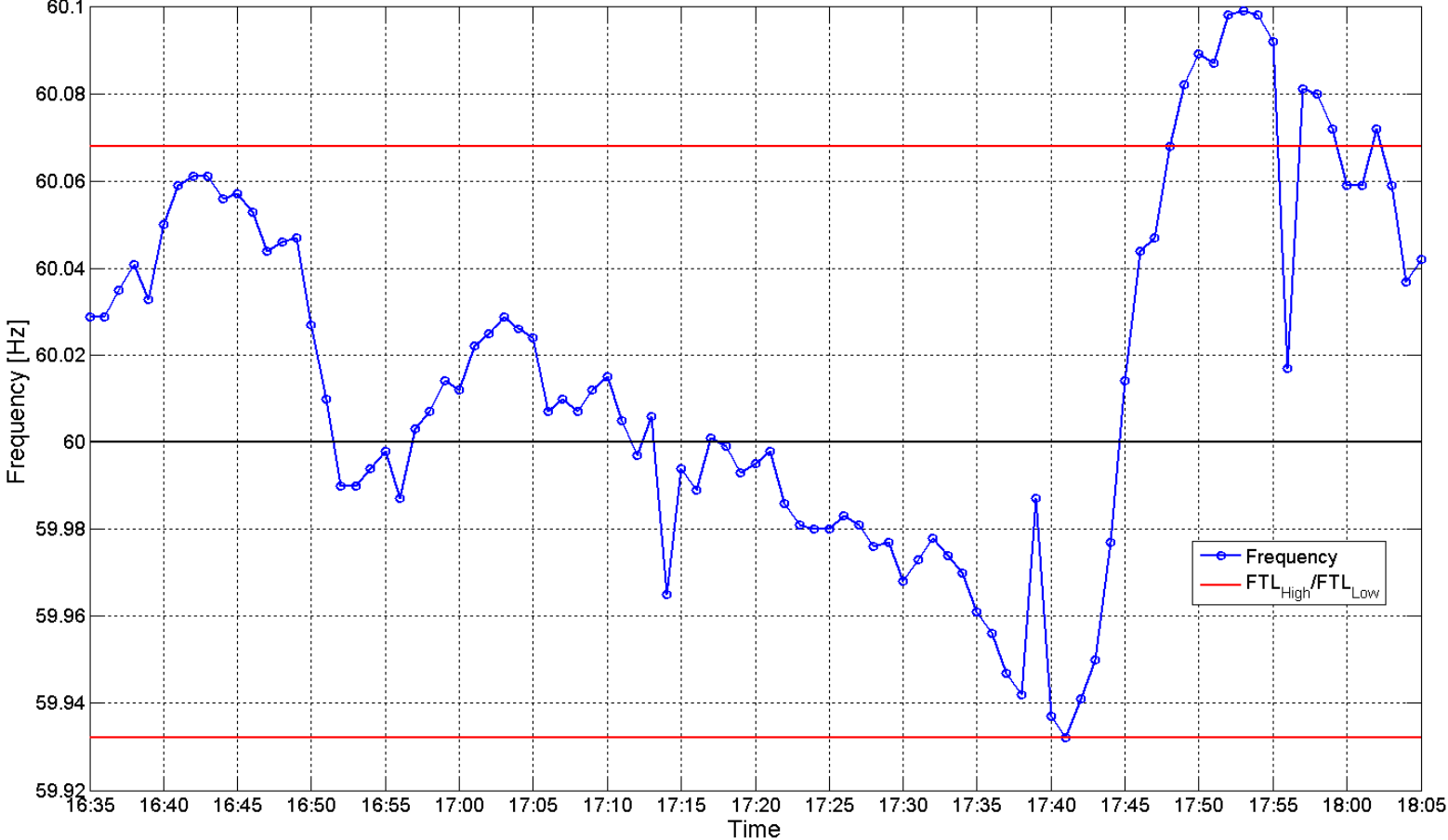
9/1/2011 ending 21:20 PST

32 minute duration above BAAL<sub>High</sub>



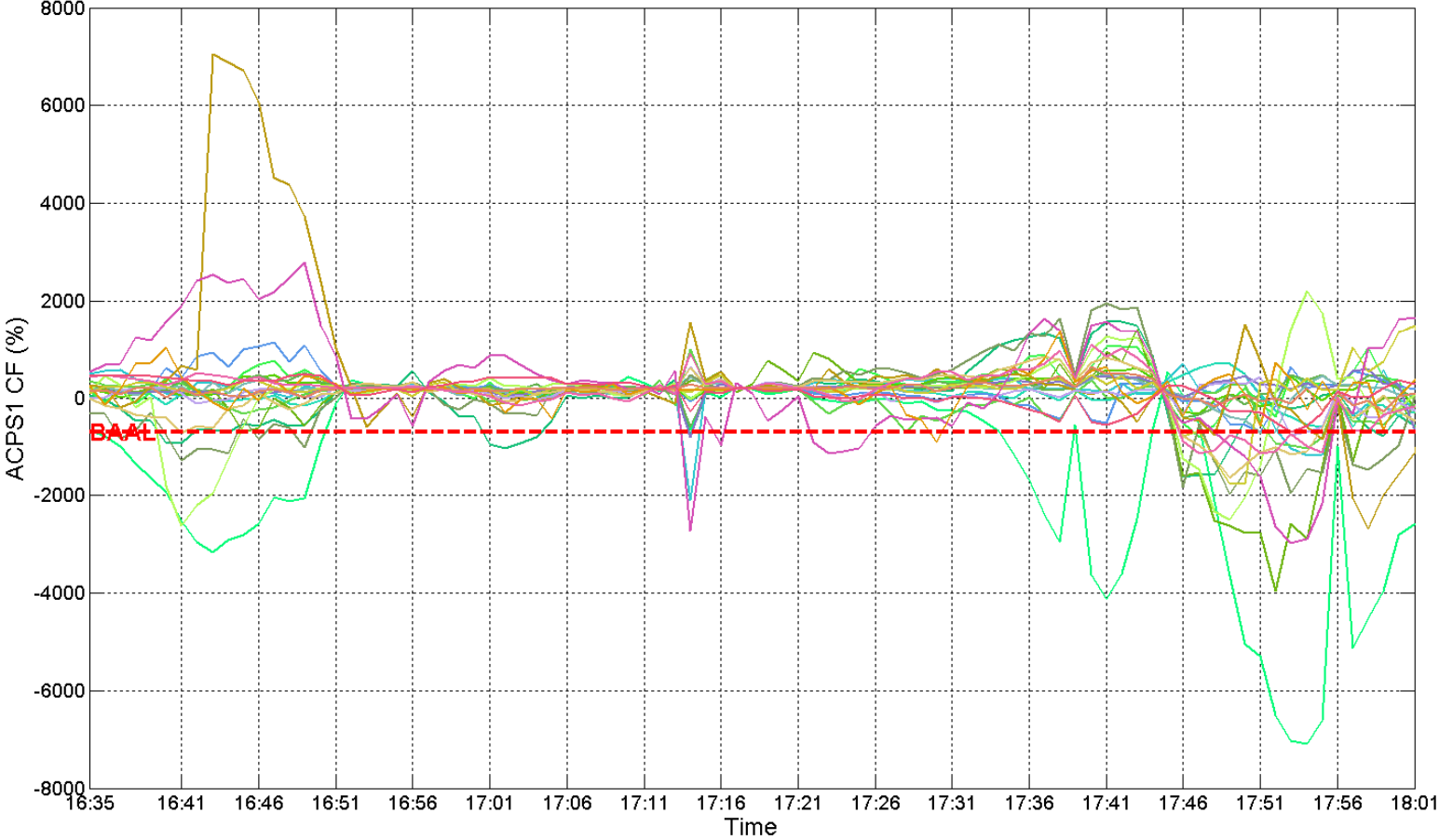
9/8/2011 ending 5:55 PST

8 minute duration above  $FTL_{High}$



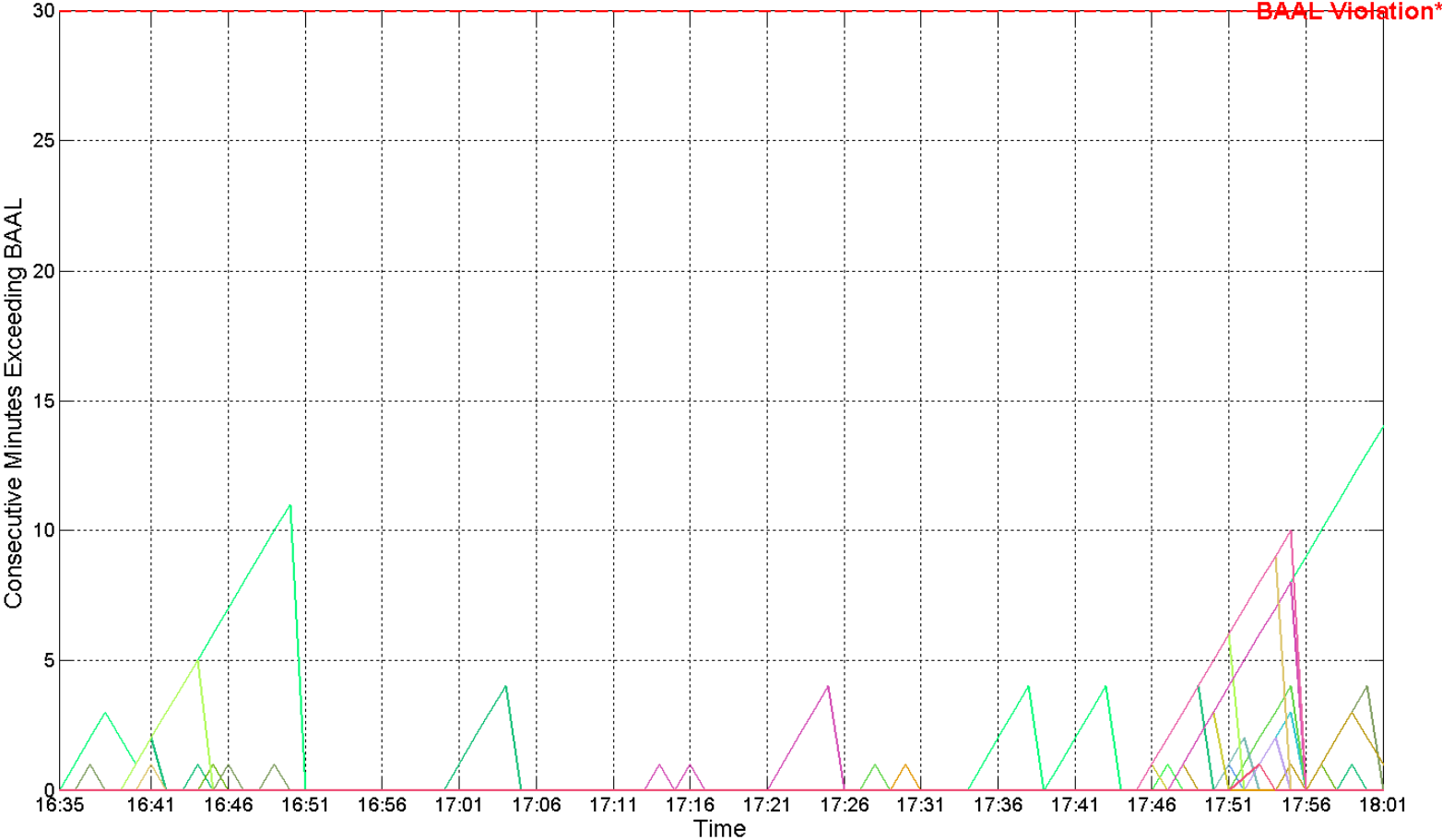
9/8/2011 ending 5:55 PST

8 minute duration above  $FTL_{High}$



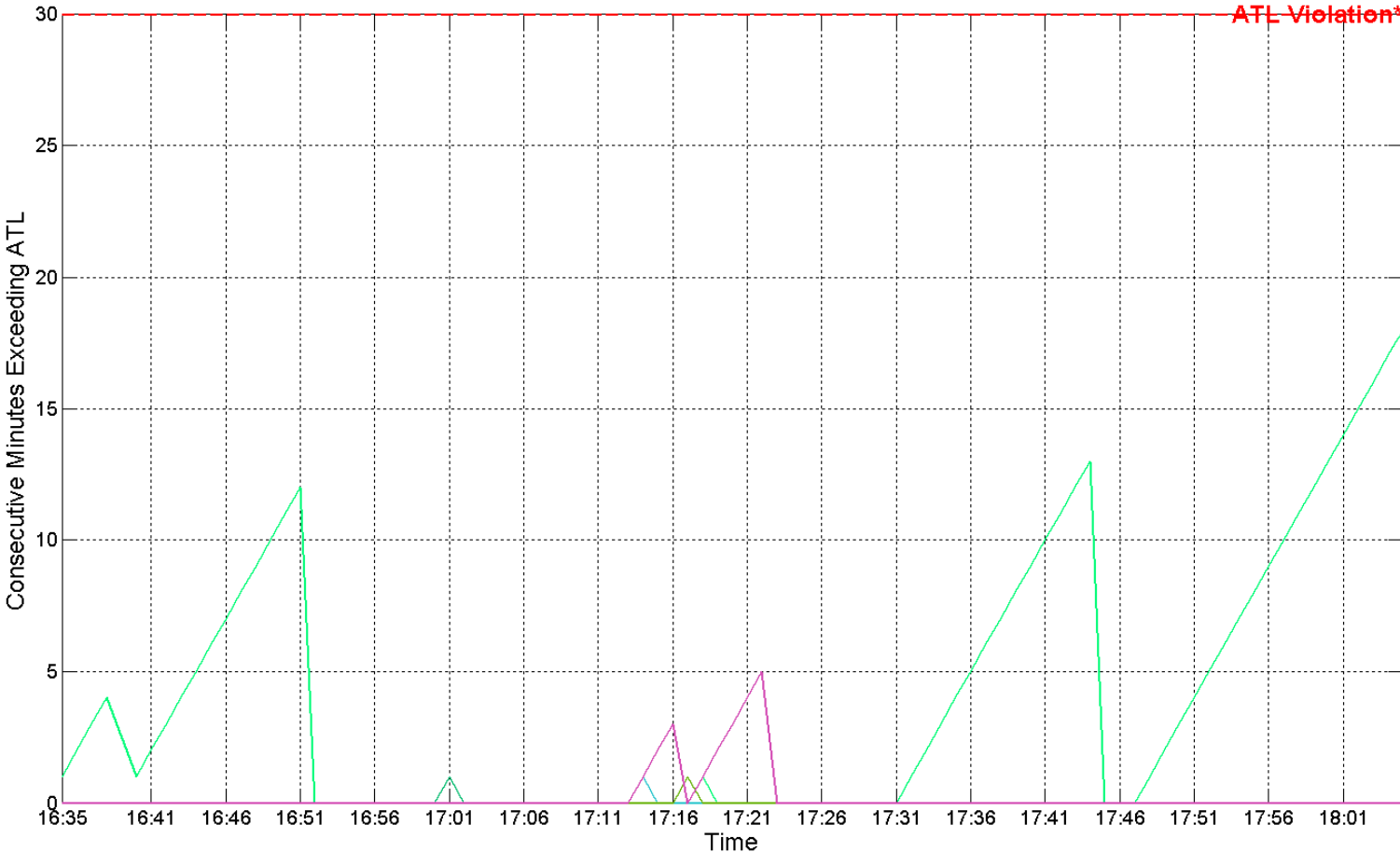
9/8/2011 ending 5:55 PST

8 minute duration above  $FTL_{High}$



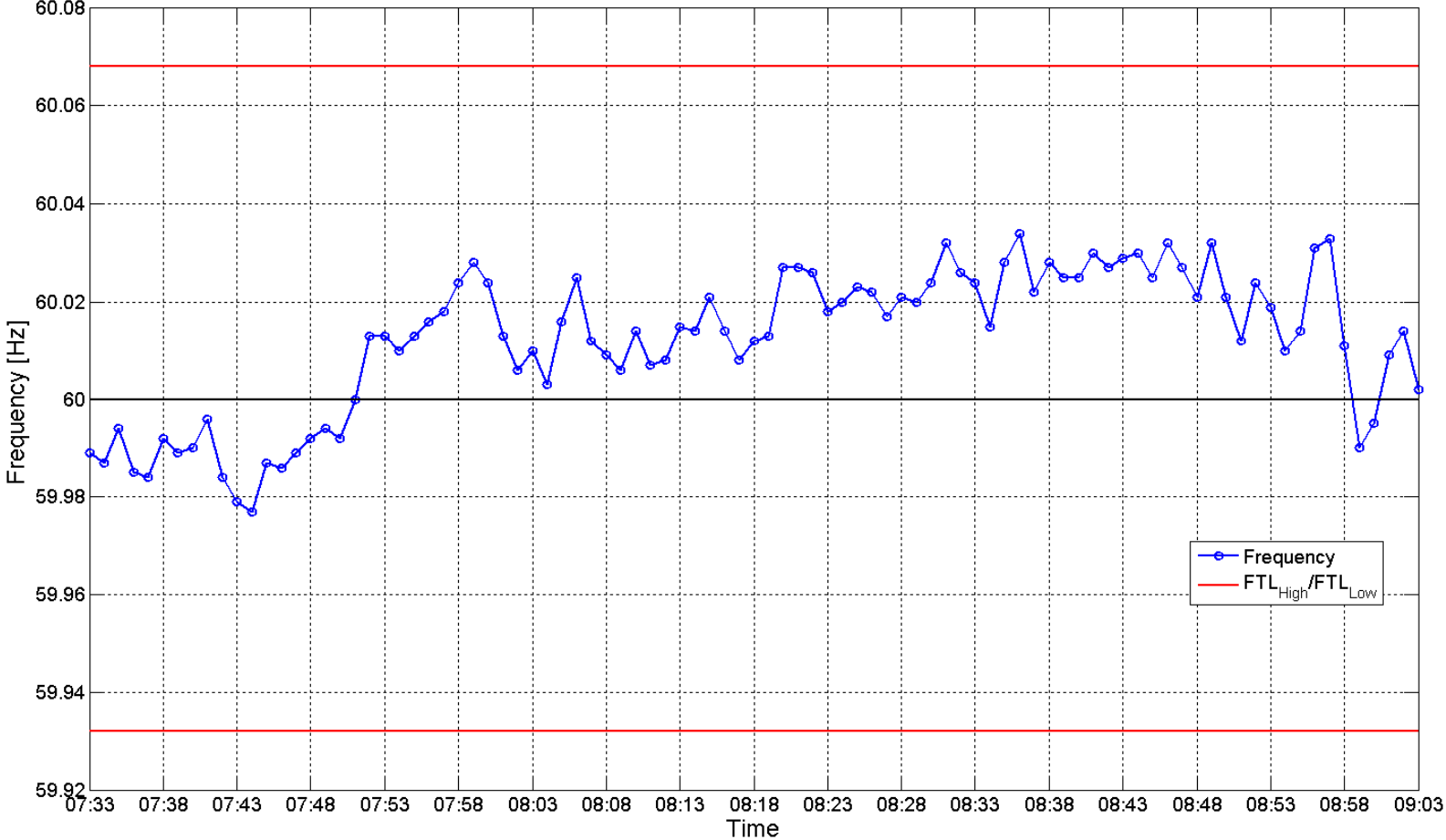
9/8/2011 ending 5:55 PST

8 minute duration above  $FTL_{High}$

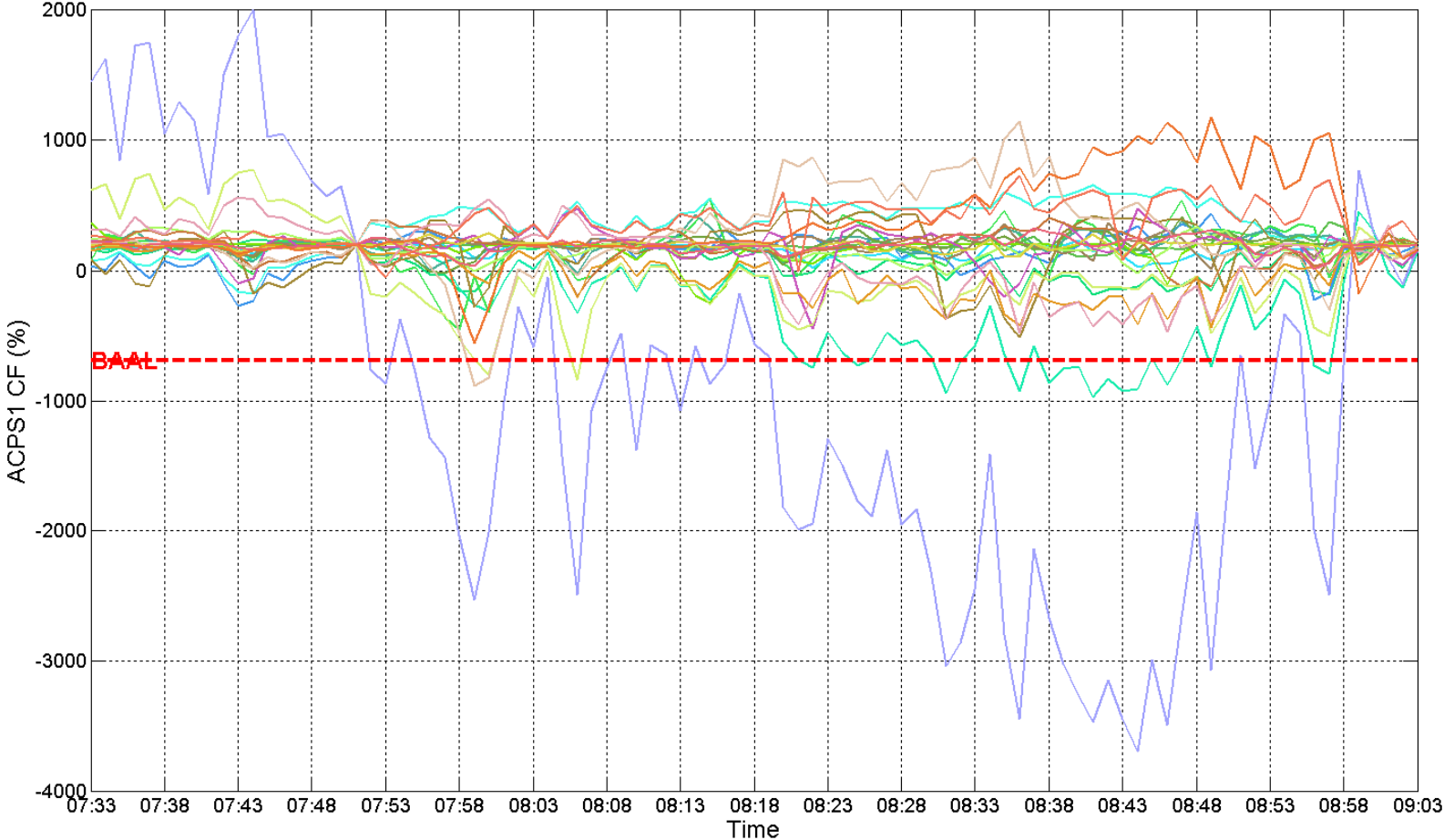


9/20/2011 ending 8:53 PST

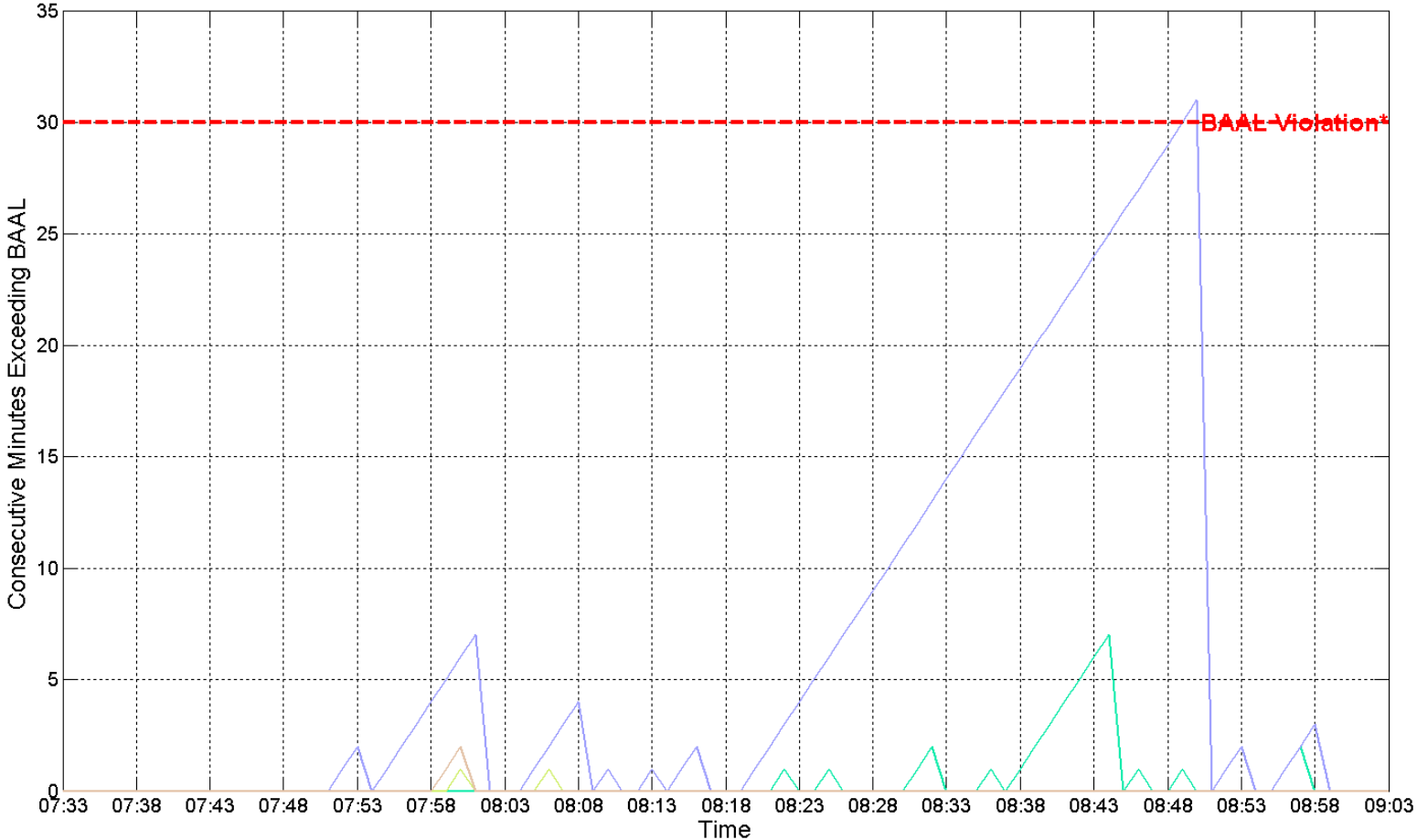
31 minute duration above  $BAAL_{High}$



9/20/2011 ending 8:53 PST  
31 minute duration above BAAL<sub>High</sub>



9/20/2011 ending 8:53 PST  
31 minute duration above BAAL<sub>High</sub>



9/20/2011 ending 8:53 PST

31 minute duration above BAAL<sub>High</sub>

