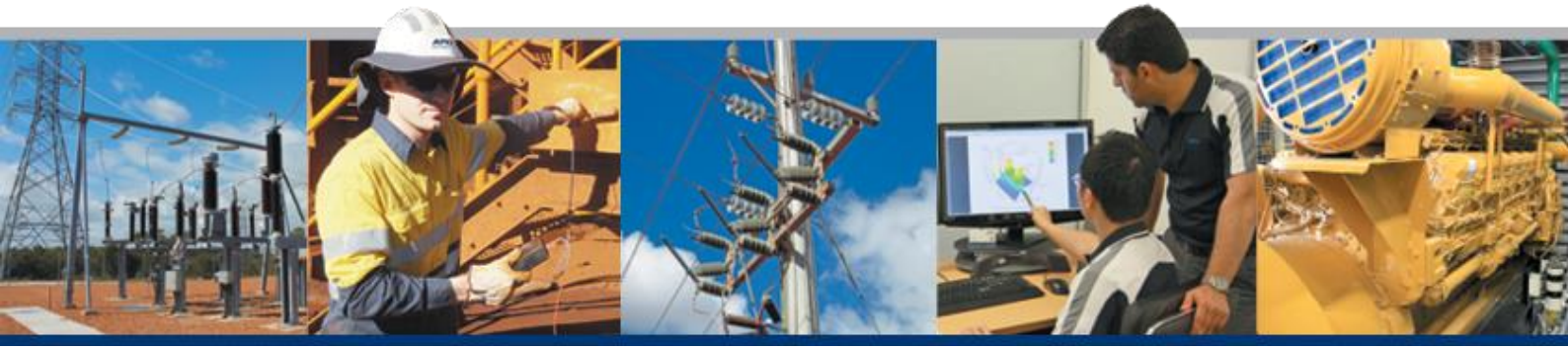

BHPB BILLITON IRON ORE NEWMAN TOWNSHIP ELECTRICITY SUPPLY

ANNUAL COMPLIANCE REPORT 2013/2014

REVISION A

6/08/2014

APD Job Number: W_APD03636

APD POWER ENGINEERING

REVISION HISTORY

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PREPARED FOR

Ben Brydson

BHP Billiton

M +61 428 669 982

E Ben.Brydson@bhpbilliton.com

Whaleback Drive, PO Box 655 Newman | WA 6753 | Australia

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1. INTRODUCTION

BHP Billiton Iron Ore (BHPBIO) is one of the world's major suppliers of iron ore and is based in the Pilbara region of Western Australia.

The township of Newman is located approximately 1200km to the north of Perth, within the Shire of East Pilbara. It is the main town for the Mt Whaleback iron ore mine, Mining Area C and several smaller satellite mines.

The electricity network is owned, governed and operated by BHP Billiton Iron Ore Supply Authority (BHPBIOSA). The network encompasses the township of Newman, Newman Airport, Capricorn Roadhouse, town water supply bore field, Mt Whaleback iron ore mine, and several smaller satellite mines in the adjacent areas.

At present, the township of Newman has 2886 premises comprised of a mixture of residential and commercial customers.

According to Western Australia Electricity Industry (Network Quality and Reliability of Supply) Code 2005 Part 4 Division 3 Performance Reporting Section 27 Publication of information about performance, an electricity distributor must prepare a report setting out the information described in Schedule 1 of the code, in respect to each year ending on 30 June.

This annual compliance report presents all information required by Schedule 1 – Information to be published of the Code, for the period of 1st July 2013 to 30th of June 2014.

The compliance statistical analysis has focused solely on Newman Township and the key infrastructures adjacent to the township. The electrical network supplying the BHPBIO mining operation and the surrounding mine leases have not been assessed. In addition, natural disasters and events outside the control of the network operator (e.g. bush fires, cyclones, lightning strikes, and major generator failures) have not been taken into account in the analysis.

2. DEFINITIONS

The terminologies used throughout this compliance report are defined in the Electricity Industry (Network Quality and Reliability Supply) Code 2005.

3. METHODOLOGY

The electricity supply compliance review entailed the following processes:

1. Installation of temporary power quality (PQ) loggers at the beginning and the end of each supply feeder emanated from Town and Whaleback Substations. The power quality loggers were installed at the low voltage (LV) side of the padmount transformers within the township (i.e. two transformers per feeder). The measuring period lasted for 10 days during the peak summer period from 16/01/14 to 26/01/14. The power quality measurements were undertaken in accordance to AS/NZS61000.4.30:2007 Annex A (informative) Power Quality Measurements – Issues and Guidelines.
2. Interpretation and analysis of the logged PQ data using HIOKI 3196 Power Quality Analyser.
3. Identification of any breaches of the Western Australia Electricity Industry (Network Quality and Reliability of Supply) Code 2005 provisions and Electricity Acts 1945.
4. Evaluation of the 2013/2014 Newman Township Electrical Faults Log and the Level 1 & Level 2 Faults and Schedule outages records provided by BHPBIOSA.
5. Statistical analysis and review of network performance using the power reliability indices ASAI, CAIDI, SAIDI, and SAIFI.
6. Preparation of a compliance report that fulfils the requirements outlined in Western Australia Electricity Industry (Network Quality and Reliability of Supply) Code 2005 – Schedule 1 Information to be published.

4. RESPONSE TO ELECTRICITY INDUSTRY (NETWORK QUALITY AND RELIABLITY OF SUPPLY) 2005 SCHEDULE 1

This section contains all of the information required for compliance reporting as detailed in Electricity Industry (Quality and Reliability of Supply) Code 2005 – Schedule 1 Information to be published.

4.1. Schedule 1 Item 4(a) and Item 10 – Breaches of the provision in the Code

4.1.1. Part 2 Division 1 Quality Standards Section 6(2)- Voltage Fluctuations

The voltage fluctuations of electricity supplied must not exceed the compatibility levels of Pst=1.0 and Plt=0.8 stated in Section 6 of Electricity Industry (Network Quality and Reliability of Supply) Code 2005.

The PQ logging results indicate a high number of voltage fluctuation breaches on all feeders supplying the township network during the logged period. The significant increase from previous years could be due to disturbances on the network (e.g. rapid switching of large industrial loads, welding machines, motor start up and etc.) or just normal background flickers. To ensure compliance to the Code, it is imperative that BHPBIOSA undertake appropriate measures to investigate and rectify the voltage fluctuation issues.

Table 1 | Total number of breaches of voltage fluctuation compatibility levels

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of breaches of Pst	16	5	79
Total number of breaches of Plt	6	1	72

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 data were obtained from the power quality logging results taken during the summer period from 16/01/2014 to 26/01/14.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

4.1.2. Part 2 Division 1 Quality Standards Section 7 - Harmonics

The harmonic voltage distortion levels of electricity supplied must not exceed the Total Harmonic Distortion (THD) of 8% stated in Section 7 of Electricity Industry (Network Quality and Reliability of Supply) Code 2005.

Table 2 | Total number of breaches of total harmonic distortion limit

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of breaches of Total Harmonic Distortion	2	0	0

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 data were obtained from the power quality logging results taken during the summer period from 16/01/2014 to 26/01/14.

4.1.3. Part 2 Division 2 Quality Standards Section 8 Note (a) - Voltage Level Compliance

According to AS60038-2000 Standard Voltages Section 2, the voltage levels of the electrical network must be maintained at +10% and -6% of the supply voltage of 230V single-phase.

As the voltage measurements were taken at the secondary (LV) side of the padmount transformers located at the beginning and the end of each feeder supplying the township, the voltage level at the customer's connection point would be lower than the logged results. The voltage drops due to customers' loads must be limited to 5%, in accordance to AS/NZS 3000. The lowest voltage level recorded during the PQ logging period was around 230V. Therefore, it is expected that the voltage level at the customer's connection would still be within the required range.

However, the largest voltage dip recorded was at the end of TC1 feeder on the 25th of January 2014 at around 3pm. Voltage level dipped to 229V from 237V which is just within limits. As the January 2014 electrical faults data was not available, it is not known what the cause of the voltage dip was.

Table 3 | Total number of breaches of voltage level limits

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of breaches of voltage limits	15	8	0

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 data were obtained from the power quality logging results taken during the summer period from 16/01/2014 to 26/01/14.

4.1.4. Part 2 Division 2 Quality Standards Section 8 Note (b) – Frequency Level Compliance

According to Electricity Act 1945 Section 25(1)(d), the frequency of electricity supplied must be maintained at +/-2.5% of the frequency of 50 cycles per second.

The recorded data shows the frequency of supply was stable and maintained very close to 50Hz during the logging period.

Table 4 | Total number of breaches of frequency limits

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of breaches of frequency limits	0	0	0

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 data were obtained from the power quality logging results taken during the summer period from 16/01/2014 to 26/01/14.

4.2. Schedule 1 Item 4 (b) – Remedial actions taken for breaches of provisions

To date, BHPBIOSA has successfully replaced 39 old transformers located within Township. Out of the 39 transformers, 15 were replaced within the current financial year. The replacement of the 465V transformers with new 433V padmount transformers has significantly alleviated the overvoltage issue on the network.

To ensure compliance to Australian Standards, BHPBIOSA proactively undertake annual power quality (PQ) logging on the 11kV supply feeders from both Whaleback and Township Substations during the summer period. Improvements are continuously implemented based on the PQ logging data results, and complaints received from customers related to power quality issues.

4.3. Schedule 1 Item 5 (a) – The number of small use customers the supply of electricity to which has been interrupted for more than 12 hours continuously

Table 5 | Total number of premises that have been interrupted continuously for more than 12 hours

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of premises that experienced interruptions more than 12 hours	0	1	5

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 data were obtained from Newman Township 2013/2014 Electrical Faults Log provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

4.4. Schedule 1 Item 5(b) – The number of small use customers the supply of electricity to which has been interrupted more than 16 times

Table 6 | Total number of premises that experienced more than 16 interruptions

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of premises that experienced interruptions more than 16 times	0	0	0

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 data were obtained from Newman Township 2013/2014 Electrical Faults Log provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

4.5. Schedule 1 Item 6 and Item 10 – The total number of complaints received

According to Schedule 1, “complaint” means a that a provision of Electricity Code 2005 Part 2; or an instrument made under Electricity Code 2005 Section 14(3), has not been, or is not being, complied with;

Table 7 | Total number of formal complaints lodged to BHPBIOSA

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of formal complaints received	0	0	0

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was provided by BHPBIOSA officer.

4.6. Schedule 1 Item 7 and Item 10 – The number of complaints received from customers in each of the discrete areas

The township of Newman is supplied from an integrated network and there are no discrete areas.

4.7. Schedule 1 Item 8 and Item 10 – The total amount spent by the transmitter or distributor in addressing complaints, other than by way of payments under sections 18 and 19 of the Code

Table 8 | Total amount spent by BHPBIOSA in network improvements

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total amount spend in dollars (A$)	$8.18 million	$13.68 million	$14.90 million

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was provided by the BHPBilliton Iron Ore Sustaining Capital Project Manager of the new South Town Substation project, Jurgens de Waal.

The Newman township network was supplied by Town Substation via TC1, TC2, TC3 and TC4 feeders, and by Whaleback Substation via TA and TB feeders. All the existing 11kV feeders emanated from the substations are heavily loaded and have not much spare capacity to cater for future load growth.

With the commissioning of the new South Town substation in January 2014, the loads previously supplied by the TA and TB feeders from Whaleback Substation were offloaded to the new feeders STS1, STS2 and STS6 from South Town Substation. TA and TB are now solely supplying the mine operations.

In 2013/2014, BHPBilliton have spent approximately $14.9 million for the new South Town substation project, which entailed the installation of two 66/11kV 30MVA transformers and three new 11kV feeders to supply the township loads. Power is transferred to the new substation from Alinta Power Station via a new 66kV overhead line from the existing 66kV Whaleback Substation to South Town Substation.

Apart from building a new substation to cater for the growing demand in the township, BHPBIOSA is also exploring a number of reinforcement options, such as balancing the loads among the 11kV supply feeders and upgrading old conductors on the network to increase current carrying capability of the overhead lines, in order to further improve the reliability of the township electricity network.

4.8. Schedule 1 Item 9 and Item 10 – The number and total amount of payments made by the transmitter or distributor under each of sections 18 and 19 of the Code

Table 9 | Total number and amount of payments made under sections 18 and 19

Description	Reportable Period		
	2011/2012	2012/2013	2013/2014
Total number of payments	0	0	0
Total amount of payments (A$)	0	0	0

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was provided by BHPBIOSA officer.

4.9. Schedule 1 Items 11 (a), 12 and 13 – The average length of interruption of supply to customer premises expressed in minutes (CAIDI)

The Customer Average Incident Duration Index (CAIDI) is a reliability index used to measure the average outage duration that a customer would experience. The CAIDI for the Newman township electrical network is measured in minutes over the course of the 2013/2014 financial year.

Table 10 | The average length of interruption of supply to customer premises expressed in minutes (CAIDI)

Description	Reportable Period				
	2010/2011	2011/2012	2012/2013	2013/2014	Average
CAIDI (minutes)	73	167	95	132	117

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was calculated based on the 2013/2014 Electrical Faults Log data provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

4.10. Schedule 1 Items 11 (b), 12 and 13 – The average number of interruptions of supply to customer premises (SAIFI)

The System Average Incident Frequency Index (SAIFI) is a reliability index used to measure the average number of outages for each customer served per year.

Table 11 | The average number of interruptions of supply to customer premises (SAIFI)

Description	Reportable Period				
	2010/2011	2011/2012	2012/2013	2013/2014	Average
SAIFI	3.22	1.18	2.59	2.40	2.35

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was calculated based on the 2013/2014 Electrical Faults Log data provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

4.11. Schedule 1 Items 11 (c), 12 and 13 – The average percentage of time that electricity has been supplied to customer premises

The Average Service Availability Index (ASAI) is a reliability index used to measure the average availability of power supply to customers.

Table 12 | The average percentage of time that electricity has been supplied to customer premises (ASAI)

Description	Reportable Period				
	2010/2011	2011/2012	2012/2013	2013/2014	Average
ASAI	99.96%	99.96%	99.95%	99.94%	99.95%

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was calculated based on the 2013/2014 Electrical Faults Log data provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

4.12. Schedule 1 Items 11 (d), 12 and 13 – The average total length of all interruptions of supply to customer premises expressed in minutes (SAIDI)

The System Average Incident Duration Index (SAIDI) is a reliability index used to measure the average outage duration for each customer served per year. SAIDI is measured in minutes.

Table 13 | The average total length of all interruptions of supply to customer premises expressed in minutes (SAIDI)

Description	Reportable Period				
	2010/2011	2011/2012	2012/2013	2013/2014	Average
SAIDI (minutes)	235	198	245	318	249

Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was calculated based on the 2013/2014 Electrical Faults Log data provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

4.13. Schedule 1 Items 14 and 15, an estimate of the 25th, 50th, 75th, 90th, 95th, 98th and 100th percentile values of the average length of interruption (CAIDI)

Table 14 | Percentile values of the average length of interruption of supply to customer premises (CAIDI) in 2013/2014

Description	0	25th	50th	75th	90th	95th	98th	100th
Average Length of Interruption (CAIDI)	104	104	104	102	107	164	166	132

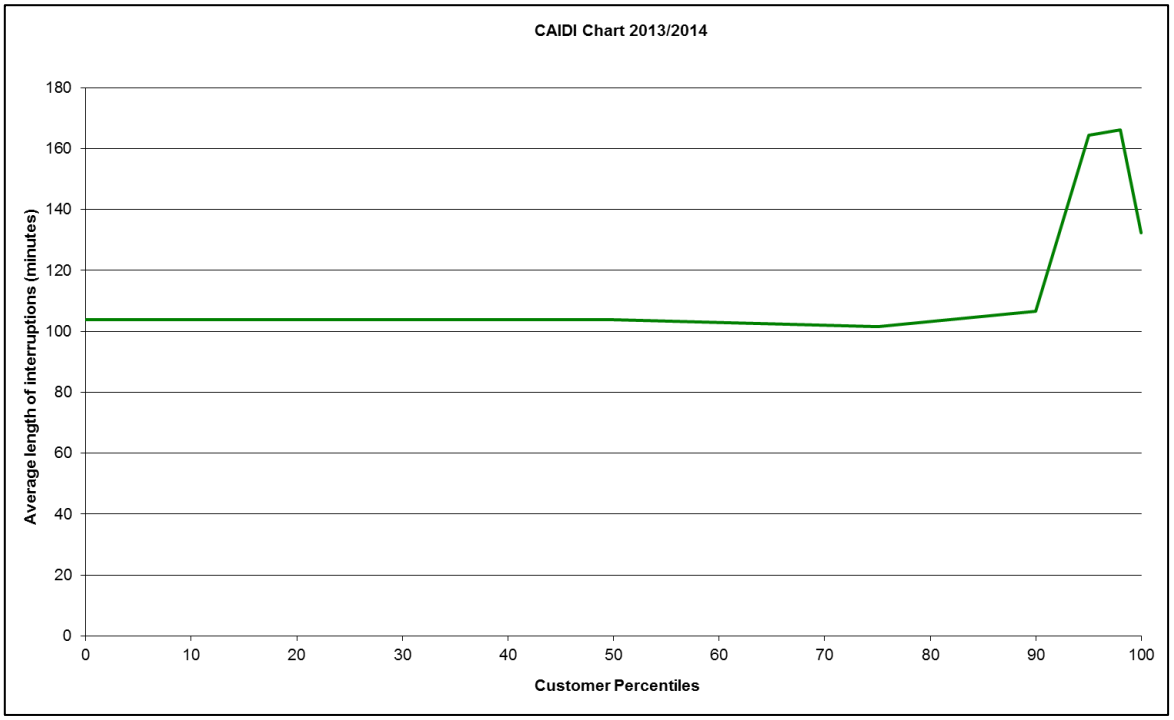
Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was calculated based on the 2013/2014 Electrical Faults Log data provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

Figure 1 | Percentile graph showing the average length of interruption (minutes) of supply to customer premises in 2013/2014



4.14. Schedule 1 Items 14 and 15, an estimate of the 25th, 50th, 75th, 90th, 95th, 98th and 100th percentile values of the number of interruptions (SAIFI)

Table 15 | Percentile values of the number of interruptions (SAIFI) in 2013/2014

Description	0	25th	50th	75th	90th	95th	98th	100th
Number of interruptions (SAIFI)	0.03	0.03	0.03	0.03	0.13	1.10	1.76	2.40

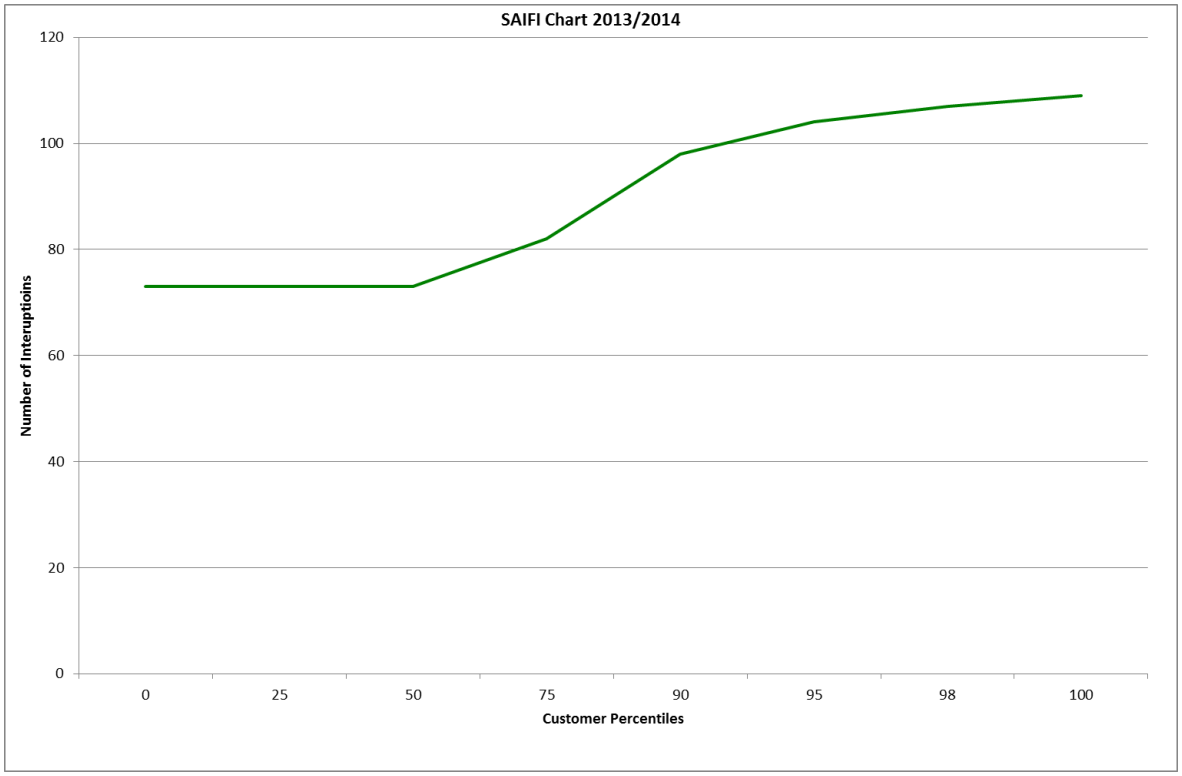
Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was calculated based on the 2013/2014 Electrical Faults Log data provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

Figure 2 | Percentile graph showing the number of interruptions in 2013/2014



4.15. Schedule 1 Items 14 and 15, an estimate of the 25th, 50th, 75th, 90th, 95th, 98th and 100th percentile values of the total length of interruptions (SAIDI)

Table 16 | Percentile values of the total length of interruptions (SAIDI) in 2013/2014

Description	0	25th	50th	75th	90th	95th	98th	100th
Total lengths of interruptions (SAIDI)	2.63	2.63	2.63	3.42	14.27	180.31	292.92	318.42

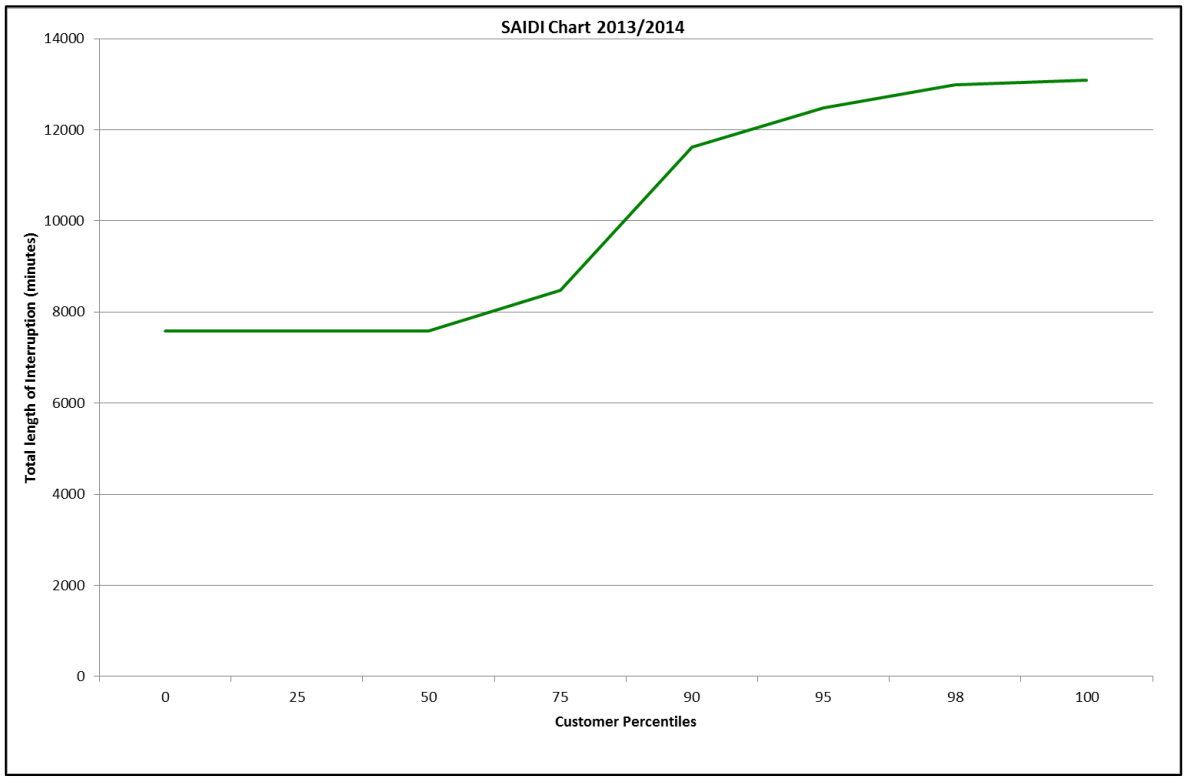
Data Source:

The 2011/2012 and 2012/2013 data were obtained from the annual electrical supply compliance report for the 2012/2013 period.

The 2013/2014 information was calculated based on the 2013/2014 Electrical Faults Log data provided by BHPBIOSA.

Natural disasters and the fault entries with missing location and trip information in the 2013/2014 Financial Year Electrical Faults Log were excluded from the study. The August 2013 and January 2014 electrical faults data was not available for assessment.

Figure 3 | Percentile graph showing the total length of interruptions (SAIDI) in 2013/2014



APPENDIX A 2013/2014 Financial Year Electrical Faults Log

APPENDIX B PQ Load Logging Data Results for 2013/2014 Financial Year

Legend

Natural Disasters
Fault more than 4hrs
Dist TX Fault
Full feeder Fault

2013/2014 Financial Year Electrical Faults Log

Date	Feeder	Protection Trip	Cause of Fault	Pole/Transformer Number	Further Repairs/Comment	Duration (mins)	Number of Customer Premises Affected	Sum of Customer Interruption Duration	Reported By	Comment
2/07/2013	TC3	3ph facia fuse	Treelimbs dropped over old PVC twistie	27 Wilara Street		60	1	60	Security Gate	
4/07/2013	TB		New mains cable and meter	15 Koolyoo St		60	1	60	DG	Planned outage, assumed 60mins of fault outage
5/07/2013	TC2	Red phase pillar fuse blown		8 Waratah Crescent		60	1	60	Housing	
6/07/2013	TC3	Fascia fuse blown	No fault found	15 Rudall Avenue		60	1	60	Security Gate	Assumed 60 mins of fault outage
7/07/2013	TB			13 Jabbarup Crescent		60	1	60		Assumed 60 mins of fault outage
7/07/2013	TB	Fascia fuse	Lost one phase no hot water	3 Snell St		30	1	30		
15/07/2013	TC2	TC2 partial feeder trip	Phase imbalance - drop out fuse blown	Pole 34/19 (near Braeside Dr)		40	73	2920		TC1 in fault sheet, no customer info for PS110, the no. customers affected was calculated based on LV SLD. Assumed PS11, PS12, PS13, PS14 and PS110 were affected
15/07/2013	TC2		Disconnect overhead lines between Pole 34/19 and Pole 34/24	Pole 34/19 to Pole 34/26		80	73	5840	SP	Planned outage, no. of customers calculated based on LV SLD - PS11, PS12, PS13, PS14
25/07/2013	TC2		Connect new cable from PS5 Callawa Way to pillar	PS5 TX		60	10	600	SE	Planned outage, assumed 10 customers are fed by the new LV cable from PS5
28/07/2013	TC2	Neutral connection in pillar		49 Bondini Drive		60	1	60		
4/09/2013	TC3	White phase fuse blown		8 O'Flaherty St		30	1	30	Housing	
5/09/2013	TB	Tripped cable in PS96 feed to DP3.1	Post hole angle hit LV cable	PS96 Pardoo Street		60	4	240	Greg Black	Assumed 60 mins of fault outage and 4 customers were affected
6/09/2013	TC2	TC2 Trip	Paralleled TC1 and TC2 tripped on imbalance	TC2 (East Newman)		60	642	38520	S.Parke	
6/09/2013	TC2	3B works	East Newman Works			180	0	0	S. Parke	Planned outage (to provide power for new customers)
21/09/2013	TB	LV Breaker 1 PS26 trip	LV overload on Breaker 1	PS26 - LIA Welsh Drive		60	3	180	Client RLR	Assumed 3 lots were affected
21/09/2013	TB	Circuit 1 PS26 LIA		PS26 - LIA Welsh Drive		60	3	180		Assumed 3 lots were affected
23/09/2013	TC2	3B works	East Newman Works			360	0	0	AW	Planned outage (to provide power for new customers)
30/09/2013	TC3	Fascia fuse		19 Ruddall Ave		60	1	60	WPS	
2/10/2013	TB	Hot water fuse blown		10 Snell St		60	1	60	TO	
5/10/2013		Stay pole repair				120	0	0	SP	Planned outage
7/10/2013	TB	Damaged spinning top of HV EDO	Damaged spinning top of HV EDO	Corner Woodstock St & T66		120	8	960	SP	Assumed 8 customers were affected on Panizza Way
12/10/2013	TA and TB	TA and OB29/TB Feeder Whaleback SEF/EF	Tripped due to switching Fuse links at Pole 35/15. Cause of why it tripped both TA and OB29/TB feeder still under investigation.		Review protection settings at TA and OB29/TB. Improve access after hours into Whaleback gatehouse.	29	1210	35090		
13/10/2013	TC3	White phase fuse blown	White phase fuse blown	34 Keedi Rd		120	1	120	HD	

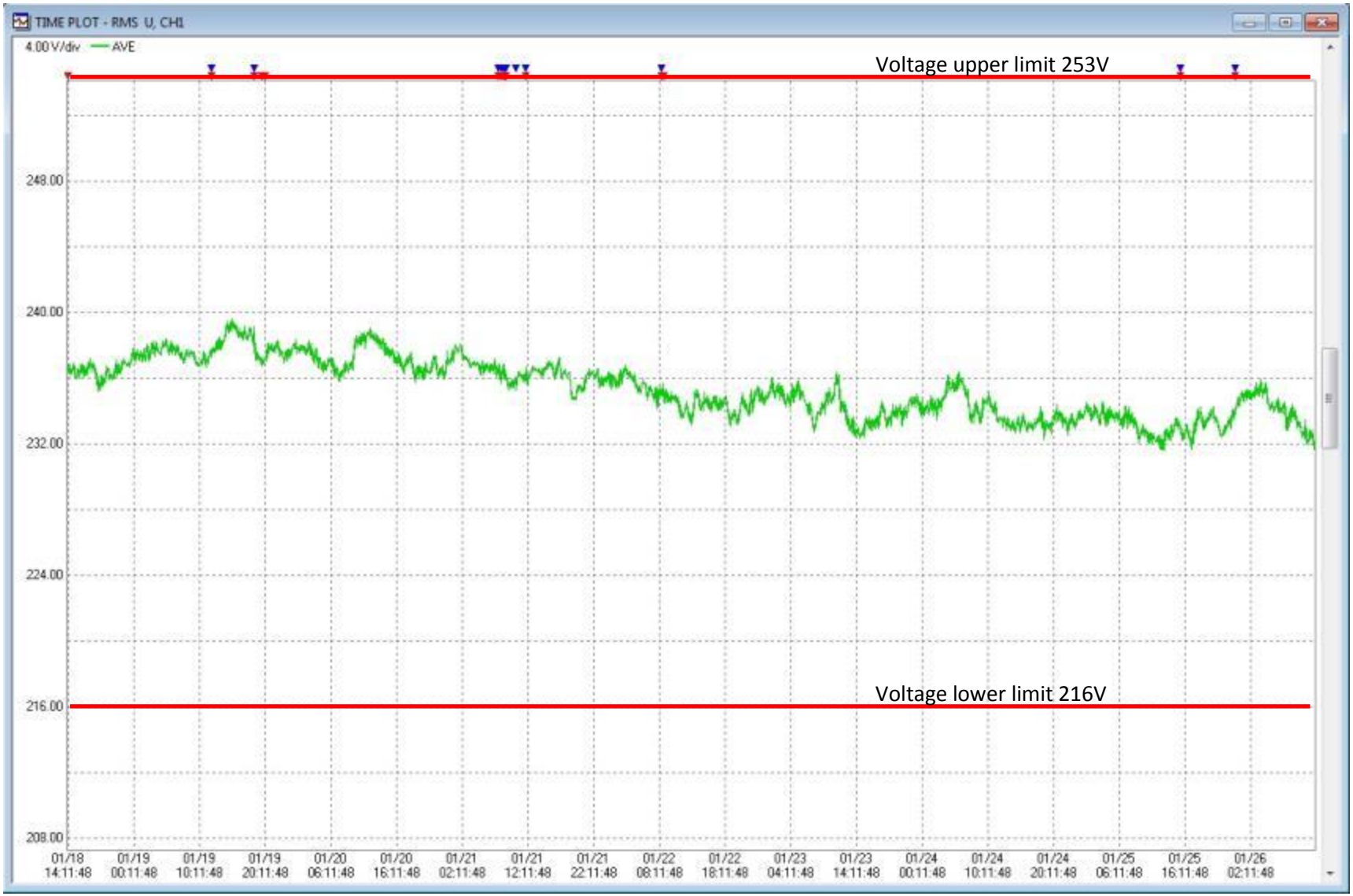
14/10/2013	TA	Town TA Network EF	Birdstrike at pole 31.46 causing small pole top fire burning off and melting insulation of conductor.	Corner Pole Newman Dr & Giles Ave Purple Pub pole 31.46	Rain may have contributed to the arc fault at pole when bird landed. Insulation of conductors need to be improved. Notification to replace conductors required.	27	641	17307	HD	
15/10/2013	TB	Drop out fuse blown		11 Wehl St		60	1	60	HD	
17/10/2013	TC3	Circuit breaker main LV tripped	Circuit breaker main LV kept tripping	T67 PS Newman Fire Station	Sands Hotel to adjust distribution power	60	3	180		
17/10/2013	TC3	Circuit breaker main LV tripped	Circuit breaker main LV kept tripping	T67 PS Newman Fire Station	Sands Hotel to adjust distribution power	60	3	180		
18/10/2013	TC3	Fit fuse box	Remove some load from TX67 Newman Dr Fire Station	T67 Newman Fire Station Stuart St		60	3	180	CM	
19/10/2013	TA	Fuse blown	Hot water system	11 Warman Ave		60	1	60	BJ	
20/10/2013	TB	TX main CB trip	Fault in Lot 2313 Savannah Engineers Pty Ltd.	PS80 Laver St	Savannah repaired	90	4	360	BJ	Savannah is fed by PS25. Could be a typo, not Shovelanna, Assumed 4 lots are fed by PS80
23/10/2013	TA	Broken service clamp	Tree	Hilditch Ave		60	1	60	JM	Assumed 1 customer is affected
24/10/2013	TC2	TC2 recloser trip	Line patrol determined birdstike at Pole in Caravan Park. Recloser tripped. Part of East Newman, Airport Line, Caravan Park affected.		Re-closesd, supply stayed on, engineer download fault history.	121	7	847	JM	Assumed Capricorn Roadhouse, Airport, Water Bore, Booster Pump, Caravan Park, Eco Village, Gun Club were affected
27/10/2013	TB	Blown/burnt LV fuse holder	Hot joint	10 Brown St	New fuse holder	60	1	60	BJ	
27/10/2013	TC3	TC3 feeder trip. Earth Fault P127 and CB at RMU01.	Confirmed birdstrike on pole at Willara Street though line patrol	Wilara Street pole (crossarm)	Fault record downloaded. Cleared remains of birdstike to reclose. Bird management plan. RMU01 cannot be operated online, review/upgrade beneficial.	68	425	28900	BJ	
27/10/2013	TC3	HV damage/rain blown service	HV damage/rain blown service	26 Wilara St	New FSD aerial service	120	1	120	BJ	
28/10/2013	TC3	SPD fuse blown	SPD fuse blown	72 Wilara St		60	1	60	HD	
30/10/2013	TB	Red fuse holder		48 Forrest Ave		60	1	60	AW	Assumed 60 mins of fault outage
30/10/2013	TC3	Service fuse in pillar blown		Unit 1/2 Golf Links		60	1	60	AW	Assumsed 60 mins of fault outage
31/10/2013	TC3	Service replacement		9 Yalberee Street		180	1	180	AW	Planned outage
8/11/2013	TB		RBP Project	18 Brown Street	New service		1	0	JM	
10/11/2013	TA		SCEE installing cabling overhead on Whaleback Drive	Pole 01/33/5 - Pole 31/33/3		60	23	1380		Planned outage. Old LIA is T85, assumed 60 mins of fault outageand 23 customers were affected
13/11/2013	TB	Main CB trip	Main CB trip	PS25 LIA Laver St	Engineers to investigate settings	60	20	1200	JM	Assumed 20 customers affected (Circuit 2)
14/11/2013	TB	800A CB trip	800A CB Failed	PS25 LIA Laver St	Investigating ventilation	105	20	2100		
16/11/2013	TB	DOF failure	DOP failure	Pole 32/61 LIA	Replaced DOF	45	104	4680	CM	Assumed T49 (26 cust.),T45 (30 cust.), T39 (27 cust.) and T52 (21 cust.) were affected
17/11/2013	TC3	Lost all power		39 Warman Ave		180	1	180	WB	
20/11/2013	TA			19 Moondoorow St	New service	240	1	240	JM	Planned outage
24/11/2013	TA	Recloser 31/30A	Recloser failed to close	Recloser 31/30A Newman Dr	Specialist to investigate	ongoing	608	#VALUE!	DM	
24/11/2013	TA		Old LIA SCEE installing new cable	Pole 31/33/3-Pole 31/33/1		240	23	5520	DM	Planned outage
26/11/2013	TC3		House fire	32 Rudall Ave		60	1	60	SE	
26/11/2013	TC3		Golf Club service replacement			60	1	60		Planned outage
28/11/2013	TC3	House blown fuse	Lost a phase	7 Burrows St		60	1	60	BJ	
1/12/2013	TA		Whaleback Dr re-conductoring			600	608	364800		Planned outage
3/12/2013	TB	Fuse blown	White phase on fascia fuse blown	Koolyoo St		60	1	60	JM	

3/12/2013	TC3	Fuse blown	Blue phase on fascia fuse blown	Burrows St		60	1	60	BM	
5/12/2013	TC1	Meter fuse blown	Fuse blown N.F.F	1B Euro Place		30	1	30		
6/12/2013	TC4	TC4 Town Feeder. FMG-Ampol Service Station-Parmpajinya	Suspect Lightning strike on line due to heavy storm. Town TC4 all loads tripped. Outage to Airport and parts of East Newman	Auto-Recloser Pole 34/38 & DOFs at Pole 34/114		150		0		
9/12/2013		Meter fuse blown				60	1	60		
10/12/2013	TC1	Fascia fuse blown		10 Snell St		60	1	60	WB	
13/12/2013	TC1	Fascia fuse blown	Lost phase	16 Ethel Creek		30	1	30	Security Gate	
13/12/2013	TC4	Hot joint fuse blown	Lost phase	2 Boree Court		60	1	60	Security Gate	
13/12/2013	TC3	Fascia fuse blown		7 Yalberee St		60	1	60	WAL Eddie	
15/12/2013	TC3	Fascia fuse blown	Lost of white phase	28 Nyabalee St		60	1	60	Lend Lease AW	
15/12/2013	TB	White phase fuse blown	Lost of white phase	16 Koolyoo St		60	1	60	Lend Lease AW	
21/12/2013	TC3	CB trip	No power	East Pilbara Shire	Reset CB	60	1	60	Security Gate	
21/12/2013	TC4	Drop out fuse blown	Lost of white phase	East Newman	Replaced DOF	120		0	Security Gate	
27/12/2013	TB	Fascia fuse blown	Lost of white phase	8 Brown St	Replaced fuse	60	1	60	SL	
29/12/2013	TB	Fascia fuse blown		20 Marloo St		30	1	30	Security Gate	
28/01/2014	TC4	Capricorn Road house Outage Overnight		Town Capricon Roadhouse	Lightning due to stormy weather					
31/01/2014	TB	Pillar fuse damaged	Pillar hit by truck causing damage	Shovelanna St Pillar P2-22	The entire pillar needs to be replaced	180	2	360	DM	Assumed 2 customers were affected
2/02/2014	TC3		Swing LV cable onto PS73 Supermarket and inside of Pole TA50	T73 & T74		60	1	60		Planned outage (Assumed 60 mins of planned outage)
5/02/2014	TC3	Woolies Padmount Sub CB Trip	Woolies LV feeder at pad substation tripped	T73 and T74		120	1	120		
6/02/2014	TC3	Fuse blown	White phase hot joint	Pole 01/65/7 3 Mardee St		120	1	120	CH	Assumed only 1 customer was affected
8/02/2014	TC2	Red phase fuse blown		11 Marillana St		30	1	30	CM	
8/02/2014	TA	White phase fuse blown		9 Moondoorow	Fuse holder to be replaced. Completed on 9/2	60	1	60	BJ	Assumed 60 mins of fault outage
10/02/2014	TC3	Fascia fuse blown		11 Warman St	Yes. Notice raised	60	1	60	BJ	
12/02/2014	TC3	Fascia fuse blown		12 Warman St		60	1	60	BL	
12/02/2014	TC3	Fascia fuse blown		7 Yalberee St		60	1	60	WAL	
22/02/2014	TC3	White phase fuse blown		7 Turner St		60	1	60	WB	
25/02/2014	TC3	Fascia fuse blown	White phase failed again blown fuse	7 Turner St	Replaced service, installed pole fuses	360	1	360		
3/03/2014	TB	Hot joint LV fuse blown	Lost phase	10 Marloo St		60	1	60	BJ	
6/03/2014	TC3		Power cut over	Newman Hospital Mindarra Drive	PS99	60	1	60		Planned outage
9/03/2014	TB		Pillar change out	Shovelanna St		180	2	360	JS	Planned outage (Assumed 2 customers were affected by the pillar change)
10/03/2014	TB		Cable installation and pillar replacement	Pillar 3 Boorthanna Crescent		1500	4	6000		Planned outage (Assumed 9-12 Boorthanna Crescent were affected)
11/03/2014	TC3		NAP testing	2,4,6,8 Boonara St		120	4	480	BW	Planned outage
12/03/2014	TB	Fuse blown	Lost white and blue phases	45 Gandawarra Crescent		60	1	60	BJ	Assumed 60 mins of fault outage

15/03/2014	TC1	TC1 feeder P127 trip. Auto reclose failed (earth + Phase A fault)	Not confirmed, possible birdstrike.	Town Substation	Auto recloser initiated but fault was still existing. Weather Fine, No lightning sighted. Feeder re-energized after line patrol confirmed ok.	32	608	19456	Khairul	Ia=1089A, Ig=971A
17/03/2014	TB	Fascia fuse blown	lost white phase	16 Koolyoo St		60	1	60	DG	
19/03/2014	TB	Meter fuse blown		Newman Veterinary Hospital Willis St		60	1	60	AS	
20/03/2014	TC4	Hot joint		DP211 Eagle Rock Turn	DP will need to be replaced	180	3	540	SP	Assumed 3 customers were affected based on the LV SLD
21/03/2014	TC4	Breaker trip		4/3 Kurrawan Way		60	1	60	CM	
23/03/2014	TC3		T5 Mindarra Dr Hospital removal	Newman Hospital Mindarra Drive	PS99	240	8	1920		Planned outage
25/03/2014	TC3	Fuse blown	Lost phase, service low	19 Nyabalee St	Replaced fuse, tensioned service	60	1	60	BW	
30/03/2014	TC1	Fascia fuse blown	Lost phase	37 Fortescue Ave	Replaced fuse	60	1	60	SE	Assumed 60 mins of fault outage
3/04/2014	TC1	Fuse holder blown	Lost red phase	23 Nanba St		60	1	60	SP	
4/04/2014	TB	Meter fuse blown		Transport LIA	Service conductor to be replaced	60	1	60	SP	
4/04/2014	TC4		Pillar change out	Eagle Rock Turn		180	4	720	AW	Planned outage. Assumed four customers were affected
4/04/2014	TC4		Disconnect neautral from pillar (service cable)	PS21 Nimingara Dr		60	4	240		Address is Armstrong on fault sheet, PS21 is located in Nimingara Dr.Assumed 4 customers are connected to the pillar
5/04/2014	TB	Fascia fuse blown		16 Koolyoo St		30	1	30	BJ	
5/04/2014	TA		Planned LV works	Ausdrill Whaleback Drive		240	1	240		Planned Outage
8/04/2014	TC1	fuse blown		37 Forstecue Ave		60	1	60		Assumed 60 mins of fault outage
13/04/2014	TC1	TC1 feeder P127 trip.			Investigation on why Earth switch was still closed when live isolator applied. HV switcher alleged the Earth switch may be defective when switched. Supervisor and engineer confirmed ok to switch TC1 back on on-site. No damage visible.	38	608	23104		
13/04/2014	TC4	RMU closed onto an earthed cable	Earth fault	PS5 TX Callawa Way				0		
17/04/2014	TC1	White phase fuse blown	Replaced fascia fuse	3 Snell St		30	1	30	Lend Lease	
21/04/2014	TC3	PS53 Giles Ave lost blue phase	LV main isolator backfeeding from PS69 North end of Giles Ave, Golf Course	PS53 Yalbaree (T53 Giles Ave)	Need to investigate how to repair	60	2	120	BJ	
25/04/2014		Fascia fuse blown	Lost blue phase			30	1	30	DG	Planned outage. Assumed only 1 customer was affected
8/05/2014	TC3	Fuse blown	Cable fault behind meterboard	28 Nyabalee St	Yes C.F.C to repair on 09/05/2014	60	1	60	BJ	
16/05/2014	TC3	TC3 outage	Bird stuck on A phase to earth. 800A earth fault		No. Bird removed. Reclosed successfully	90	425	38250	MJ	
16/05/2014	TC3	HV damage on OH service	HV damage on OH service	6 Tjilla St	OH service replaced	420	1	420	CM	
16/05/2014	TC3	PS104 outage	Issue with HV switch to TX	Kurra Estate	Need to reinstate PS and LV back to normal	180	0	0	CM	
16/05/2014	TC3	PS105 HV switch tripped	TX feeed on RMU had tripped	Kurra Estate PS105	No	720	0	0	CM	

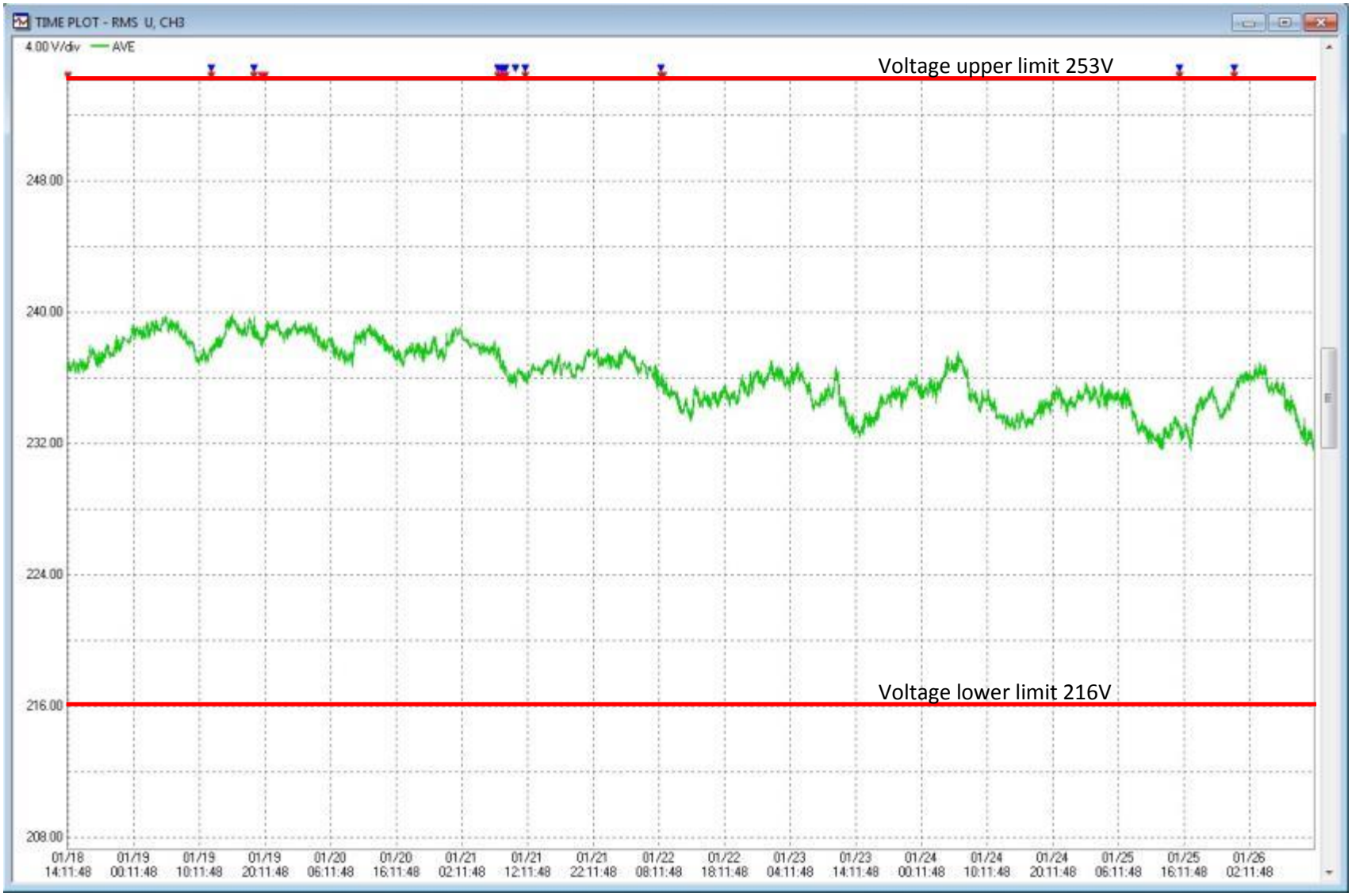
16/05/2014	TC1	Bridging cables on service arcing	OH service need replacing	4 Carney St	Yes. Cables to be replaced	720	1	720	AW	
17/05/2014	TC1	Dropped phase	HV overhead service damage	1 Nanba St	Yes. OH services to be replaced	150	1	150	CM	
18/05/2014	TC1		Damaged OH service	1 Nanba St	No	180	1	180	CM	
31/05/2014	TC3	TX109 (PS109) tripped out		Kurra Estate	No		0	0	SP	
10/06/2014	TC4	CFC Call Fault in SPD	SPD melted	27 Nimingarra Drive	Awaiting housing response	1080	1	1080	CFC Steve	
12/06/2014	TC1		Short in switchboard	49 Forstescue Ave		120	1	120	JS	
15/06/2014	TA	"A" feeder shut	Planned shut, had fault (low oil) at PS113	PS113		180	641	115380	CM	
15/06/2014	TA	"A" feeder STS6	Changeover to STS6 feeder			300	641	192300		Planned outage
16/06/2014	TB	White phase fascia fuse blown		20 Marloo St	Changed fuse	120	1	120		
16/06/2014	TB	White phase fascia fuse blown		20 Marloo St	Changed fuse	60	1	60		
29/06/2014	TB	White phase fascia fuse blown		20 Marloo St	Changed fuse	20	1	20	ESS/Lend Lease	

TA Start of Feeder T79 Security Gate 1st Phase Vrms



TA Start of Feeder T79 Security Gate 2nd Phase Vrms

TA Start of Feeder T79 Security Gate 3rd Phase Vrms

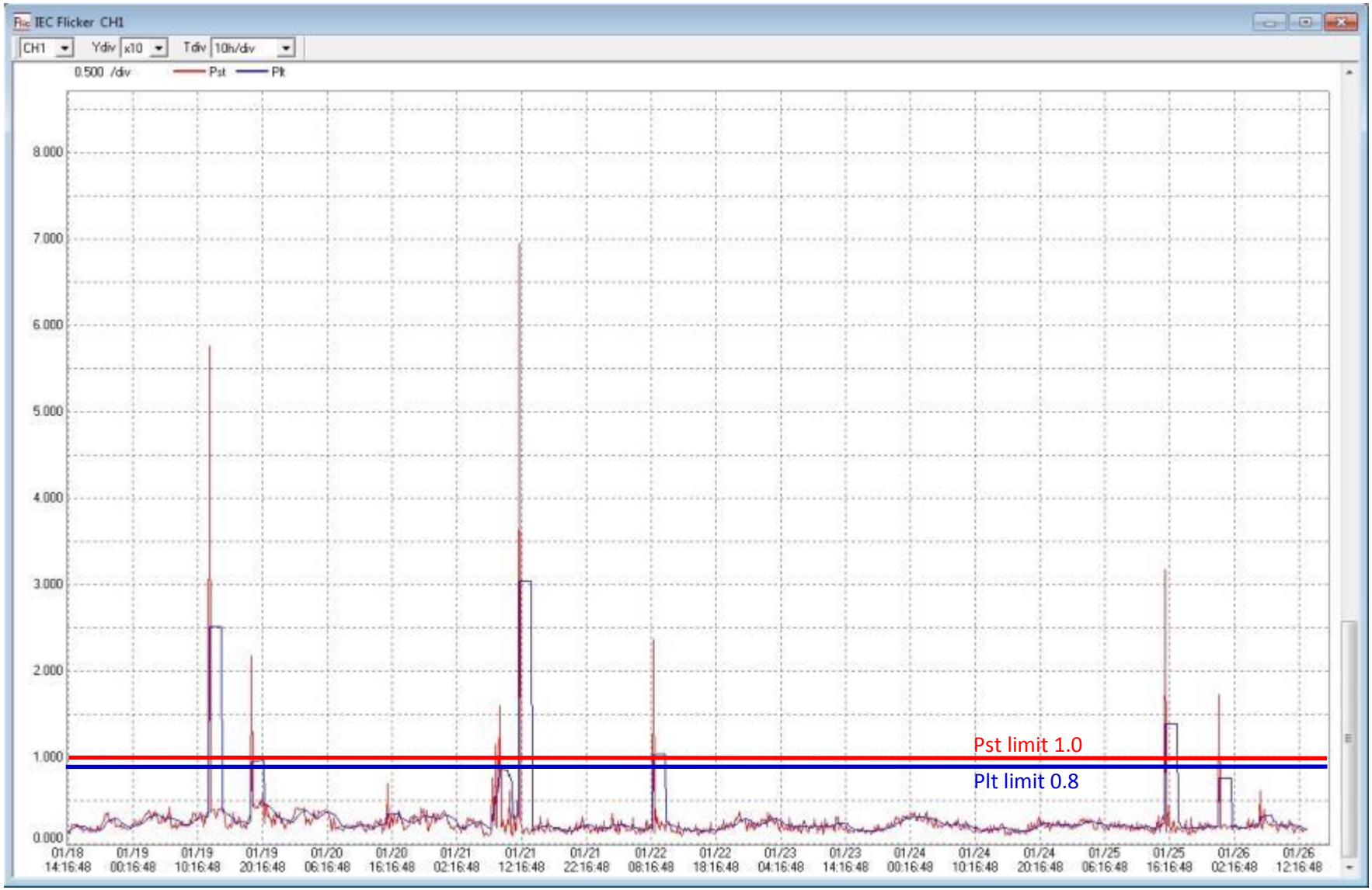


TA Start of Feeder T79 Security Gate 1st phase Vthd

TA Start of Feeder T79 Security Gate 2nd Phase Vthd

TA Start of Feeder T79 Security Gate 3rd Phase Vthd

TA Start of Feeder T79 Security Gate 1st Phase Pst & Plt



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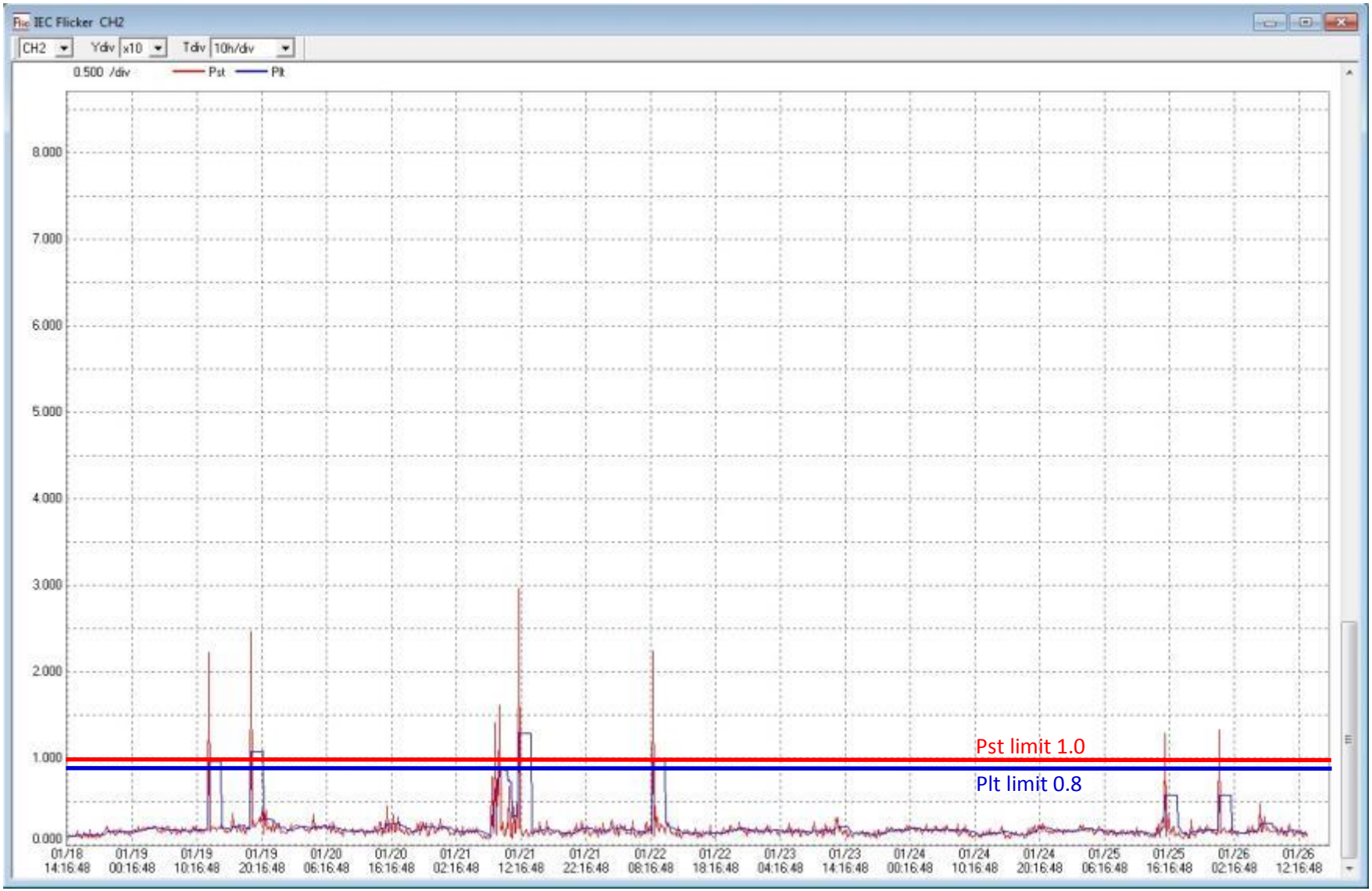

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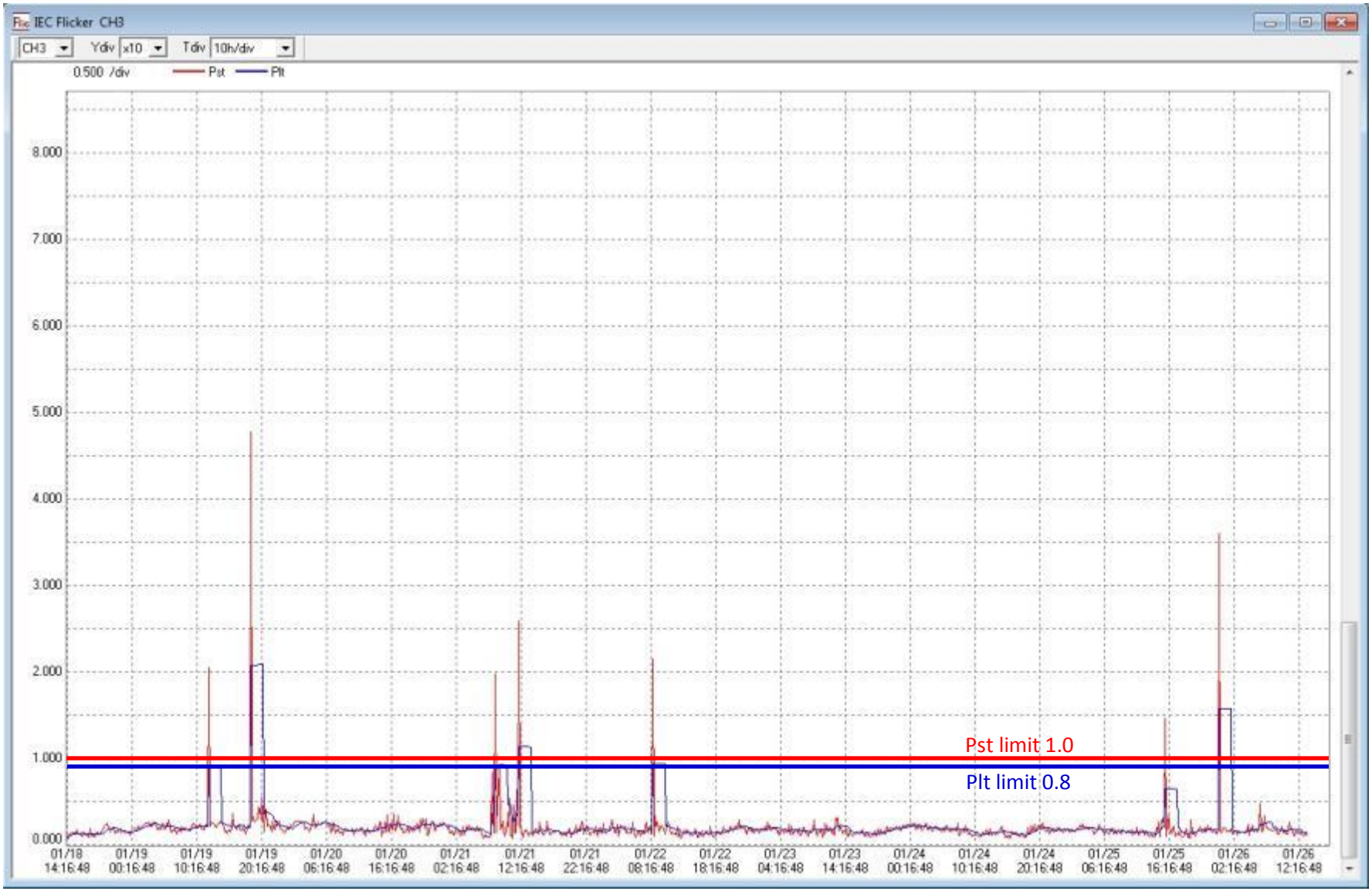
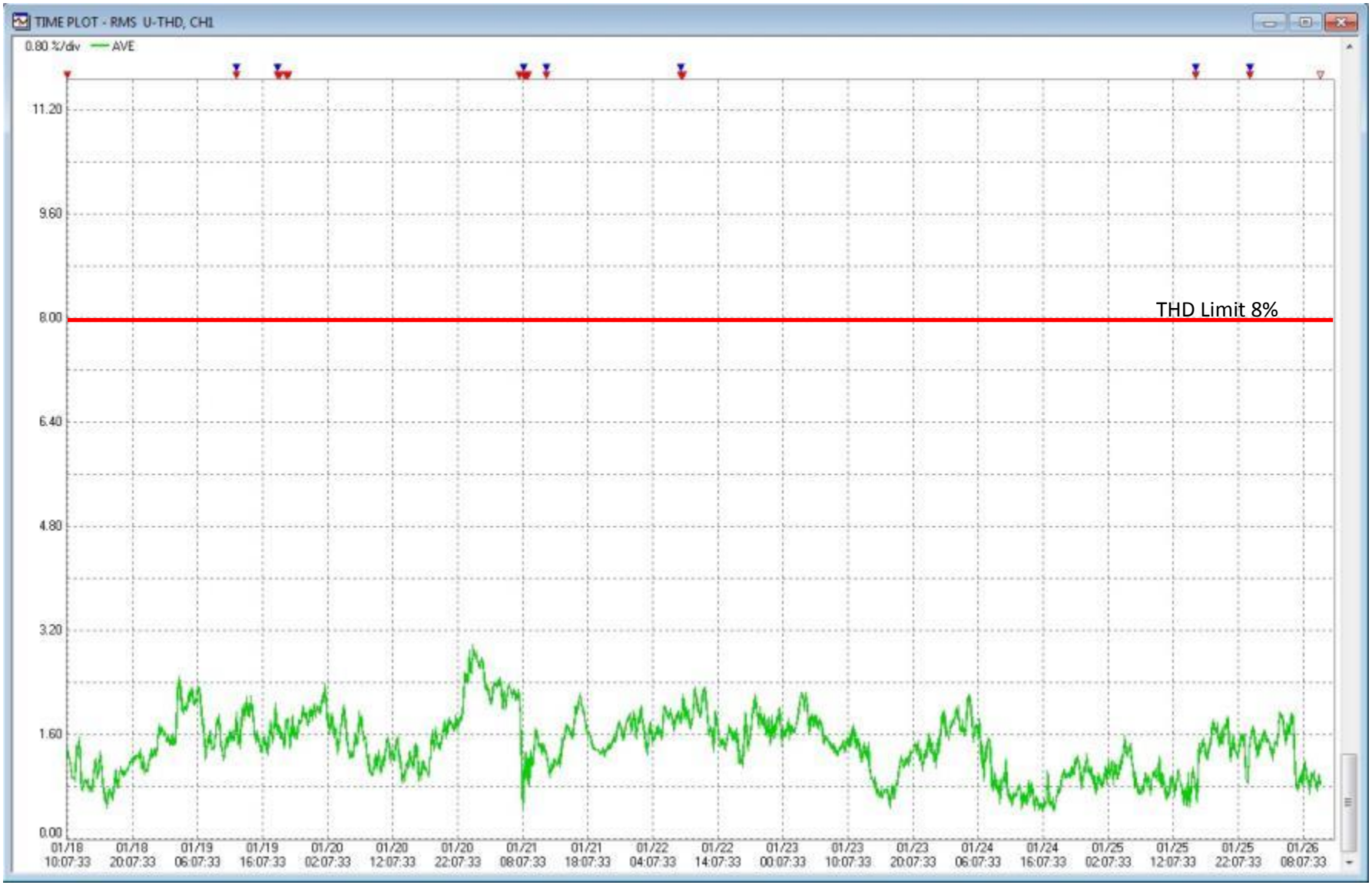


TA End of Feeder T41 Seasons 1st Phase Vrms

TA End of Feeder T41 Seasons 2nd Phase Vrms

TA End of Feeder T41 Seasons 3rd Phase Vrms

TA End of Feeder T41 Seasons 1st Phase Vthd



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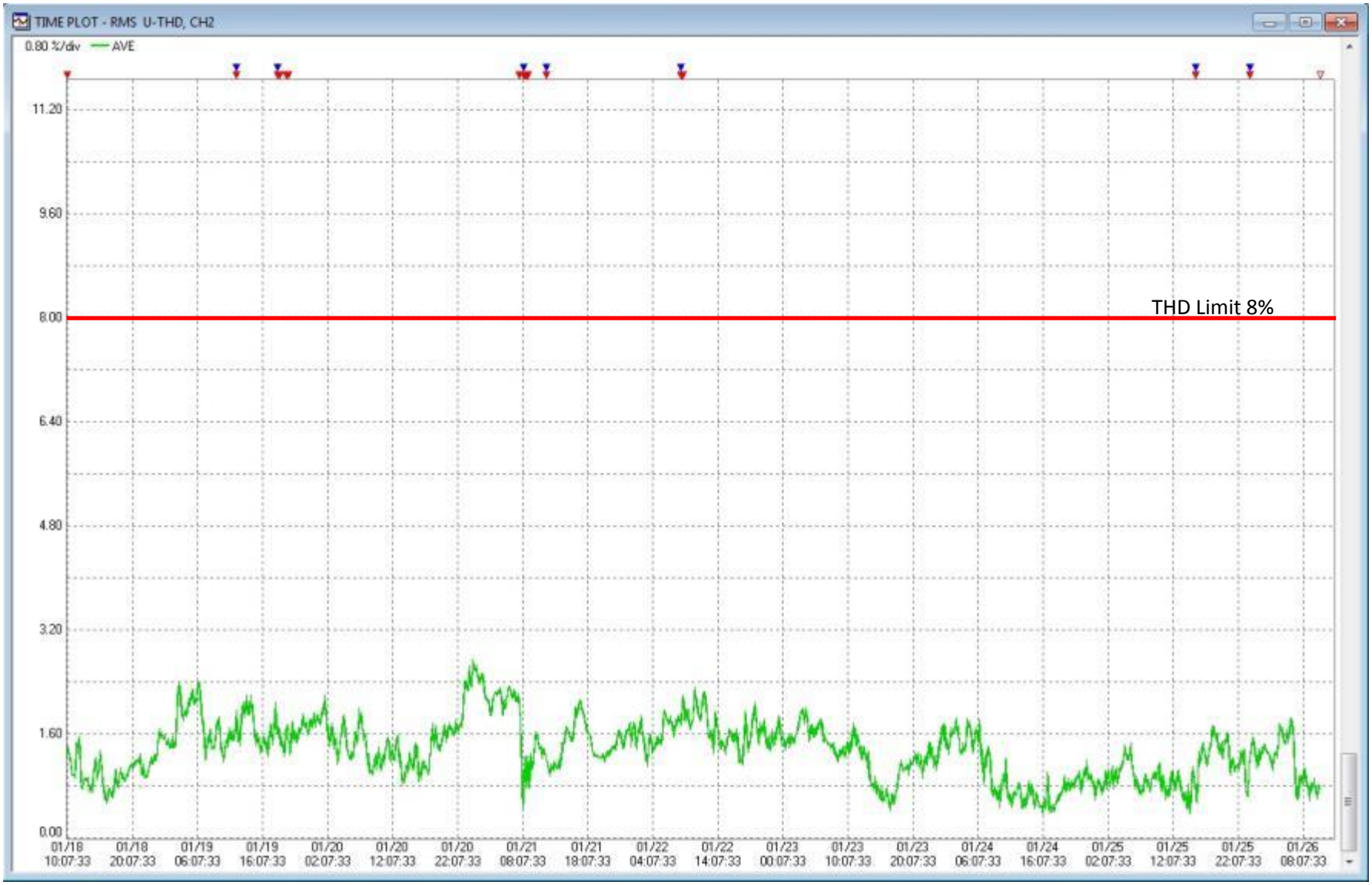

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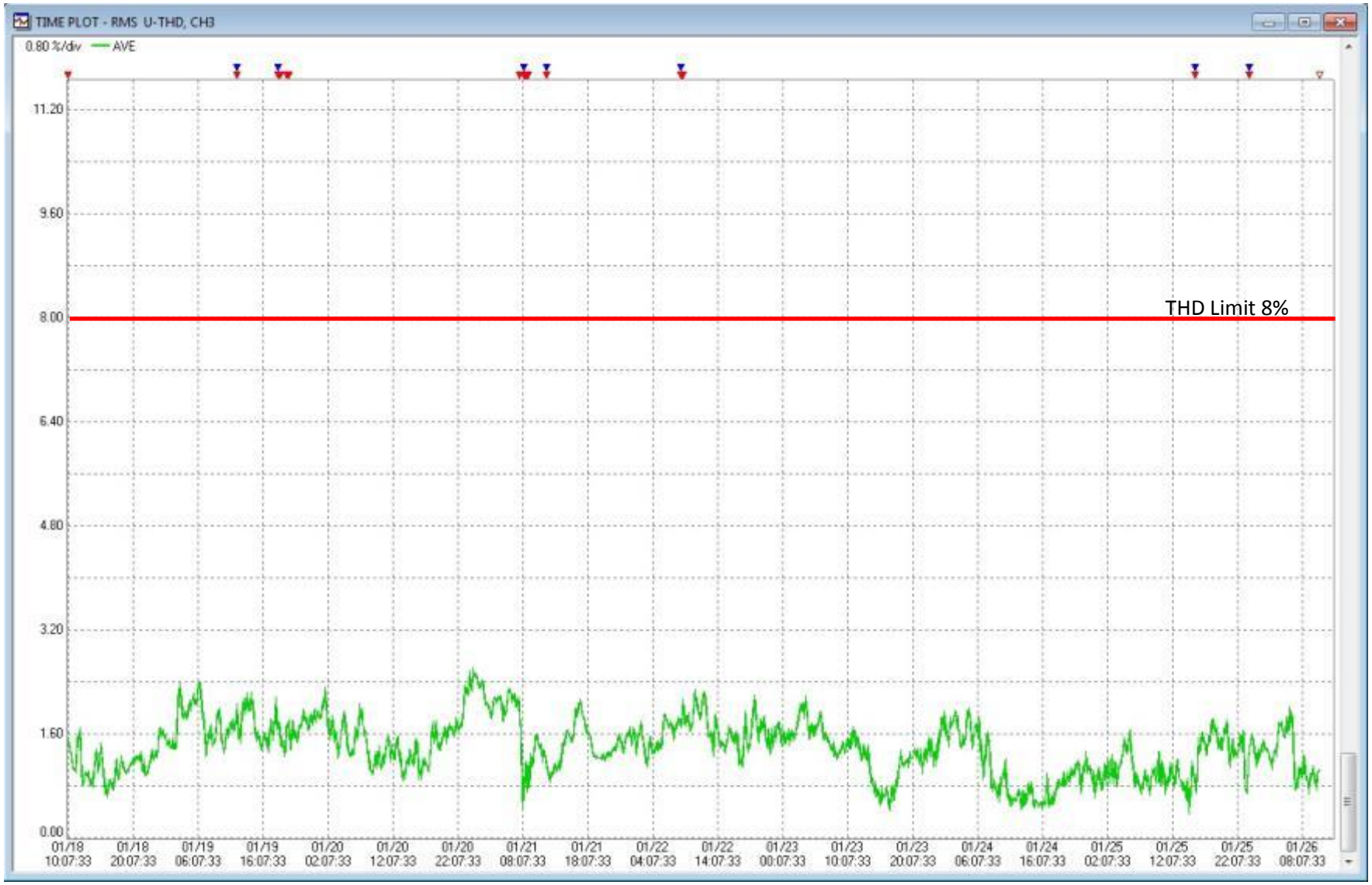
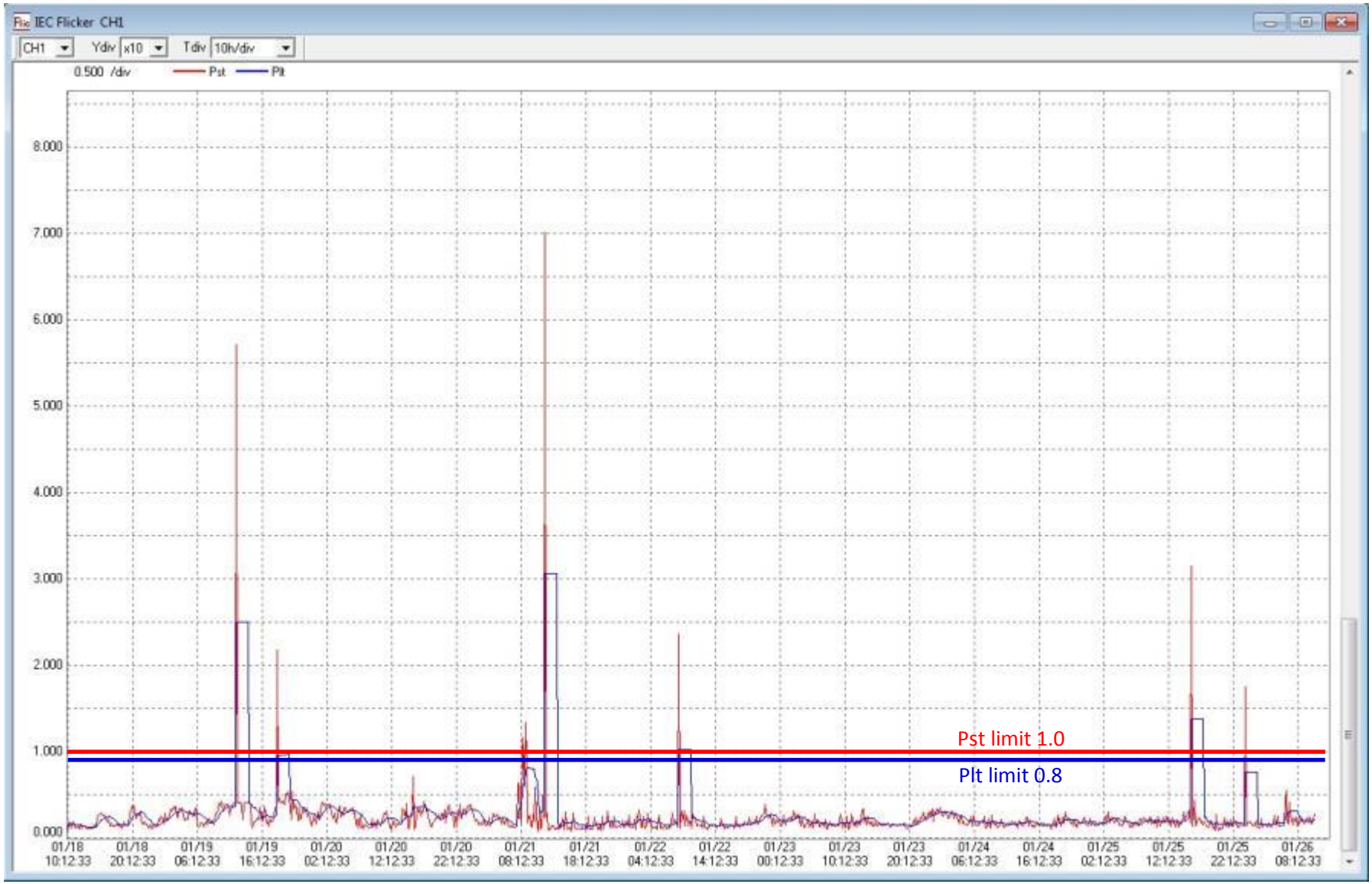
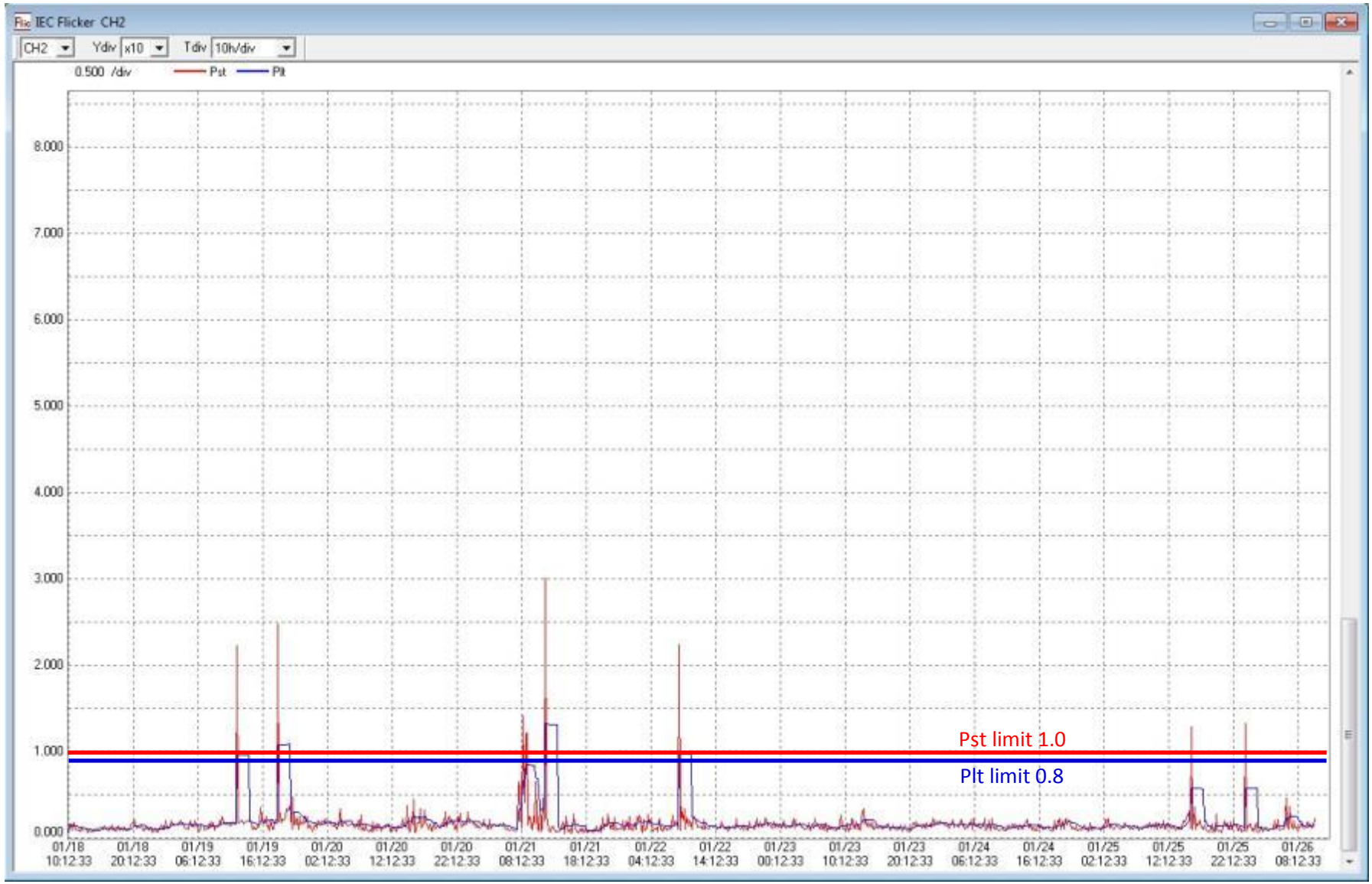


TA End of Feeder T41 Seasons 1st Phase Pst & Plt



TA End of Feeder T41 Seasons 2nd Phase Pst & Plt

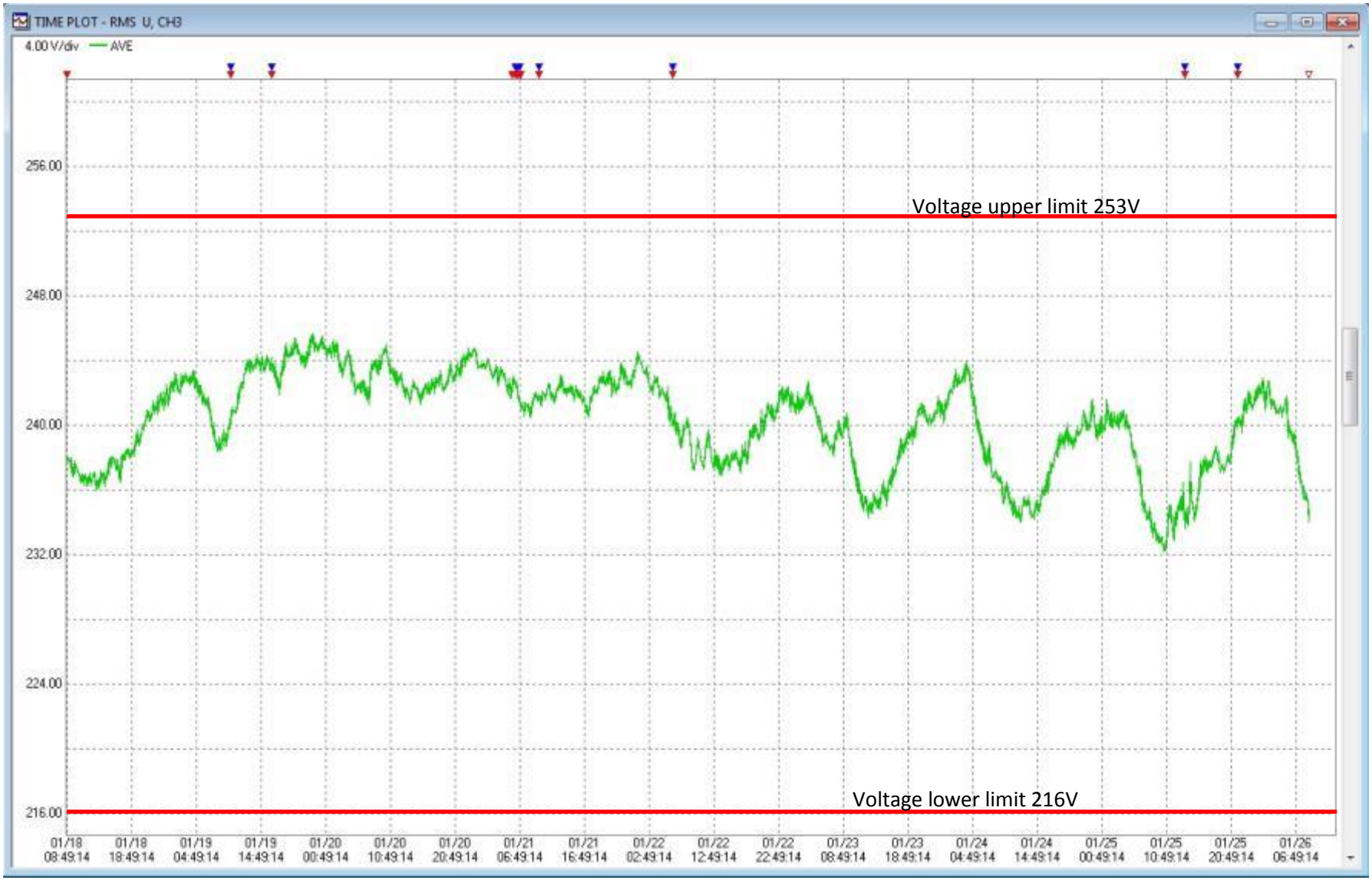


TA End of Feeder T41 Seasons 3rd Phase Pst & Plt

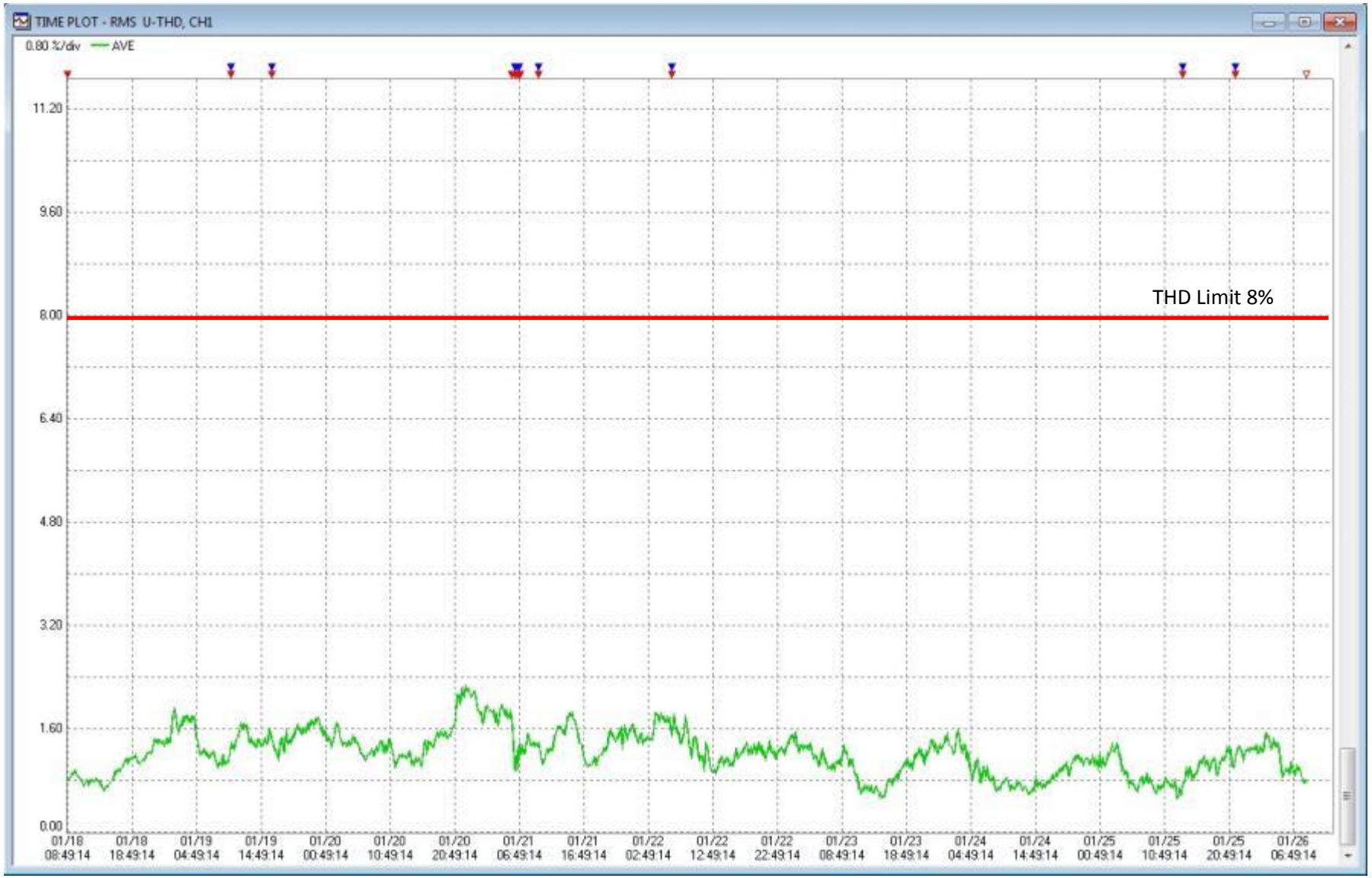
TB Start of Feeder PS60 Forrest Ave 1st Phase Vrms

TB Start of Feeder PS60 Forrest Ave 2nd Phase Vrms

TB Start of Feeder PS60 Forrest Ave 3rd Phase Vrms



TB Start of Feeder PS60 Forrest Ave 1st Phase Vthd



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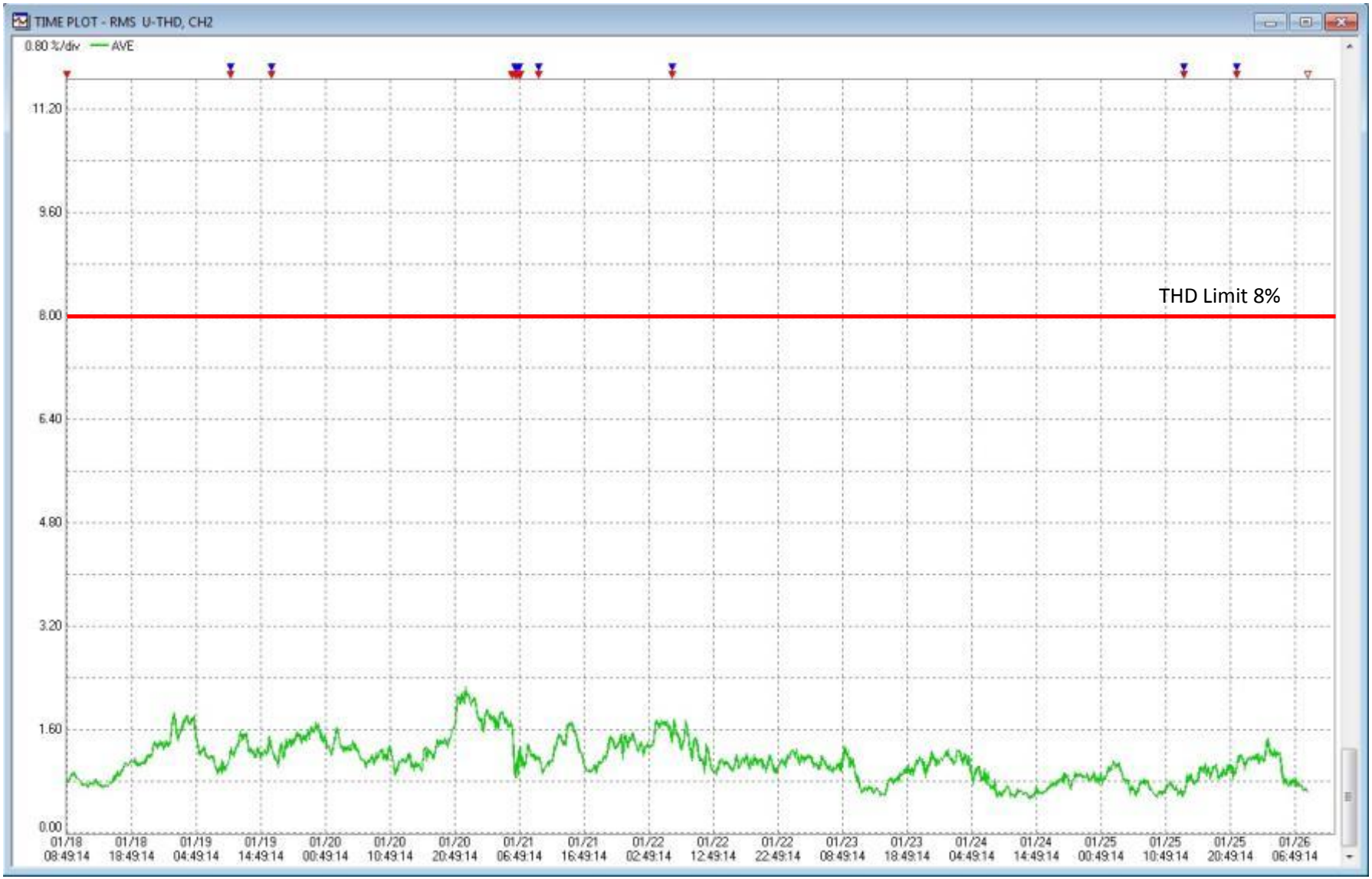
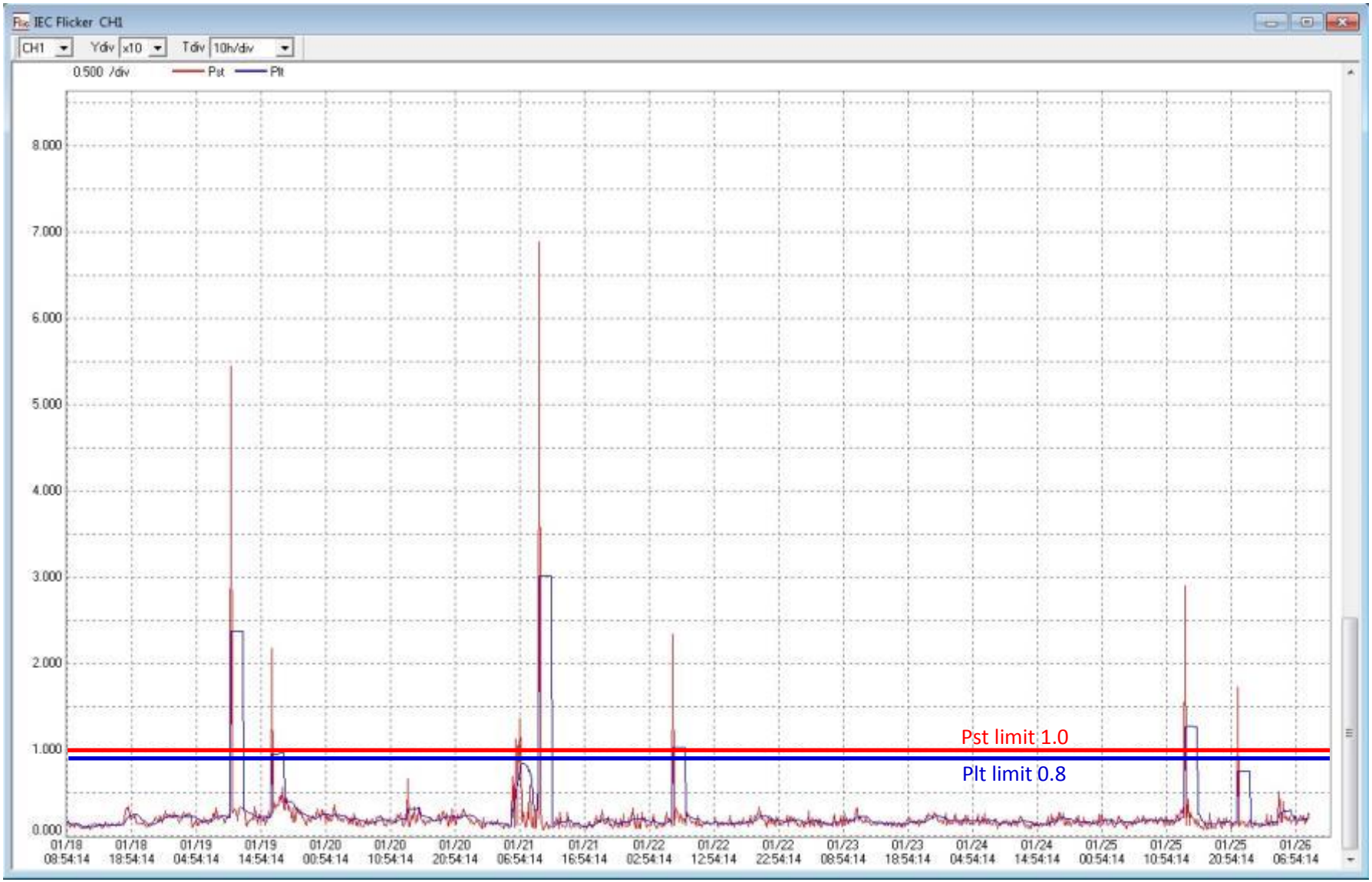
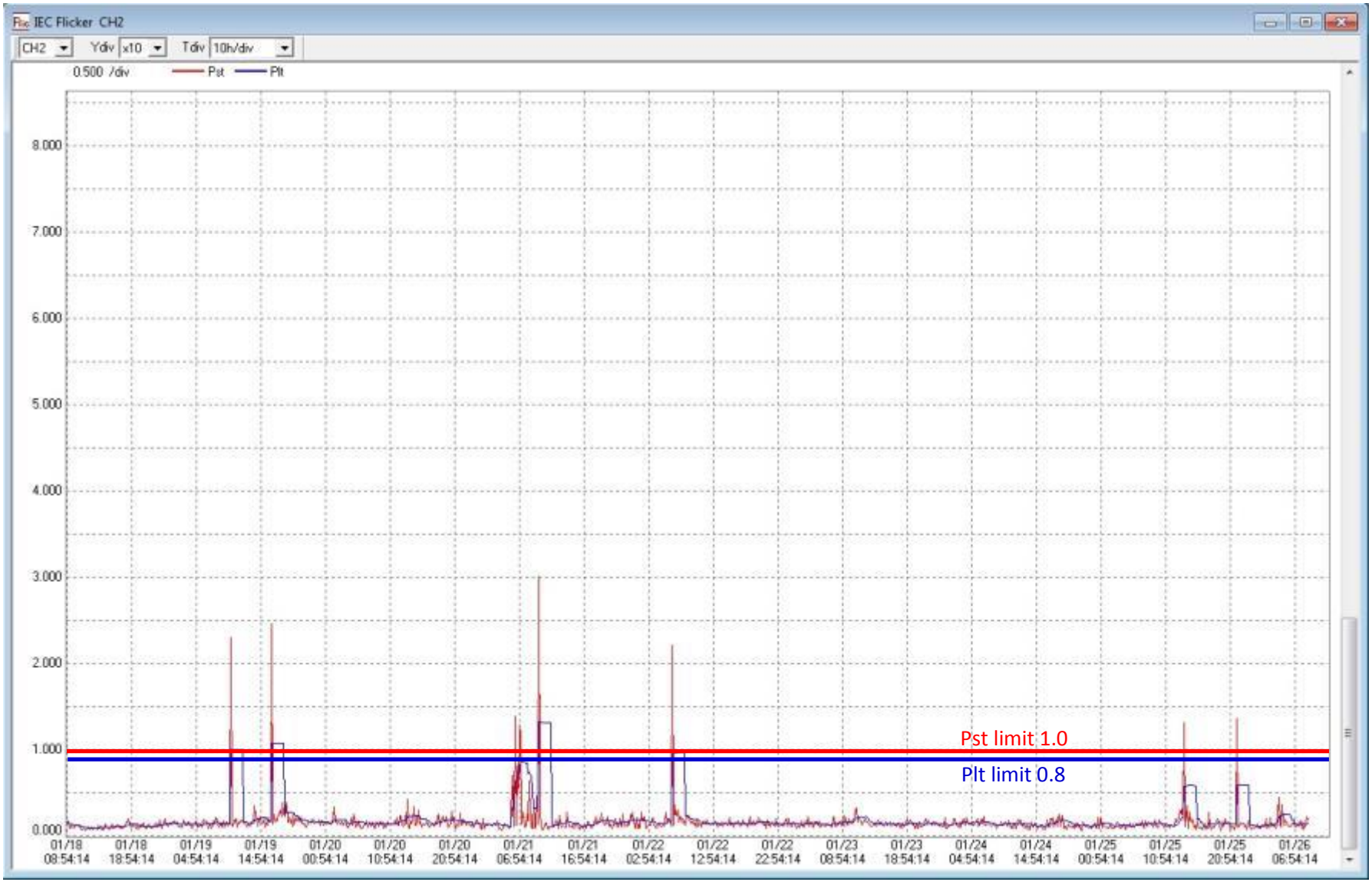


TB Start of Feeder PS60 Forrest Ave 3rd Phase Vthd

TB Start of Feeder PS60 Forrest Ave 1st Phase Pst & Plt



TB Start of Feeder PS60 Forrest Ave 2nd Phase Pst & Plt



TB Start of Feeder PS60 Forrest Ave 3rd Phase Pst & Plt

TB End of Feeder PS85 Shovelanna St 1st Phase Vrms

TB End of Feeder PS85 Shovelanna St 2nd Phase Vrms

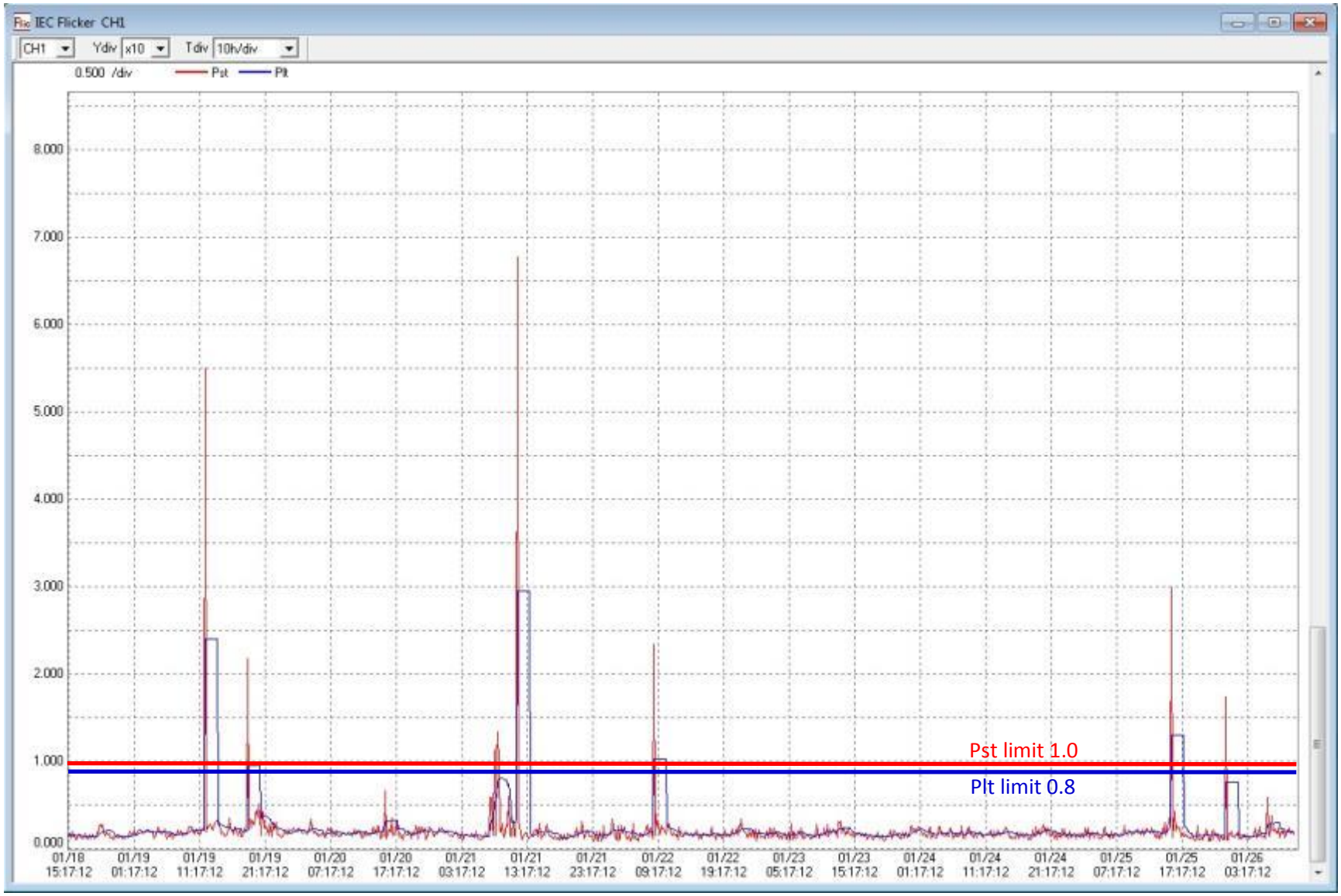
TB End of Feeder PS85 Shovelanna St 3rd Phase Vrms

TB End of Feeder PS85 Shovelanna St 1st Phase Vthd

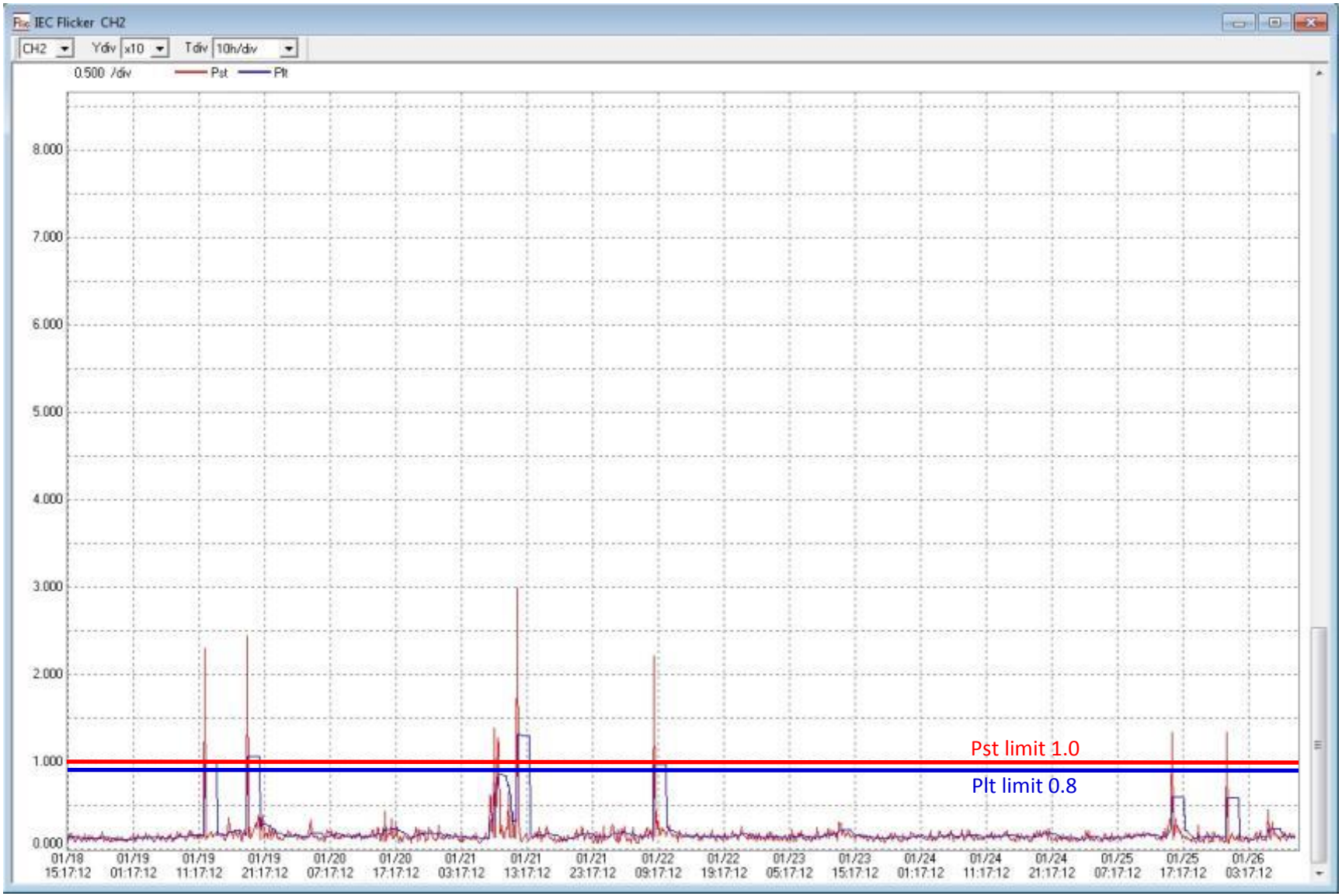
TB End of Feeder PS85 Shovelanna St 2nd Phase Vthd

TB End of Feeder PS85 Shovelanna St 3rd Phase Vthd

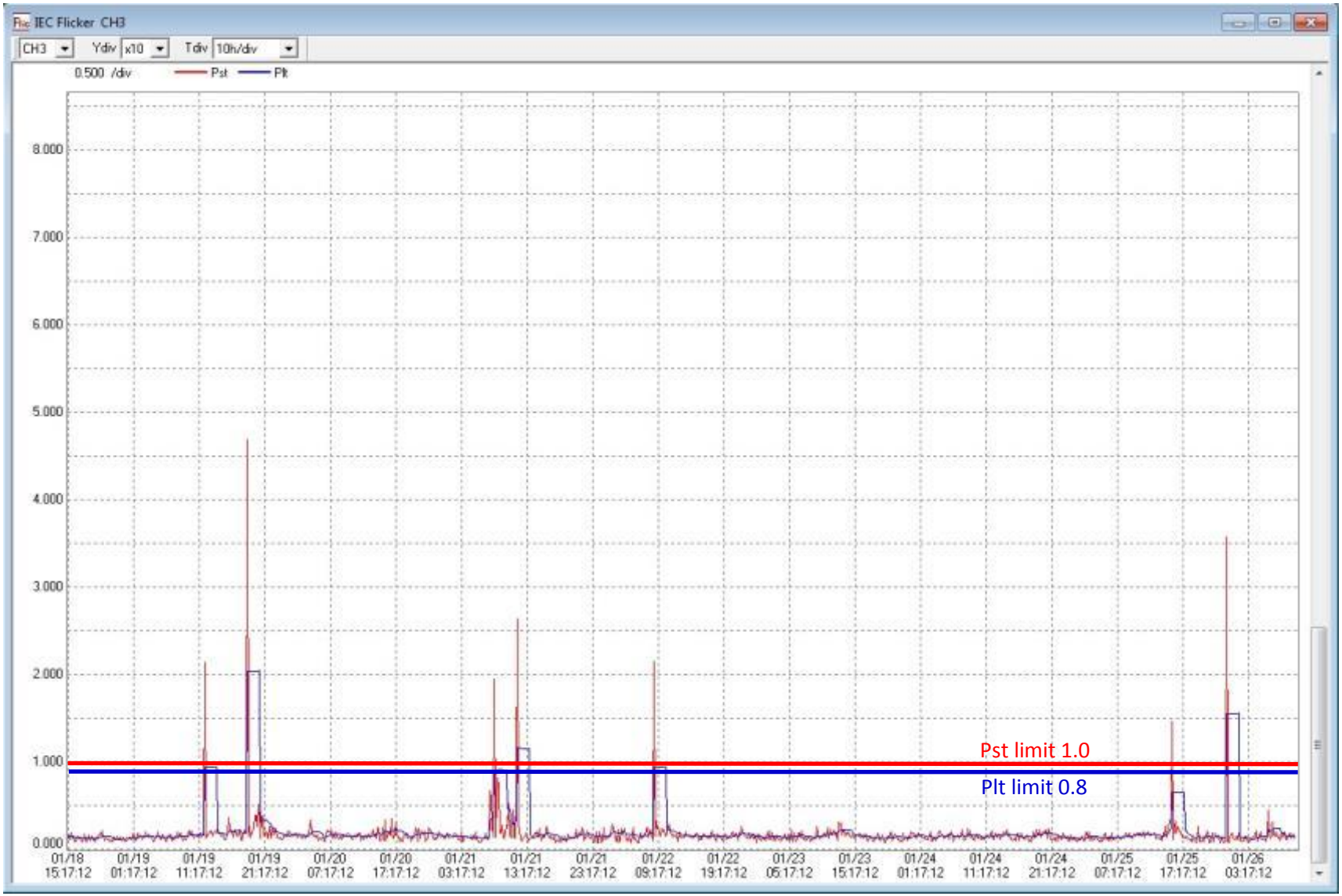
TB End of Feeder PS85 Shovelanna St 1st Phase Pst & Plt



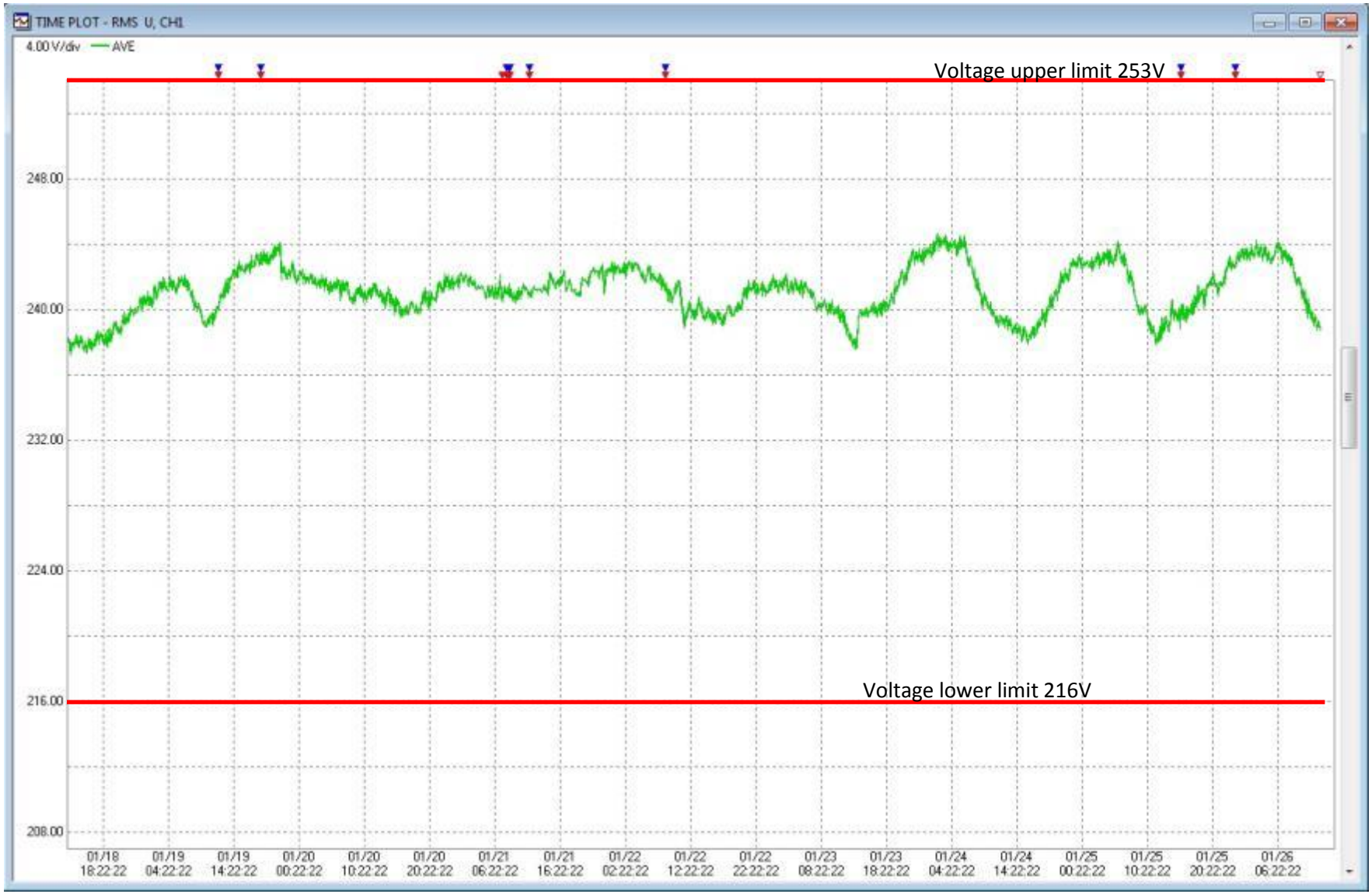
TB End of Feeder PS85 Shoveluwn St 2nd Phase Pst & Plt



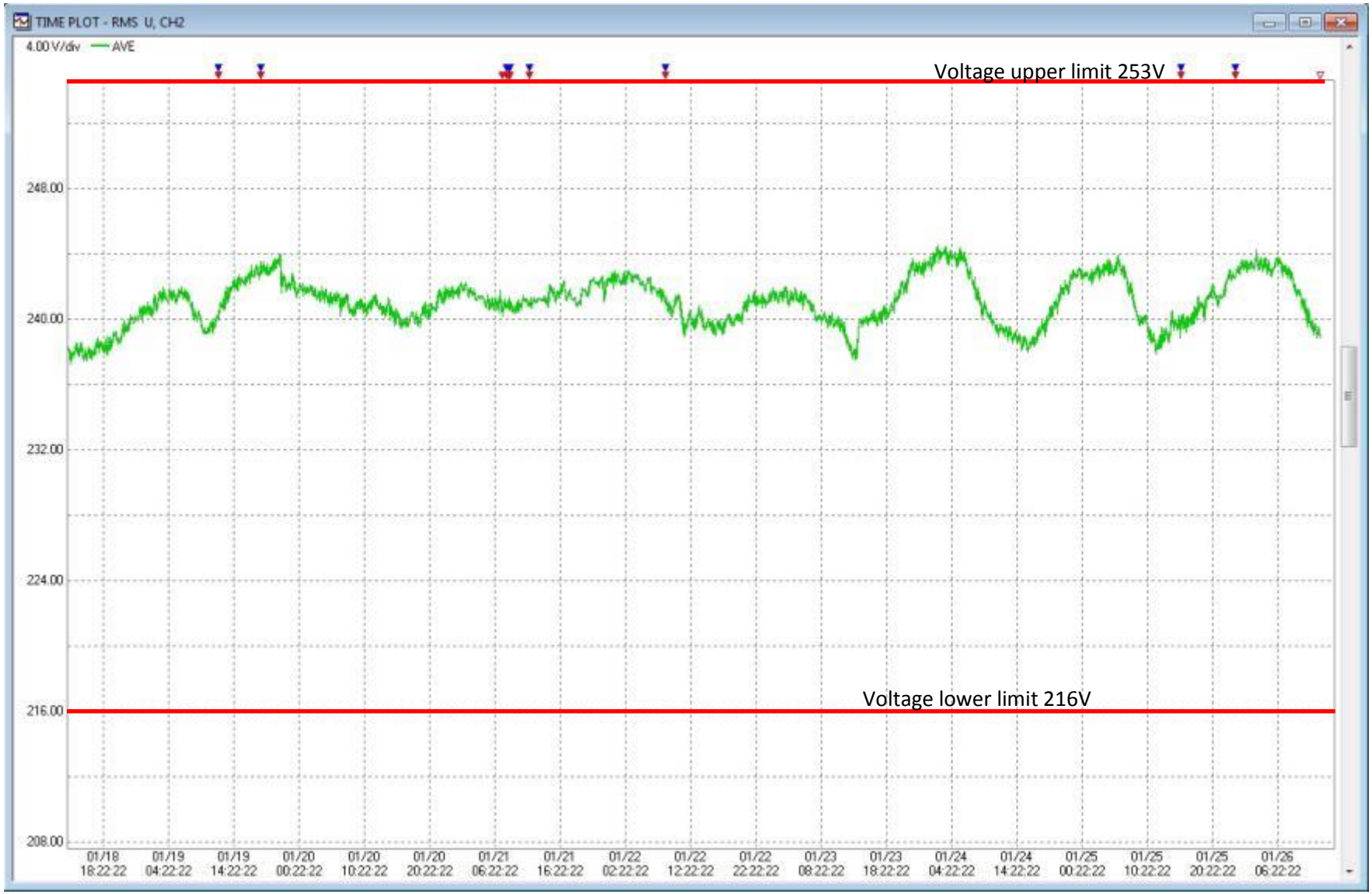
TB End of Feeder PS85 Shoveluwn St 3rd Phase Pst & Plt



TC1 Start of Feeder PS86 Red Sands 1st Phase Vrms



TC1 Start of Feeder PS86 Red Sands 2nd Phase Vrms



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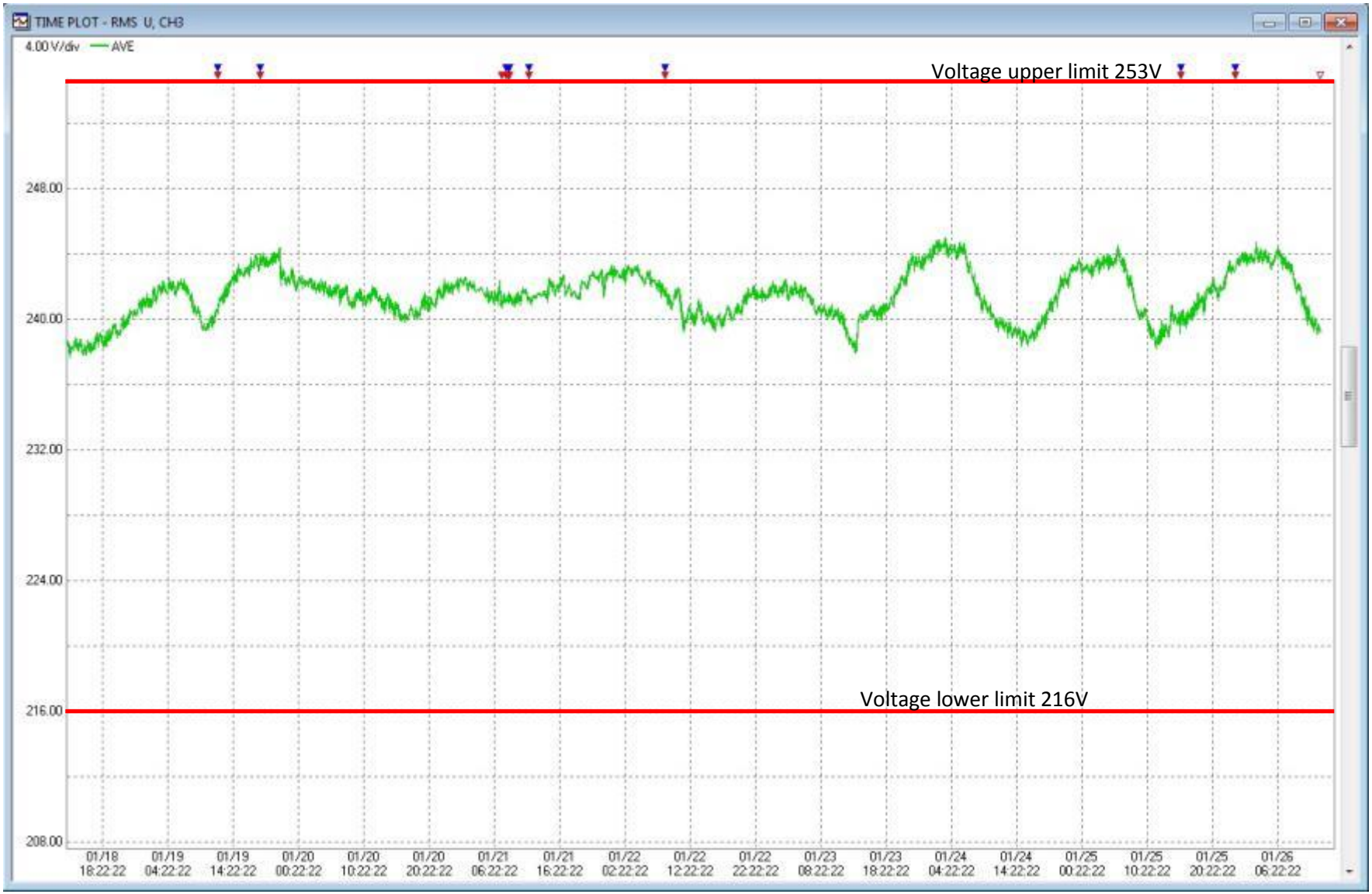
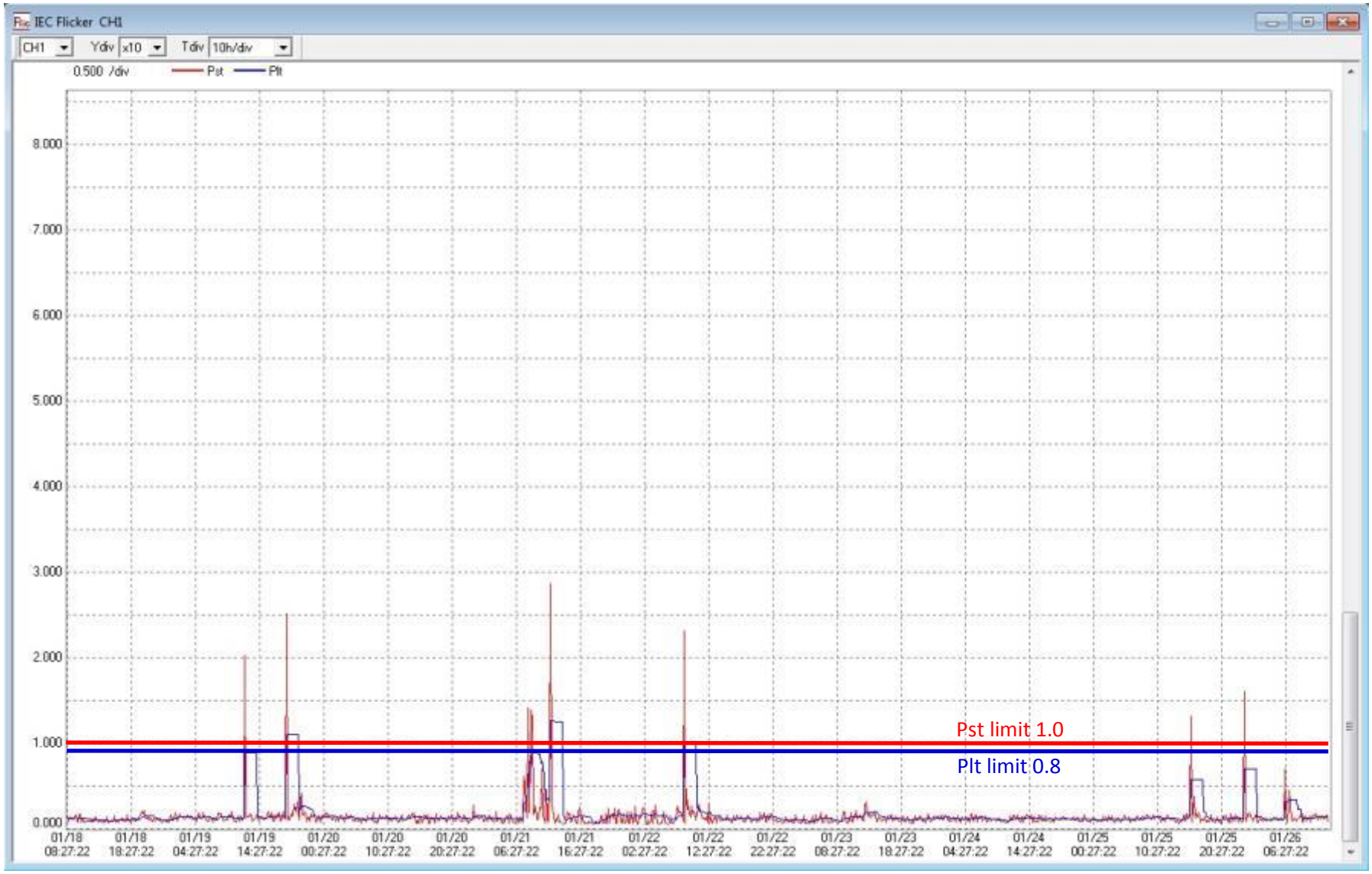


TC1 Start of Feeder PS86 Red Sands 1st Phase Vthd

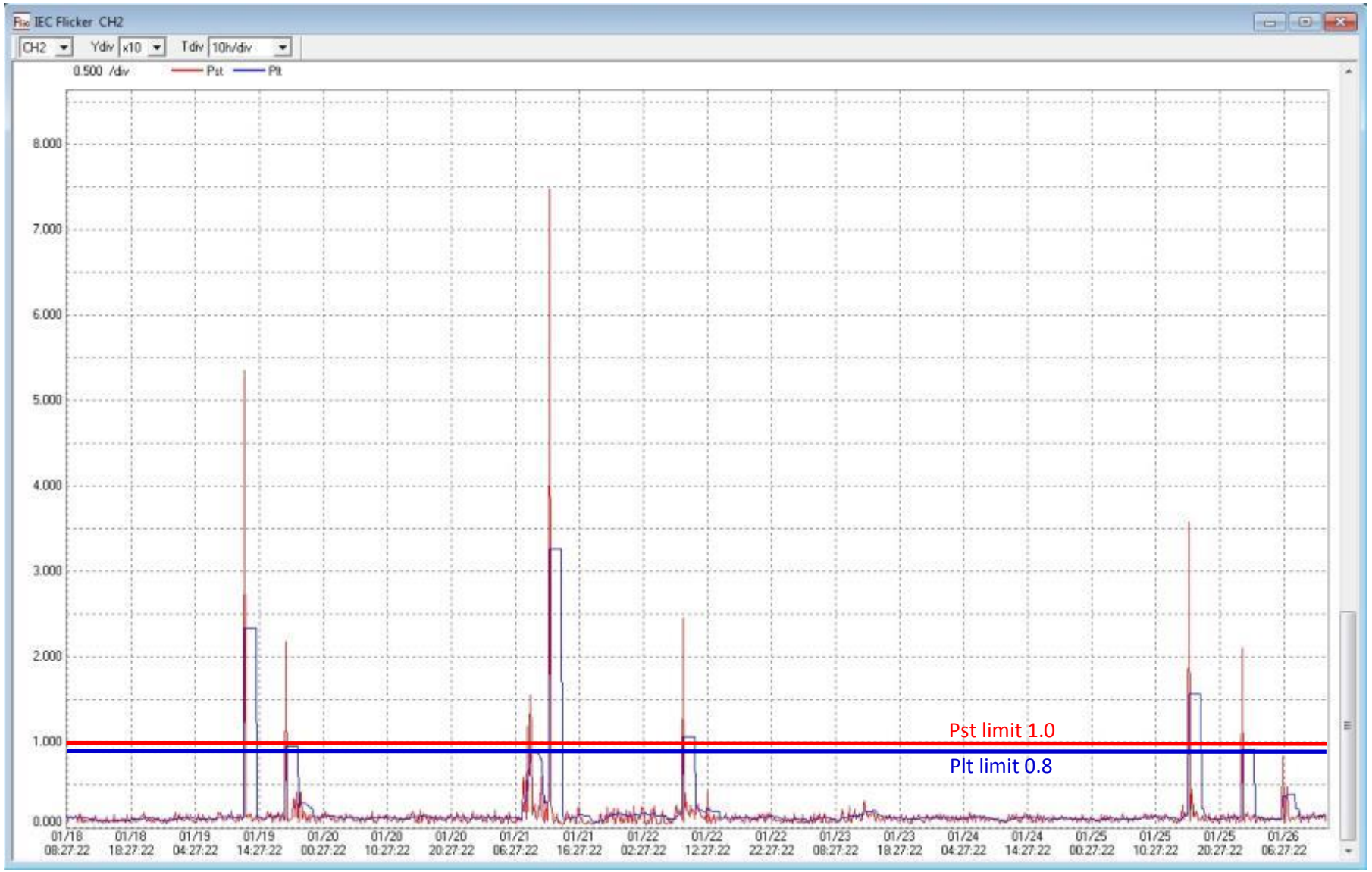
TC1 Start of Feeder PS86 Red Sands 2nd Phase Vthd

TC1 Start of Feeder PS86 Red Sands 3rd Phase Vthd

TC1 Start of Feeder PS86 Red Sands 1st Phase Pst & Plt



TC1 Start of Feeder PS86 Red Sands 2nd Phase Pst & Plt



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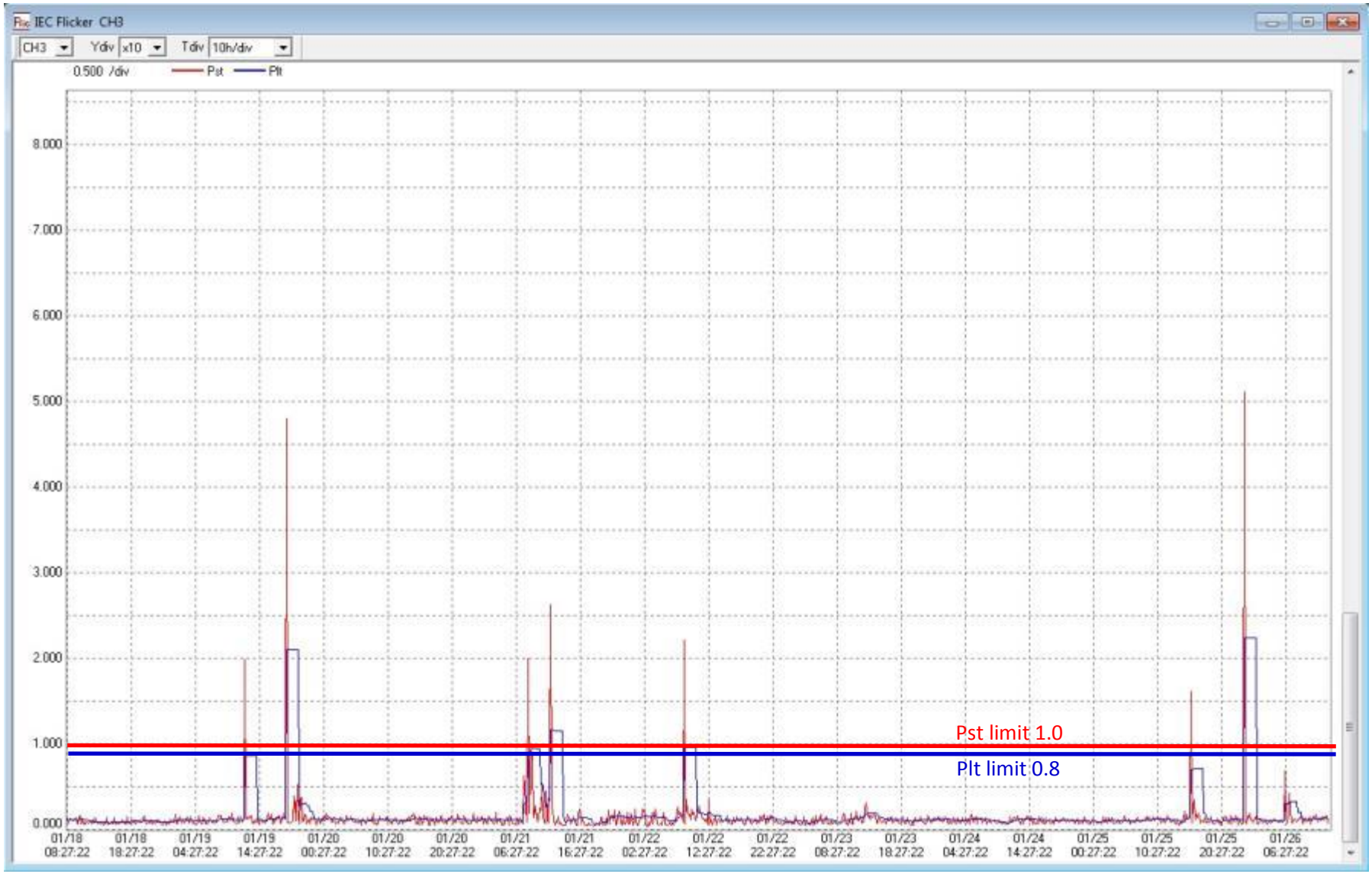


TC1 End of Feeder T68 Capricorn Oval 1st Phase Vrms

TC1 End of Feeder T68 Capricorn Oval 2nd Phase Vrms

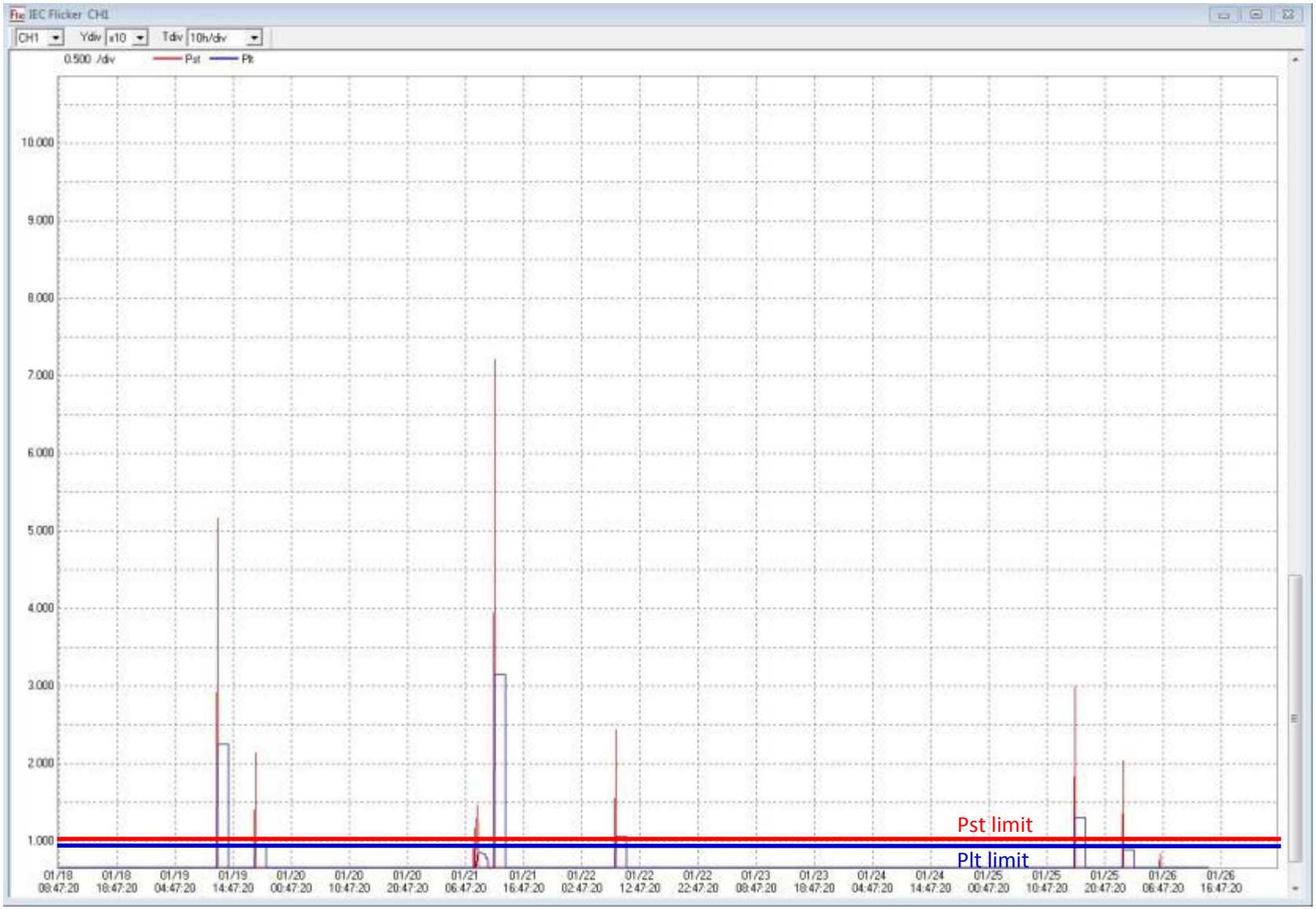
TC1 End of Feeder T68 Capricorn Oval 3rd Phase Vrms

TC1 End of Feeder T68 Capricorn Oval 1st Phase Vthd

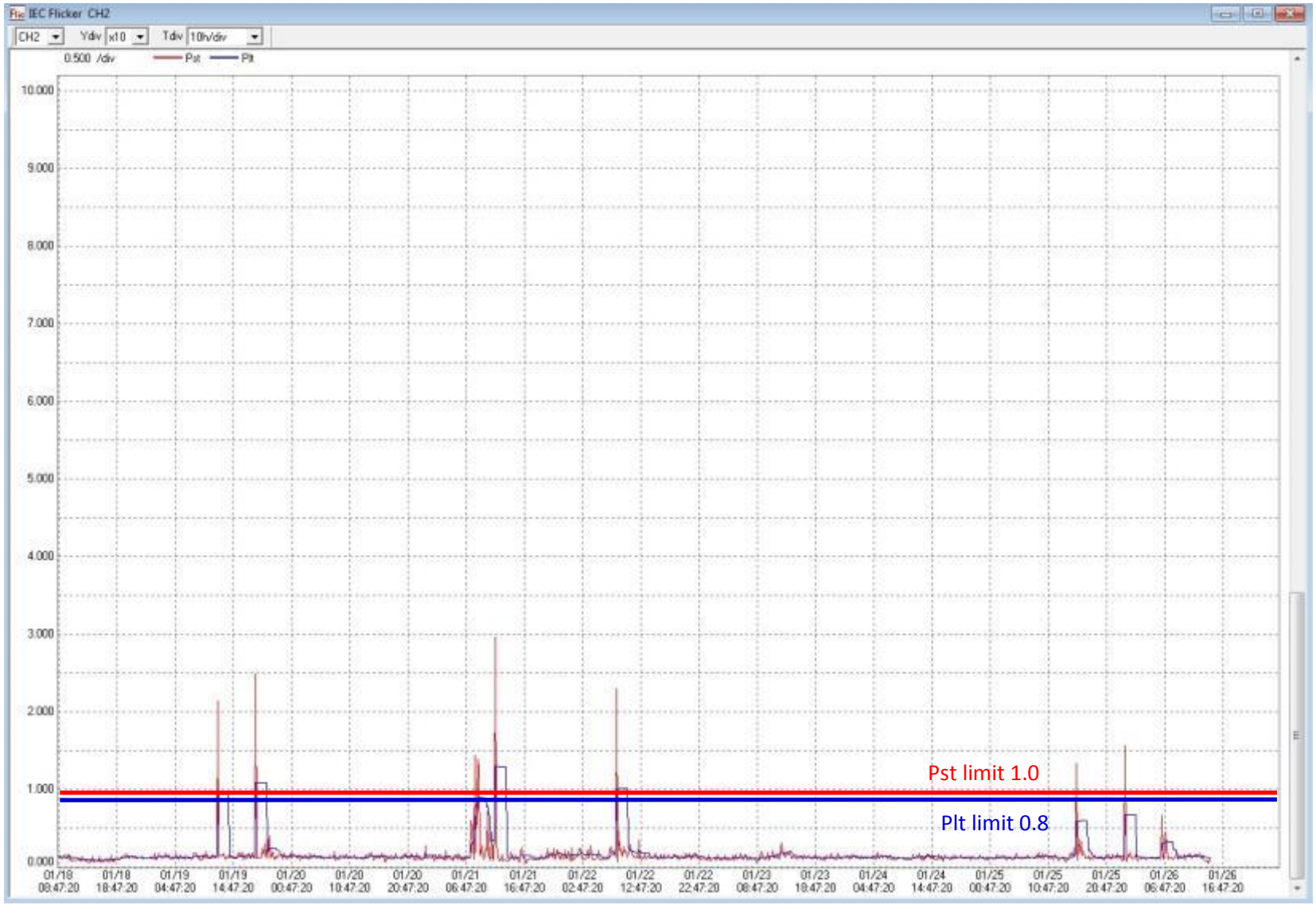
TC1 End of Feeder T68 Capricorn Oval 2nd Phase Vthd

TC1 End of Feeder T68 Capricorn Oval 3rd Phase Vthd

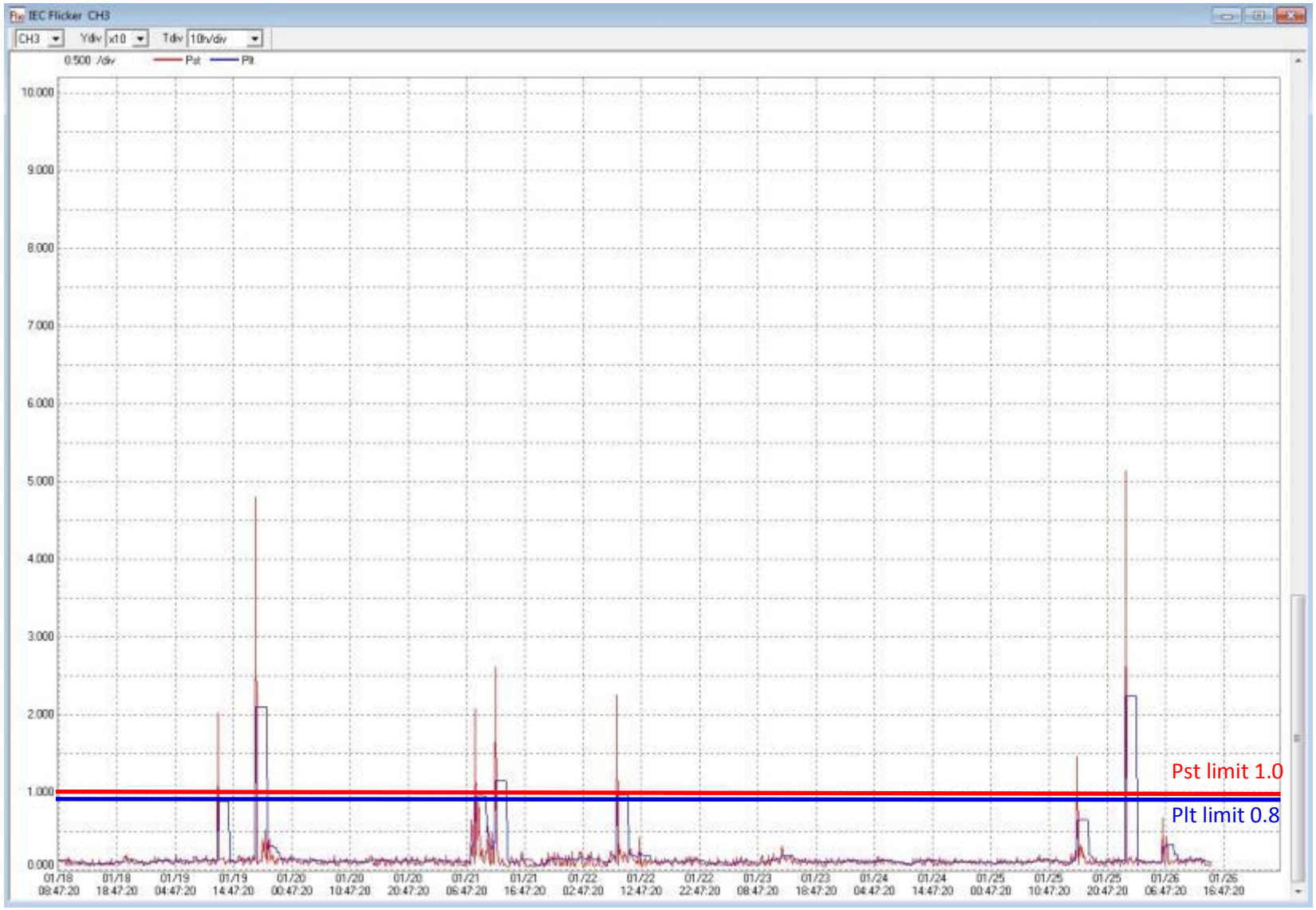
TC1 End of Feeder T68 Capricorn Oval 1st Phase Pst & Plt



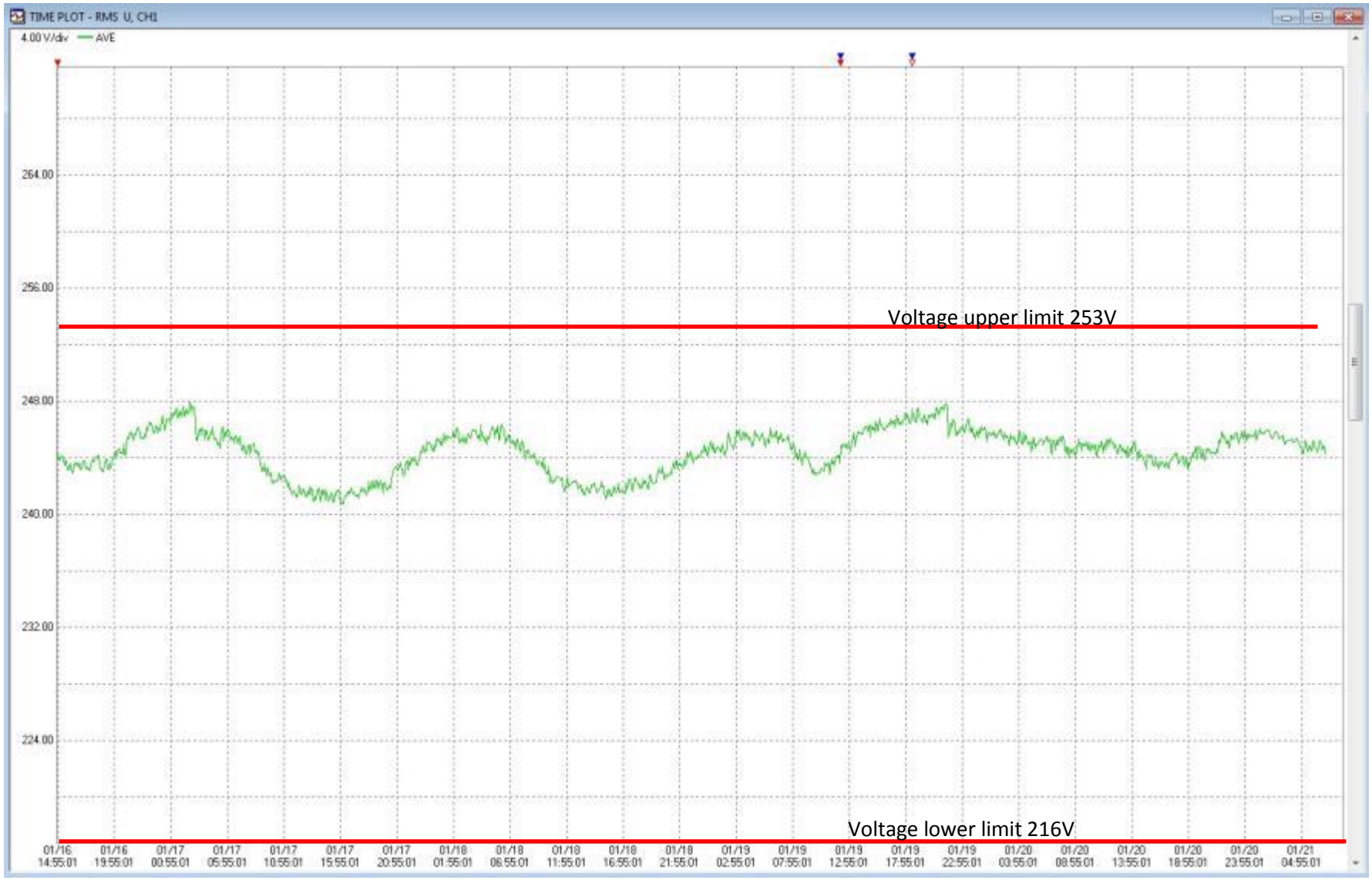
TC1 End of Feeder T68 Capricorn Oval 2nd Phase Pst & Plt



TC1 End of Feeder T68 Capricorn Oval 3rd Phase Pst & Plt

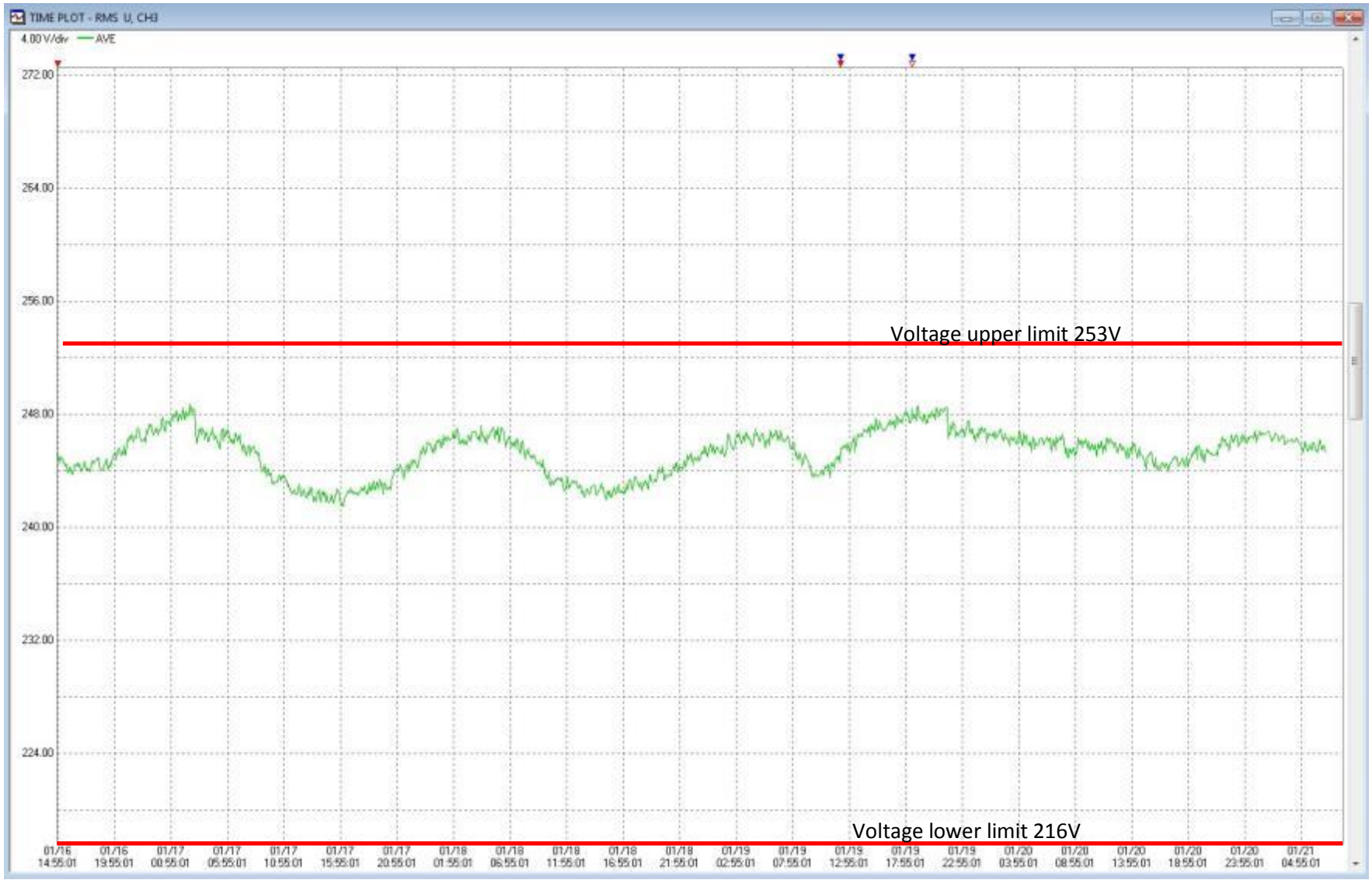


TC2 Start of Feeder PS10 McLennan Drive 1st Phase Vrms (16/01/14 – 21/01/14)

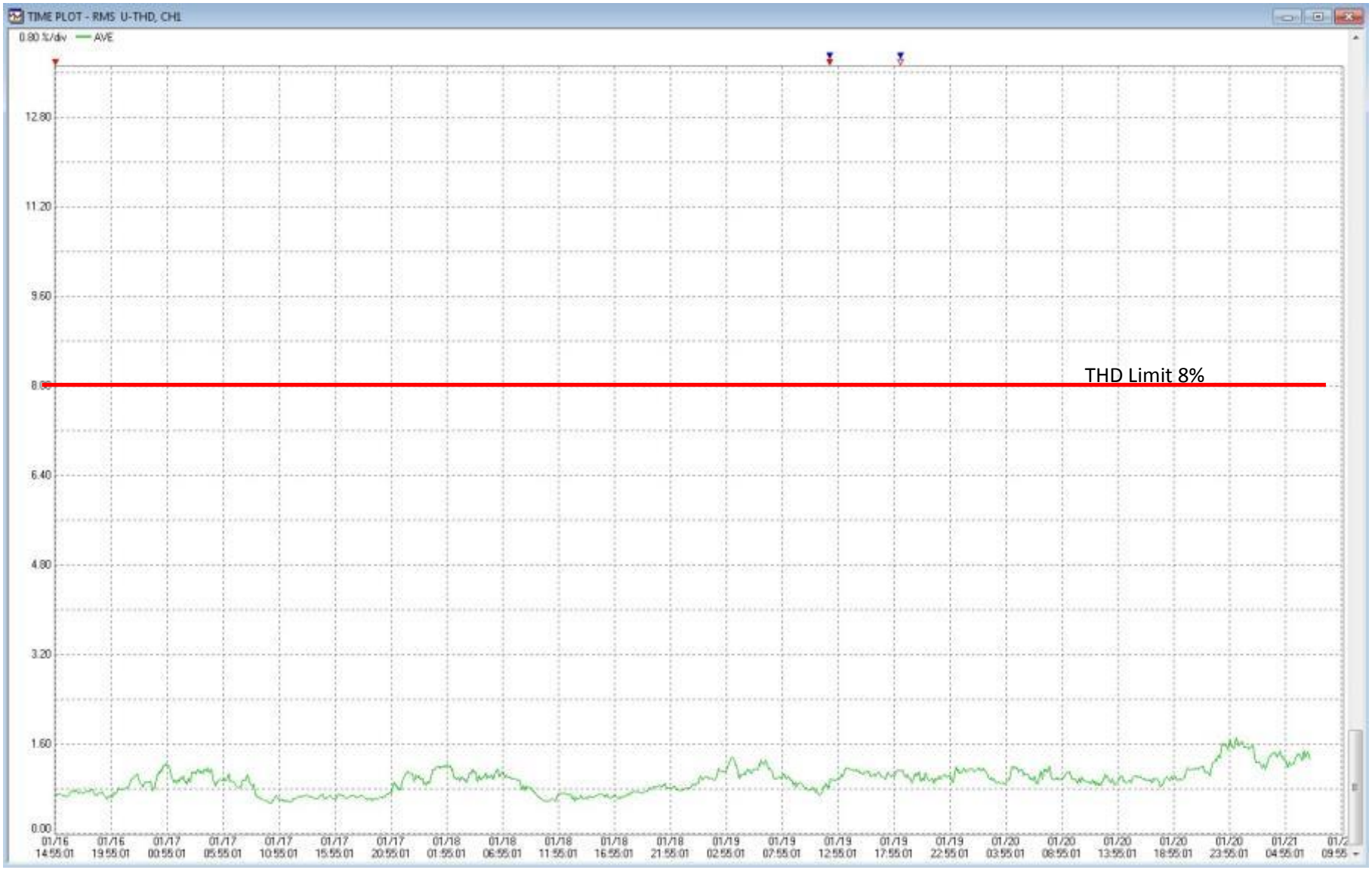


TC2 Start of Feeder PS10 McLennan Drive 2nd Phase Vrms (16/01/14 – 21/01/14)

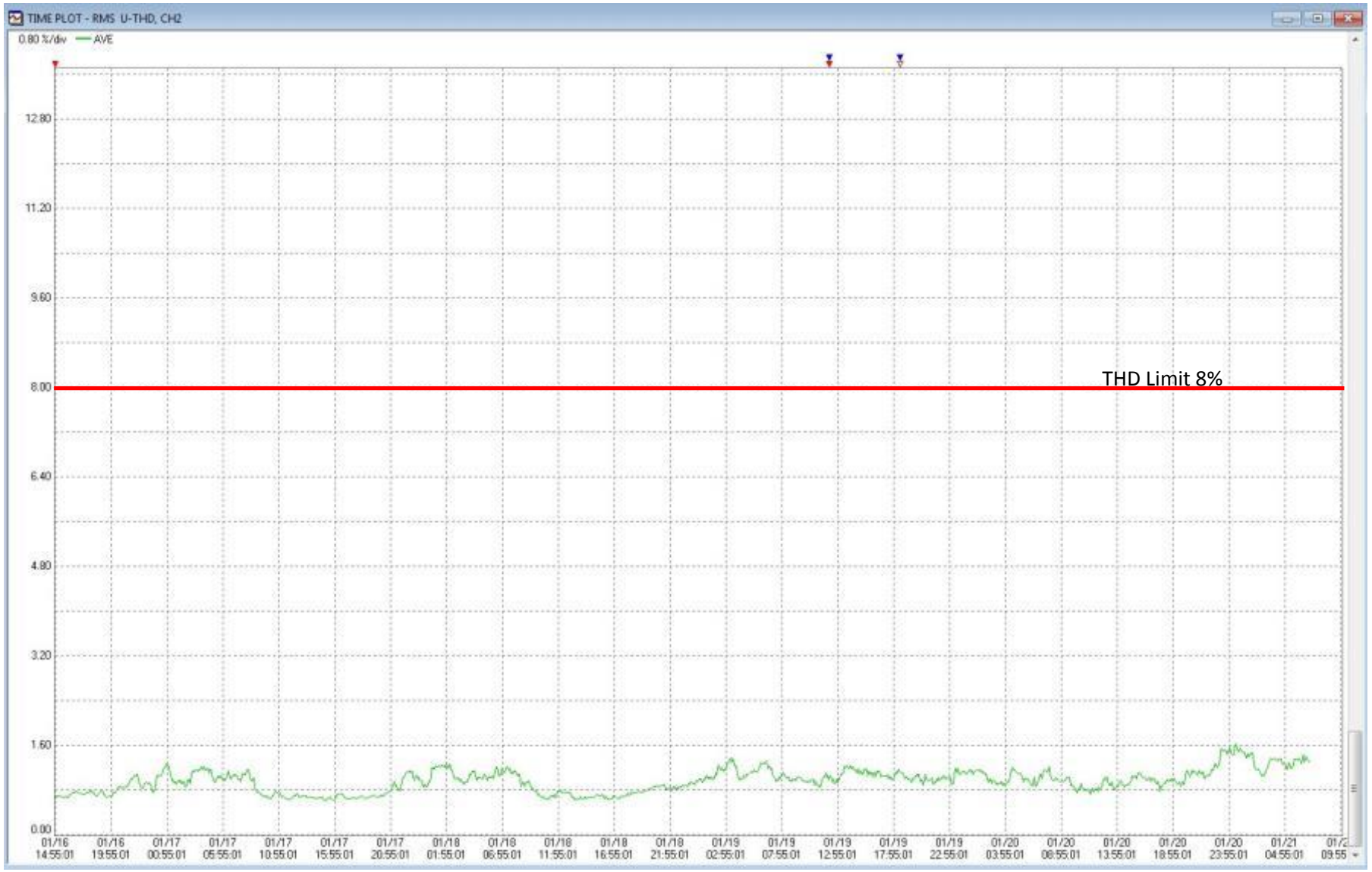
TC2 Start of Feeder PS10 McLennan Drive 3rd Phase Vrms (16/01/14 – 21/01/14)



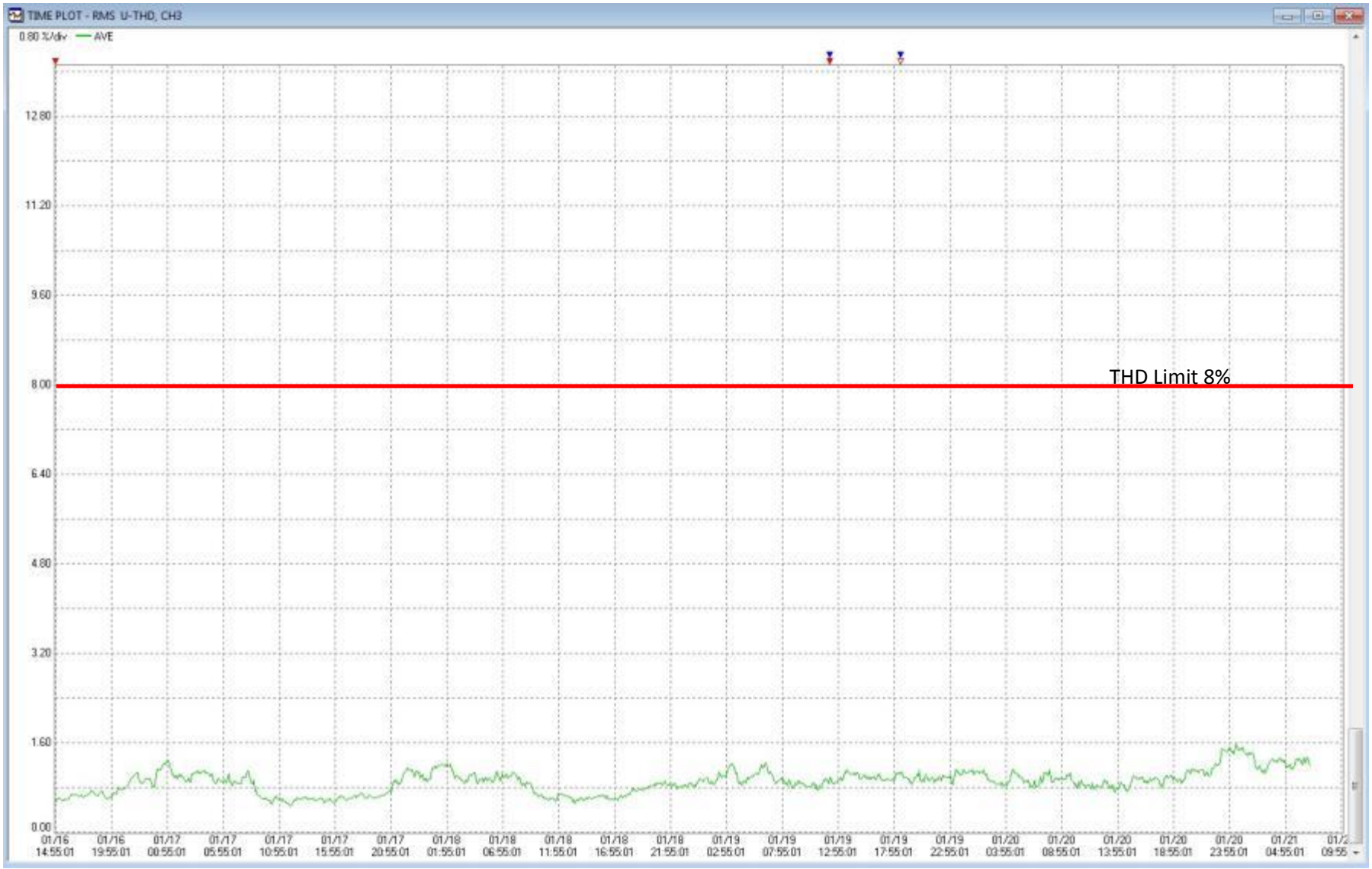
TC2 Start of Feeder PS10 McLennan Drive 1st Phase Vthd (16/01/14 – 21/01/14)



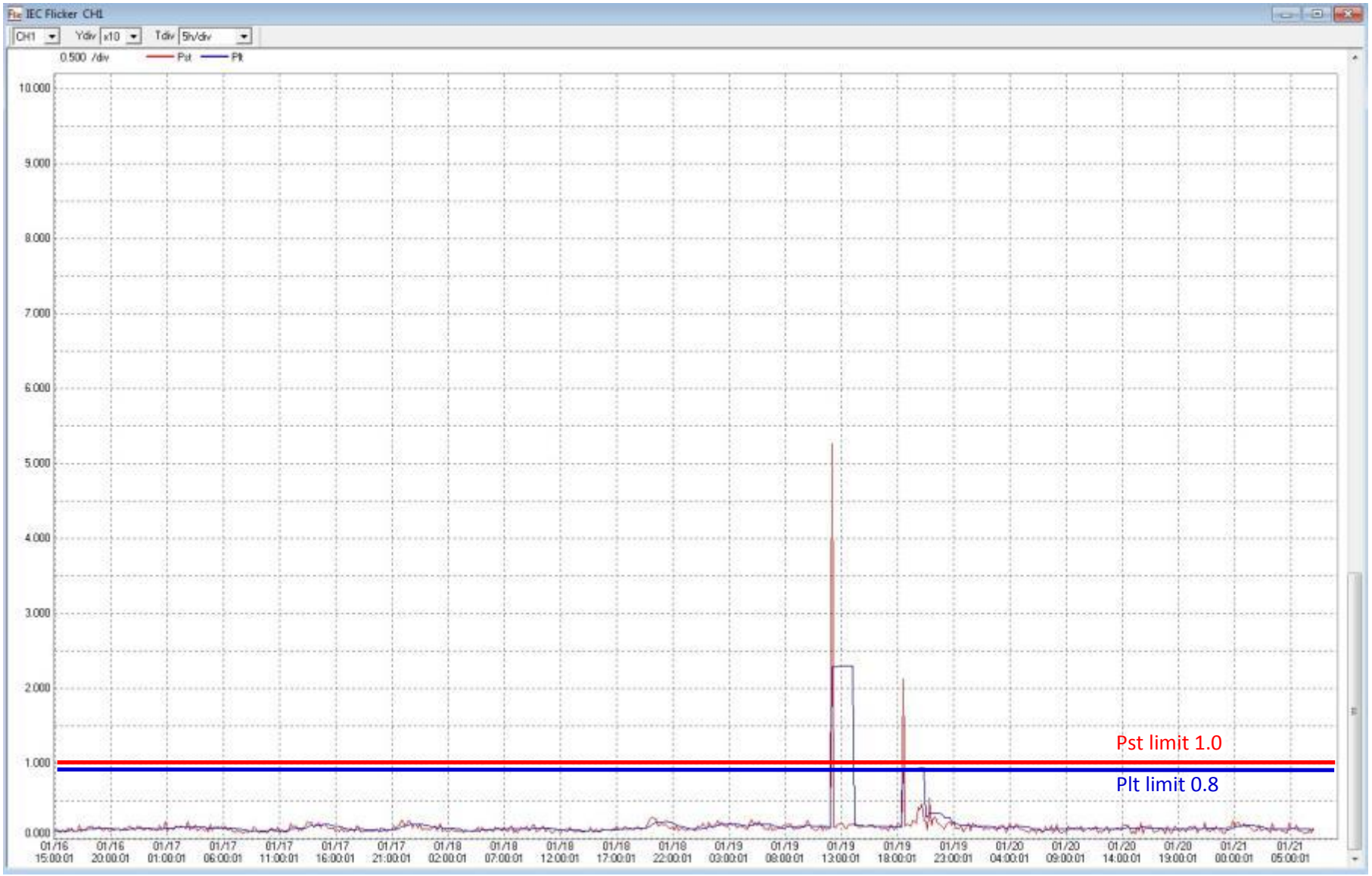
TC2 Start of Feeder PS10 McLennan Drive 2nd Phase Vthd (16/01/14 – 21/01/14)



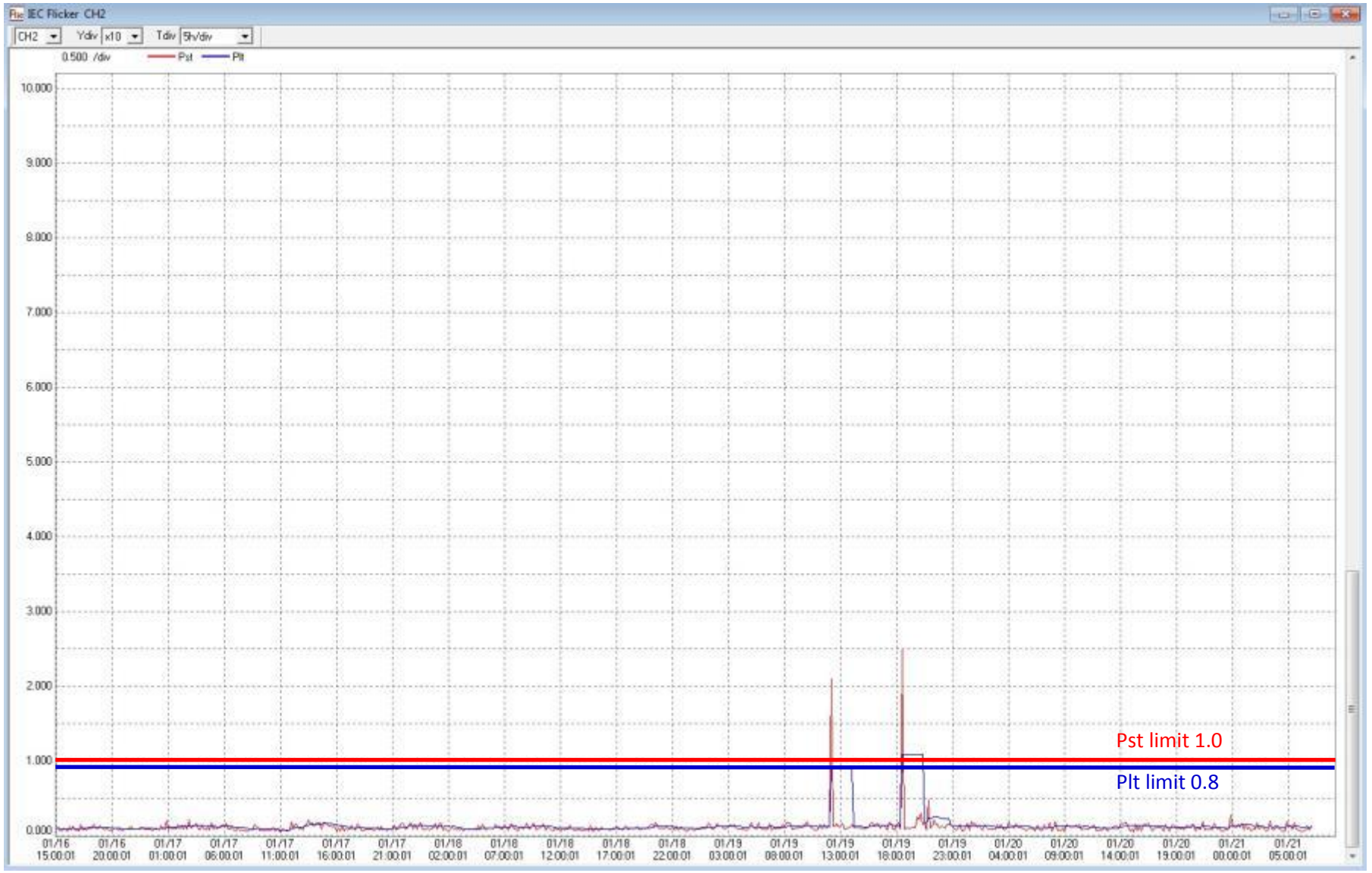
TC2 Start of Feeder PS10 McLennan Drive 3rd Phase Vthd (16/01/14 – 21/01/14)



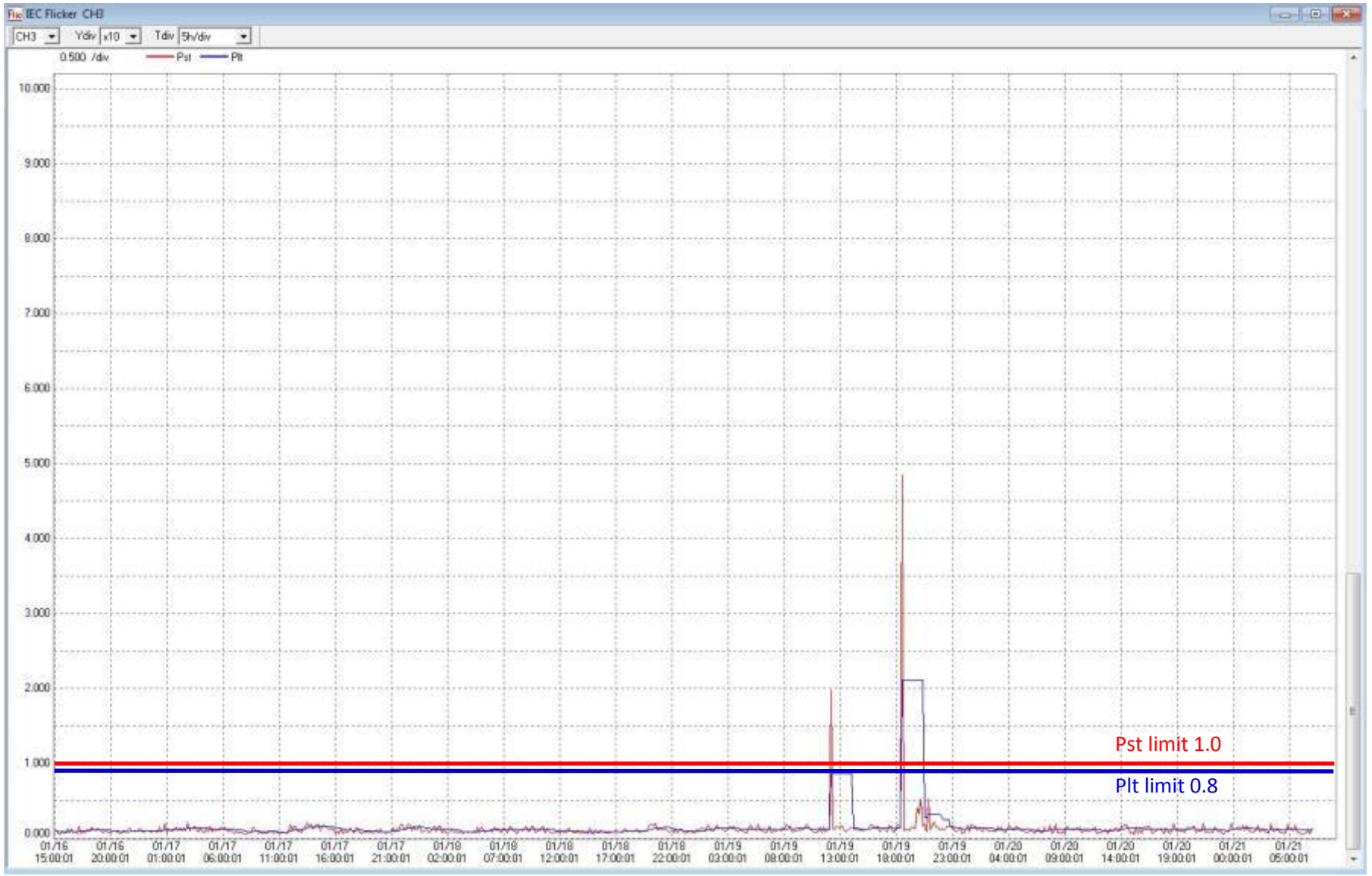
TC2 Start of Feeder PS10 McLennan Drive 1st Phase Pst & Plt (16/01/14 – 21/01/14)



TC2 Start of Feeder PS10 McLennan Drive 2nd Phase Pst & Plt (16/01/14 – 21/01/14)



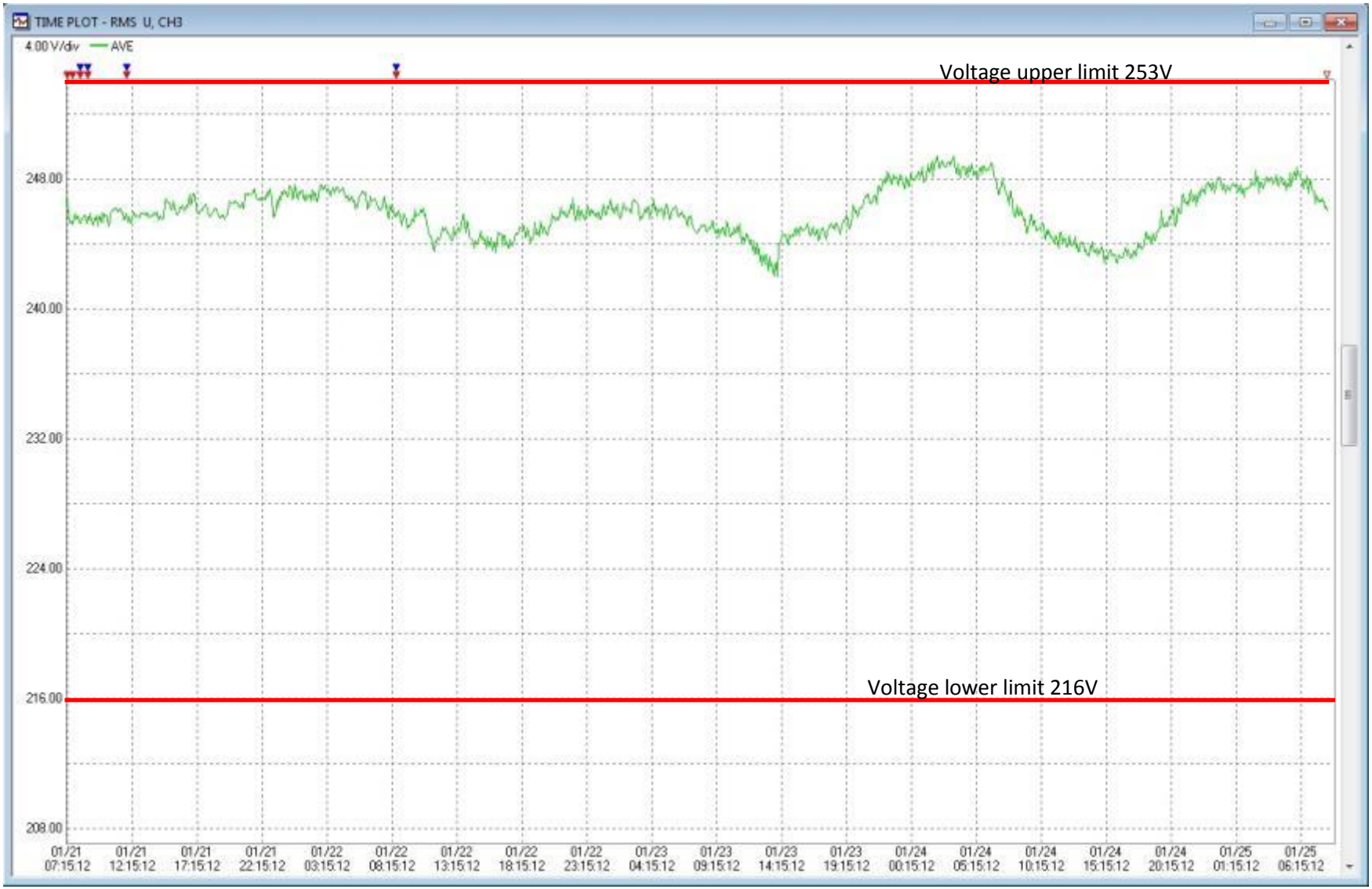
TC2 Start of Feeder PS10 McLennan Drive 3rd Phase Pst & Plt (16/01/14 – 21/01/14)



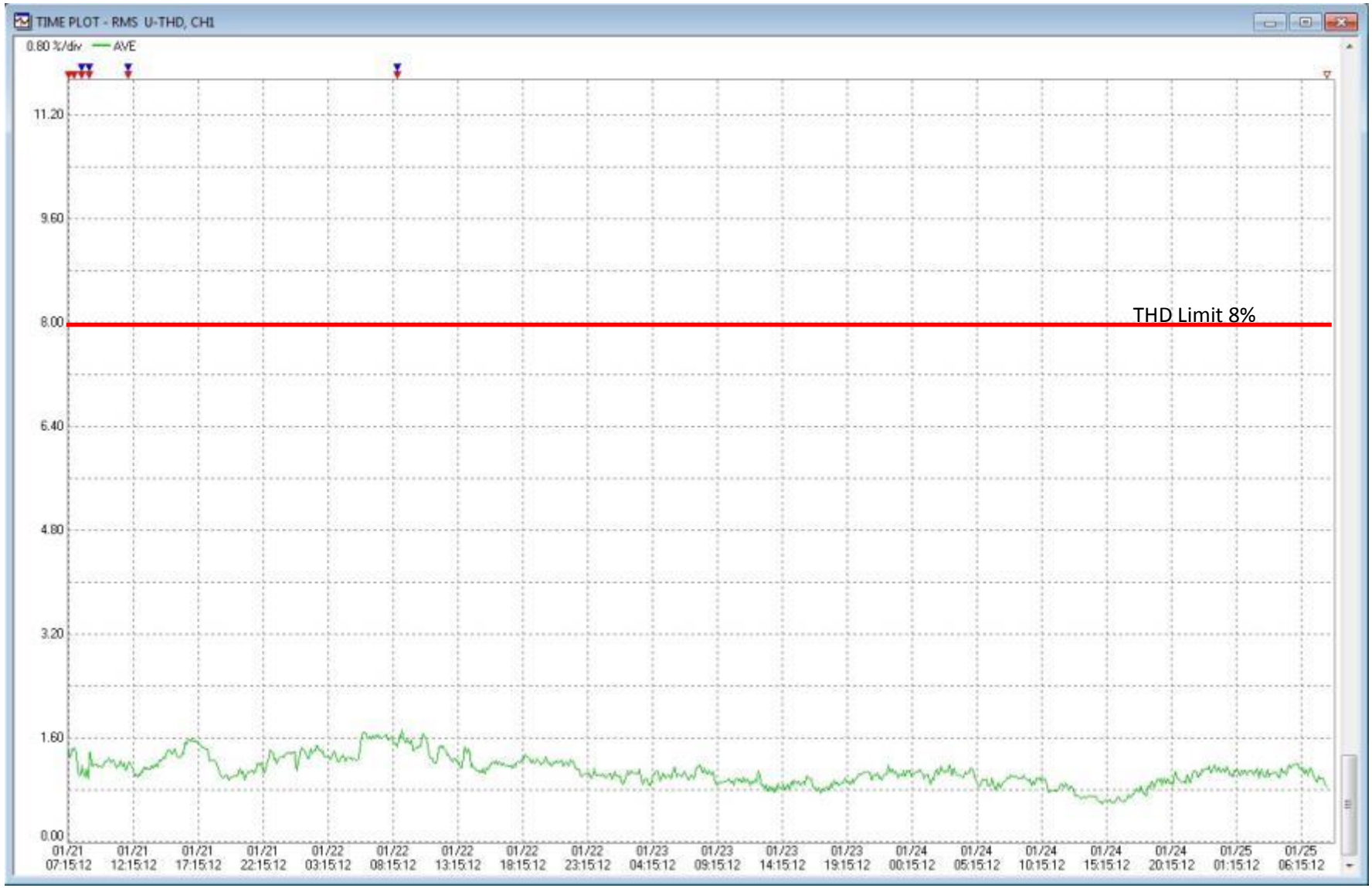
TC2 Start of Feeder PS10 McLennan Drive 1st Phase Vrms (21/01/14 – 25/01/14)

TC2 Start of Feeder PS10 McLennan Drive 2nd Phase Vrms (21/01/14 – 25/01/14)

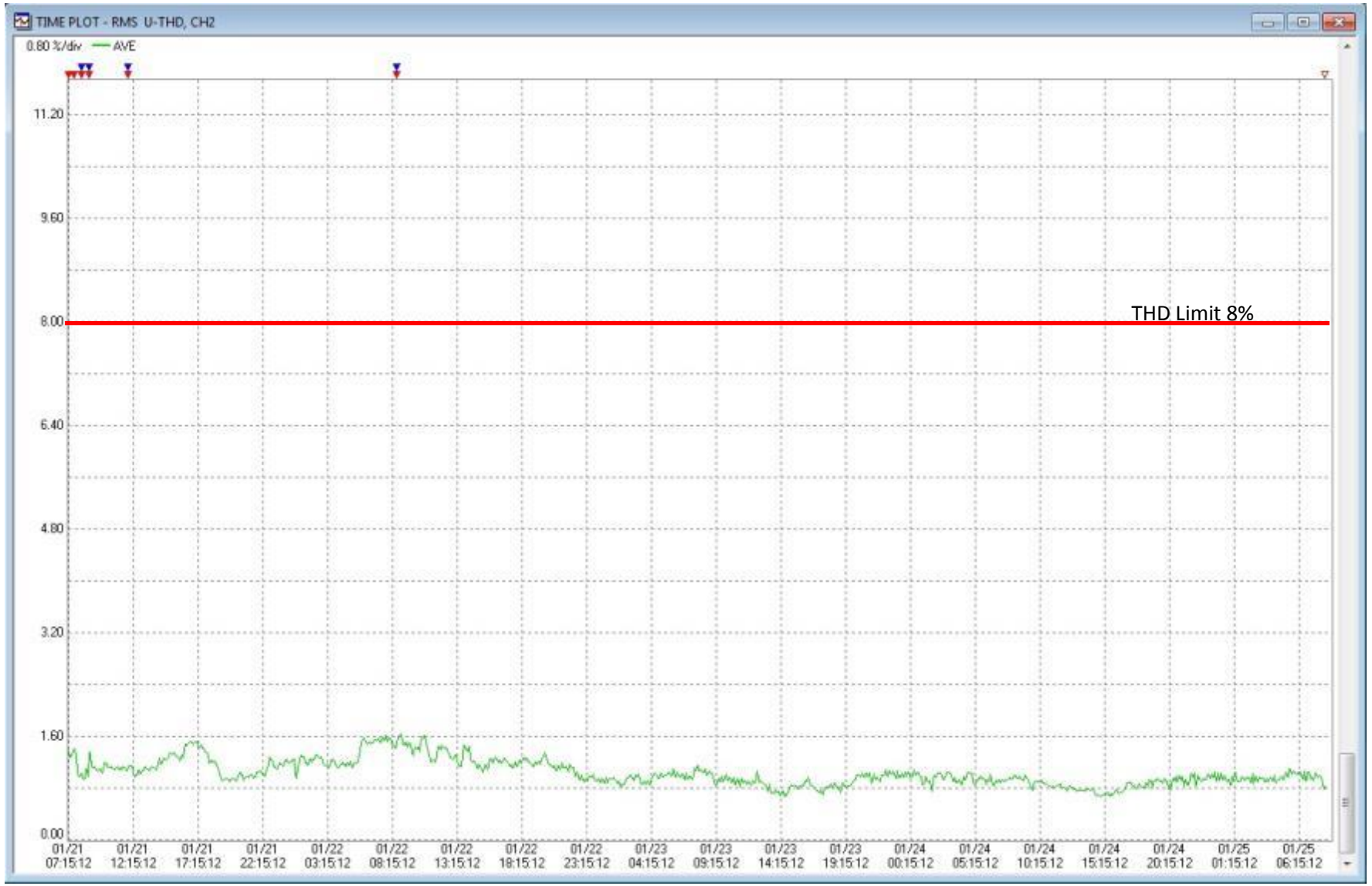
TC2 Start of Feeder PS10 McLennan Drive 3rd Phase Vrms (21/01/14 – 25/01/14)



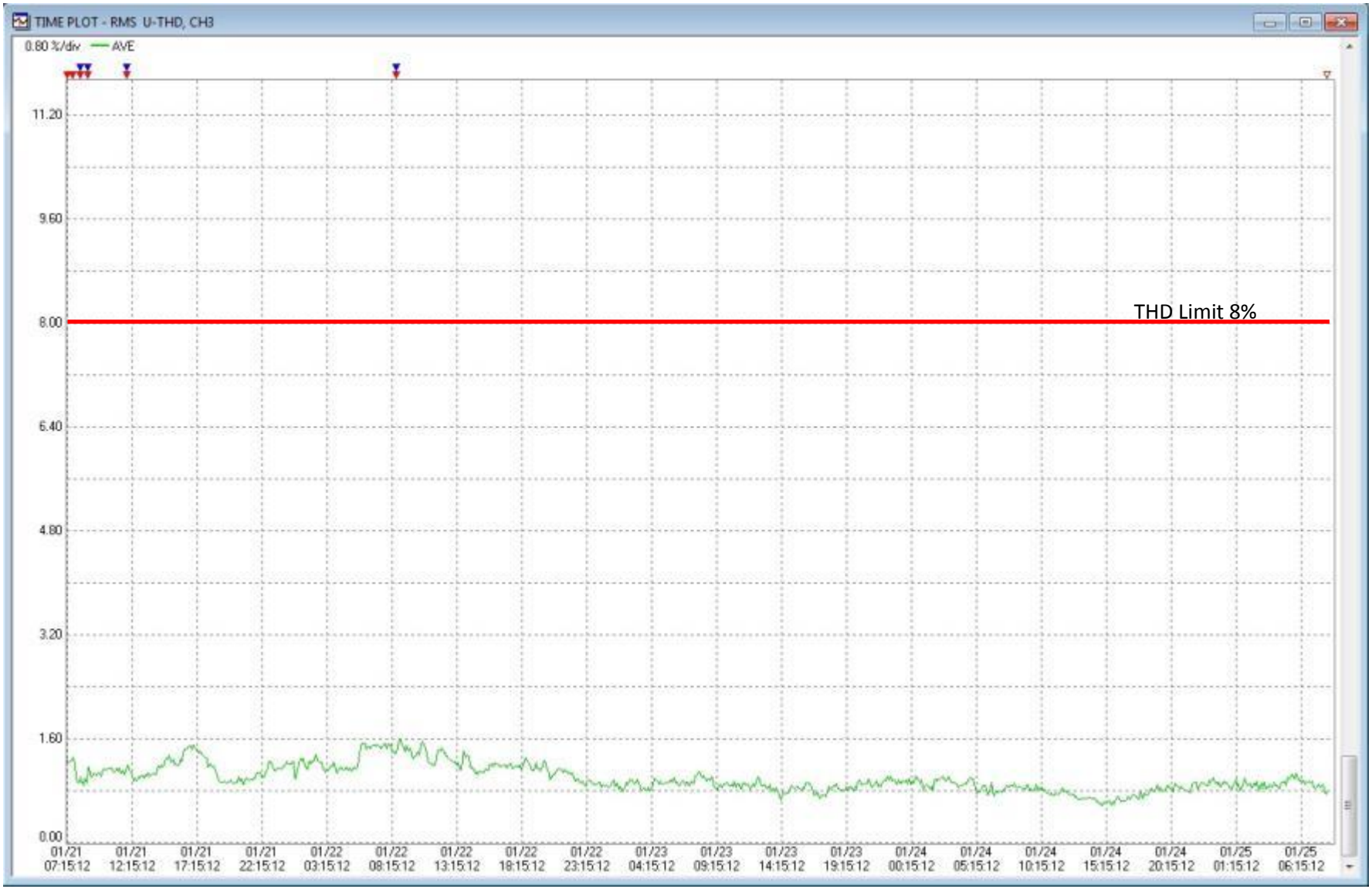
TC2 Start of Feeder PS10 McLennan Drive 1st Phase Vthd (21/01/14 – 25/01/14)



TC2 Start of Feeder PS10 McLennan Drive 2nd Phase Vthd (21/01/14 – 25/01/14)

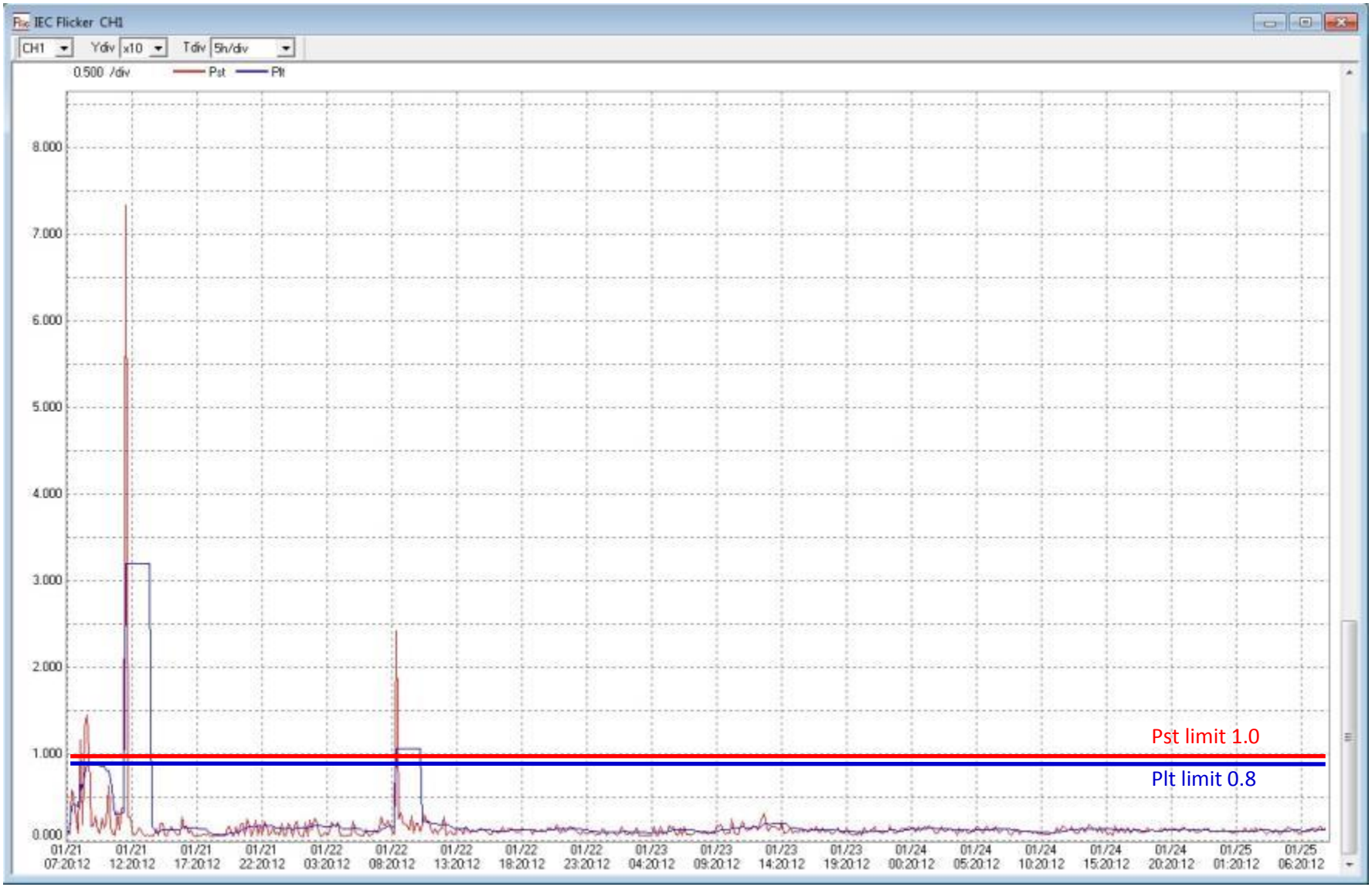


TC2 Start of Feeder PS10 McLennan Drive 3rd Phase Vthd (21/01/14 – 25/01/14)

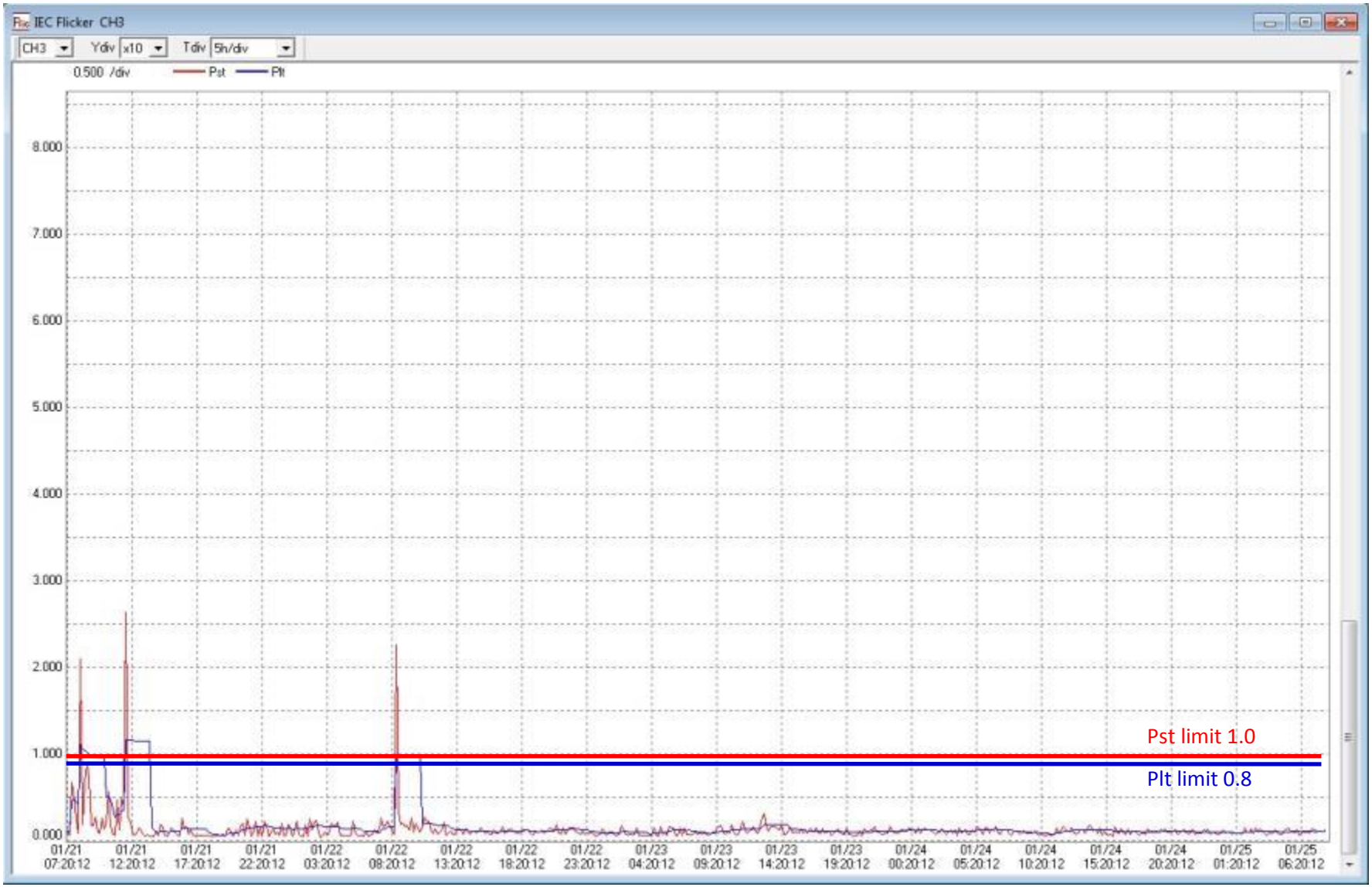


TC2 Start of Feeder PS10 McLennan Drive 1st Pst & Plt (21/01/14 – 25/01/14)

TC2 Start of Feeder PS10 McLennan Drive 2nd Pst & Plt (21/01/14 – 25/01/14)



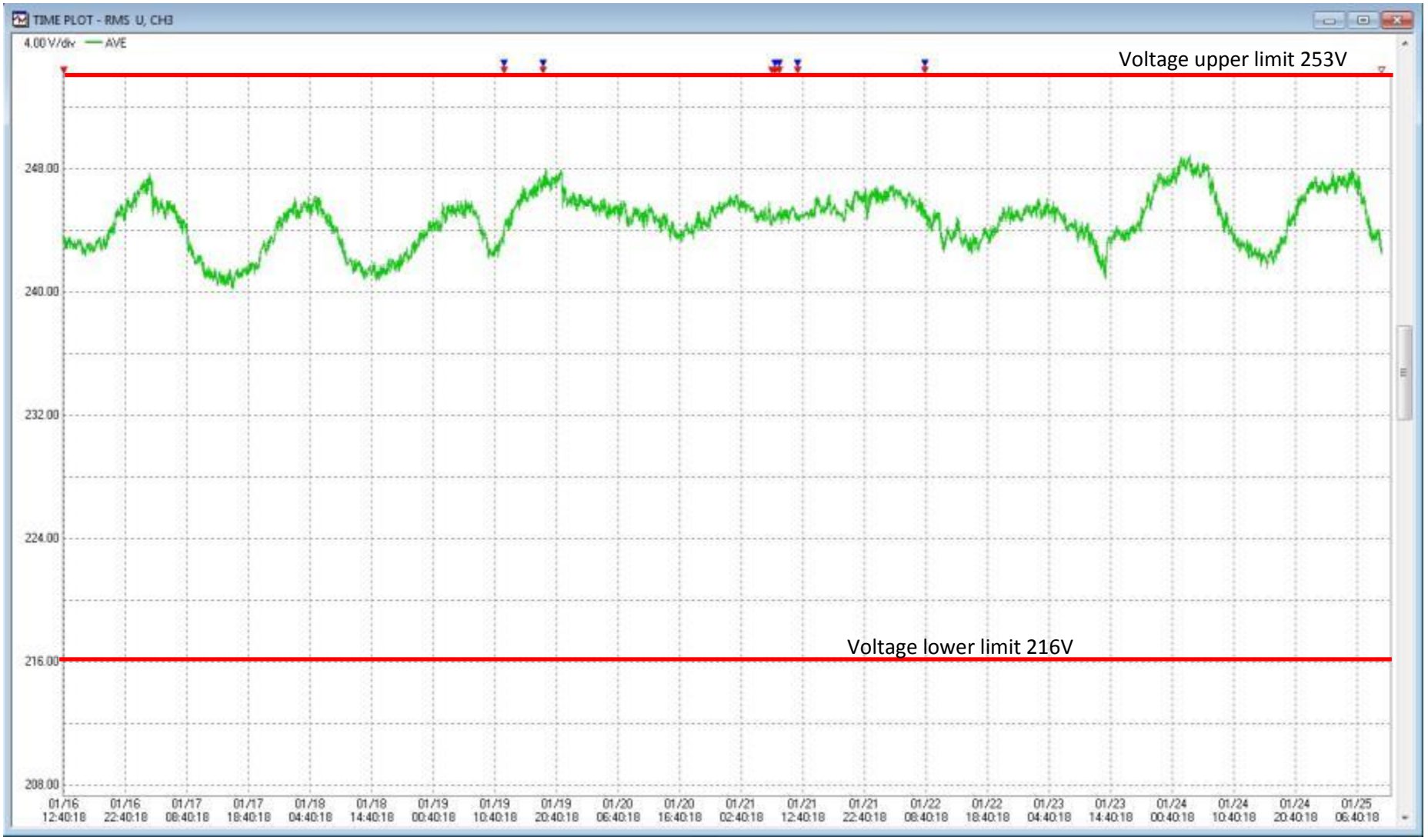
TC2 Start of Feeder PS10 McLennan Drive 3rd Pst & Plt



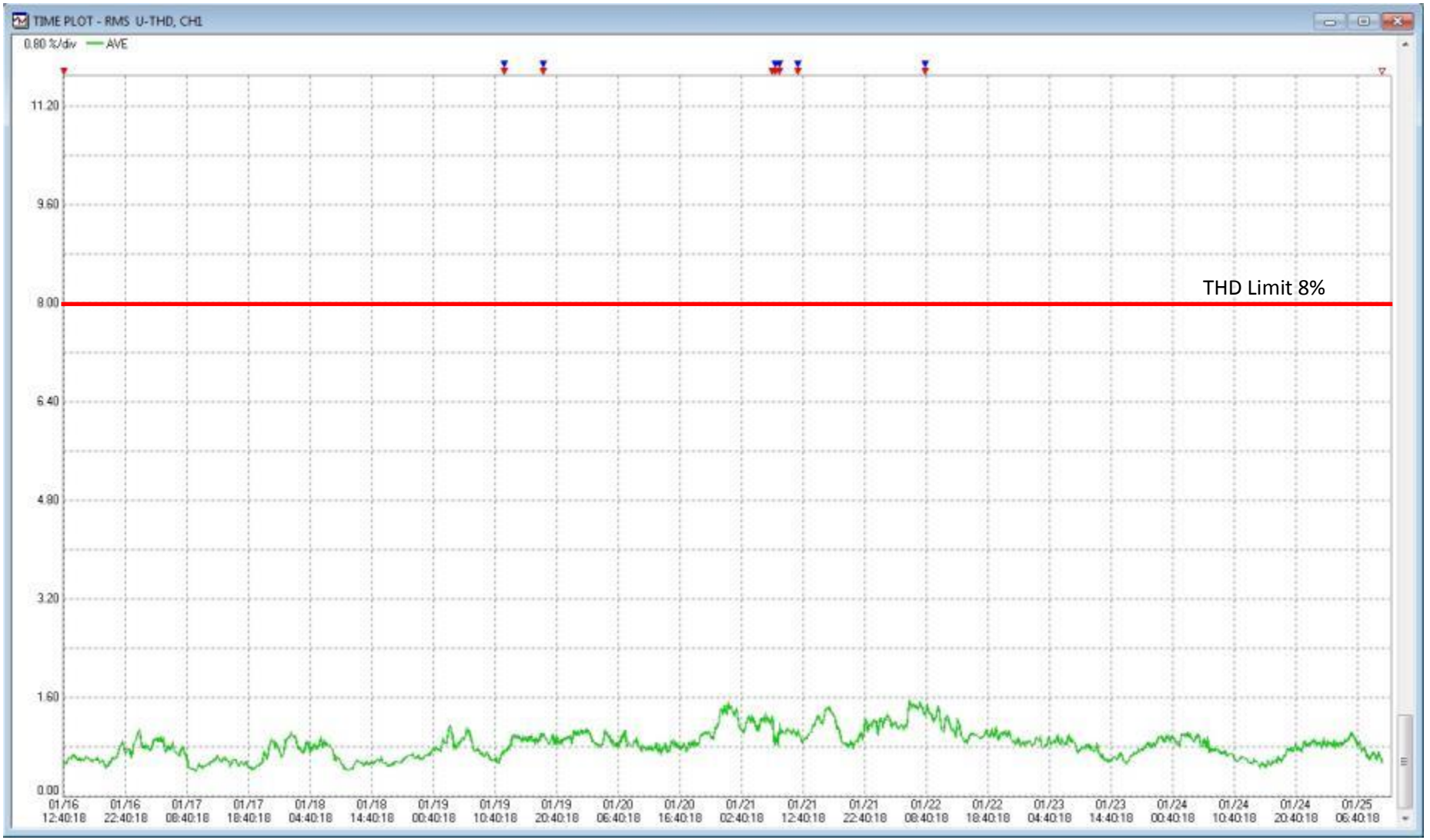
TC2 End of Feeder PS14 Bondini 1st Phase Vrms

TC2 End of Feeder PS14 Bondini 2nd Phase Vrms

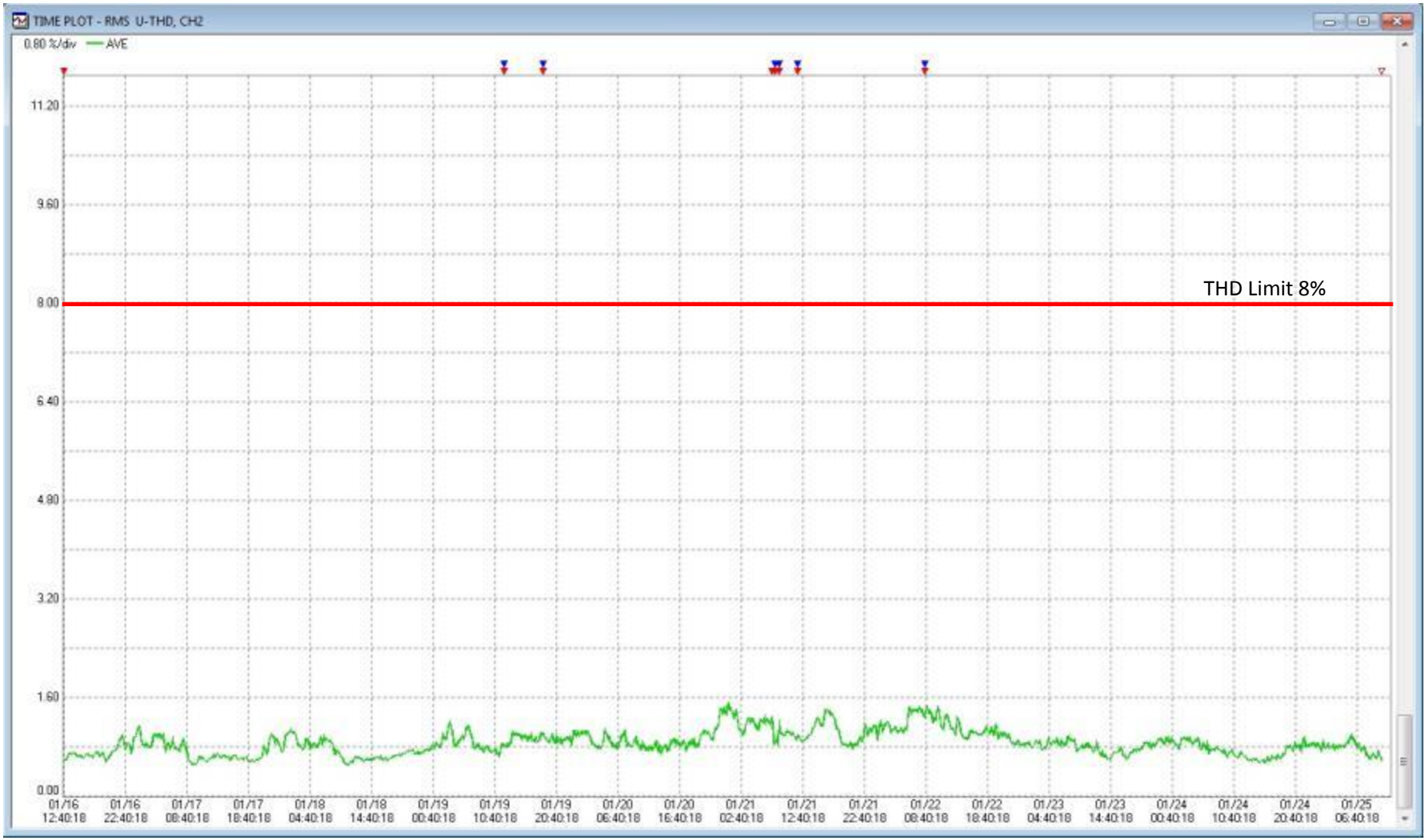
TC2 End of Feeder PS14 Bondini 3rd Phase Vrms



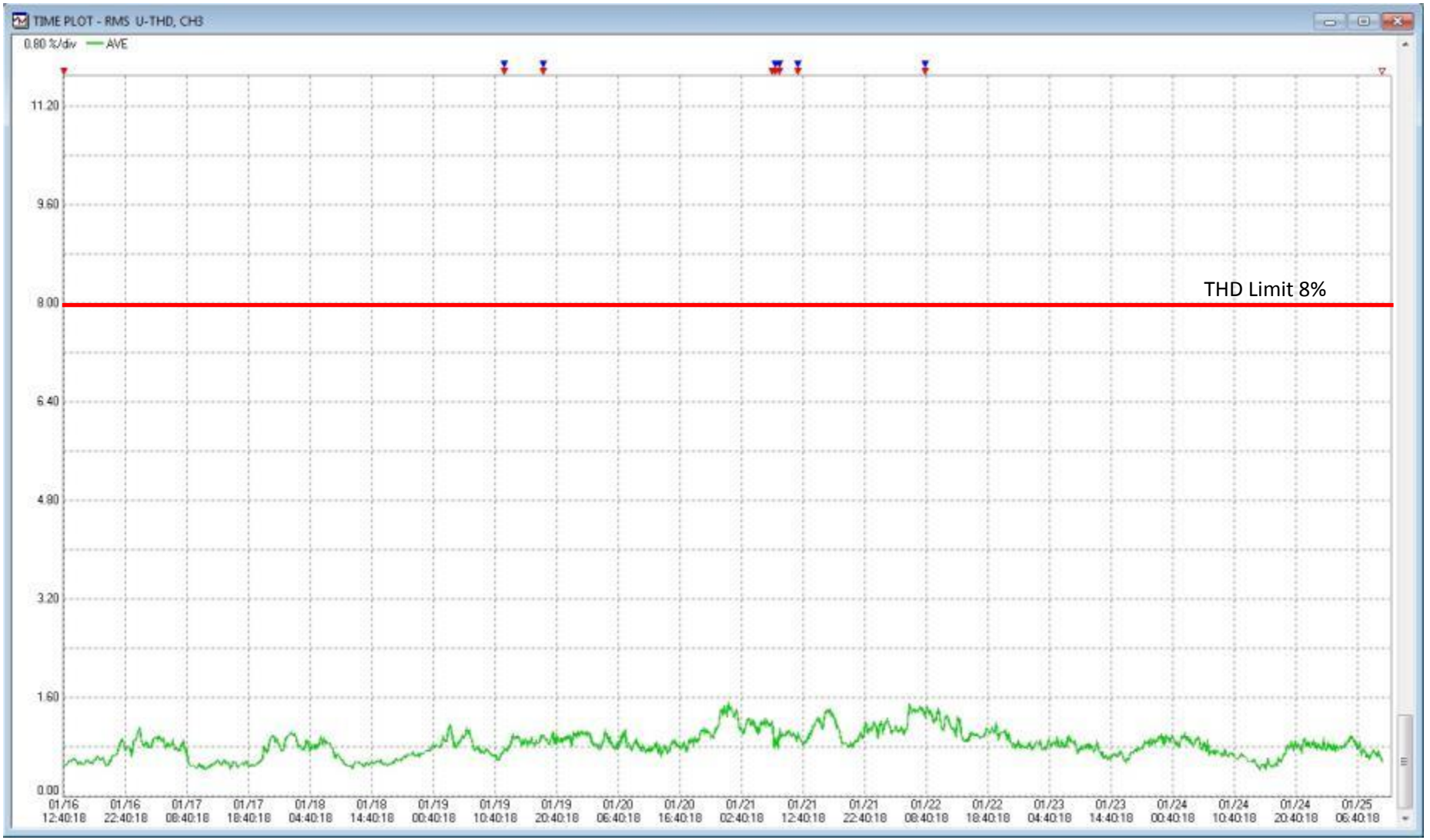
TC2 End of Feeder PS14 Bondini 1st Phase Vthd



TC2 End of Feeder PS14 Bondini 2nd Phase Vthd



TC2 End of Feeder PS14 Bondini 3rd Phase Vthd



TC2 End of Feeder PS14 Bondini 1st Phase Pst & Plt

TC2 End of Feeder PS14 Bondini 2nd Phase Pst & Plt

TC2 End of Feeder PS14 Bondini 3rd Phase Pst & Plt

TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 1st Phase Vrms

TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 2nd Phase Vrms

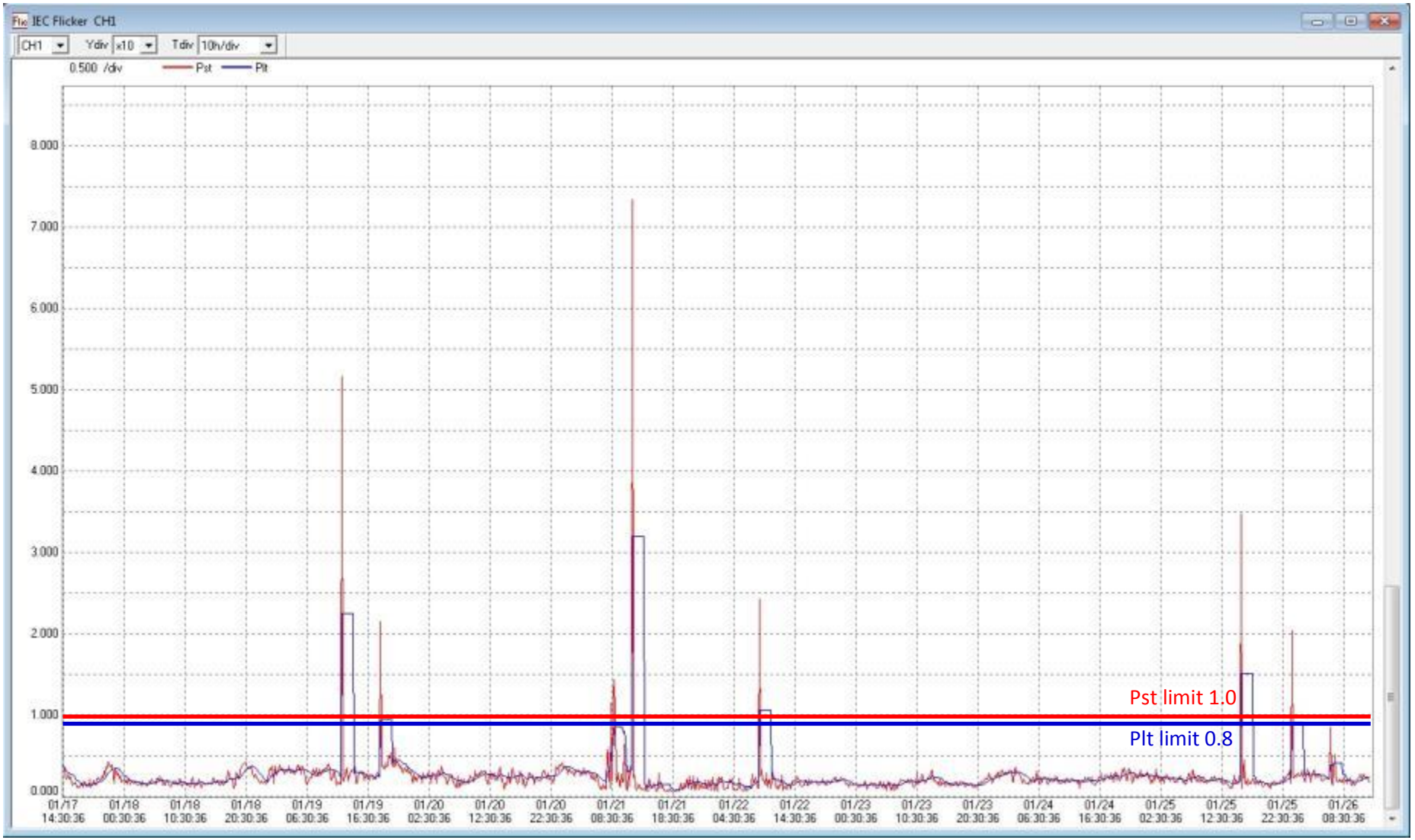
TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 3rd Phase Vrms

TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 1st Phase Vthd

TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 2nd Phase Vthd

TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 3rd Phase Vthd

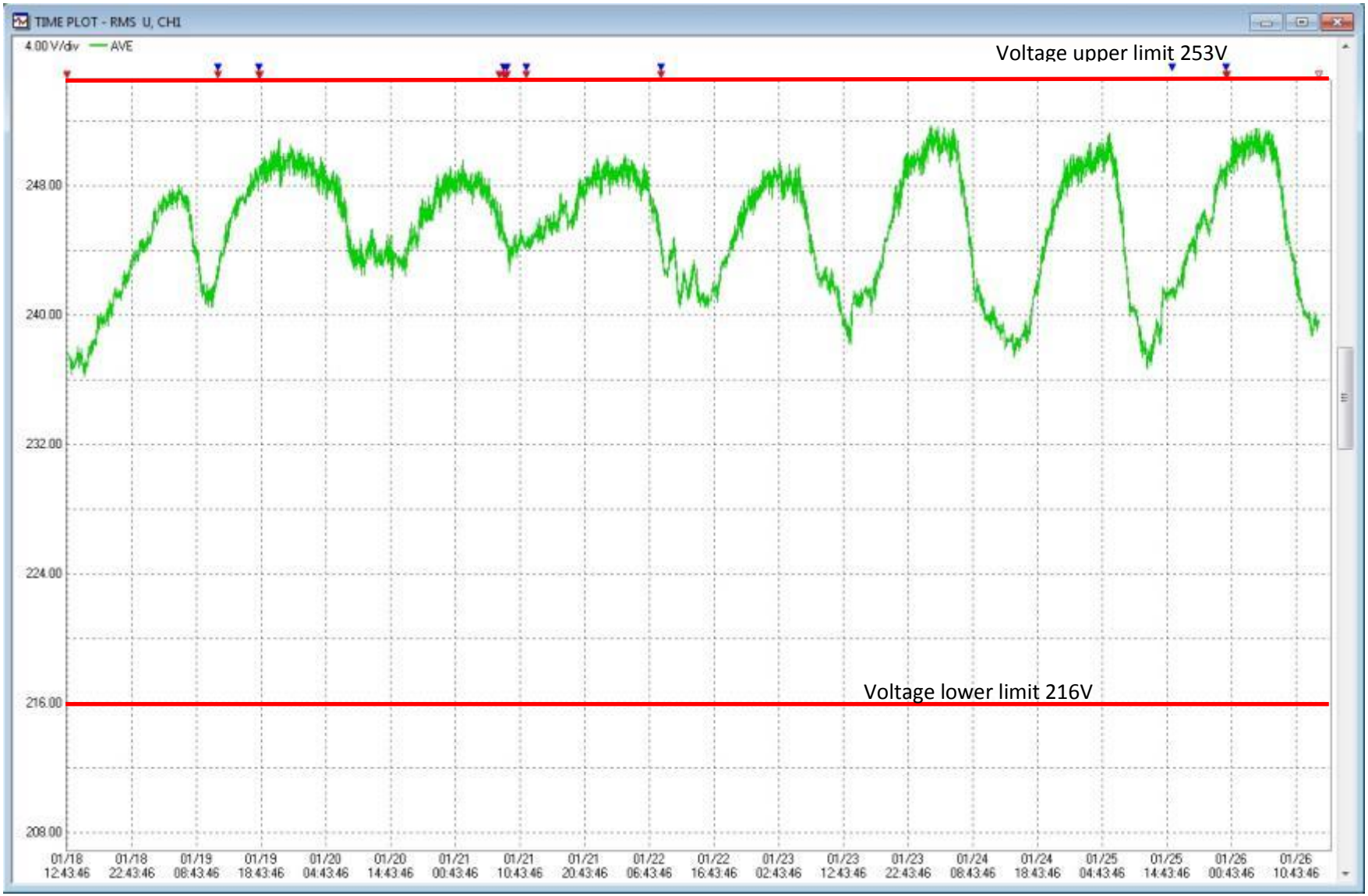
TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 1st Phase Pst & Plt



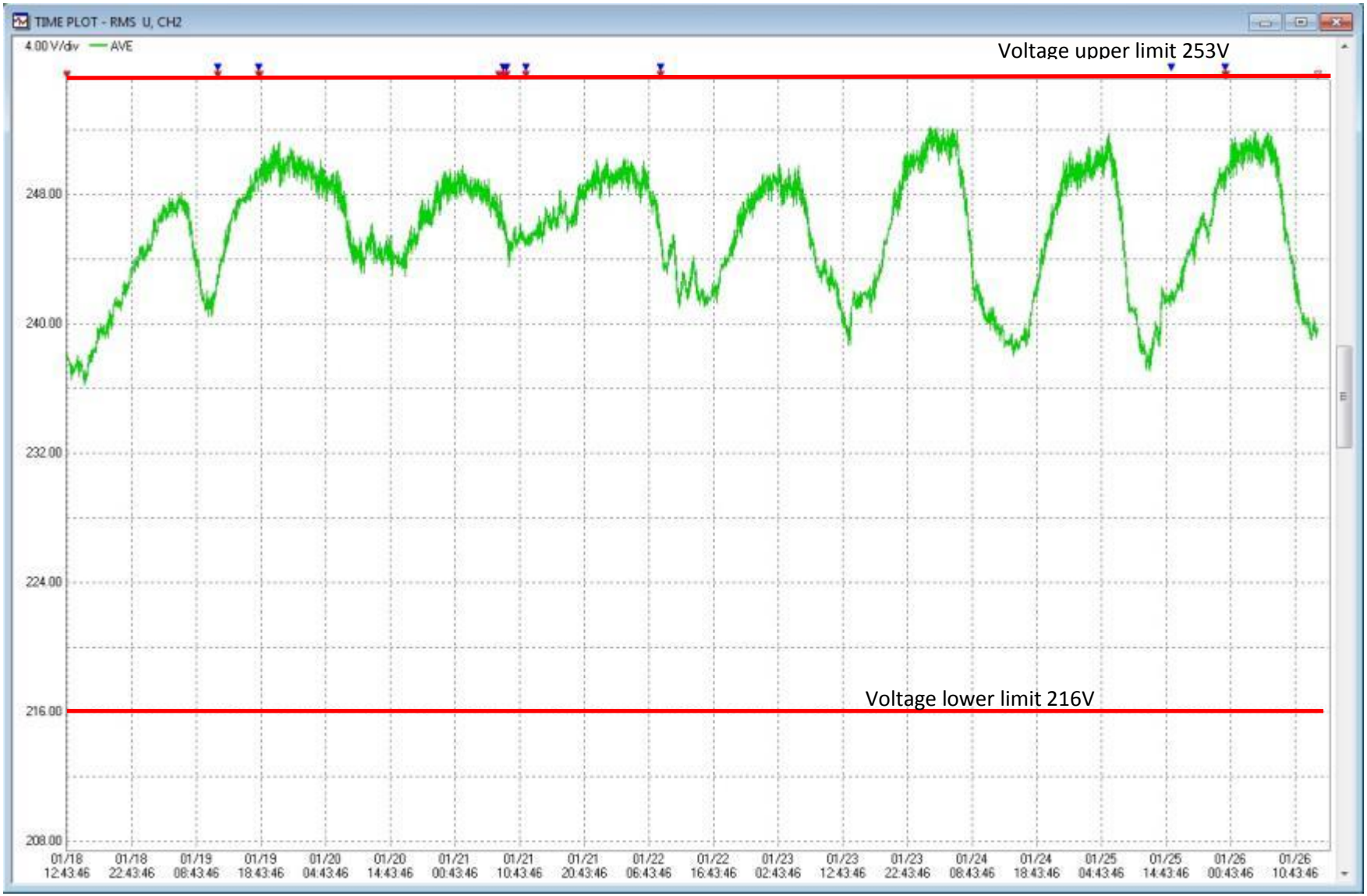
TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 2nd Phase Pst & Plt

TC3 Start of Feeder T67 Corner of Kurra and Newman Drive 3rd Phase Pst & Plt

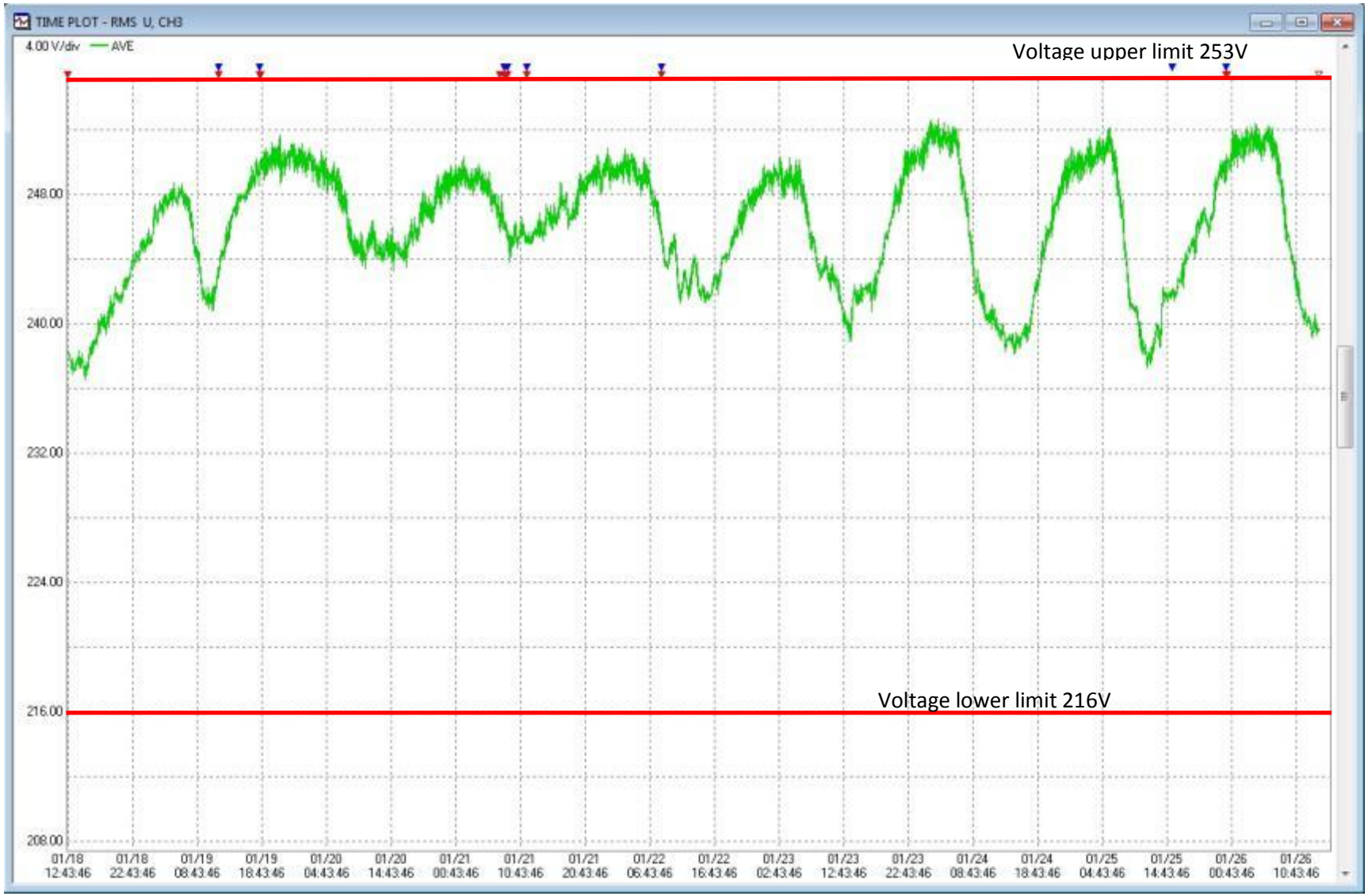
TC3 End of Feeder T73 Woolworths 1st Phase Vrms



TC3 End of Feeder T73 Woolworths 2nd Phase Vrms



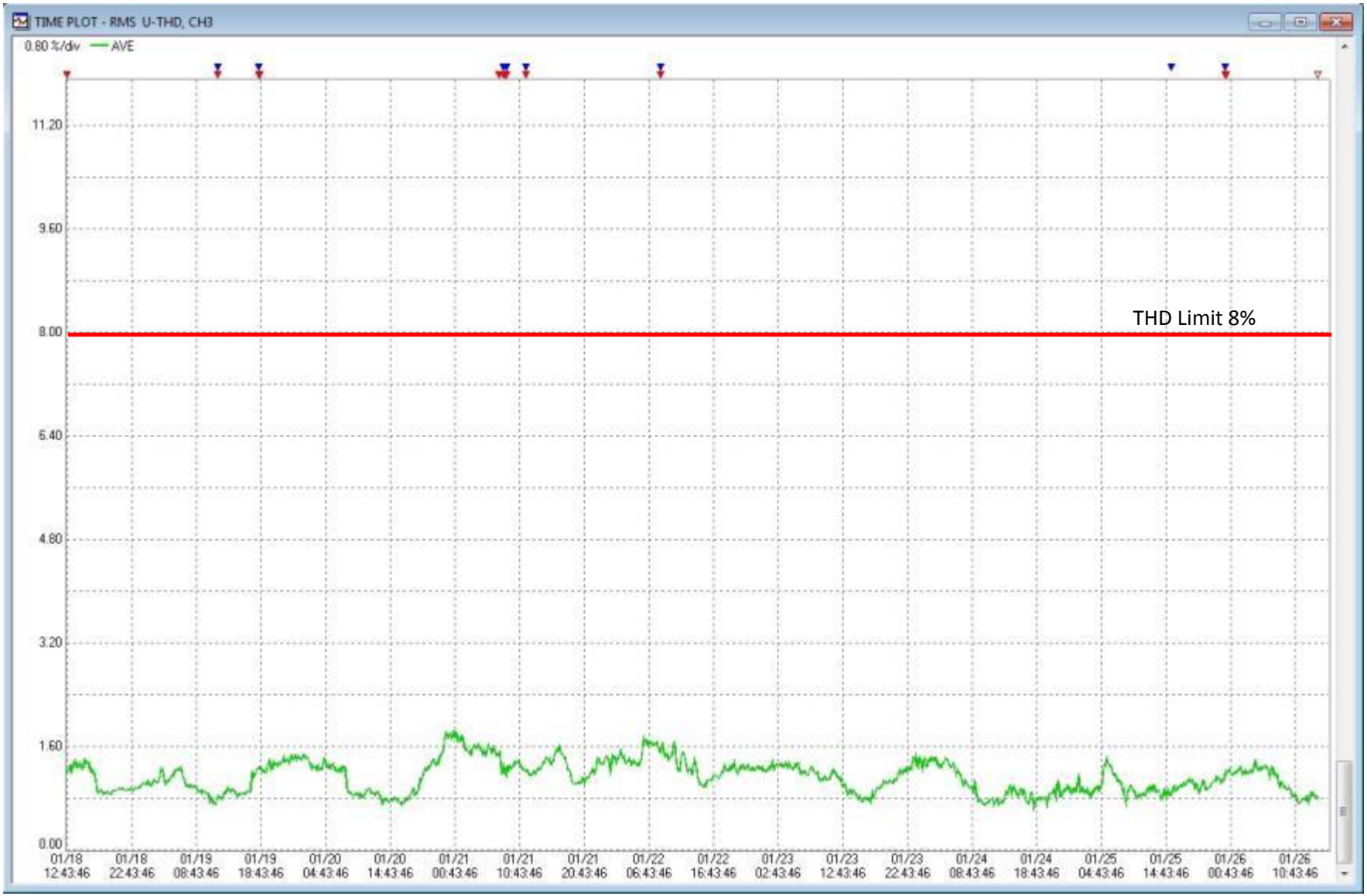
TC3 End of Feeder T73 Woolworths 3rd Phase Vrms



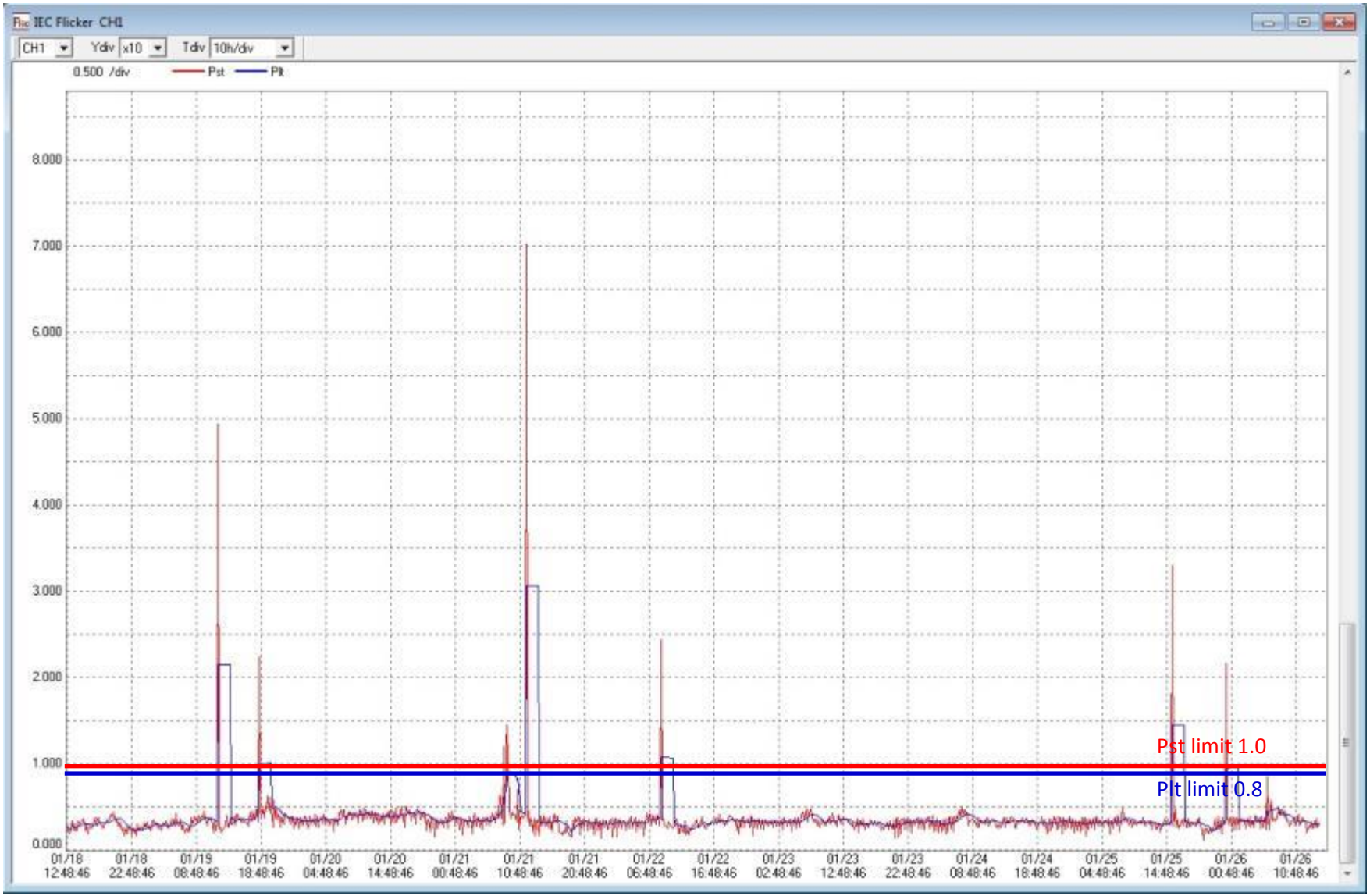
TC3 End of Feeder T73 Woolworths 1st Phase Vthd

TC3 End of Feeder T73 Woolworths 2nd Phase Vthd

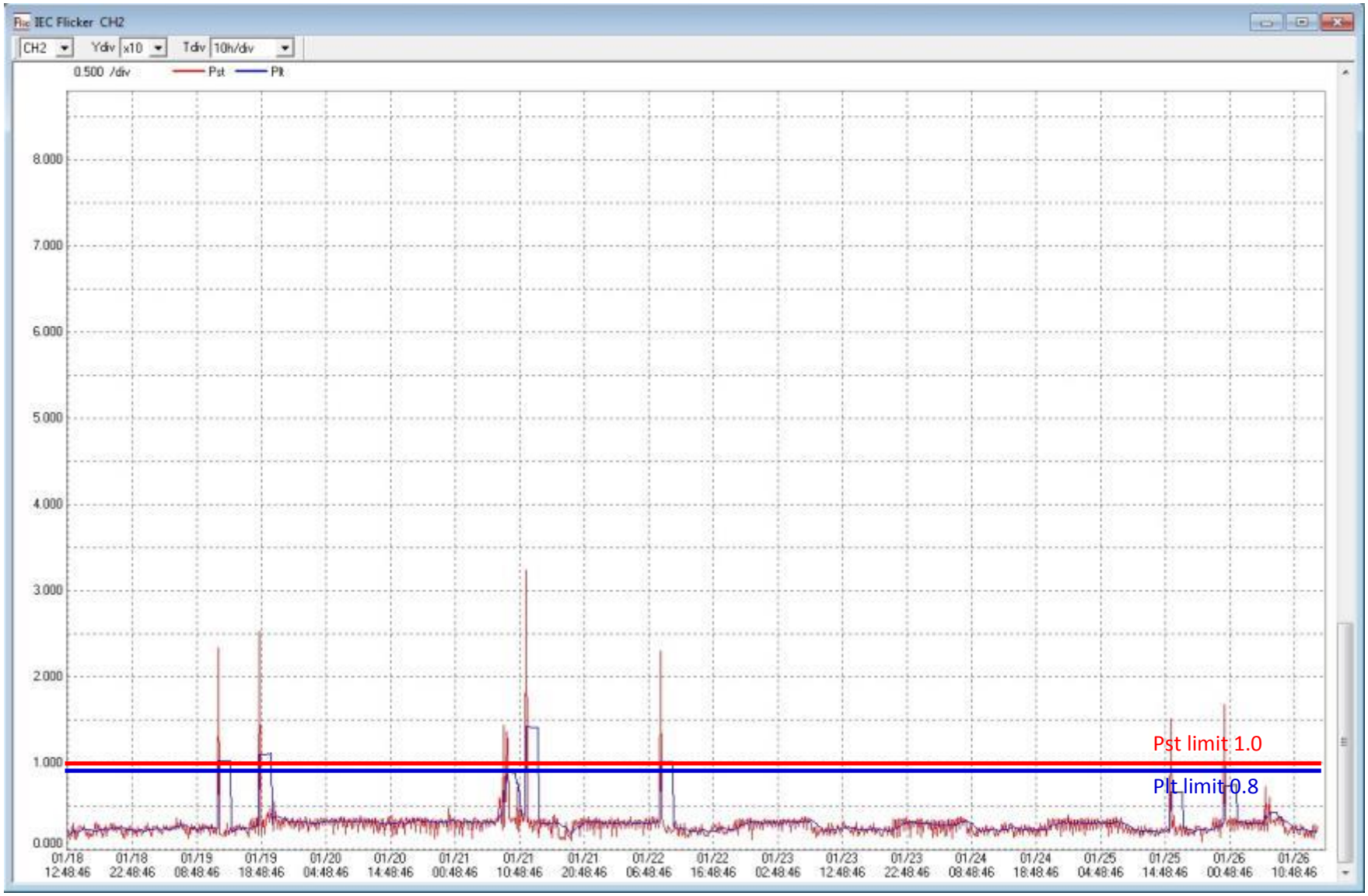
TC3 End of Feeder T73 Woolworths 3rd Phase Vthd



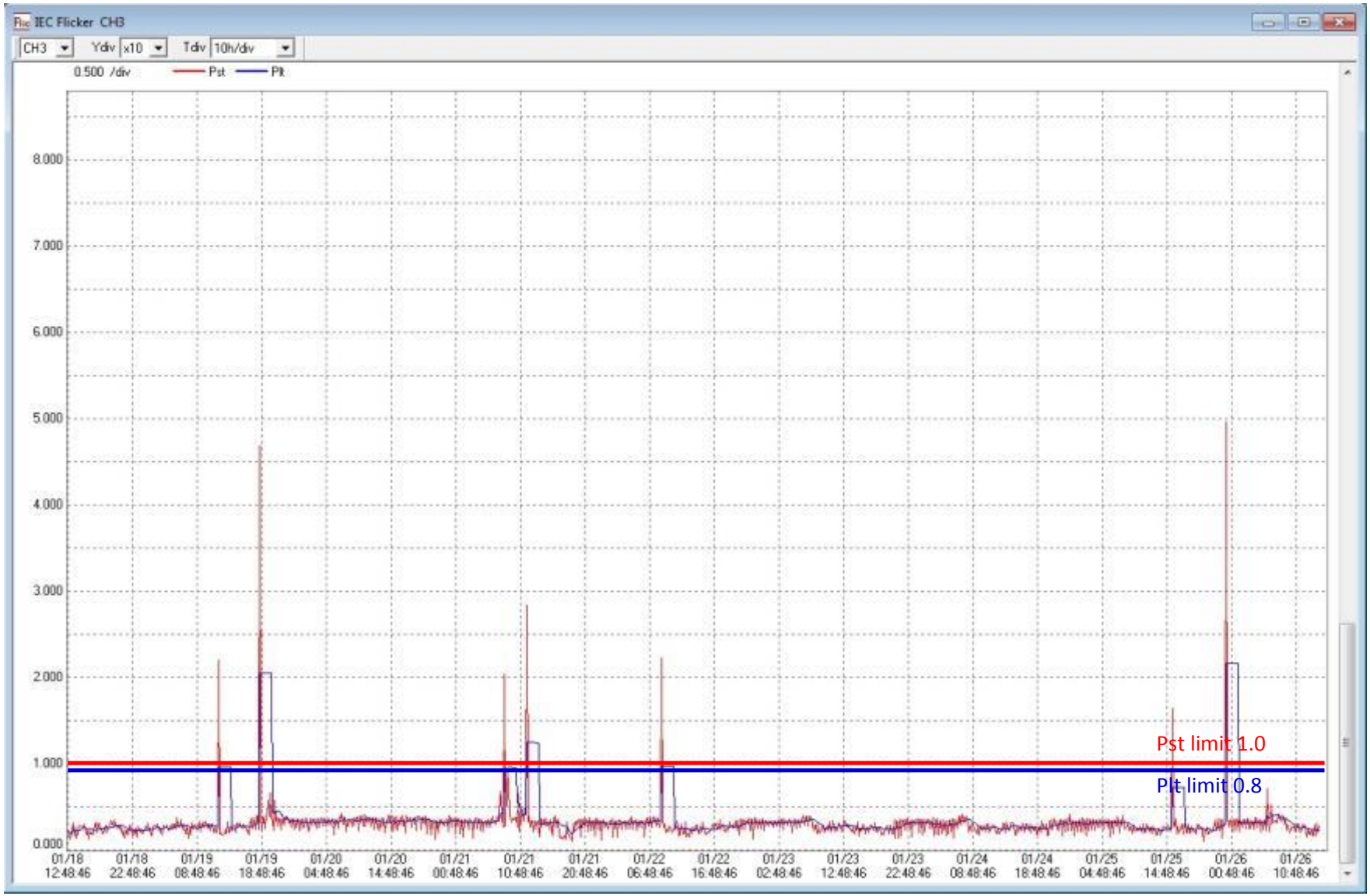
TC3 End of Feeder T73 Woolworths 1st Phase Pst & Plt



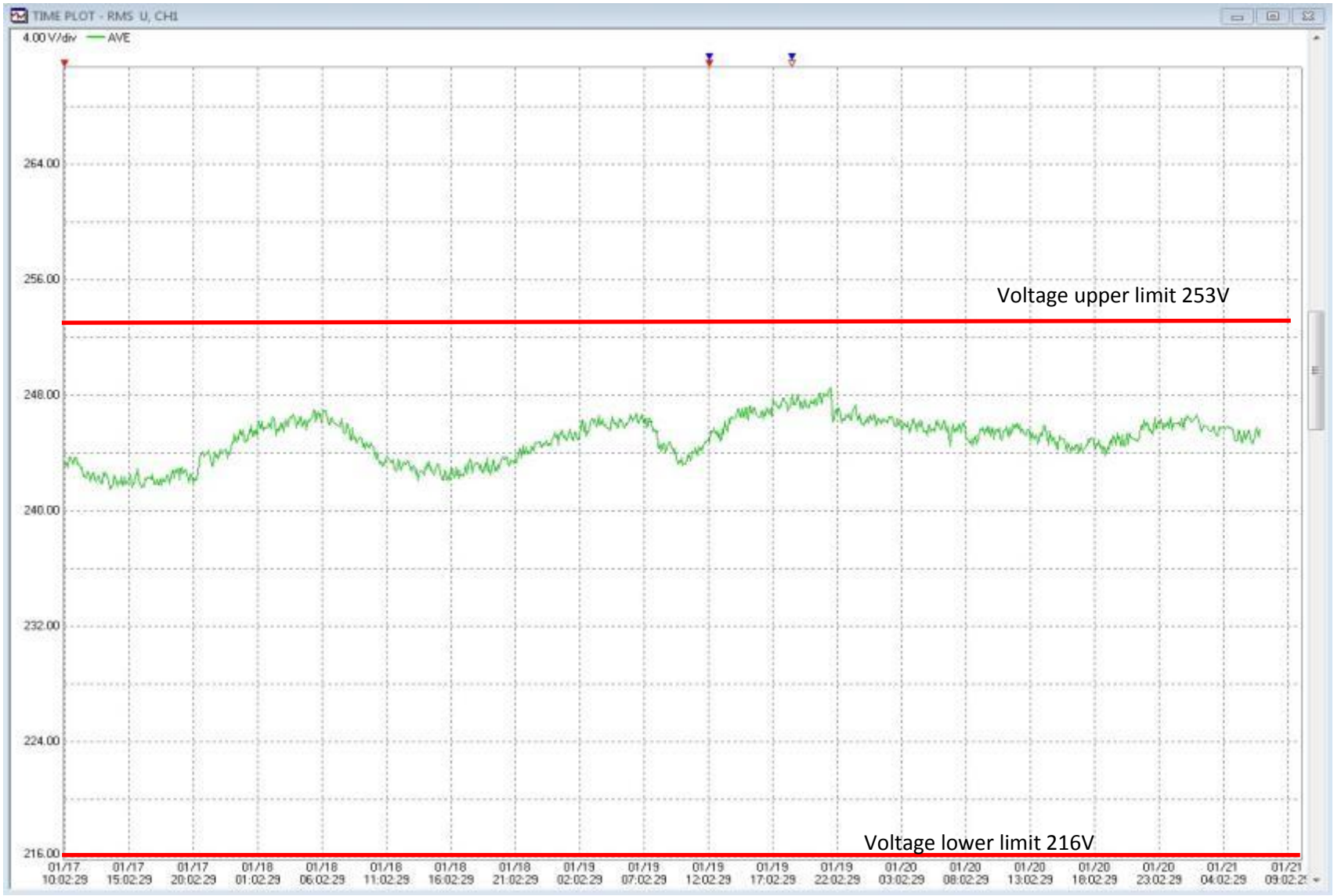
TC3 End of Feeder T73 Woolworths 2nd Phase Pst & Plt



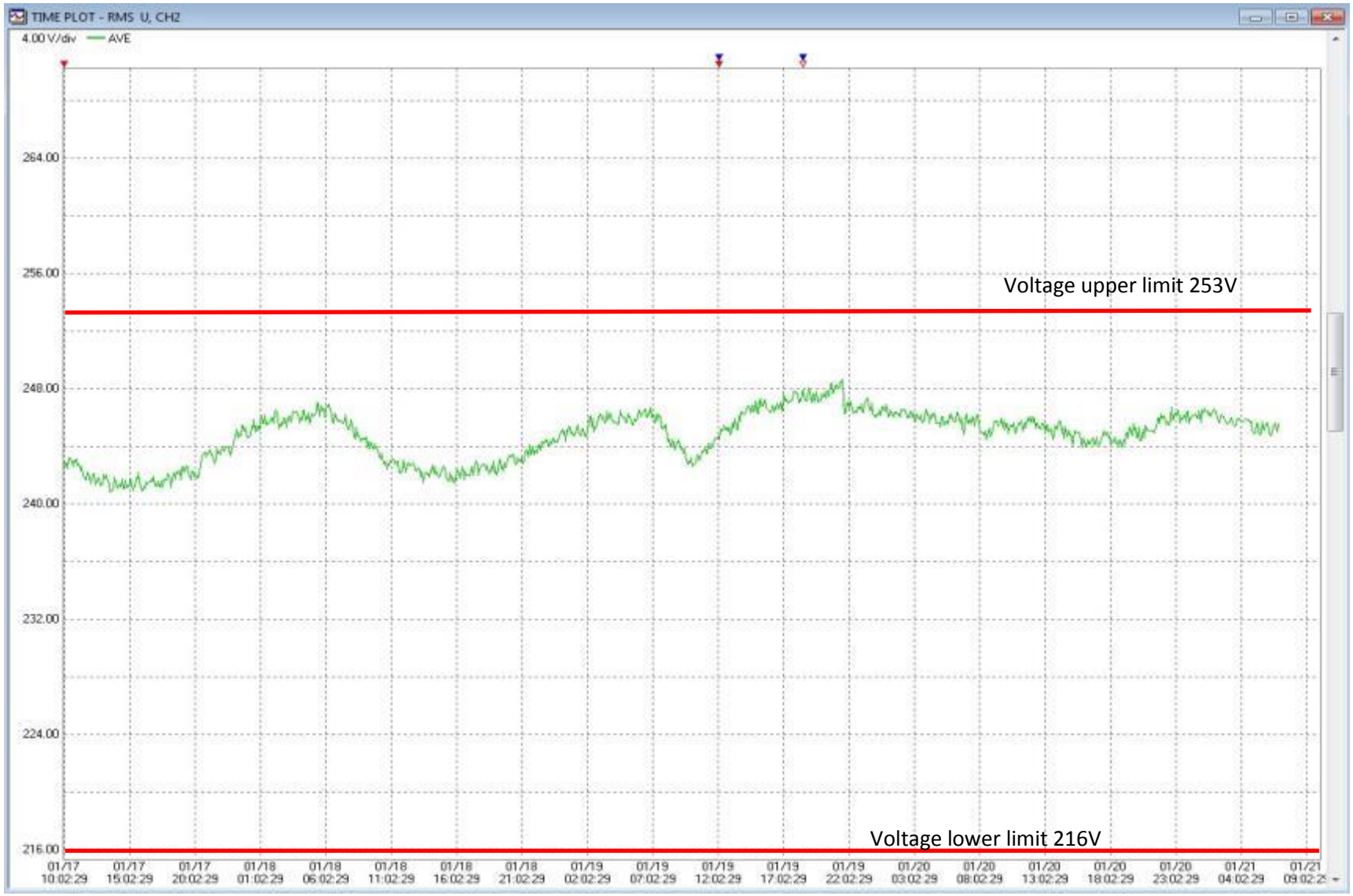
TC3 End of Feeder T73 Woolworths 3rd Phase Pst & Plt



TC4 Start of Feeder PS21 Nimingara 1st Phase Vrms (17/01/14 – 21/01/14)

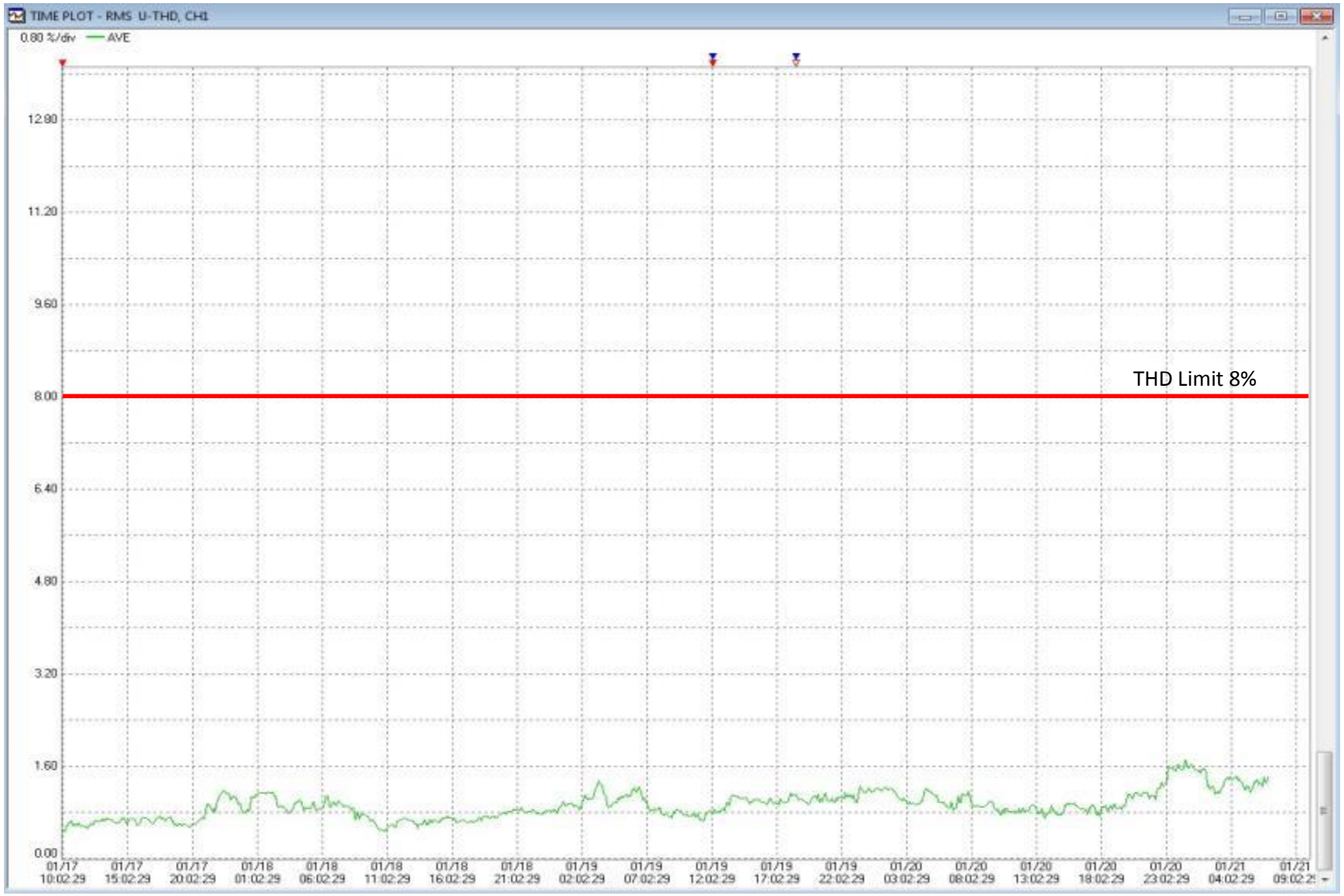


TC4 Start of Feeder PS21 Nimingara 2nd Phase Vrms (17/01/14 – 21/01/14)

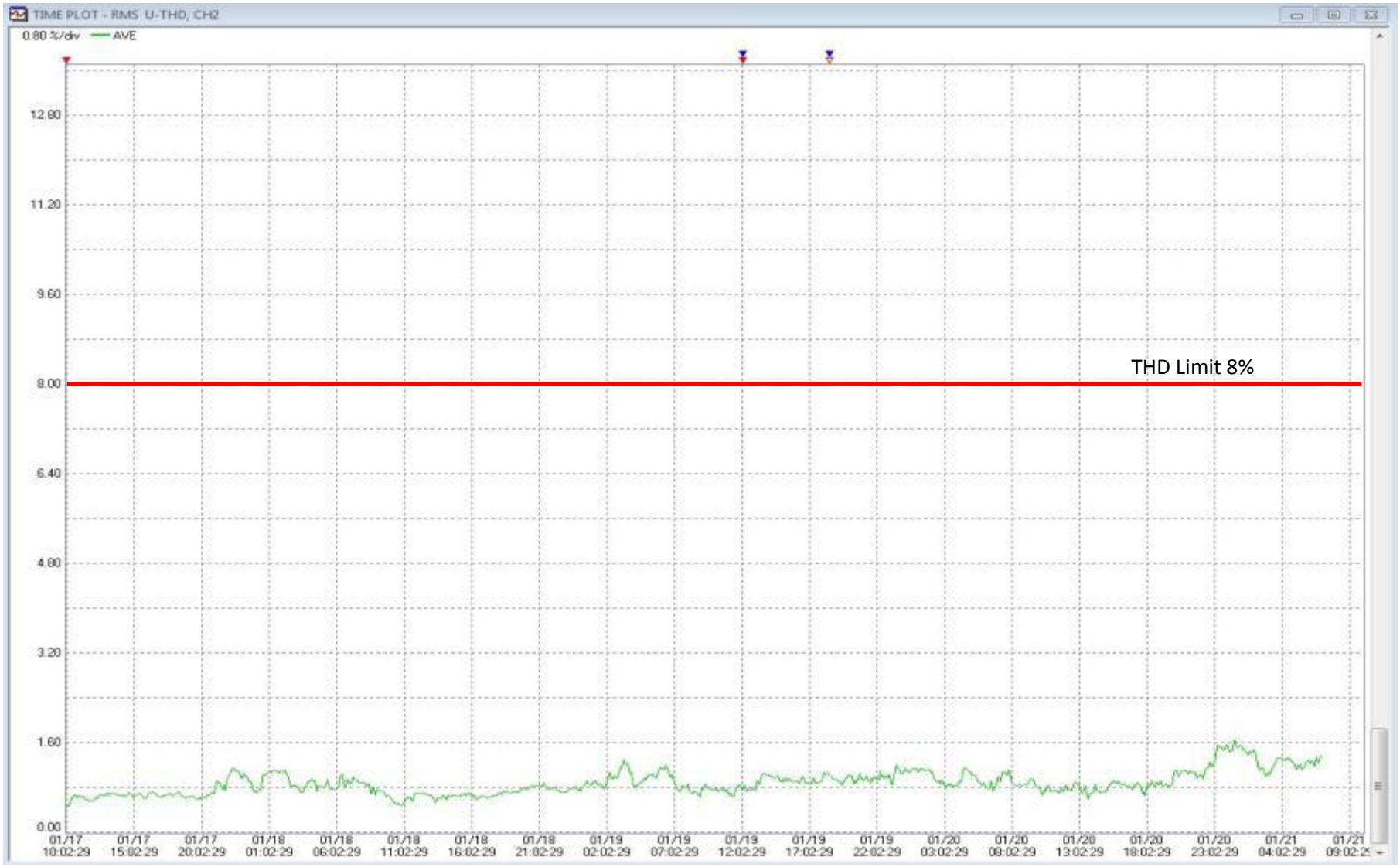


TC4 Start of Feeder PS21 Nimingara 3rd Phase Vrms (17/01/14 – 21/01/14)

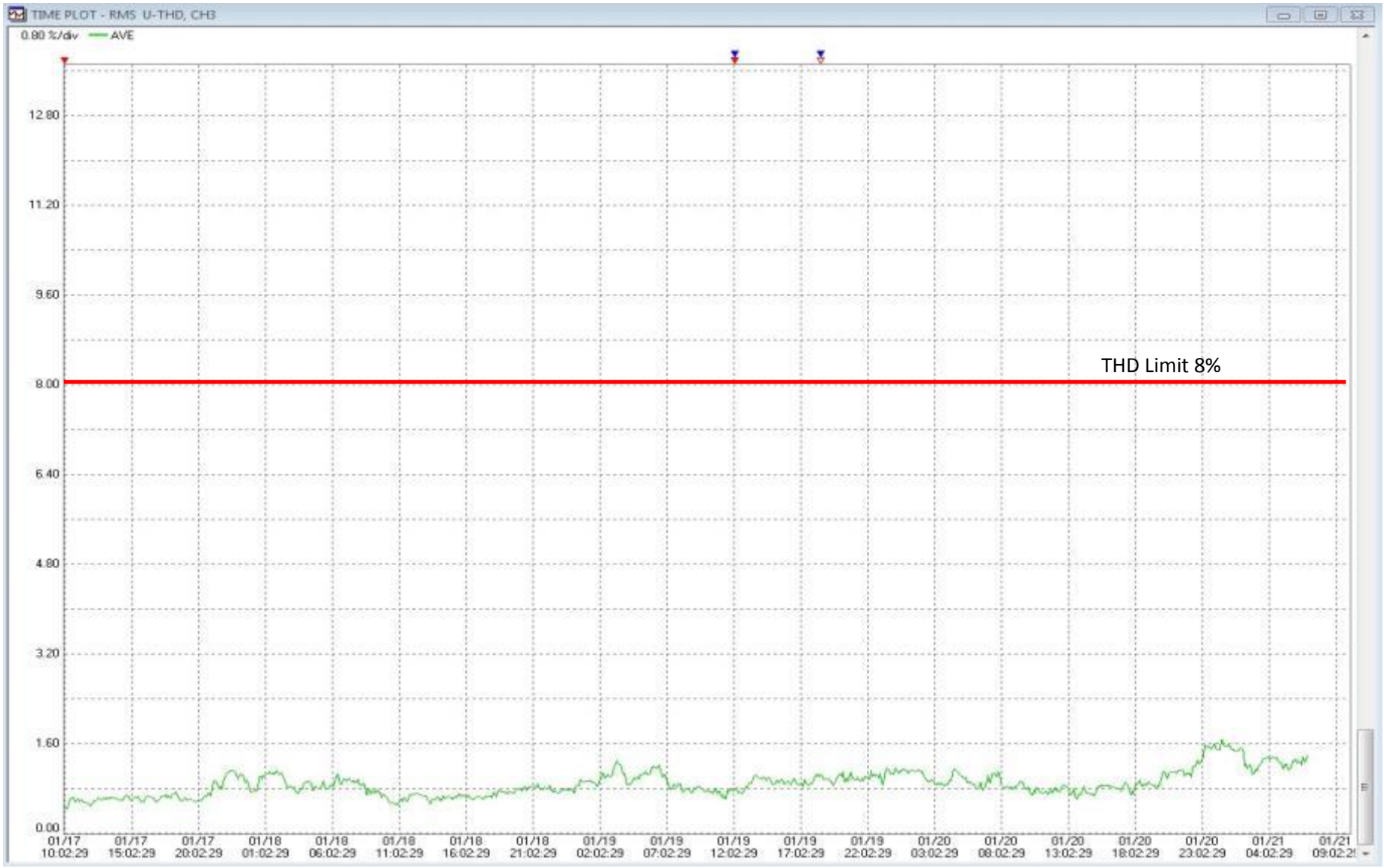
TC4 Start of Feeder PS21 Nimingara 1st Phase Vthd (17/01/14 – 21/01/14)



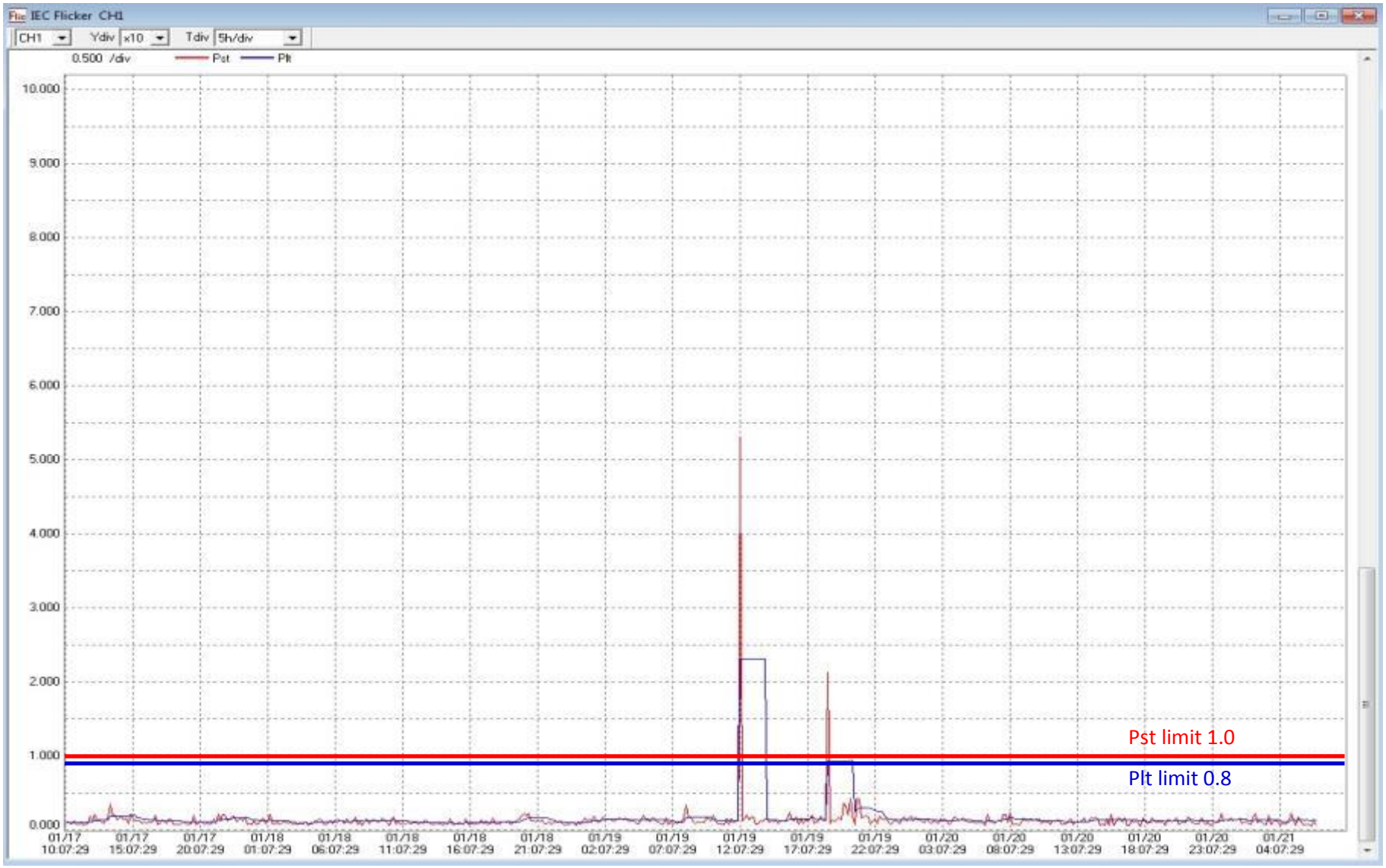
TC4 Start of Feeder PS21 Nimingara 2nd Phase Vthd (17/01/14 – 21/01/14)



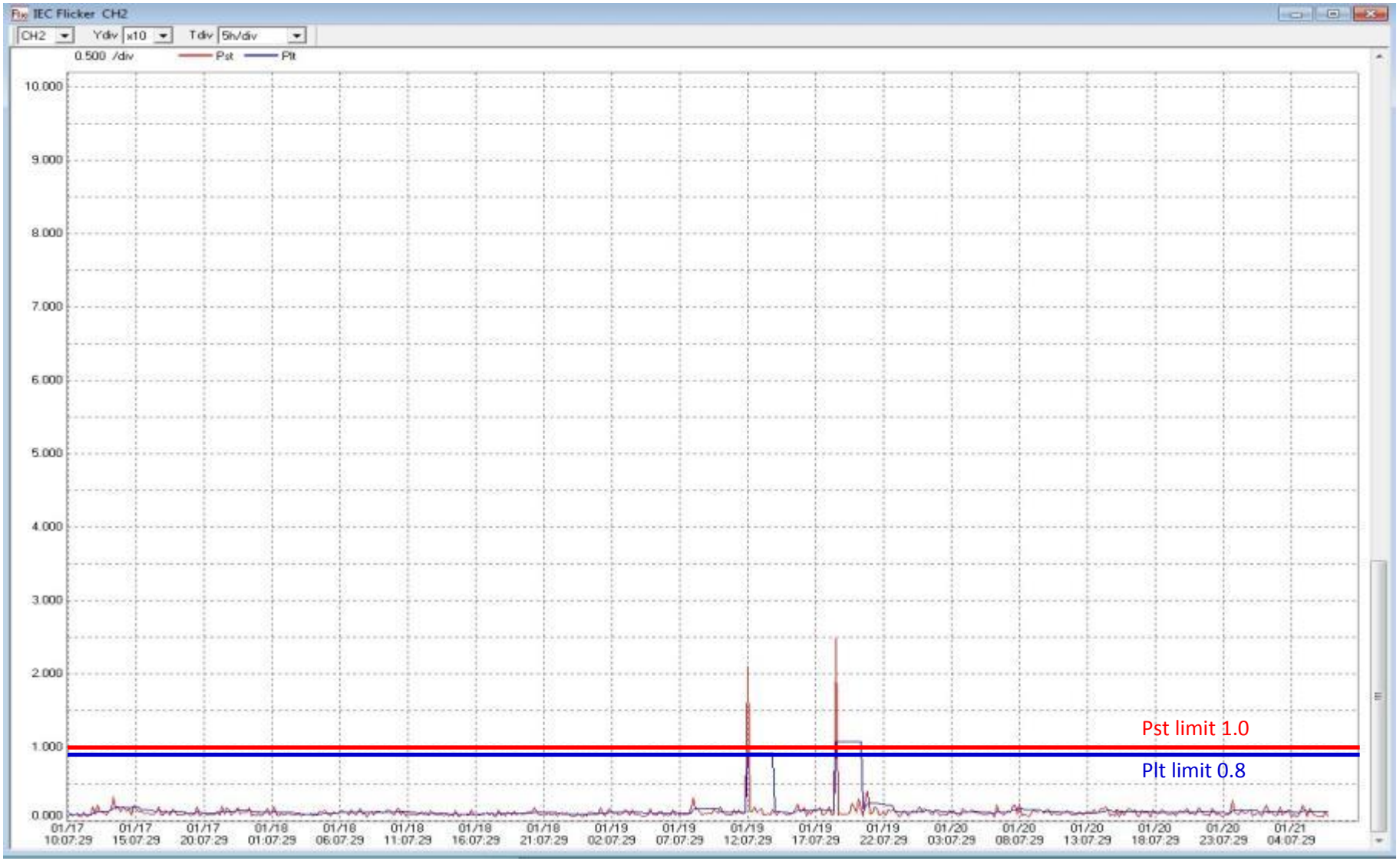
TC4 Start of Feeder PS21 Nimingara 3rd Phase Vthd (17/01/14 – 21/01/14)



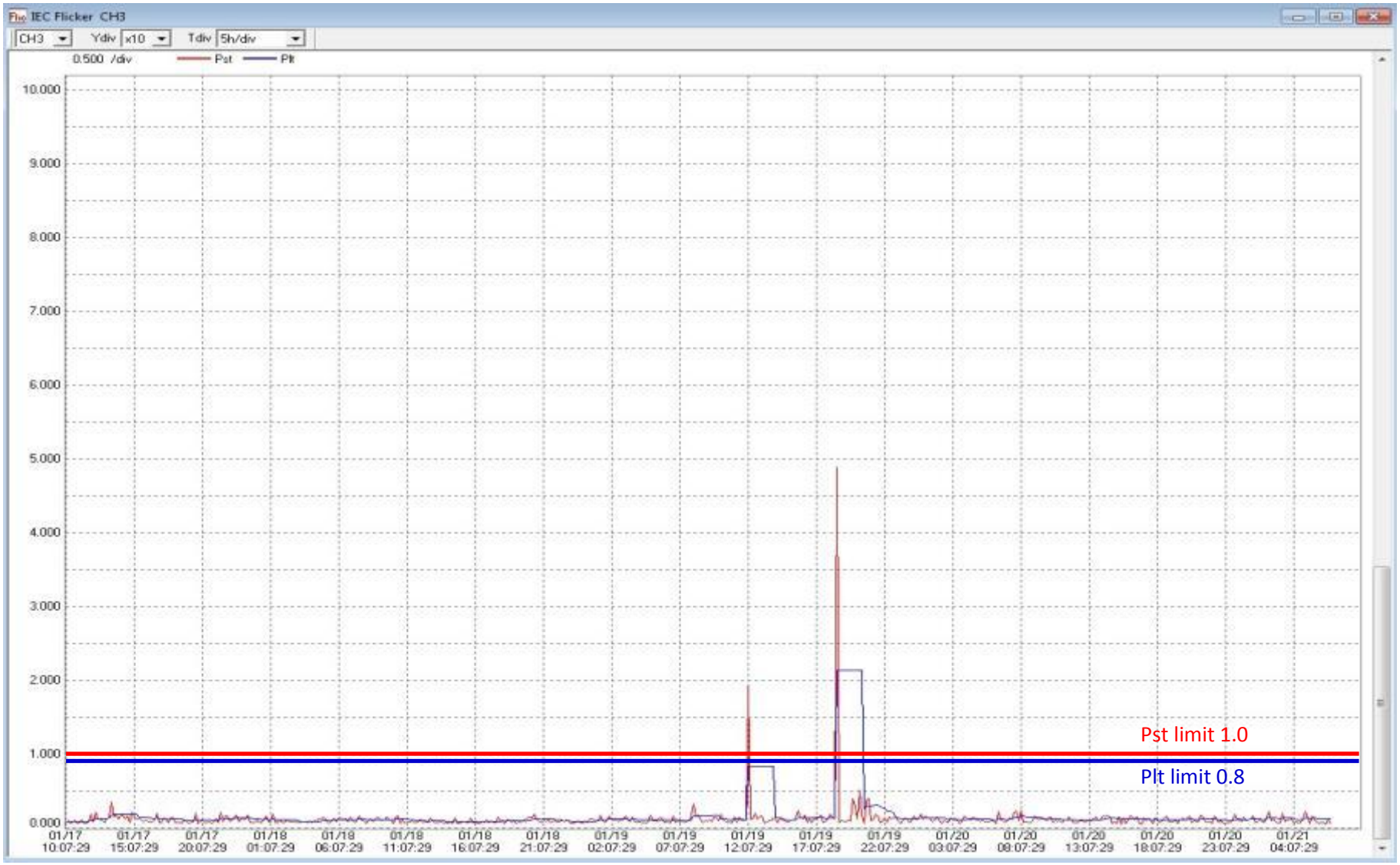
TC4 Start of Feeder PS21 Nimingara 1st Phase Pst & Plt (17/01/14 – 21/01/14)



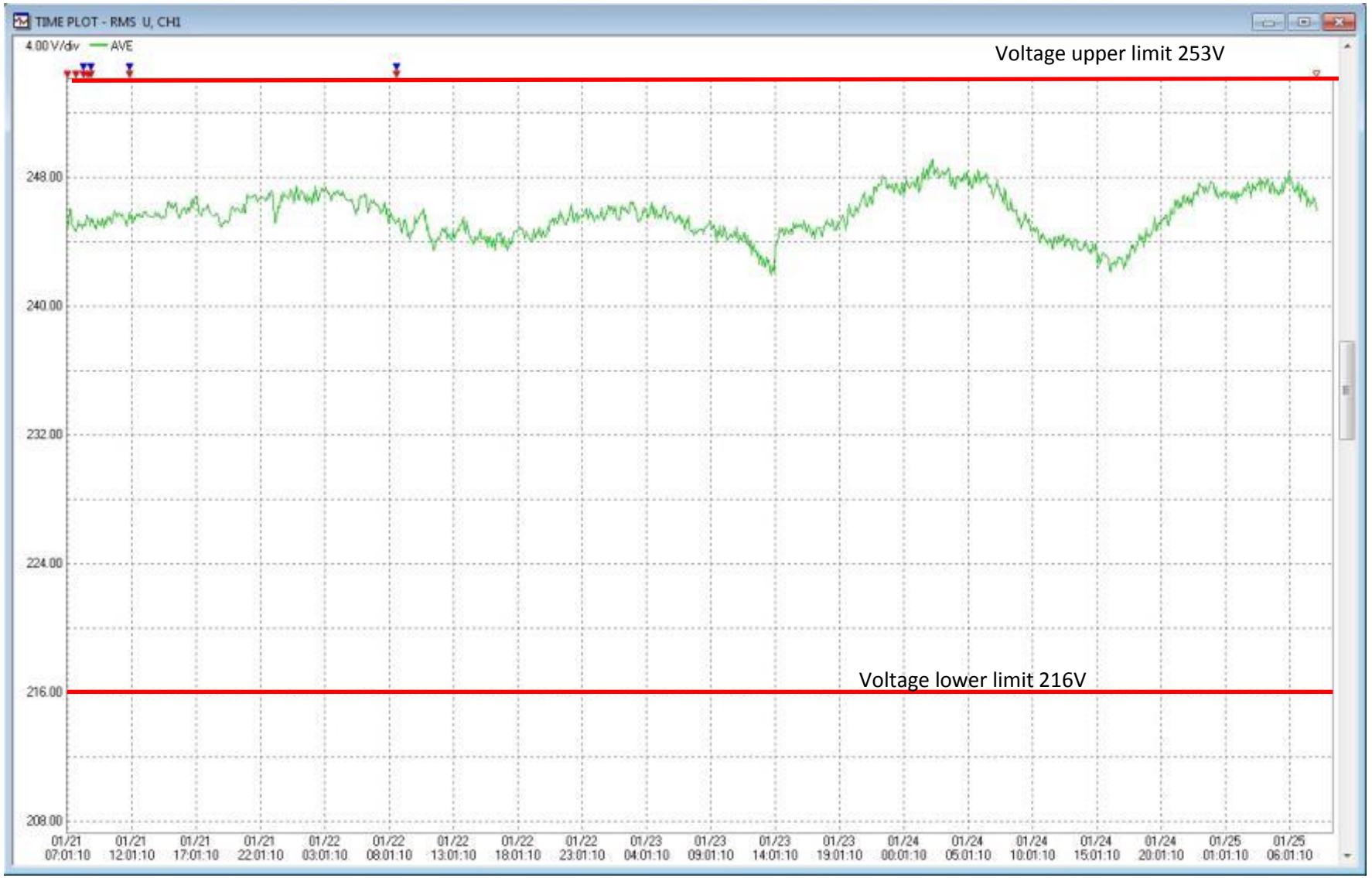
TC4 Start of Feeder PS21 Nimingara 2nd Phase Pst & Plt (17/01/14 – 21/01/14)



TC4 Start of Feeder PS21 Nimingara 3rd Phase Pst & Plt (17/01/14 – 21/01/14)



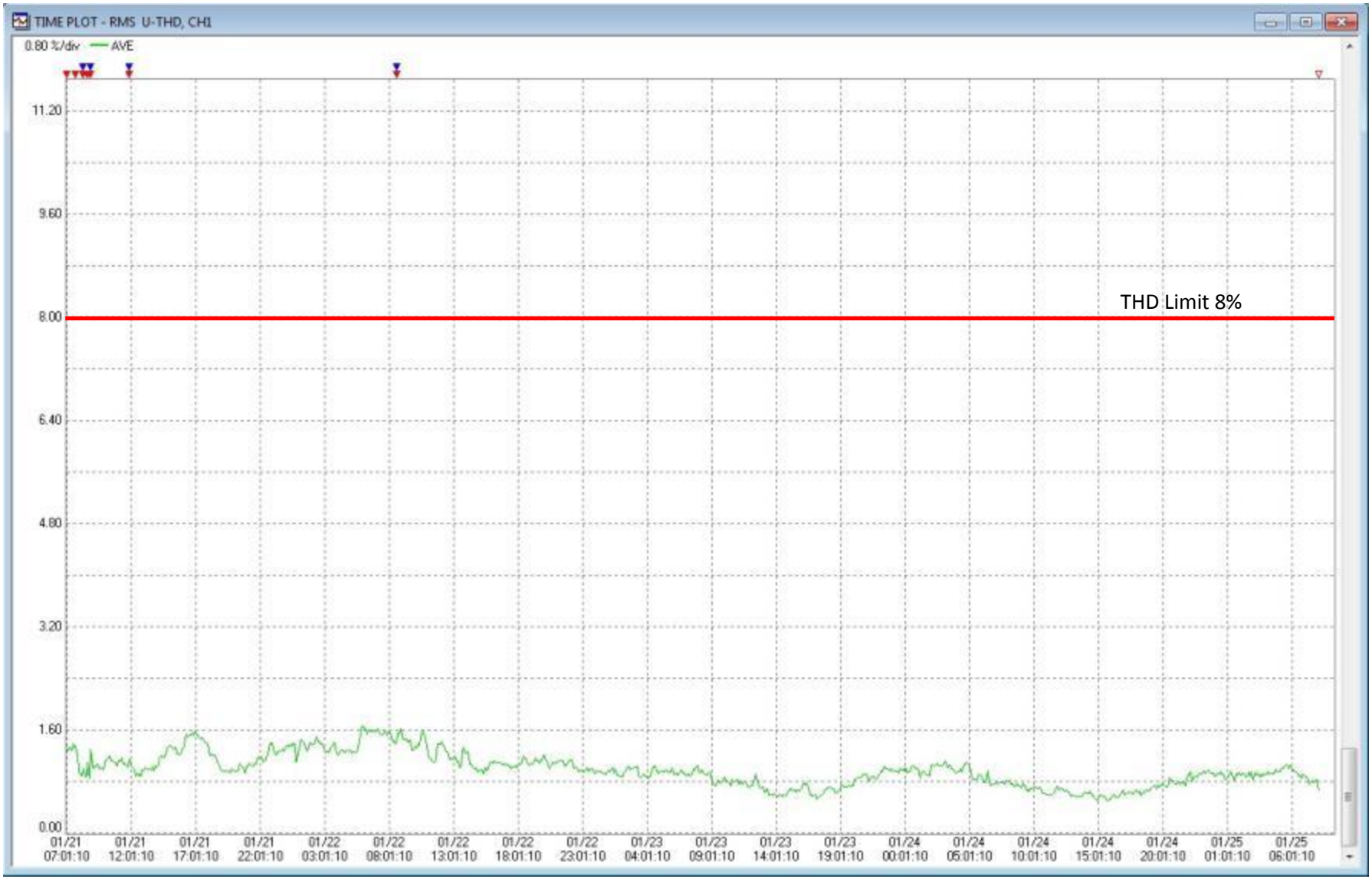
TC4 Start of Feeder PS21 Nimingara 1st Phase Vrms (21/01/14 – 25/01/14)



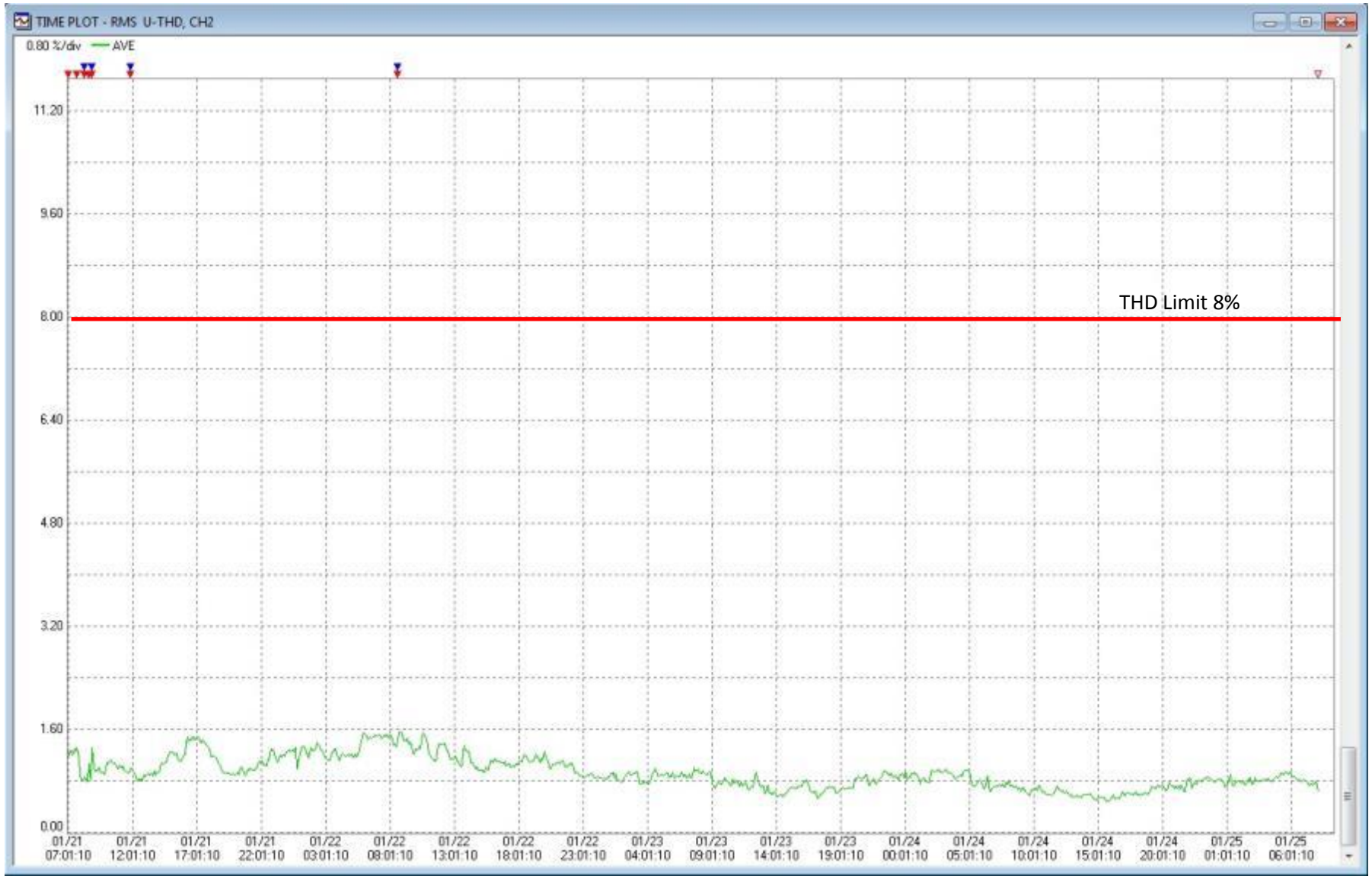
TC4 Start of Feeder PS21 Nimingara 2nd Phase Vrms (21/01/14 – 25/01/14)

TC4 Start of Feeder PS21 Nimingara 3rd Phase Vrms (21/01/14 – 25/01/14)

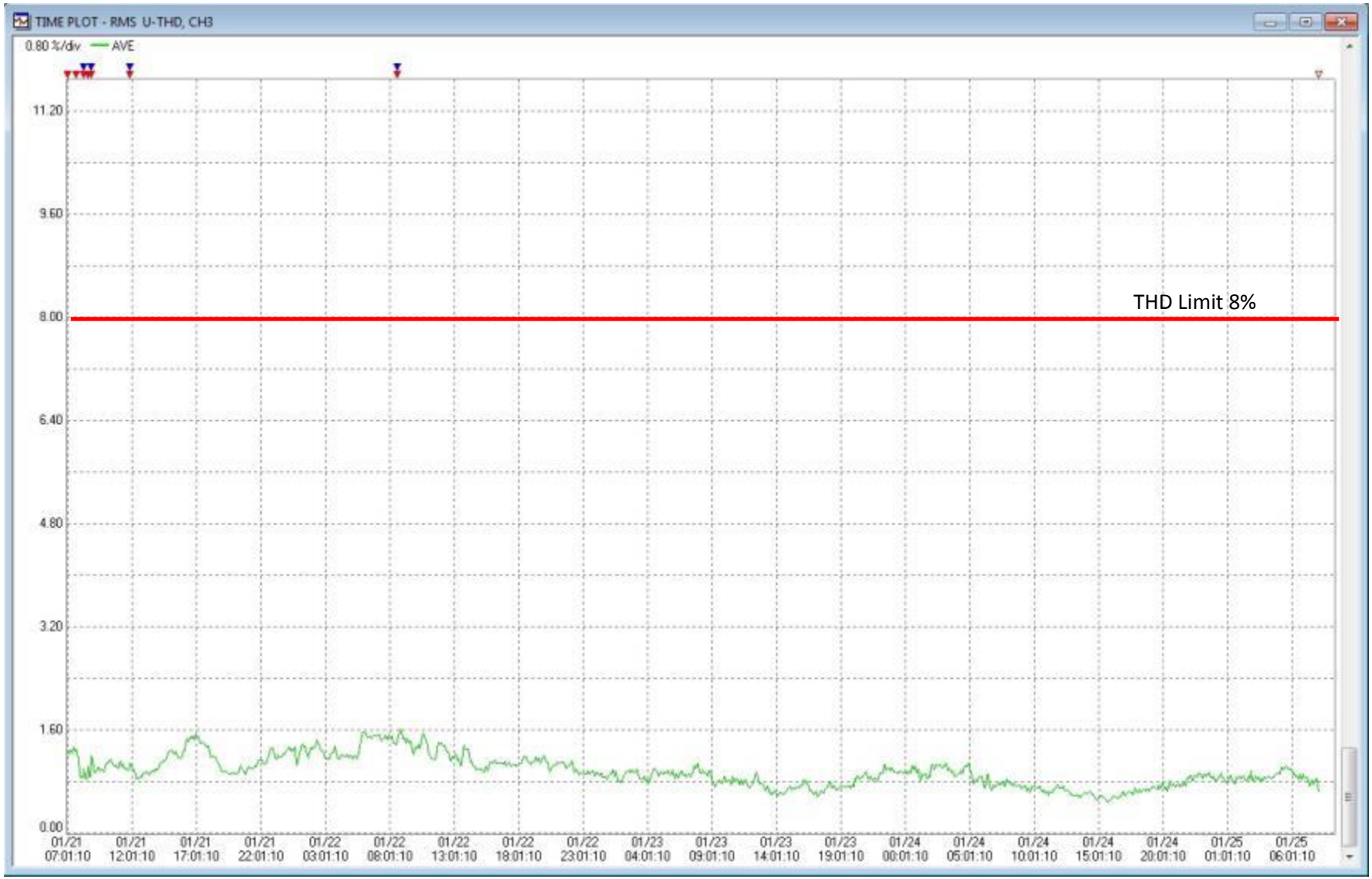
TC4 Start of Feeder PS21 Nimingara 1st Phase Vthd (21/01/14 – 25/01/14)



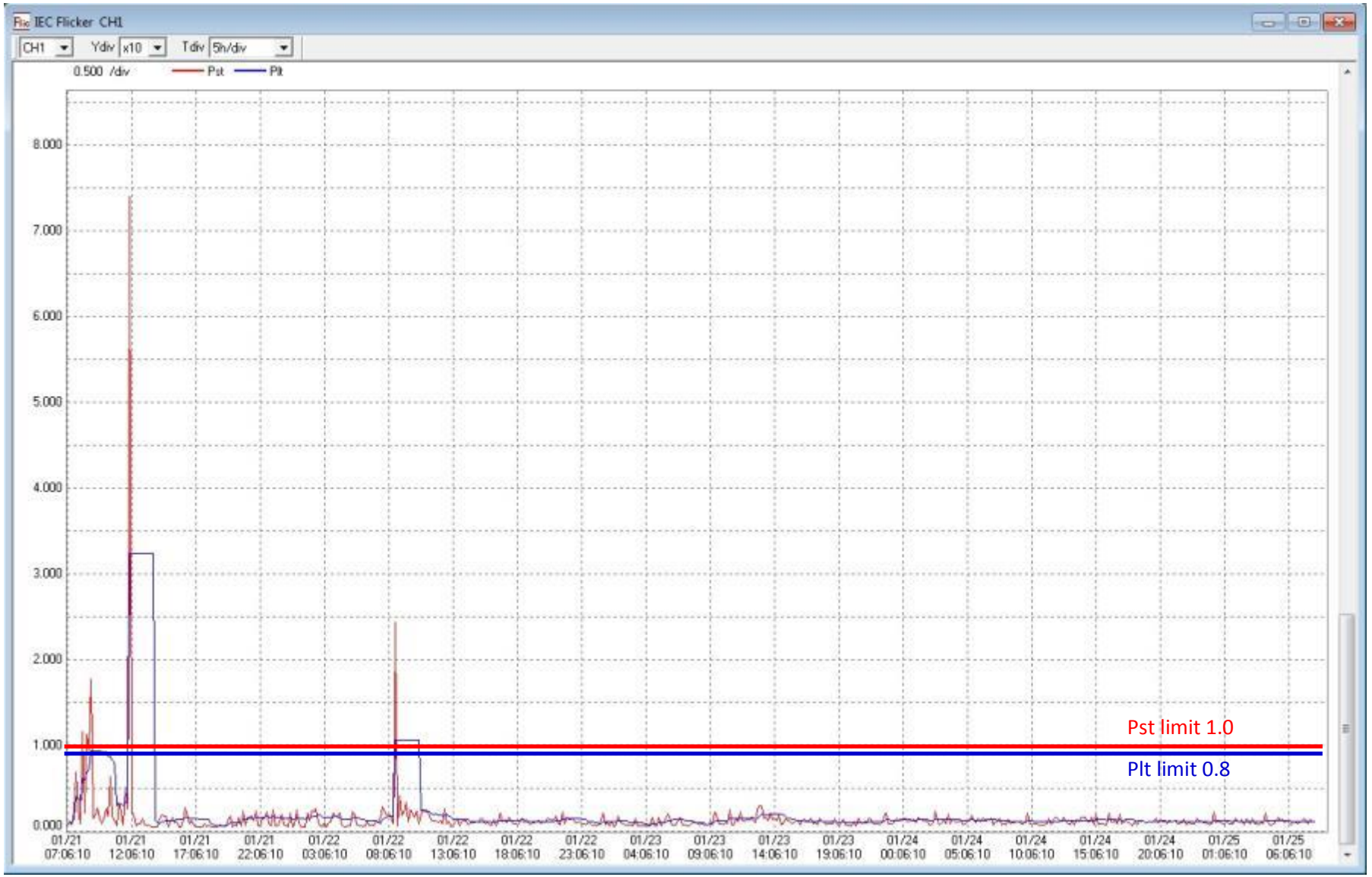
TC4 Start of Feeder PS21 Nimingara 2nd Phase Vthd (21/01/14 – 25/01/14)



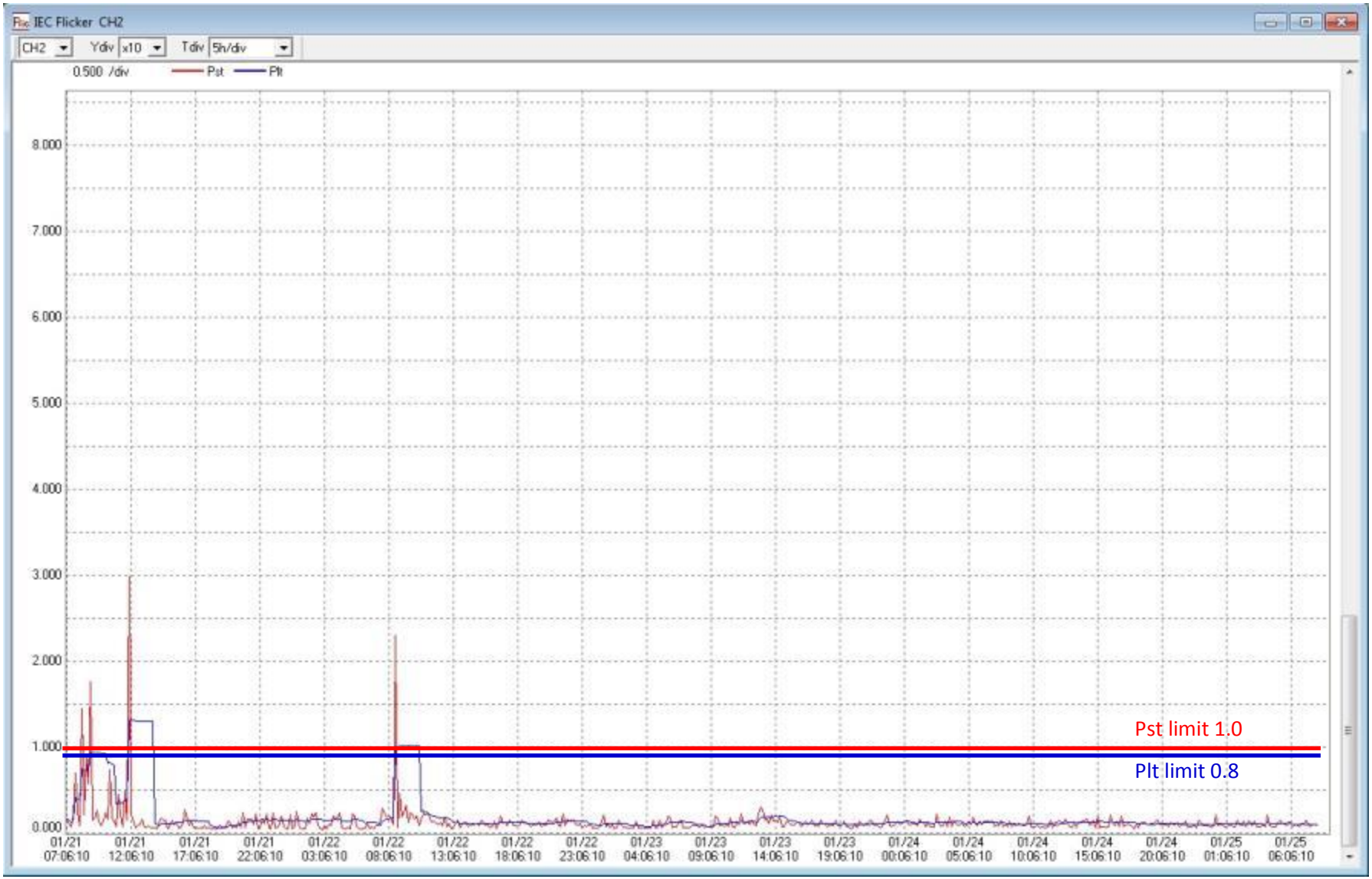
TC4 Start of Feeder PS21 Nimingara 3rd Phase Vthd (21/01/14 – 25/01/14)



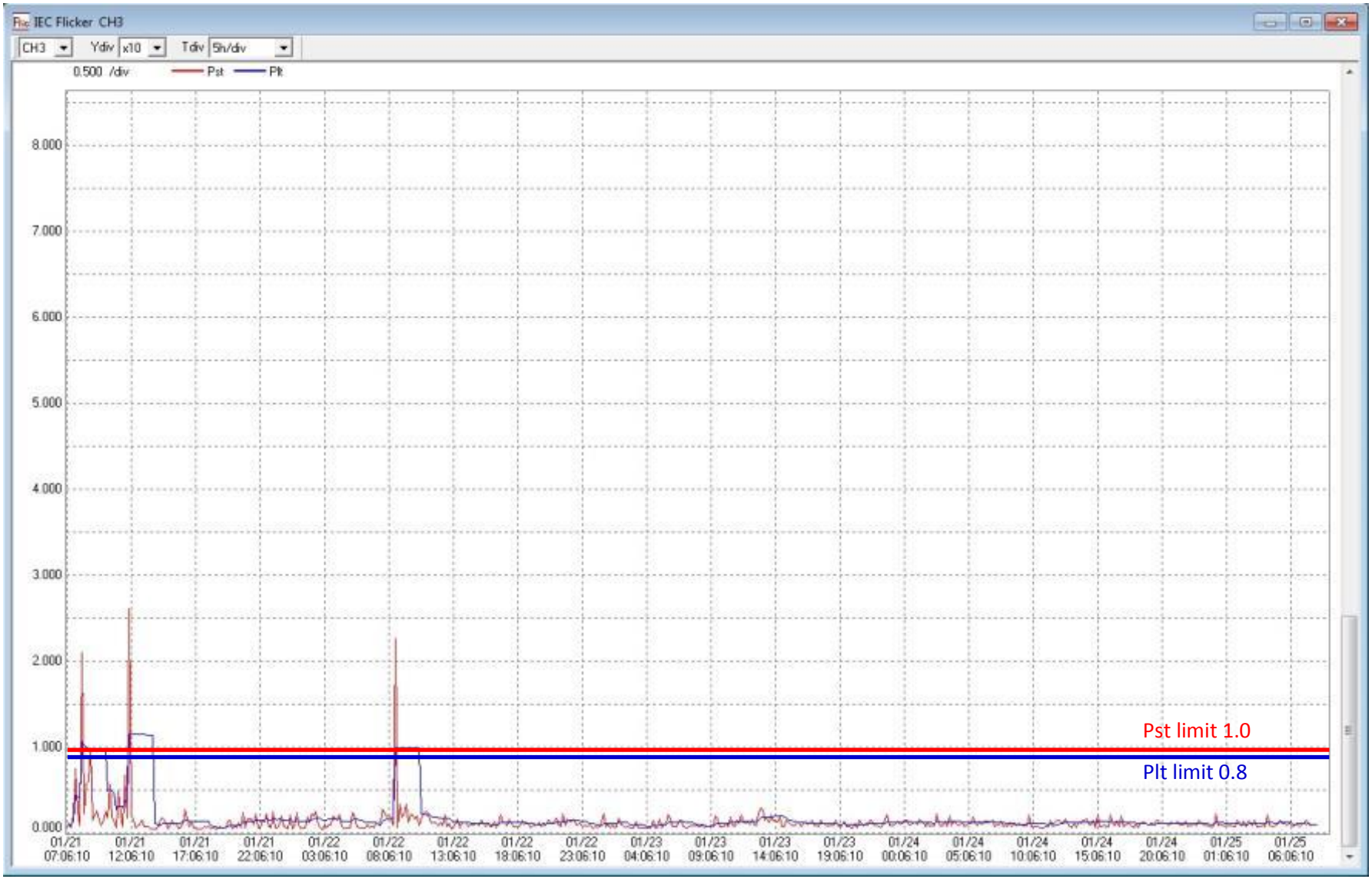
TC4 Start of Feeder PS21 Nimingara 1st Phase Pst & Plt (21/01/14 – 25/01/14)



TC4 Start of Feeder PS21 Nimingara 2nd Phase Pst & Plt (21/01/14 – 25/01/14)



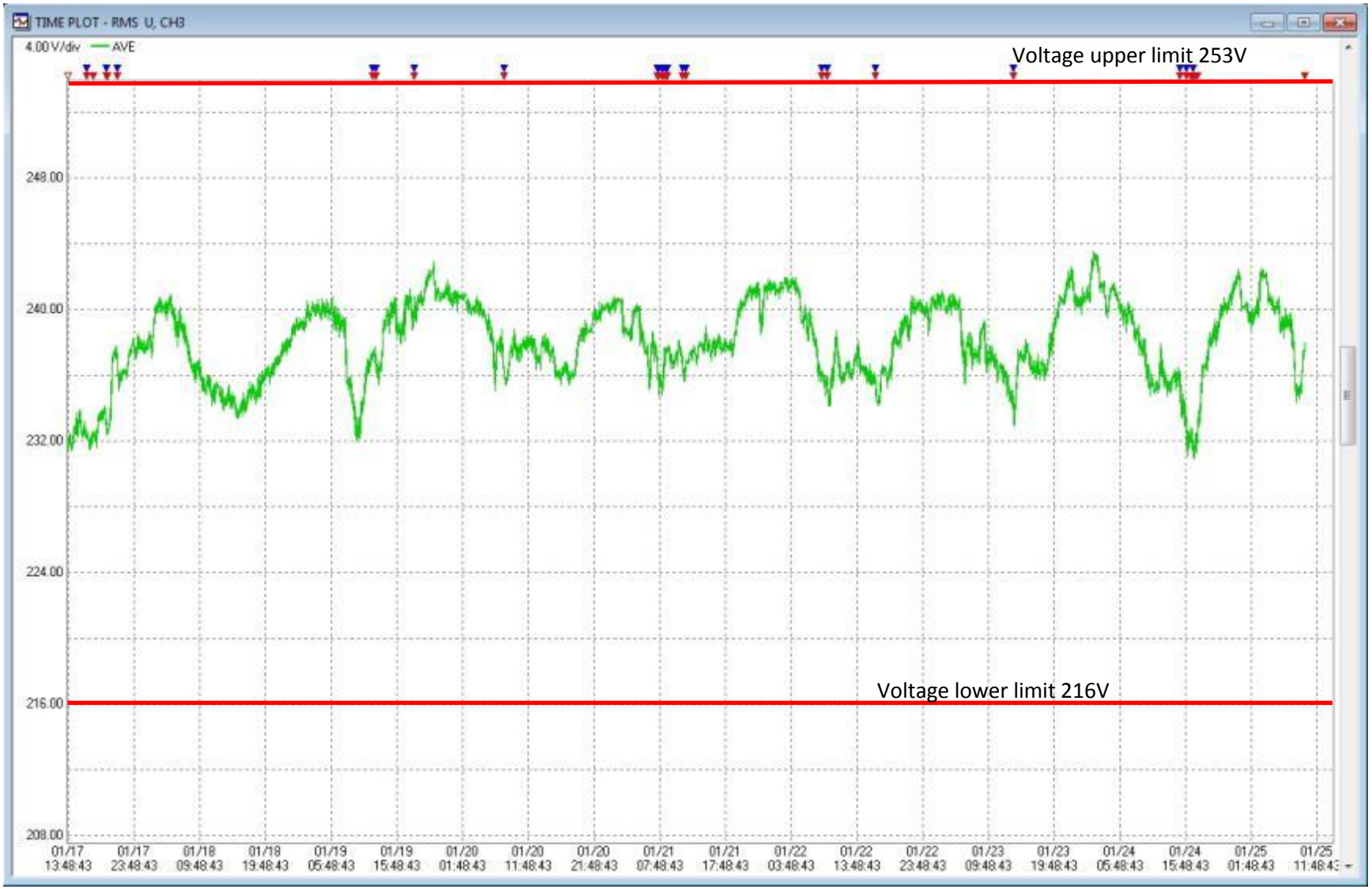
TC4 Start of Feeder PS21 Nimingara 3rd Phase Pst & Plt (21/01/14 – 25/01/14)



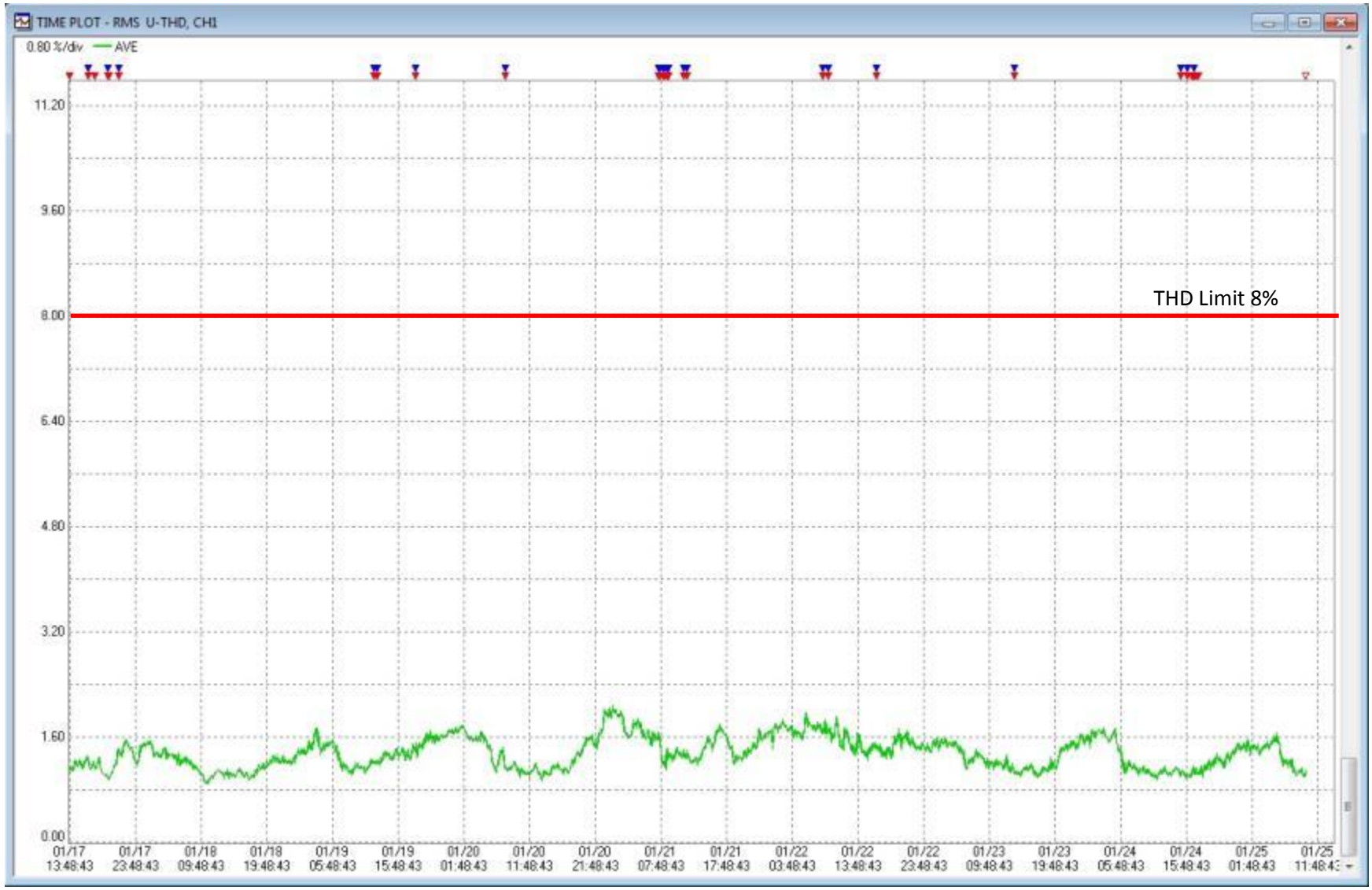
TC4 End of Feeder PS83 Airport 1st Phase Vrms

TC4 End of Feeder PS83 Airport 2nd Phase Vrms

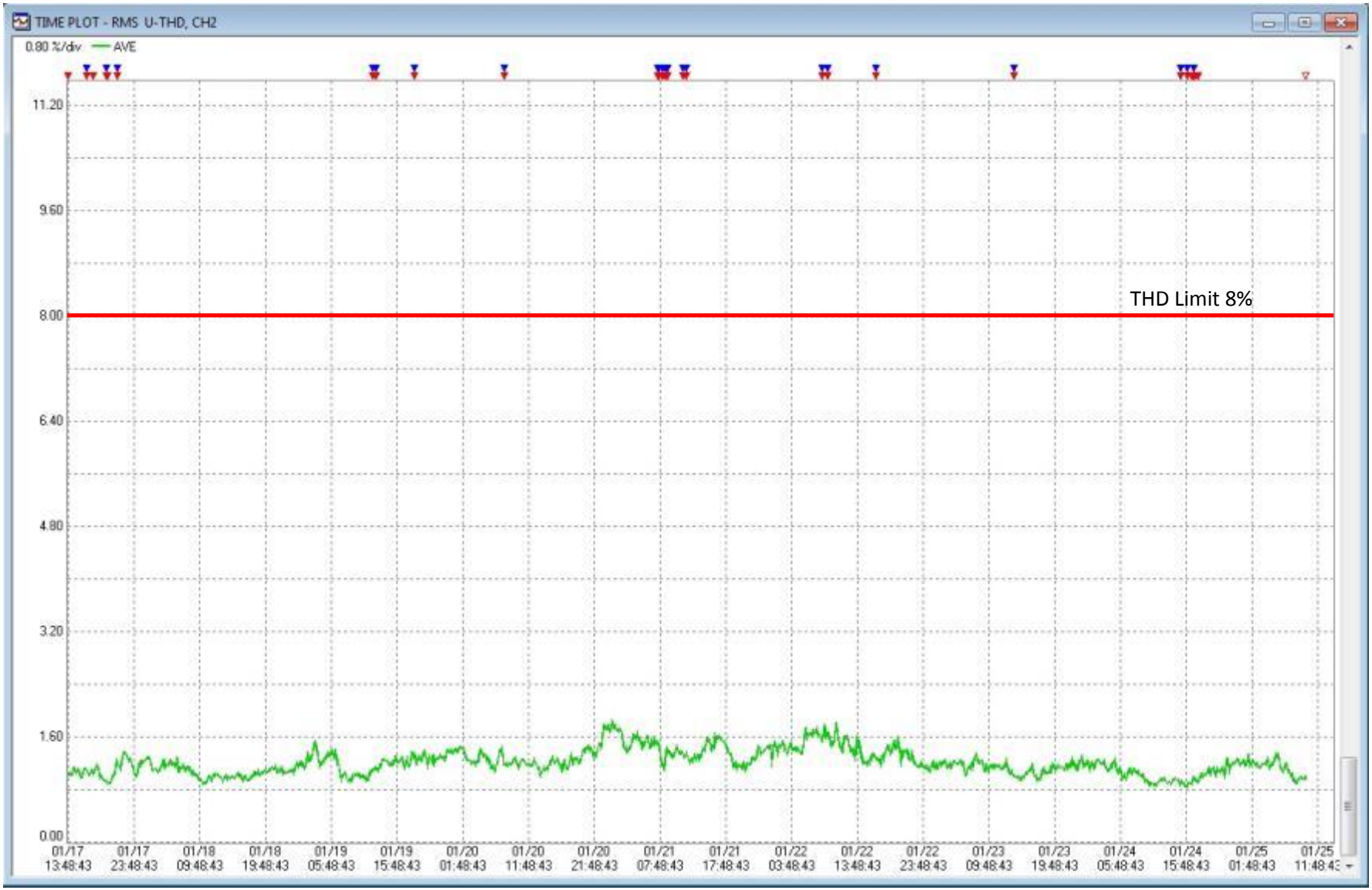
TC4 End of Feeder PS83 Airport 3rd Phase Vrms



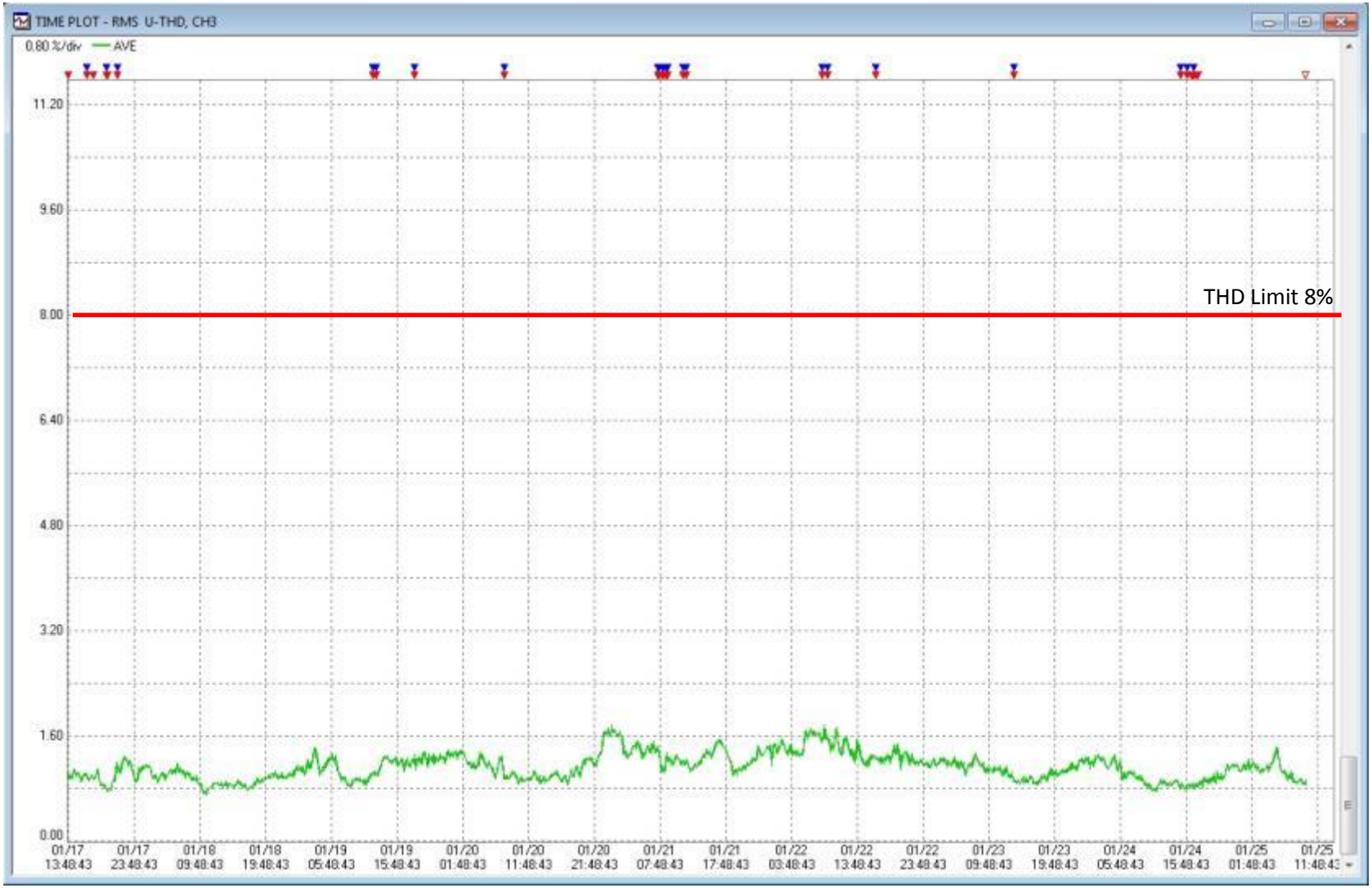
TC4 End of Feeder PS83 Airport 1st Phase Vthd



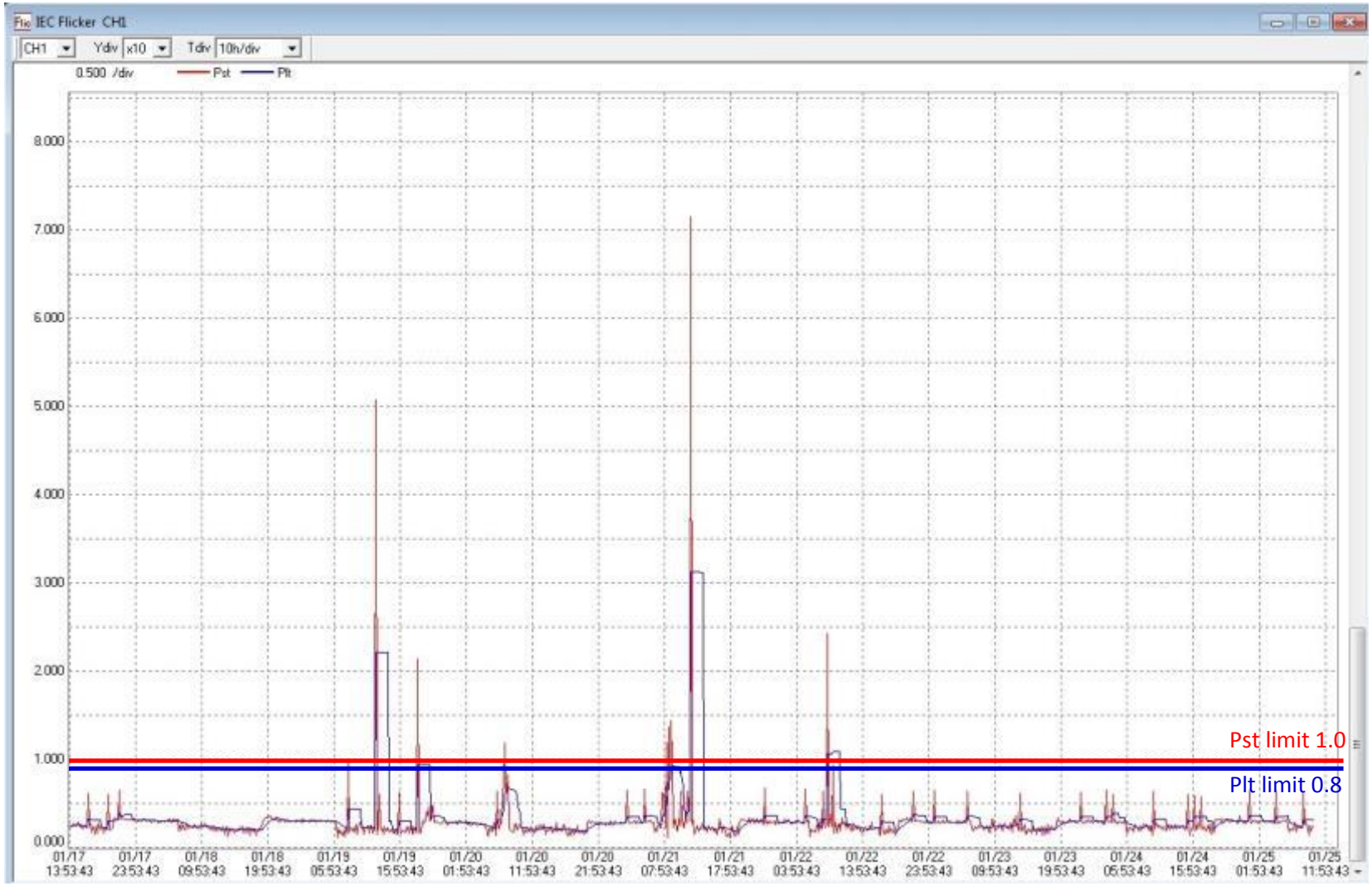
TC4 End of Feeder PS83 Airport 2nd Phase Vthd



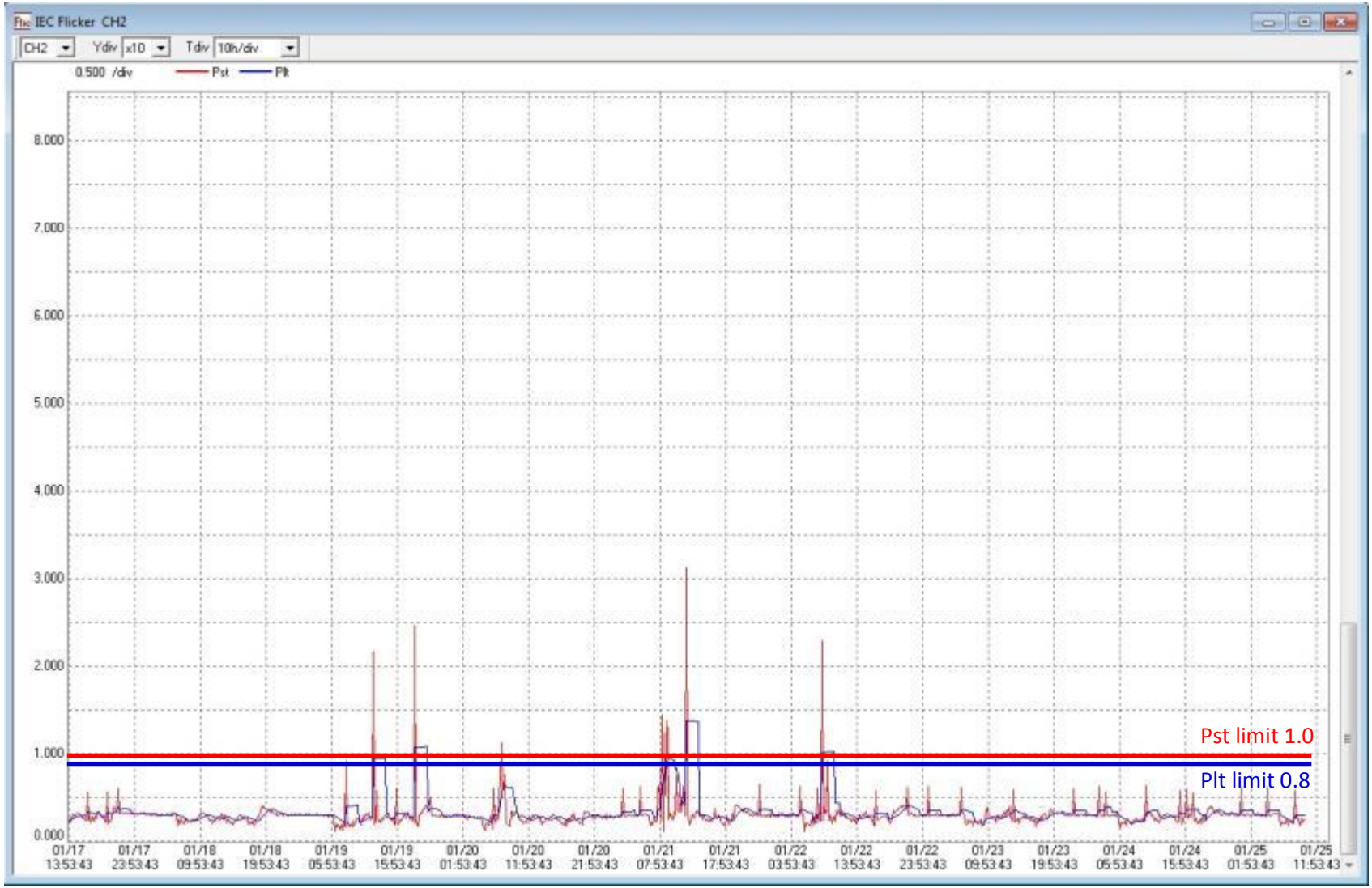
TC4 End of Feeder PS83 Airport 3rd Phase Vthd



TC4 End of Feeder PS83 Airport 1st Phase Pst & Plt



TC4 End of Feeder PS83 Airport 2nd Phase Pst & Plt



TC4 End of Feeder PS83 Airport 3rd Phase Pst & Plt