I-Sense Monitor Report

I-Sense Monitor:	0000-0000-0000
Model:	V3480A00 (Three phase 480V I-Sense monitor)
Location:	Sample Monitor
Report Date:	June 6, 2006
Monitoring Period:	June 7 to September 7, 2005

REPORTING OVERVIEW

This report provides detailed power quality information for one or more I-Sense monitors. Power quality events have been aggregated using a 2 minute time period. Transient events are NOT included in this report. For a more detailed explanation of terms, see Appendix A. This report contains the following sections:

* ***Figure 1*** shows the event overview by remaining RMS voltage and duration.
* ***Figure 2*** displays a monthly summary of each type of event.
* ***Figure 3*** shows the magnitude and duration (MAG-DUR) of all the recorded PQ events in this interval.
* ***Figure 4*** displays the chronology of the event record.
* ***Figure 5*** displays histograms of the event times.
* ***Figure 6*** shows voltage regulation and imbalance.
* ***Figure 7*** shows detailed RMS over the entire reporting period.
* ***Figure 8*** displays an event log for captured PQ events at this site during the specified time period.

MONITORING SUMMARY

A total of 12 significant power quality and power reliability events were recorded during the 4-month monitoring period. Of these, 4 events fell below the ITI/CBEMA curve and would be expected to cause problems with sensitive equipment.

Figure 1: Event Overview (by Remaining RMS Voltage and Duration)

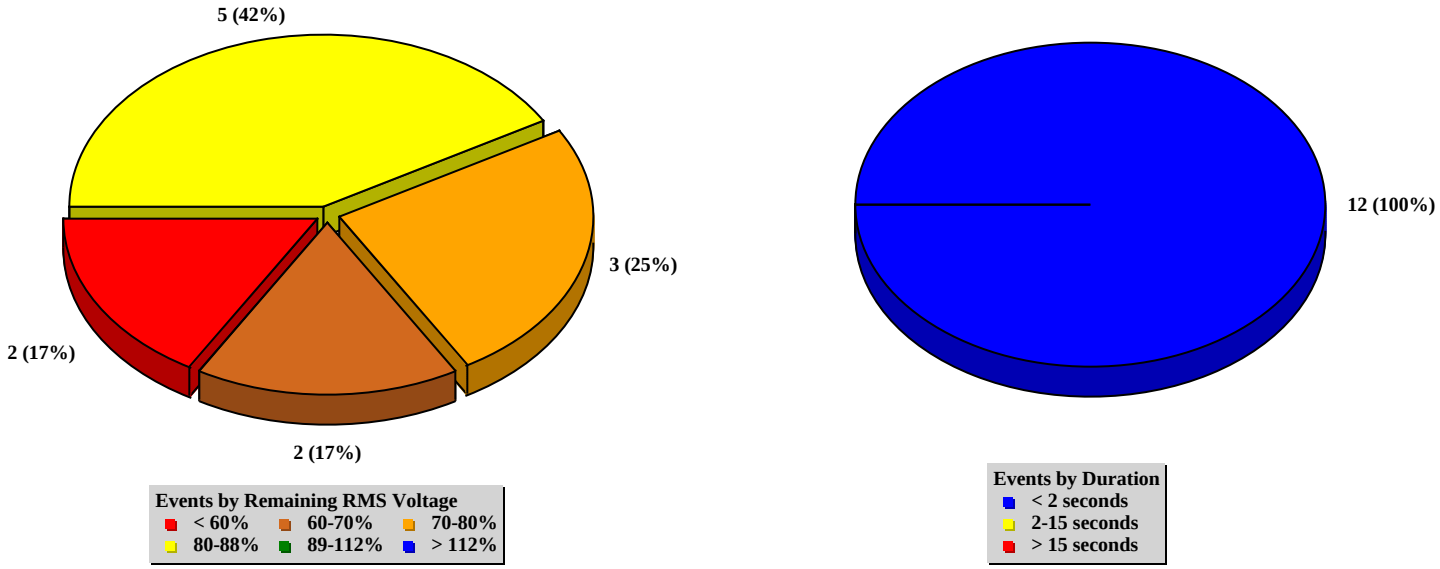

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Figure 2: Monthly Summary of Recorded PQ Events

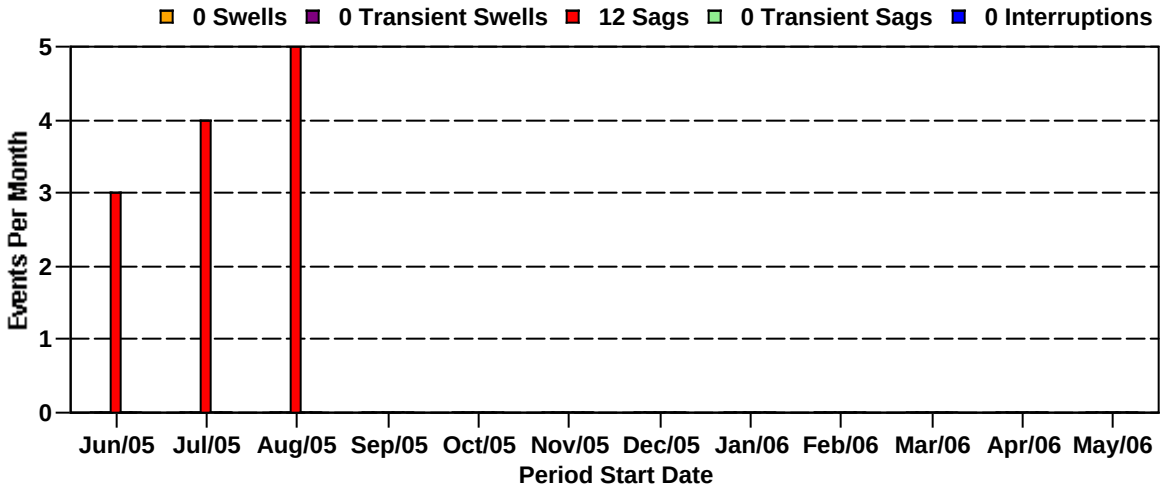
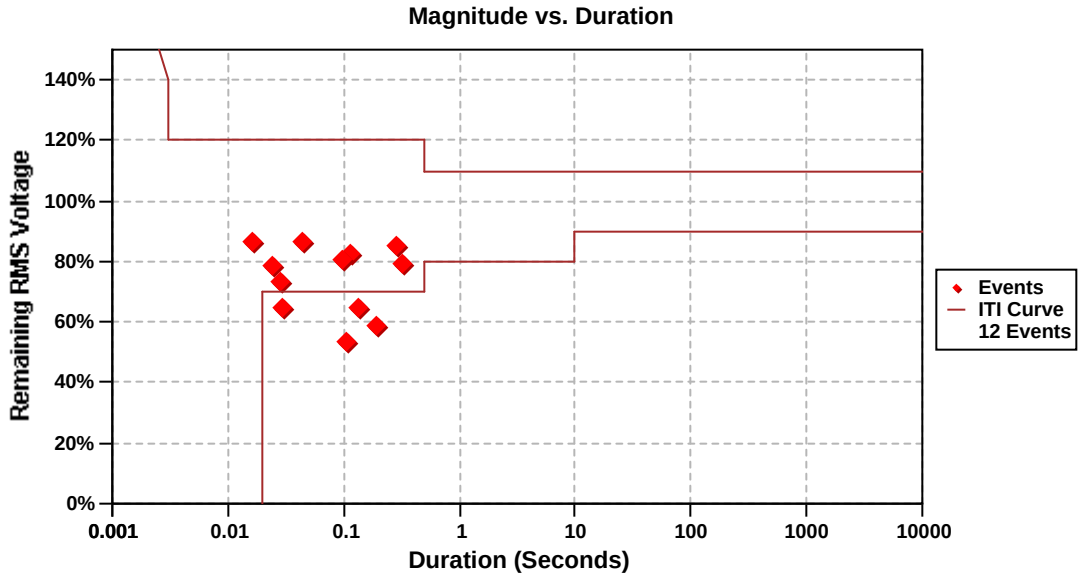


Figure 3: Magnitude Duration Plot of Recorded Events



The ITI/CBEMA curve describes an input voltage envelope that typically can be tolerated by most information technology equipment. Events between the ITI/CBEMA lines on the chart typically do not create problems with a system. Events that are shown outside the ITI/CBEMA curves have a high probability of disrupting the operation of a system.

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Figure 4: Chronology of Events

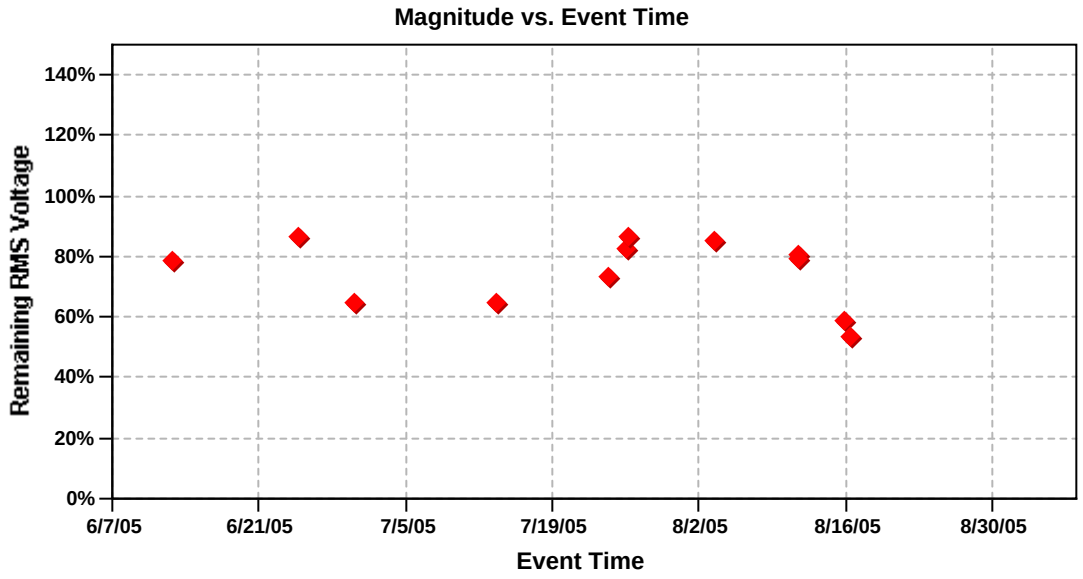


Figure 5: Event Hour of the Day Summary

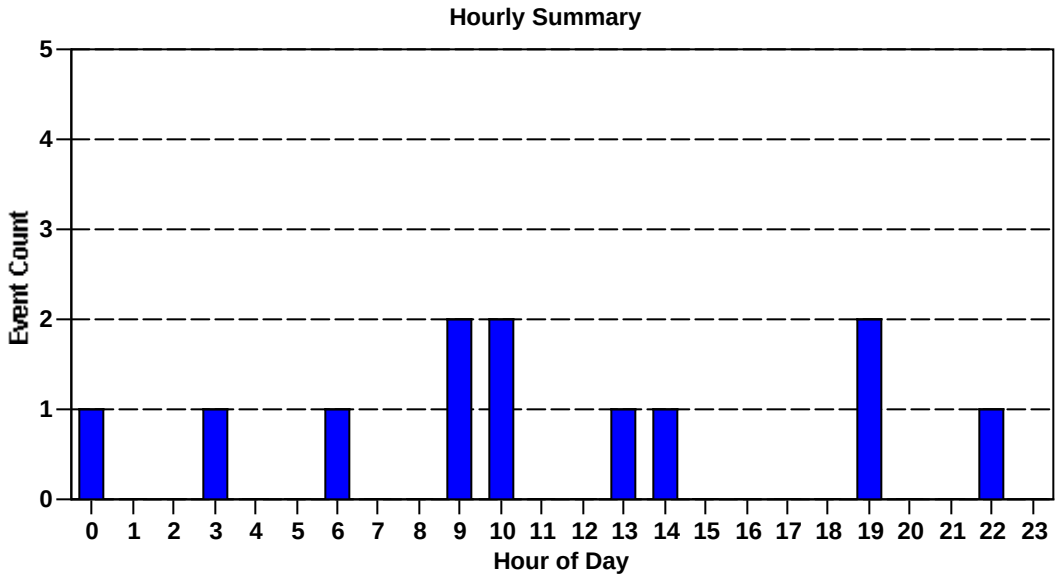


Figure 5: Event Day of the Week Summary

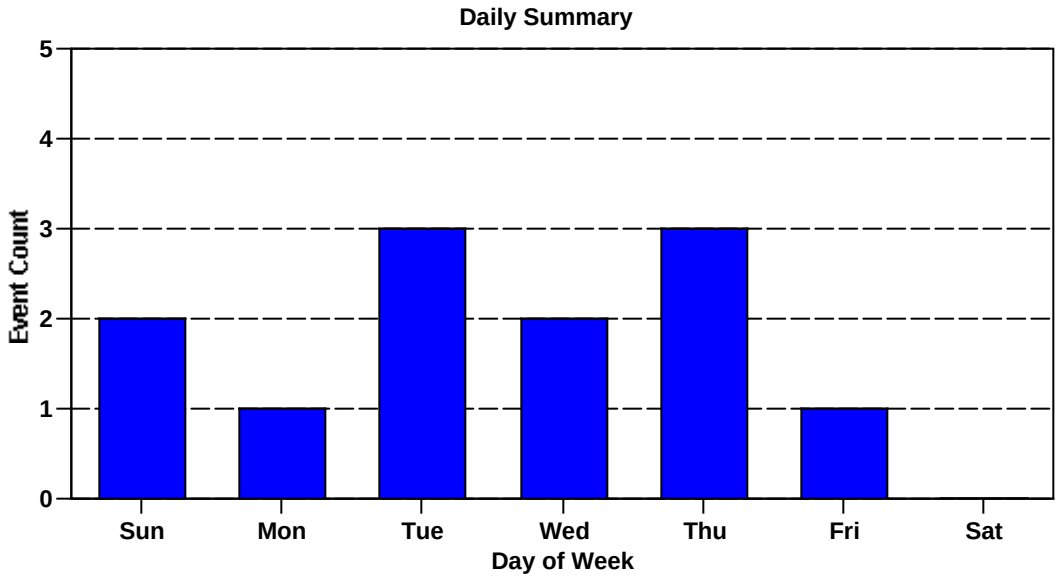


Figure 5: Event Month of the Year Summary

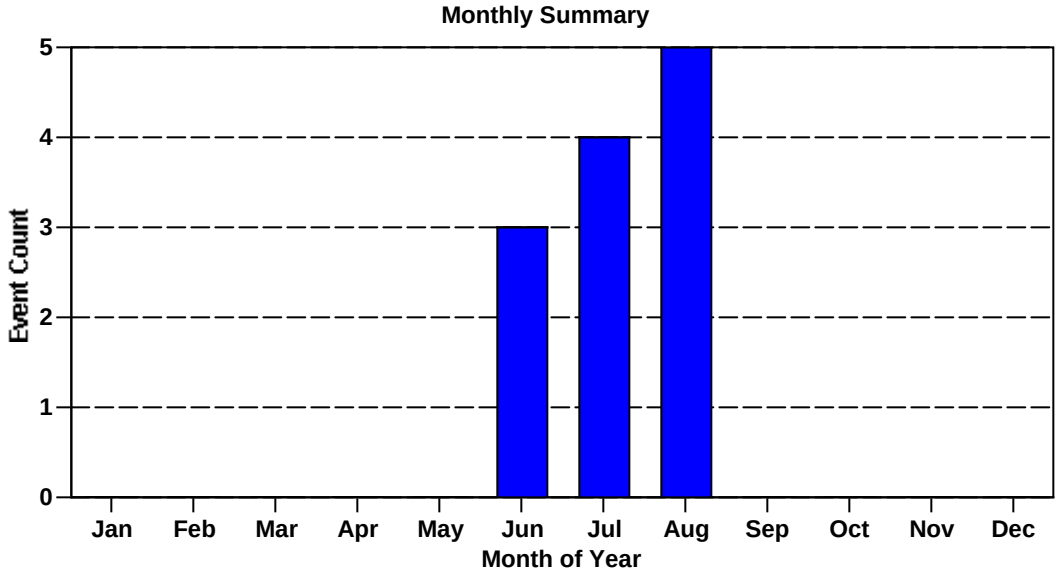
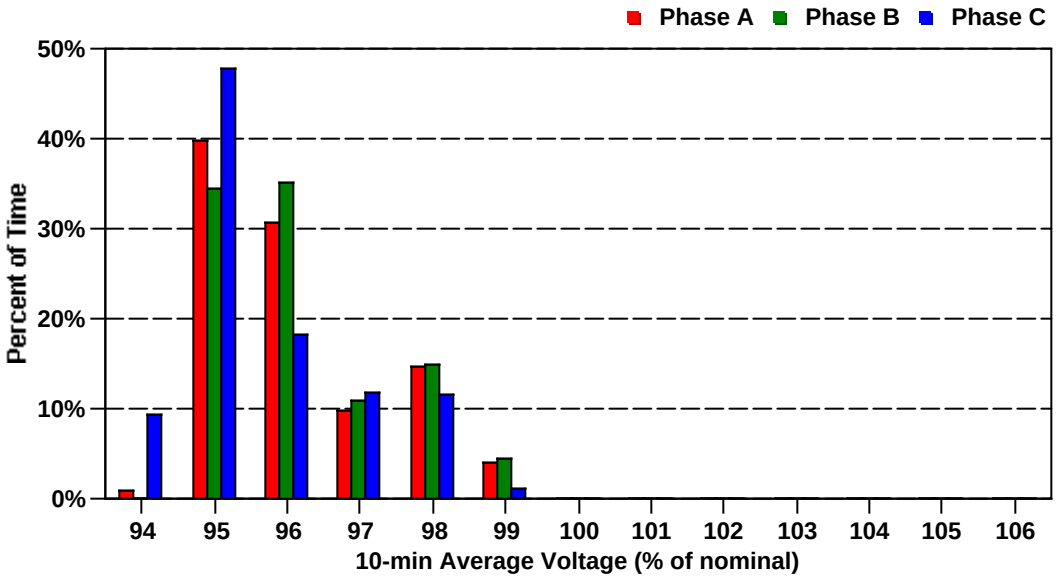


Figure 6.1: Voltage Regulation



Note: Deviations greater than +/-5% from 100% on the above chart may indicate equipment stress.

Note: Depending on equipment type, greater than 1% imbalance (below) may indicate equipment stress.

Figure 6.2: Voltage Imbalance

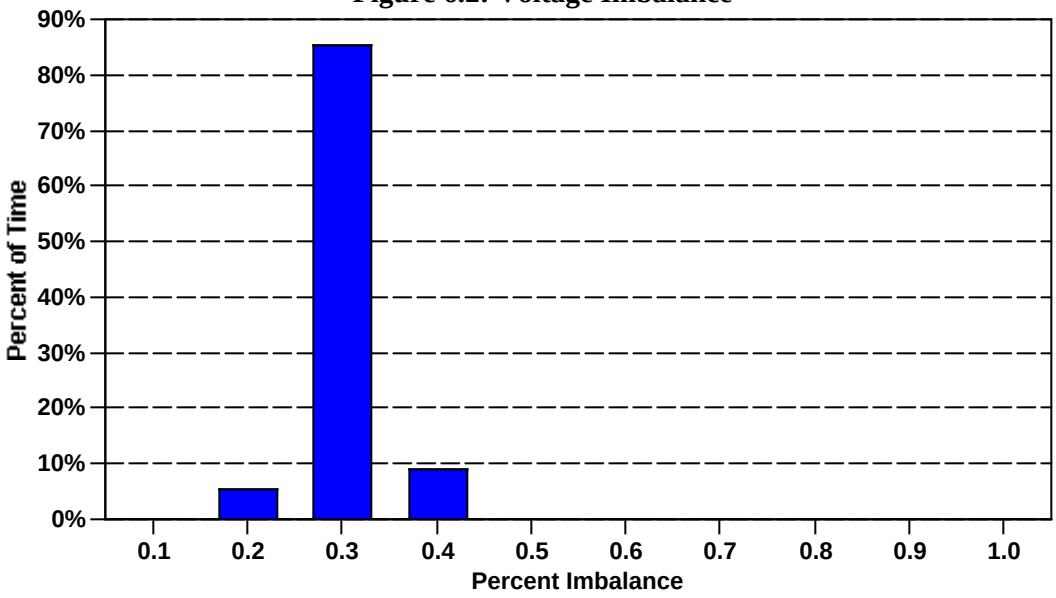


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Figure 7: RMS Voltages

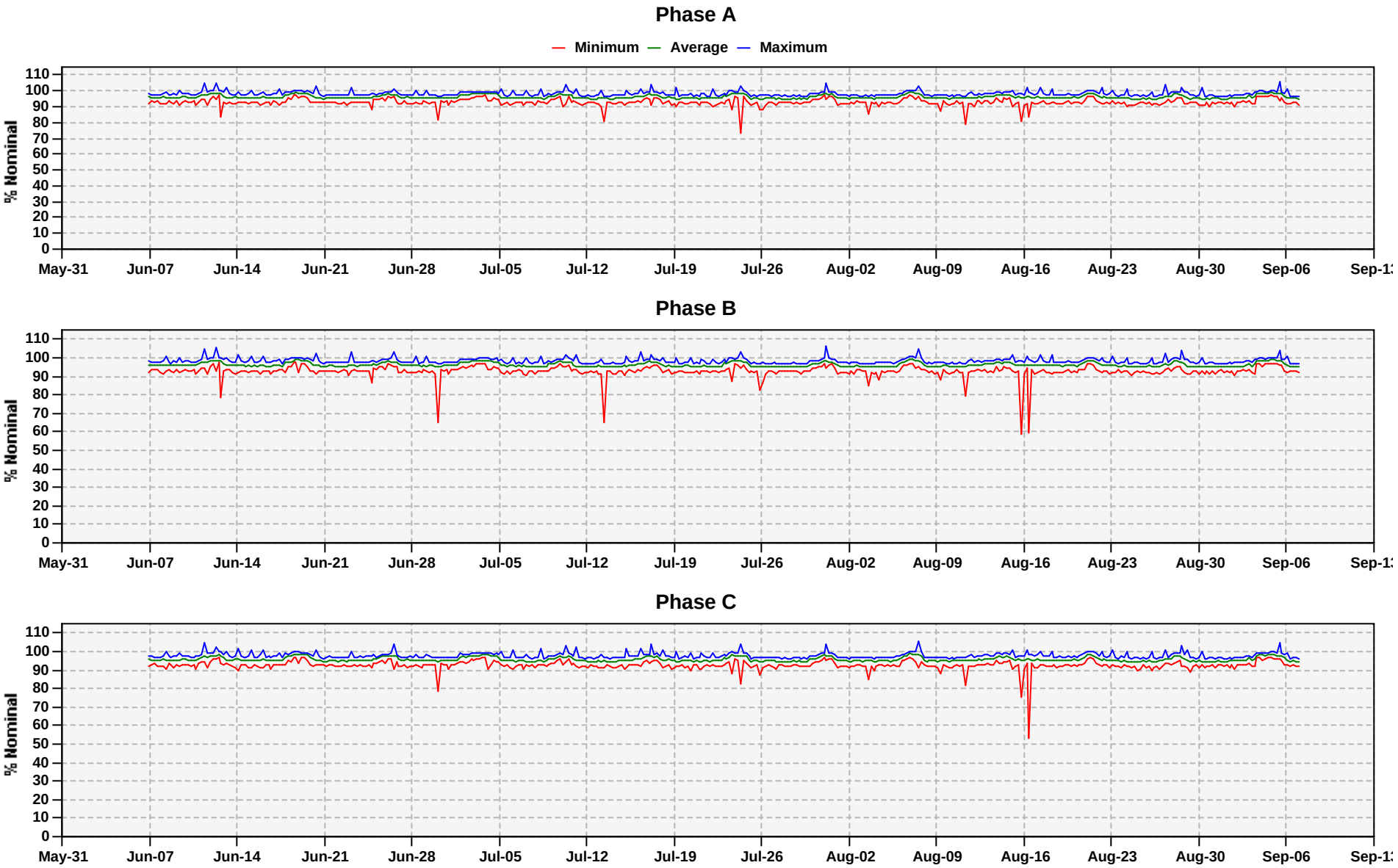

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Figure 8: Event Log (transient events excluded)

Events are listed in ascending order by event time. The Event IDs for aggregate events are denoted with an asterisk (*).

Start Time (CST)	IEEE 1159 STD Classification	RMS%	Duration (seconds)	Outside ITIC?	Grid Event?
6/12/2005 19:21:27	Instantaneous Sag	79%	0.02		Yes
6/24/2005 19:20:38	Instantaneous Sag	86%	0.02		Yes
6/30/2005 3:09:56	Instantaneous Sag	65%	0.14	Yes	Yes
7/13/2005 14:40:22	Instantaneous Sag	65%	0.03	Yes	Yes
7/24/2005 9:53:15	Instantaneous Sag	73%	0.03		Yes
7/26/2005 0:20:10	Instantaneous Sag	82%	0.11		Yes
7/26/2005 6:44:41	Instantaneous Sag	86%	0.04		Yes
8/3/2005 13:02:21	Instantaneous Sag	85%	0.28		Yes
8/11/2005 9:31:02	Instantaneous Sag	81%	0.1		Yes
8/11/2005 10:36:04	Instantaneous Sag	79%	0.32		Yes
8/15/2005 22:11:23	Instantaneous Sag	59%	0.19	Yes	
8/16/2005 10:20:14	Instantaneous Sag	53%	0.1	Yes	Yes

Appendix A: Explanatory Appendix

Event Aggregation: If enabled, events are aggregated using a 2 minute time period. Individual events occuring within 2 minutes of each other are treated as a single aggregate event throughout the report. The aggregate event's remaining RMS voltage and event duration are derived from the *worst event*; the individual event with the lowest remaining RMS voltage.

Transient Events: A transient event is defined as any event with a duration less than .5 cycles, or an event with duration between .5 and 1 cycle and magnitude between 90% and 110% of nominal.

ITI/CBEMA Curve: The ITI/CBEMA curve describes an input voltage envelope that typically can be tolerated by most information technology equipment. Events between the ITI/CBEMA lines on the chart typically do not create problems with a system. Events that are shown outside the ITI/CBEMA curves have a high probability of disrupting the operation of a system.

Semi F47 Curve: The Semi F47 curve describes voltage sag ride-through capability required for equipment used by the semiconductor industry. Events above the F47 line on the chart typically do not cause problems with semiconductor equipment. Events below the F47 line have a high probability of disrupting the operation of semiconductor equipment.

Grid Event: An event is defined as a "Grid Event" if another monitor within a 200 mile radius recorded a similar event inside of a two minute window.

Event Classification: The I-Grid system classifies the severity of a power quality event according to the IEEE 1159 specification,

"IEEE Recommended Practice on Monitoring Electrical Power Quality",
IEEE Standard Number 1159-1995, ISBN 1-5593-7549-3,
available from the IEEE Standards Association,

as extended by IEEE draft proposal 1159.1, and further extended by SoftSwitching in order to fill gaps in the proposed standard.