System Impact Study Report
PID 217 Generation
42 MW Plant
Gulfway 230kV Substation

Prepared by:

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Revision: 1

Rev	Issue Date	Description of Revision	Revised By	Project Manager
0	8/15/2008	Draft for Review	BEF	JDH
1	8/20/2008	Final	BEF	JDH

Objective:

This System Impact Study is the second step of the interconnection process and is based on PID-217 request for interconnection on Entergy's transmission system near the Atlantic Bulk substation. This report is organized in two sections, namely, Section – A, Energy Resource Interconnection Service (ERIS) and when requested, Section – B, Network Resource Interconnection Service (NRIS – Section B).

Scope for the ERIS section (Section – A) includes load flow (steady state) analysis, transient stability analysis and short circuit analysis as defined in FERC orders 2003, 2003A and 2003B. If applicable, the NRIS section (Section – B) contains details of load flow (steady state) analysis only, however, transient stability analysis and short circuit analysis of Section – A are also applicable to Section – B. Additional information on scope for NRIS study would be found in Section – B.

Requestor for PID-217 did request ERIS, however it was determined that a load flow (steady state) analysis was not required because the generator would not be exporting power.

To accommodate this in plant co-generation project PID-217 intends to construct a new switchyard, named Gulfway, configured with a five breaker ring bus and will include facilities for two 230kV interconnections with Total's new 230/69kV substation (Substation AA); 230kV Transmission line L-499 (VFW Park to Hanks) will be cut in/out to the new station; and a third 230kV line will be installed between Sabine to the new Gulfway substation.

The proposed in-service date for this facility is October 1, 2009

TABLE OF CONTENTS FOR ERIS

I. Introduction

This Energy Resource Interconnection Service (ERIS) is based on PID-217 **(42 MW)** request for interconnection on Entergy's transmission system near the Atlantic Bulk substation. The objective of this study is to assess the reliability impact of the new facility on the Entergy transmission system with respect to the steady state and transient stability performance of the system as well as its effects on the system's existing short circuit current capability. It is also intended to determine whether the transmission system meets standards established by NERC Reliability Standards and Entergy's planning criteria and guidelines when the plant is connected to Entergy's transmission system. If not, transmission improvements will be identified.

A short circuit analysis is performed to determine whether the generation would cause the available fault current to surpass the fault duty of existing equipment within the Entergy transmission system. A transient stability analysis was conducted to determine whether the new units would cause a stability problem on the Entergy system.

This ERIS System Impact Study was based on information provided by PID-217 and assumptions made by Southwest Power Pool, Independent Coordinator of Transmission (SPP ICT). All supplied information and assumptions are documented in this report. If the actual equipment installed is different from the supplied information or the assumptions made, the results outlined in this report are subject to change.

Any load flow results from the ERIS study are for information only. ERIS does not in and of itself convey any transmission service.

II. Short Circuit Analysis/ Breaker Rating Analysis

A. Model Information

The short circuit analysis was performed on the Entergy system short circuit model using ASPEN software. This model includes all generators interconnected to the Entergy system or interconnected to an adjacent system and having an impact on this interconnection request, IPP's with signed IOAs, and approved future transmission projects on the Entergy transmission system including the proposed PID-217 unit.

B. Short Circuit Analysis

The method used to determine if any short circuit problems would be caused by the addition of the PID-217 generation is as follows:

1. Three phase and single phase to ground faults were simulated on the Entergy base case short circuit model and the worst case short circuit level was determined at each station. The PID-217 generator was then modeled in the base case to generate a revised short circuit model. The base case short circuit results were then compared with the results from the revised model to identify any breakers that were under-rated as a result of additional short circuit contribution from PID-217 generation. The breakers identified to be upgraded through this comparison are *mandatory* upgrades.

C. Analysis Results

The results of the short circuit analysis, including priors PID's 206,207,208,210,211,213,215 and 216 indicates that the additional generation due to PID-217 generators does cause an increase in short circuit current such that they exceed the fault interrupting capability of the high voltage circuit breakers within the vicinity of the proposed generation. Also, when studied with no generation interconnection queue priors in service, there were breakers identified as being underrated due to the added fault current from the PID-217 generator.

Table I illustrates the station name, worst case fault level, and the number of breakers that were found to be under-rated at the respective locations as a result of the additional short circuit current due to PID-217 generator and includes no priors.

Table I: Underrated Breakers Without Priors

Substation	Breaker	Max Fault w/o PID-217 (amps)	Max Fault with PID-217 (amps)	Interrupting Rating (amps)
SABINE 230kV Bus# 334434	13180-C	49099.0	50547.4	50204.4
	13185-C	49099.0	50547.4	50204.4
	13190-C	49099.0	50547.4	50204.4
	13195-C	49099.0	50547.4	50204.4
	13200-C	49099.0	50547.4	50204.4
	13255-C	49099.0	50547.4	50204.4
	13265-C	49099.0	50547.4	50204.4

D. Problem Resolution

Table II illustrates the station name, and the cost associated with upgrading the breakers at each station both for mandatory and optional breaker upgrades with Priors and without Priors.

Table II: Breaker Upgrade Costs without Priors

Substation	Number of Breakers	Estimated cost of Breaker Upgrades ($)
SABINE 230kV	7	*$2,342,900

* Price based on 245kV breaker with 63kA interrupt rating.

The impact on breaker rating due to line upgrades will be evaluated during facilities study phase.

The results of the short circuit analysis are subject to change. They are based upon the current configuration of the Entergy transmission system and Generation Interconnection Study queue.

III. Transient Stability Analysis

A. Transient Stability Analysis Methodology

Using Planning Standards approved by NERC, the following stability definition was applied in the Transient Stability Analysis:

"Power system stability is defined as that condition in which the differences of the angular positions of synchronous machine rotors become constant following an aperiodic system disturbance."

Stability analysis was performed using Siemens-PTI's PSS/E^{TM} dynamics program V29.4.0. Three-phase (3PH) normally cleared and three-phase stuck breaker faults were simulated for the specified durations and the synchronous machine rotor angles were monitored to make sure they maintained synchronism following the fault removal. Stability of asynchronous machines was monitored as well.

The stability analysis was performed using the PSS/E dynamics program, which only simulates the positive sequence network. Unbalanced faults involve the positive, negative, and zero sequence networks. For unbalanced faults, the equivalent fault admittance must be inserted in the PSS/E positive sequence model between the faulted bus and ground to simulate the effect of the negative and zero sequence networks. For a single-line-to-ground (SLG) fault, the fault admittance equals the inverse of the sum of the positive, negative and zero sequence Thevenin impedances at the faulted bus. Since PSS/E inherently models the positive sequence fault impedance, the sum of the negative and zero sequence Thevenin impedances needs to be added and entered as the fault impedance at the faulted bus.

The single-line-to-ground (SLG) fault impedance was computed to give a positive sequence voltage at the fault location of approximately 60% of pre-fault voltage, which is a typical value.

For three-phase faults, a fault admittance of –j2E9 is used (essentially infinite admittance or zero impedance).

B. Model Information

When the Transient Stability Analysis for PID-217 was performed the most realistic model available for the Entergy system was 2015 summer peak load conditions. Beyond the year 2015, the models will involve a number of uncertain projects and upgrades. Hence, the dynamic database representing 2015 summer peak load conditions was used in this analysis. The analysis was carried out on the power flow case without the upgrades identified for PID-217 in either the Power Flow or Short-Circuit analysis. The reason for not including the upgrades identified in the Power Flow and Short Circuit analysis was, if the system was stable without the required upgrades the system performance would only improve with the upgrades. Figure 1V-1 shows the current configuration of the new Gulfway Switching Station (SS). Figure 1V-2 illustrates the changes implemented to the 2015 power flow case to connect the two 230/69kV transformers, the 69/13.8 transformer and the generator into the new Gulfway SS.

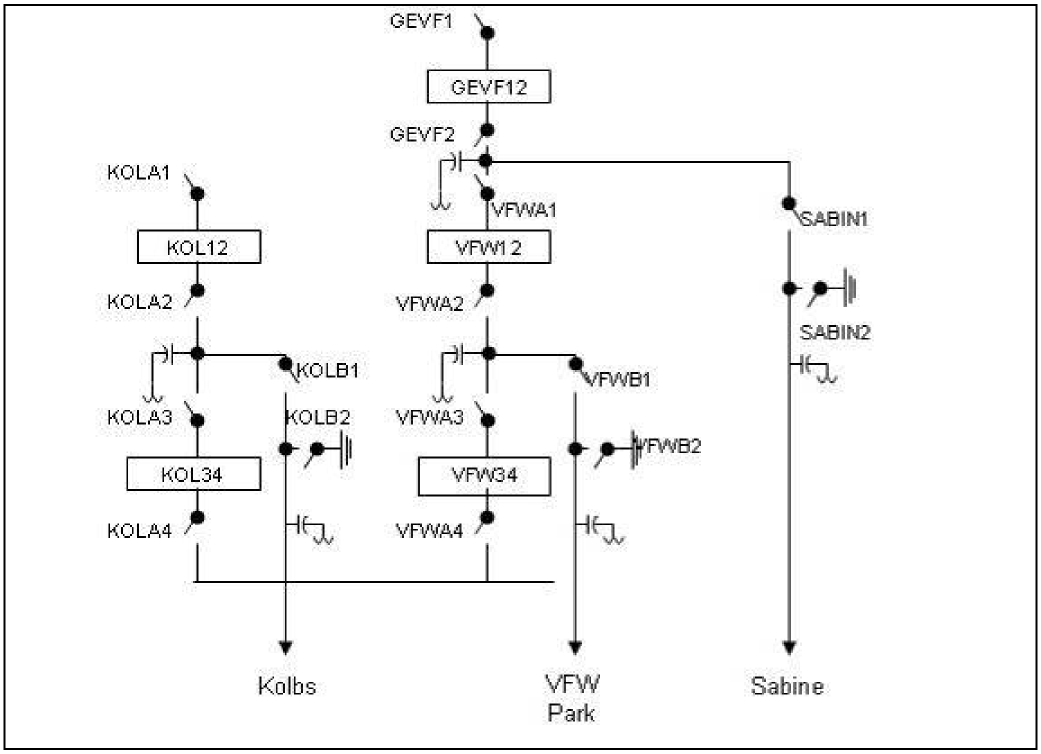


Figure 1V-1: Transmission configuration at Gulfway 230kV without PID-217.

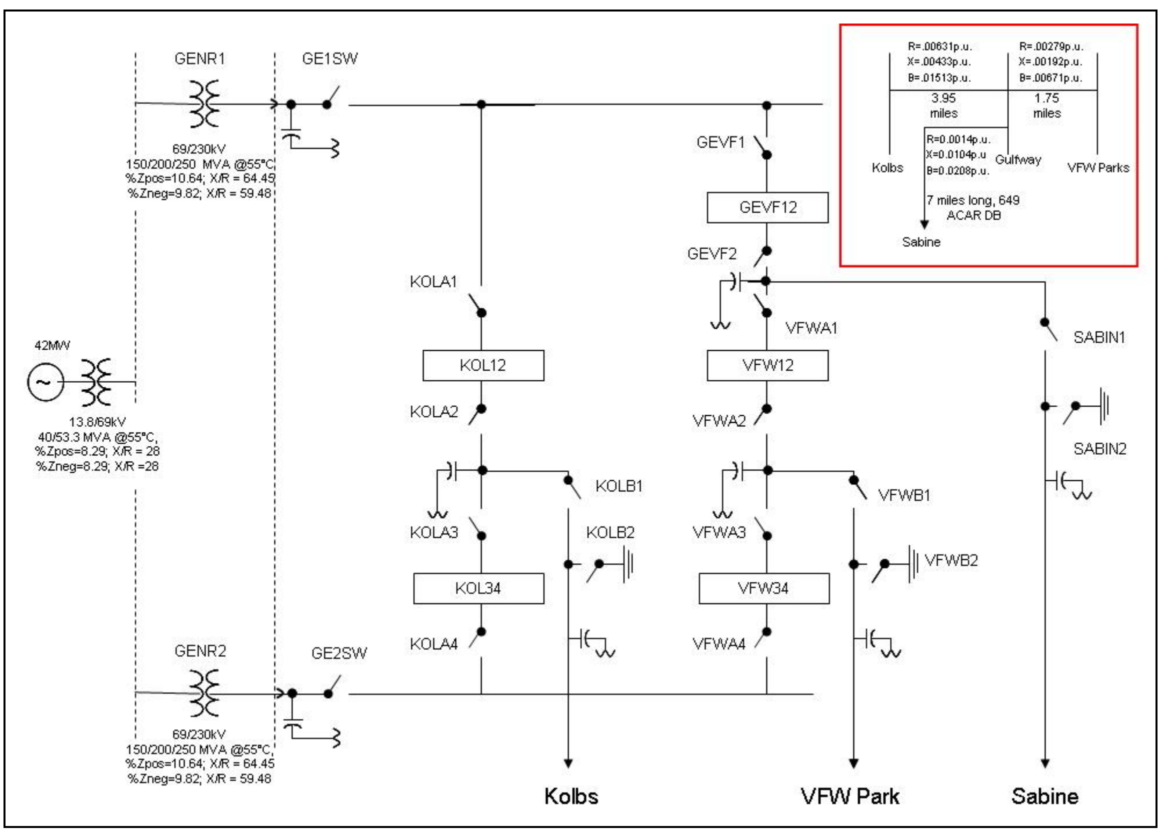


Figure 1V-2: Transmission line configuration at Gulfway 230 kV with PID-217.

The new PID-217 generation (existing generation being moved from Entergy's 69kV system and added to the 230kV system) was added to the model via a new 230/69kV interconnection at the New Gulfway S.E.S 230 kV bus. The new Gulfway Switching Station (SS) was added to the model 3.95 miles from Kolbs/Hanks SS and 1.75 miles from VFW Park SS. A line was then added to the model from the new Gulfway SS to Sabine (7 miles). Refer to Figure V1-3 for System Area Study diagram. The stability studies were conducted to assess the impact of PID-217 injecting 42 MW of power into Entergy's system. The loads in the Entergy system were represented as follows: for the active part, 100% was modeled with a constant current model; all of the reactive part was modeled with a constant impedance model.

PID-217 provided dynamic models of their generation equipment for use in this study. The generators were modeled using the standard PSS/E **GENROU** model.

PID-217 also provided data for the excitation system. The data for the PID-217 gas turbine excitation system was modeled using the PSS/E **ESST4B** model. PID-217 provided the data for the turbine-governor controls. The gas turbine generator governor model was modeled using the PSS/E **GGOV1** model. The data used for the proposed PID-217 generator, exciter, and governor models are shown in **Appendix A.A.**

SYSTEM STUDY AREA

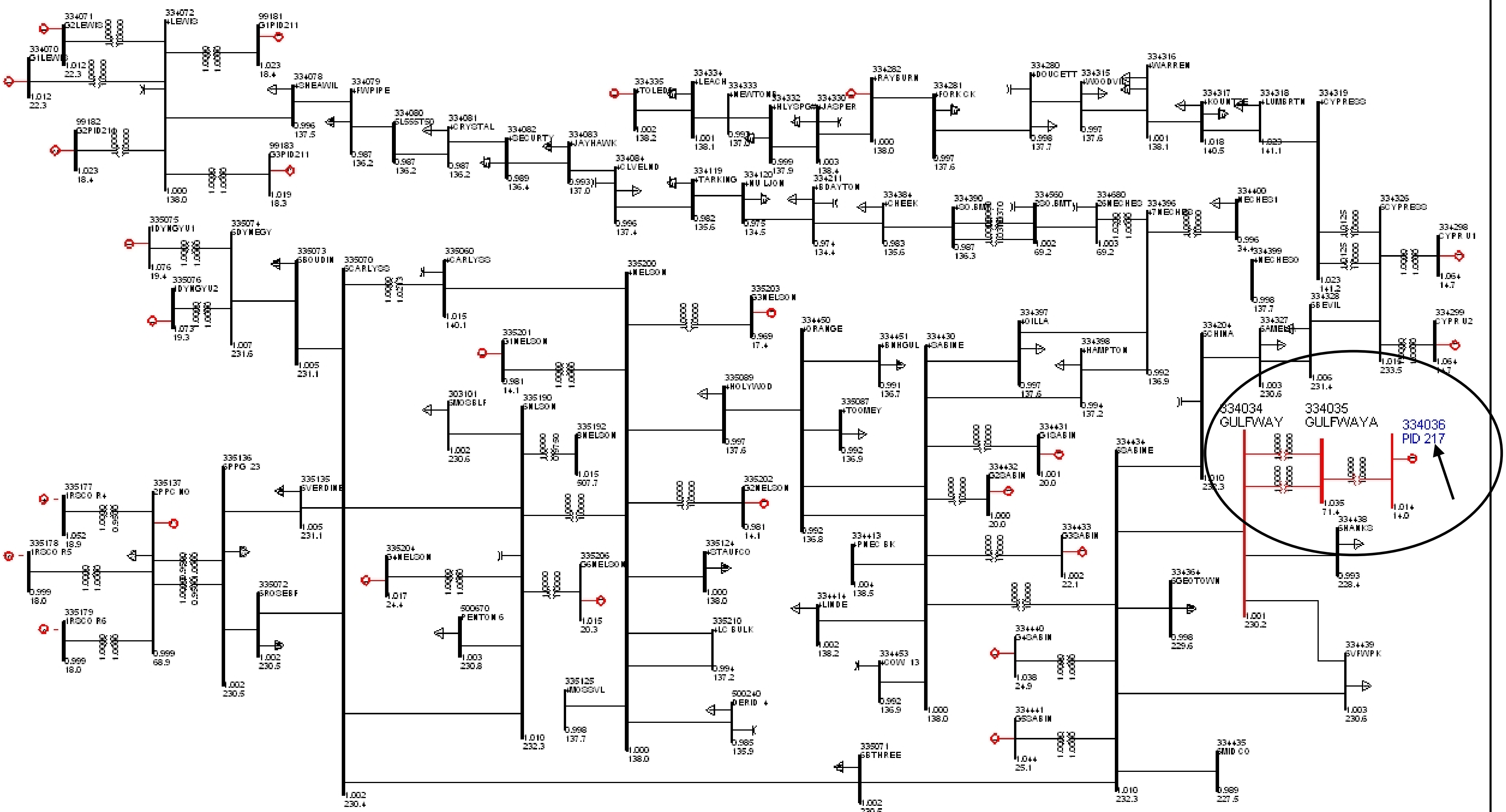


Figure IV-3: System Study Area

C. Transient Stability Analysis

Stability simulations were run to examine the transient behavior of the PID-217 generator and their effect on the Entergy system. Stability analysis was performed using the following procedure. Three-phase faults with normal clearing time and three-phase delayed times were simulated on the transmission lines connected to the Gulfway 230kV switching station. The stability analysis was performed using the PSS/E dynamics program. The fault clearing times used for the simulations are given in Table IV-1.

Table IV-1 Fault Clearing Times

Contingency at kV level	Normal Clearing	Delayed Clearing
230	6 cycles	6+9 cycles

The breaker failure scenarios were simulated with the following sequence of events:

1) At the normal clearing time for the primary breakers, the faulted line is tripped at the far end from the fault by normal breaker opening.

2) The fault remains in place for three-phase stuck-breakers. For single-phase faults the fault is appropriately adjusted to account for the line trip of step 1.

3) The fault is then cleared by back-up clearing. If the system is shown to be unstable for this condition, then stability of the system without the PID-217 plant needs to be verified.

All line trips are assumed to be permanent (i.e. no high speed re-closure).

The stability analysis was performed using the PSS/E dynamics program, which only simulates the positive sequence network. Unbalanced faults involve the positive, negative, and zero sequence networks. For unbalanced faults, the equivalent fault admittance must be inserted in the PSS/E positive sequence model between the faulted bus and ground to simulate the effect of the negative and zero sequence networks. For a single-line-to-ground (SLG) fault, the fault admittance equals the inverse of the sum of the positive, negative and zero sequence Thevenin impedances at the faulted bus. Since PSS/E inherently models the positive sequence fault impedance, the sum of the negative and zero sequence Thevenin impedances needs to be added and entered as the fault impedance at the faulted bus.

For three-phase faults, a fault admittance of –j2E9 is used (essentially infinite admittance or zero impedance).

Table IV-2A and Table IV-2B list all the fault cases that were simulated in this study. Fault scenarios were formulated by examining the system configuration shown in Figure IV-3. The substation configurations for the adjacent substations with the fault locations are included in the Appendix A.C for reference.

Faults 1 through 5 of Table IV-2A represent the normal clearing 3-phase faults. Faults 1 through 7 of Table IV-2B represent faults with stuck breakers with the appropriate delayed back-up clearing times.

For all cases analyzed, the initial disturbance was applied at t = 0.1 seconds. The breaker clearing was applied at the appropriate time following this fault inception.

Table IV-2A Fault Cases Simulated in this Study: 3 Phase Faults with Normal Clearing

FAULT REF. NO.	CASE	Prior Outage Element	LOCATION	TYPE	Clearing Time (cy)	PRIMARY BRK TRIP #	TRIPPED FACILITIES	Stable?	Acceptable Voltages?
1	FAULT-SABINE	--	GULFWAY	3 PH	6	GEVF12 / VFW12	GULFWAY - SABINE	Yes	Yes
2	FAULT-VFWPARK	--	GULFWAY	3 PH	6	VFW12 / VFW34	GULFWAY - VFW PARK	Yes	Yes
3	FAULT-KOLBS	--	GULFWAY	3 PH	6	KOL12 / KOL34	GULFWAY - KOLBS	Yes	Yes
4	FAULT-GENR1	--	GULFWAY GENR1	3 PH	6	KOL12 / GEVF12	GULFWAY GENR1	Yes	Yes
5	FAULT-GENR2	--	GULFWAY GENR2	3 PH	6	KOL34 / VFW34	GULFWAY GENR2	Yes	Yes

Table V1-2B Fault Cases Simulated in this Study: 3 Phase Faults with Stuck Breaker Conditions

REF. NO.	CASE	LOCATION	TYPE	CLEARING TIME (cycles)		STUCK BRK #	PRIMARY (Normal) BRK TRIP #	SECONDARY BRK (Backup) TRIP	TRIPPED FACILITIES	Stable?	Acceptable Voltages?
				PRIMARY	Back-up						
1	FAULT-SABINE_SB	GULFWAY	3PH	6	9	VFW12	GEVF12	VFW34	GULFWAY - SABINE / GULFWAY - VFW PARK	Yes	Yes
2	FAULT-VFWPARK_SB	GULFWAY	3PH	6	9	VFW12	VFW34	GEVF12	GULFWAY - VFW PARK GULFWAY - SABINE	Yes	Yes
3	FAULT-KOLBS_SB	GULFWAY	3PH	6	9	KOL12	KOL34	GEVF12	GULFWAY - KOLBS	Yes	Yes
4	FAULT-KOLBS2_SB	GULFWAY	3PH	6	9	KOL34	KOL12	VFW34	GULFWAY - KOLBS	Yes	Yes
5	FAULT-GENR1_SB	GULFWAY GENR1	3PH	6	9	KOL12	GEVF12	KOL34	GULFWAY GENR1 GULFWAY - KOLBS	Yes	Yes
6	FAULT-GENR1_SB2	GULFWAY GENR1	3PH	6	9	GEVF12	KOL12	VFW12	GULFWAY GENR1 GULFWAY - SABINE	Yes	Yes
7	FAULT-GENR2_SB	GULFWAY GENR2	3PH	6	9	VFW34	KOL34	VFW12	GULFWAY GENR2 GULFWAY – VFW PARKS	Yes	Yes

IV. Analysis Results

All of the three-phase faults with stuck breaker conditions were stable. Even though none of these were unstable, three-phase faults with normal clearing were simulated as well, for completeness. All of the three-phase faults with normal clearing were stable as well. The plots are provided in Appendix A.B.

In addition to criteria for the stability of the machines, Entergy has evaluation criteria for the transient voltage dip as follows:

- 3-phase fault or single-line-ground fault with normal clearing resulting in the loss of a single component (generator, transmission, circuit, or transformer) or a loss of a single component without fault:

  Not to exceed 20% for more than 20 cycles at any bus

  Not to exceed 25% at any load bus

  Not to exceed 30% at any non-load bus

- 3-phase faults with normal clearing resulting in the loss of two or more components (generator, transmission circuit or transformer), and SLG fault with delayed clearing resulting in the loss of one or more components:

  Not to exceed 20% for more than 40 cycles at any bus

  Not to exceed 30% at any bus

The duration of the transient voltage dip excludes the duration of the fault. The transient voltage dip criteria will not be applied to single-phase faults followed by stuck breaker conditions unless the determined impact is extremely widespread.

The voltages at all buses in the Entergy system (138 kV and above) were monitored during each of the fault cases as appropriate. No voltage violations were observed for normally cleared three-phase faults.

Hence, it can be concluded that the proposed PID-217 unit does not degrade the Entergy system performance.

The plots for voltages, frequency and machine angles in the local area following Fault 1 of Table V1-2B are shown in Figure IV-4 through Figure IV-6. Plots of relevant parameters (machine angles, frequencies, and bus voltages) are shown in Appendix A.B.

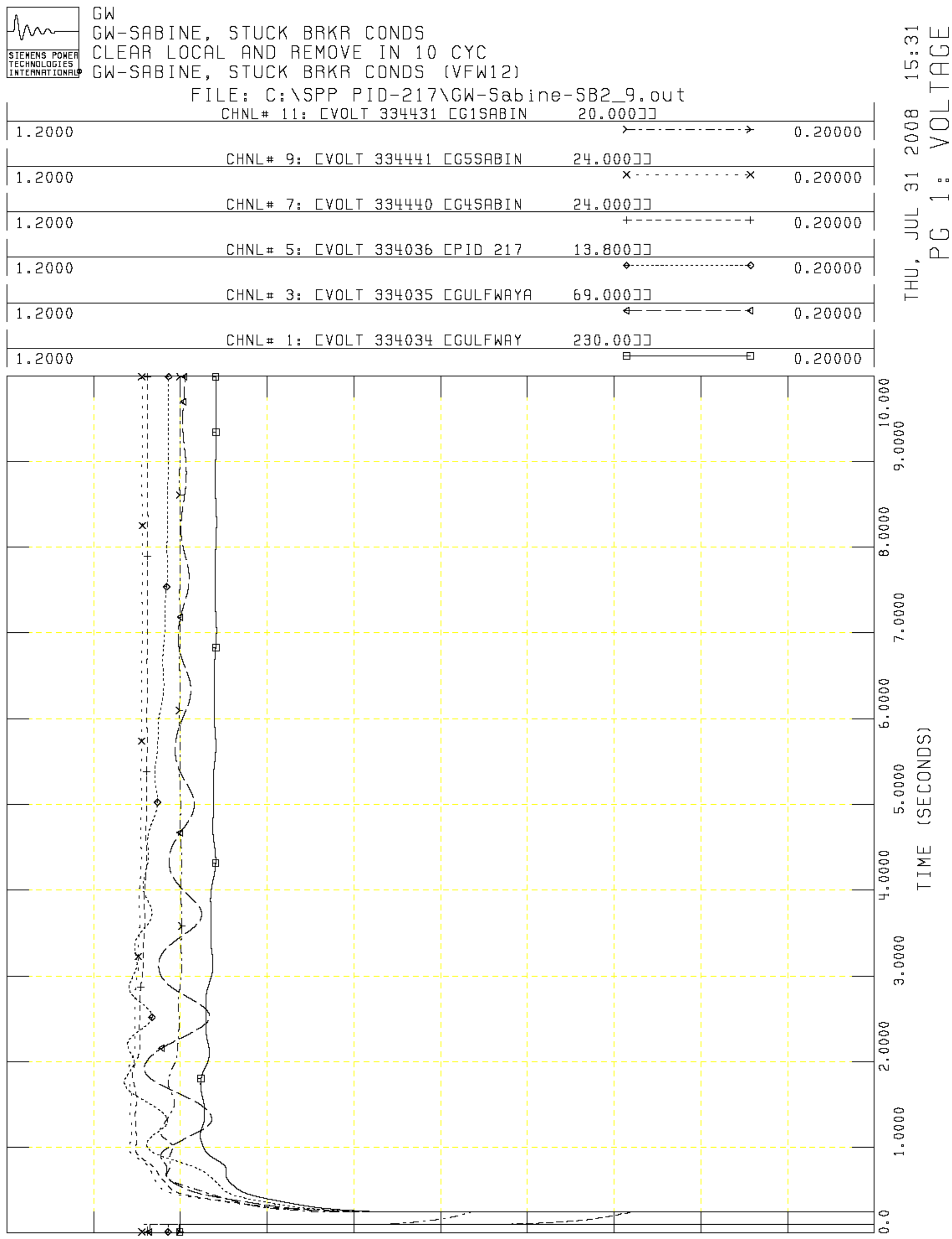


Figure IV-4: Local area voltages following Fault-1 Table IV-2B with PID-217

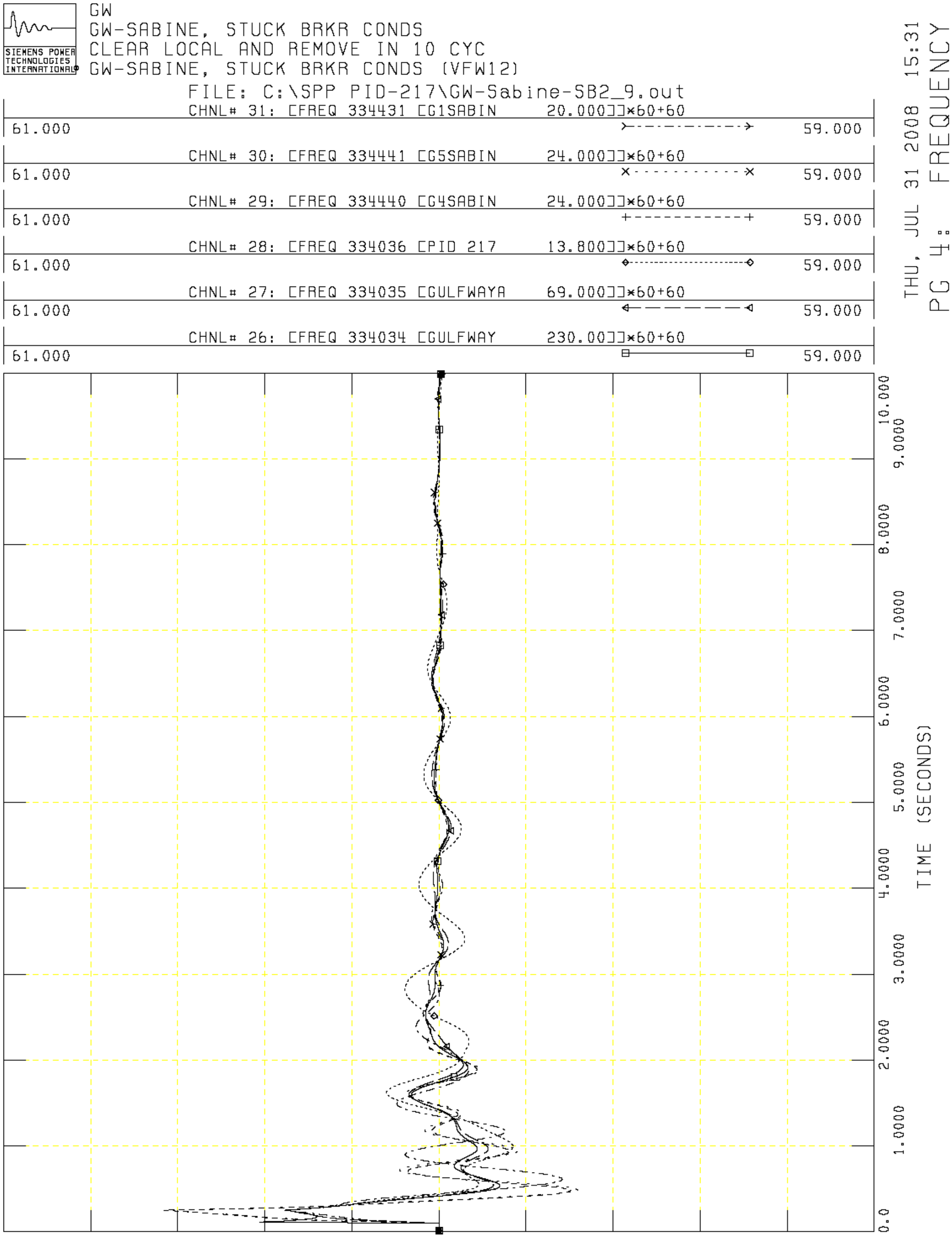


Figure IV-5: Local area frequency following Fault-1 Table IV-2B with PID-217

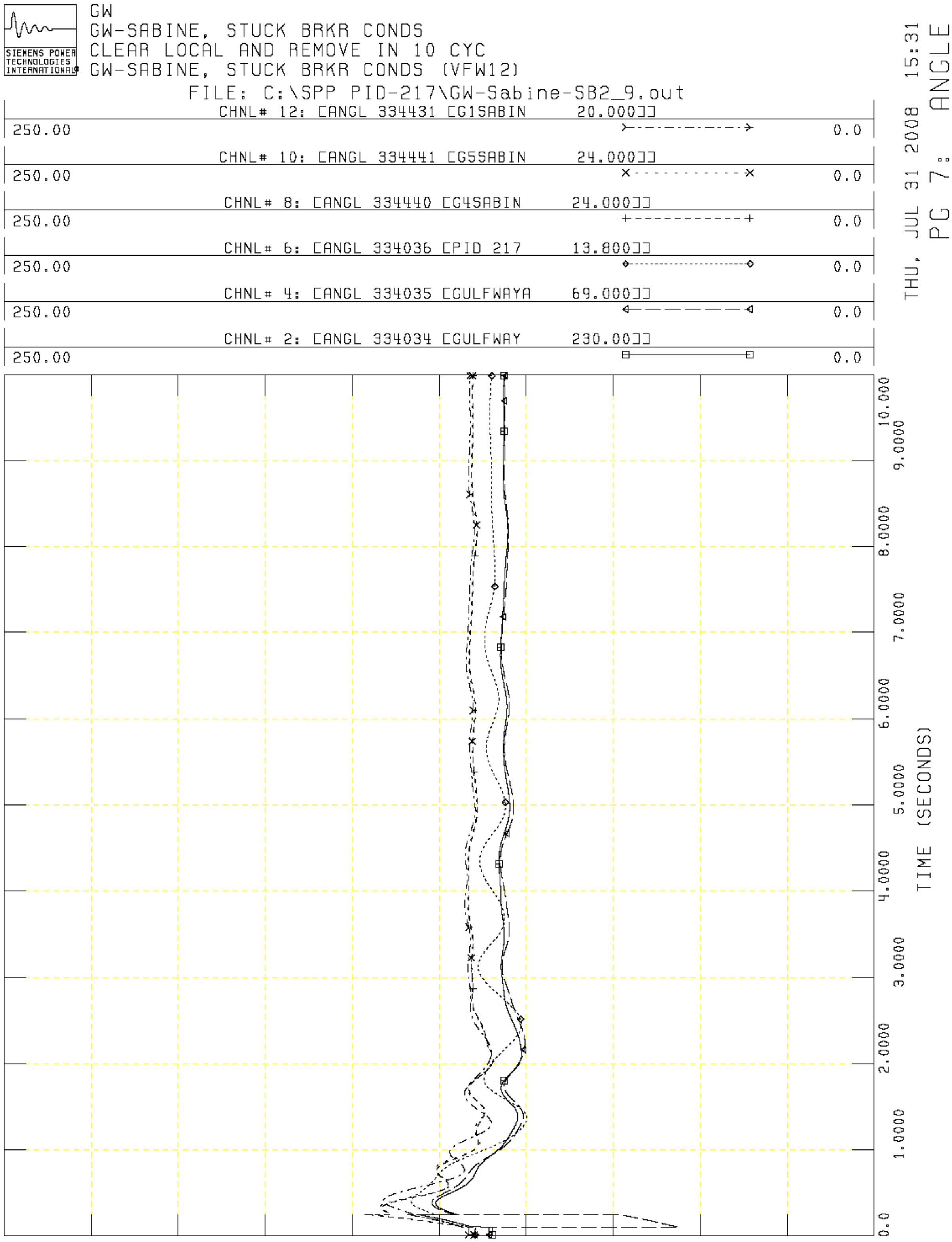


Figure IV-6: Local area angles following Fault-1 Table IV-2B with PID-217

In summary, when considering the new PID-217 (42 MW) generation at the Gulfway S.E.S. 230 kV bus, all the simulated faults are stable. No violations of the voltage dip criteria were observed. This meets Entergy’s performance criteria when the PID-217 plant is in-service.

APPENDIX A-A DATA PROVIDED BY CUSTOMER

A.A.1 LARGE GENERATING FACILITY DATA

APPENDIX 1 to LGIP
INTERCONNECTION REQUEST FOR A
LARGE GENERATING FACILITY

1. The undersigned Interconnection Customer submits this request to interconnect its Large Generating Facility with Transmission Provider's Transmission System pursuant to a Tariff.

2. This Interconnection Request is for (check one):
   __X_ A proposed new Large Generating Facility. (Existing, but will be removed from Entergy's 69 kV system and added to the 230 kV system.)
   ____ An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. The type of interconnection service requested (check one):
   __X_ Energy Resource Interconnection Service (no export)
   ____ Network Resource Interconnection Service

4. _____ Check here only if Interconnection Customer requesting Network Resource Interconnection Service also seeks to have its Generating Facility studied for Energy Resource Interconnection Service

5. Interconnection Customer provides the following information:

   a. Location:

   b. Maximum summer net output: 42,400 kW
   Maximum winter net output: 42,400 kW

   c. General description of the equipment configuration: Frame 6B, GE Turbine. No exportation of energy. (See one line diagram)

   d. Commercial Operation Date (Day, Month, and Year): 10/2009

   e. Name, address, telephone number, and e-mail address of Interconnection Customer's contact person;

f. Approximate location of the proposed Point of Interconnection (optional):

g. Interconnection Customer Data (set forth in Attachment A)

6. Applicable deposit amount as specified in the LGIP: $50,000.00

7. Evidence of Site Control as specified in the LGIP (check one)
__X_ Is attached to this Interconnection Request: "Attachment I Evidence of Site Control.pdf"
____ Will be provided at a later date in accordance with this LGIP

8. This Interconnection Request shall be submitted to the representative indicated below:

[To be completed by Transmission Provider]

9. Representative of Interconnection Customer to contact:

LARGE GENERATING FACILITY DATA

UNIT RATINGS

kVA 44,180 °F 104 (40°C) Max Cold Air Temp. Voltage 13,800
Power Factor 0.90
Speed (RPM) 3,600 Connection (e.g. Wye) Wye

Short Circuit Ratio ________ Frequency, Hertz 60
Stator Amperes at Rated kVA 351 Field Volts 250
Max Turbine MW 42,240 °F 69

COMBINED TURBINE-GENERATOR-EXCITER INERTIA DATA

Inertia Constant, H = 6.6 kW sec/kVA
Moment-of-Inertia, WR^2 = 96,801 lb. ft.^{2}

REACTANCE DATA (PER UNIT-RATED KVA)

	DIRECT AXIS		QUADRATURE AXIS	
Synchronous – saturated	X_{dv}	2.025	X_{qv}	1.917
Synchronous – unsaturated	X_{di}	2.025	X_{qi}	1.917
Transient – saturated	X'_{dv}	0.187	X'_{qv}	______
Transient – unsaturated	X'_{di}	0.261	X'_{qi}	______
Subtransient – saturated	X''_{dv}	0.115	X''_{qv}	0.112
Subtransient – unsaturated	X''_{di}	0.169	X''_{qi}	0.167
Negative Sequence – saturated	$X2_v$	0.108		
Negative Sequence – unsaturated	$X2_i$	0.159	X'_q	0.430
Zero Sequence – saturated	$X0_v$	0.072		
Zero Sequence – unsaturated	$X0_i$	0.089		
Leakage Reactance	Xl_m	______		

X_{lm}, OEX 0.138

X_{lm}, UEX 0.138

FIELD TIME CONSTANT DATA (SEC)

Open Circuit	T'_{do}	5.513	T'_{qo}	0.454
Three-Phase Short Circuit Transient	T'_{d3}	0.509	T'_{q}	0.454
Line to Line Short Circuit Transient	T'_{d2}	0.764		
Line to Neutral Short Circuit Transient	T'_{d1}	0.919		
Short Circuit Subtransient	T''_{d}	0.015	T''_{q}	0.015
Open Circuit Subtransient	T''_{do}	0.024	T''_{qo}	0.038

ARMATURE TIME CONSTANT DATA (SEC)

Three Phase Short Circuit	T_{a3}	0.126
Line to Line Short Circuit	T_{a2}	0.126
Line to Neutral Short Circuit	T_{a1}	0.112

NOTE: If requested information is not applicable, indicate by marking "N/A."

MW CAPABILITY AND PLANT CONFIGURATION LARGE GENERATING FACILITY DATA

ARMATURE WINDING RESISTANCE DATA (PER UNIT)

Positive	R_1	0.005
Negative	R_2	0.017
Zero	R_0	0.009

Rotor Short Time Thermal Capacity I_2^2t = 30
Field Current at Rated kVA, Armature Voltage and PF = 351.4 amps
Field Current at Rated kVA and Armature Voltage, 0 PF = 428.6 amps
Three Phase Armature Winding Capacitance = 0.400 microfarad
Field Winding Resistance = 0.637 ohms 125 °C
Armature Winding Resistance (Per Phase) = 0.00986 ohms 100 °C

CURVES

Provide Saturation, Vee, Reactive Capability, Capacity Temperature Correction curves. Designate normal and emergency Hydrogen Pressure operating range for multiple curves.

GENERATOR STEP-UP TRANSFORMER DATA RATINGS

Capacity / Self-cooled/ Maximum Nameplate

40,000 / 53,333 kVA @ 55°C

Voltage Ratio(Generator Side/System side/Tertiary)

13.8 / 69 / N.A kV

Winding Connections (Low V/High V/Tertiary V (Delta or Wye))

Wye / Delta / N.A

Fixed Taps Available

Yes ± 2 X 2 1/2 %

Present Tap Setting

0% (Nominal)

IMPEDANCE

Positive Z_1 (on self-cooled kVA rating)________ % ________ X/R

Zero Z_0 (on self-cooled kVA rating)________ % ________ X/R

Z = 8.29% @ 4,000 kVA

+/- Seq Z R = 0.2959 X = 8.2847

X/R = 28.0

DESIGN NO. D205T26

GENERATOR DATA

CUSTOMER: Fina Oil
GENERATOR NO. 335X470 FIELD NO. 335X470 D.L. NO. 335X470

NAMEPLATE DATA

2 Poles, 3 Phase, Wye Connected, 60 Hertz, 3600 RPM

Total Temp. at Rating Guaranteed not to Exceed: 130 C on Armature by Detector
145 C on Field by Resistance

Maximum Cold Gas/Air Temperature 40 C.

	Rating
KVA (0 Ft.)	44,180
Armature Amps	1,848
Armature Volts	13,800
Field Amps	351
Exciter Volts	250
Power Factor	0.90

DESIGN DATA

Voltage Range at 60 Hertz . . . . ± 5 Percent

COLLECTOR AND BRUSH DATA

Collector Brushes, 14 Per Set Recommended Grade, National Carbon 634
Collector Minumum Safe Operating Diameter . . . . 12.5 inches
Shaft Grounding Brushes, 2 Per Set Recommended Grade, National Carbon 634

GAS COOLER DATA

Inlet Water Temperature	95 F.
Water Flow at Rated Load	1104 GPM
Head Loss Through Cooler	13.5 Ft.
Gas Flow Through Generator	35,754 CFM
Gas Space in Generator	752 Cu.Ft.

GEN. NO. 335X470

ESTIMATED GENERATOR DATA

REACTANCE DATA: (PER UNIT)

	DIRECT AXIS		QUADRATURE AXIS	
Saturated Synchronous	(Xdv)	2.025	(Xqv)	1.917
Unsaturated Synchronous	(Xdi)	2.025	(Xqi)	1.917
Saturated Transient	(X'dv)	0.187	(X'q)	0.430
Unsaturated Transient	(X'di)	0.261		
Saturated Subtransient	(X''dv)	0.115	(X''qv)	0.112
Unsaturated Subtransient	(X''di)	0.169	(X''qi)	0.167
Saturated Negative Sequence	(X2v)	0.108		
Unsaturated Negative Sequence	(X2i)	0.159		
Saturated Zero Sequence	(Xov)	0.072		
Unsaturated Zero Sequence	(Xoi)	0.089		
Leakage Reactance	(XLM,OEX)	0.138		
Leakage Reactance	(XLM,UEX)	0.138		

FIELD TIME CONSTANT DATA: (Sec. at 125 C)

Open Circuit	(T'do)	5.513	(T'qo)	0.454
Three Phase Short Circuit Transient	(T'd3)	0.509	(T'q)	0.454
Line to Line Short Circuit Transient	(T'd2)	0.764		
Line to Neutral Short Circuit Transient	(T'd1)	0.919		
Short Circuit Subtransient	(T''d)	0.015	(T''q)	0.015
Open Circuit Subtransient	(T''do)	0.024	(T''qo)	0.058

ARMATURE DC COMPONENT TIME CONSTANT DATA - (Sec. AT 100C)

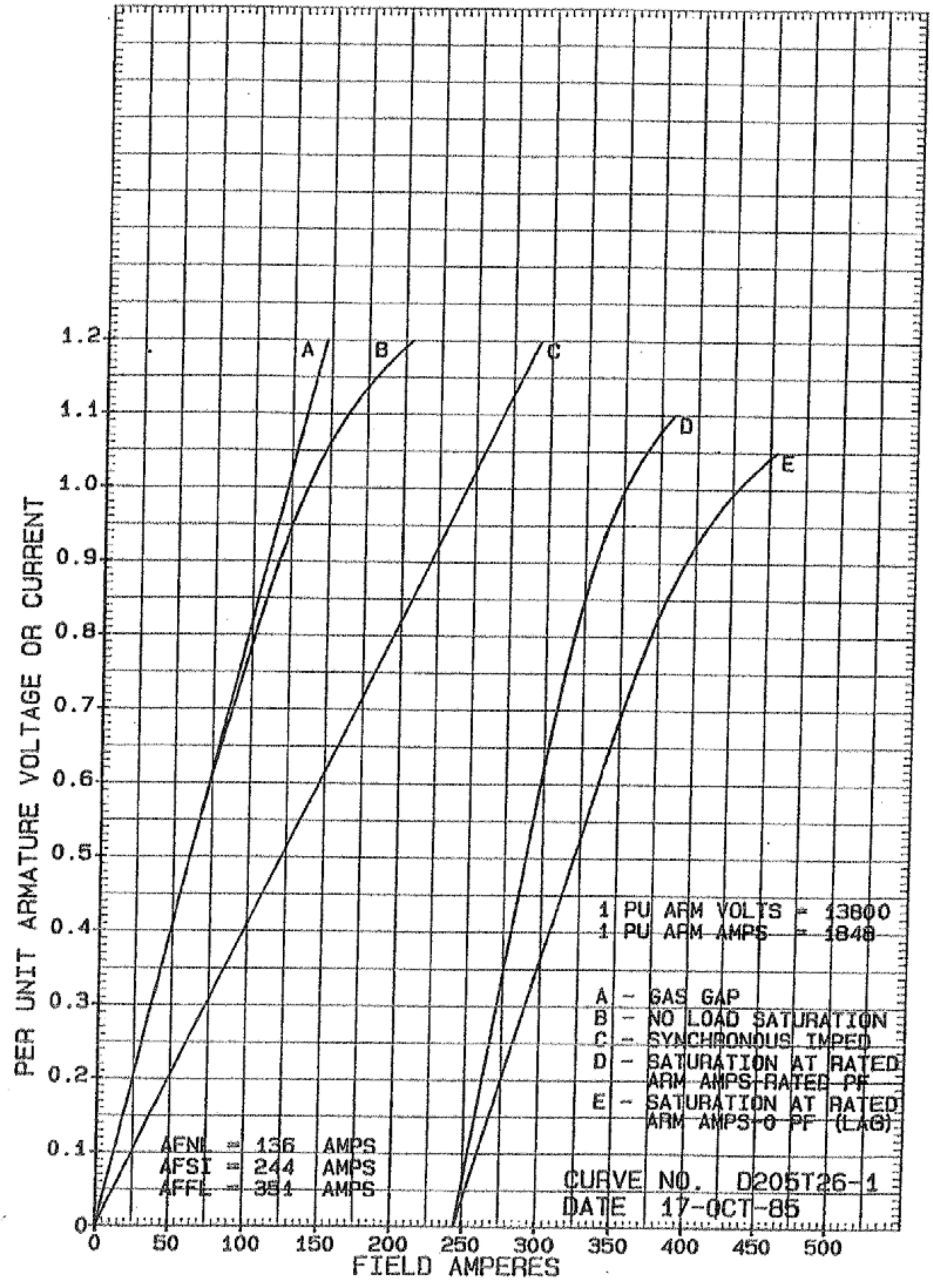
Three Phase Short Circuit	(Ta3)	0.126
Line to Line Short Circuit	(Ta2)	0.126
Line to Neutral Short Circuit	(Ta1)	0.112

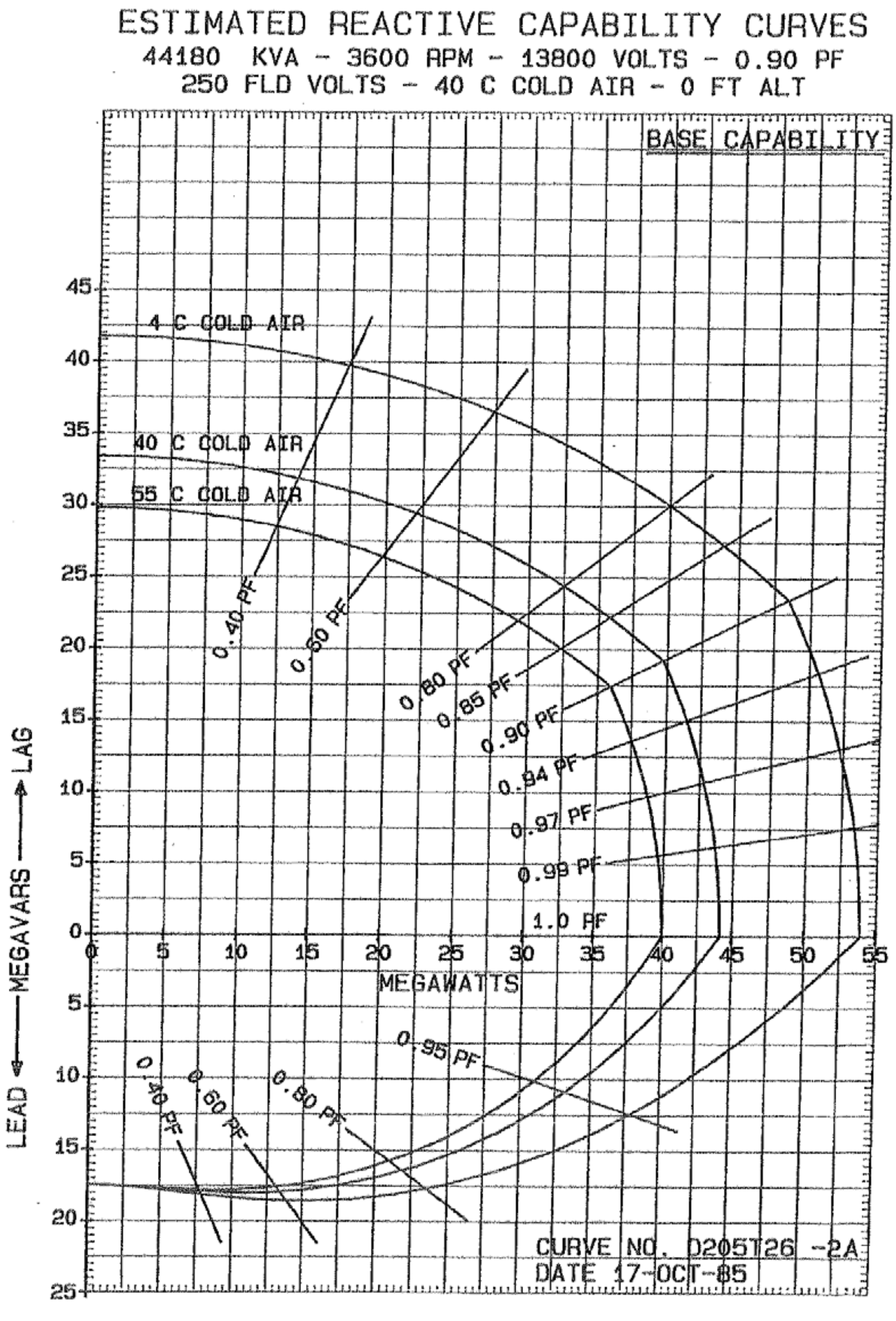
ARMATURE WINDING SEQUENCE RESISTANCE DATA - (Per Unit)

Positive	(R1)	0.005
Negative	(R2)	0.017
Zero	(RO)	0.009

Rotor Short Time Thermal Capacity, $(I_2)^2T$ . . . . = 30
Three Phase Armature Winding Capacitance . . . . = 0.400 Microfarads
Armature Winding DC Resistance (Per Phase) . . . . = 0.00986 Ohms at 100C
Field Winding DC Resistance . . . . = 0.637 Ohms at 125C
Field Current at Rated KVA, Armature Voltage and PF . . . . = 351.4 Amps
Field Current at Rated KVA and Armature Voltage, 0 PF Lagging
(FOR SYSTEMS STUDY ONLY - NOT ALLOWABLE OPERATING POINT). . . . . = 428.6 Amps

ESTIMATED SATURATION AND SYNCHRONOUS IMPEDANCE CURVES
44180 KVA - 3600 RPM - 13800 VOLTS - 0.90 PF
250 FLD VOLTS - 40 C COLD AIR - 0 FT ALT

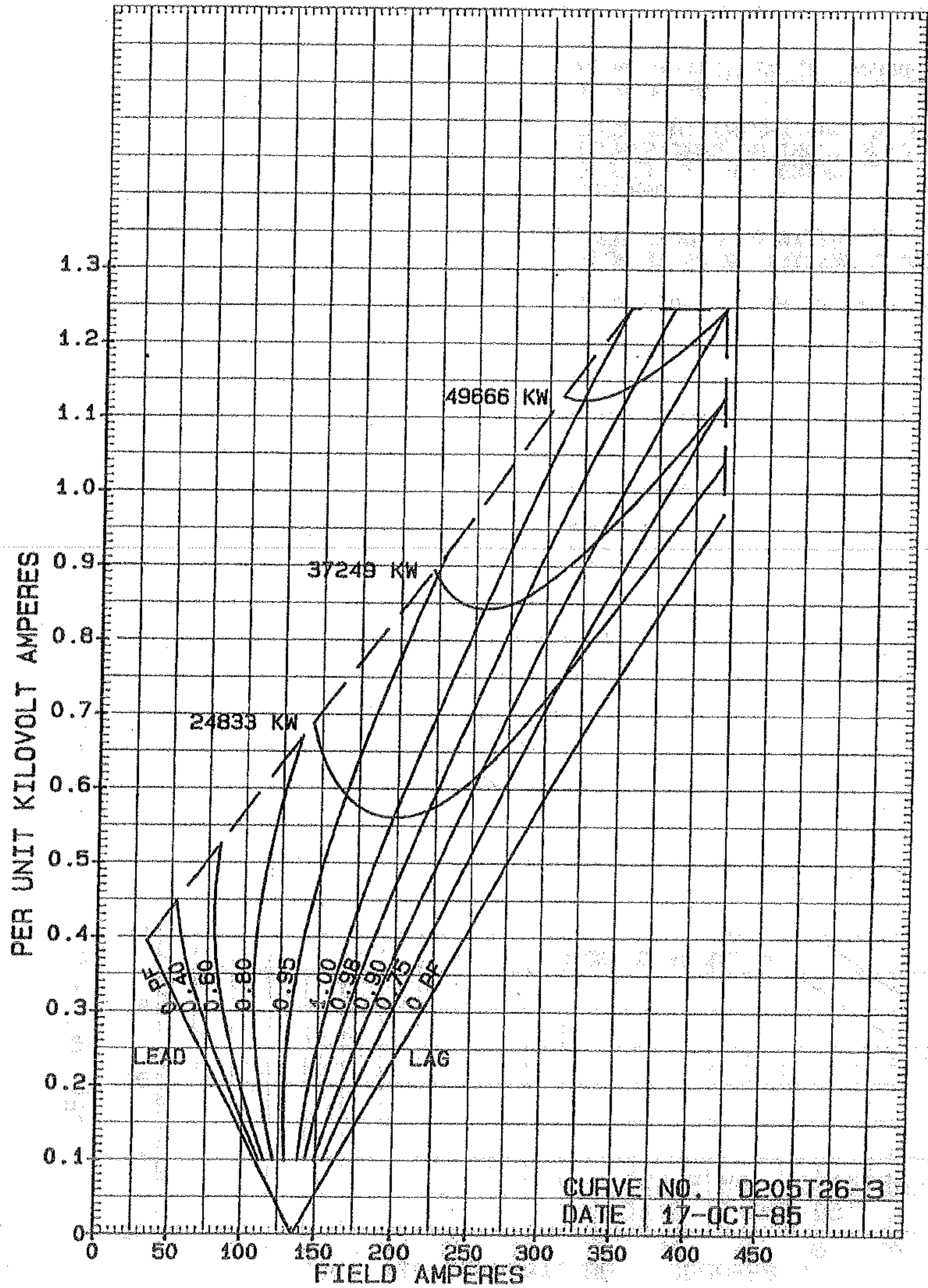



ESTIMATED REACTIVE CAPABILITY CURVES
44180 KVA - 3600 RPM - 13800 VOLTS - 0.90 PF
250 FLD VOLTS - 40 C COLD AIR - 0 FT ALT
BASE CAPABILITY
4 C COLD AIR
40 C COLD AIR
55 C COLD AIR
0.40 PF
0.60 PF
0.80 PF
0.85 PF
0.90 PF
0.94 PF
0.97 PF
0.99 PF
1.0 PF
0.95 PF
LEAD ← MEGAVARS → LAG
MEGAWATTS
45
40
35
30
25
20
15
10
5
0
5
10
15
20
25
0
5
10
15
20
25
30
35
40
45
50
55
CURVE NO. D205T26 -2A
DATE 17-OCT-85

ESTIMATED EXCITATION V CURVES

44180 KVA - 3600 RPM - 13800 VOLTS - 0.90 PF

250 FLD VOLTS - 40 C COLD AIR - 0 FT ALT




GENERAL ELECTRIC
GENERATOR
LYNN, MASSACHUSETTS
MADE IN U.S.A.

GENERAL ELECTRIC

329A7642
CONT ON SHEET F SH NO. 1

REV NO.
329A7642
CONT ON SHEET F SH NO. 1

TITLE
NAMEPLATE DATA

FIRST MADE FOR GAS TURBINE

A004

REVISIONS

GENERAL ELECTRIC
GAS TURBINE DIVISION

NO: (A) AIR IN: 69° F ALT: SEA LEVEL

BASE: 38,360 KW PEAK: 42,240 KW FUEL: NATURAL GAS

TURBINE EXHAUST: BASE: 1011° F PEAK: 1072°F PRESS: 14 IN H20

CPRSR: STAGES 17 RPM 5100 CPRSR TURBINE: STAGES ____

POWER TURBINE: STAGES 3 RPM 5100

CAUTION! BEFORE INSTALLING, OPERATING, OR DISMANTLING - READ GEK 96004

SCHENECTADY, N.Y. - GREENVILLE, S.C.
N.P. 169487

Note: Make from N.P. 169487. Data to be engraved or etched and filled with black baking enamel. Letter size and style shall be per nameplate drawing. Do not engrave or etch encircled letter. Data as identified above must be located in approximate center of allotted space.

NAMEPLATE UNIT RATING

NO.	TURBINE NO. (A)	IT. NO.	TURBINE NO. (A)
1	295357		

PRINTS TO

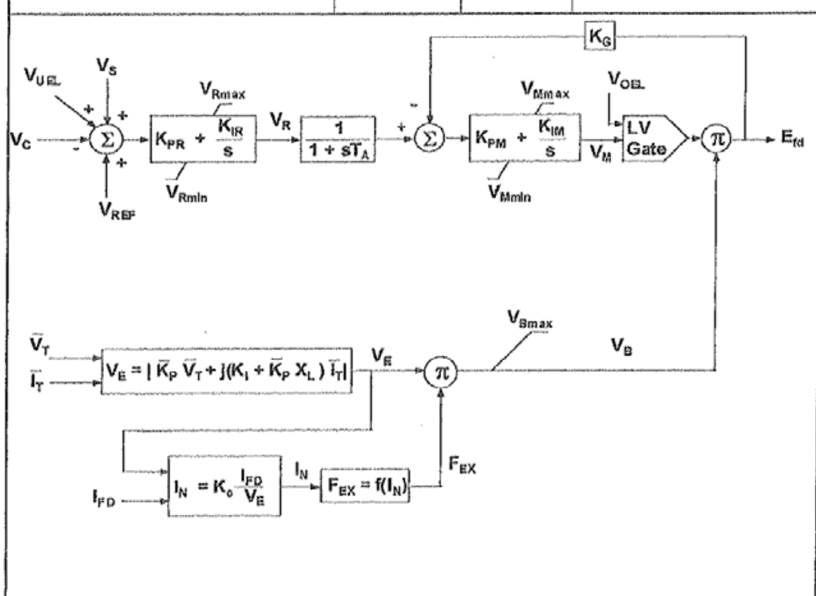
MADE BY Lisa Fiske Oct 23, 87
ISSUED October 26, 1987
APPROVALS [illegible]

GAS TURBINE
GREENVILLE, S.C.

329A7642
CONT ON SHEET F SH NO. 1

Worksheet - EX2000 Bus Fed Excitation System					
IEEE ST4B Model Format				HCS	
	input	output	4/2/2007 9:02		
AFSI	596.0		0		
AFNL	302				
Rfd (125C) - ohms	0.1341				
Rfd (100C) - ohms		0.1248			
airgapMMF	24692				
totalMMF	27175				
N/FT/P		90.00			
IFAG	274.4	274.4			
VFAG100 = IFAG*RFG100		34.2			
IFFL	857.0				
VFFL125=AFFL*RFG125		115			
EDV=1.025*VFFL125		118			
VFFL100=IFFL*RFG100		106.9			
IM current margin	1.15		cold day		
EDA=IM*IFFL		985.55	needs	951	
VCF ceiling factor	2.14		PG&E Grid Code	1.5 pu@70%	
VC1=VFC*VFFL100		228.834	minimum		
VC3=7*VFNL125	0	0	not applied		
Transformer (PPT)					
IPPT=EDA*0.78	780	768.729	minimum fundamental		
VPPT=VC1/1.25	185	183.067	minimum		
PPT KVA=sqrt(3)*V*I/1000	250	243.75	minimum		
VC2=VPPT*1.25		231.25	actual		
Impedance %	6.00%		typical		
XT (ohms -sec)		0.0082			
KC = 1.654 *XT/RFG100		0.1089	revised 3-3-99		
Kp = Vsec*1.35/VFAG		7.29			
VBmax = 125% Kp		9.12			
Vceiling(pu)= Kp - KC*Ifd (FL)*0.577		7.10	revised 3-12-99		
Vceiling (volts) (xVFAG)		243			
Desired Transient Gain, Ktr	20		standard		
KPR = Ktr/Kp		2.74			
VPS, pole slip voltage	1500		unknown		
PRV1=(VPS+1.05*sqrt(2)*VPPT)/0.85		2087.9	W/out PRV resistors		
PRV2=0.75*PRV1		1565.9	with PRV resistors		
RR=(VC2/VFFL100-1)*3.8		4.42			

Customer					
unit					
Generator					
Design	D215P19	6A6 OV			
MVA Rating	54		KV Rating	13.8	
RPM	3600		PF	0.85	
SCR	0.48				
Volts DC	125		RFG at 100 C	0.1248	
AFAG amps	274		AFFL amps	857	
EX2000 Busfed Exciter Model Parameters					
IEEE ST4B Model Format		Exciter Nominal Response at rated input		4.4	
TR	0		KC	0.11	
KPR	2.74		KIR	2.74	
VRMAX	1.00		VRMIN	-0.87	
TA	0.01		KG	0	
KPM	1.00		KIM	0	
VMMAX	1.00		VMIMIN	-0.87	
KP	7.29		KI	0	
VBMAX	9.12		XL	0	



"Computer Models for Representation of Digital-Based Excitation Systems",
IEEE Trans. EC, Vol. 11, No. 3, September 1996, pp 607-615.

Harold C. Sanderson			4/2/2007 9:02		
GE Excitation/Controls Engineering					
ex2000/		.xls			

GE PSLF **ggov1** governor/turbine model parameters for 6B Gas Turbine Units.

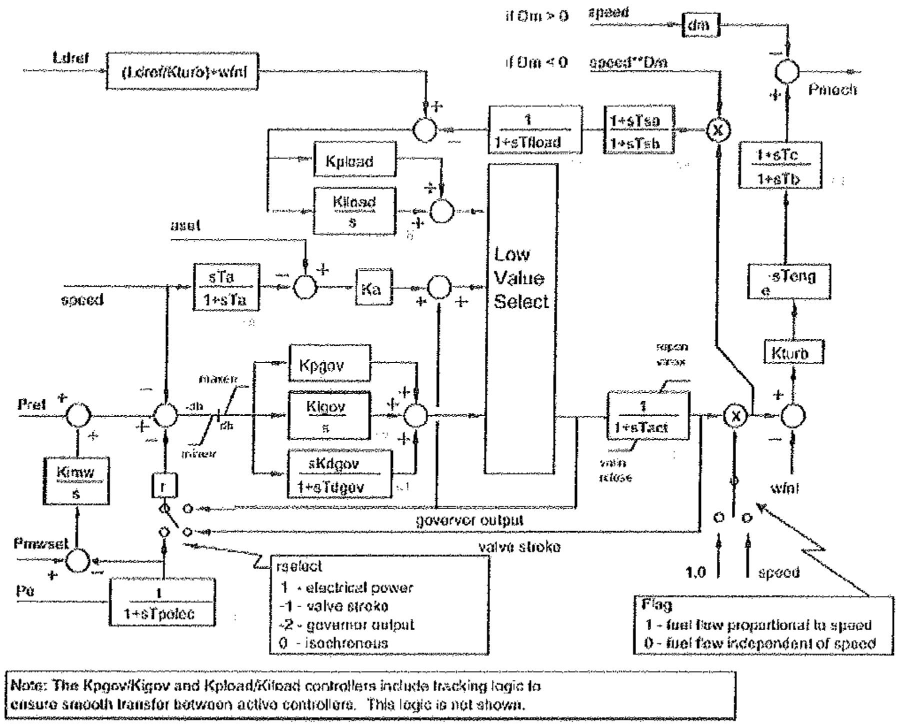
Parameter	**Value**[1]
MWCAP	41.67
r	0.04
rselect	1
T_{pelec} (sec)	1.0
Max_{ERR} (pu)	0.05
Min_{ERR} (pu)	-0.05
K_{PGOV}	10.0
K_{IGOV}	2.0
K_{DGOV}	0.0
T_{DGOV} (sec)	1.0
V_{MAX}	1.0
V_{MIN}	0.15
T_{ACT} (sec)	0.5
K_{TURB}	1.5
W_{FNL}	0.2
T_B (sec)	0.1
T_C (sec)	0.0
flag	1.0
T_{ENG} (sec)	0.0
T_{FLOAD} (sec)	3.0
K_{PLOAD}	2.0
K_{ILOAD}	0.67

[1] Except for MWCAP the values for the model parameters are typical and reasonable for grid studies. Validation of values by testing is recommended.

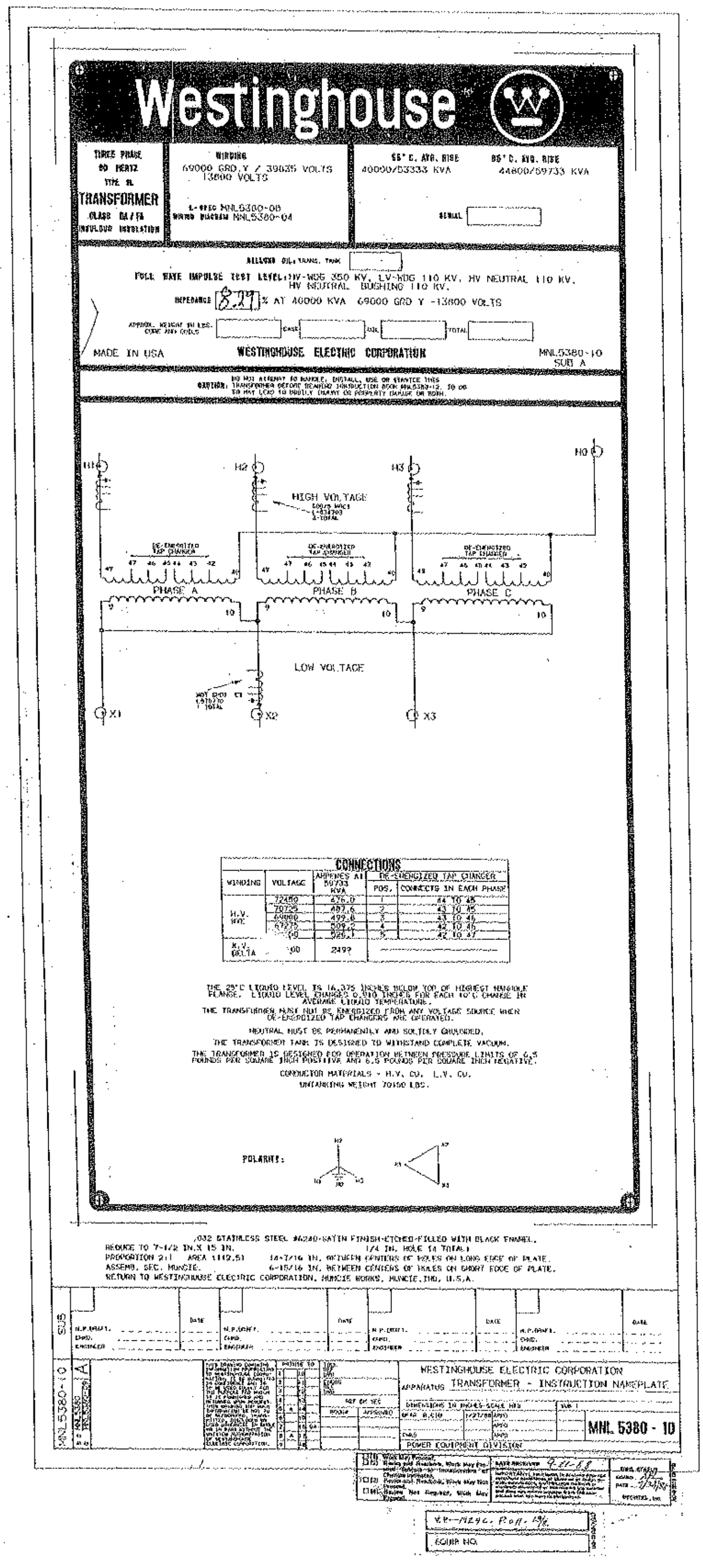
GE PSLF **ggov1** governor/turbine model parameters for 6B Gas Turbine Units

Parameter	**Value**
L_{DREF}	1.0[2]
D_M	0.0
R_{OPEN} (pu/sec)	0.10
R_{CLOSE} (pu/sec)	-0.1
K_{IMW}	0.0
P_{MWSET} (pu)	N/A
A_{SET} (pu)	0.01
K_A (pu)	10.0
T_A (sec)	0.1
db (pu)	0.0
T_{SA} (sec)	4.0
T_{SB} (sec)	5.0
R_{UP} (pu)	99.0
R_{DOWN} (pu)	-99.0
T_{LLN} (sec)	0.0
T_{LLD} (sec)	0.0

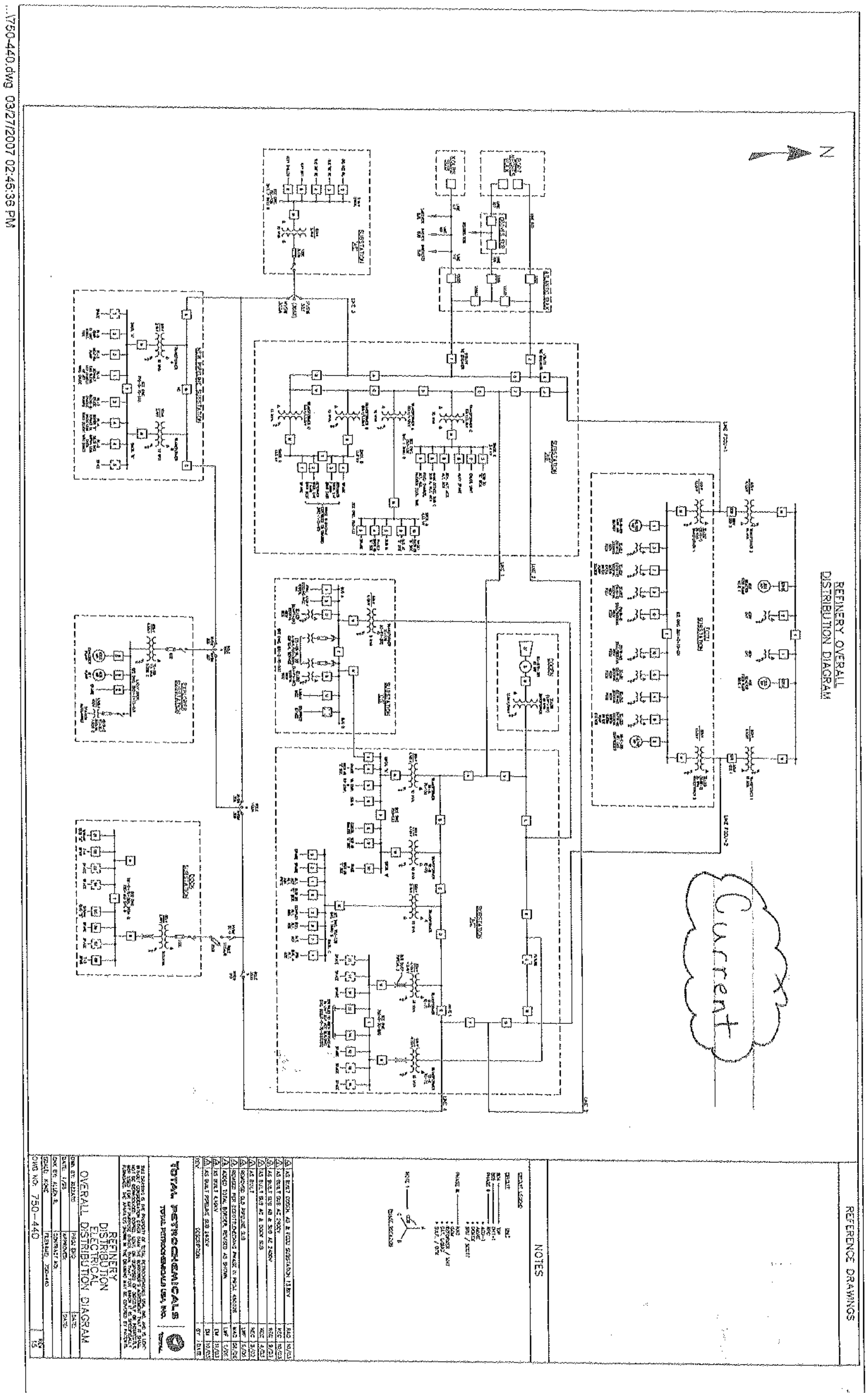
[2] Value for ldref will vary for changes of ambient temperature. A value of 1.0 is valid for 59°F, 14.7psia.



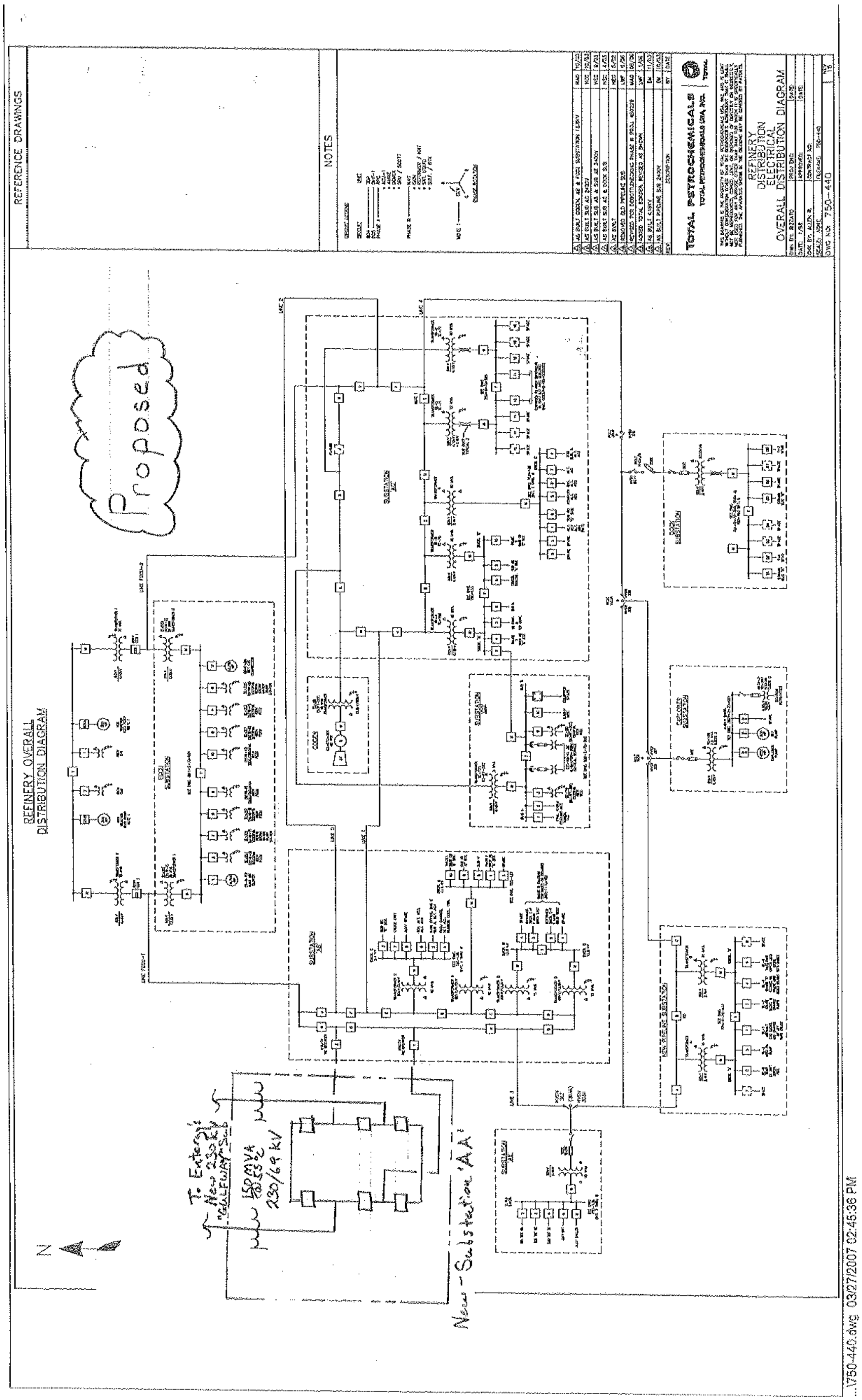
Block Diagram for **ggov1** Governor/Turbine Model



Westinghouse
THREE PHASE
60 HERTZ
TRANSFORMER
WINDING
69000 GRD.Y / 39835 VOLTS
13800 VOLTS
55° C. AVG. RISE
40000/53333 KVA
65° C. AVG. RISE
44800/59733 KVA
SERIAL
FULL WAVE IMPULSE TEST LEVEL: HV-WDG 350 KV, LV-WDG 110 KV, HV NEUTRAL 110 KV,
HV NEUTRAL BUSHING 110 KV.
IMPEDANCE 8.29 % AT 40000 KVA 69000 GRD Y -13800 VOLTS
MADE IN USA
WESTINGHOUSE ELECTRIC CORPORATION
MNL5380-10
SUB A
HIGH VOLTAGE
PHASE A
PHASE B
PHASE C
LOW VOLTAGE
H1
H2
H3
H0
X1
X2
X3
CONNECTIONS
WINDING | VOLTAGE | AMPERES AT 59733 KVA | DE-ENERGIZED TAP CHANGER POS. | CONNECTS IN EACH PHASE
H.V. WYE | 72450 | 476.0 | 1 | 44 TO 45
70725 | 487.6 | 2 | 43 TO 45
69000 | 499.8 | 3 | 43 TO 46
67275 | 509.2 | 4 | 42 TO 46
X.V. DELTA | 2499
THE 25°C LIQUID LEVEL IS 16.375 INCHES BELOW TOP OF HIGHEST HANDHOLE FLANGE. LIQUID LEVEL CHANGES 0.910 INCHES FOR EACH 10°C CHANGE IN AVERAGE LIQUID TEMPERATURE.
THE TRANSFORMER MUST NOT BE ENERGIZED FROM ANY VOLTAGE SOURCE WHEN DE-ENERGIZED TAP CHANGERS ARE OPERATED.
NEUTRAL MUST BE PERMANENTLY AND SOLIDLY GROUNDED.
THE TRANSFORMER TANK IS DESIGNED TO WITHSTAND COMPLETE VACUUM.
POLARITY:
WESTINGHOUSE ELECTRIC CORPORATION
TRANSFORMER - INSTRUCTION NAMEPLATE
MNL 5380 - 10
POWER EQUIPMENT DIVISION



...\750-440.dwg 03/27/2007 02:45:36 PM
N
REFINERY OVERALL DISTRIBUTION DIAGRAM
Current
REFERENCE DRAWINGS
NOTES
TOTAL PETROCHEMICALS
TOTAL PETROCHEMICALS USA, INC.
REFINERY ELECTRICAL DISTRIBUTION OVERALL DISTRIBUTION DIAGRAM
DWG NO. 750-440


REFERENCE DRAWINGS
NOTES
REFINERY OVERALL DISTRIBUTION DIAGRAM
Proposed
To Entergy's New 230kV "Gulfway" Sub
150 MVA
230/69 kV
New - Substation 'AA'
TOTAL PETROCHEMICALS
REFINERY DISTRIBUTION ELECTRICAL OVERALL DISTRIBUTION DIAGRAM
750-440
...\750-440.dwg 03/27/2007 02:45:36 PM

A.A.2 DATA USED IN STABILITY MODEL

Load Flow Models

The **PID-217** plant equipment data are listed in Appendix A.A. No other elements were added to the Entergy system.

Stability Models

The **PID-217** plant equipment stability model data are listed in Appendix A.A. The resulting PSS/E model data is a follows:

Load Flow data in Stability Models

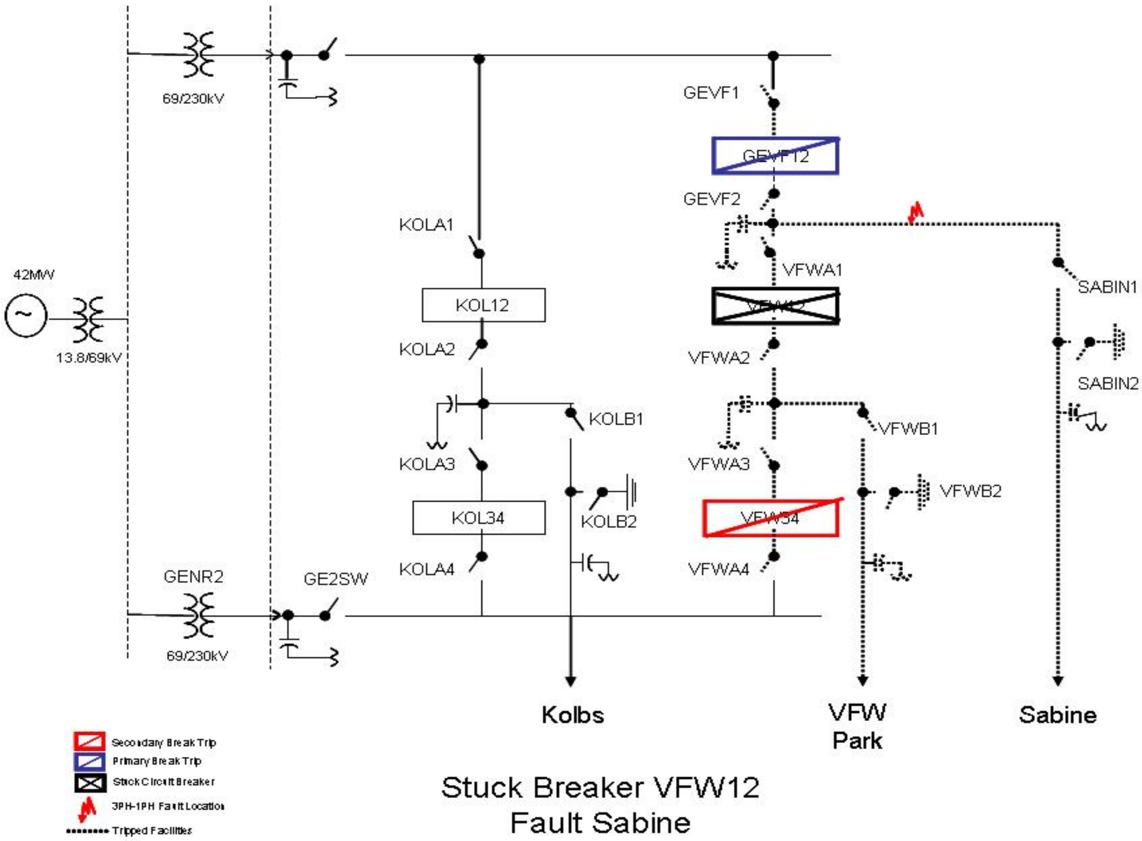
```
334034,'GULFWAY      ', 230.0000, 1,     0.000,     0.000,  351,  109, 1.00006,  -19.6604,    1
334035,'GULFWAY A    ',  69.0000,  1,     0.000,     0.000,  351,  109, 1.00004,   -19.6604,    1
334036,'PID 217           ',  13.8000,  2,     0.000,     0.000,   351, 109,  1.00000,  -19.6604,    1
334034,'GULFWAY    ', 230.0000,1,    0.000,    0.000, 351, 109,1.00086, 109.7619,   1
334434,'6SABINE    ', 230.0000,1,    0.000,    0.000, 351, 105,1.01000, 110.4304,   1
0 / END OF BUS DATA, BEGIN LOAD DATA
0 / END OF LOAD DATA, BEGIN GENERATOR DATA
334036,'1 ',    -0.361,   -40.198,  9999.000, -9999.000,1.00000,    0,   100.000,   0.00000,   1.00000,   0.00000,   0.00000,1.00000,1,
100.0,    42.000,     0.000,   1,1.0000
0 / END OF GENERATOR DATA, BEGIN BRANCH DATA
334034,-334434,'1 ',   0.00140,   0.01040,   0.02080,  685.00,  685.00,    0.00,  0.00000,  0.00000,  0.00000,  0.00000,1,   0.00,
1,1.0000
0 / END OF BRANCH DATA, BEGIN TRANSFORMER DATA
334034,334035,     0,'1 ',1,1,1,   0.00000,   0.00000,2,'           ',1,   1,1.0000
  0.00000,   0.00010,   100.00
1.00000,   0.000,   0.000,     0.00,     0.00,     0.00, 0,      0, 1.10000, 0.90000, 1.10000, 0.90000,  33, 0, 0.00000, 0.00000
1.00000,   0.000
334034,334035,     0,'2 ',1,1,1,   0.00000,   0.00000,2,'           ',1,   1,1.0000
  0.00000,   0.00010,   100.00
1.00000,   0.000,   0.000,     0.00,     0.00,     0.00, 0,      0, 1.10000, 0.90000, 1.10000, 0.90000,  33, 0, 0.00000, 0.00000
1.00000,   0.000
334035,334036,     0,'1 ',1,1,1,   0.00000,   0.00000,2,'           ',1,   1,1.0000
  0.00000,   0.00010,   100.00
1.00000,   0.000,   0.000,     0.00,     0.00,     0.00, 0,      0, 1.10000, 0.90000, 1.10000, 0.90000,  33, 0, 0.00000, 0.00000
1.00000,   0.000
0 / END OF TRANSFORMER DATA, BEGIN AREA DATA
 351,337653,  1361.200,    10.000,'EES        '
0 / END OF AREA DATA, BEGIN TWO-TERMINAL DC DATA
0 / END OF TWO-TERMINAL DC DATA, BEGIN VSC DC LINE DATA
0 / END OF VSC DC LINE DATA, BEGIN SWITCHED SHUNT DATA
0 / END OF SWITCHED SHUNT DATA, BEGIN IMPEDANCE CORRECTION DATA
0 / END OF IMPEDANCE CORRECTION DATA, BEGIN MULTI-TERMINAL DC DATA
0 / END OF MULTI-TERMINAL DC DATA, BEGIN MULTI-SECTION LINE DATA
0 / END OF MULTI-SECTION LINE DATA, BEGIN ZONE DATA
 109,'GSTPTA      '
0 / END OF ZONE DATA, BEGIN INTER-AREA TRANSFER DATA
0 / END OF INTER-AREA TRANSFER DATA, BEGIN OWNER DATA
   1,'CENT HUD    '
0 / END OF OWNER DATA, BEGIN FACTS DEVICE DATA
0 / END OF FACTS DEVICE DATA
```

Dynamics Data in Stability Models

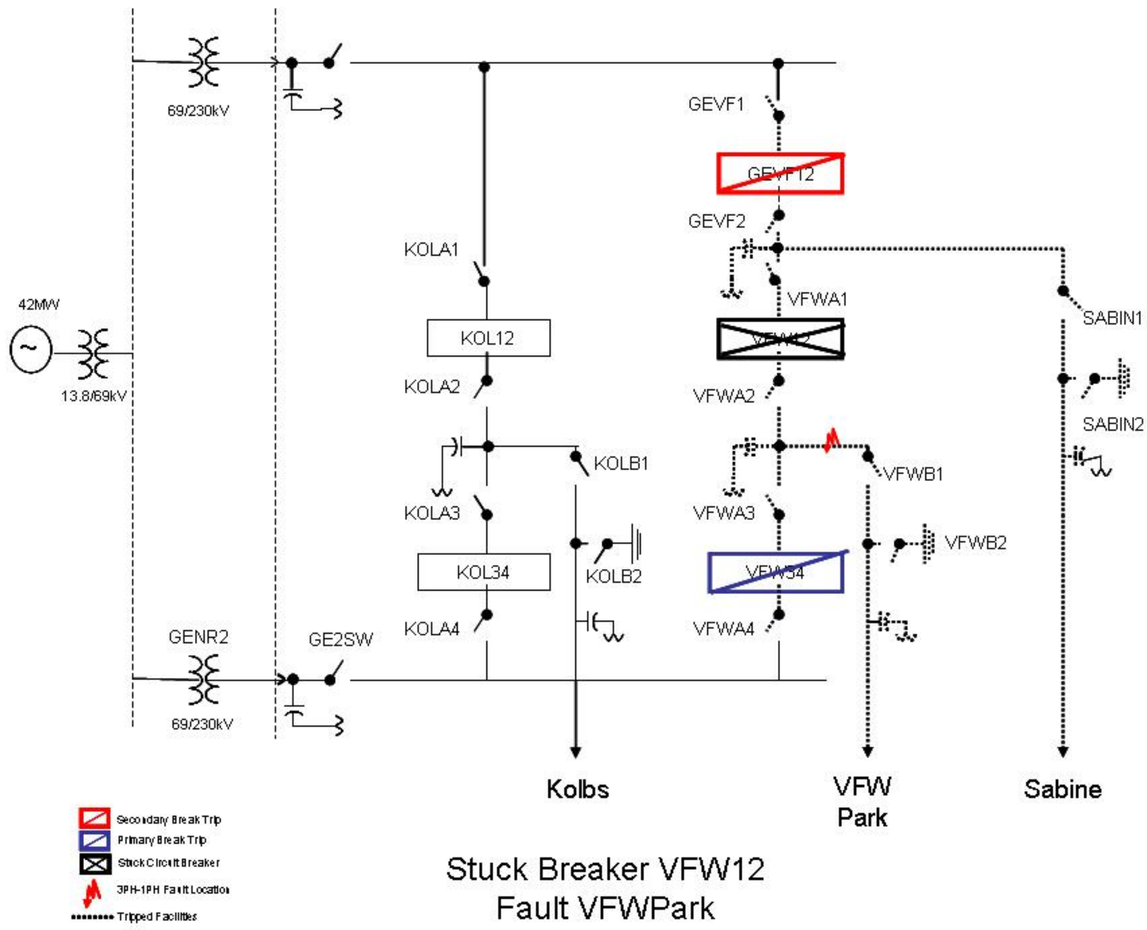
```
334036 'GENROU'  1     5.513    0.024     0.454    0.058
                        6.6      0.0       2.025    1.917    0.261
                        0.43     0.169     0.15     0.05     0.3       / GN1_PID217 13.8 \ EMC_04June08

334036 'GGOV1'          1        1        0      0.04      1.0
                        0.05    -0.05    10.0    2.0       0.0
                        1.0      1.0      0.15   0.5       1.5
                        0.2      0.1      0.00   0.0       3.0
                        2.0      0.67     1.0    0.0       0.10
                       -0.1      0.0      0.01  10.0       0.1
                       41.67     0.0      4.0    5.0      99.0
                      -99.0                                            / GN1_PID217 13.8 \ EMC_04June08

334036 'ESST4B'         1        0.0      2.74   2.74      1.0
                        -.87     0.01     1.00   0.0       1.0
                        -.87     0.0      7.29   0.0       9.12
                        0.11     0.0      0.0                          / GN1_PID217 13.8 \ EMC_04June08
```

APPENDIX A-B SUBSTATION CONFIGURATION FOR THE ADJACENT SUBSTATIONS UNDER STUCK BREAKER FAULT CONDITIONS

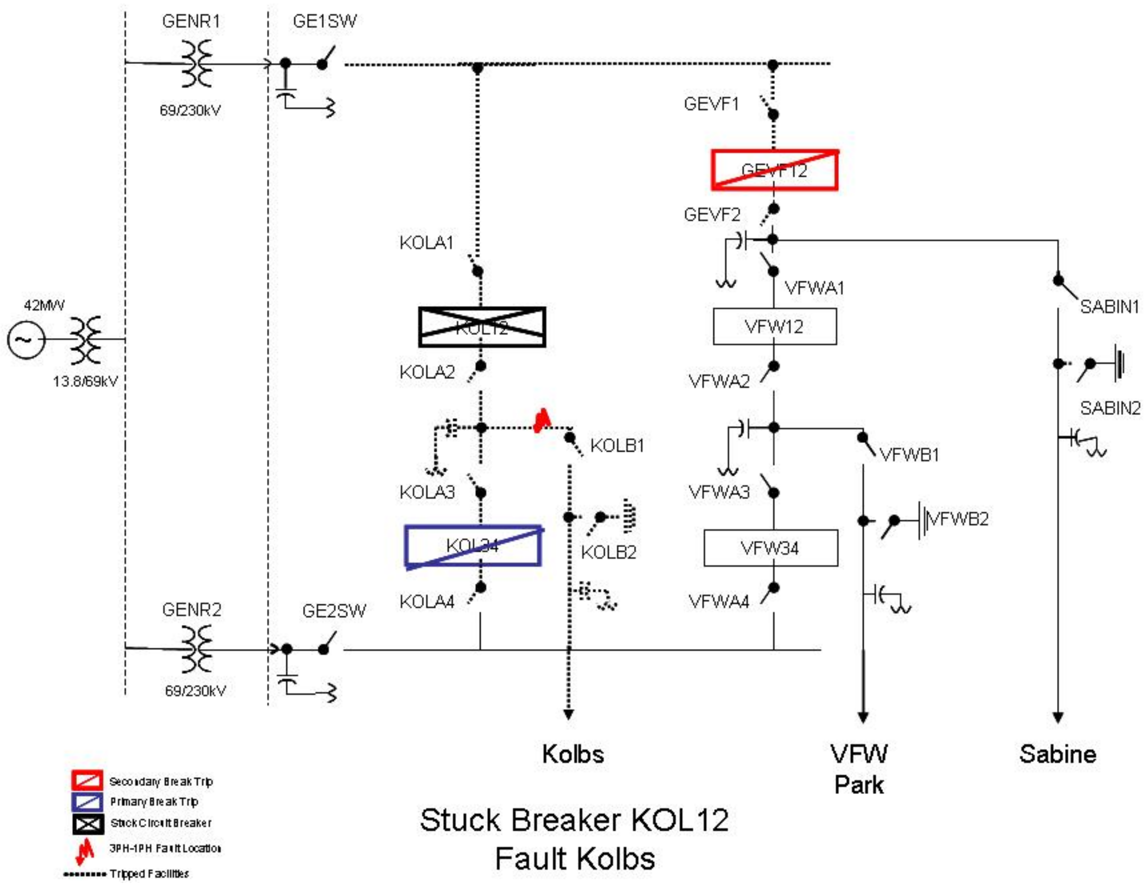
Fault 1: Fault on the Gulfway-Sabine 230kV
Stuck Circuit Breaker (CB) VFW12 with VFW34 Last to Open



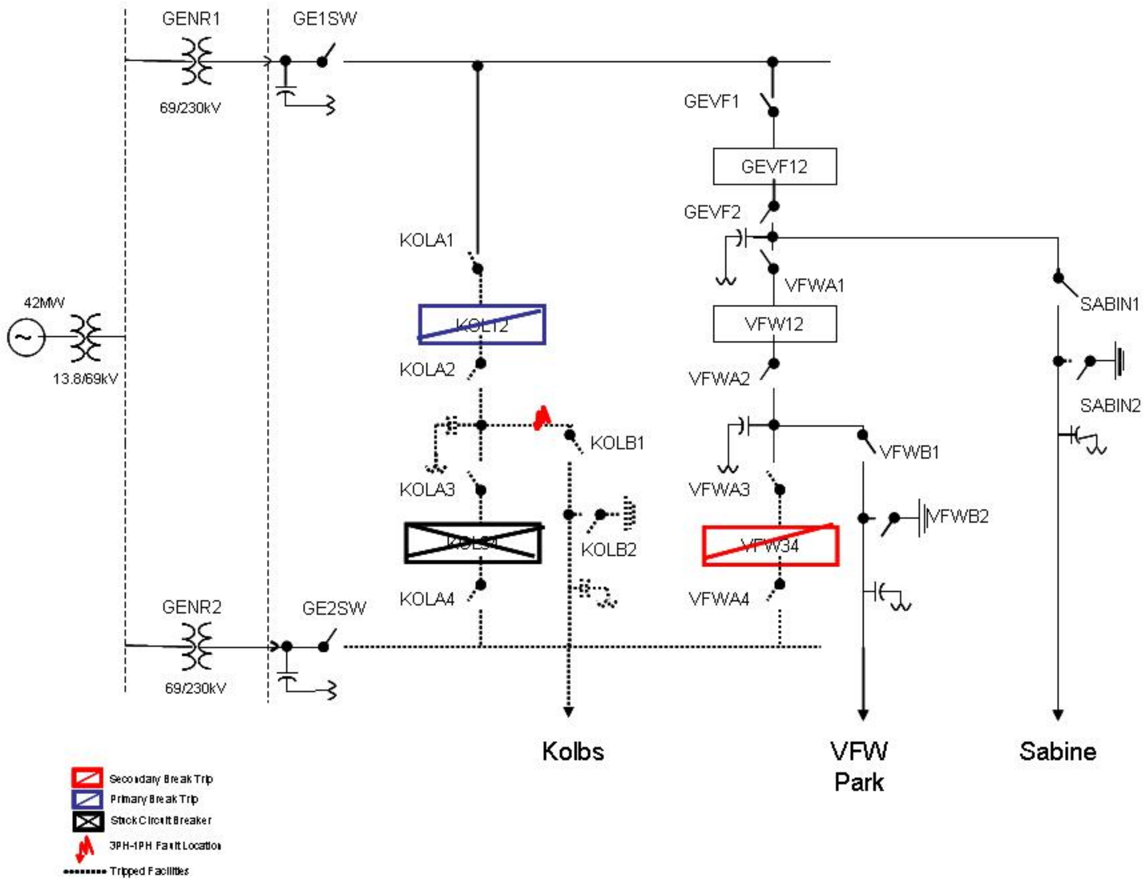
Fault 2: Fault on the Gulfway-VFWPark 230kV
Stuck Circuit Breaker (CB) VFW12 with GEV12 Last to Open



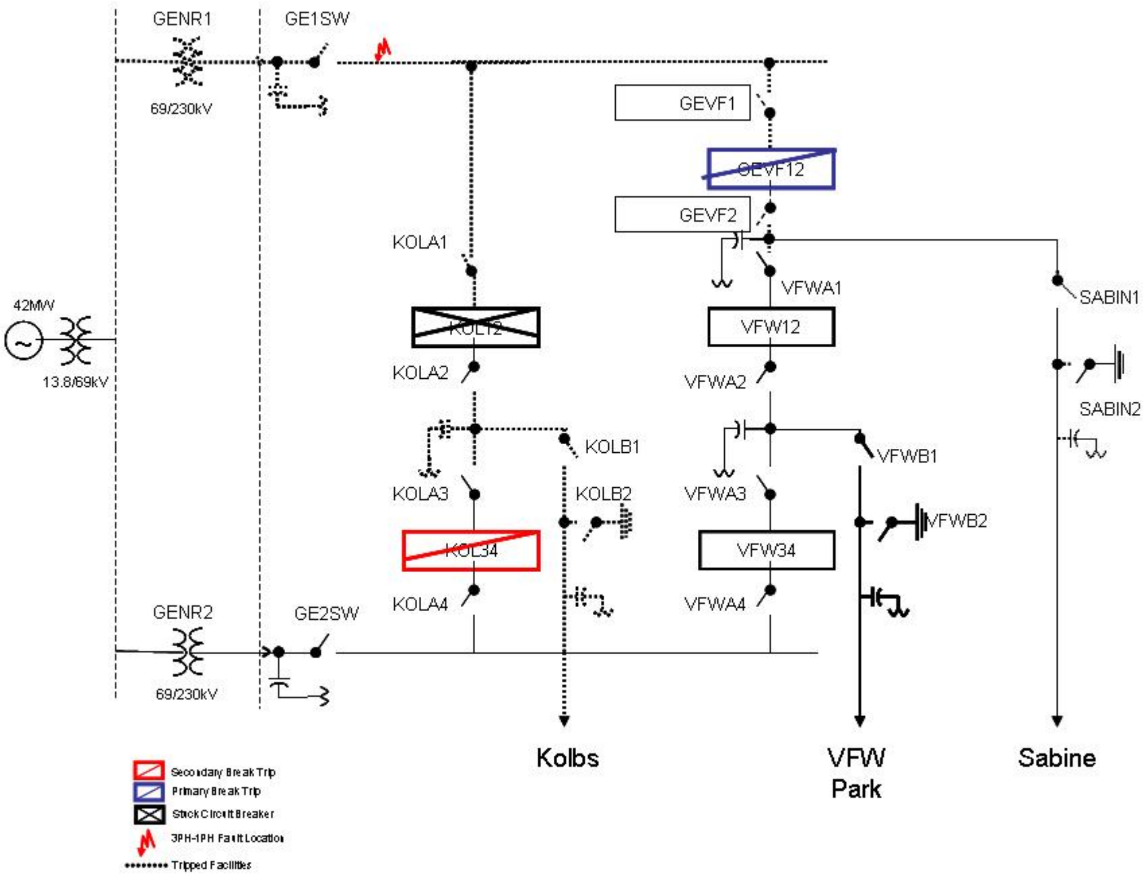
Fault 3: Fault on the Gulfway-Kolbs 230kV
Stuck Circuit Breaker (CB) KOL12 with GEV12 Last to Open



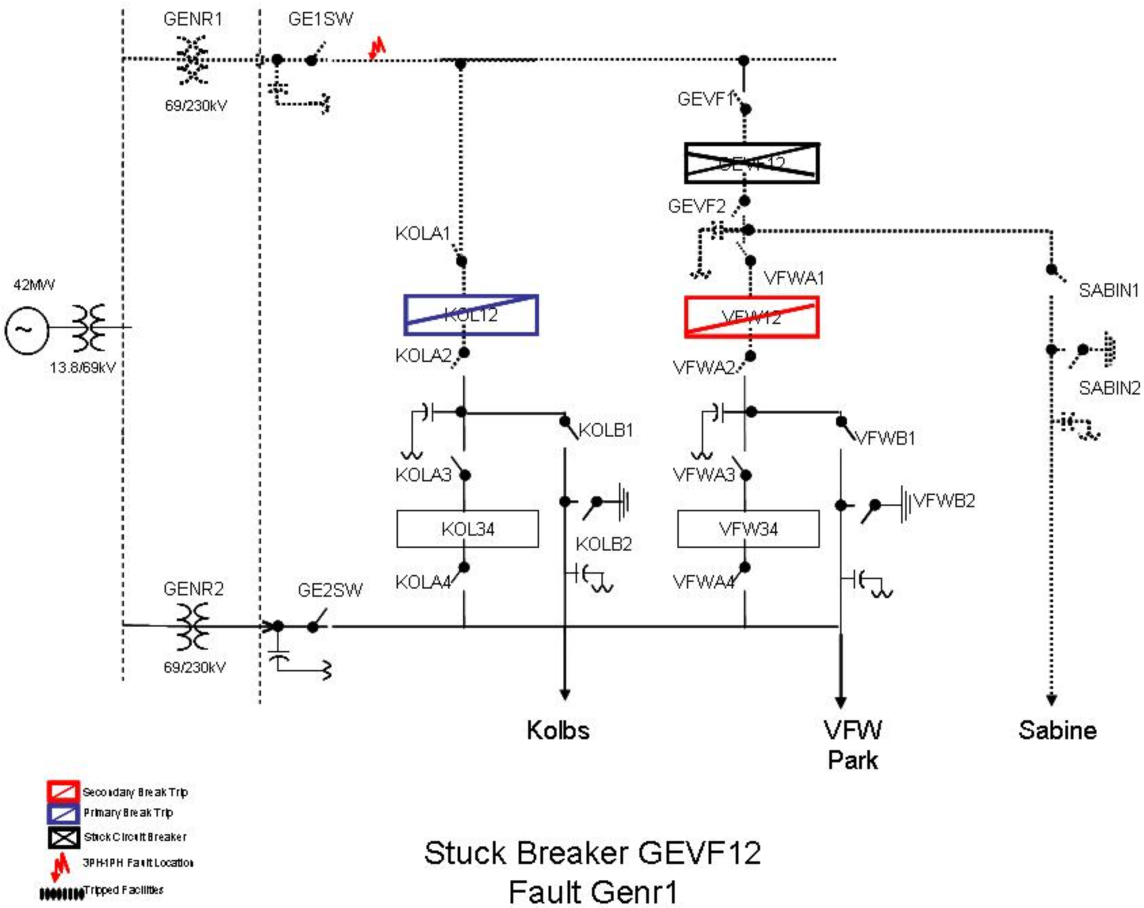
Fault 4: Fault on the Gulfway-Kolbs 230kV
Stuck Circuit Breaker (CB) KOL34 with VFW34 Last to Open



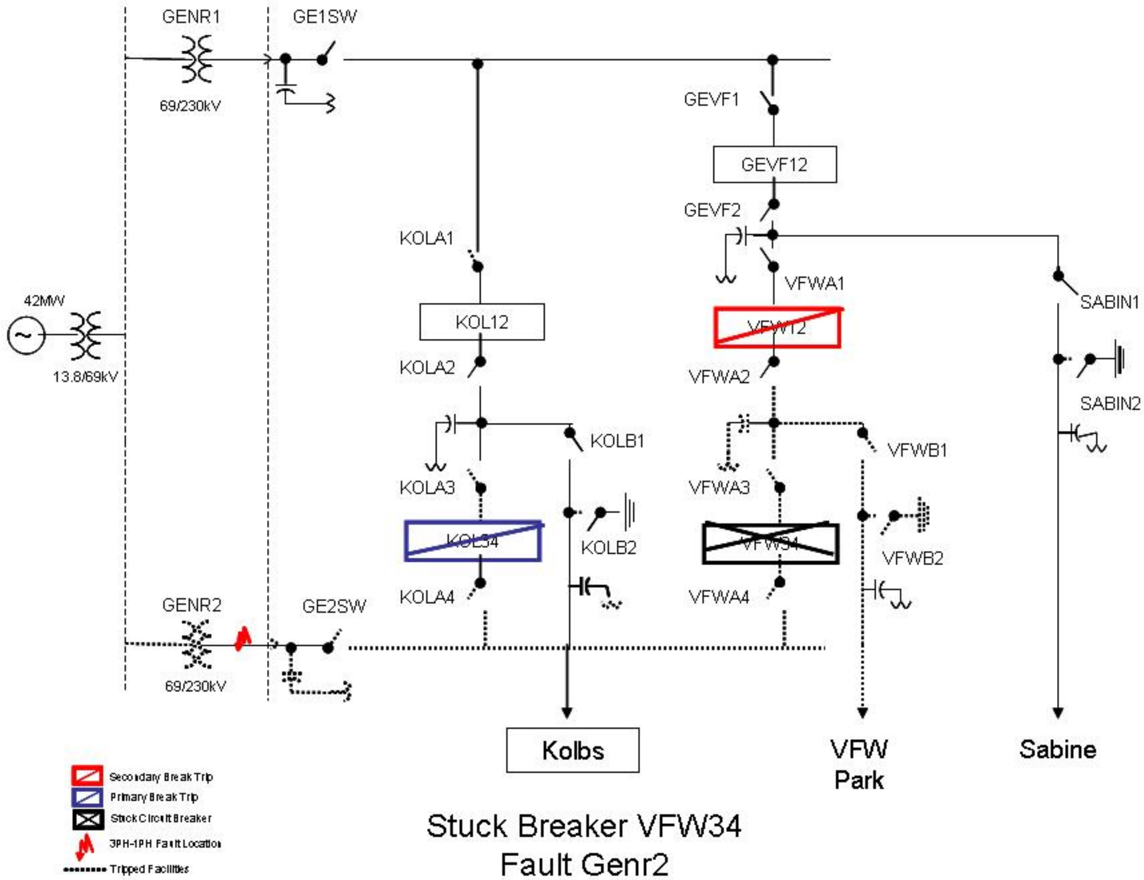
Fault 5: Fault on the Gulfway-Genr1 230/69kV
Stuck Circuit Breaker (CB) KOL12 with KOL34 Last to Open



Fault 6: Fault on the Gulfway-Genr1 230/69kV
Stuck Circuit Breaker (CB) GEF12 with VFW12 Last to Open



Fault 7: Fault on the Gulfway-Genr2 230/69kV
Stuck Circuit Breaker (CB) VFW34 with VFW12 Last to Open



CHANNEL IDENTIFIER LIST

CHANEL X--------- IDENTIFIER ---------X	CHANEL X--------- IDENTIFIER ---------X
1 VOLT 334034 [GULFWAY 230.00]	2 ANGL 334034 [GULFWAY 230.00]
3 VOLT 334035 [GULFWAYA 69.000]	4 ANGL 334035 [GULFWAYA 69.000]
5 VOLT 334036 [PID 217 13.800]	6 ANGL 334036 [PID 217 13.800]
7 VOLT 334440 [G4SABIN 24.000]	8 ANGL 334440 [G4SABIN 24.000]
9 VOLT 334441 [G5SABIN 24.000]	10 ANGL 334441 [G5SABIN 24.000]
11 VOLT 334431 [G1SABIN 20.000]	12 ANGL 334431 [G1SABIN 20.000]
13 VOLT 334432 [G2SABIN 20.000]	14 ANGL 334432 [G2SABIN 20.000]
15 VOLT 334433 [G3SABIN 22.000]	16 ANGL 334433 [G3SABIN 22.000]
17 VOLT 334398 [4HAMPTON 138.00]	18 VOLT 334399 [4NECHESO 138.00]
19 VOLT 334413 [4PNEC BK 138.00]	20 VOLT 334414 [4LINDE 138.00]
21 VOLT 334204 [6CHINA 230.00]	22 VOLT 334364 [6GEOTOWN 230.00]
23 VOLT 335071 [6BTHREE 230.00]	24 VOLT 334450 [4ORANGE 138.00]
25 VOLT 334453 [4COW 13 138.00]	26 FREQ 334034 [GULFWAY 230.00]
27 FREQ 334035 [GULFWAYA 69.000]	28 FREQ 334036 [PID 217 13.800]
29 FREQ 334440 [G4SABIN 24.000]	30 FREQ 334441 [G5SABIN 24.000]
31 FREQ 334431 [G1SABIN 20.000]	32 FREQ 334432 [G2SABIN 20.000]
33 FREQ 334433 [G3SABIN 22.000]	34 FREQ 334398 [4HAMPTON 138.00]
35 FREQ 334399 [4NECHESO 138.00]	36 FREQ 334413 [4PNEC BK 138.00]
37 FREQ 334414 [4LINDE 138.00]	38 FREQ 334204 [6CHINA 230.00]
39 FREQ 334364 [6GEOTOWN 230.00]	40 FREQ 335071 [6BTHREE 230.00]
41 FREQ 334450 [4ORANGE 138.00]	42 FREQ 334453 [4COW 13 138.00]
43 ANGL BUS 334030 MACH '1 '	44 ANGL BUS 334031 MACH '1 '
45 ANGL BUS 334032 MACH '1 '	46 ANGL BUS 334033 MACH '1 '
47 ANGL BUS 334070 MACH '1 '	48 ANGL BUS 334071 MACH '1 '
49 ANGL BUS 334282 MACH '1 '	50 ANGL BUS 334298 MACH '1 '
51 ANGL BUS 334299 MACH '1 '	52 ANGL BUS 334335 MACH '1 '
53 ANGL BUS 334374 MACH '1 '	54 ANGL BUS 334375 MACH '1 '
55 ANGL BUS 334376 MACH '1 '	56 ANGL BUS 334377 MACH '1 '
57 ANGL BUS 334392 MACH '1 '	58 ANGL BUS 334393 MACH '1 '
59 ANGL BUS 334394 MACH '1 '	60 ANGL BUS 334456 MACH '1 '
61 ANGL BUS 334457 MACH '1 '	62 ANGL BUS 334458 MACH '1 '
63 ANGL BUS 334467 MACH '1 '	64 ANGL BUS 334738 MACH '1 '
65 ANGL BUS 334739 MACH '1 '	66 ANGL BUS 334740 MACH '1 '
67 ANGL BUS 335075 MACH '1 '	68 ANGL BUS 335076 MACH '1 '
69 ANGL BUS 335137 MACH '2 '	70 ANGL BUS 335177 MACH '4 '
71 ANGL BUS 335178 MACH '5 '	72 ANGL BUS 335179 MACH '6 '
73 ANGL BUS 335201 MACH '1 '	74 ANGL BUS 335202 MACH '1 '
75 ANGL BUS 335203 MACH '1 '	76 ANGL BUS 335204 MACH '1 '
77 ANGL BUS 335206 MACH '1 '	

APPENDIX A-C Stability Issues in the Western Region of the Entergy System Due to Independent Power Generation

Introduction

The WOTAB (West of the Atchafalaya Basin) Area in defined as Entergy's systems in Southwestern Louisiana, and Southeastern Texas. The WOTAB area is a major load center for the Entergy System. The load to generation ratio requires a significant amount of power to be imported into the WOTAB area. However, because of the influx of new generating projects proposed for the area, it is likely that by the year 2003 this area may turn into a significant exporter of power. There have been a significant number of requests for interconnection studies to evaluate the potential interconnection of new generating facilities in the WOTAB area. It is anticipated that by 2003 there may be approximately 4000 – 6000 MW of new merchant generation within the WOTAB area.

Entergy's transmission system was planned, designed and built to serve approximately 5000 – 6000 MW of native and network loads in the WOTAB area. The addition of a significant amount of merchant generation will result in the export of power out of the WOTAB area. A high level of export power has the potential to create major problems, such as voltage and dynamic stability. The main objective of this study is to establish an estimated power export limit for the WOTAB area based on stability criteria.

Signing an interconnection agreement provides the generator the right to interconnection to the transmission system, but does not provide it any right to move its power onto or over the transmission system. The right to use the transmission system to transmit power can only be obtained by submitting a transmission request for service pursuant to Entergy's FERC-approved transmission tariff. Solutions to stability problems to increase export limits, such as construction of 500 kV line, have very long lead-times and tend to be very expensive.

Entergy believes that it is important to post this study publicly on its OASIS site so that entities that have already executed interconnection agreements, as well as entities that are proposing to site new generation within the WOTAB area, can incorporate this information into their decision-making process.

Analysis

In order to establish stability limits from the WOTAB area, all merchant generating]that have signed an interconnection agreement were dispatched at their maximum capability along with the native generation in the area. In order to accommodate this export and simulate a worst case scenario, generation was reduced in the northern part of the Entergy System.

In this analysis the export limits were determined without the addition of any Power System Stabilizers (PSSs). However, sensitivity studies were conducted to determine the impact of stabilizers. If voltage stability limits were found to be lower than the dynamic stability limits, they were captured in this analysis.

One important assumption made in this study was to ignore thermal limitations. Thermal issues will be addressed as part of Transmission Service Request as they are based on source to sink information and generation dispatch within the WOTAB area.

The two cases analyzed in this study are as follows:

1. Base case with no merchant generation
2. Base case with merchant generation

Voltage stability analysis was performed for the pre-contingency condition and contingencies on four critical lines: Hartburg-Mt. Olive 500 kV, Richard–Webre 500 kV, Nelson–Richard 500 kV, and Grimes–Crockett 345 kV lines. As part of the voltage stability analysis, PV curves were developed in order to determine the maximum power that can be exported from the WOTAB area without experiencing voltage decline or voltage collapse. Entergy's guideline on voltage decline states that voltage at any station should not fall below 0.92 pu of nominal system voltage on single contingency.

Transient stability analysis was performed by applying a 3 phase to ground fault on the lines mentioned earlier. The fault clearing time was assumed to be 5 cycles for 500 kV and 345 kV lines and 6 cycles for the 230 kV lines. The transient stability plots show the machine angle as a function of time and indicate whether machine is stable and well damped, transiently unstable or dynamically unstable. A three percent damping criteria was used to screen the damping problem.

Results

Case 1 – Base Case with no Merchant Generation

No voltage stability problems were identified in this case. The transient stability plots in Figures 1 and 2 for a three-phase fault on the Hartburg – Mt.Olive 500 kV and Richard – Webre 500 kV lines show that the machines are stable and well damped.

Case 2 – Base case with Merchant Generation

A. Voltage Stability Analysis

The voltage stability plot or PV Curve for this case is shown in Figure 3. The X-axis of this plot is the power export level from the WOTAB area corresponding to the pre-contingency condition and the contingency of the four critical lines described earlier. The Y-axis represents the voltage at the Cane River 115 kV bus in the North Louisiana area. This station is representative of the voltage collapse occurring in that area. From the PV plot it can be observed that the most limiting contingency from the point of view of export from the area is the Hartburg – Mt. Olive 500 kV line. Based on the voltage decline guideline, the export limit from the area on the contingency of Hartburg-Mt. Olive line is 2100 MW. Figure 3 also shows that voltage collapse will eventually occur at about 3300 MW.

B. Transient/Dynamic Stability Analysis

The transient stability simulations were performed with the assumption that there are no Power System Stabilizers (PSS) installed on the proposed merchant generating units. The maximum export under this condition where the units are marginally damped was determined to be approximately 2700 MW. The stability plot for this simulation is shown in Figure 4. It was determined that export limits can be improved by adding PSS to the merchant generation. Henceforth, it will be a requirement that all new units in the area be equipped with stabilizers.

<u>Conclusions:</u>

The West of the Atchafalaya Basin (WOTAB) area can experience a voltage and dynamic stability problem if a significant amount of new merchant generation is operating in the area by year 2003. The export limit from this area is determined to be 2700 MW based on dynamic stability and 2100 MW based on voltage decline. As this area can experience dynamic problems beyond a certain export limit it will be mandatory for all IPPs in the area to install PSS on their units. Any *further* increase in the export level may require major upgrades, such as construction of 500 kV transmission lines.

The thermal limits were not evaluated in this study because they are source and sink specific and based on the generation dispatch. These limits will be evaluated when transmission service is requested and a System Impact Study is conducted.

APPENDIX A-D POLICY STATEMENT/GUIDELINES FOR POWER SYSTEM STABILIZER ON THE ENTERGY SYSTEM

Background:

A Power System Stabilizer (PSS) is an electronic feedback control that is a part of the excitation system control for generating units. The PSS acts to modulate the generator field voltage to damp the Power System oscillation.

Due to restructuring of the utility industry, there has been a significant amount of merchant generation activity on the Entergy system. These generators are typically equipped with modern exciters that have a high gain and a fast response to enhance transient stability. However, these fast response exciters, if used without stabilizers, can lead to oscillatory instability affecting local or regional reliability. This problem is exacerbated particularly in areas where there is a large amount of generation with limited transmission available for exporting power.

Stability studies carried out at Entergy have validated this concern. Furthermore, based on the understanding of operational problems experienced in the WSCC area over the last several years and the opinion of leading experts in the stability area, PSS are an effective and a low cost means of mitigating dynamic stability problems. In particular, PSS cost can be low if it is included in power plant procurement specifications.

Therefore, as a pre-emptive measure, Entergy requires all new generation (including affiliates and qualifying facilities) intending to interconnect to its transmission system to install PSS on their respective units.

The following guidelines shall be followed for PSS installation:

- PSS shall be installed on all new synchronous generators (50 MVA and larger) connecting to the transmission system that were put into service after January 1, 2000.

- PSS shall be installed on synchronous generators (50 MVA and larger) installed before January 1, 2000 subject to confirmation by Entergy that these units are good candidates for PSS and installing PSS on these units will enhance stability in the region. The decision to install PSS on a specific unit will be based on the effectiveness of the PSS in controlling oscillations, the suitability of the excitation system, and cost of retrofitting.

- In areas where a dynamic stability problem has not been explicitly identified, all synchronous generators (50 MVA and larger) will still be required to install stabilizers. However, in such cases the tuning will not be required and the stabilizer may remain disconnected until further advised by Entergy.

- Need for testing and tuning of PSS on units requesting transmission service from areas where stability problem has not been explicitly identified will be determined on an as-needed basis as part of transmission service study.

- The plants are responsible for testing and tuning of exciter and stabilizer controls for optimum performance and providing PSS model and data for use with PSS/E stability program.

- PSS equipment shall be tested and calibrated in conjunction with automatic voltage regulation (AVR) testing and calibration at-least every five years in accordance with the NERC Compliance Criteria on Generator Testing. PSS re-calibration must be performed if AVR parameters are modified.

- The PSS equipment to be installed is required to be of the Delta-P-omega type.

References:

WOTAB Area Stability Study for the Entergy System
WSCC Draft Policy Statement on Power System Stabilizers
PSEC Application Notes: Power System Stabilizer helps need plant stability margins for Simple Cycle and Combined Cycle Power Plants

APPENDIX A-E TRANSIENT STABILITY DATA AND PLOTS

Plots illustrating the results from the simulated cases have been provided. For all cases, machine angle and frequency plots are given for representative generators in the vicinity of major 138kV or 230kV buses in the area near the proposed PID-217 generation.

PLOTS

TABLE IV-2A FAULT CASES SIMULATED IN THIS STUDY: 3 PHASE FAULTS WITH NORMAL CLEARING

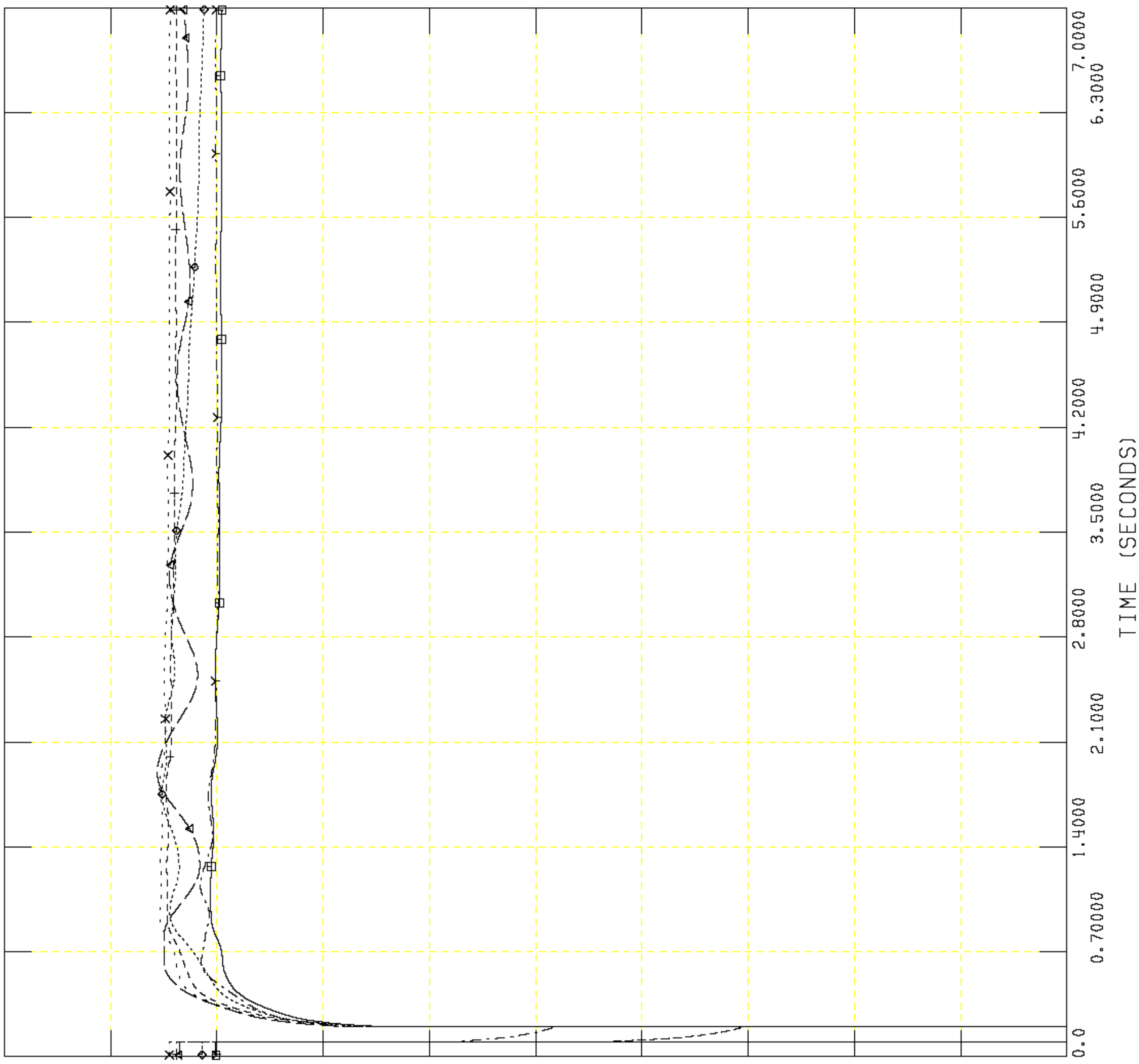
FAULT REFERENCE NO. 1
FAULT-SABINE- LOCATION GULFWAY

GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

FILE: C:\SPP PID-217\GW-SABINE-1.out

TUE, JUL 29 2008 10:31
PG 1: VOLTAGE

Channel	Min	Max
CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]	1.2000	0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]	1.2000	0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]	1.2000	0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]	1.2000	0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]	1.2000	0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]	1.2000	0.20000



GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

FILE: C:\SPP PID-217\GW-SABINE-1.out

TUE, JUL 29 2008 10:31
PG 2: VOLTAGE

CHNL# 20: [VOLT 334414 [4LINDE 138.00]]
1.2000 0.20000

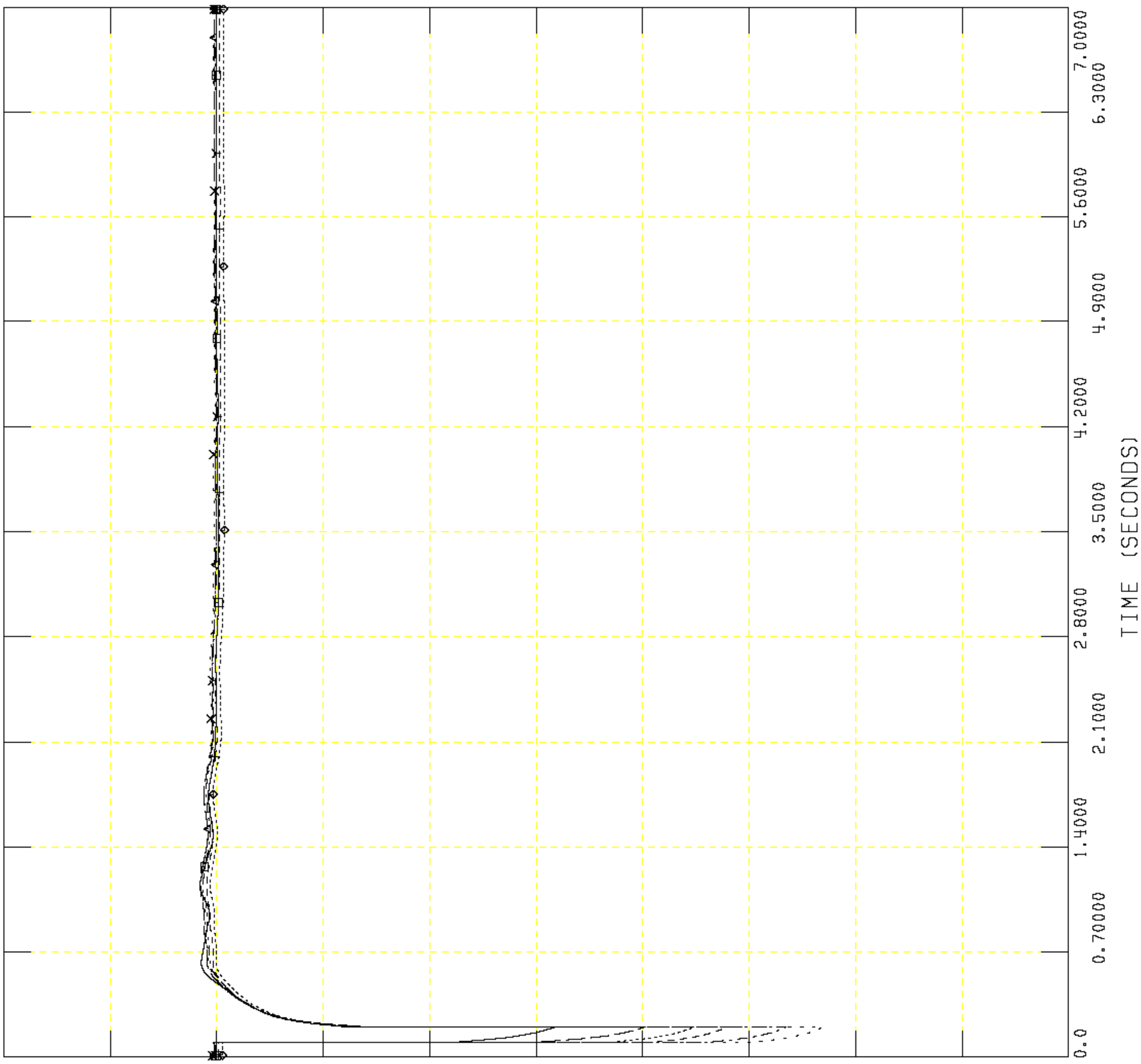
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]
1.2000 0.20000

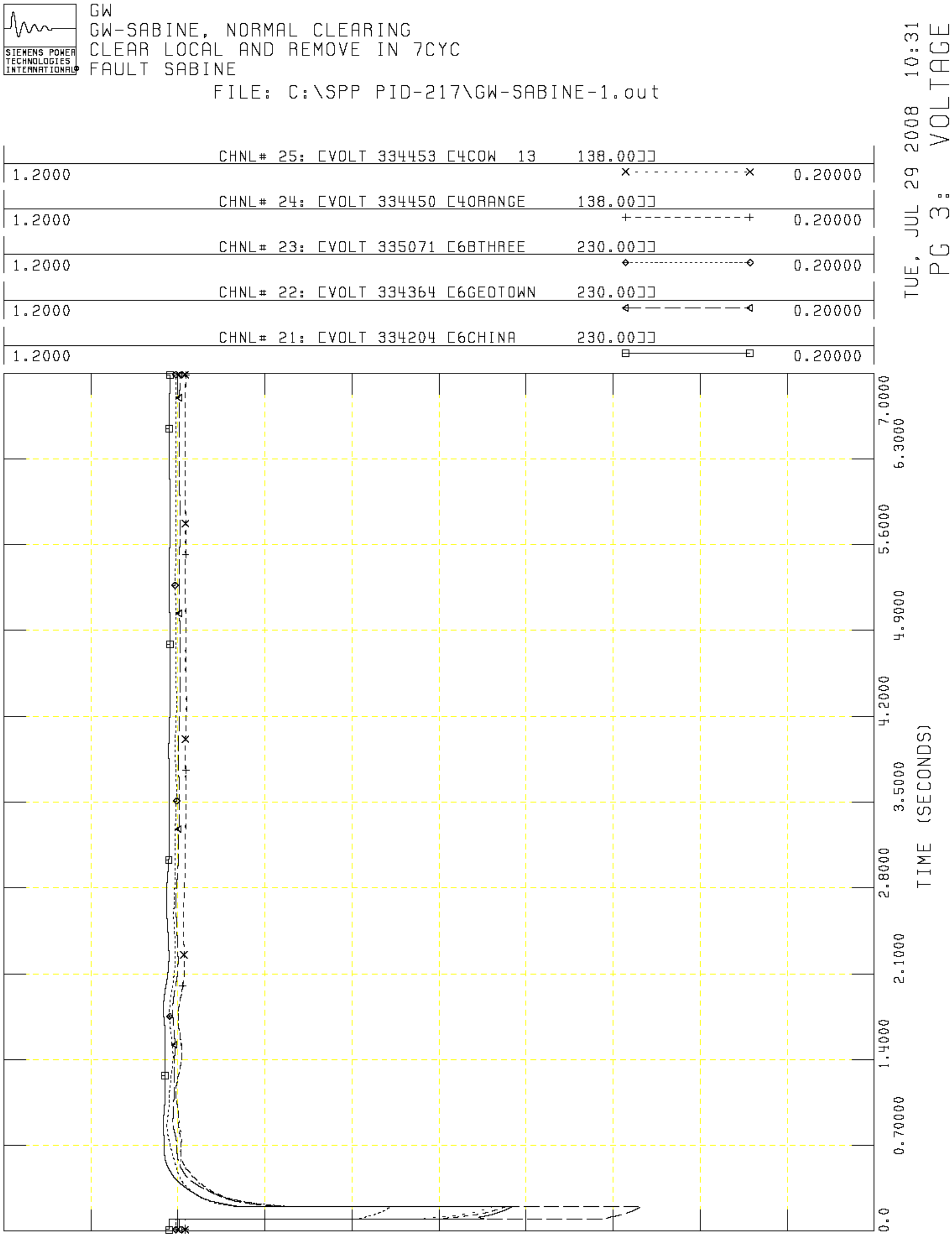
CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]
1.2000 0.20000

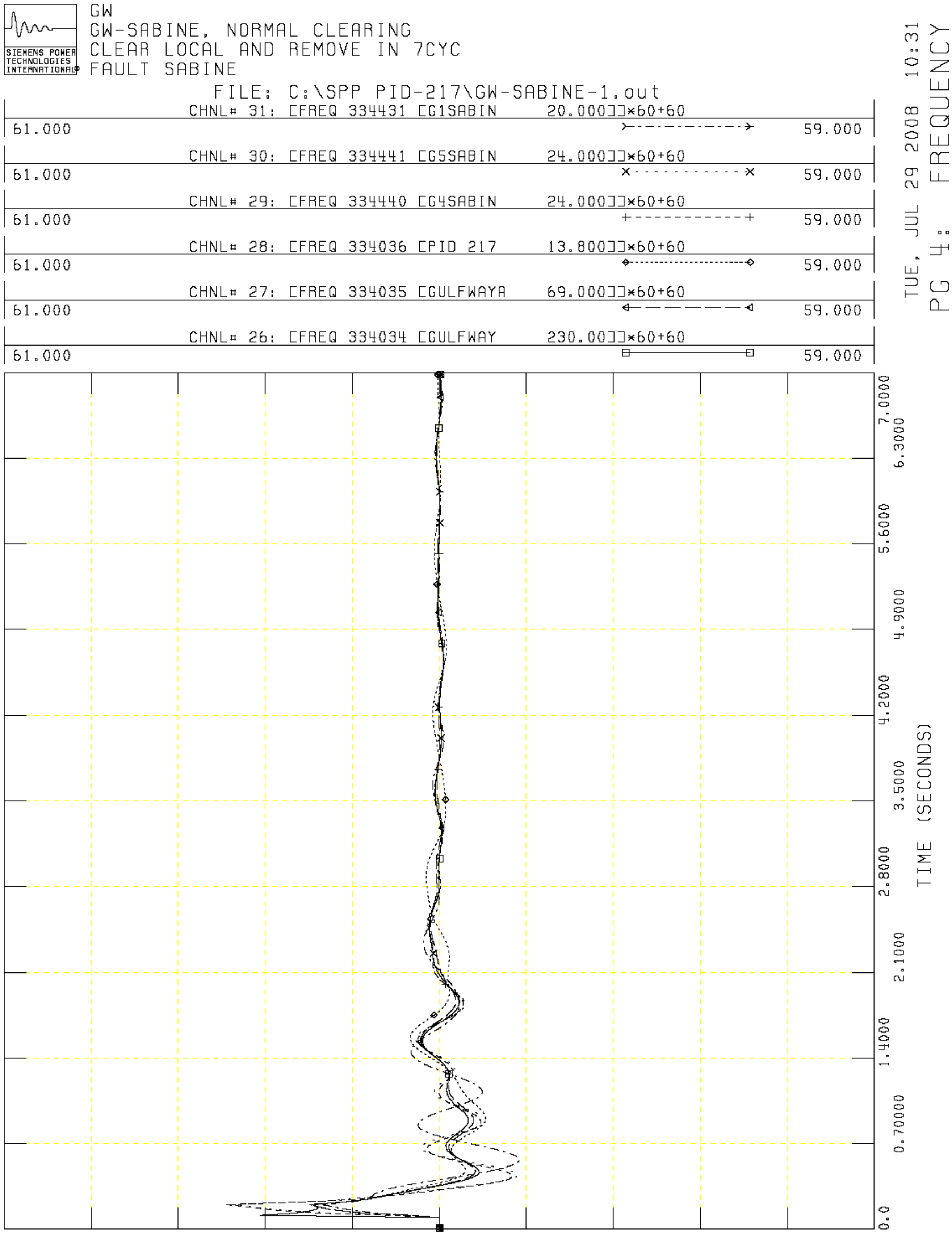
CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]
1.2000 0.20000

CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]
1.2000 0.20000

CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]
1.2000 0.20000




SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE
FILE: C:\SPP PID-217\GW-SABINE-1.out
TUE, JUL 29 2008 10:31
PG 3: VOLTAGE
CHNL# 25: [VOLT 334453 [4COW 13 138.00]]
1.2000 0.20000
CHNL# 24: [VOLT 334450 [4ORANGE 138.00]]
1.2000 0.20000
CHNL# 23: [VOLT 335071 [6BTHREE 230.00]]
1.2000 0.20000
CHNL# 22: [VOLT 334364 [6GEOTOWN 230.00]]
1.2000 0.20000
CHNL# 21: [VOLT 334204 [6CHINA 230.00]]
1.2000 0.20000
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)



GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE
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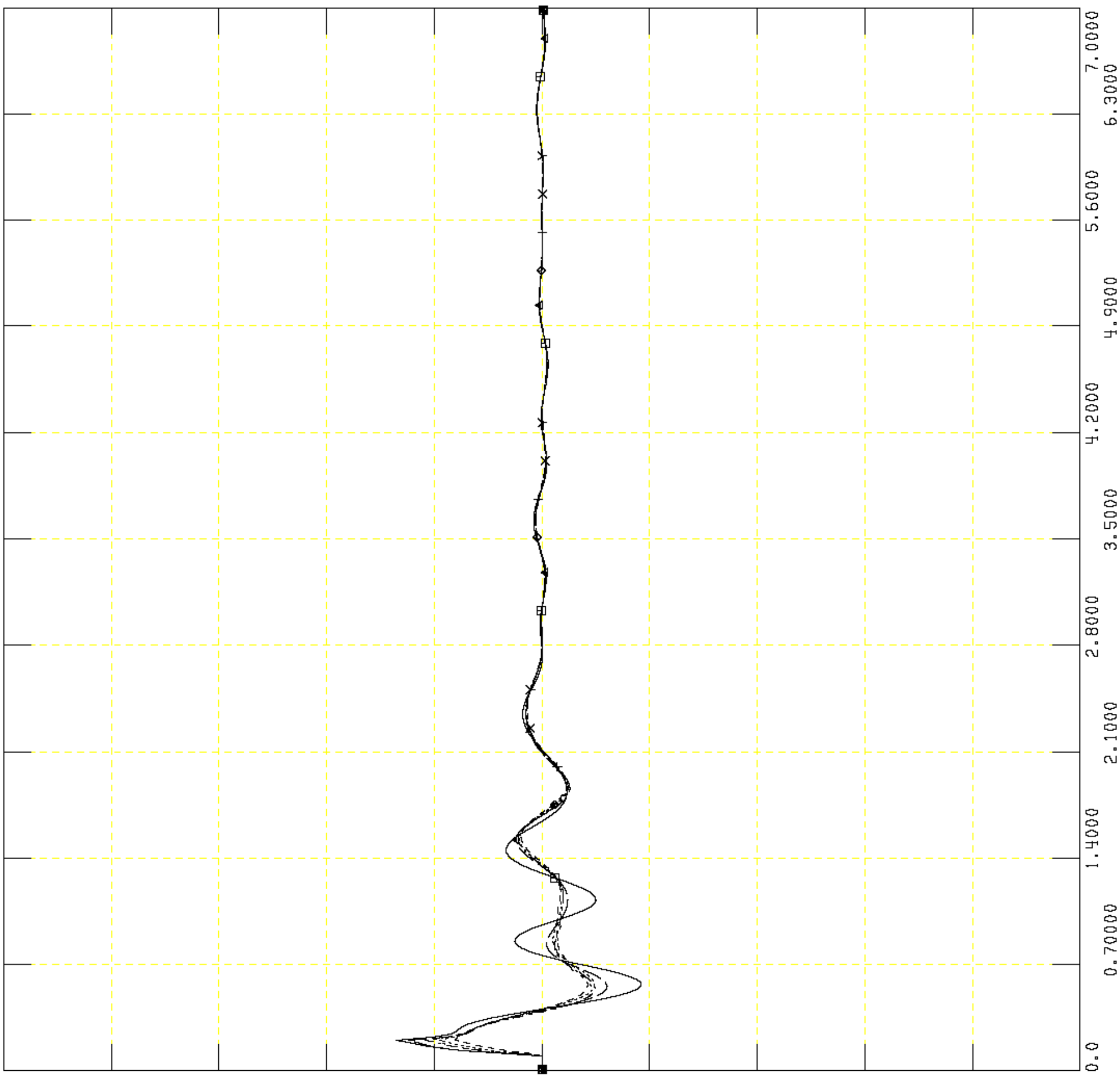
CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60
61.000 59.000
CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60
61.000 59.000
CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60
61.000 59.000
CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60
61.000 59.000
CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60
61.000 59.000
CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60
61.000 59.000
TUE, JUL 29 2008 10:31
PG 4: FREQUENCY
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)

GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

FILE: C:\SPP PID-217\GW-SABINE-1.out

61.000	CHNL# 37: [FREQ 334414 [4LINDE 138.00]]*60+60	59.000
61.000	CHNL# 36: [FREQ 334413 [4PNEC BK 138.00]]*60+60	59.000
61.000	CHNL# 35: [FREQ 334399 [4NECHESO 138.00]]*60+60	59.000
61.000	CHNL# 34: [FREQ 334398 [4HAMPTON 138.00]]*60+60	59.000
61.000	CHNL# 33: [FREQ 334433 [G3SABIN 22.000]]*60+60	59.000
61.000	CHNL# 32: [FREQ 334432 [G2SABIN 20.000]]*60+60	59.000



TUE, JUL 29 2008 10:31
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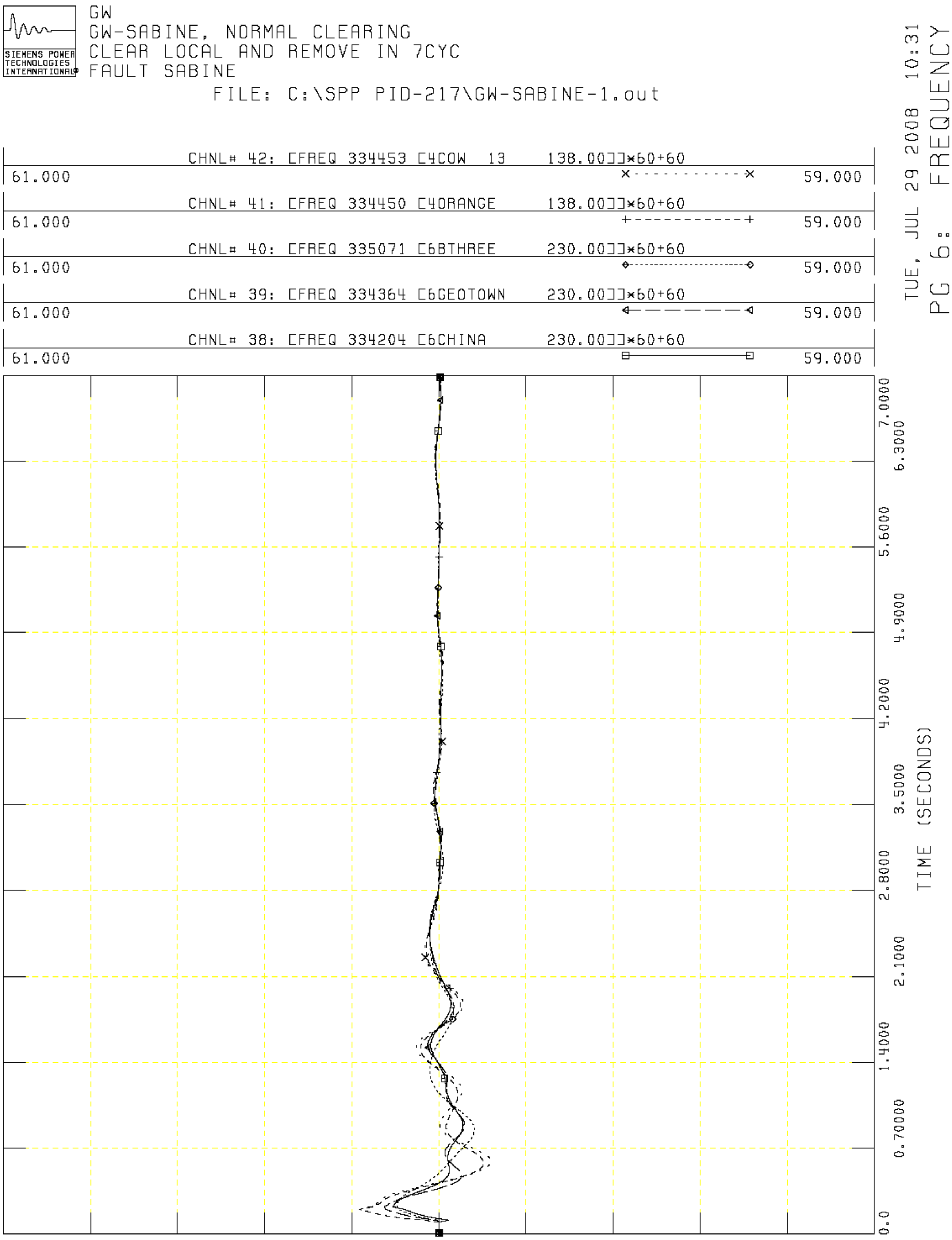
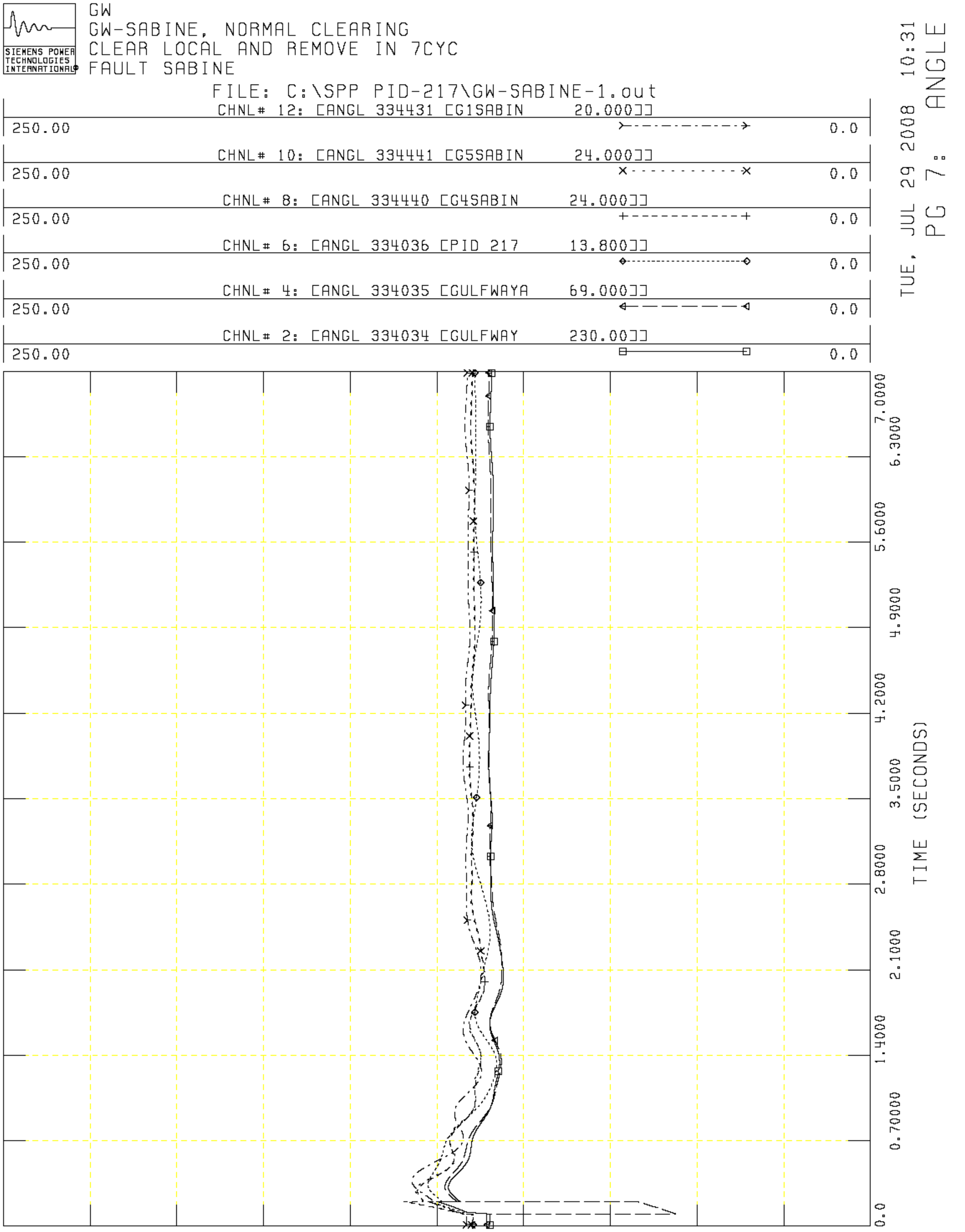


GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE
FILE: C:\SPP PID-217\GW-SABINE-1.out
TUE, JUL 29 2008 10:31
PG 6: FREQUENCY
CHNL# 42: [FREQ 334453 [4COW 13 138.00]]*60+60
61.000
59.000
CHNL# 41: [FREQ 334450 [4ORANGE 138.00]]*60+60
61.000
59.000
CHNL# 40: [FREQ 335071 [6BTHREE 230.00]]*60+60
61.000
59.000
CHNL# 39: [FREQ 334364 [6GEOTOWN 230.00]]*60+60
61.000
59.000
CHNL# 38: [FREQ 334204 [6CHINA 230.00]]*60+60
61.000
59.000
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)


GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
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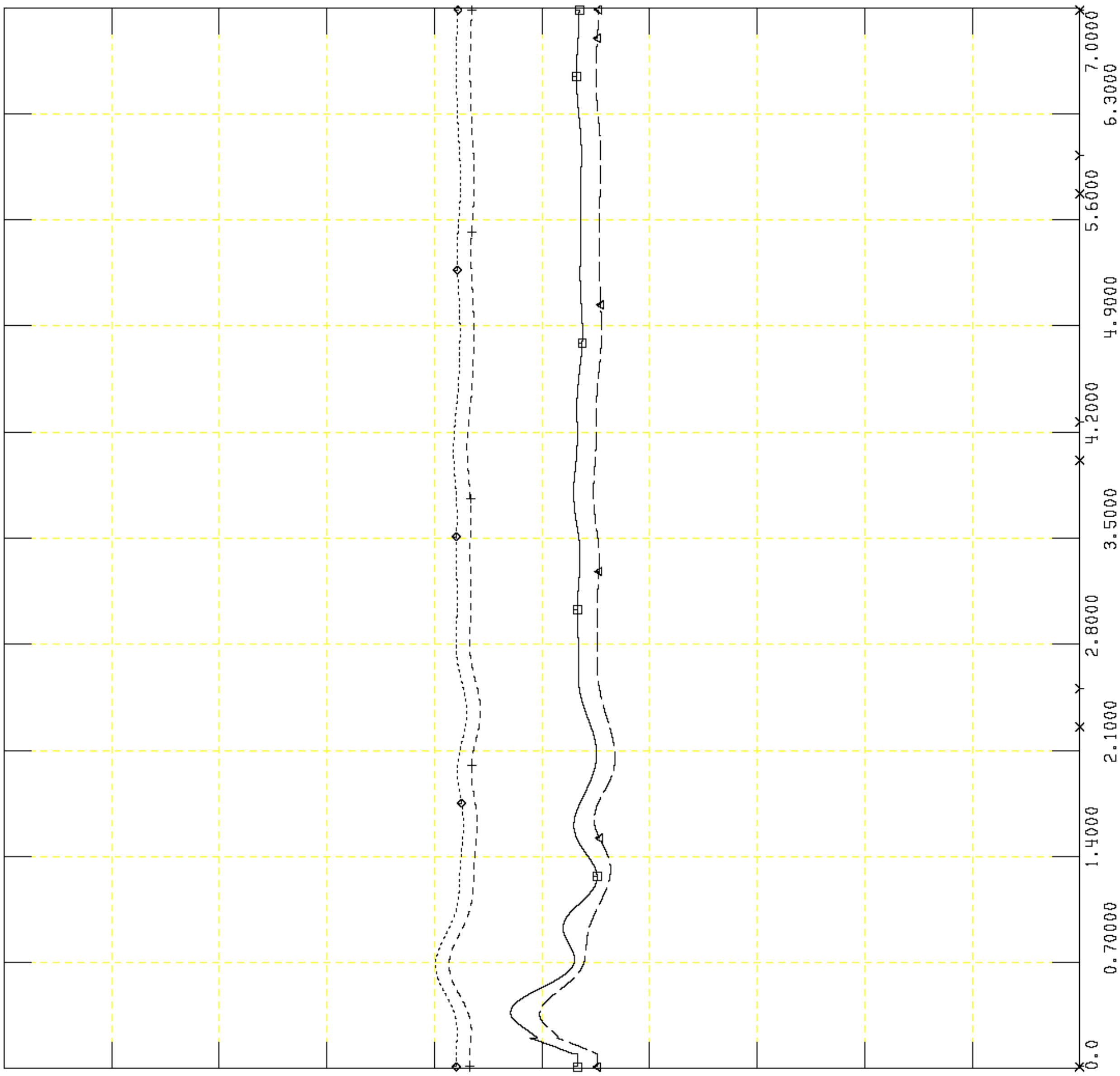
250.00 0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00 0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00 0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00 0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00 0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.00]]
250.00 0.0
TUE, JUL 29 2008 10:31
PG 7: ANGLE
7.0000
6.3000
5.6000
4.9000
4.2000
3.5000
2.8000
2.1000
1.4000
0.70000
0.0
TIME (SECONDS)

GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

FILE: C:\SPP PID-217\GW-SABINE-1.out

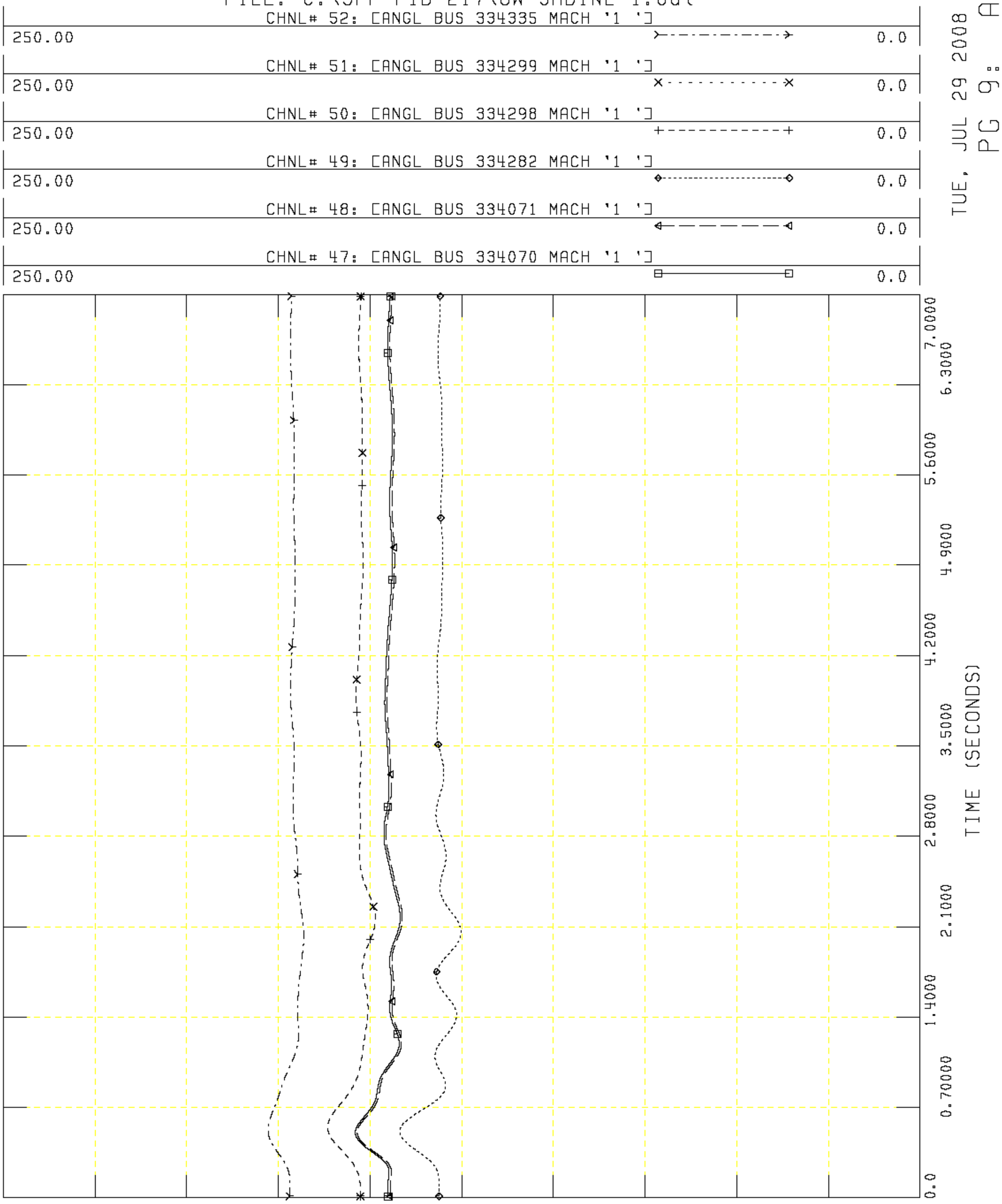
TUE, JUL 29 2008 10:31
PG 8: ANGLE

Channel	Max	Min
CHNL# 46: [ANGL BUS 334033 MACH '1 ']	250.00	0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']	250.00	0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']	250.00	0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']	250.00	0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]	250.00	0.0
CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]	250.00	0.0



GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

FILE: C:\SPP PID-217\GW-SABINE-1.out



GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

TUE, JUL 29 2008 10:31
PG 10: ANGLE

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CHNL# 58: [ANGL BUS 334393 MACH '1 ']
250.00 0.0

CHNL# 57: [ANGL BUS 334392 MACH '1 ']
250.00 0.0

CHNL# 56: [ANGL BUS 334377 MACH '1 ']
250.00 0.0

CHNL# 55: [ANGL BUS 334376 MACH '1 ']
250.00 0.0

CHNL# 54: [ANGL BUS 334375 MACH '1 ']
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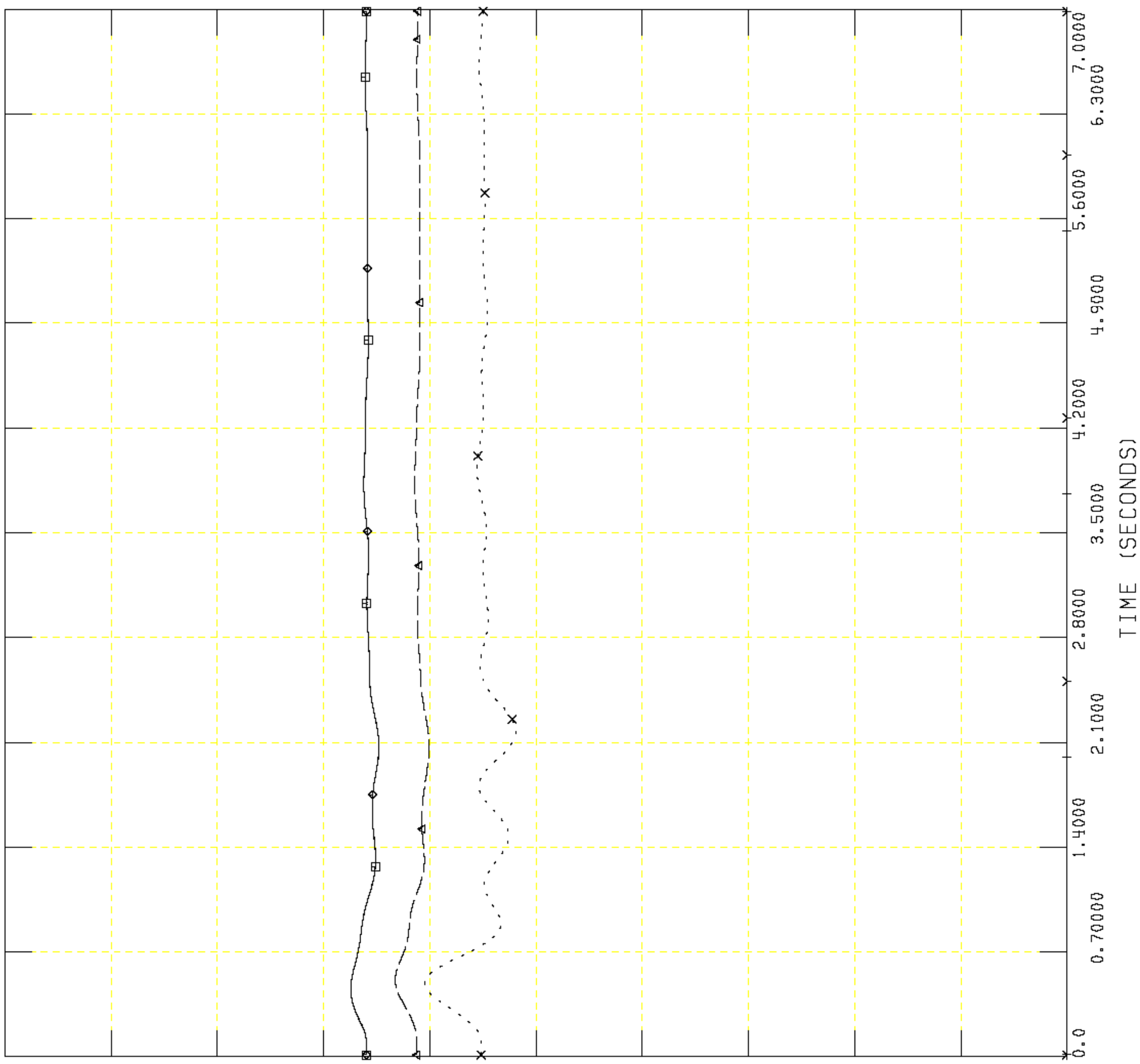
CHNL# 53: [ANGL BUS 334374 MACH '1 ']
250.00 0.0



GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

FILE: C:\SPP PID-217\GW-SABINE-1.out

TUE, JUL 29 2008 10:31
PG 11: ANGLE

250.00	CHNL# 64: [ANGL BUS 334738 MACH '1 ']	0.0
250.00	CHNL# 63: [ANGL BUS 334467 MACH '1 ']	0.0
250.00	CHNL# 62: [ANGL BUS 334458 MACH '1 ']	0.0
250.00	CHNL# 61: [ANGL BUS 334457 MACH '1 ']	0.0
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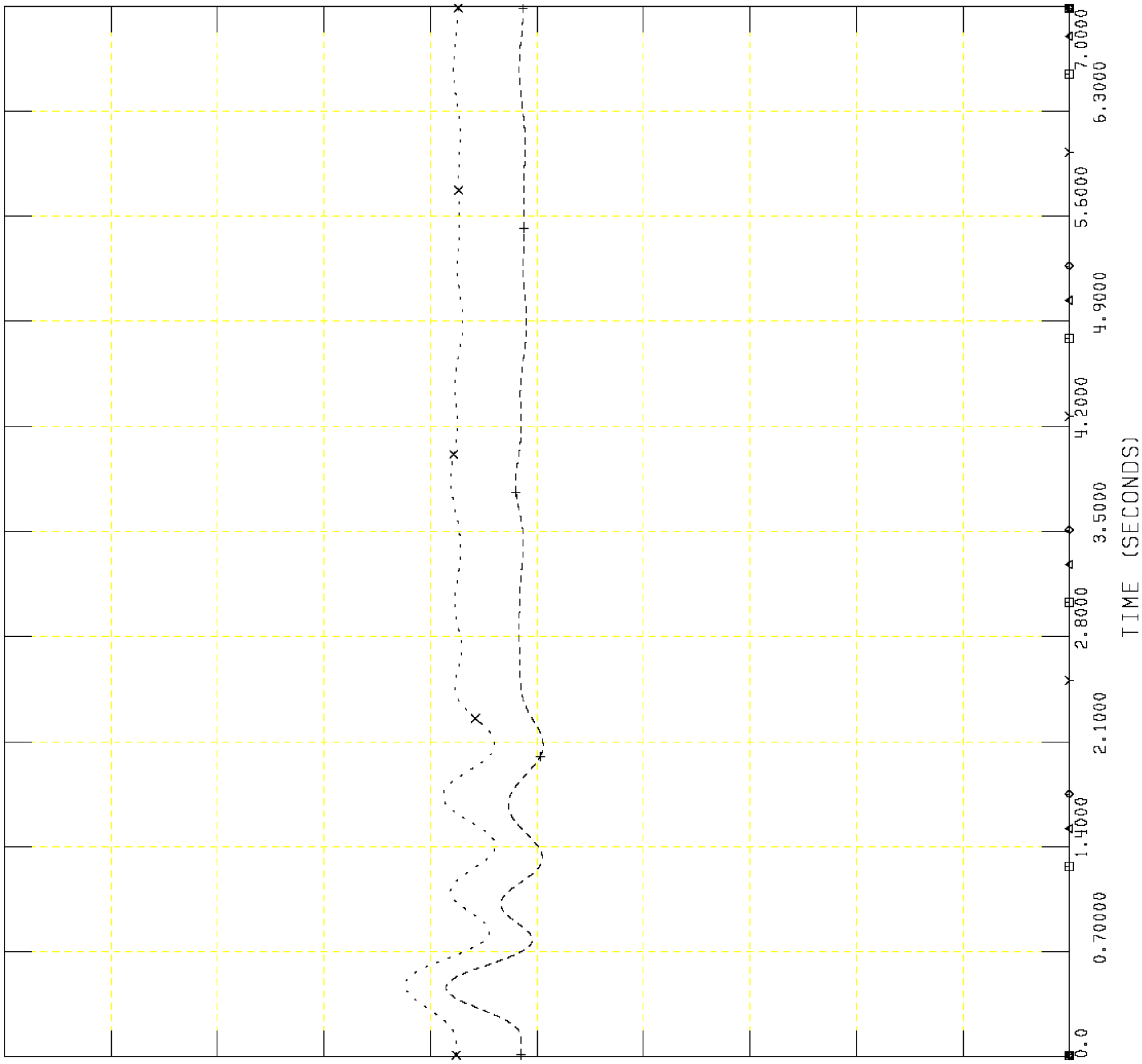

GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

FILE: C:\SPP PID-217\GW-SABINE-1.out

TUE, JUL 29 2008 10:31
PG 12: ANGLE

Channel	Max	Min
CHNL# 70: [ANGL BUS 335177 MACH '4 ']	250.00	0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']	250.00	0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']	250.00	0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']	250.00	0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']	250.00	0.0
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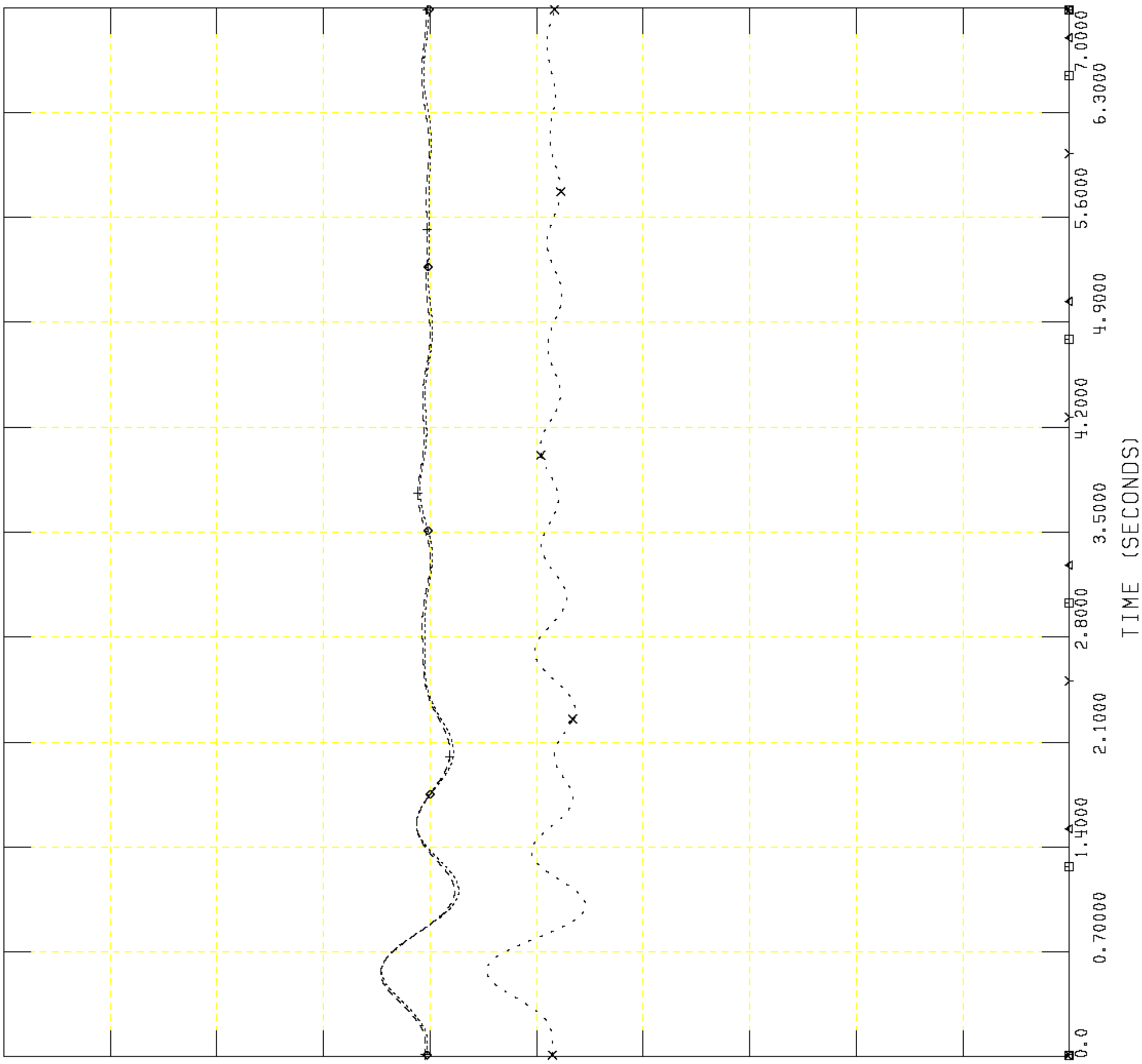

GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE

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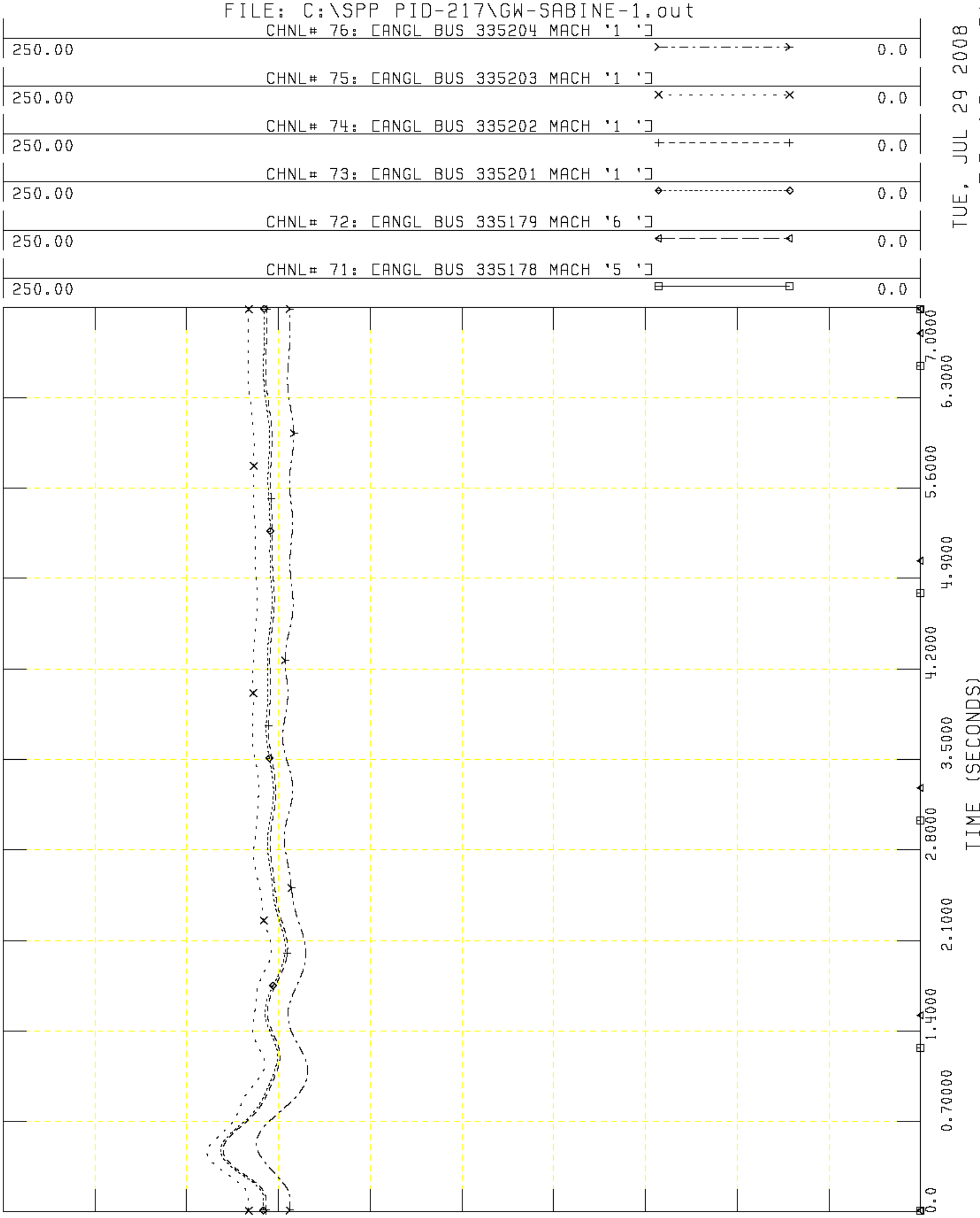
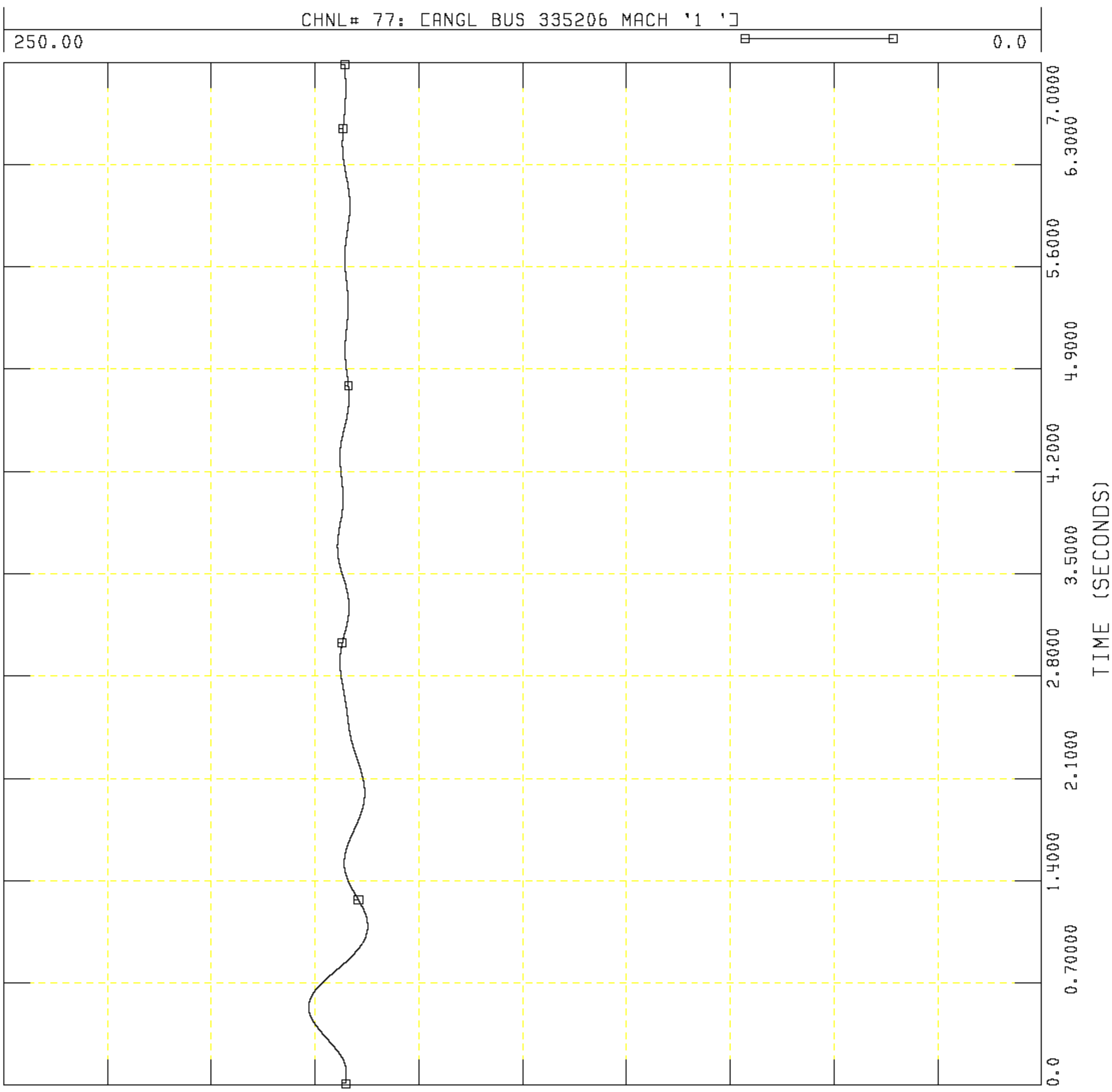


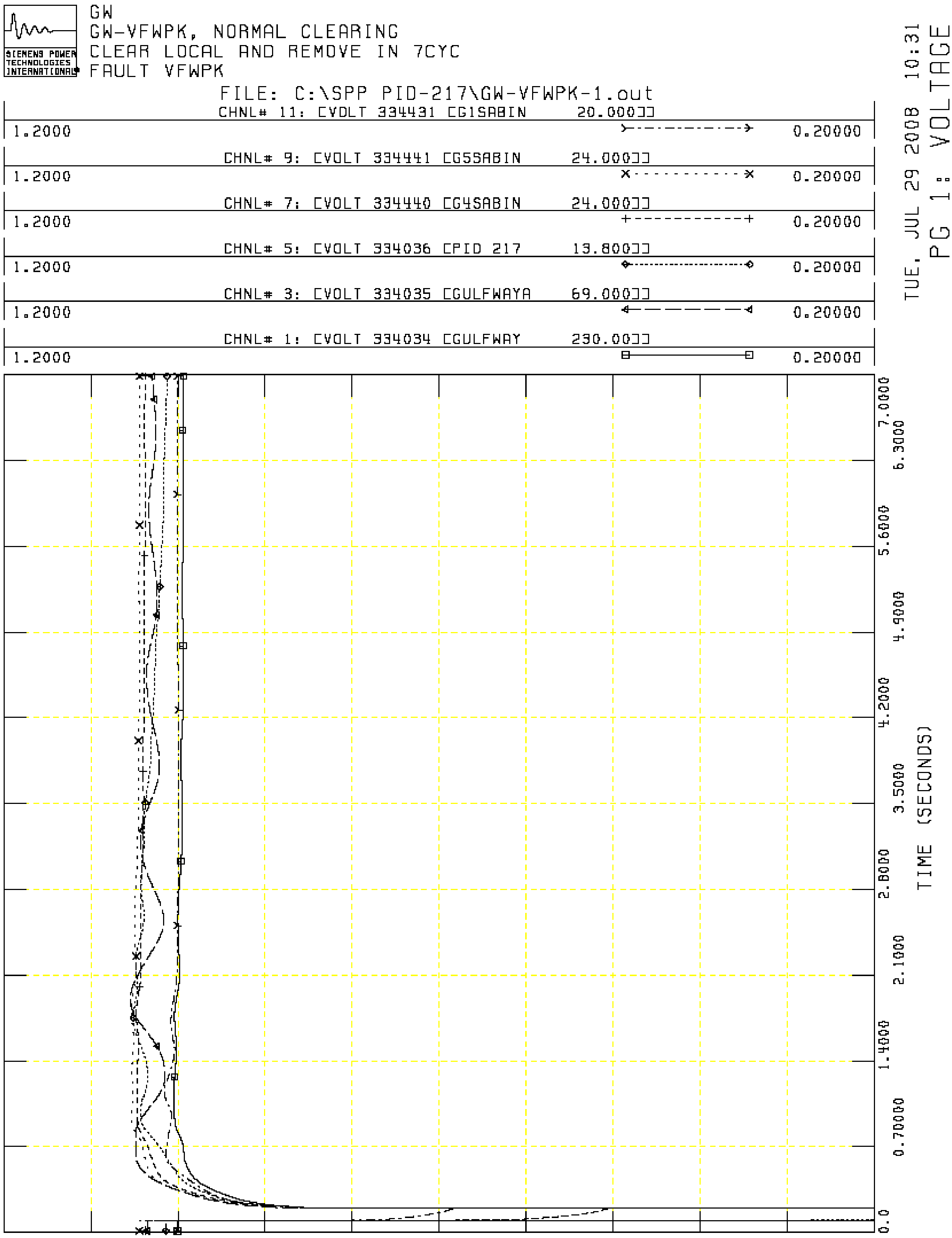
TUE, JUL 29 2008 10:31
PG 13: ANGLE

GW
GW-SABINE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT SABINE
FILE: C:\SPP PID-217\GW-SABINE-1.out

TUE, JUL 29 2008 10:31
PG 14: ANGLE



FAULT REFERENCE NO. 2
FAULT-VFWPARK- LOCATION GULFWAY


GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
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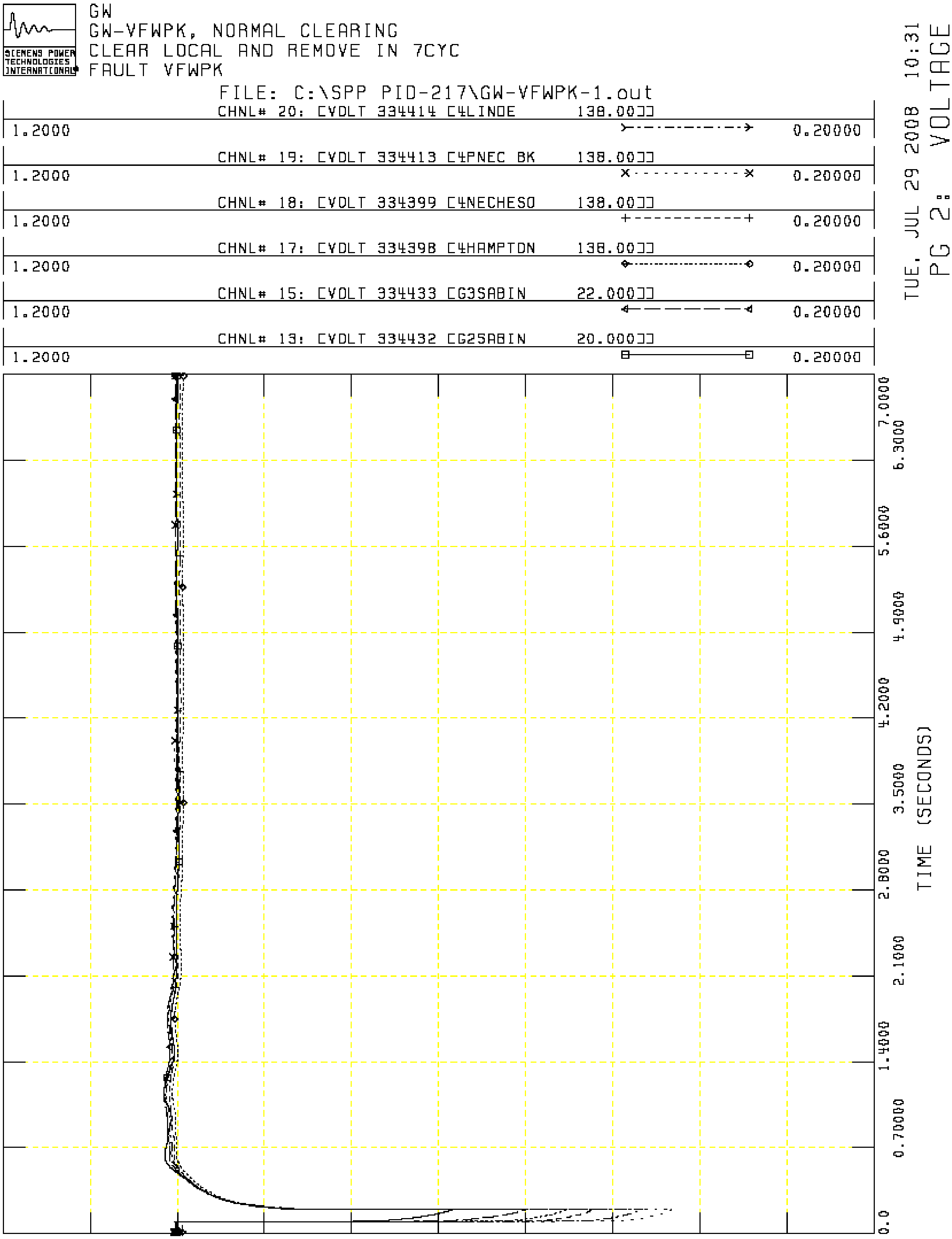
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000 0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000 0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000 0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000 0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000 0.20000
TUE, JUL 29 2008 10:31
PG 1: VOLTAGE
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)


GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
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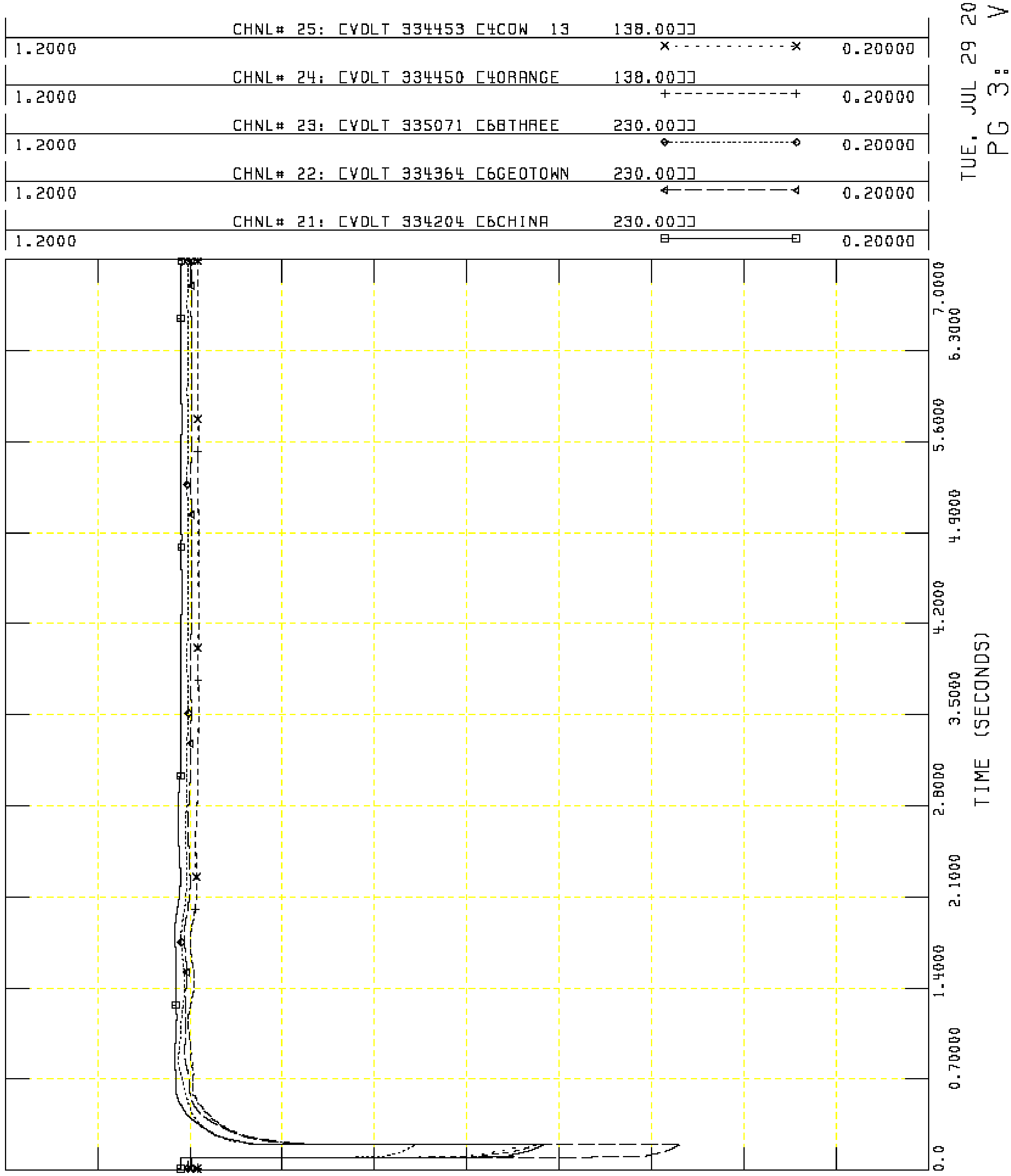
1.2000 0.20000
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]
1.2000 0.20000
CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]
1.2000 0.20000
CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]
1.2000 0.20000
CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]
1.2000 0.20000
CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]
1.2000 0.20000
TUE, JUL 29 2008 10:31
PG 2: VOLTAGE
7.0000
6.3000
5.6000
4.9000
4.2000
3.5000
2.8000
2.1000
1.4000
0.70000
0.0
TIME (SECONDS)

GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK
FILE: C:\SPP PID-217\GW-VFWPK-1.out



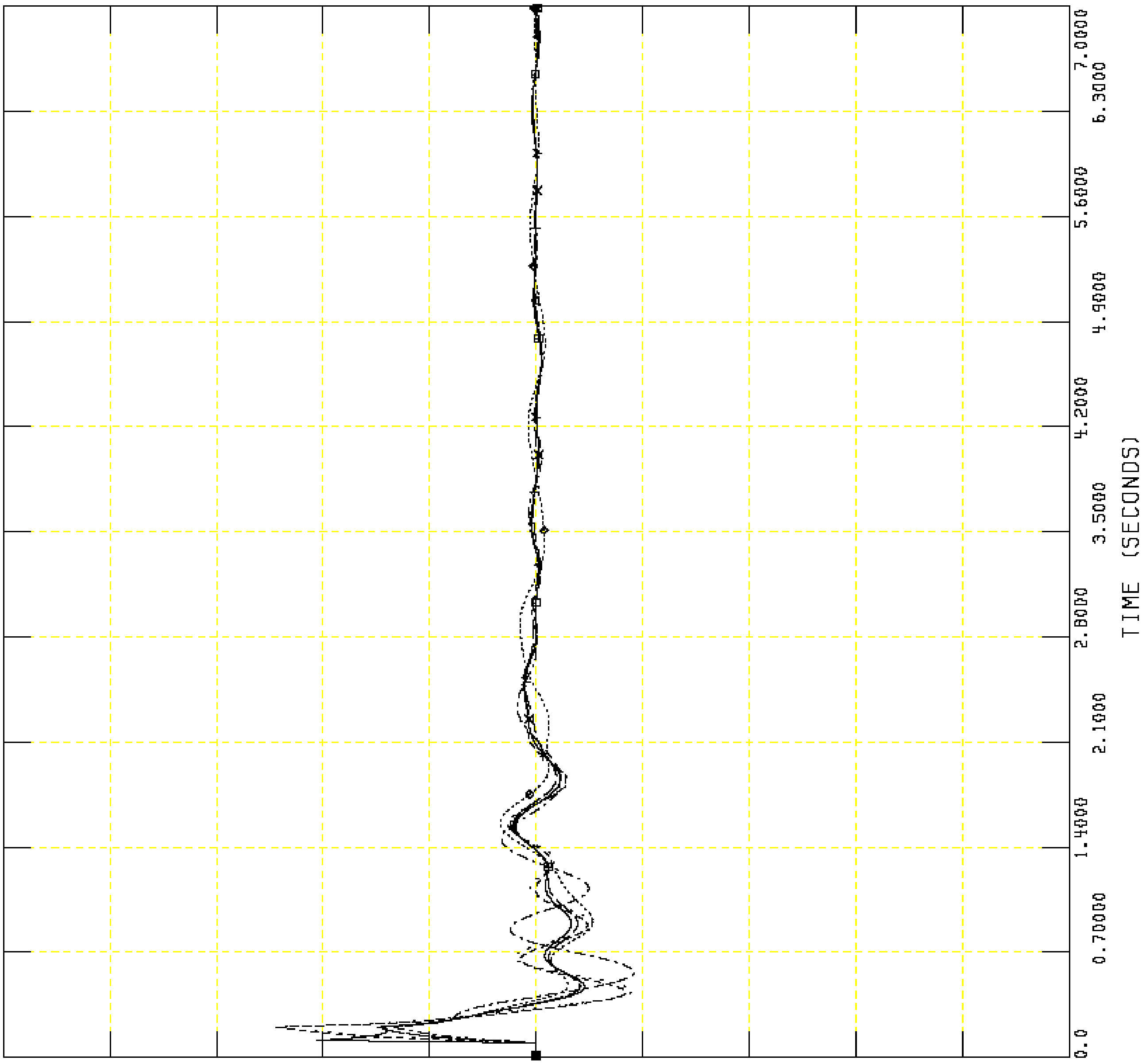
SIEMENS POWER TECHNOLOGIES INTERNATIONAL

GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

FILE: C:\SPP PID-217\GW-VFWPK-1.out

Channel	Scale	Max	Min
CHNL# 31: [FREQ 334431 [G1SABIN	20.000]]*60+60	61.000	59.000
CHNL# 30: [FREQ 334441 [G5SABIN	24.000]]*60+60	61.000	59.000
CHNL# 29: [FREQ 334440 [G4SABIN	24.000]]*60+60	61.000	59.000
CHNL# 28: [FREQ 334036 [PID 217	13.800]]*60+60	61.000	59.000
CHNL# 27: [FREQ 334035 [GULFWAYA	69.000]]*60+60	61.000	59.000
CHNL# 26: [FREQ 334034 [GULFWAY	230.00]]*60+60	61.000	59.000

TUE, JUL 29 2008 10:31
PG 4: FREQUENCY



GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

FILE: C:\SPP PID-217\GW-VFWPK-1.out

TUE, JUL 29 2008 10:31
PG 5: FREQUENCY

CHNL# 37: [FREQ 334414 C4LINDE 138.00]]*60+60
61.000 59.000

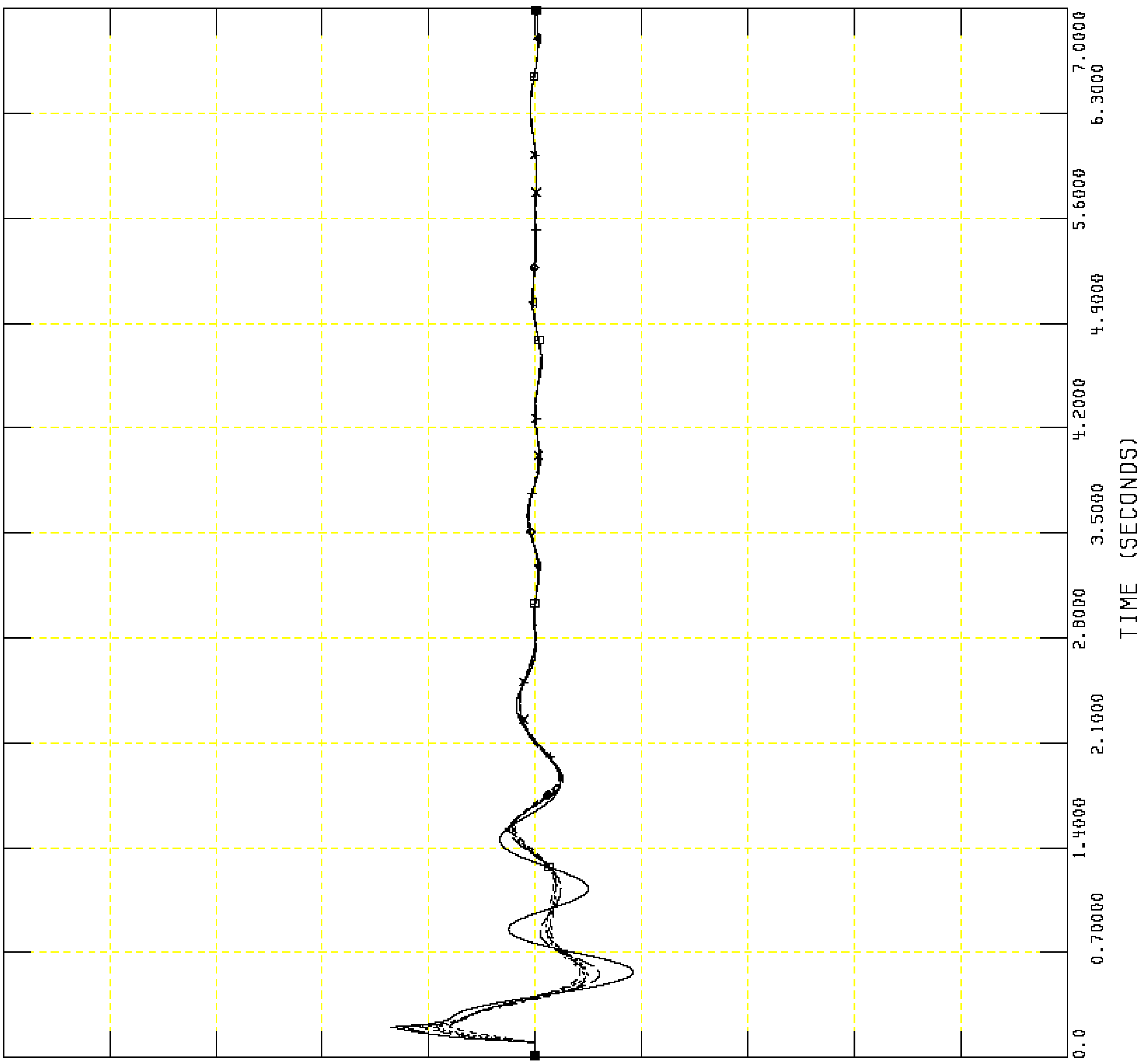
CHNL# 36: [FREQ 334413 C4PNEC BK 138.00]]*60+60
61.000 59.000

CHNL# 35: [FREQ 334399 C4NECHESO 138.00]]*60+60
61.000 59.000

CHNL# 34: [FREQ 334398 C4HAMPTON 138.00]]*60+60
61.000 59.000

CHNL# 33: [FREQ 334433 CG3SABIN 22.000]]*60+60
61.000 59.000

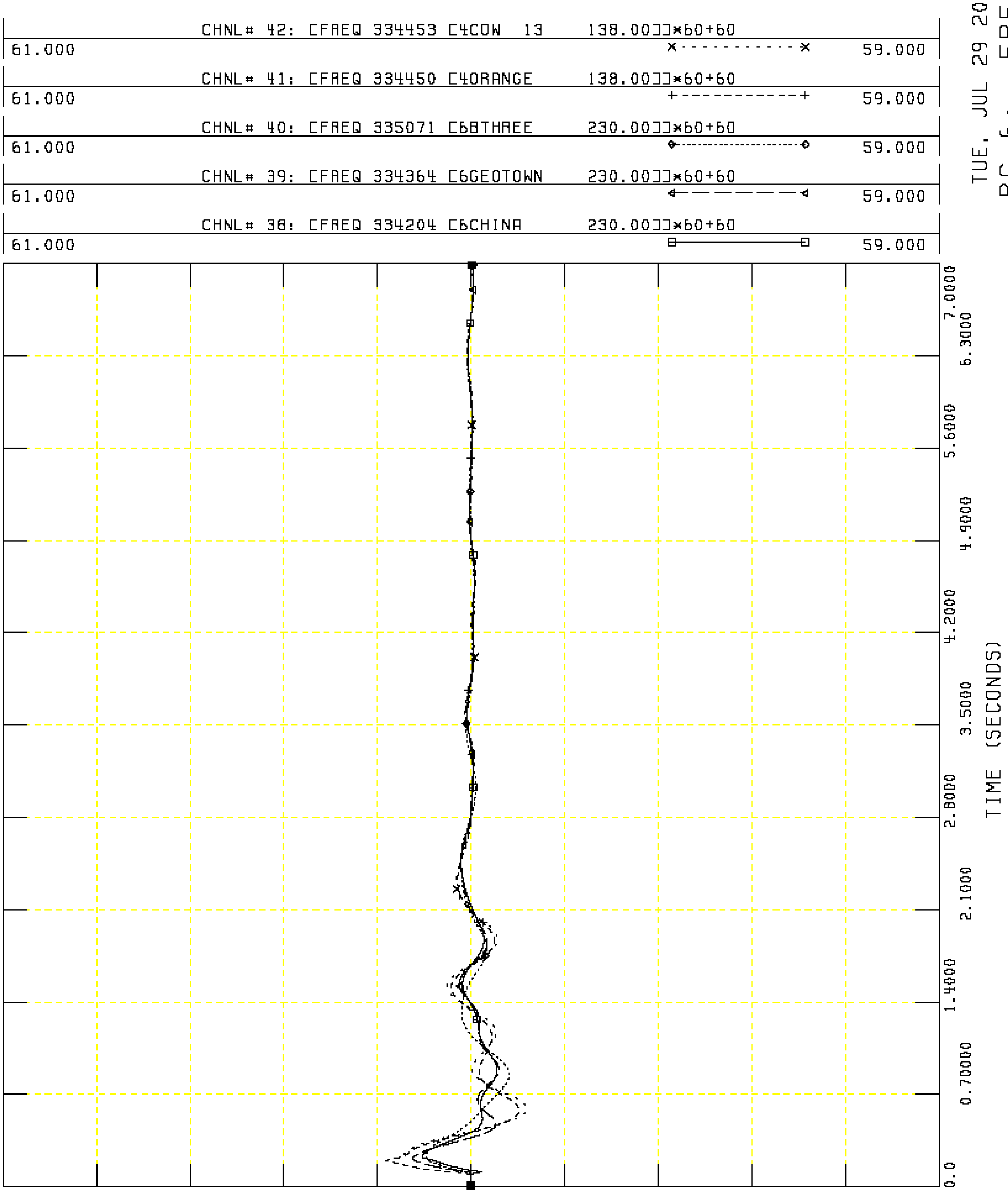
CHNL# 32: [FREQ 334432 CG2SABIN 20.000]]*60+60
61.000 59.000



GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

FILE: C:\SPP PID-217\GW-VFWPK-1.out

TUE, JUL 29 2008 10:31
PG 6: FREQUENCY

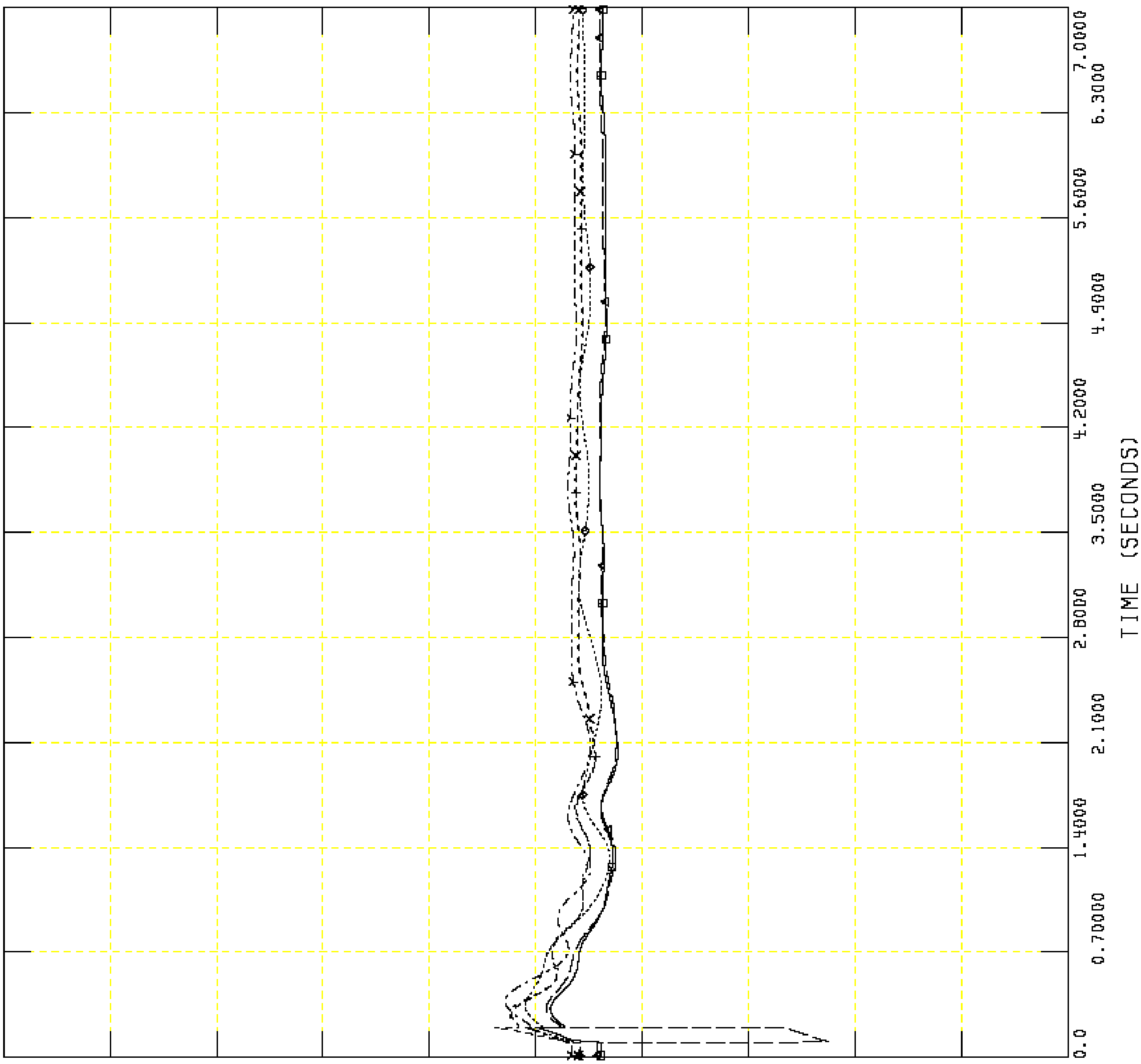


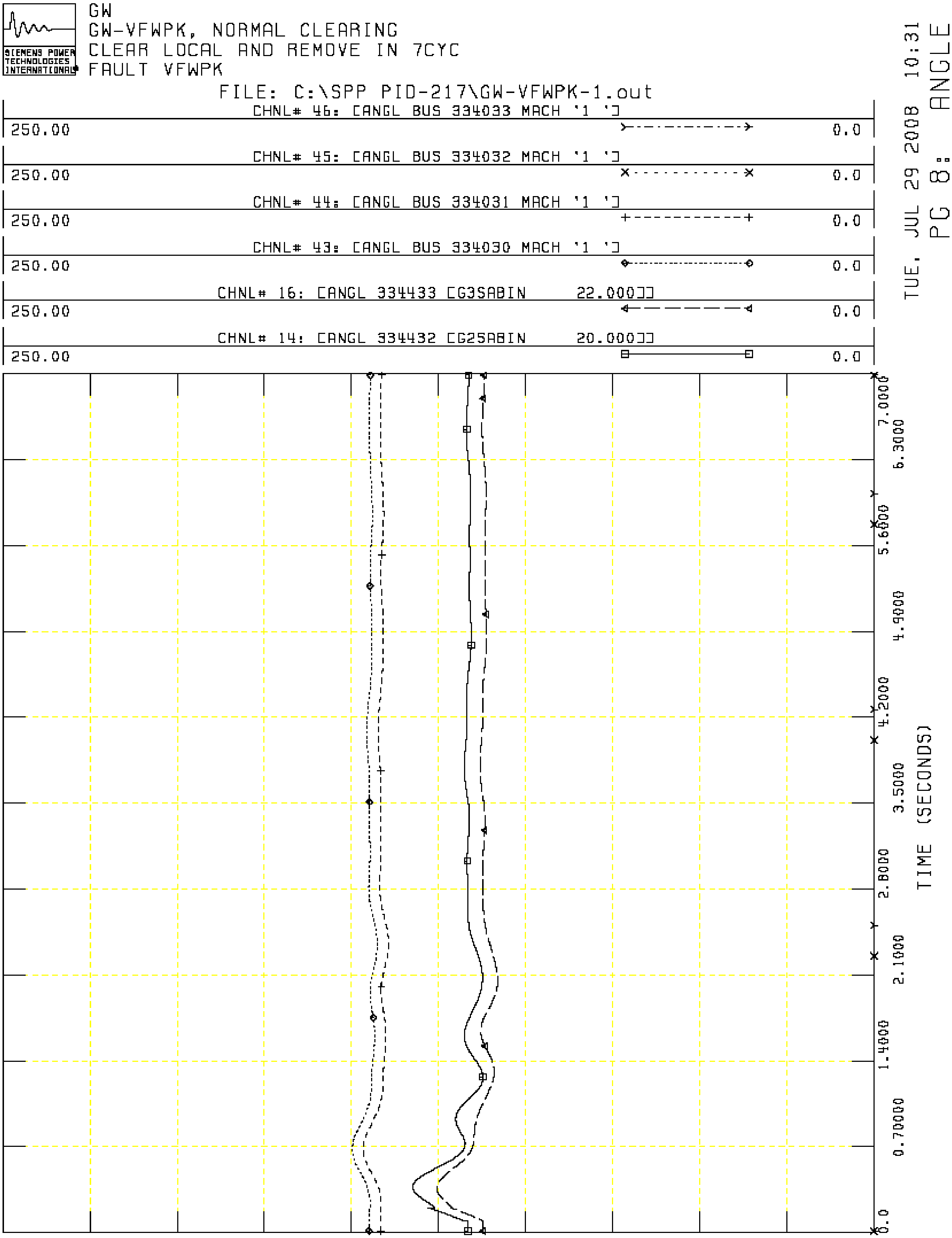
GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

TUE, JUL 29 2008 10:31
PG 7: ANGLE

FILE: C:\SPP PID-217\GW-VFWPK-1.out

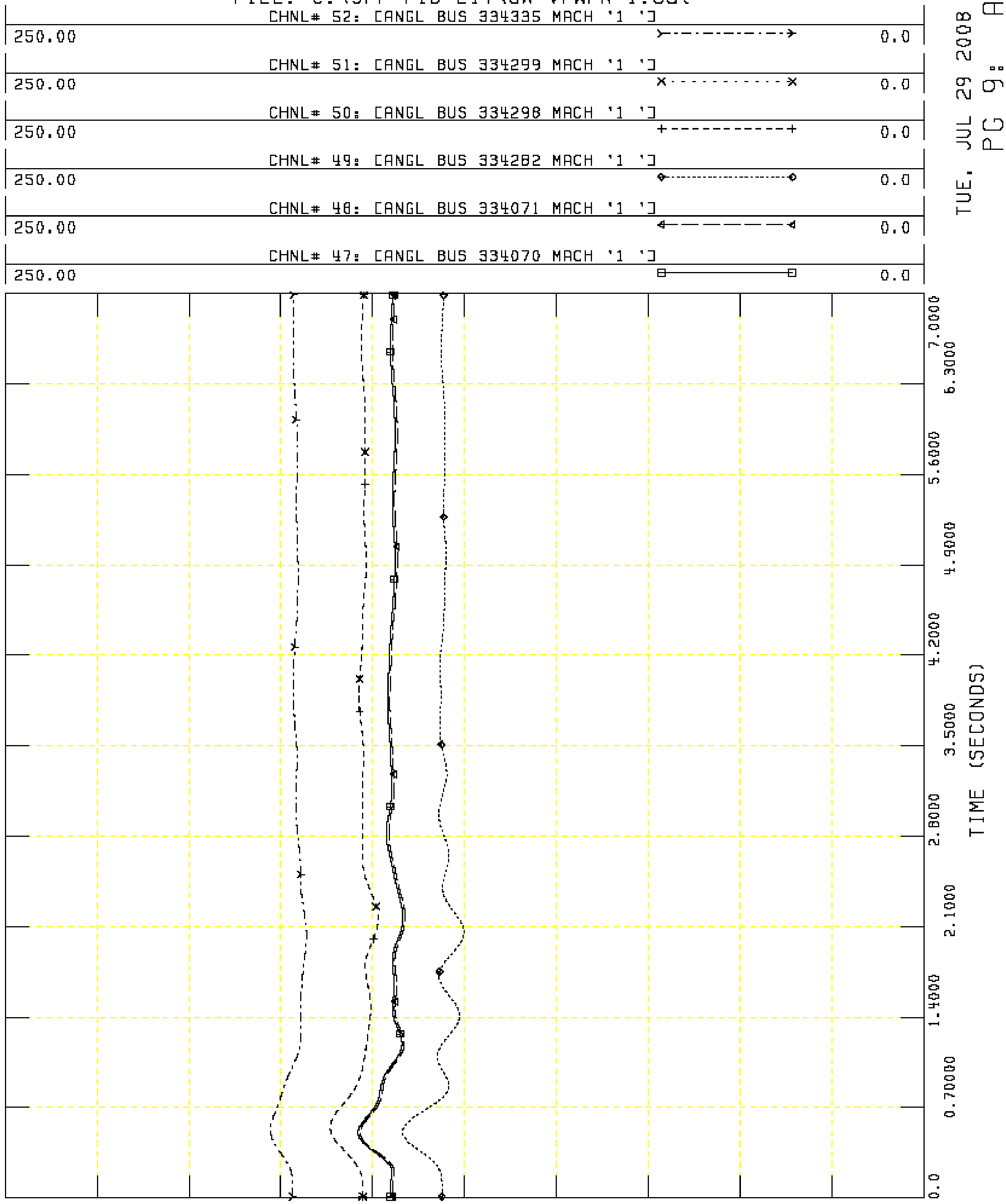
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]	250.00	≻- · - · - · - · -≻	0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]	250.00	× - - - - - - - - - ×	0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]	250.00	+ - - - - - - - - - +	0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]	250.00	◇- - - - - - - - - -◇	0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]	250.00	◁— — — — — —◁	0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.00]]	250.00	⊡————————⊡	0.0




GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
FILE: C:\SPP PID-217\GW-VFWPK-1.out
CHNL# 46: [ANGL BUS 334033 MACH '1 ']
250.00 0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']
250.00 0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']
250.00 0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']
250.00 0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]
250.00 0.0
CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]
250.00 0.0
TUE, JUL 29 2008 10:31
PG 8: ANGLE
7.0000
6.3000
5.6000
4.9000
4.2000
3.5000
2.8000
2.1000
1.4000
0.70000
0.0
TIME (SECONDS)

GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

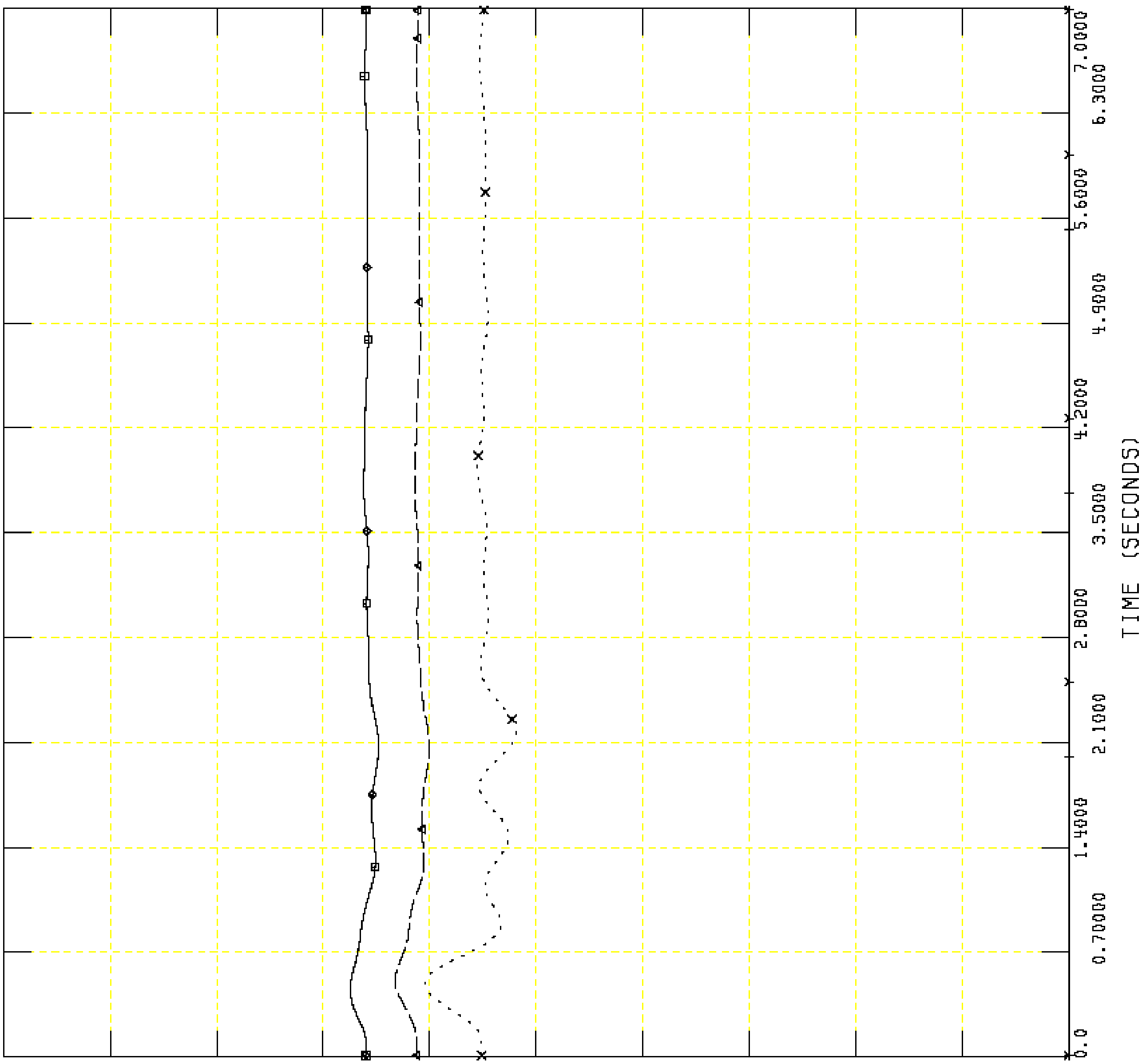
FILE: C:\SPP PID-217\GW-VFWPK-1.out



GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

FILE: C:\SPP PID-217\GW-VFWPK-1.out

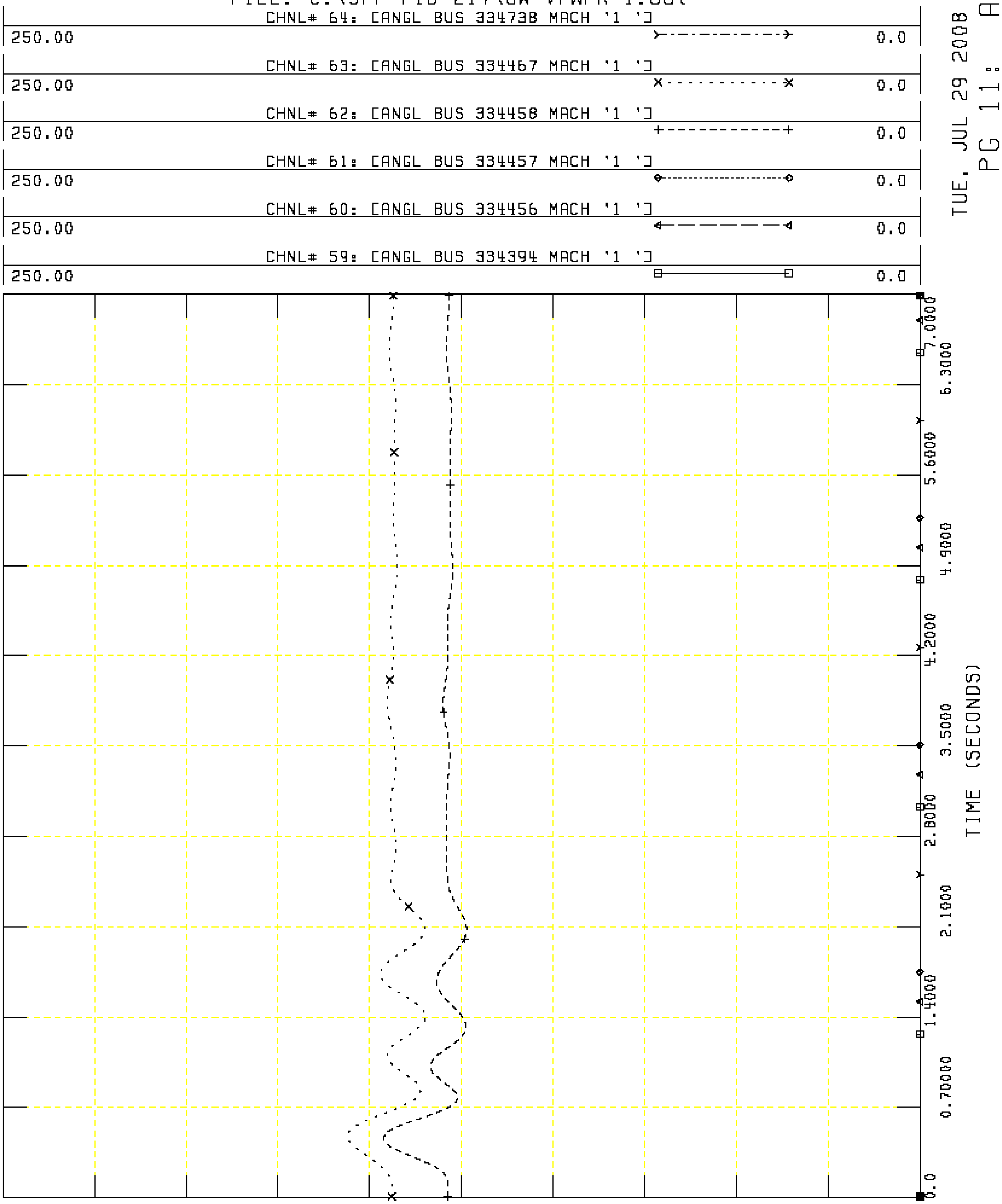
CHNL# 58: [ANGL BUS 334393 MACH '1 '] 250.00 0.0
CHNL# 57: [ANGL BUS 334392 MACH '1 '] 250.00 0.0
CHNL# 56: [ANGL BUS 334377 MACH '1 '] 250.00 0.0
CHNL# 55: [ANGL BUS 334376 MACH '1 '] 250.00 0.0
CHNL# 54: [ANGL BUS 334375 MACH '1 '] 250.00 0.0
CHNL# 53: [ANGL BUS 334374 MACH '1 '] 250.00 0.0



TUE, JUL 29 2008 10:31
PG 10: ANGLE

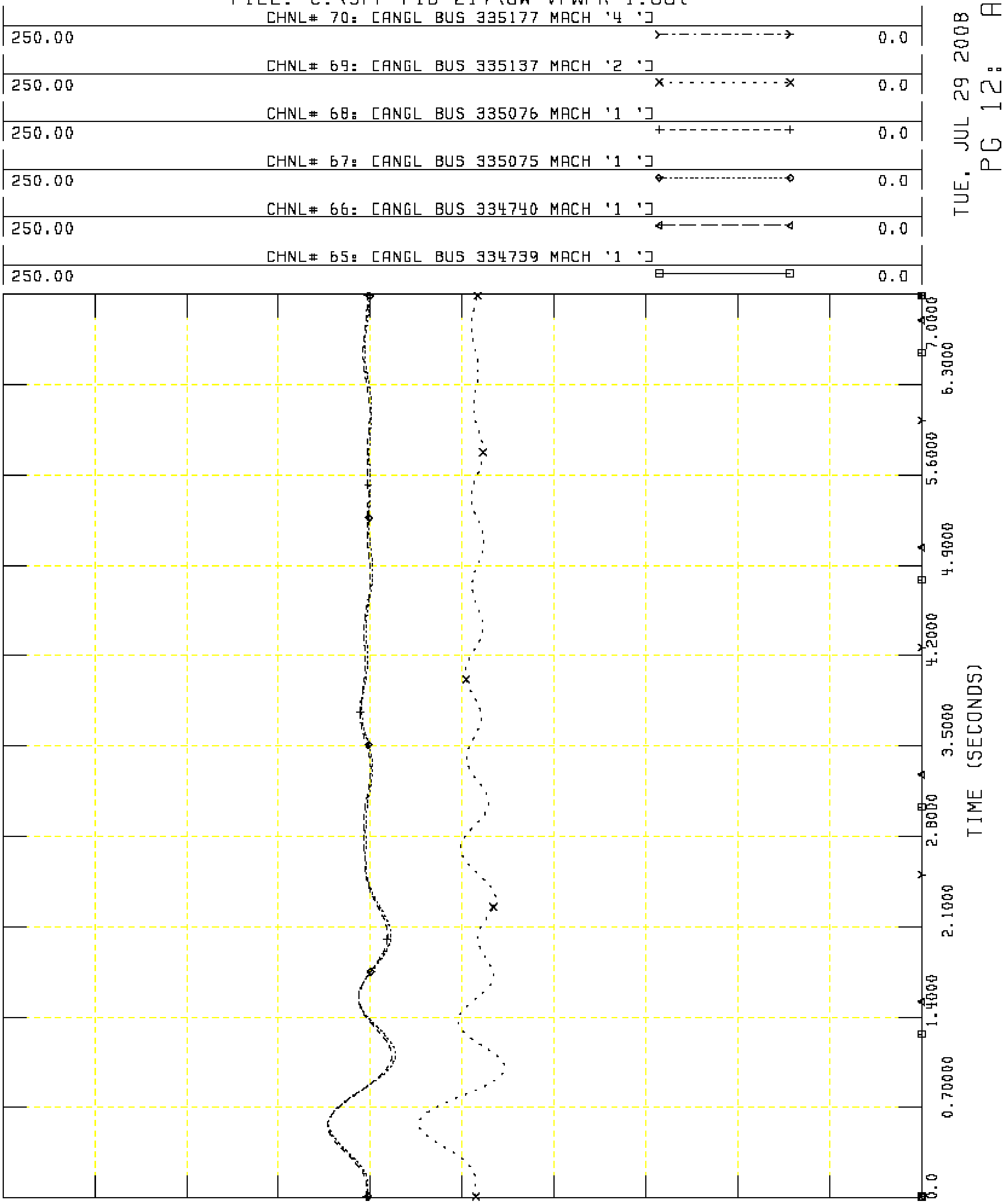
GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

FILE: C:\SPP PID-217\GW-VFWPK-1.out



GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

FILE: C:\SPP PID-217\GW-VFWPK-1.out



GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK

FILE: C:\SPP PID-217\GW-VFWPK-1.out

CHNL# 76: [ANGL BUS 335204 MACH '1 ']
250.00 0.0

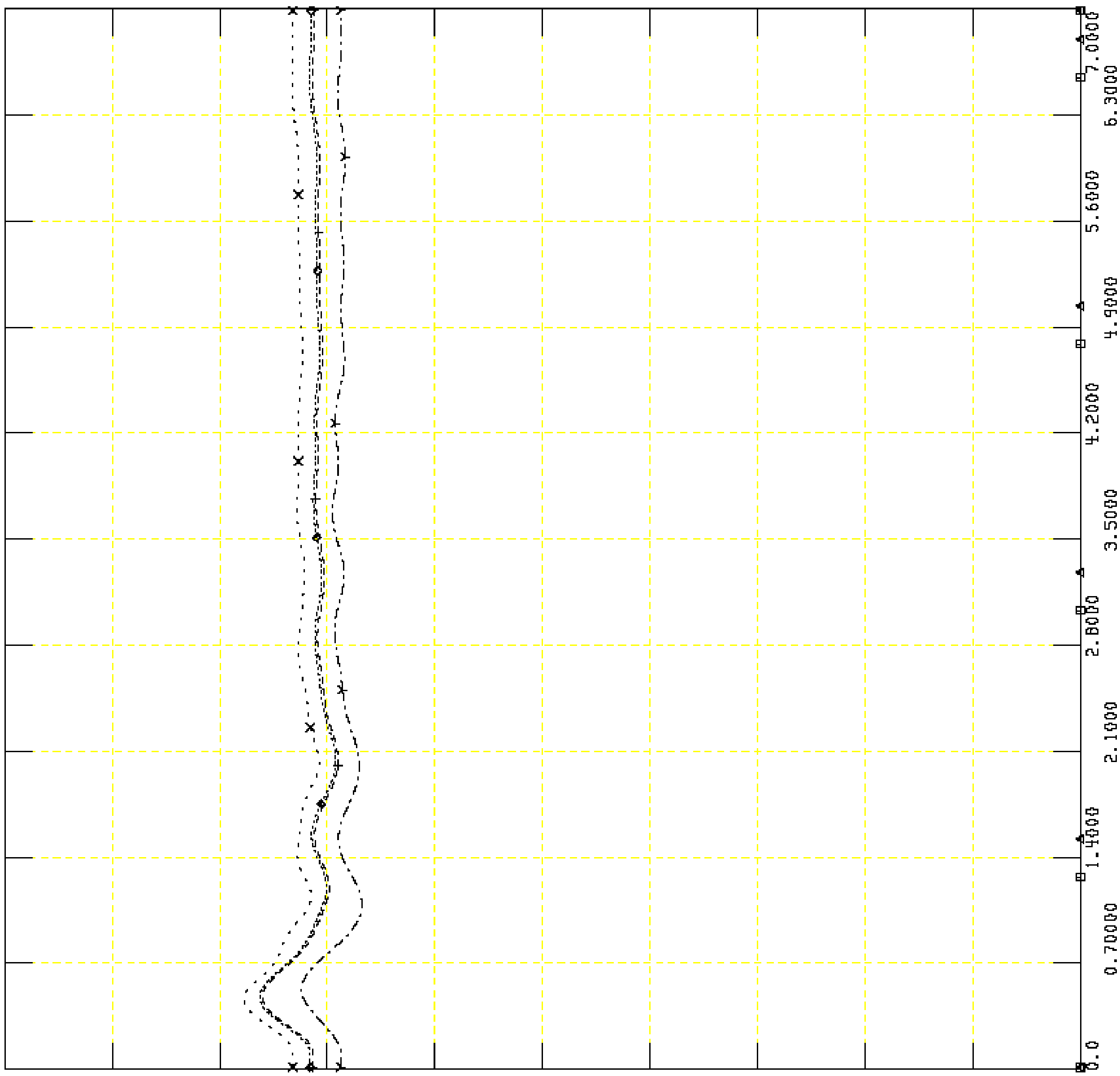
CHNL# 75: [ANGL BUS 335203 MACH '1 ']
250.00 0.0

CHNL# 74: [ANGL BUS 335202 MACH '1 ']
250.00 0.0

CHNL# 73: [ANGL BUS 335201 MACH '1 ']
250.00 0.0

CHNL# 72: [ANGL BUS 335179 MACH '6 ']
250.00 0.0

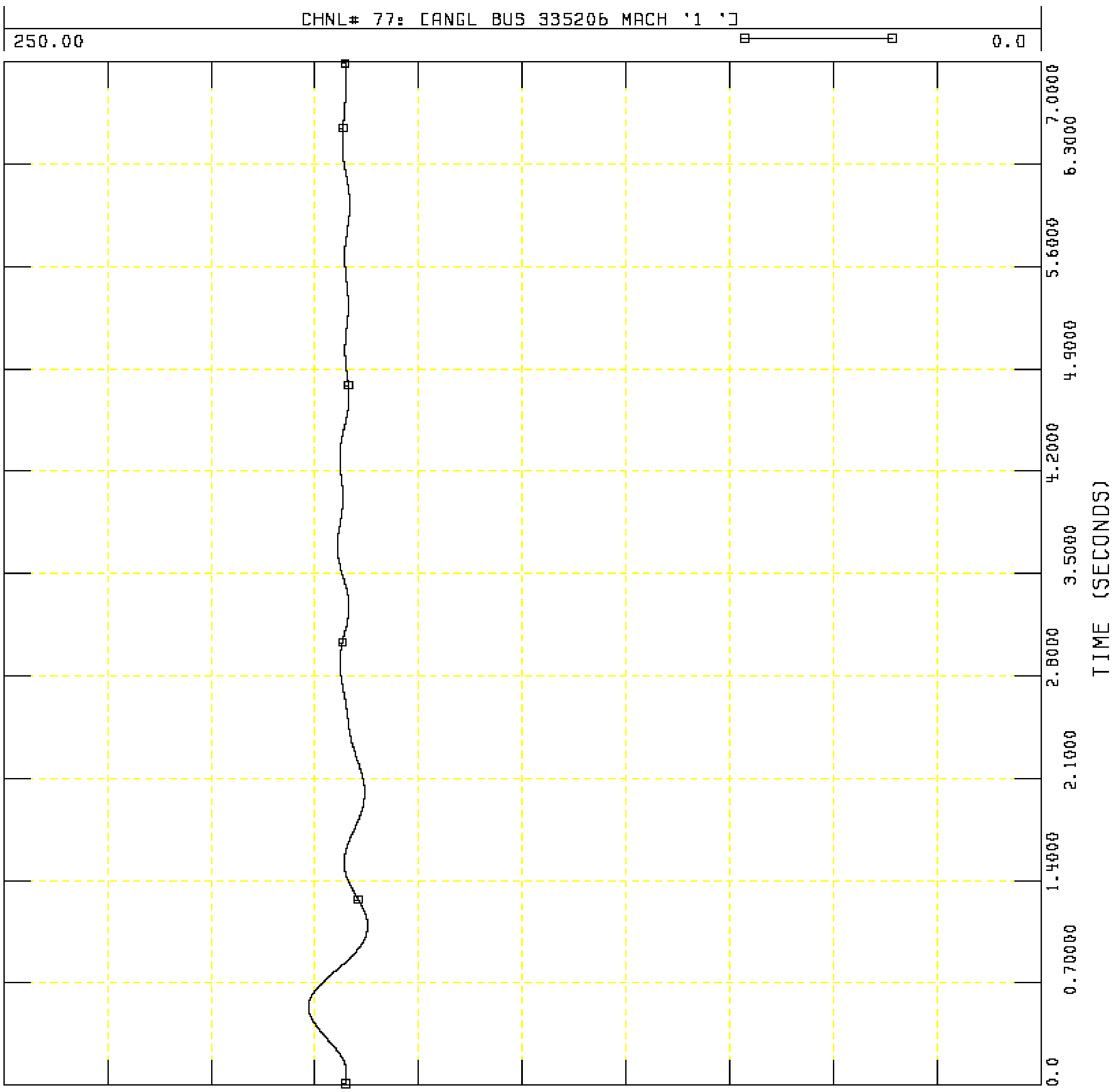
CHNL# 71: [ANGL BUS 335178 MACH '5 ']
250.00 0.0



TUE, JUL 29 2008 10:31
PG 13: ANGLE

GW
GW-VFWPK, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT VFWPK
FILE: C:\SPP PID-217\GW-VFWPK-1.out

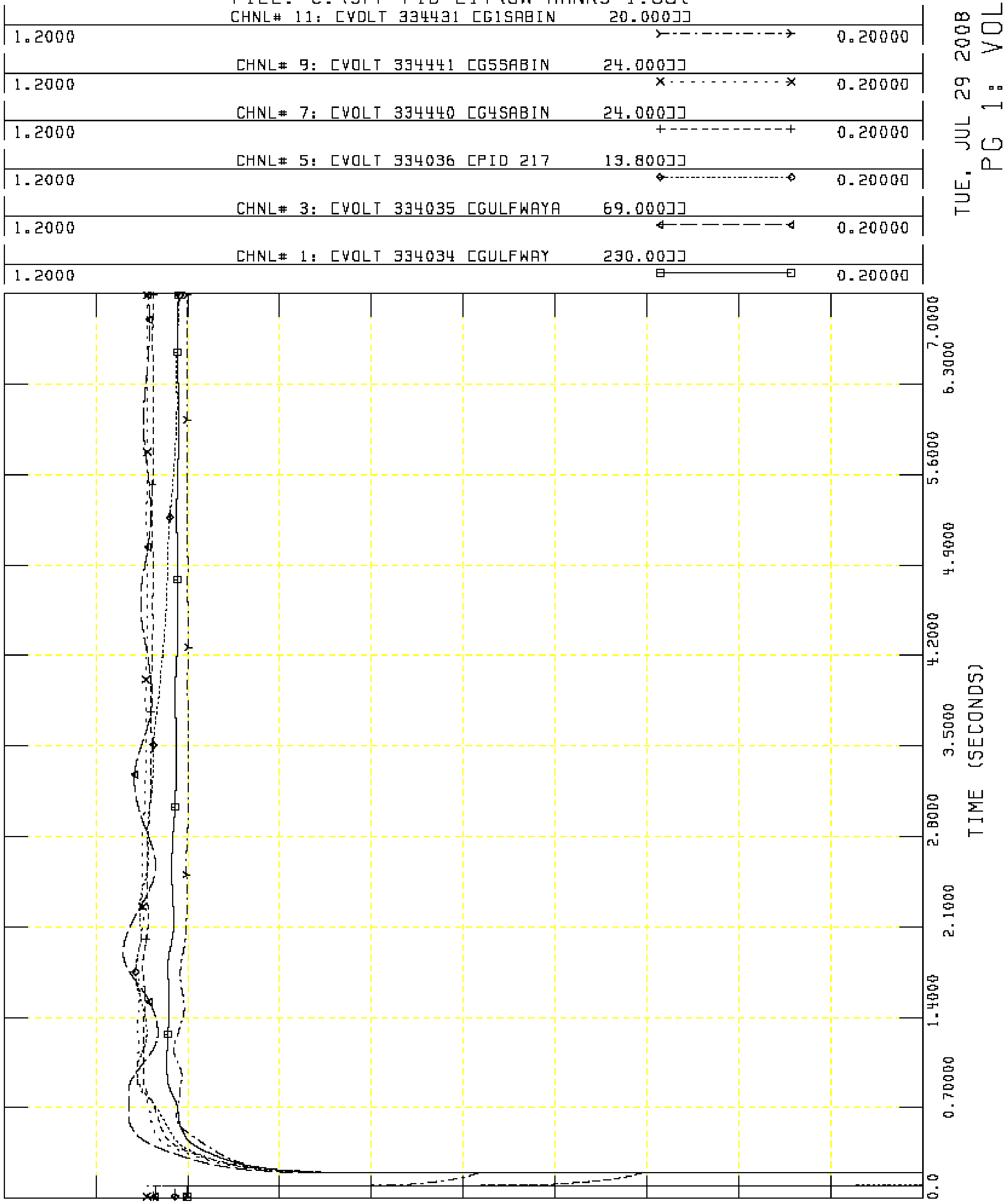
TUE, JUL 29 2008 10:31
PG 14: ANGLE

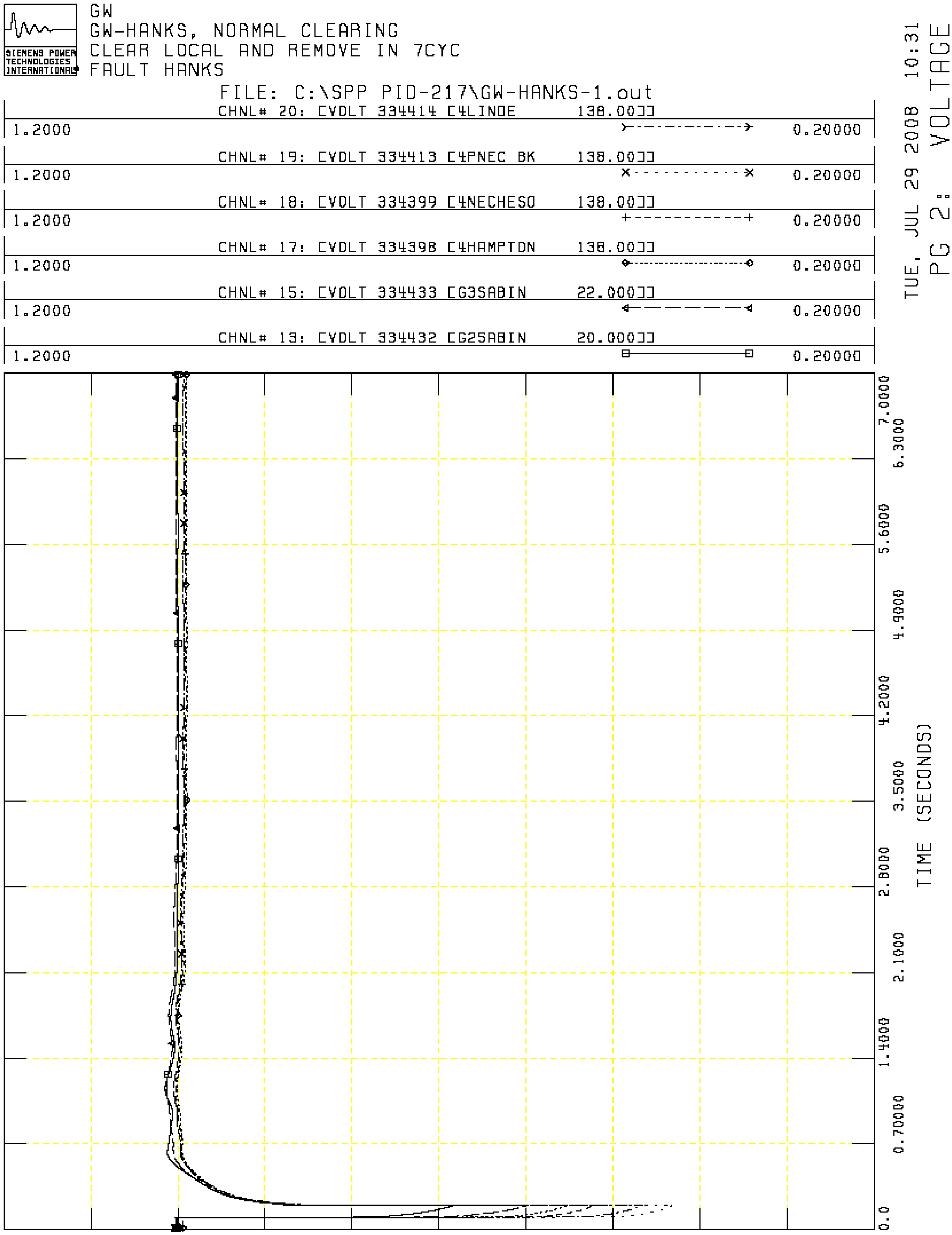


FAULT REFERENCE NO. 3
FAULT-KOLBS/HANKS- LOCATION GULFWAY

GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

FILE: C:\SPP PID-217\GW-HANKS-1.out



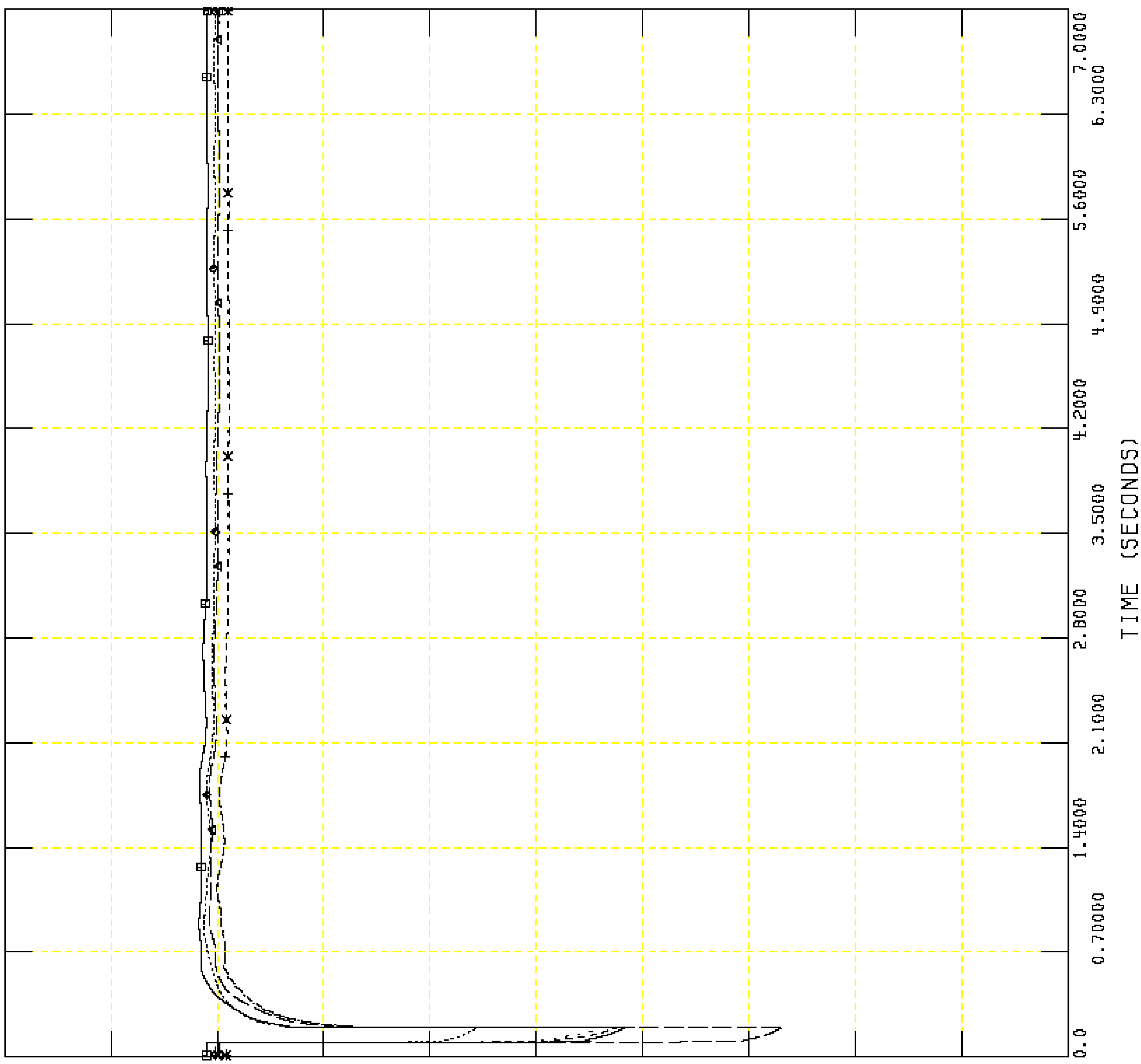

SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS
FILE: C:\SPP PID-217\GW-HANKS-1.out
CHNL# 20: [VOLT 334414 [4LINDE 138.00]]
1.2000 0.20000
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]
1.2000 0.20000
CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]
1.2000 0.20000
CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]
1.2000 0.20000
CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]
1.2000 0.20000
CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]
1.2000 0.20000
TUE, JUL 29 2008 10:31
PG 2: VOLTAGE
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)

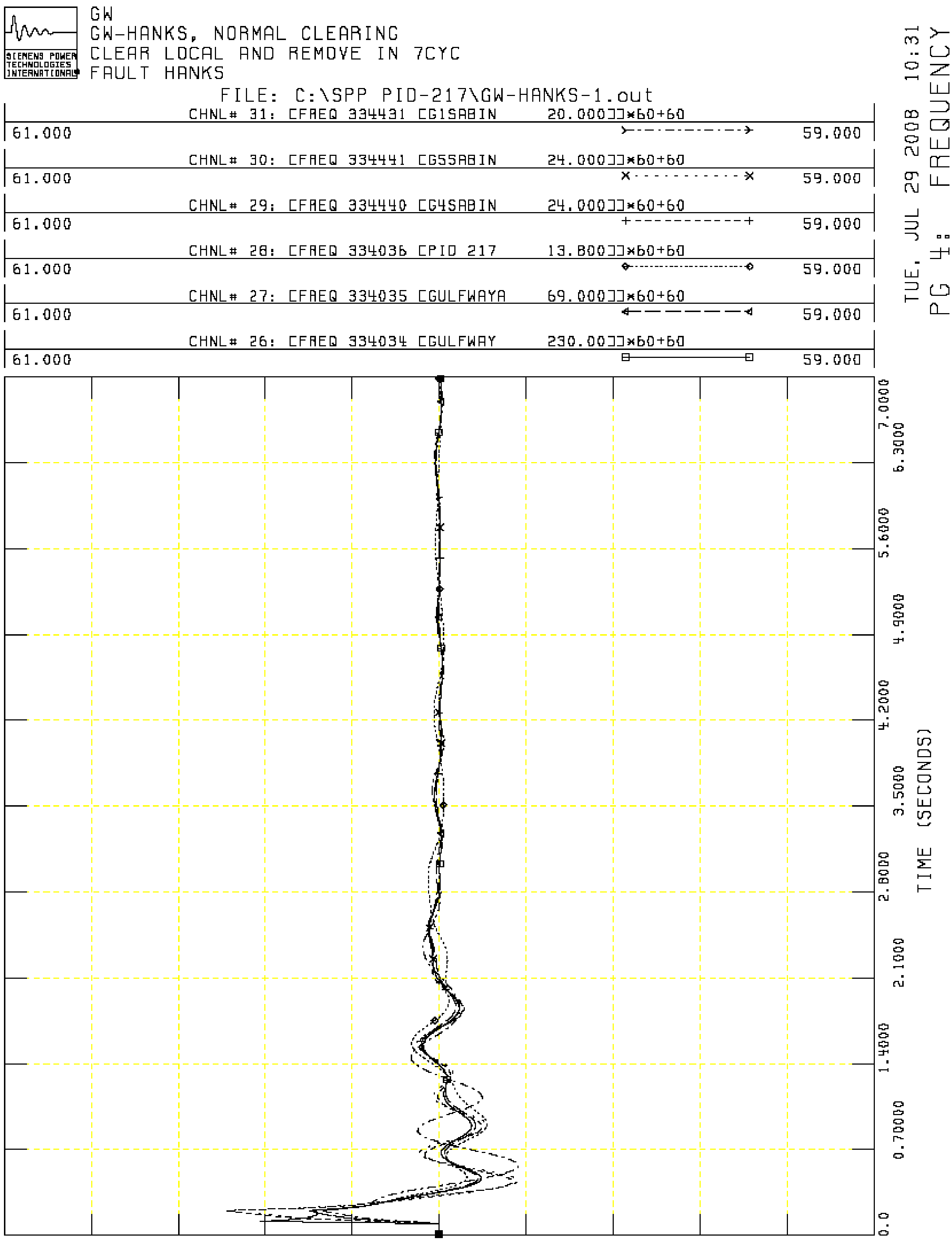
GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

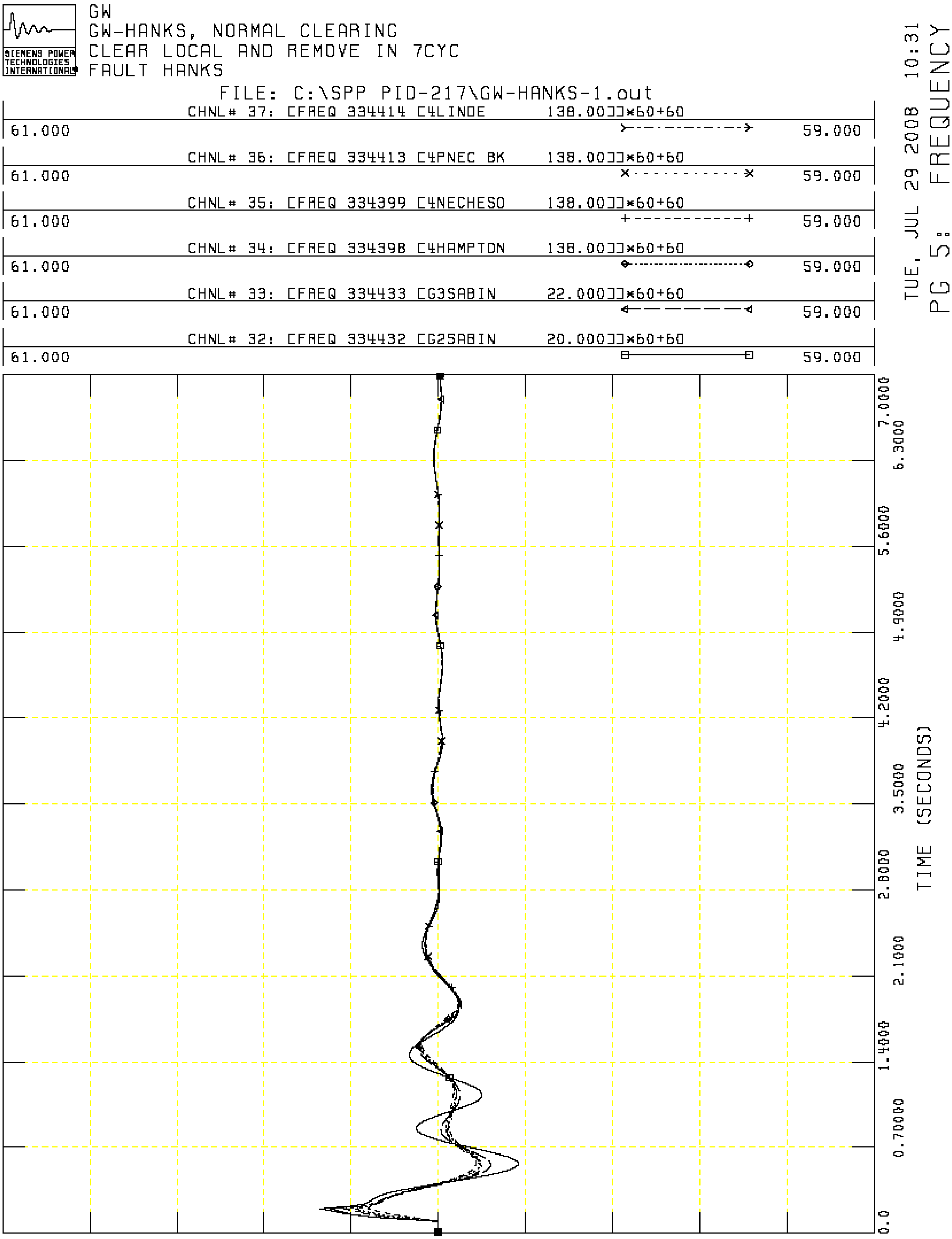
FILE: C:\SPP PID-217\GW-HANKS-1.out

TUE, JUL 29 2008 10:31
PG 3: VOLTAGE

Min	Channel	Max
1.2000	CHNL# 25: [VOLT 334453 [4COW 13 138.00]]	0.20000
1.2000	CHNL# 24: [VOLT 334450 [4ORANGE 138.00]]	0.20000
1.2000	CHNL# 23: [VOLT 335071 [6BTHREE 230.00]]	0.20000
1.2000	CHNL# 22: [VOLT 334364 [6GEOTOWN 230.00]]	0.20000
1.2000	CHNL# 21: [VOLT 334204 [6CHINA 230.00]]	0.20000




GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS
FILE: C:\SPP PID-217\GW-HANKS-1.out
CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60
61.000 59.000
CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60
61.000 59.000
CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60
61.000 59.000
CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60
61.000 59.000
CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60
61.000 59.000
CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60
61.000 59.000
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)
TUE, JUL 29 2008 10:31
PG 4: FREQUENCY


GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
FILE: C:\SPP PID-217\GW-HANKS-1.out
CHNL# 37: [FREQ 334414 [4LINDE 138.00]]*60+60
61.000 59.000
CHNL# 36: [FREQ 334413 [4PNEC BK 138.00]]*60+60
61.000 59.000
CHNL# 35: [FREQ 334399 [4NECHESO 138.00]]*60+60
61.000 59.000
CHNL# 34: [FREQ 334398 [4HAMPTON 138.00]]*60+60
61.000 59.000
CHNL# 33: [FREQ 334433 [G3SABIN 22.000]]*60+60
61.000 59.000
CHNL# 32: [FREQ 334432 [G2SABIN 20.000]]*60+60
61.000 59.000
TUE, JUL 29 2008 10:31
PG 5: FREQUENCY
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)

GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

FILE: C:\SPP PID-217\GW-HANKS-1.out

TUE, JUL 29 2008 10:31
PG 6: FREQUENCY

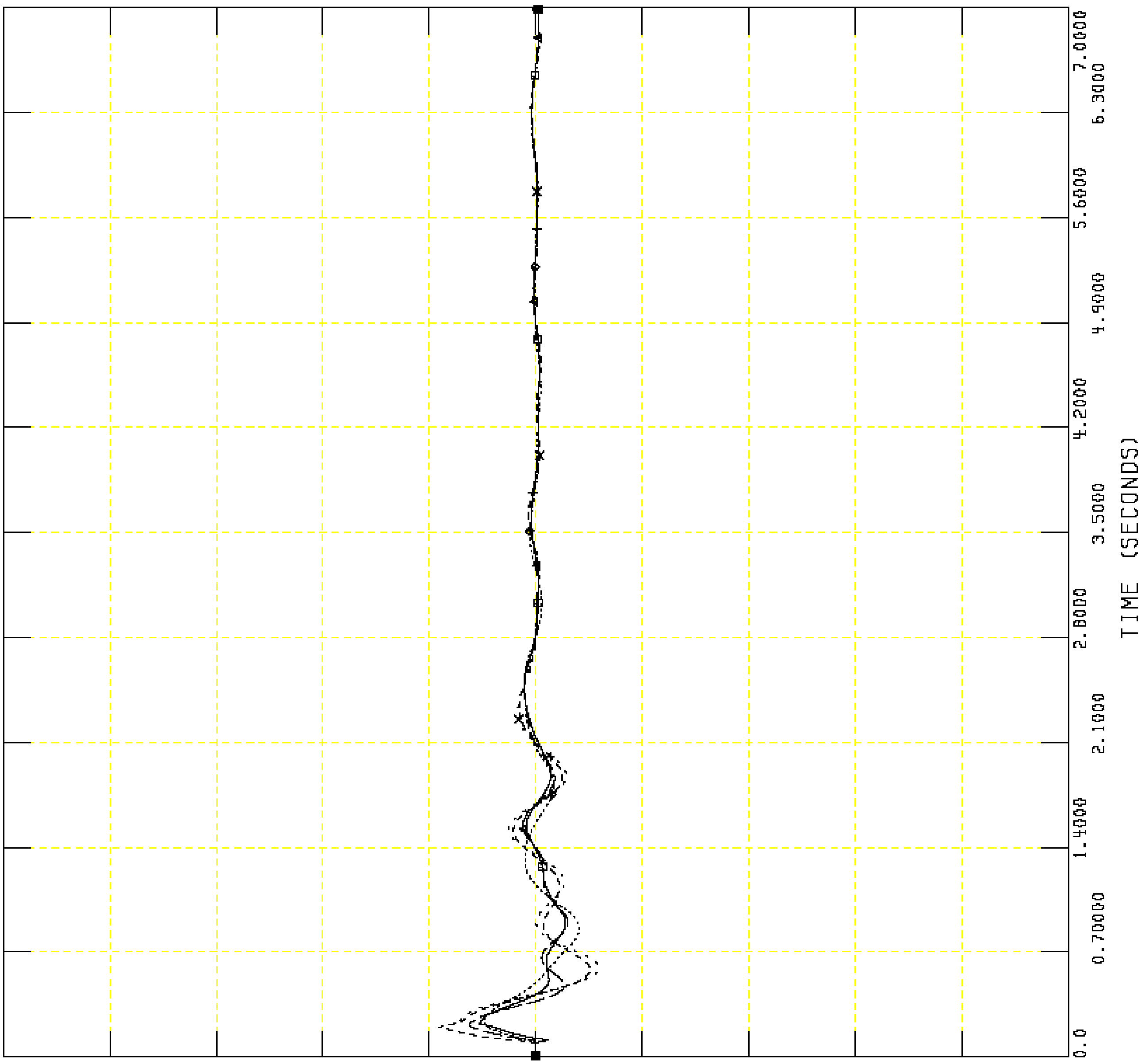
CHNL# 42: [FREQ 334453 C4COW 13 138.00]]*60+60
61.000 59.000

CHNL# 41: [FREQ 334450 C4ORANGE 138.00]]*60+60
61.000 59.000

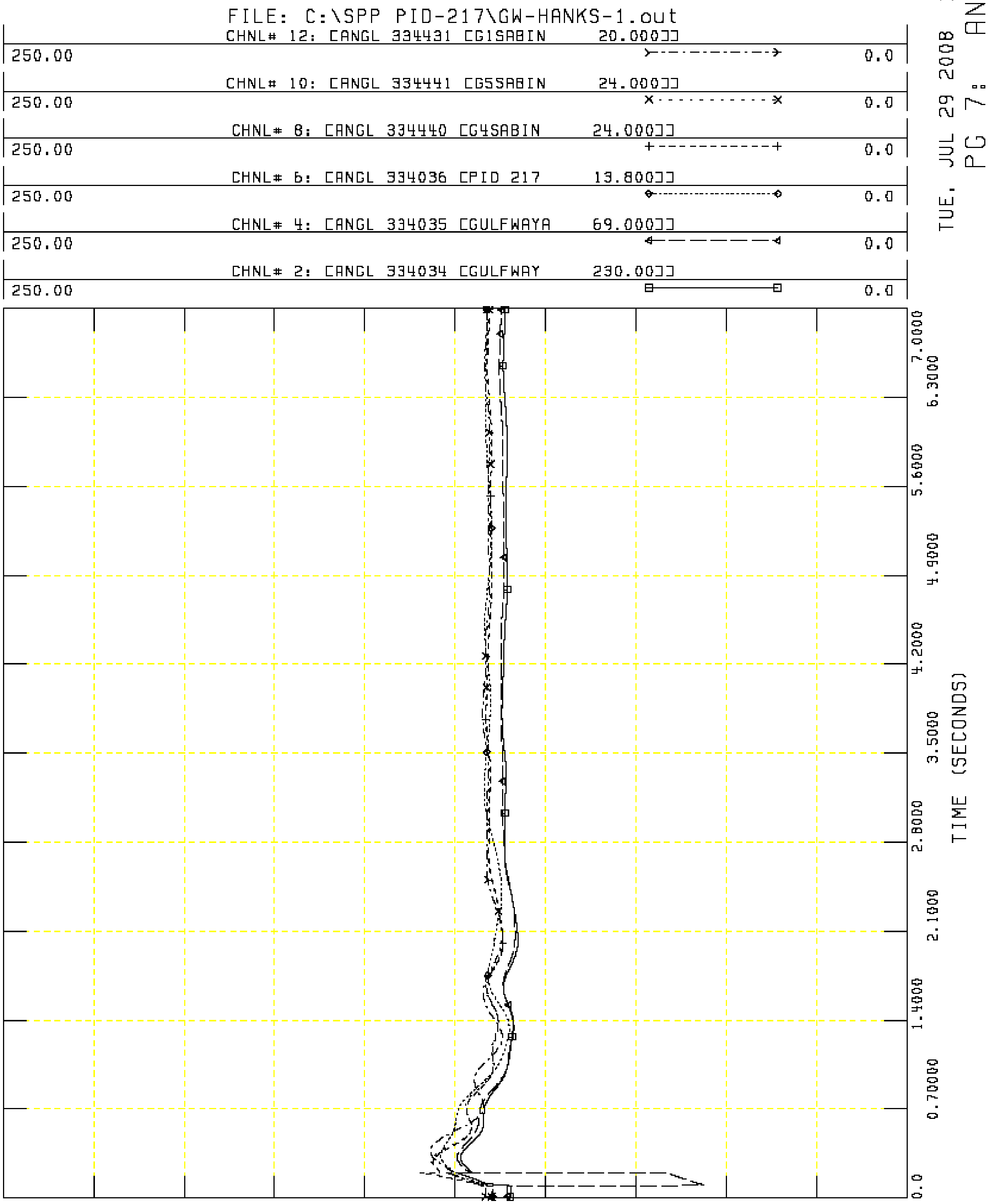
CHNL# 40: [FREQ 335071 C6BTHREE 230.00]]*60+60
61.000 59.000

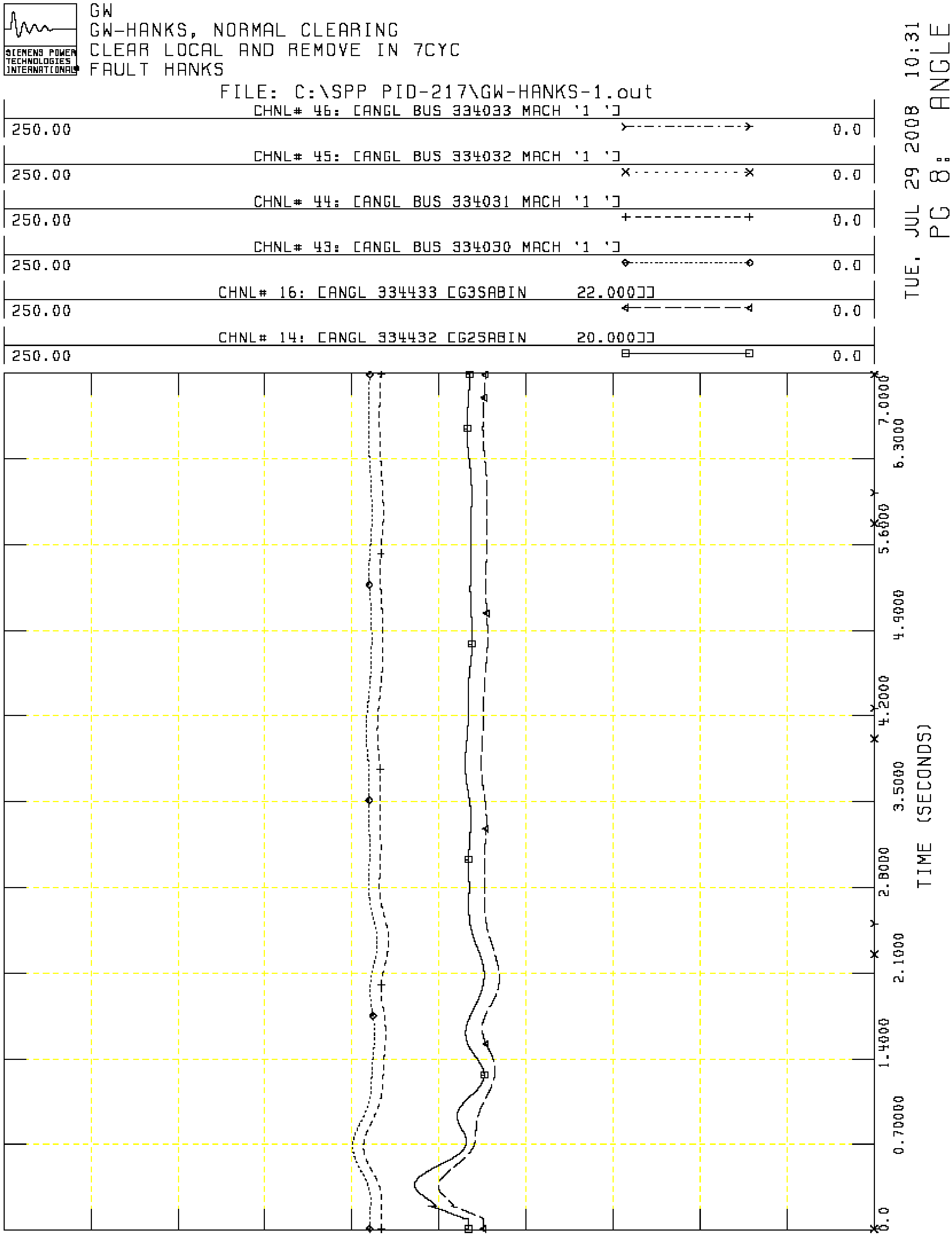
CHNL# 39: [FREQ 334364 C6GEOTOWN 230.00]]*60+60
61.000 59.000

CHNL# 38: [FREQ 334204 C6CHINA 230.00]]*60+60
61.000 59.000



GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS




GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
FILE: C:\SPP PID-217\GW-HANKS-1.out
CHNL# 46: [ANGL BUS 334033 MACH '1 ']
250.00
0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']
250.00
0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']
250.00
0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']
250.00
0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]
250.00
0.0
CHNL# 14: [ANGL 334432 [G25ABIN 20.000]]
250.00
0.0
TUE, JUL 29 2008 10:31
PG 8: ANGLE
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)

GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

FILE: C:\SPP PID-217\GW-HANKS-1.out

TUE, JUL 29 2008 10:31
PG 9: ANGLE

CHNL# 52: [ANGL BUS 334335 MACH '1 ']
250.00 0.0

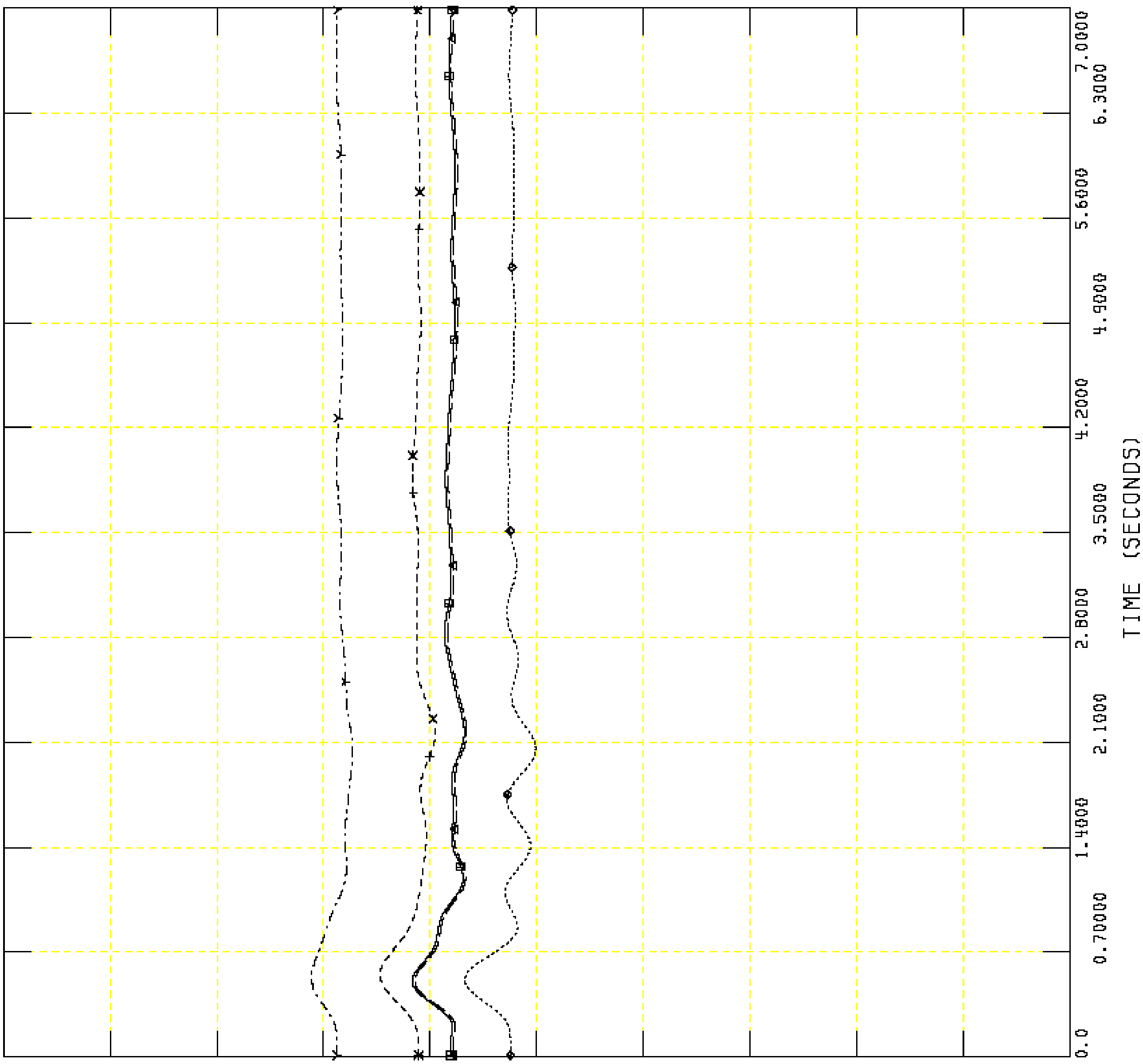
CHNL# 51: [ANGL BUS 334299 MACH '1 ']
250.00 0.0

CHNL# 50: [ANGL BUS 334298 MACH '1 ']
250.00 0.0

CHNL# 49: [ANGL BUS 334282 MACH '1 ']
250.00 0.0

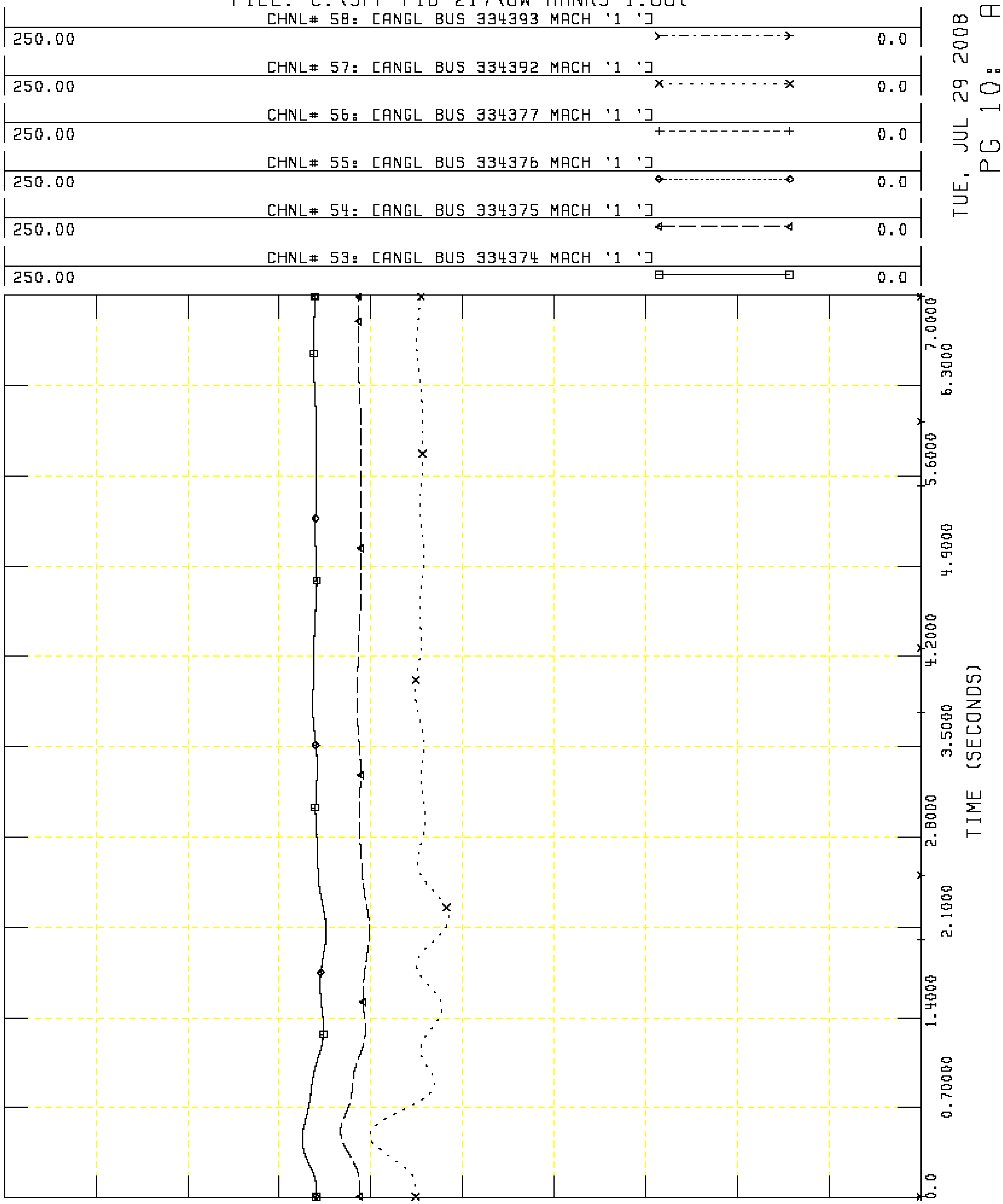
CHNL# 48: [ANGL BUS 334071 MACH '1 ']
250.00 0.0

CHNL# 47: [ANGL BUS 334070 MACH '1 ']
250.00 0.0



GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

FILE: C:\SPP PID-217\GW-HANKS-1.out



GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

FILE: C:\SPP PID-217\GW-HANKS-1.out

CHNL# 64: [ANGL BUS 334738 MACH '1 ']
250.00 0.0

CHNL# 63: [ANGL BUS 334467 MACH '1 ']
250.00 0.0

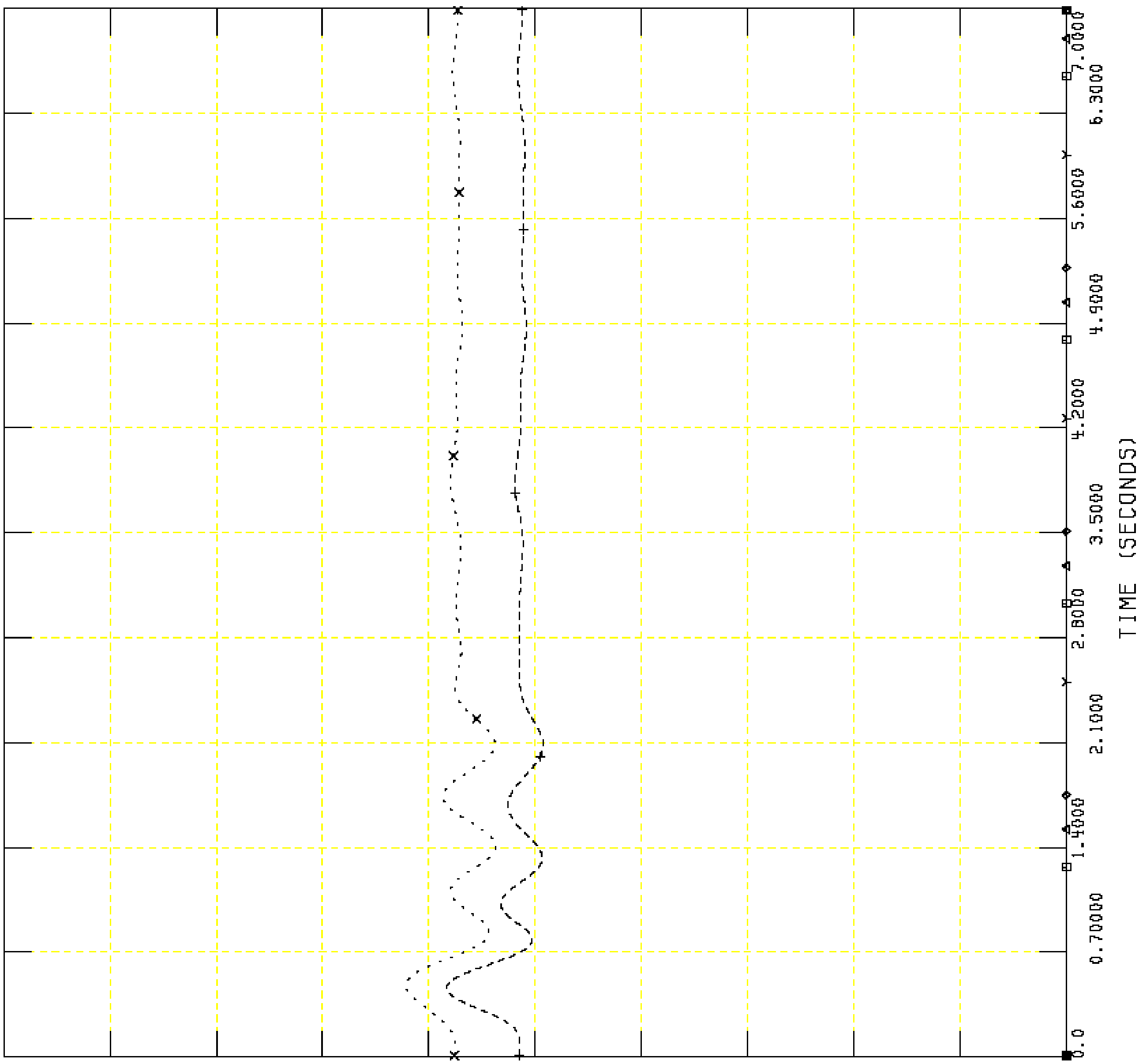
CHNL# 62: [ANGL BUS 334458 MACH '1 ']
250.00 0.0

CHNL# 61: [ANGL BUS 334457 MACH '1 ']
250.00 0.0

CHNL# 60: [ANGL BUS 334456 MACH '1 ']
250.00 0.0

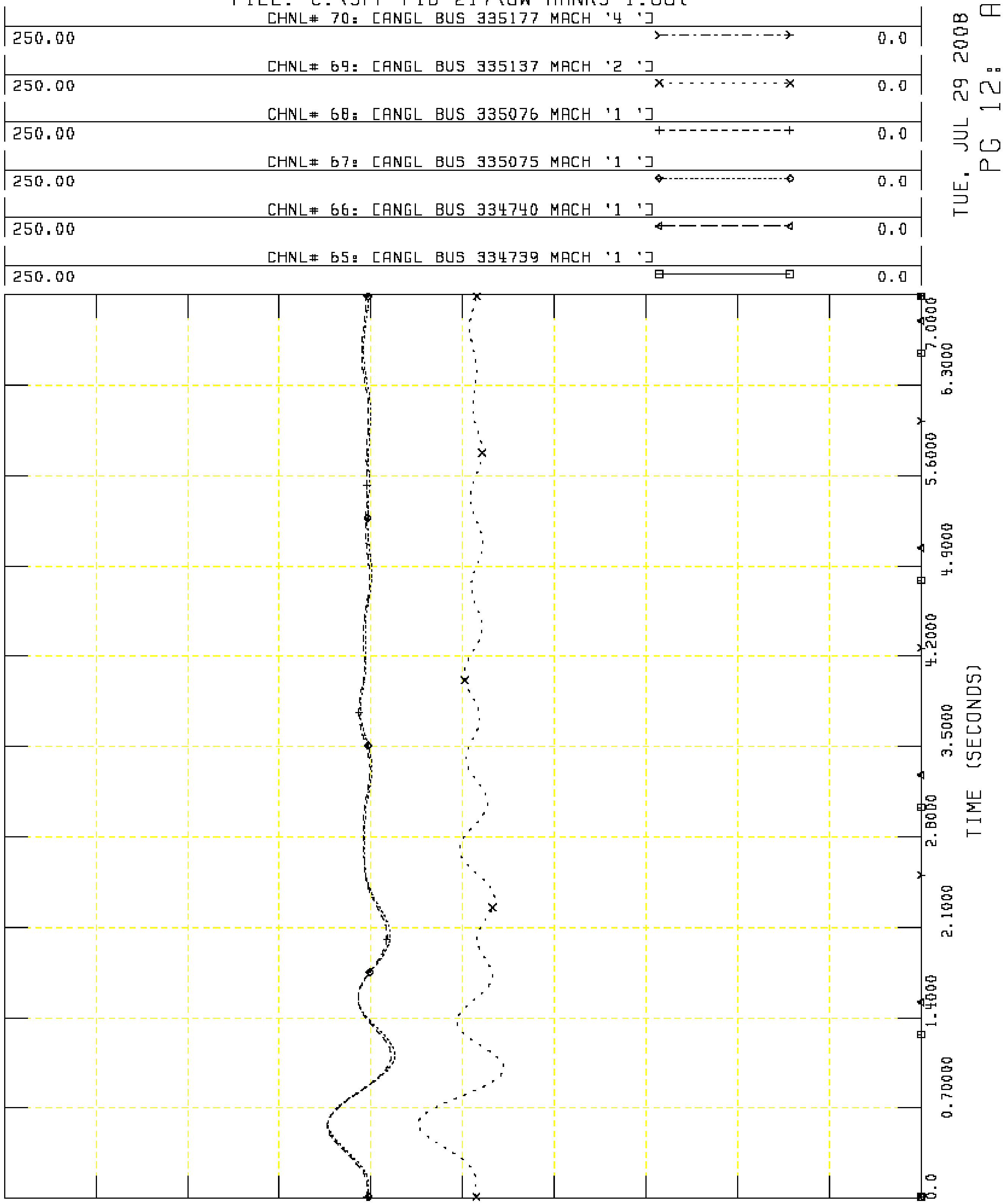
CHNL# 59: [ANGL BUS 334394 MACH '1 ']
250.00 0.0

TUE, JUL 29 2008 10:31
PG 11: ANGLE



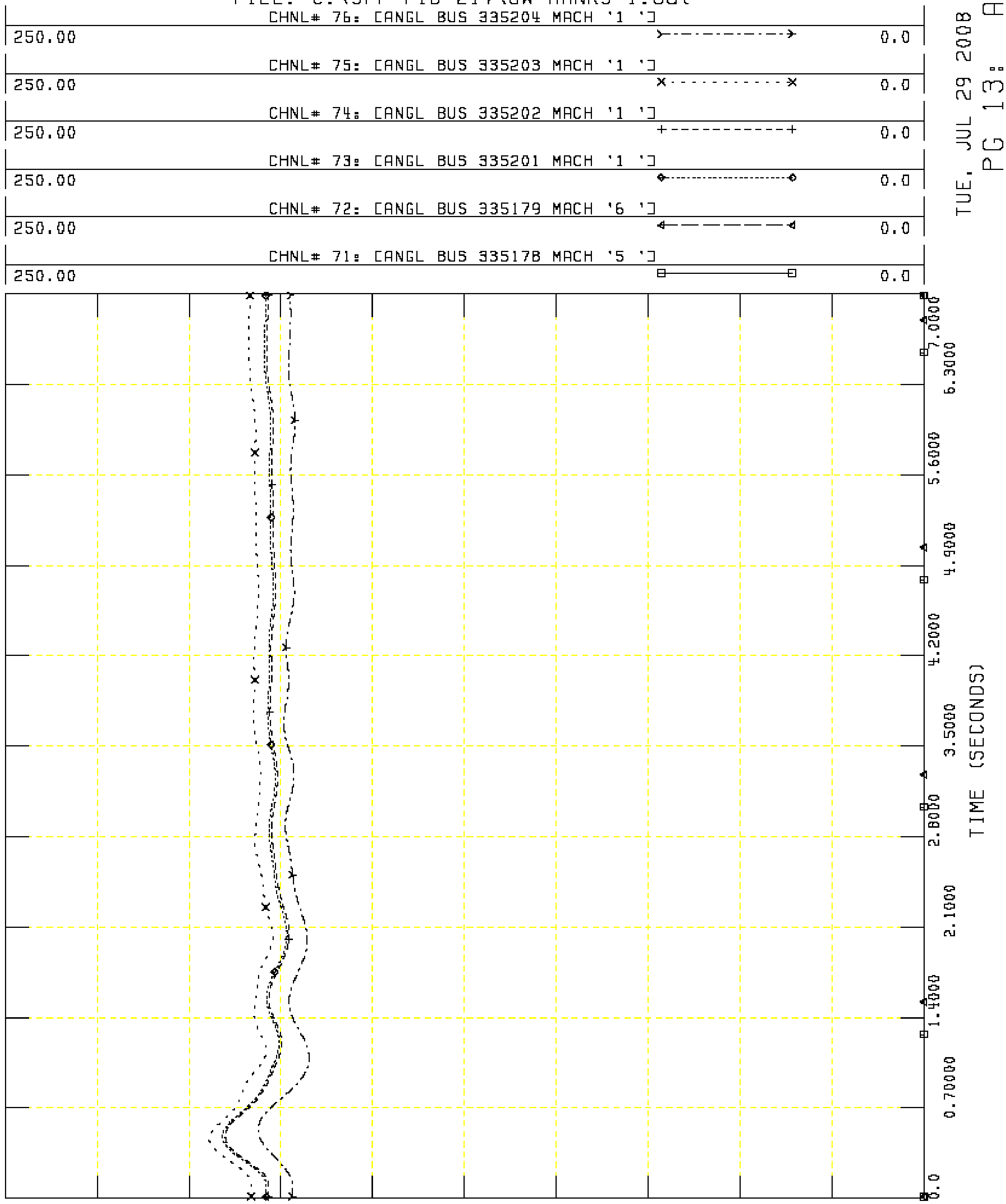
GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

FILE: C:\SPP PID-217\GW-HANKS-1.out



GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

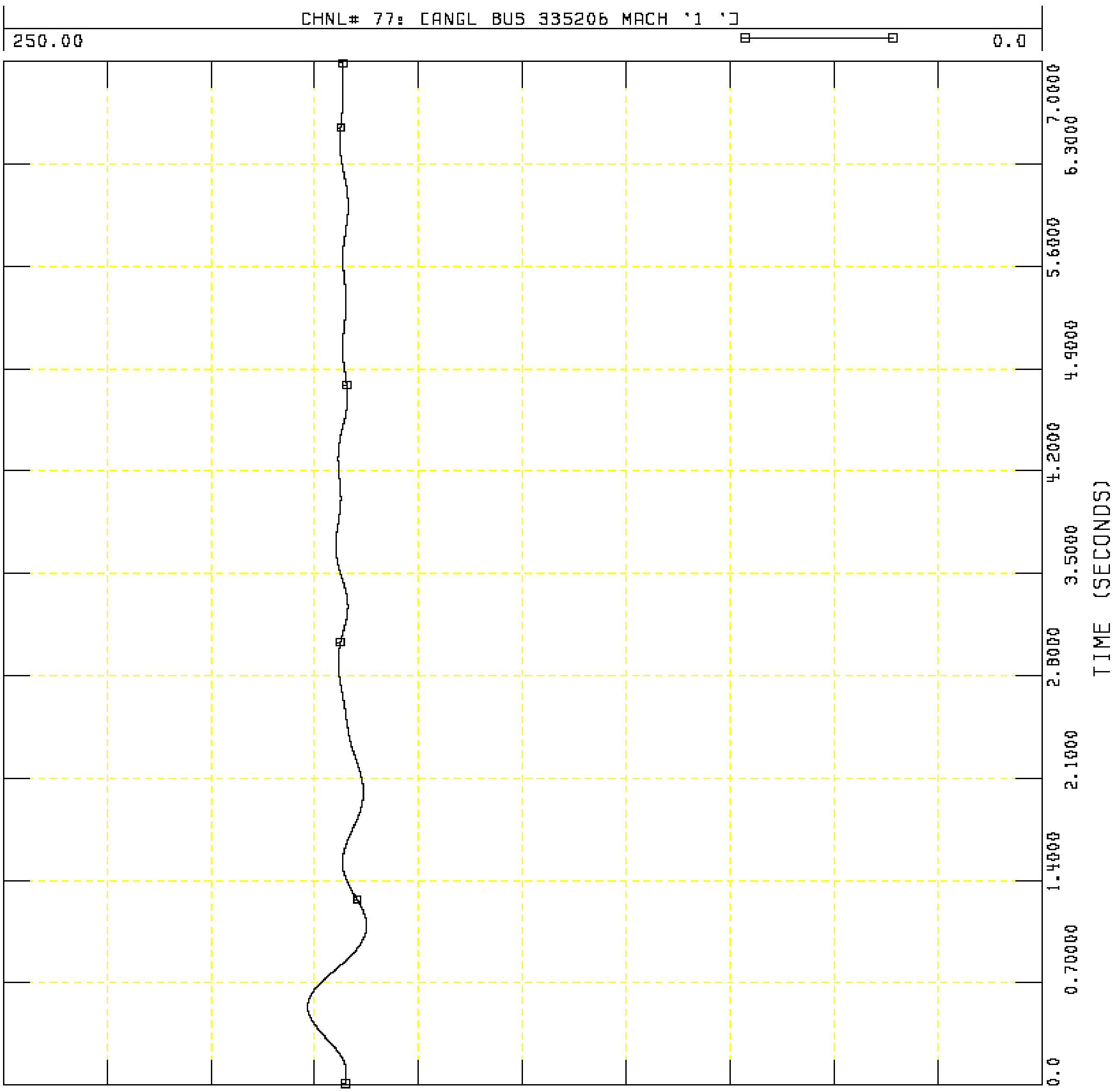
FILE: C:\SPP PID-217\GW-HANKS-1.out



GW
GW-HANKS, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
FAULT HANKS

FILE: C:\SPP PID-217\GW-HANKS-1.out

TUE, JUL 29 2008 10:31
PG 14: ANGLE

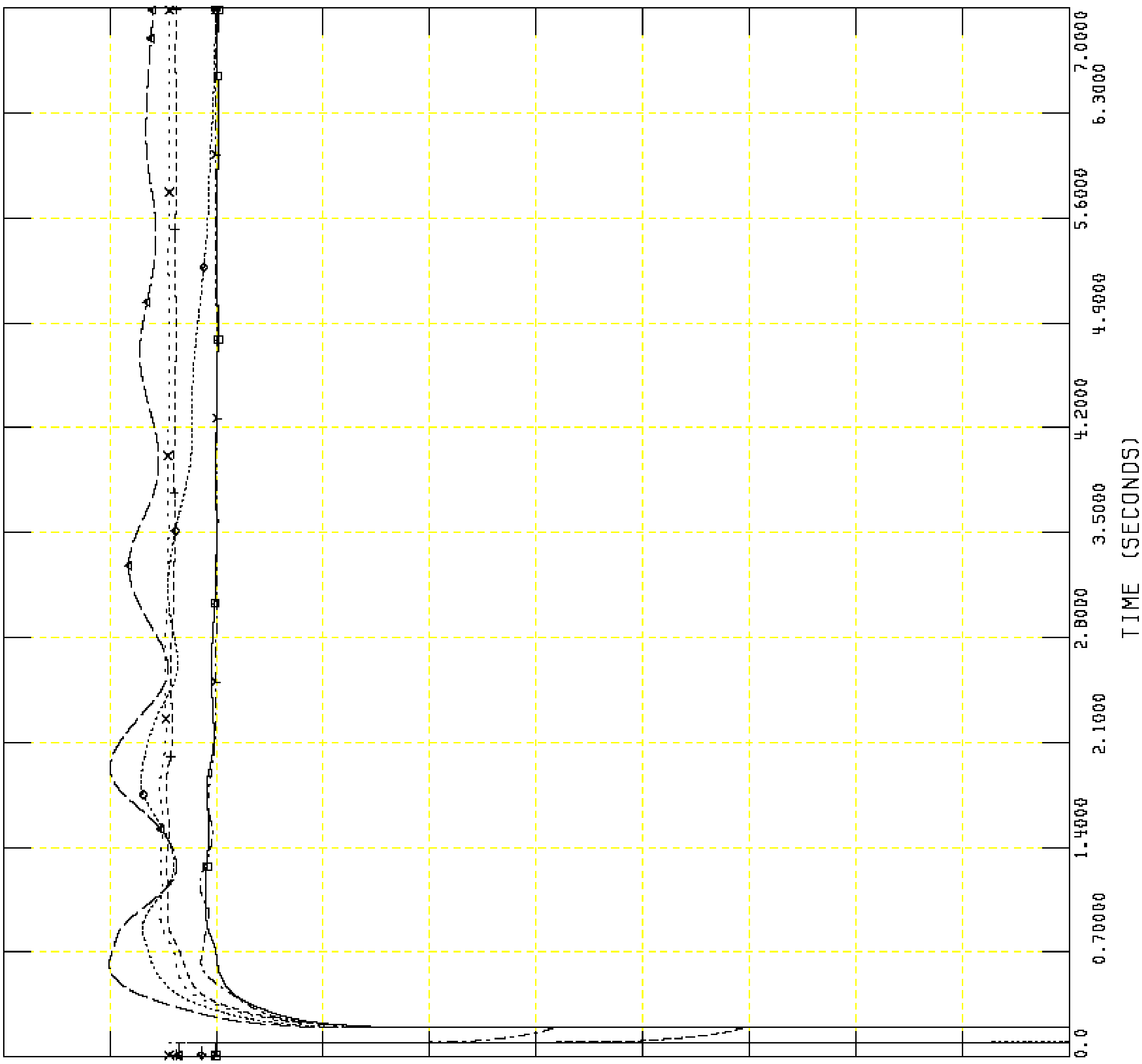


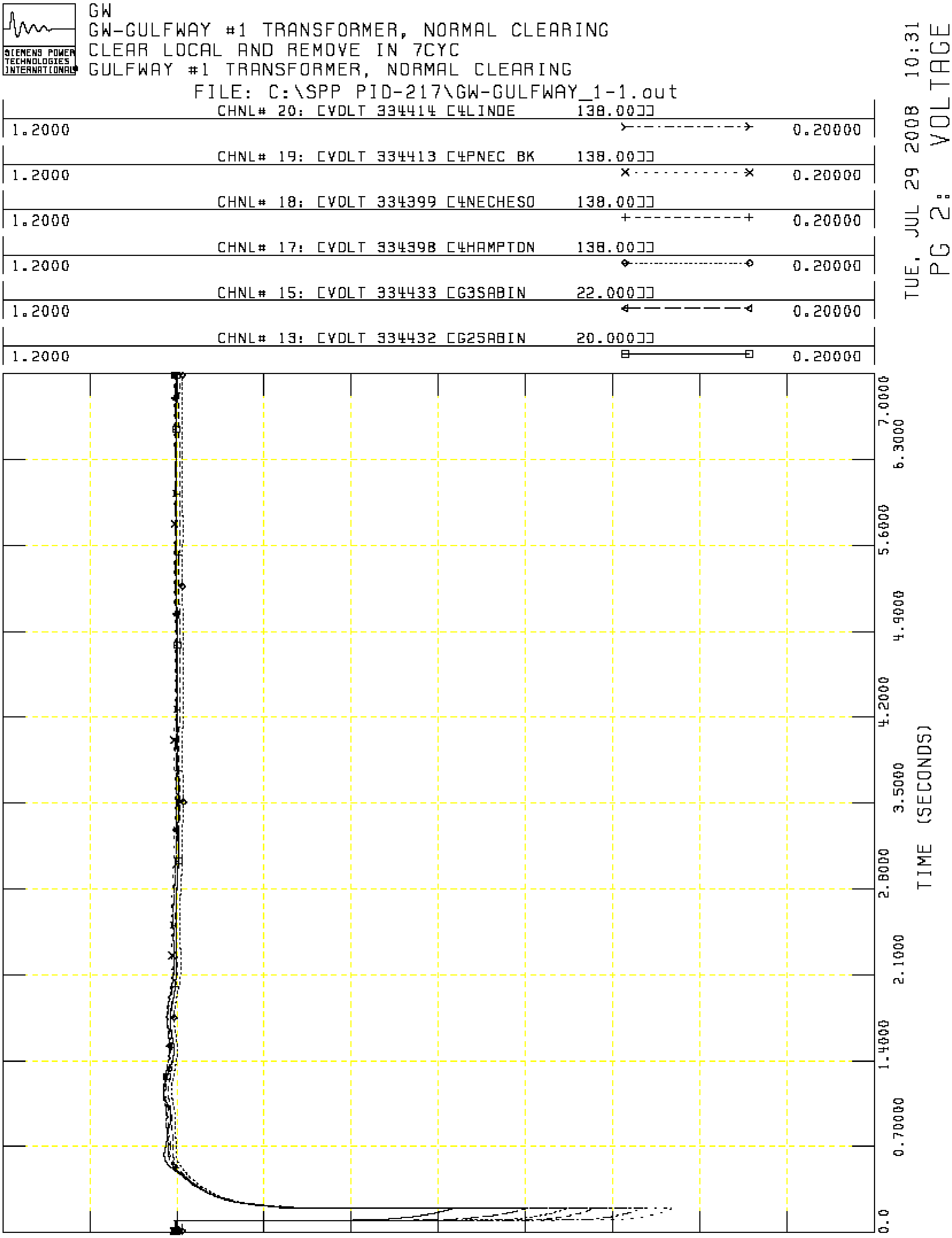
FAULT REFERENCE NO. 4
FAULT-GENR1- LOCATION GULFWAY GENR1

GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

TUE, JUL 29 2008 10:31
PG 1: VOLTAGE

CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]	1.2000		0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]	1.2000		0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]	1.2000		0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]	1.2000		0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]	1.2000		0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]	1.2000		0.20000

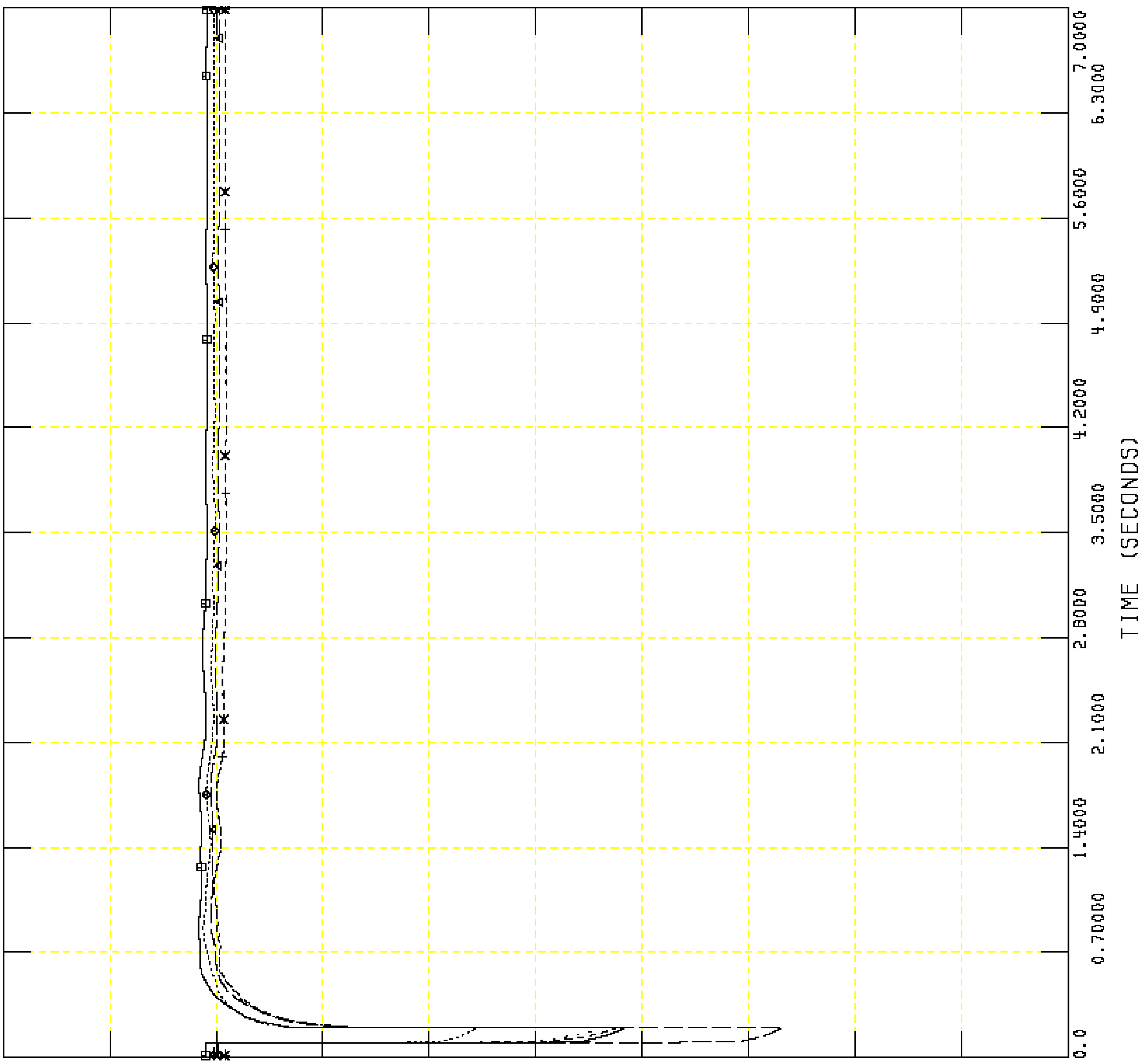


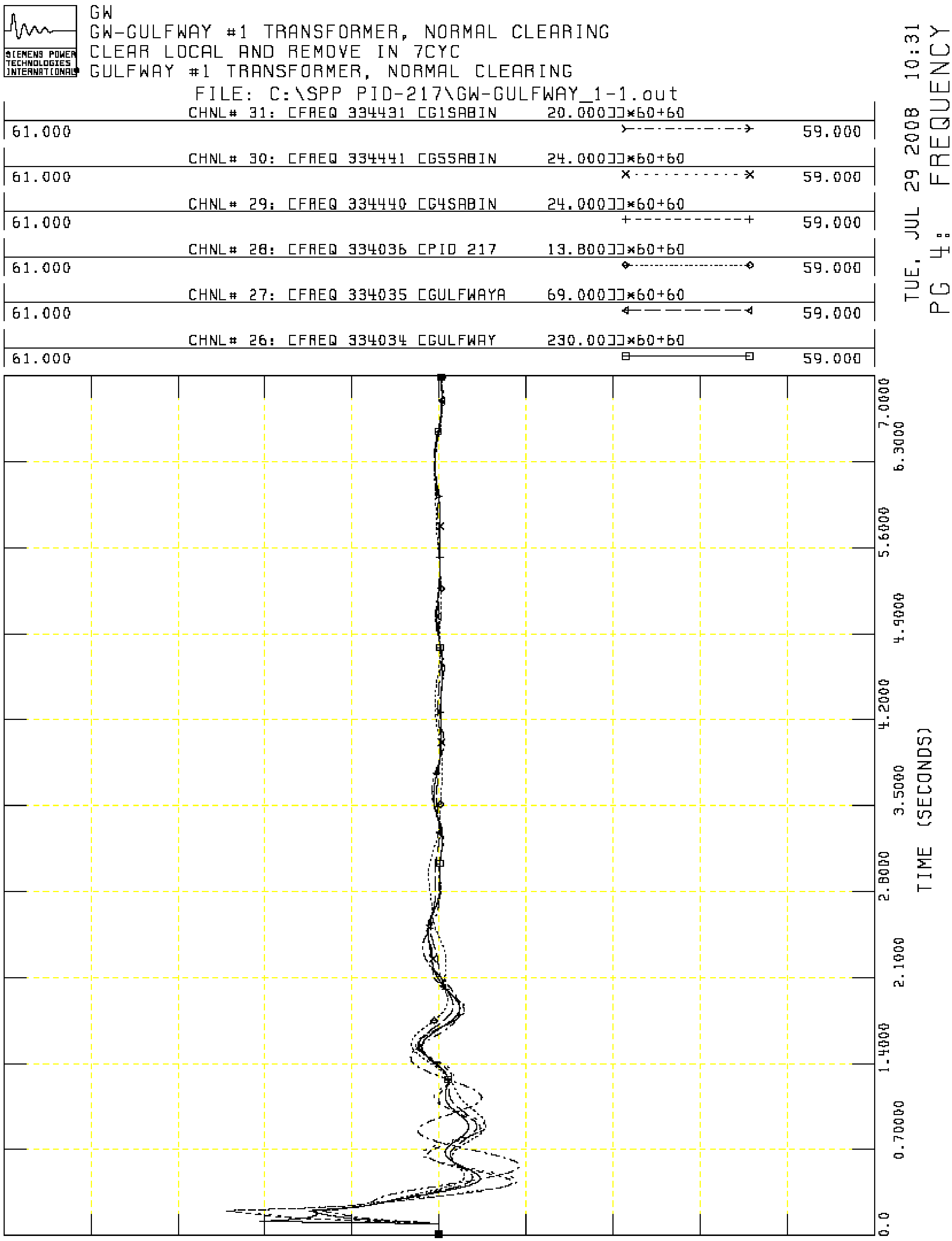

GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out
CHNL# 20: [VOLT 334414 C4LINDE 138.00]]
1.2000 0.20000
CHNL# 19: [VOLT 334413 C4PNEC BK 138.00]]
1.2000 0.20000
CHNL# 18: [VOLT 334399 C4NECHESO 138.00]]
1.2000 0.20000
CHNL# 17: [VOLT 334398 C4HAMPTDN 138.00]]
1.2000 0.20000
CHNL# 15: [VOLT 334433 CG3SABIN 22.000]]
1.2000 0.20000
CHNL# 13: [VOLT 334432 CG25ABIN 20.000]]
1.2000 0.20000
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)
TUE, JUL 29 2008 10:31
PG 2: VOLTAGE

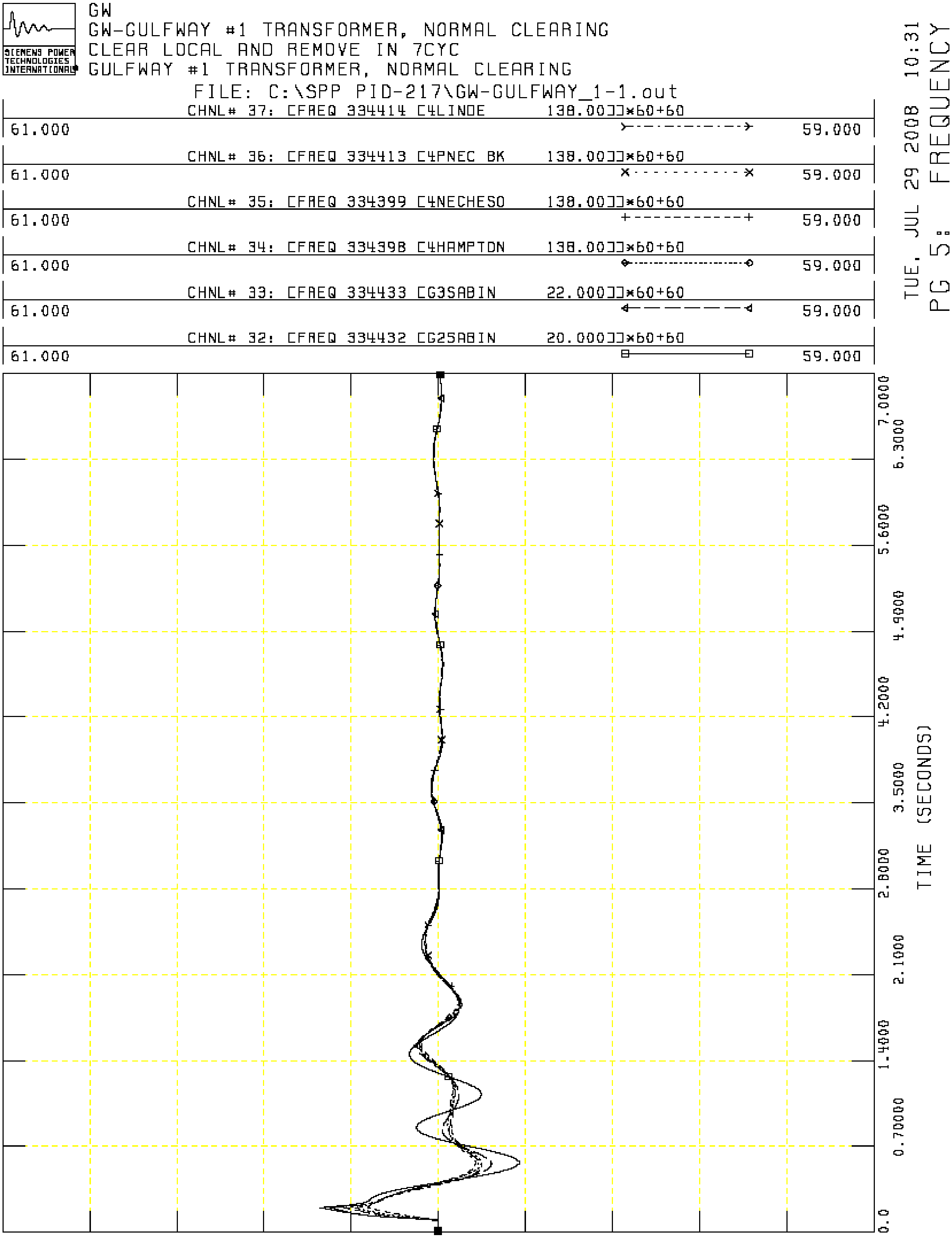
GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

TUE, JUL 29 2008 10:31
PG 3: VOLTAGE

Scale max	Channel	Scale min
1.2000	CHNL# 25: [VOLT 334453 [4COW 13 138.00]]	0.20000
1.2000	CHNL# 24: [VOLT 334450 [4ORANGE 138.00]]	0.20000
1.2000	CHNL# 23: [VOLT 335071 [6BTHREE 230.00]]	0.20000
1.2000	CHNL# 22: [VOLT 334364 [6GEOTOWN 230.00]]	0.20000
1.2000	CHNL# 21: [VOLT 334204 [6CHINA 230.00]]	0.20000

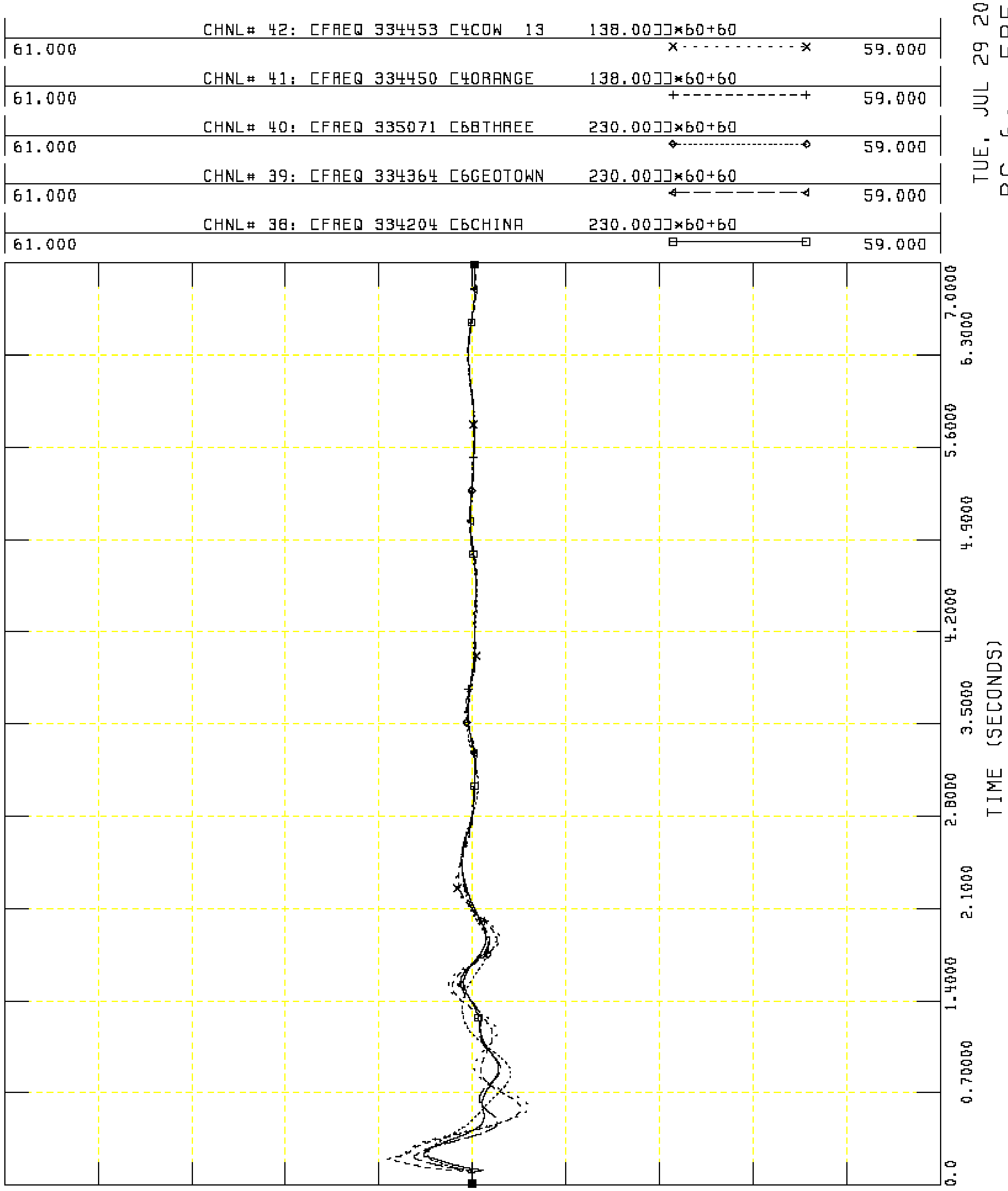



GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60
61.000 59.000
CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60
61.000 59.000
CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60
61.000 59.000
CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60
61.000 59.000
CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60
61.000 59.000
CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60
61.000 59.000
TUE, JUL 29 2008 10:31
PG 4: FREQUENCY
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)


GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out
CHNL# 37: [FREQ 334414 [4LINDE 138.00]]*60+60
61.000 59.000
CHNL# 36: [FREQ 334413 [4PNEC BK 138.00]]*60+60
61.000 59.000
CHNL# 35: [FREQ 334399 [4NECHESO 138.00]]*60+60
61.000 59.000
CHNL# 34: [FREQ 334398 [4HAMPTON 138.00]]*60+60
61.000 59.000
CHNL# 33: [FREQ 334433 [G3SABIN 22.000]]*60+60
61.000 59.000
CHNL# 32: [FREQ 334432 [G2SABIN 20.000]]*60+60
61.000 59.000
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)
TUE, JUL 29 2008 10:31
PG 5: FREQUENCY

GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

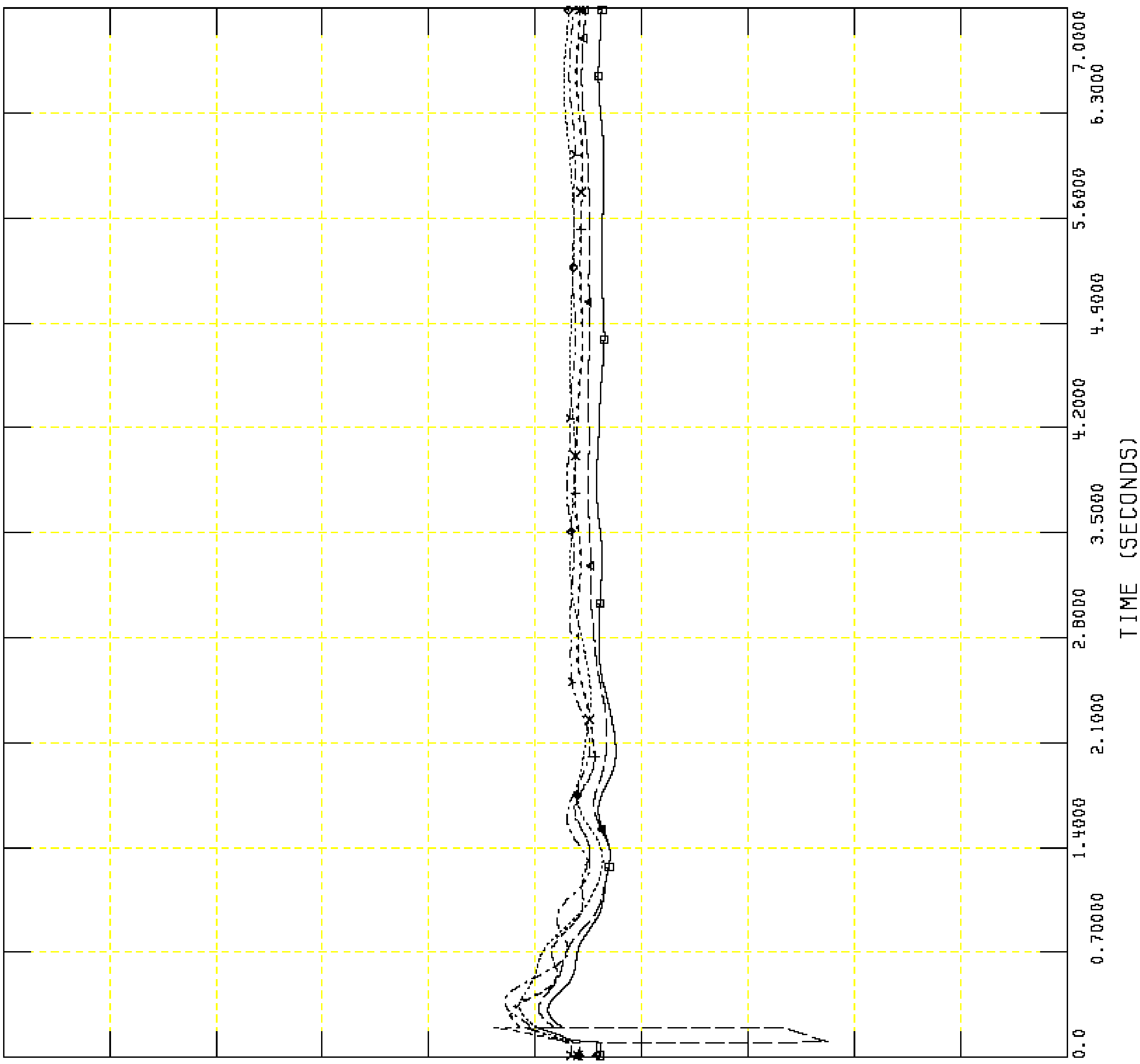
TUE, JUL 29 2008 10:32
PG 6: FREQUENCY



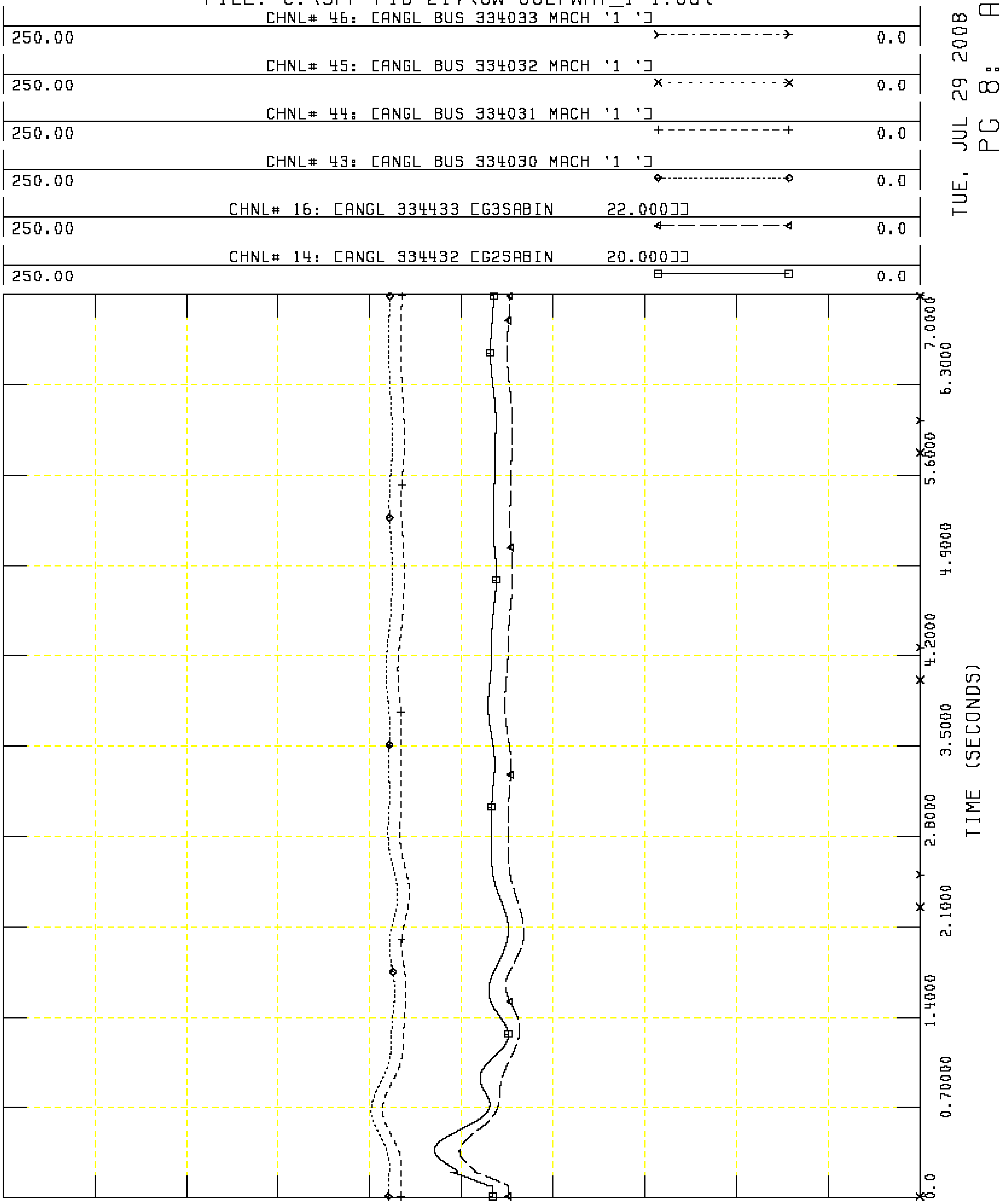
GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

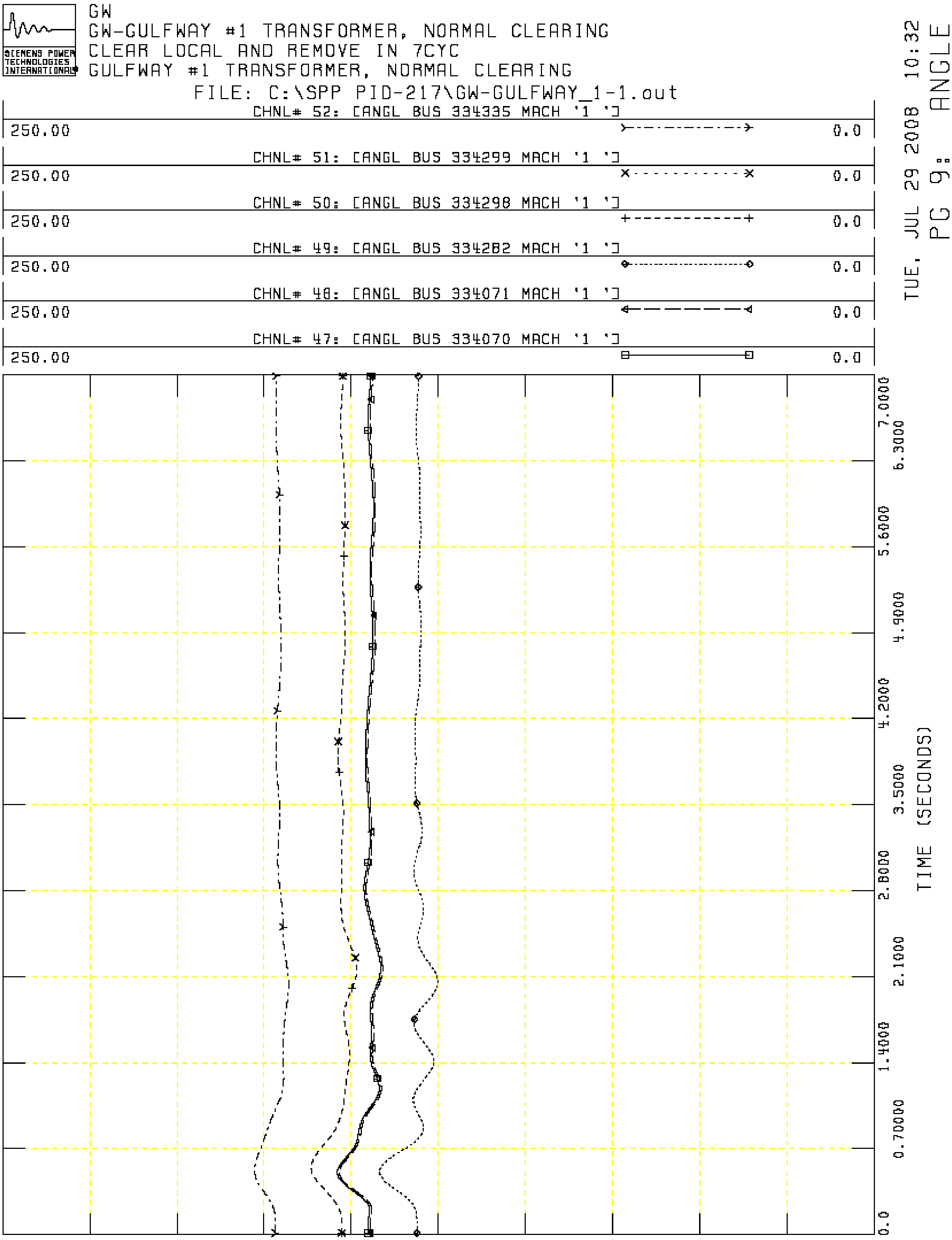
TUE, JUL 29 2008 10:32
PG 7: ANGLE

CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]		
250.00		0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]		
250.00		0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]		
250.00		0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]		
250.00		0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]		
250.00		0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.000]]		
250.00		0.0



GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out




SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out
CHNL# 52: [ANGL BUS 334335 MACH '1 ']
250.00 0.0
CHNL# 51: [ANGL BUS 334299 MACH '1 ']
250.00 0.0
CHNL# 50: [ANGL BUS 334298 MACH '1 ']
250.00 0.0
CHNL# 49: [ANGL BUS 334282 MACH '1 ']
250.00 0.0
CHNL# 48: [ANGL BUS 334071 MACH '1 ']
250.00 0.0
CHNL# 47: [ANGL BUS 334070 MACH '1 ']
250.00 0.0
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)
TUE, JUL 29 2008 10:32
PG 9: ANGLE

GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING

FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

TUE, JUL 29 2008 10:32
PG 10: ANGLE

CHNL# 58: [ANGL BUS 334393 MACH '1 ']
250.00 — 0.0

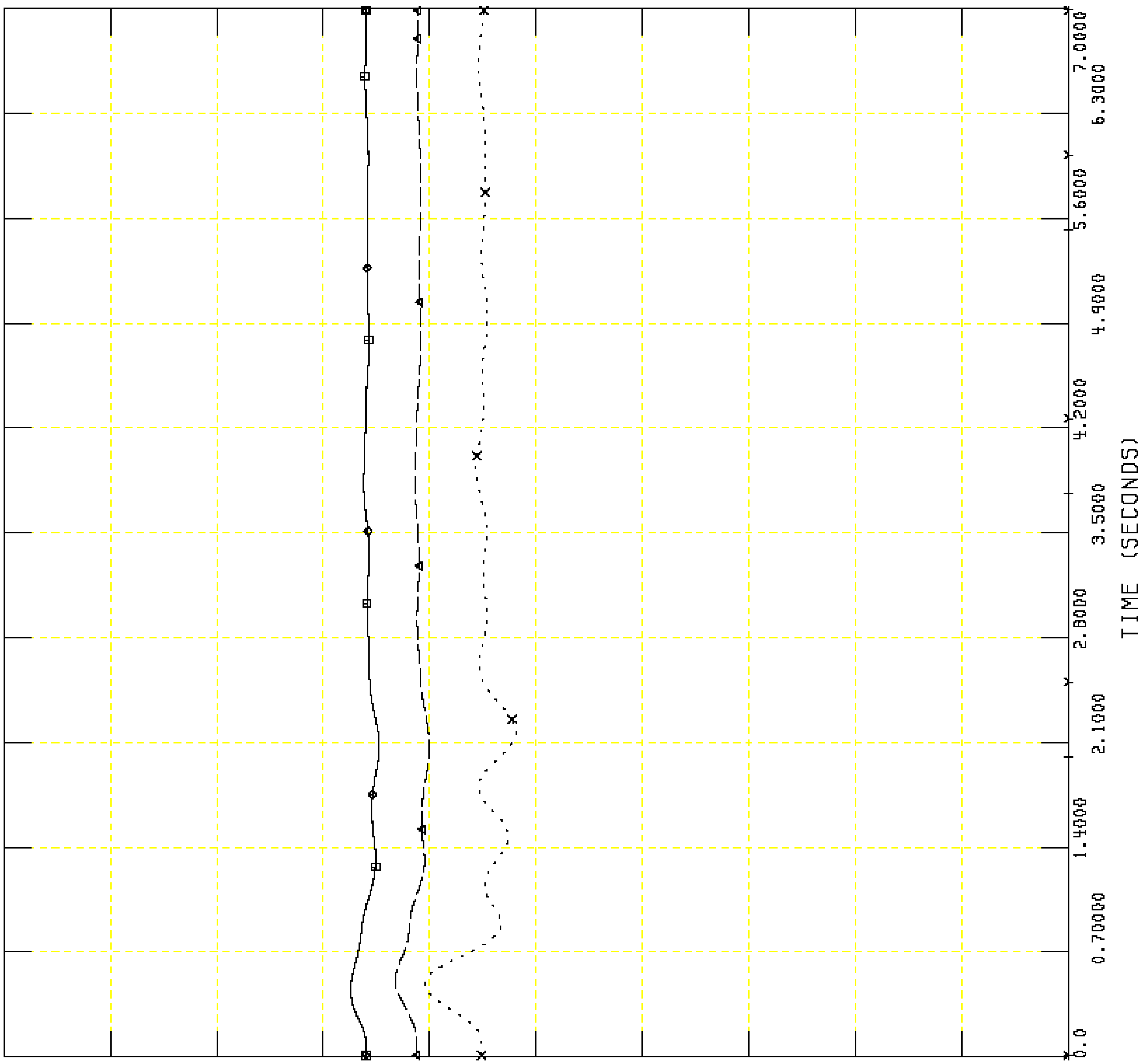
CHNL# 57: [ANGL BUS 334392 MACH '1 ']
250.00 — 0.0

CHNL# 56: [ANGL BUS 334377 MACH '1 ']
250.00 — 0.0

CHNL# 55: [ANGL BUS 334376 MACH '1 ']
250.00 — 0.0

CHNL# 54: [ANGL BUS 334375 MACH '1 ']
250.00 — 0.0

CHNL# 53: [ANGL BUS 334374 MACH '1 ']
250.00 — 0.0



GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING

FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

TUE, JUL 29 2008 10:32
PG 11: ANGLE

CHNL# 64: [ANGL BUS 334738 MACH '1 ']
250.00 0.0

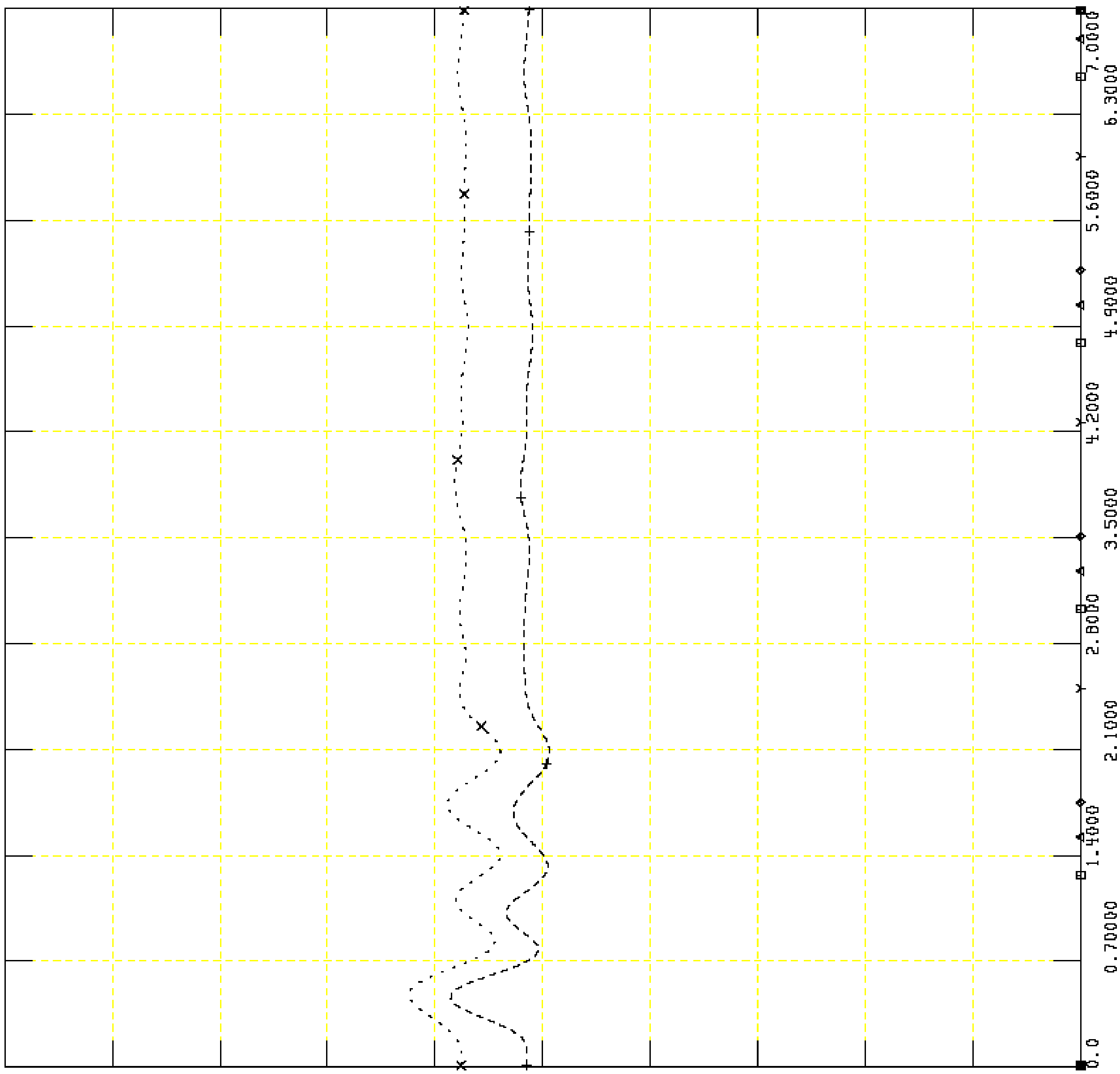
CHNL# 63: [ANGL BUS 334467 MACH '1 ']
250.00 0.0

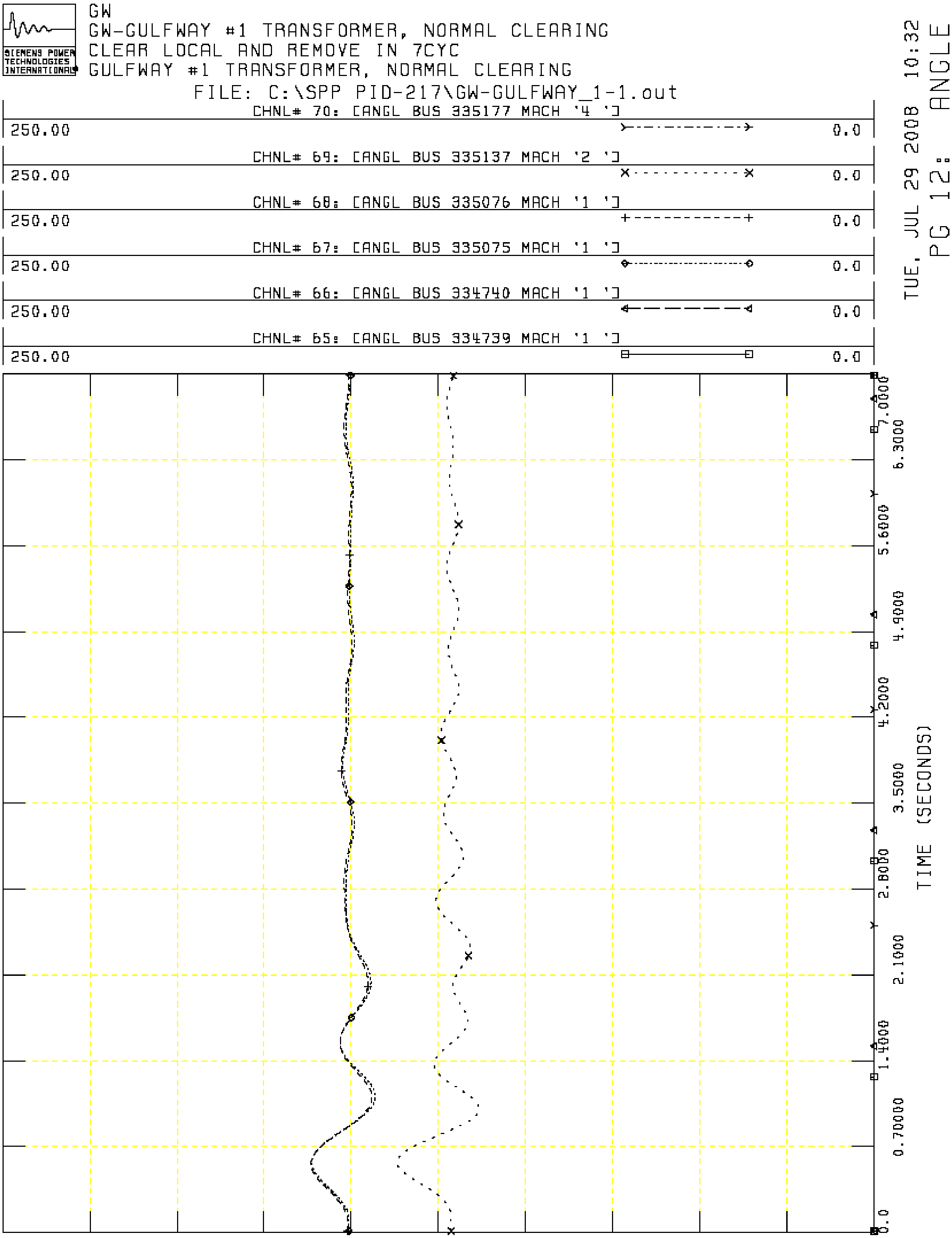
CHNL# 62: [ANGL BUS 334458 MACH '1 ']
250.00 0.0

CHNL# 61: [ANGL BUS 334457 MACH '1 ']
250.00 0.0

CHNL# 60: [ANGL BUS 334456 MACH '1 ']
250.00 0.0

CHNL# 59: [ANGL BUS 334394 MACH '1 ']
250.00 0.0

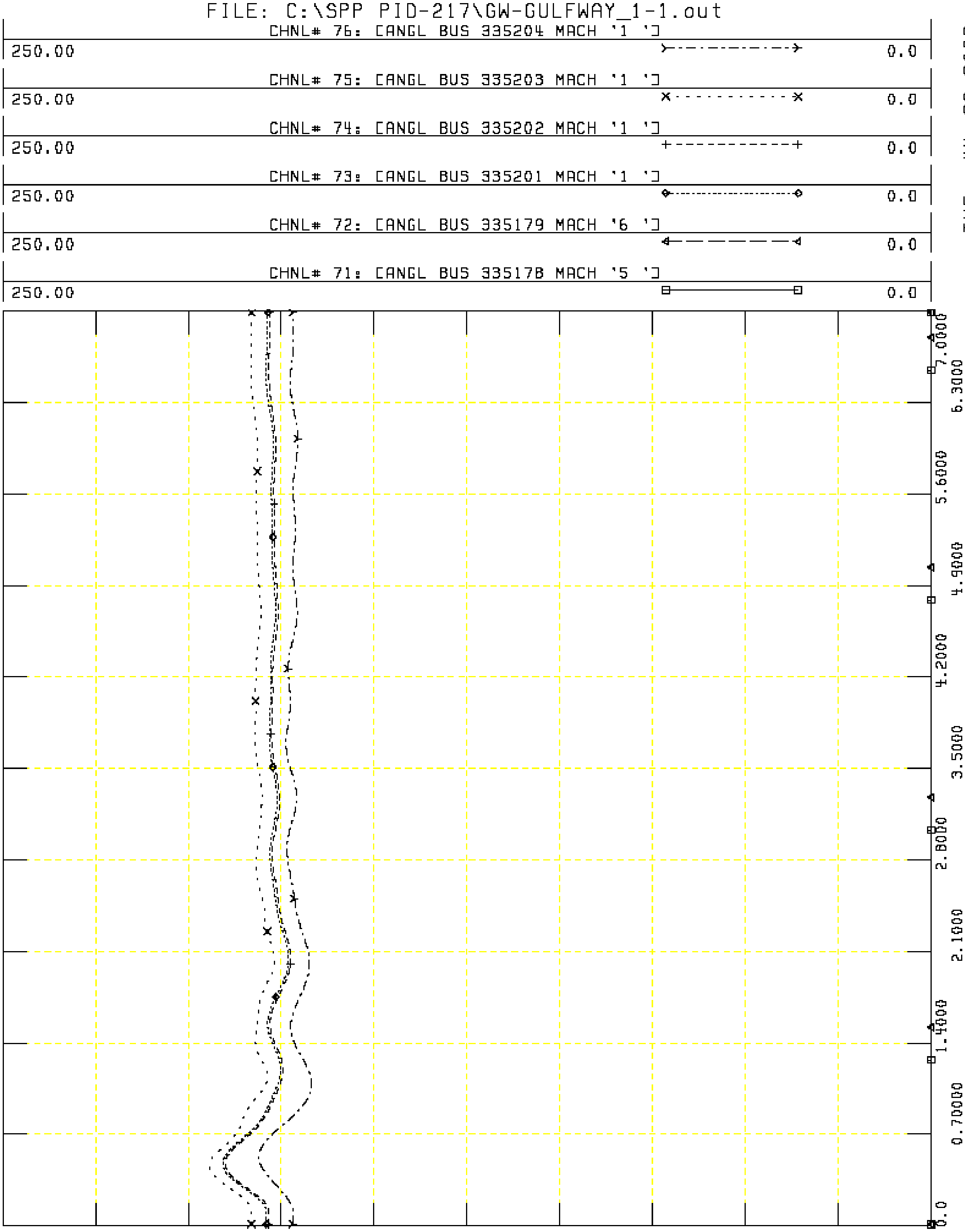




SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out
CHNL# 70: [ANGL BUS 335177 MACH '4 ']
250.00 0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']
250.00 0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']
250.00 0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']
250.00 0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']
250.00 0.0
CHNL# 65: [ANGL BUS 334739 MACH '1 ']
250.00 0.0
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)
TUE, JUL 29 2008 10:32
PG 12: ANGLE

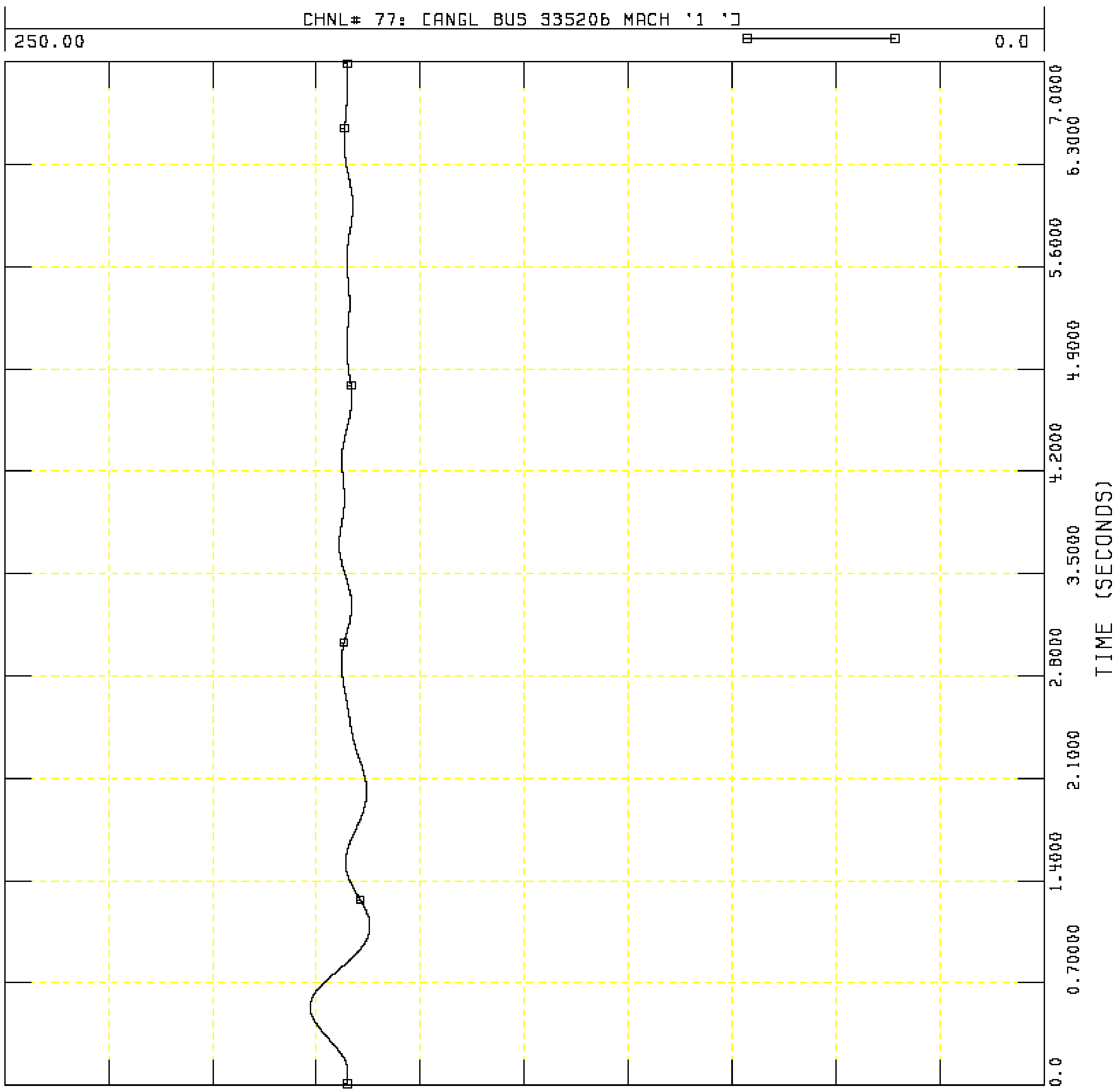
GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

TUE, JUL 29 2008 10:32
PG 13: ANGLE

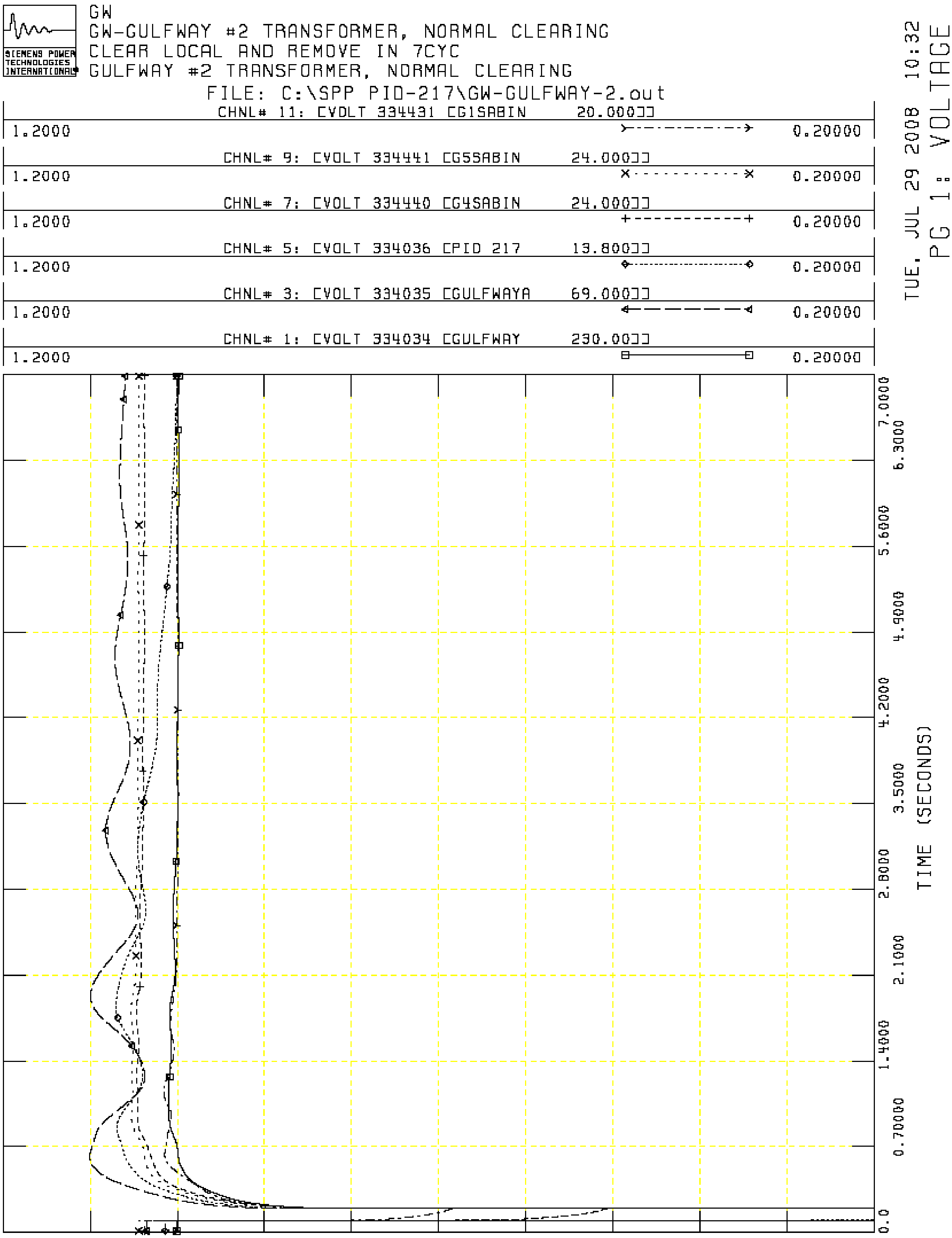


GW
GW-GULFWAY #1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #1 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY_1-1.out

TUE, JUL 29 2008 10:32
PG 14: ANGLE



Fault Reference No. 5
Fault-GENR2- Location Gulfway Genr2


GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]
1.2000 0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000 0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000 0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000 0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000 0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000 0.20000
TUE, JUL 29 2008 10:32
PG 1: VOLTAGE
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)

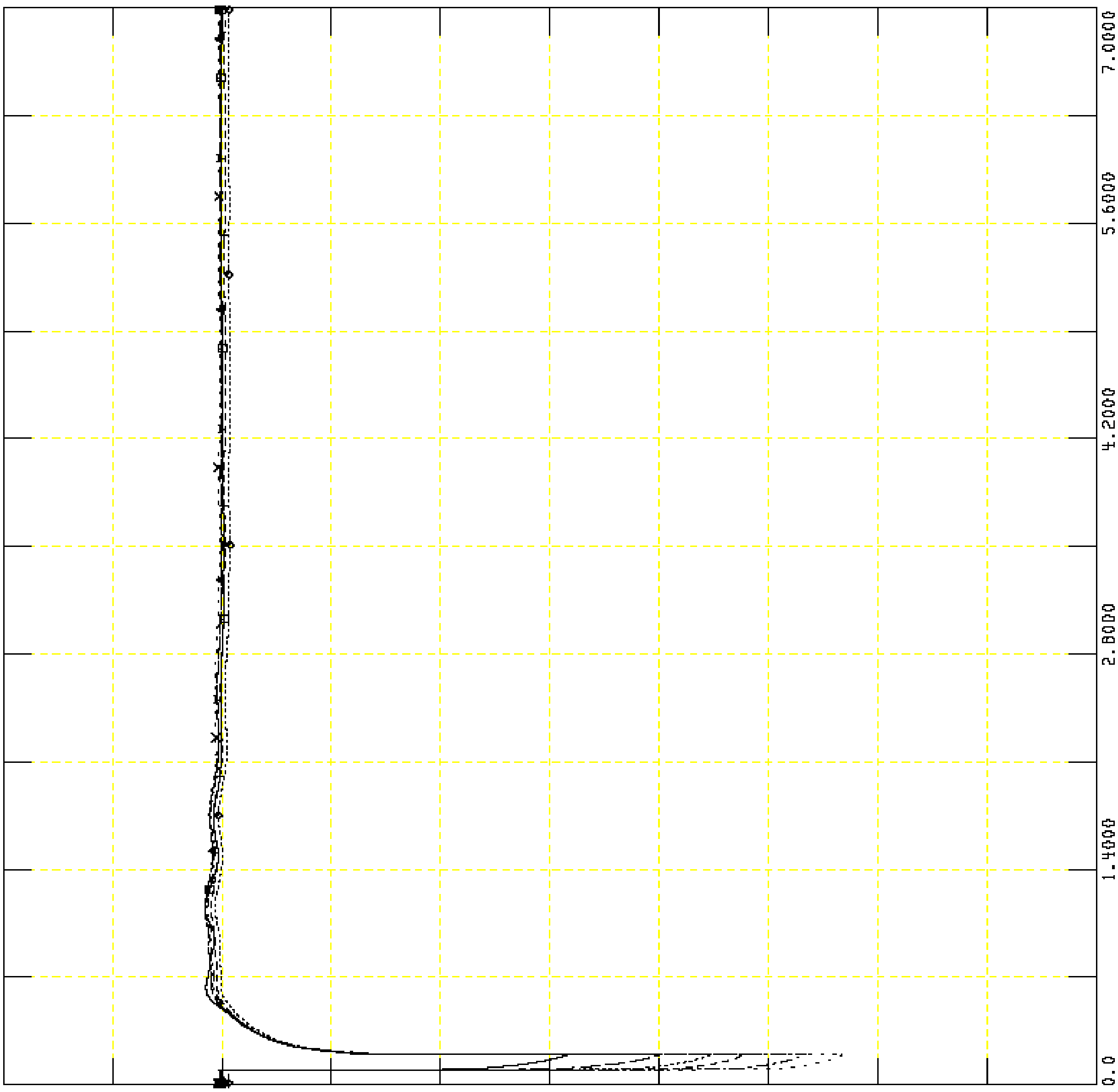
SIEMENS POWER TECHNOLOGIES INTERNATIONAL

GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING

FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 2: VOLTAGE

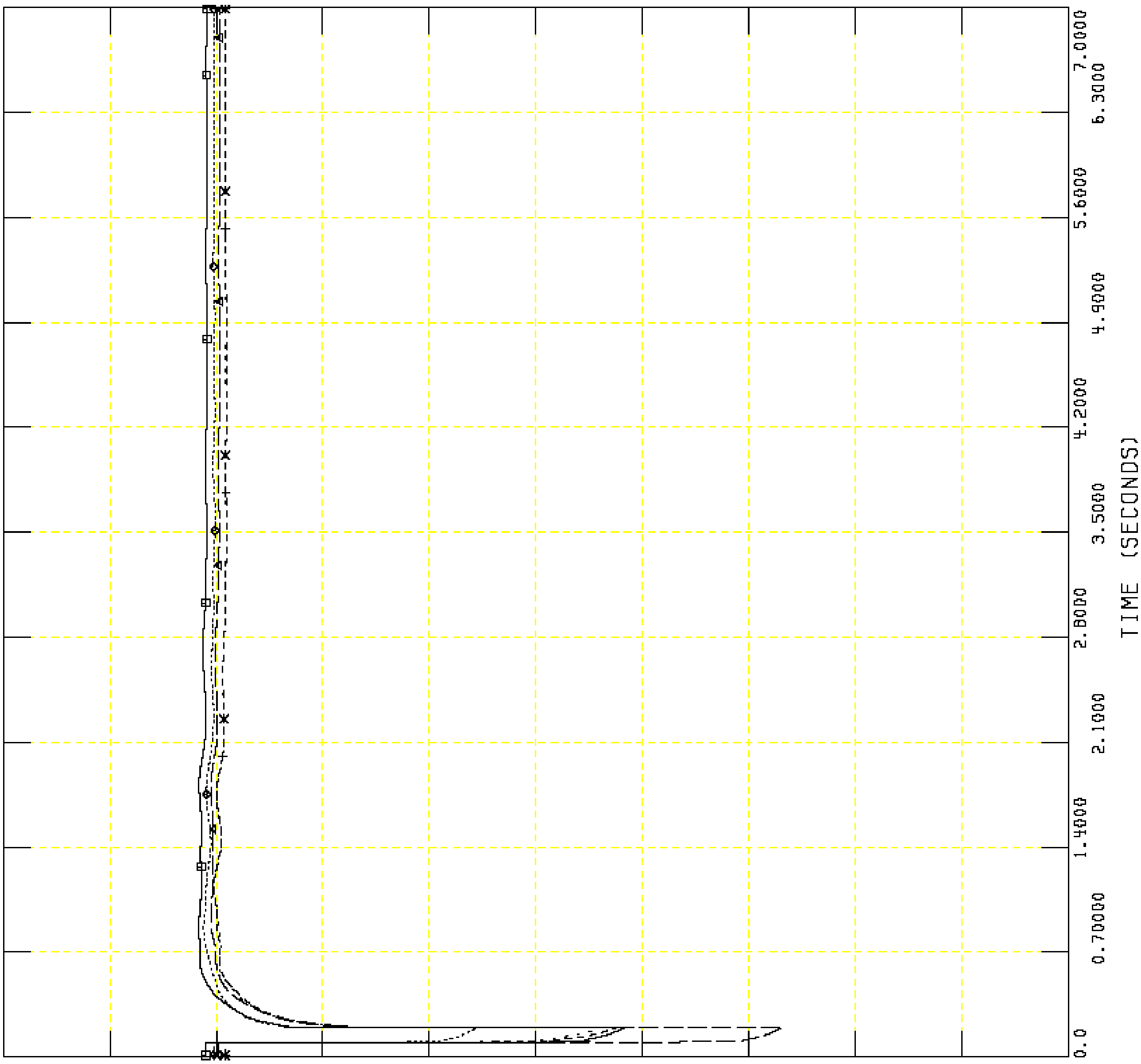
CHNL# 20: [VOLT 334414 [4LINDE 138.00]]	1.2000	>-·-·-·-·->	0.20000
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]	1.2000	x·········x	0.20000
CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]	1.2000	+-----------+	0.20000
CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]	1.2000	◇·········◇	0.20000
CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]	1.2000	◁— — — —◁	0.20000
CHNL# 13: [VOLT 334432 [G25ABIN 20.000]]	1.2000	⊟———————⊟	0.20000

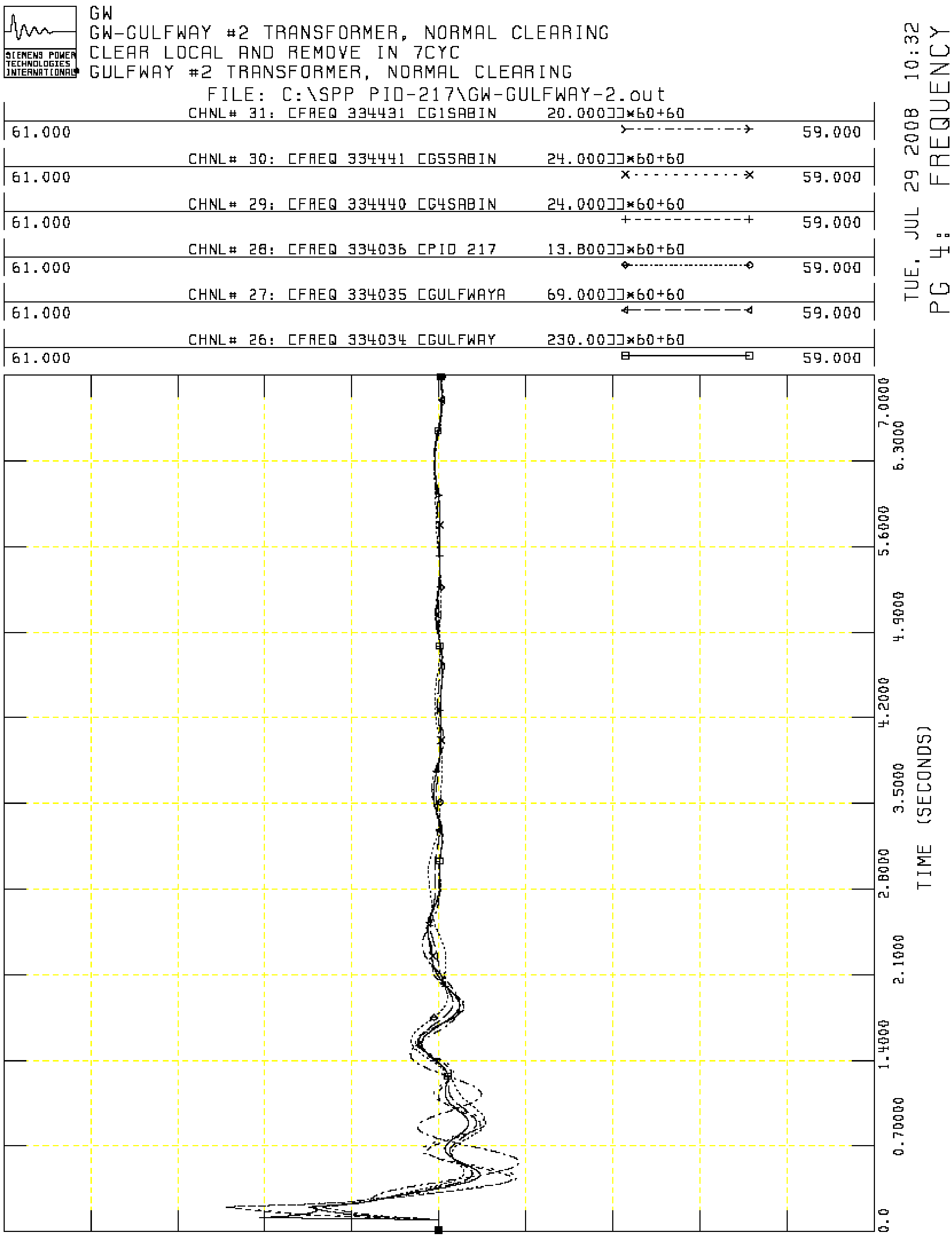


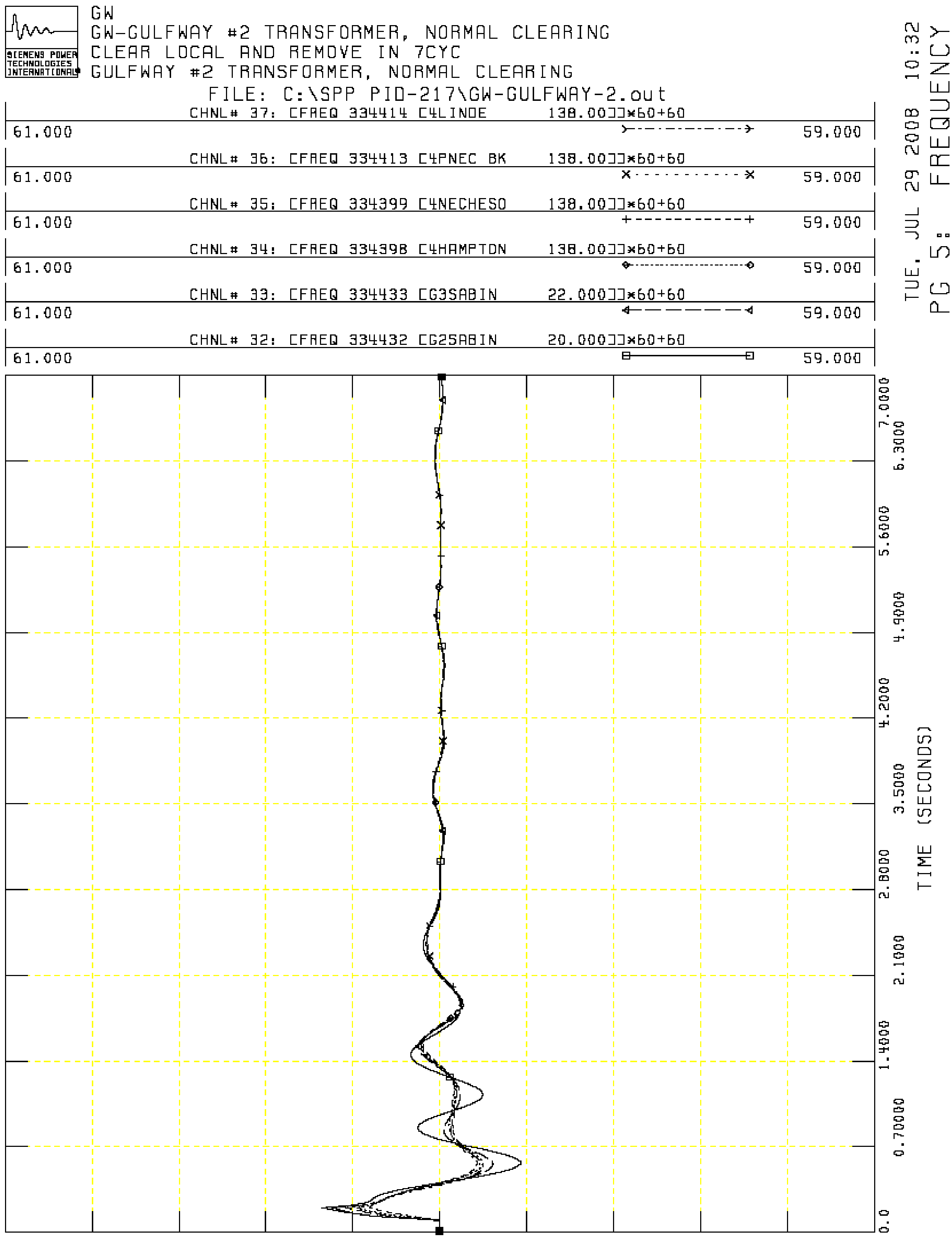
GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 3: VOLTAGE

CHNL# 25: [VOLT 334453 [4COW 13 138.00]] 1.2000 0.20000
CHNL# 24: [VOLT 334450 [4ORANGE 138.00]] 1.2000 0.20000
CHNL# 23: [VOLT 335071 [6BTHREE 230.00]] 1.2000 0.20000
CHNL# 22: [VOLT 334364 [6GEOTOWN 230.00]] 1.2000 0.20000
CHNL# 21: [VOLT 334204 [6CHINA 230.00]] 1.2000 0.20000




GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60
61.000 59.000
CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60
61.000 59.000
CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60
61.000 59.000
CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60
61.000 59.000
CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60
61.000 59.000
CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60
61.000 59.000
TUE, JUL 29 2008 10:32
PG 4: FREQUENCY
7.0000
6.3000
5.6000
4.9000
4.2000
3.5000
2.8000
2.1000
1.4000
0.70000
0.0
TIME (SECONDS)


SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out
CHNL# 37: [FREQ 334414 [4LINDE 138.00]]*60+60
61.000 59.000
CHNL# 36: [FREQ 334413 [4PNEC BK 138.00]]*60+60
61.000 59.000
CHNL# 35: [FREQ 334399 [4NECHESO 138.00]]*60+60
61.000 59.000
CHNL# 34: [FREQ 334398 [4HAMPTDN 138.00]]*60+60
61.000 59.000
CHNL# 33: [FREQ 334433 [G3SABIN 22.000]]*60+60
61.000 59.000
CHNL# 32: [FREQ 334432 [G2SABIN 20.000]]*60+60
61.000 59.000
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)
TUE, JUL 29 2008 10:32
PG 5: FREQUENCY

GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 6: FREQUENCY

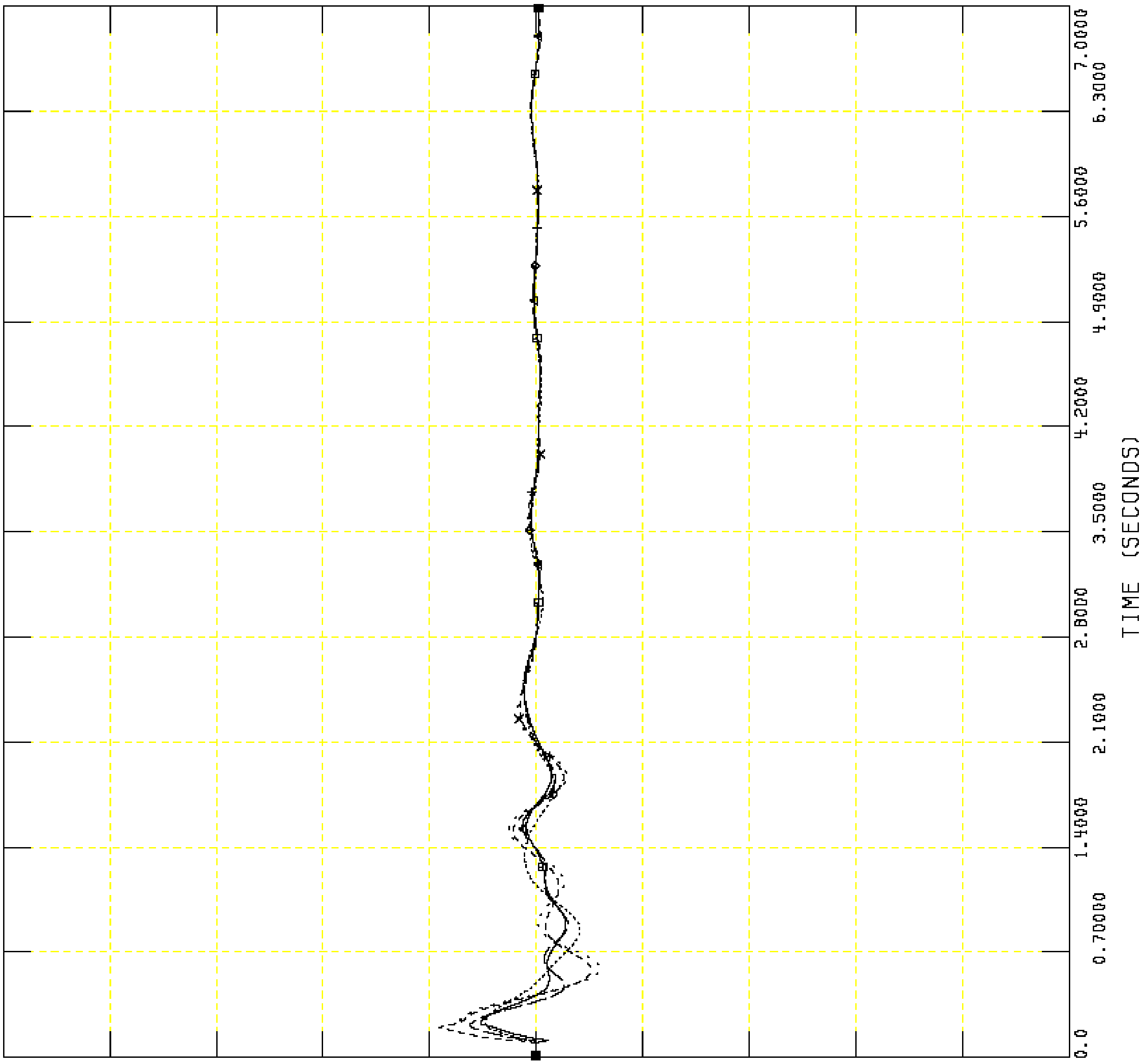
CHNL# 42: [FREQ 334453 [4COW 13 138.00]]*60+60
61.000 — 59.000

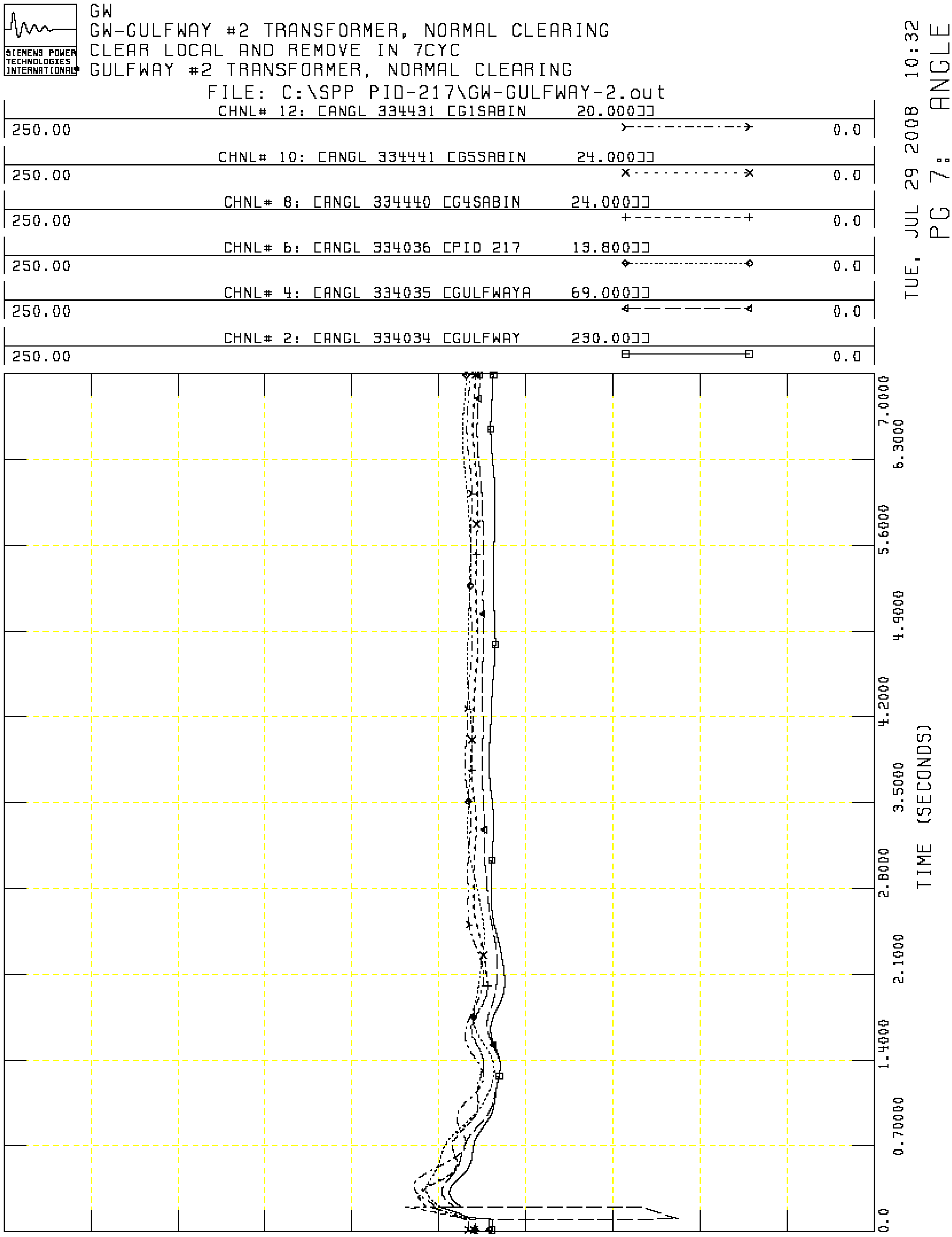
CHNL# 41: [FREQ 334450 [4ORANGE 138.00]]*60+60
61.000 — 59.000

CHNL# 40: [FREQ 335071 [6BTHREE 230.00]]*60+60
61.000 — 59.000

CHNL# 39: [FREQ 334364 [6GEOTOWN 230.00]]*60+60
61.000 — 59.000

CHNL# 38: [FREQ 334204 [6CHINA 230.00]]*60+60
61.000 — 59.000





GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]
250.00
0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00
0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00
0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00
0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00
0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.00]]
250.00
0.0
0.0
0.70000
1.4000
2.1000
2.8000
3.5000
4.2000
4.9000
5.6000
6.3000
7.0000
TIME (SECONDS)
TUE, JUL 29 2008 10:32
PG 7: ANGLE

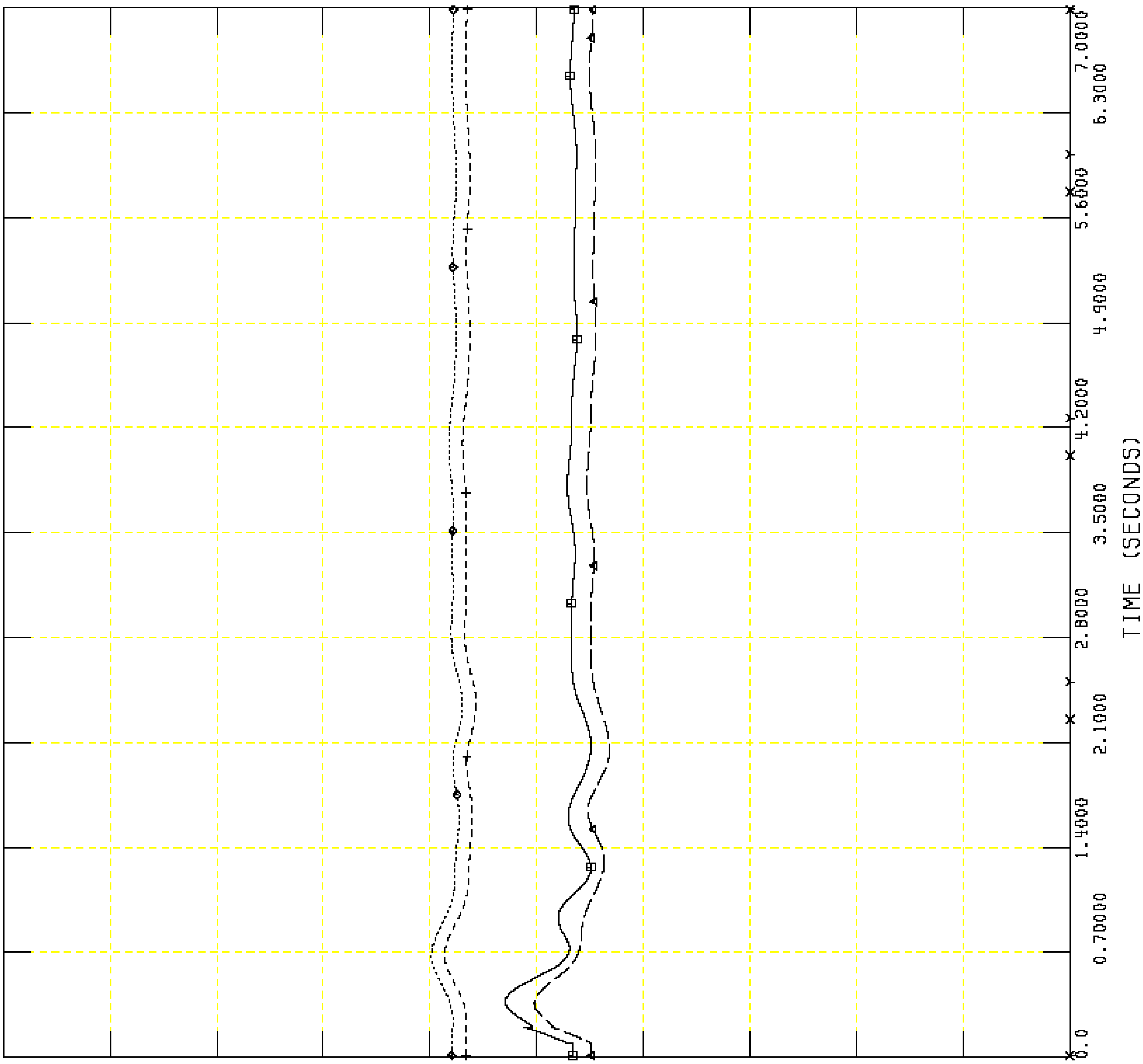
SIEMENS POWER TECHNOLOGIES INTERNATIONAL

GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING

FILE: C:\SPP PID-217\GW-GULFWAY-2.out

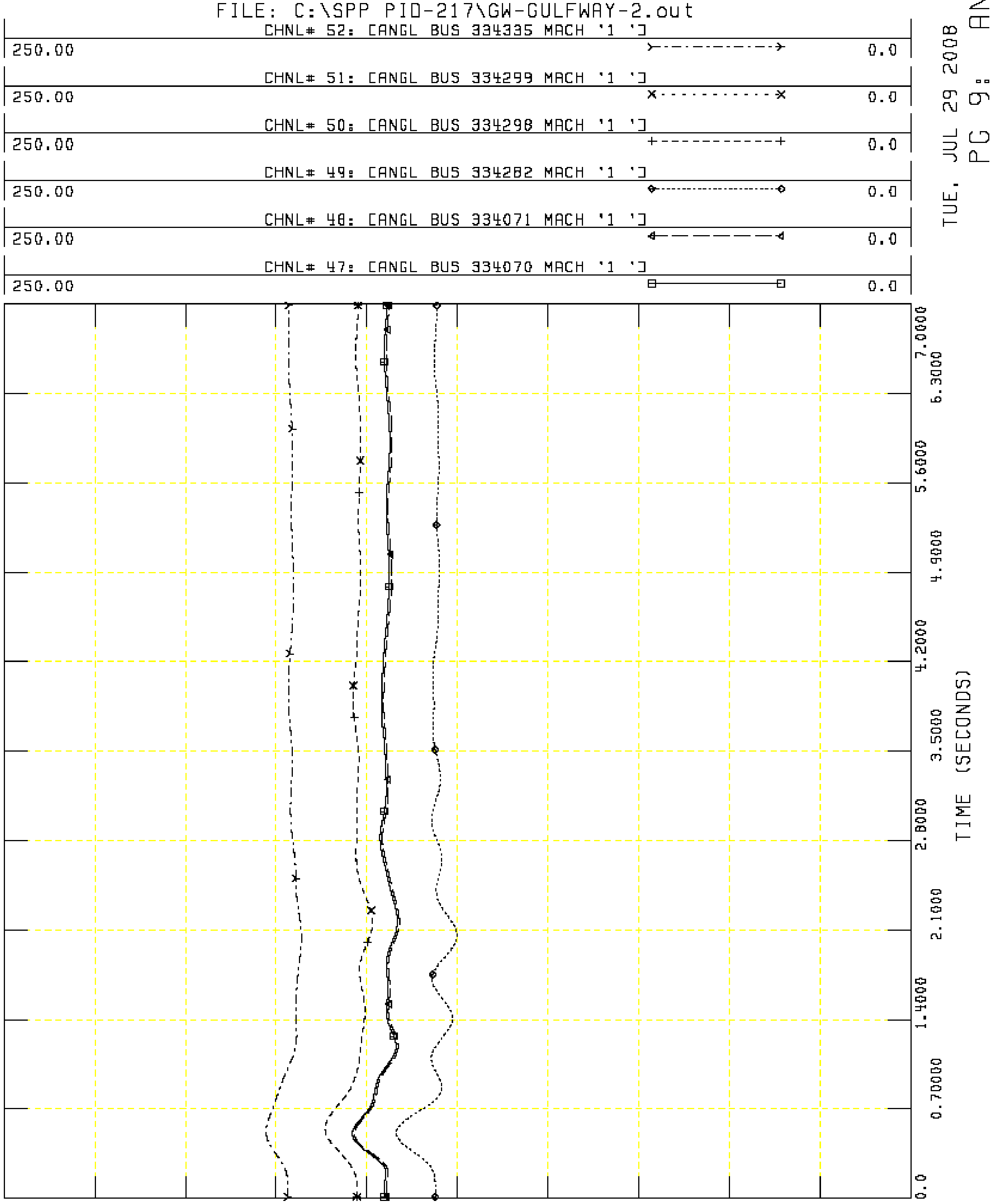
TUE, JUL 29 2008 10:32
PG 8: ANGLE

Channel	Max	Min
CHNL# 46: [ANGL BUS 334033 MACH '1 ']	250.00	0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']	250.00	0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']	250.00	0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']	250.00	0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]	250.00	0.0
CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]	250.00	0.0



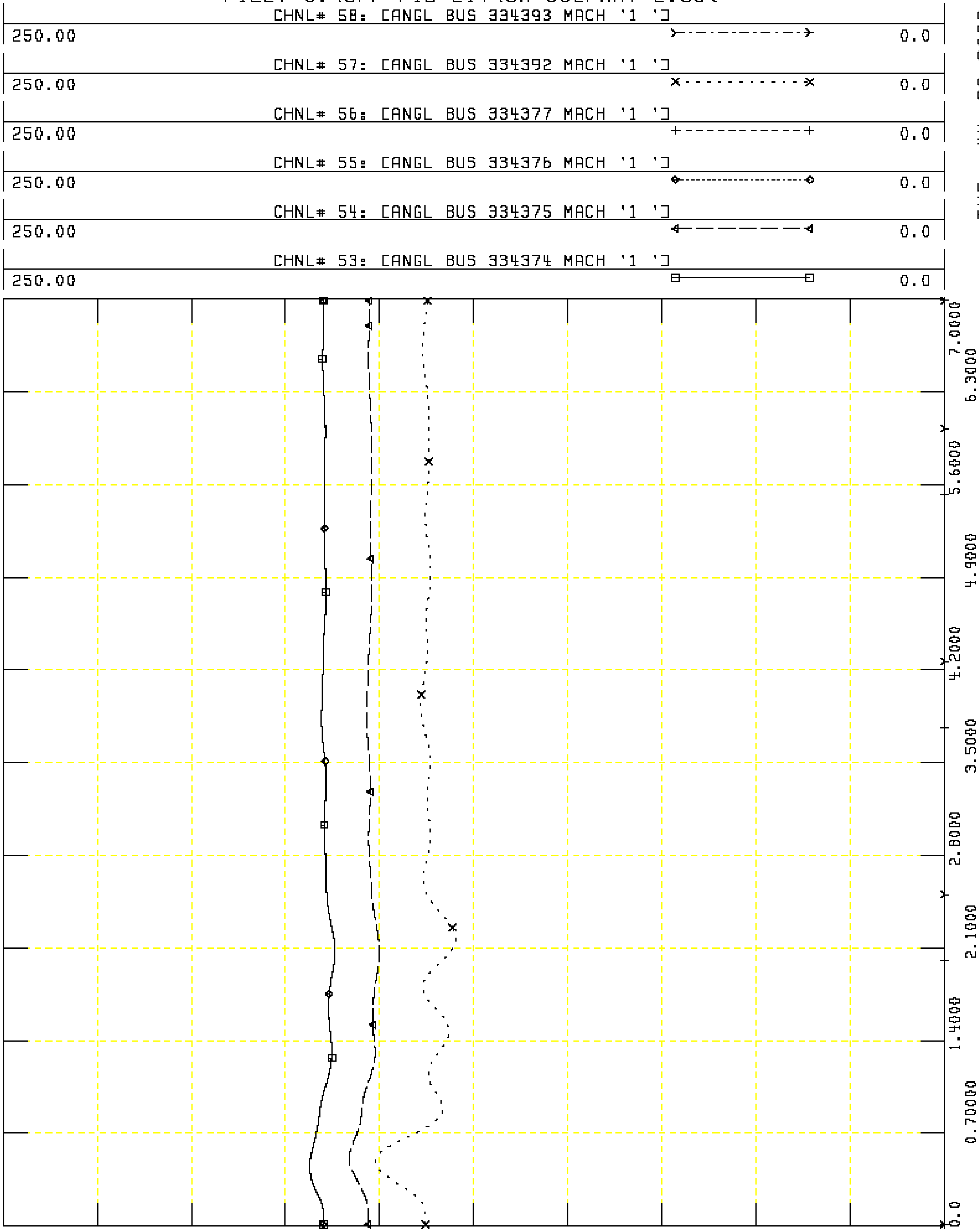
GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 9: ANGLE



GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 10: ANGLE



GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 11: ANGLE

CHNL# 64: [ANGL BUS 334738 MACH '1 ']
250.00 0.0

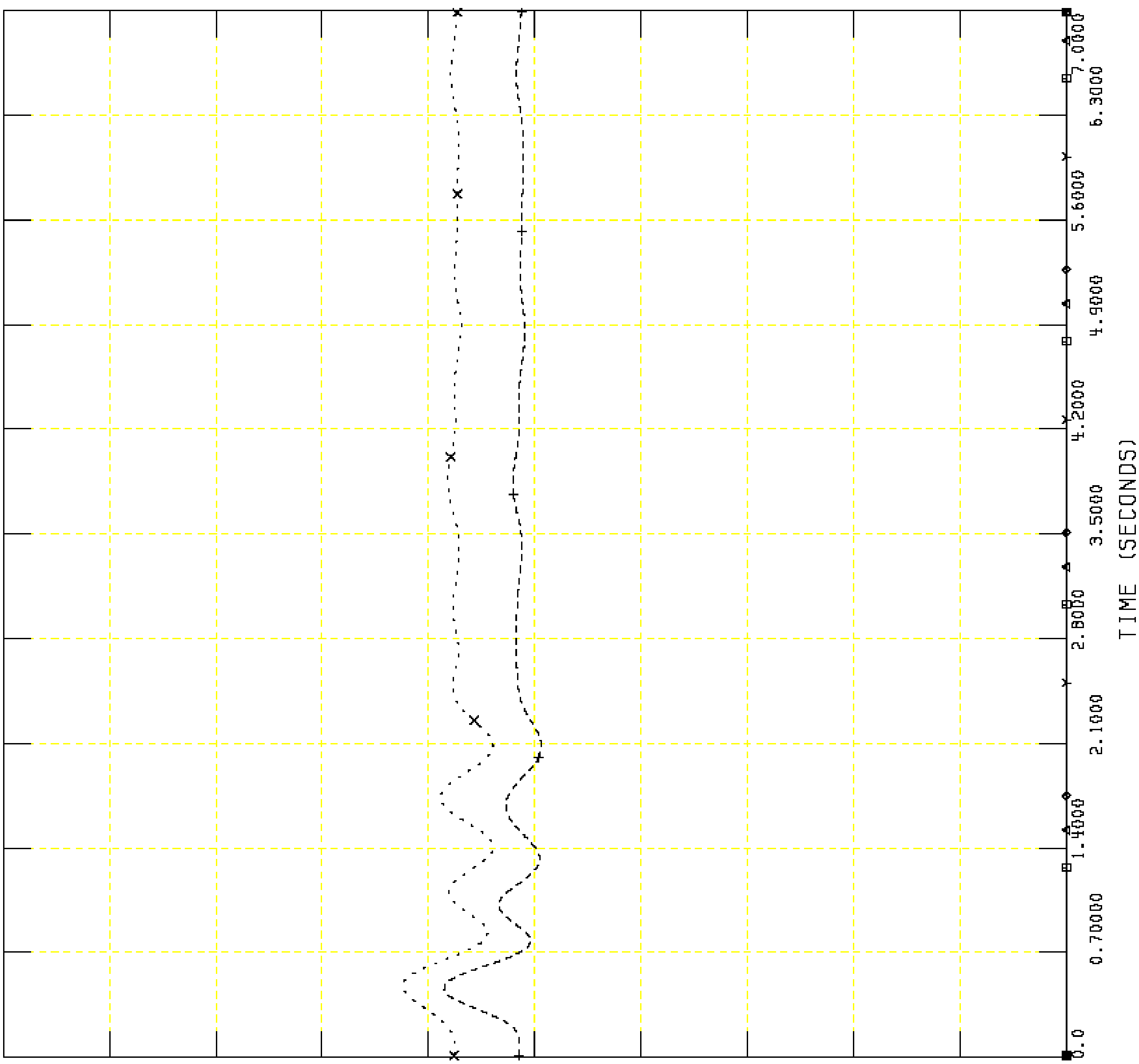
CHNL# 63: [ANGL BUS 334467 MACH '1 ']
250.00 0.0

CHNL# 62: [ANGL BUS 334458 MACH '1 ']
250.00 0.0

CHNL# 61: [ANGL BUS 334457 MACH '1 ']
250.00 0.0

CHNL# 60: [ANGL BUS 334456 MACH '1 ']
250.00 0.0

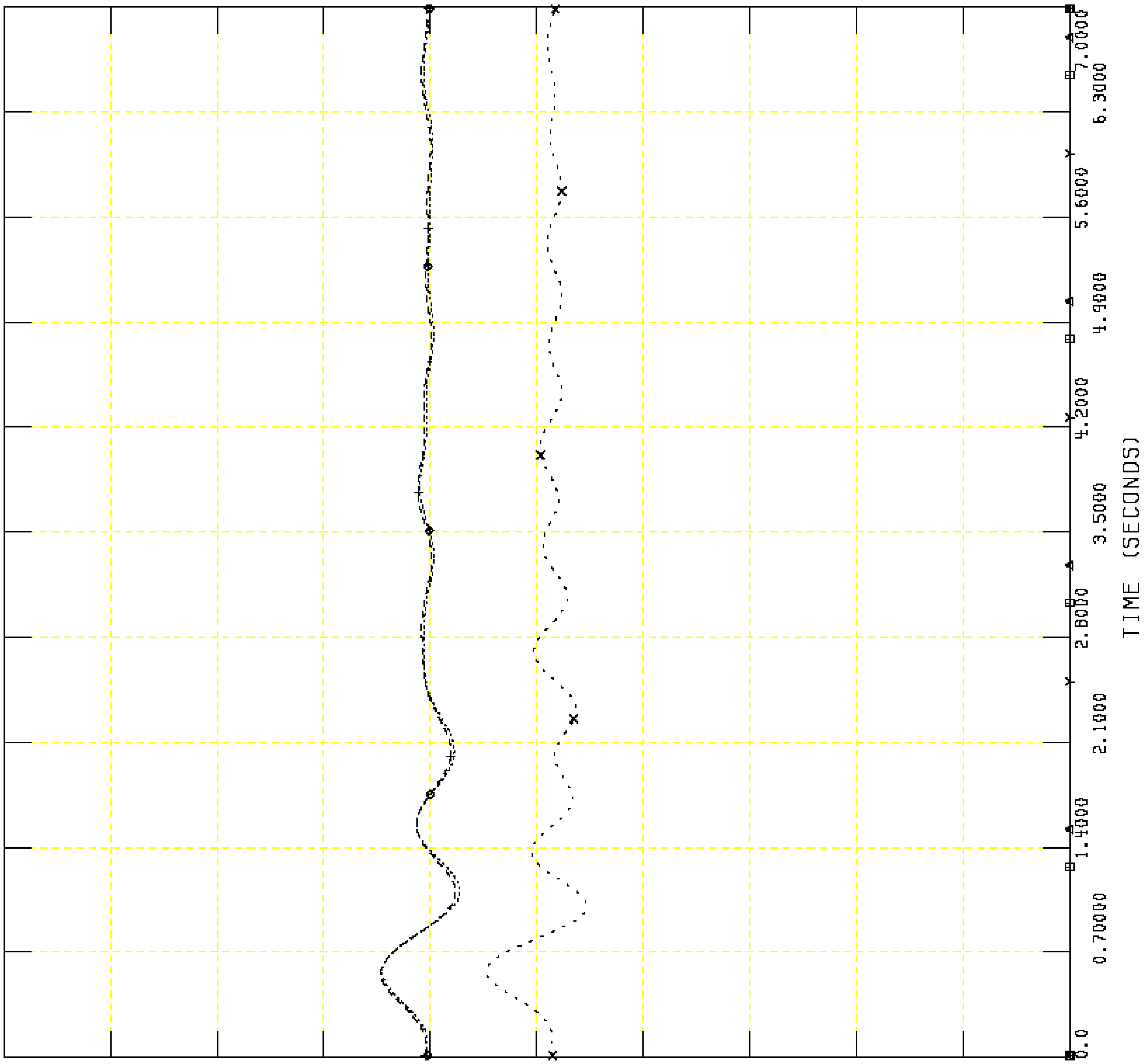
CHNL# 59: [ANGL BUS 334394 MACH '1 ']
250.00 0.0



GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 12: ANGLE

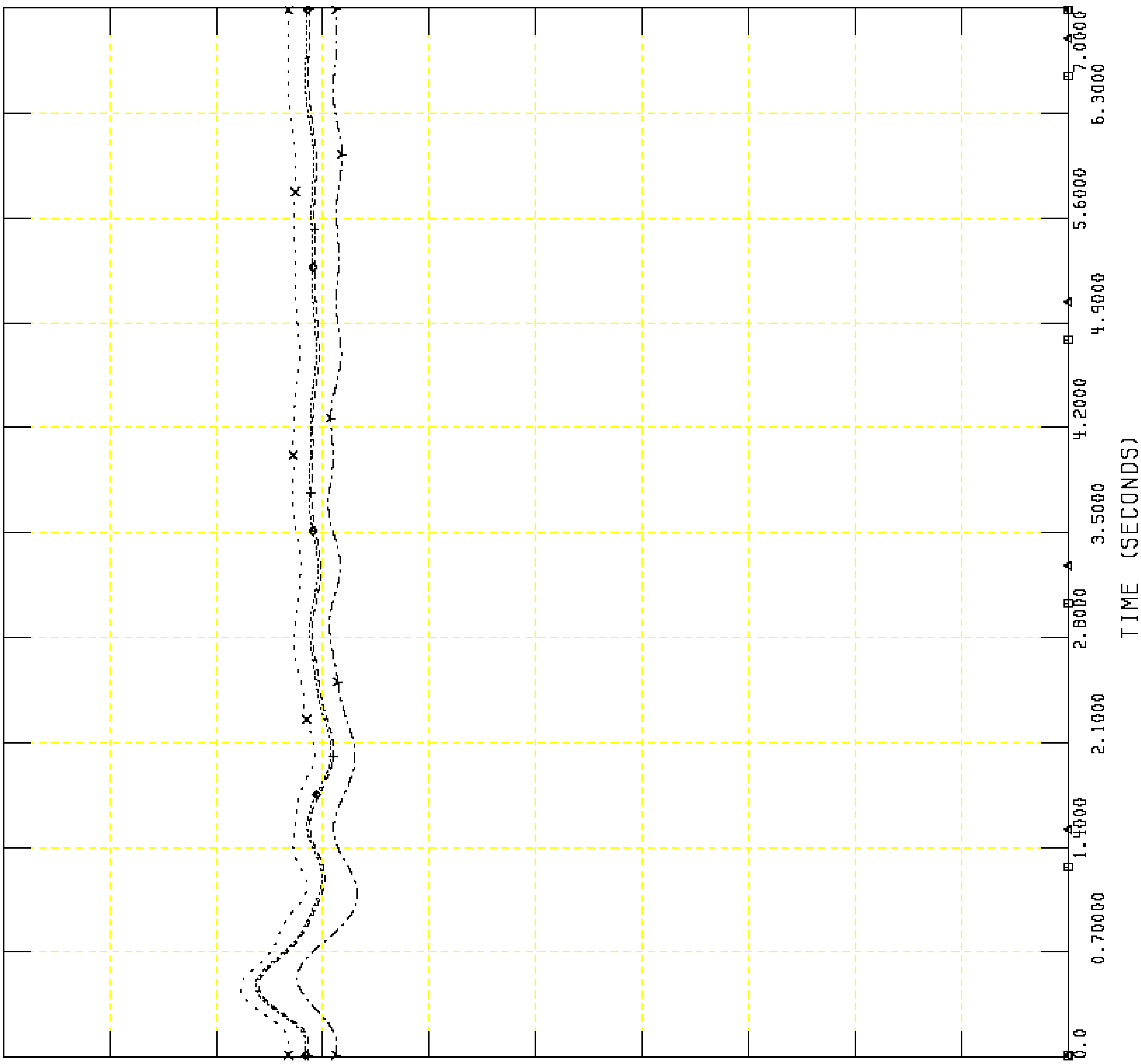
Channel	Min	Max
CHNL# 70: [ANGL BUS 335177 MACH '4 ']	250.00	0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']	250.00	0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']	250.00	0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']	250.00	0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']	250.00	0.0
CHNL# 65: [ANGL BUS 334739 MACH '1 ']	250.00	0.0



GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

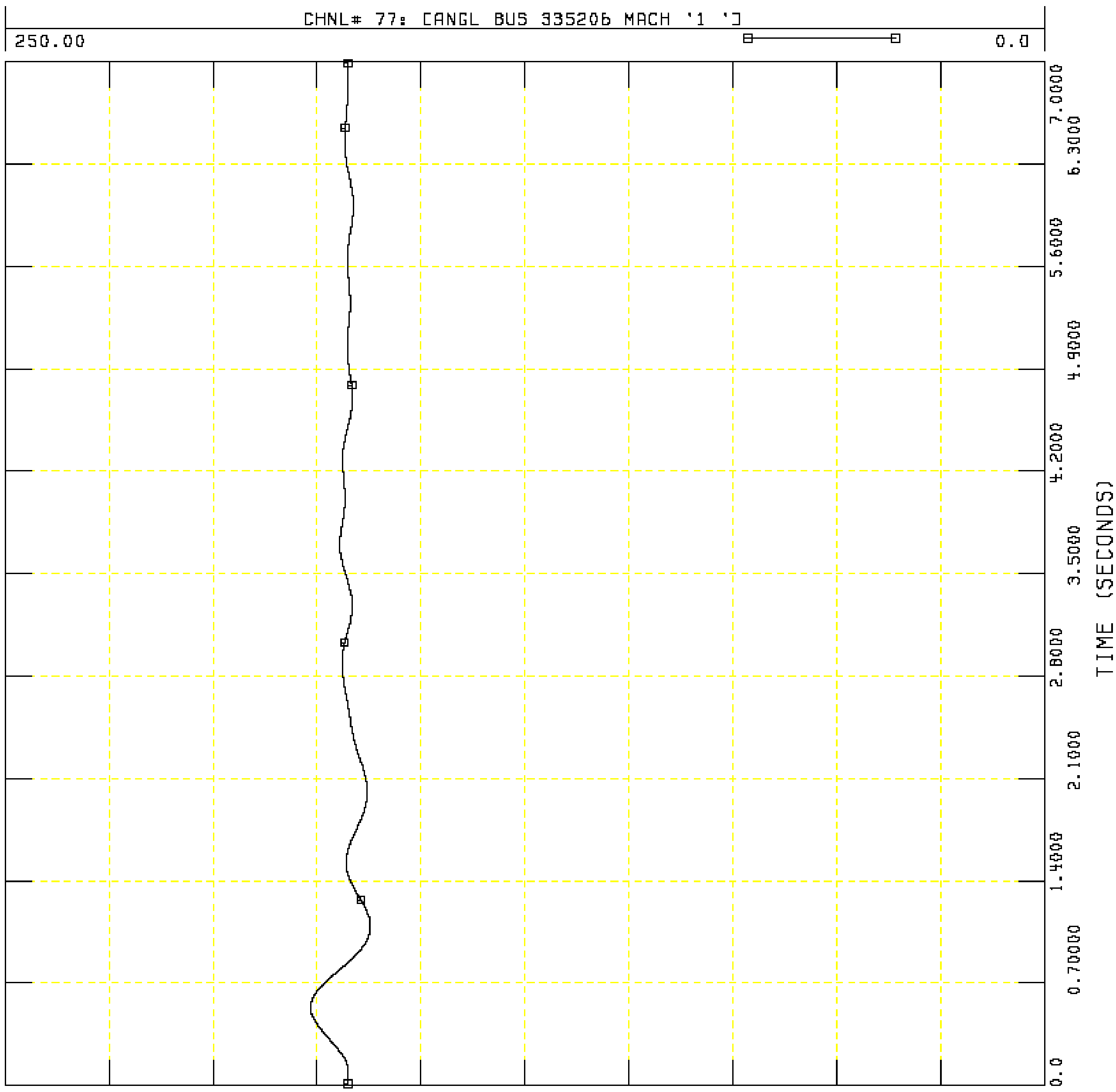
TUE, JUL 29 2008 10:32
PG 13: ANGLE

CHNL# 76: [ANGL BUS 335204 MACH '1 '] 250.00 0.0
CHNL# 75: [ANGL BUS 335203 MACH '1 '] 250.00 0.0
CHNL# 74: [ANGL BUS 335202 MACH '1 '] 250.00 0.0
CHNL# 73: [ANGL BUS 335201 MACH '1 '] 250.00 0.0
CHNL# 72: [ANGL BUS 335179 MACH '6 '] 250.00 0.0
CHNL# 71: [ANGL BUS 335178 MACH '5 '] 250.00 0.0



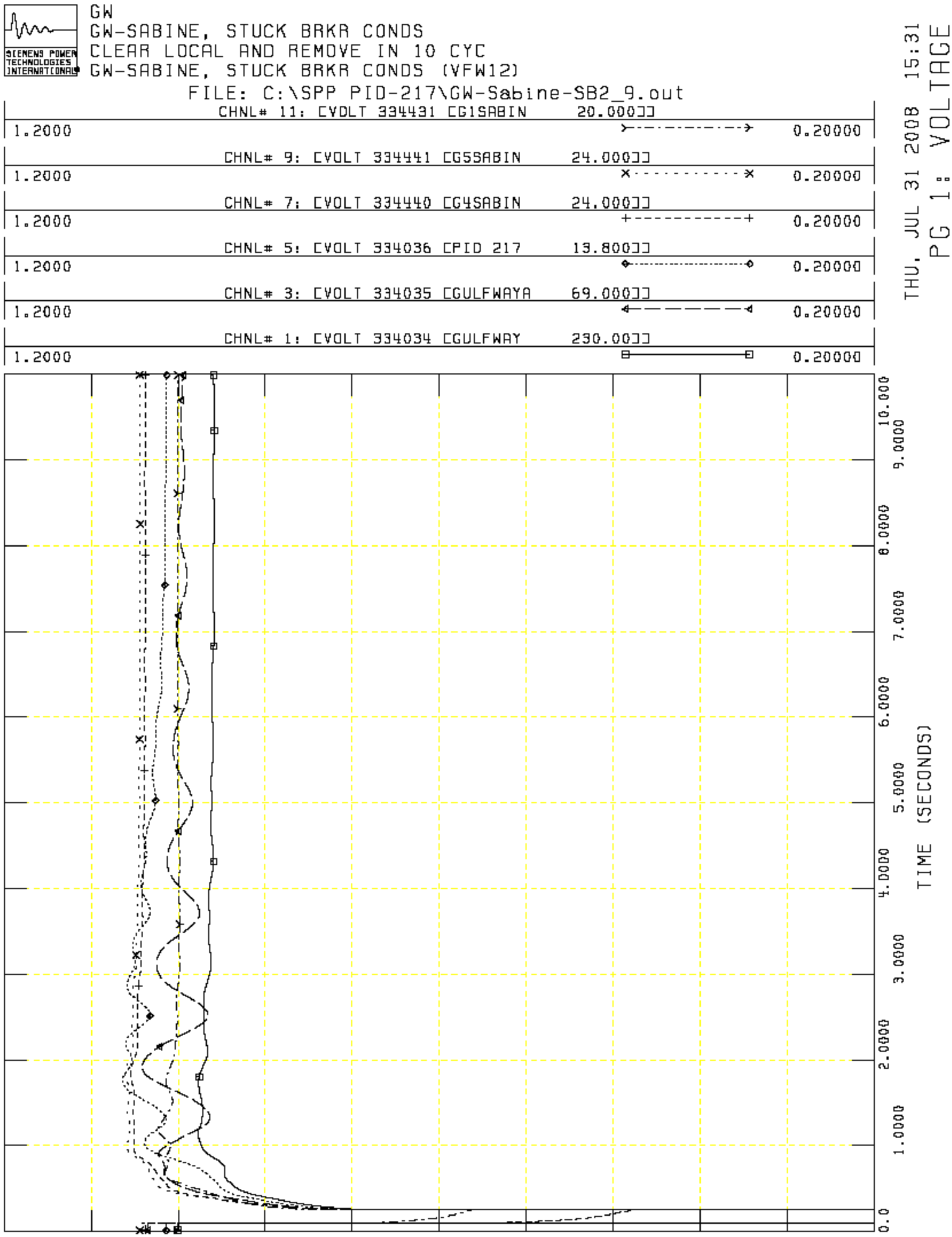
GW
GW-GULFWAY #2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 7CYC
GULFWAY #2 TRANSFORMER, NORMAL CLEARING
FILE: C:\SPP PID-217\GW-GULFWAY-2.out

TUE, JUL 29 2008 10:32
PG 14: ANGLE



PLOTS
TABLE V1-2B FAULT CASES SIMULATED IN THIS STUDY:
FAULTS WITH STUCK BREAKER CONDITIIONS

FAULT REFERENC NO. 1
FAULT-SABINE-STUCK BKR –VFW12- LOCATION GULFWAY

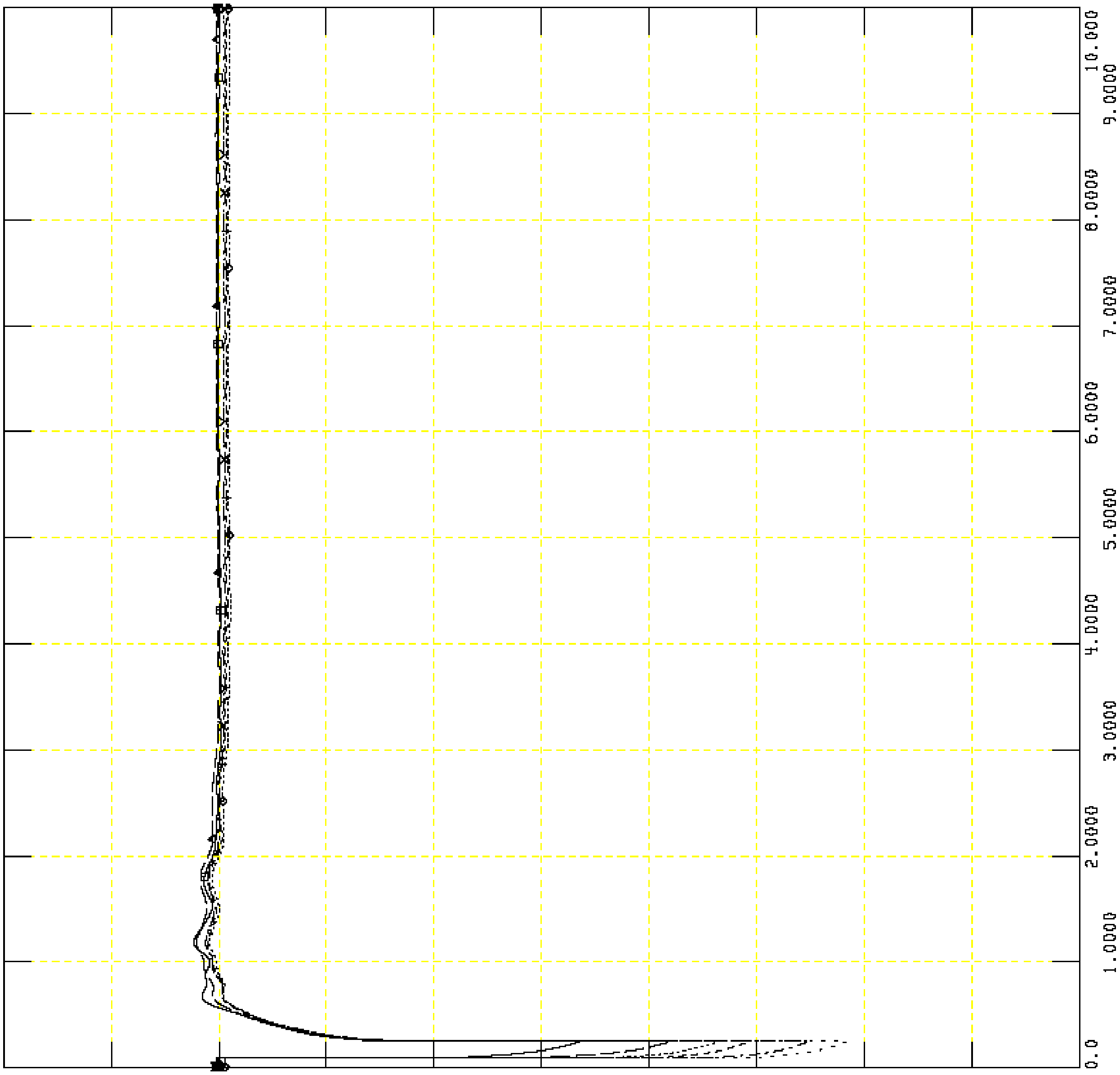

GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out
CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]
1.2000 0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000 0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000 0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000 0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000 0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000 0.20000
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 15:31
PG 1: VOLTAGE

GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)

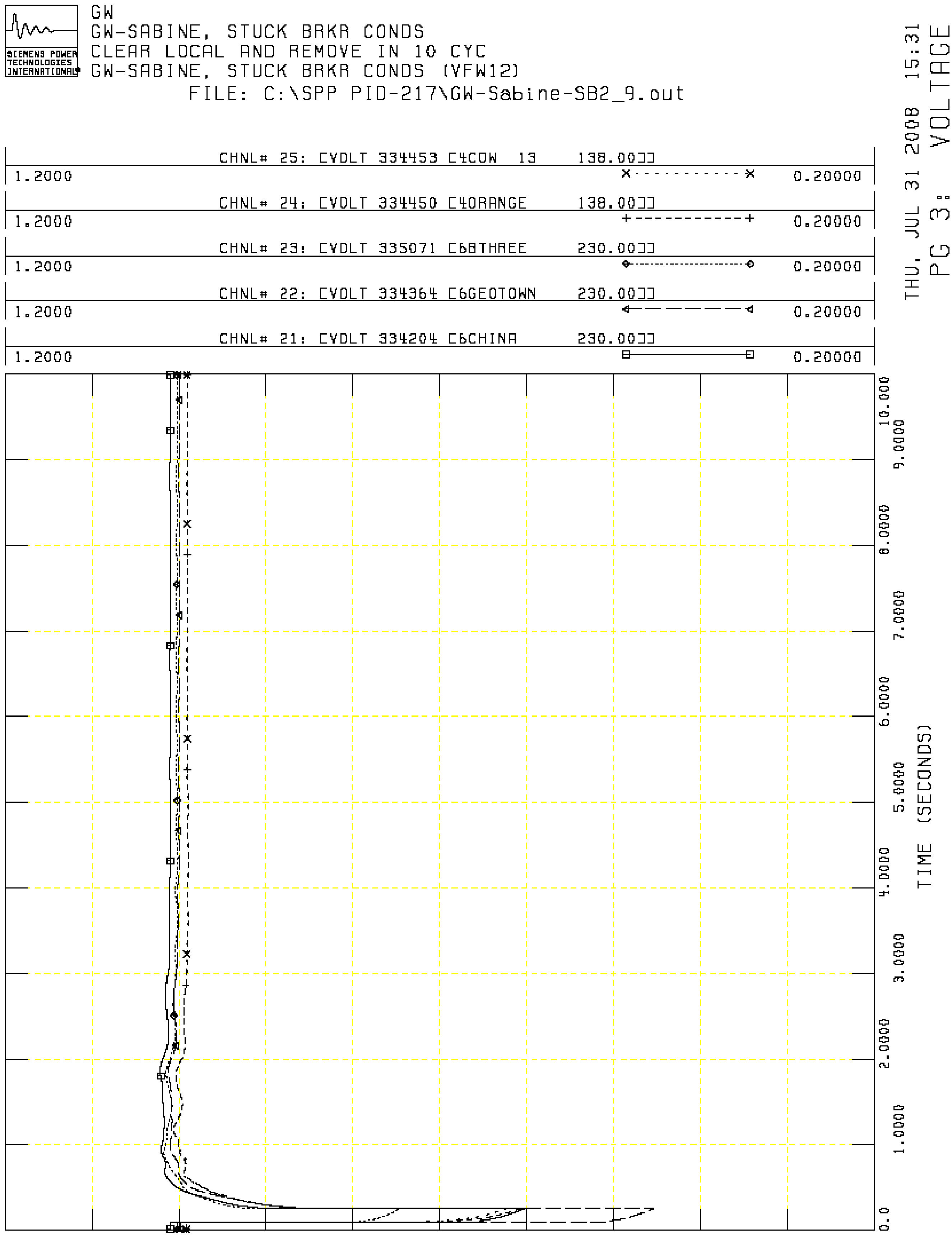
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

THU, JUL 31 2008 15:31
PG 2: VOLTAGE

Channel	Max	Min
CHNL# 20: [VOLT 334414 [4LINDE 138.00]]	1.2000	0.20000
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]	1.2000	0.20000
CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]	1.2000	0.20000
CHNL# 17: [VOLT 334398 [4HAMPTDN 138.00]]	1.2000	0.20000
CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]	1.2000	0.20000
CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]	1.2000	0.20000



GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

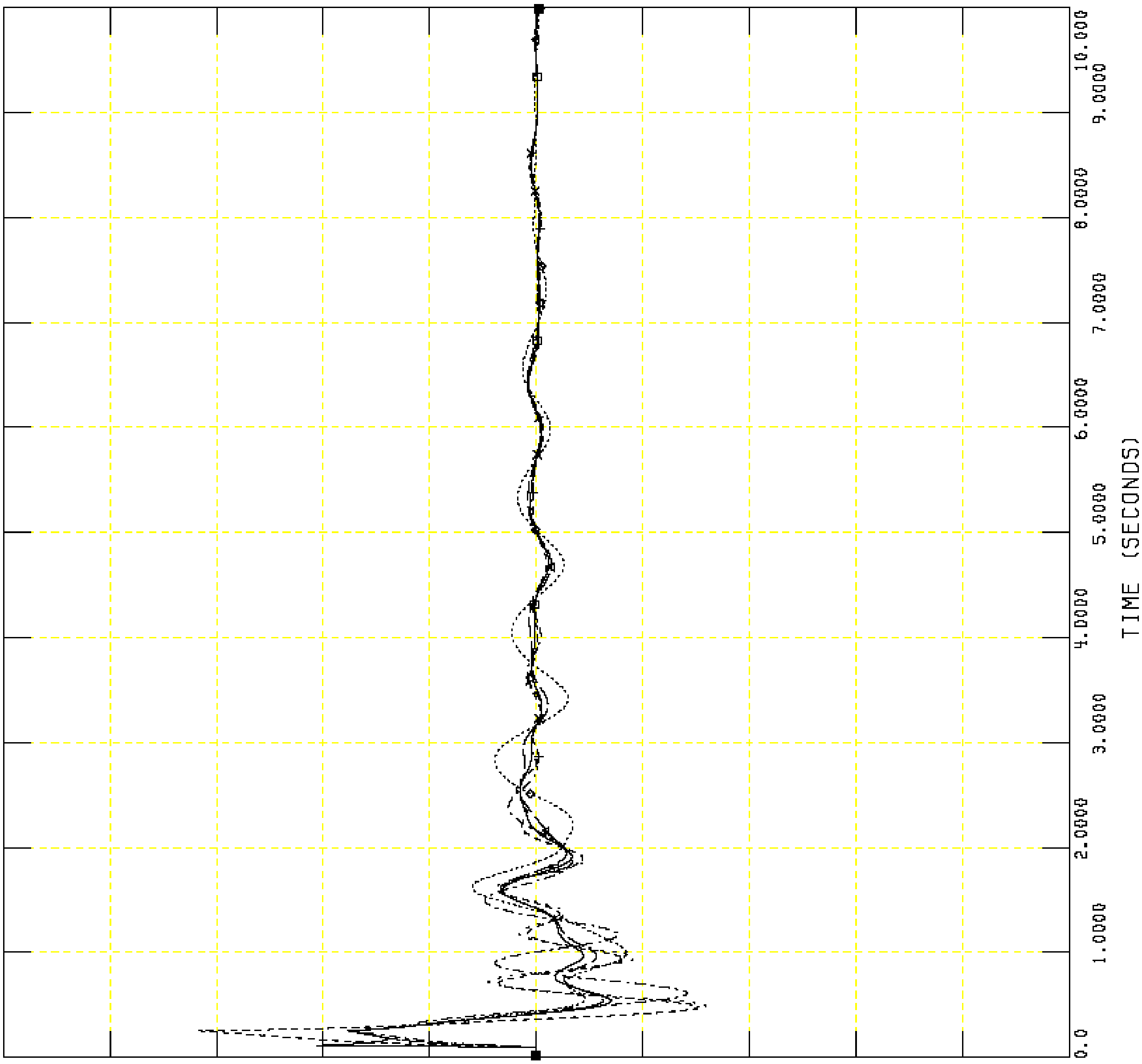


GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)

FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

THU, JUL 31 2008 15:31
PG 4: FREQUENCY

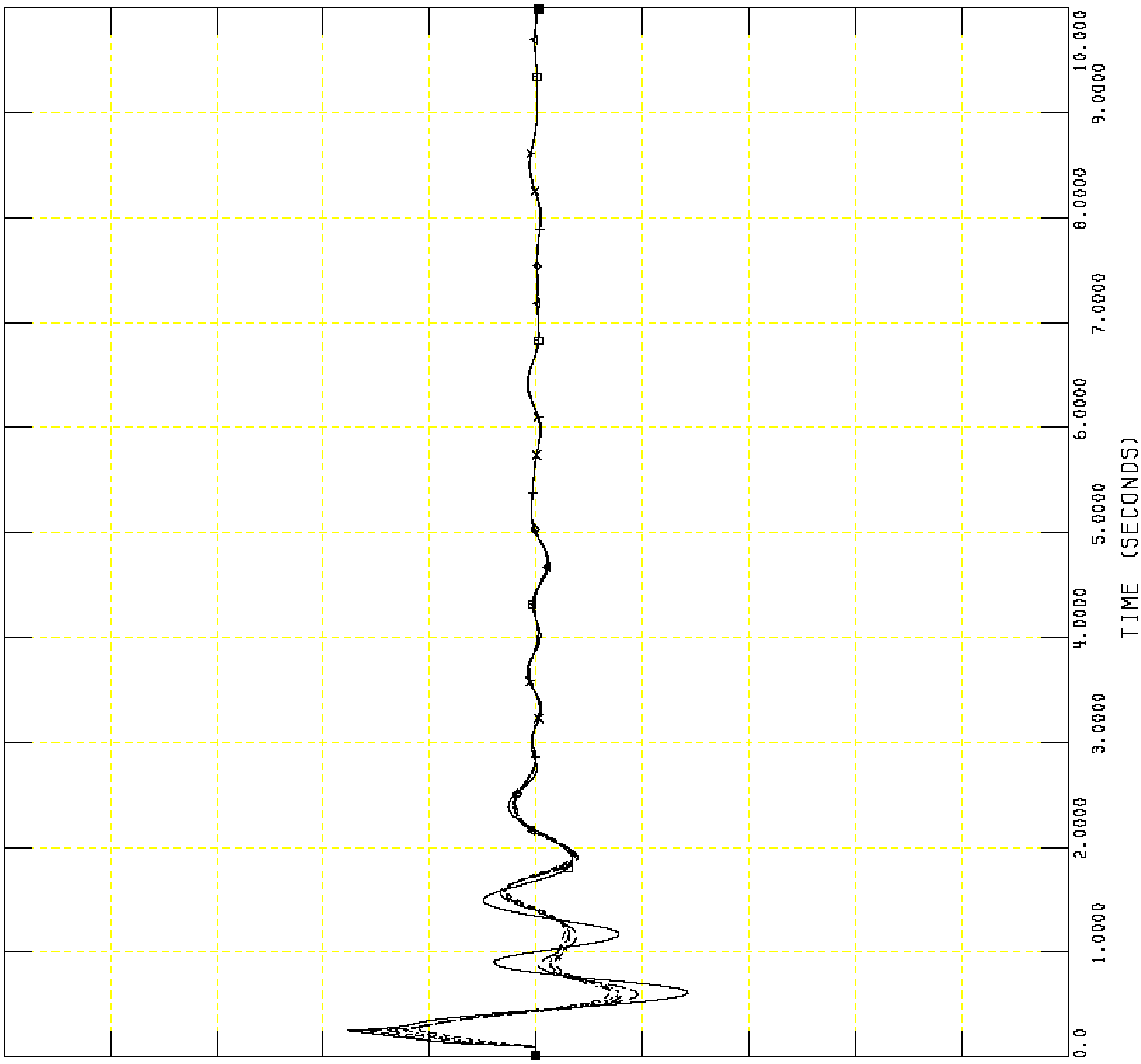
CHANNEL			
CHNL# 31: [FREQ 334431 [G1SABIN	20.000]]*60+60	61.000	59.000
CHNL# 30: [FREQ 334441 [G5SABIN	24.000]]*60+60	61.000	59.000
CHNL# 29: [FREQ 334440 [G4SABIN	24.000]]*60+60	61.000	59.000
CHNL# 28: [FREQ 334036 [PID 217	13.800]]*60+60	61.000	59.000
CHNL# 27: [FREQ 334035 [GULFWAYA	69.000]]*60+60	61.000	59.000
CHNL# 26: [FREQ 334034 [GULFWAY	230.00]]*60+60	61.000	59.000



GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

THU, JUL 31 2008 15:31
PG 5: FREQUENCY

Channel	Scale	Min	Max
CHNL# 37: CFREQ 334414 C4LINDE 138.00]]*60+60		61.000	59.000
CHNL# 36: CFREQ 334413 C4PNEC BK 138.00]]*60+60		61.000	59.000
CHNL# 35: CFREQ 334399 C4NECHESO 138.00]]*60+60		61.000	59.000
CHNL# 34: CFREQ 334398 C4HAMPTON 138.00]]*60+60		61.000	59.000
CHNL# 33: CFREQ 334433 CG3SABIN 22.000]]*60+60		61.000	59.000
CHNL# 32: CFREQ 334432 CG2SABIN 20.000]]*60+60		61.000	59.000



GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

THU, JUL 31 2008 15:31
PG 6: FREQUENCY

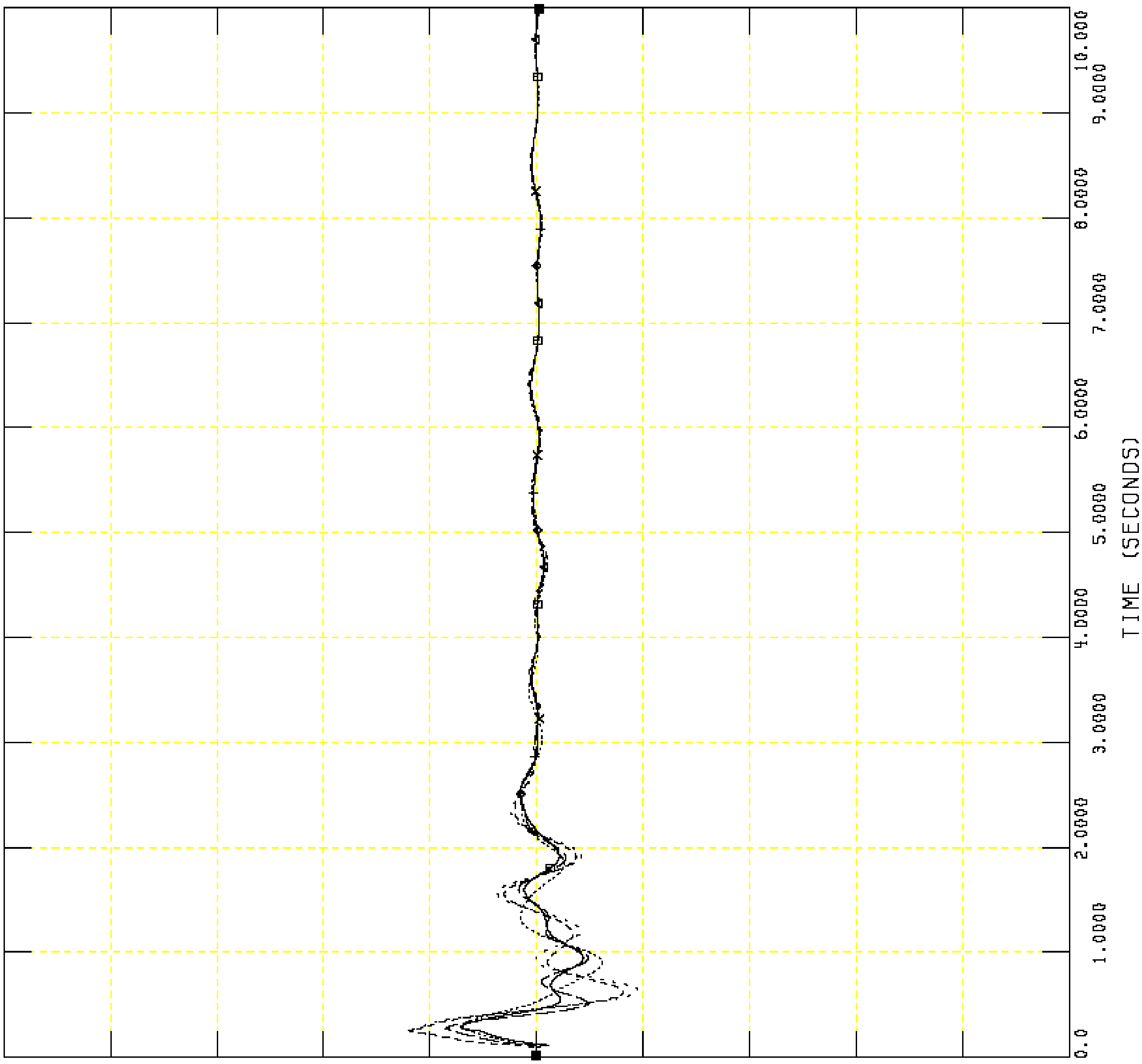
CHNL# 42: [FREQ 334453 [4COW 13 138.00]]*60+60
61.000 59.000

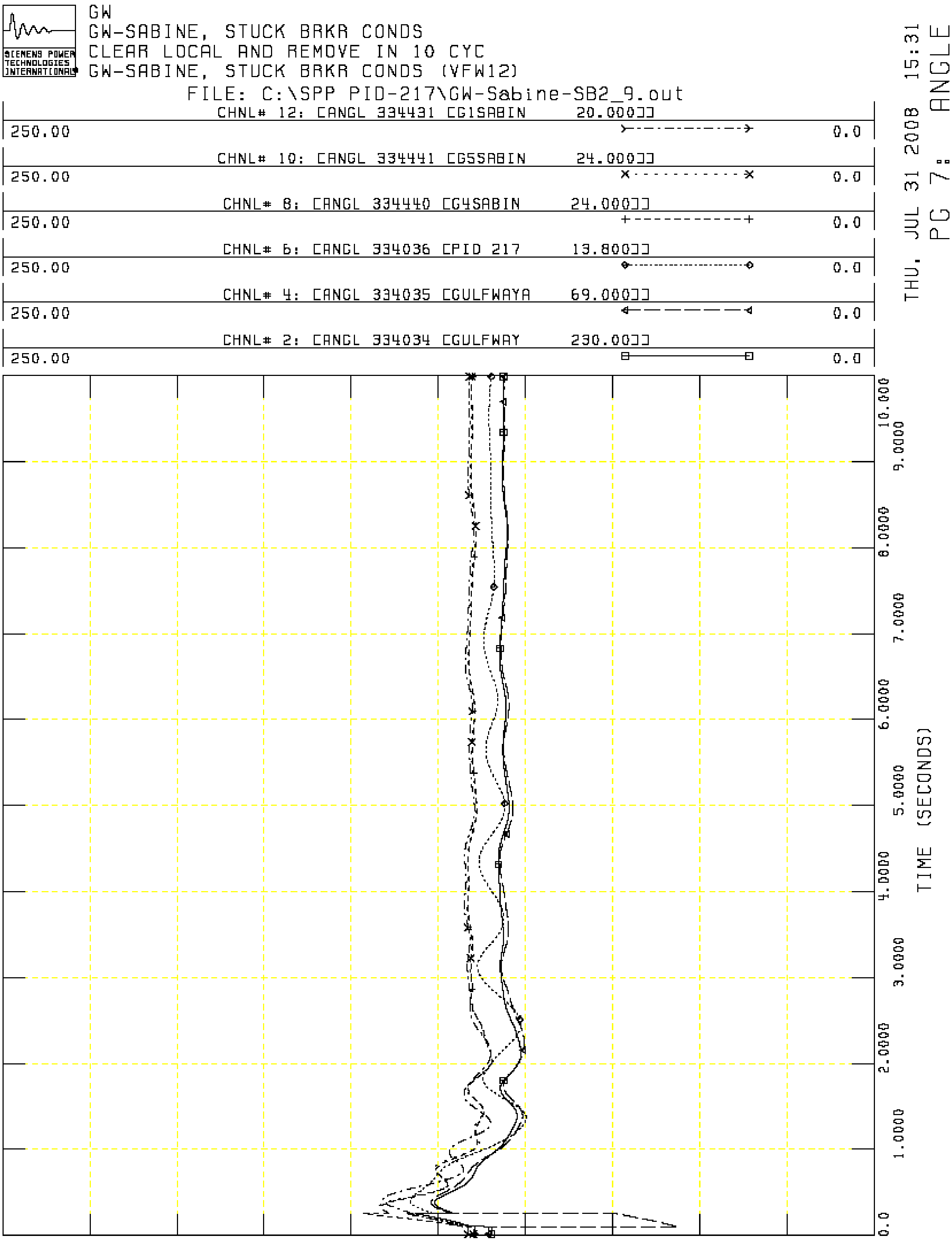
CHNL# 41: [FREQ 334450 [4ORANGE 138.00]]*60+60
61.000 59.000

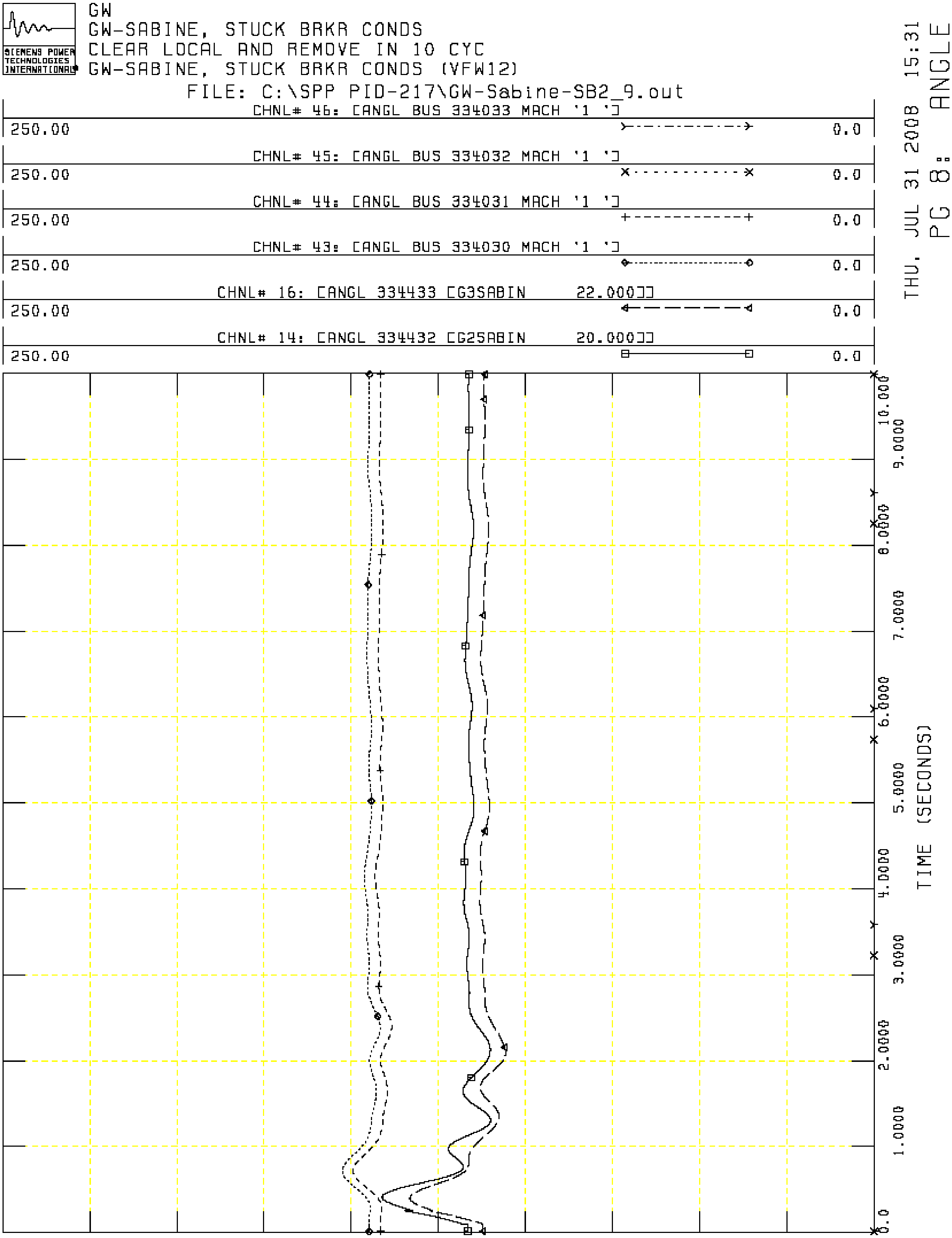
CHNL# 40: [FREQ 335071 [6BTHREE 230.00]]*60+60
61.000 59.000

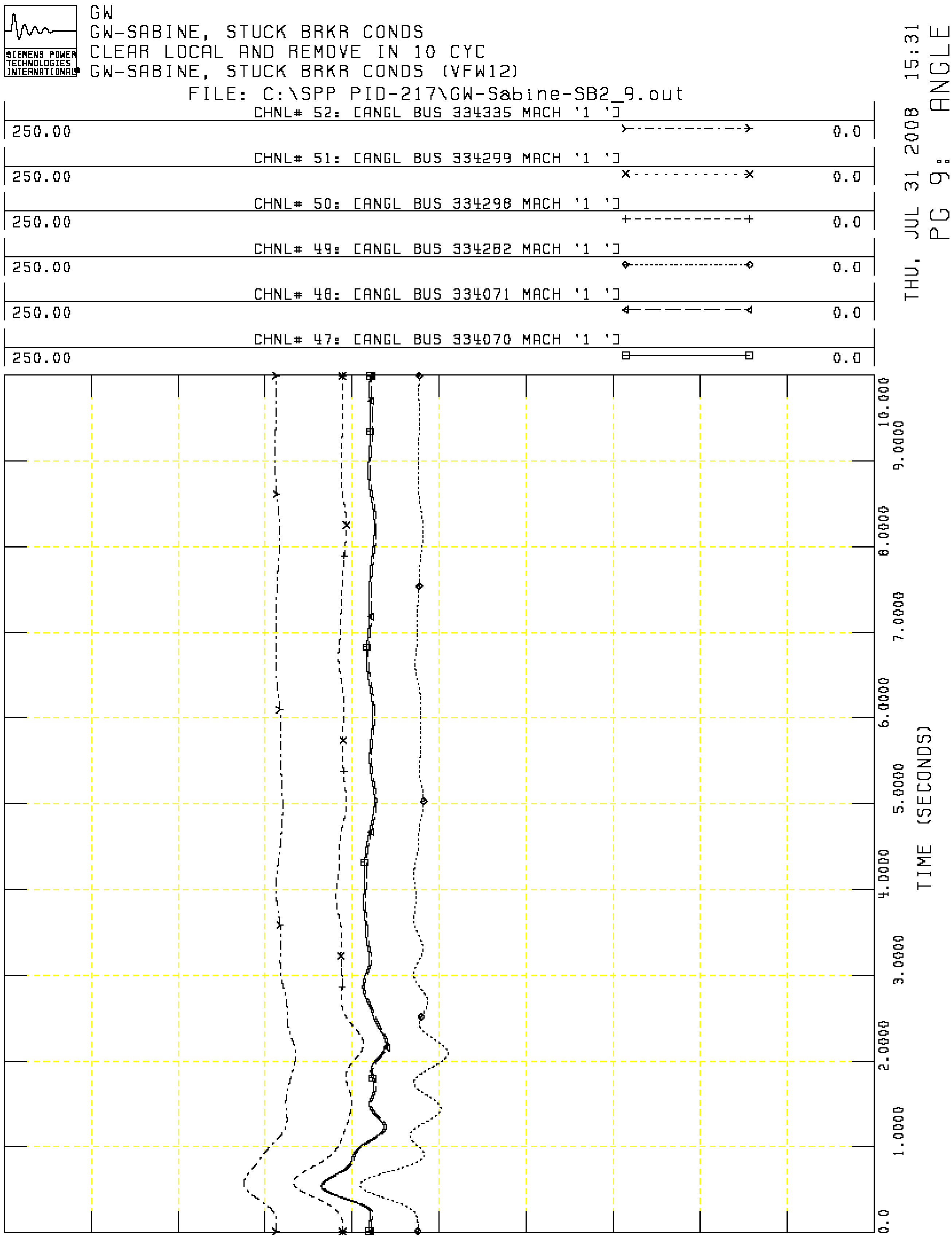
CHNL# 39: [FREQ 334364 [6GEOTOWN 230.00]]*60+60
61.000 59.000

CHNL# 38: [FREQ 334204 [6CHINA 230.00]]*60+60
61.000 59.000

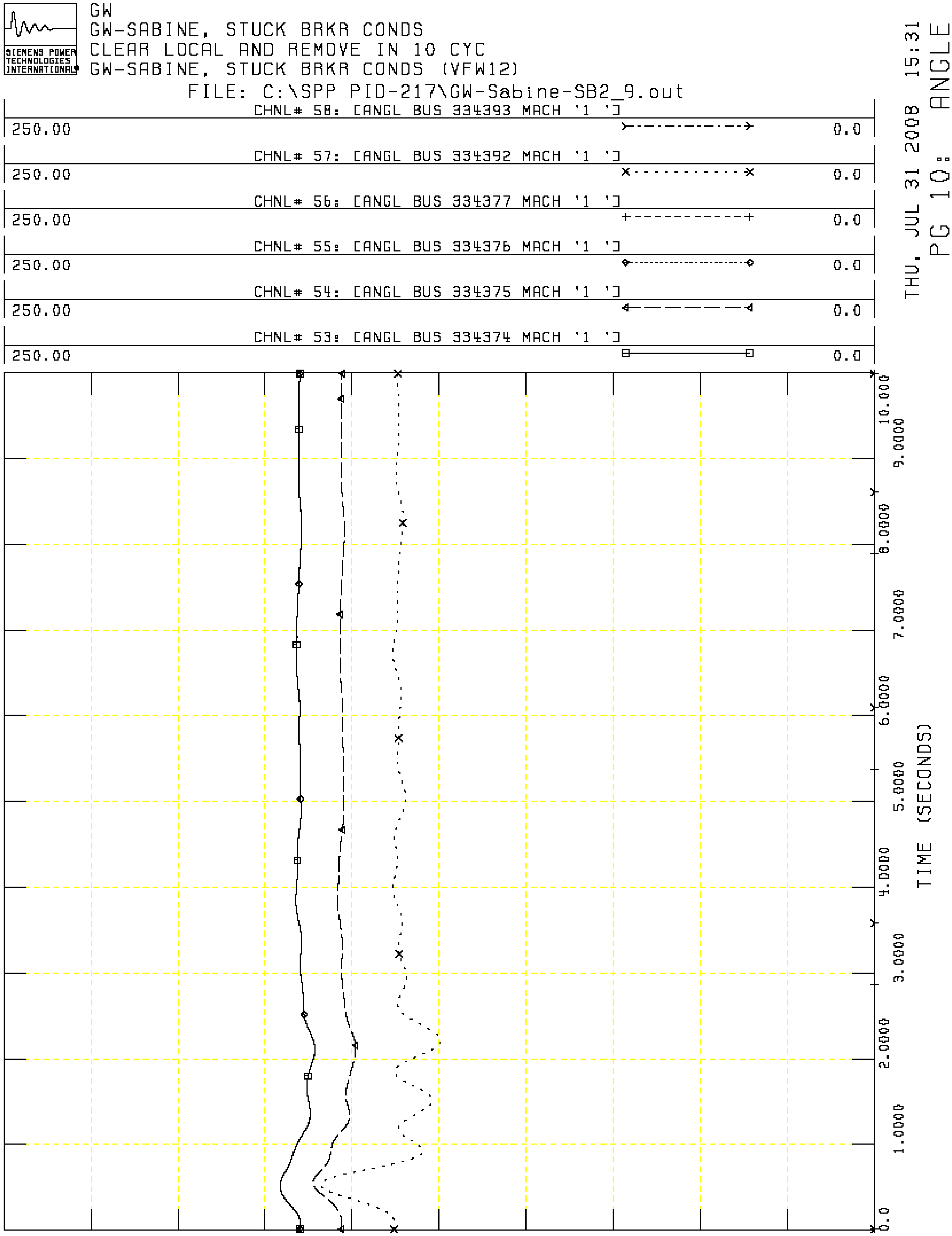



GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]
250.00 0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00 0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00 0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00 0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00 0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.00]]
250.00 0.0
THU, JUL 31 2008 15:31
PG 7: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

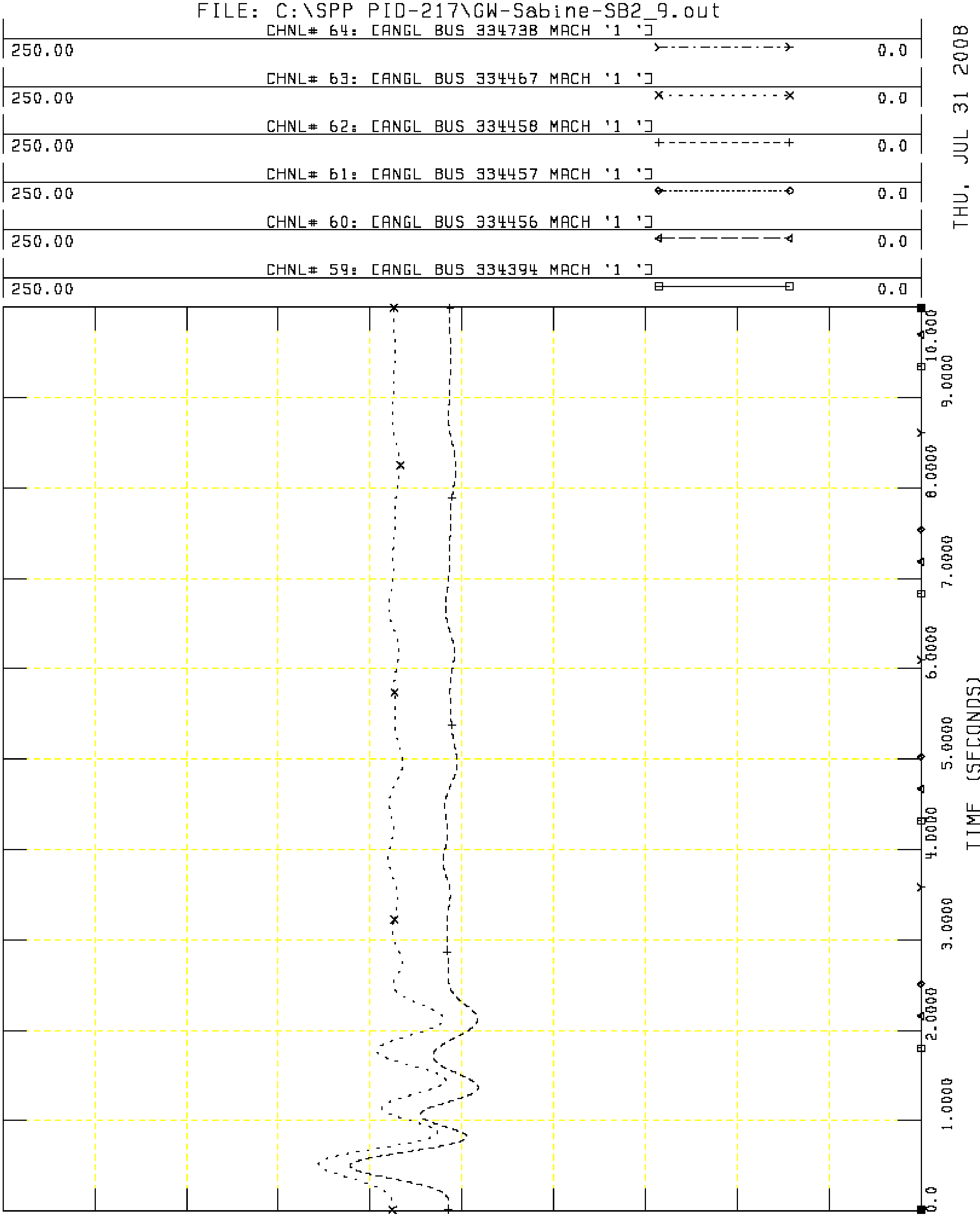

GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out
CHNL# 46: [ANGL BUS 334033 MACH '1 ']
250.00 0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']
250.00 0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']
250.00 0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']
250.00 0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]
250.00 0.0
CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]
250.00 0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 15:31
PG 8: ANGLE


GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out
CHNL# 52: [ANGL BUS 334335 MACH '1 ']
250.00
0.0
CHNL# 51: [ANGL BUS 334299 MACH '1 ']
250.00
0.0
CHNL# 50: [ANGL BUS 334298 MACH '1 ']
250.00
0.0
CHNL# 49: [ANGL BUS 334282 MACH '1 ']
250.00
0.0
CHNL# 48: [ANGL BUS 334071 MACH '1 ']
250.00
0.0
CHNL# 47: [ANGL BUS 334070 MACH '1 ']
250.00
0.0
THU, JUL 31 2008 15:31
PG 9: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out



GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

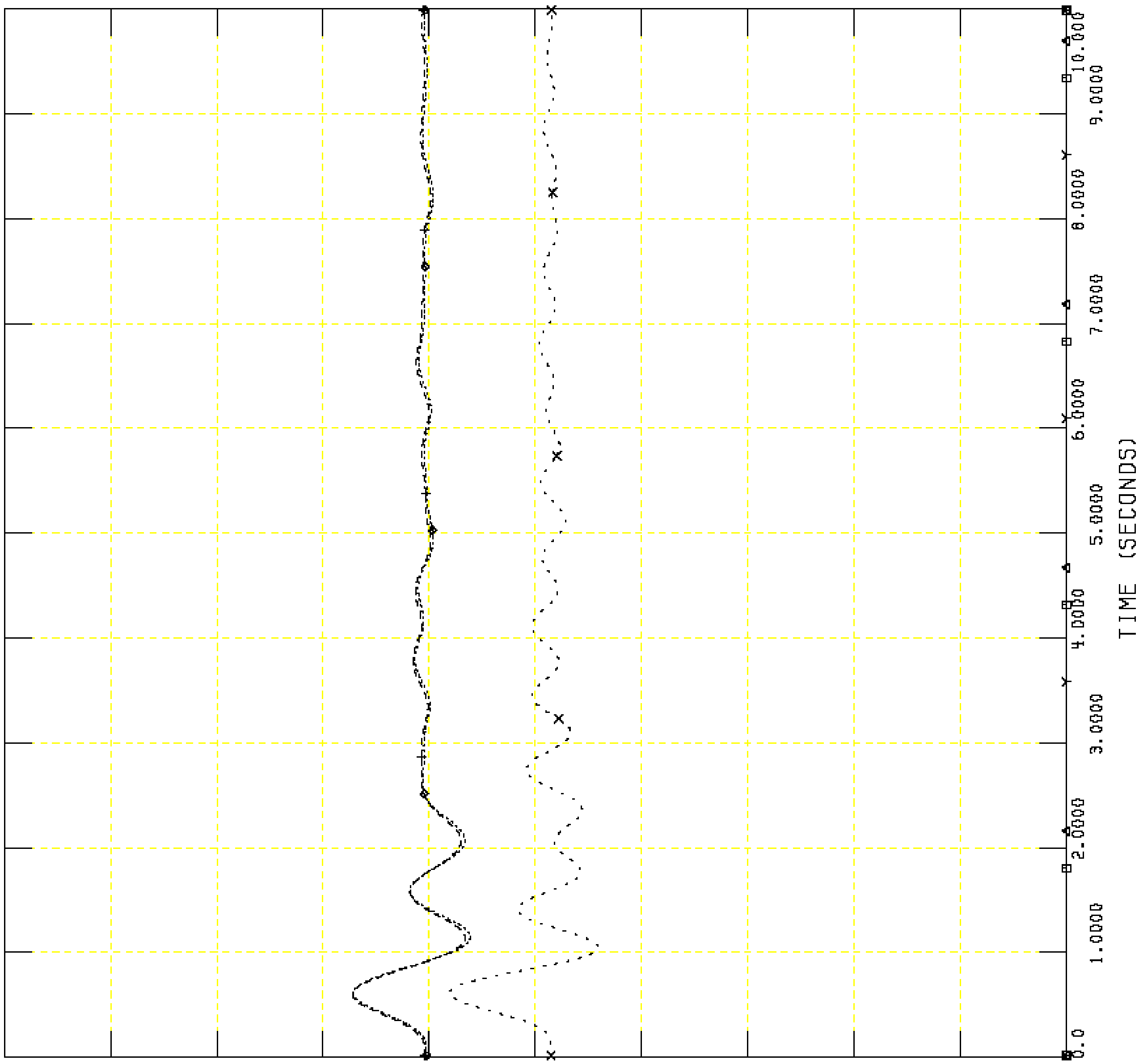


THU, JUL 31 2008 15:31
PG 11: ANGLE

GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)

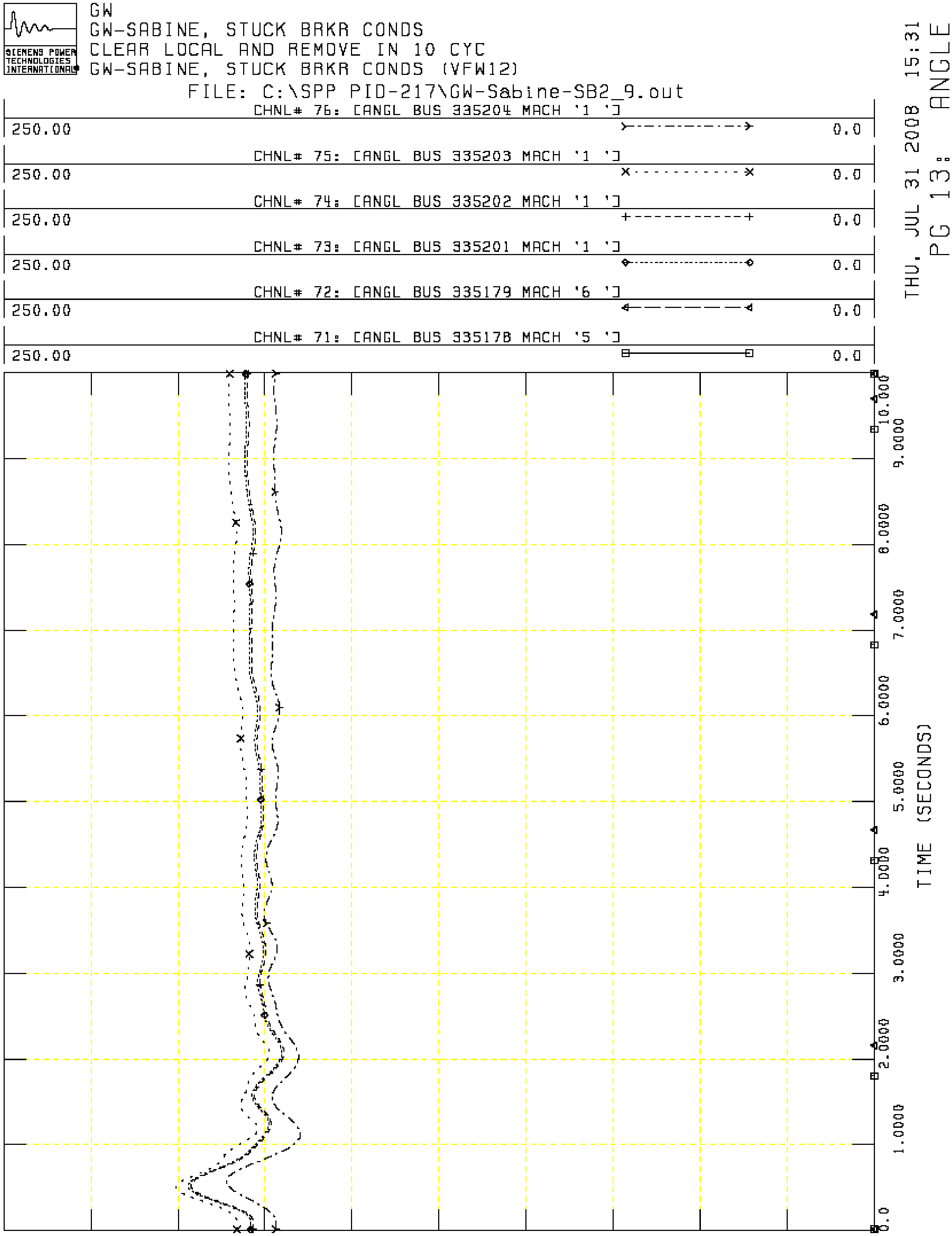
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

Channel	Max	Min
CHNL# 70: [ANGL BUS 335177 MACH '4 ']	250.00	0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']	250.00	0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']	250.00	0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']	250.00	0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']	250.00	0.0
CHNL# 65: [ANGL BUS 334739 MACH '1 ']	250.00	0.0



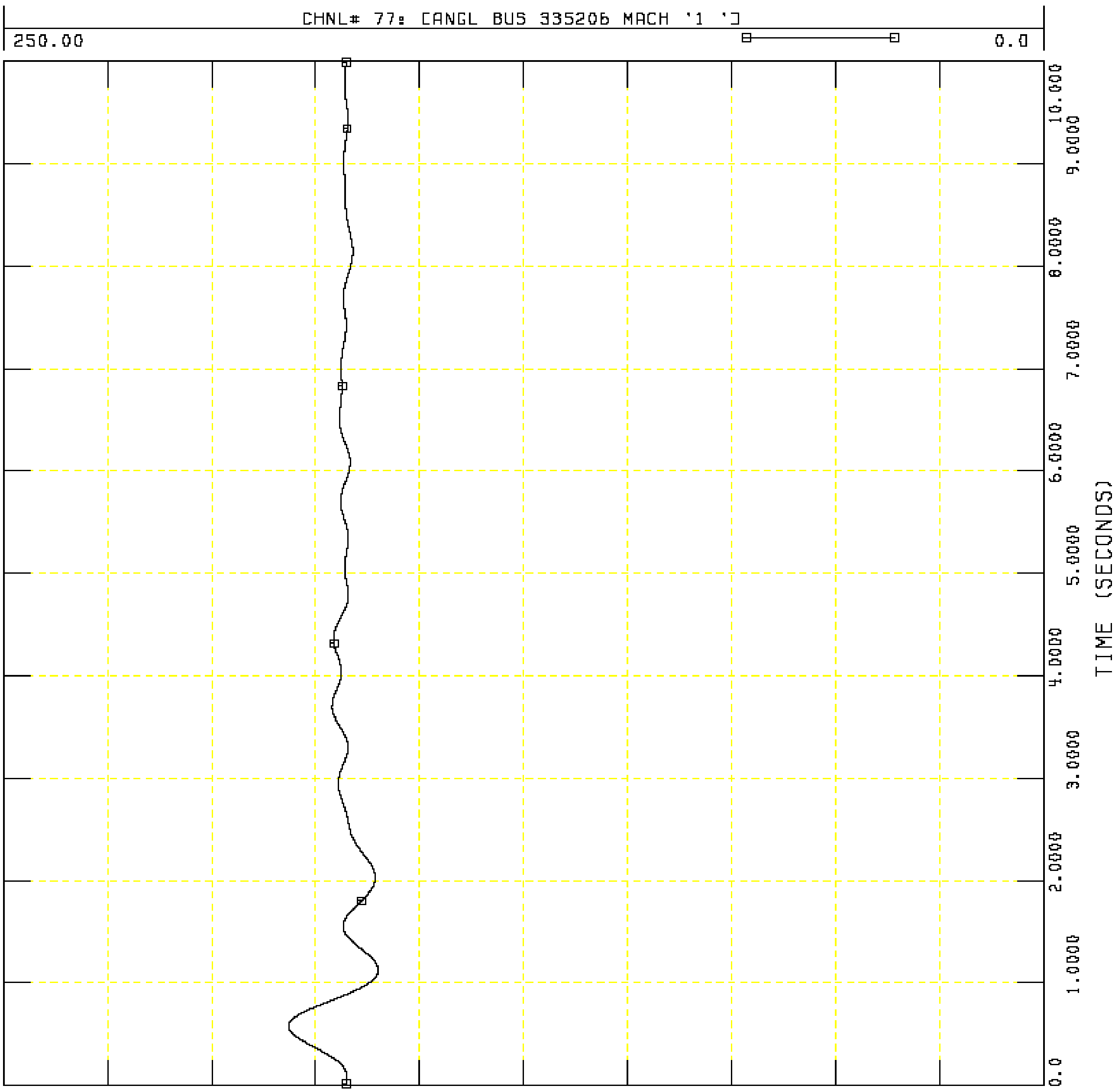
THU, JUL 31 2008 15:31
PG 12: ANGLE

GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out



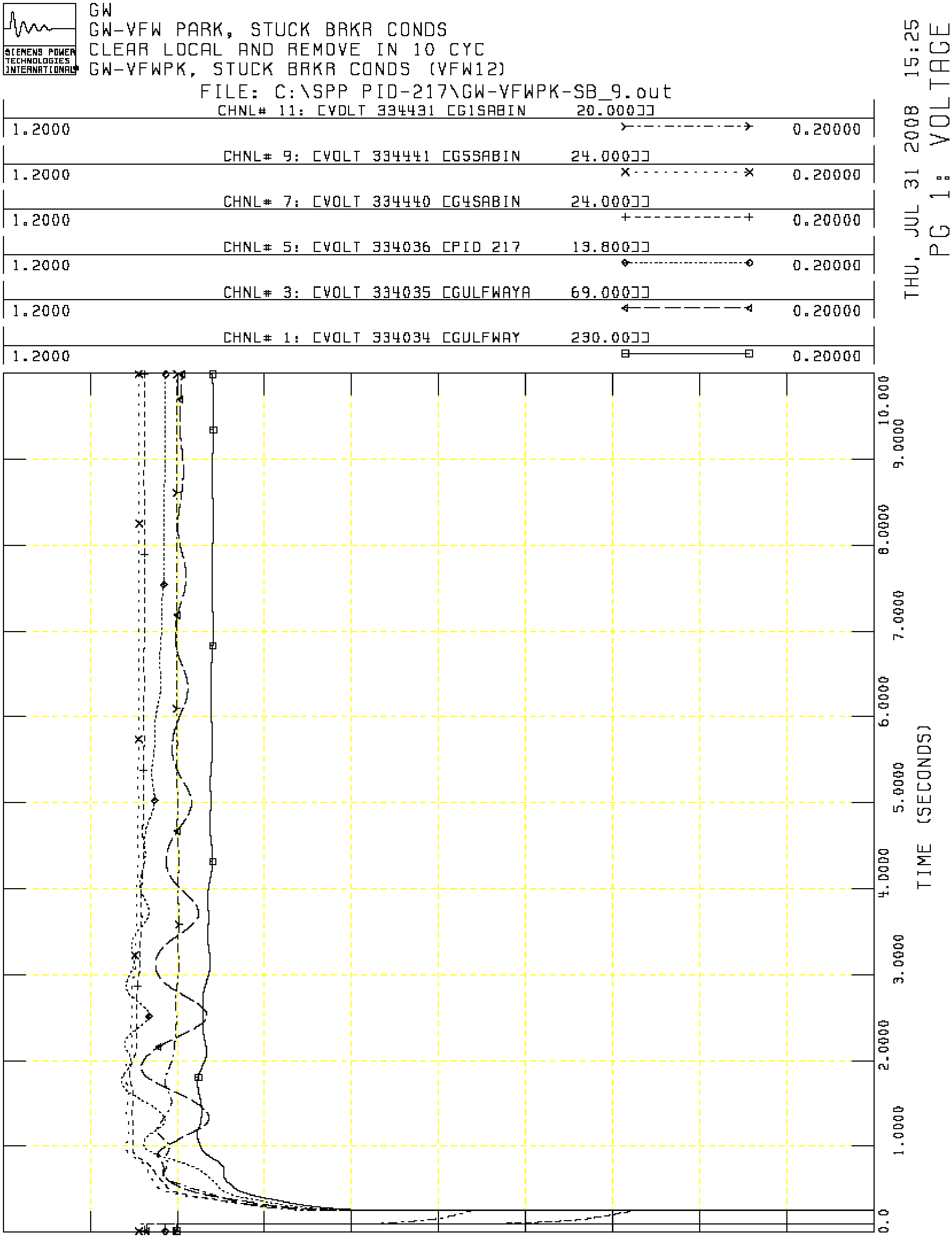
GW
GW-SABINE, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-SABINE, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-Sabine-SB2_9.out

THU, JUL 31 2008 15:31
PG 14: ANGLE



FAULT REFERENCE NO. 2
FAULT-VFWPARK-STUCK BKR–VFW12- LOCATION GULFWAY

GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out

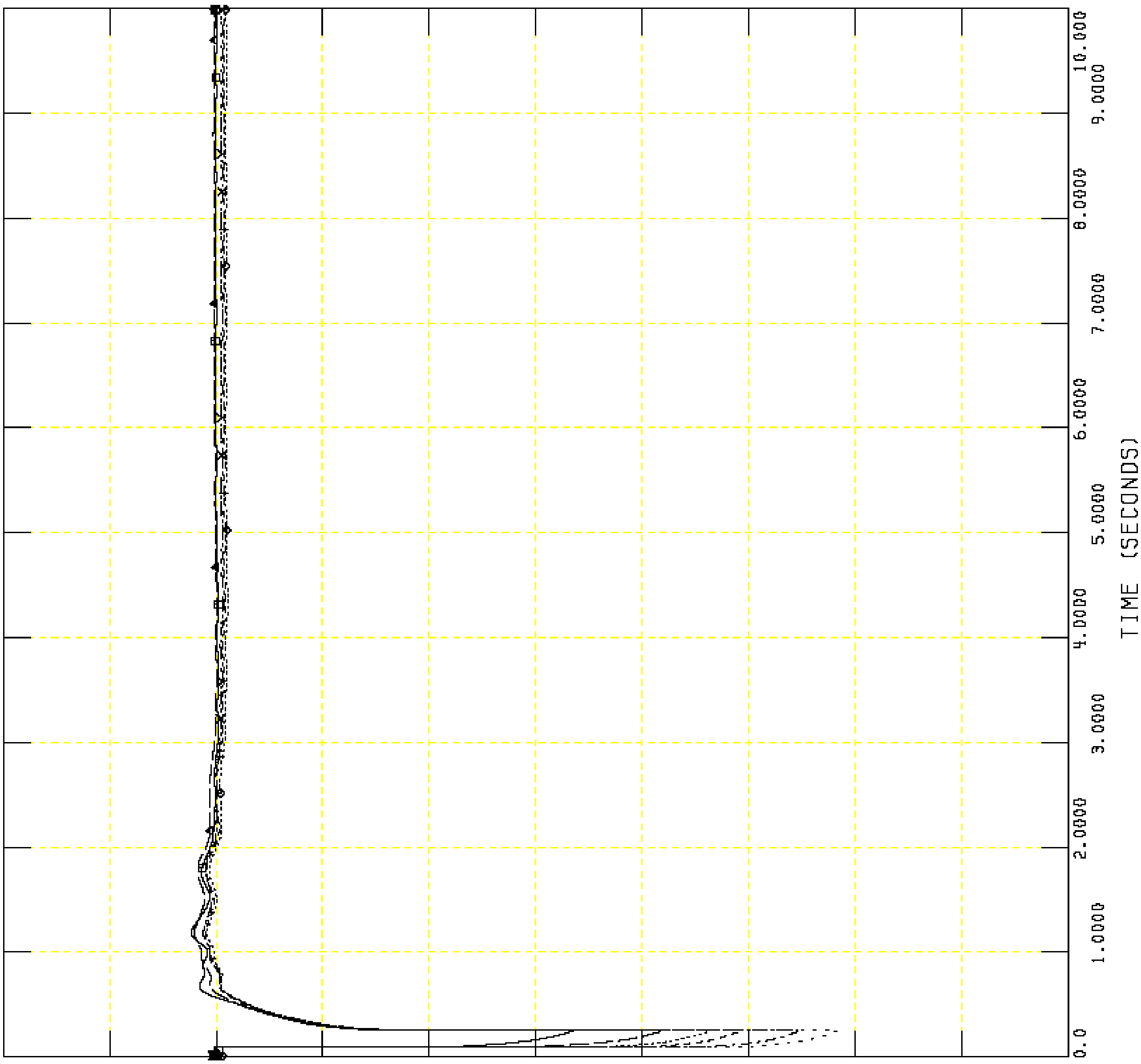


GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)

FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out

THU, JUL 31 2008 15:25
PG 2: VOLTAGE

Min	Channel	Base	Max
1.2000	CHNL# 20: [VOLT 334414 [4LINDE	138.00]]	0.20000
1.2000	CHNL# 19: [VOLT 334413 [4PNEC BK	138.00]]	0.20000
1.2000	CHNL# 18: [VOLT 334399 [4NECHESO	138.00]]	0.20000
1.2000	CHNL# 17: [VOLT 334398 [4HAMPTON	138.00]]	0.20000
1.2000	CHNL# 15: [VOLT 334433 [G3SABIN	22.000]]	0.20000
1.2000	CHNL# 13: [VOLT 334432 [G2SABIN	20.000]]	0.20000

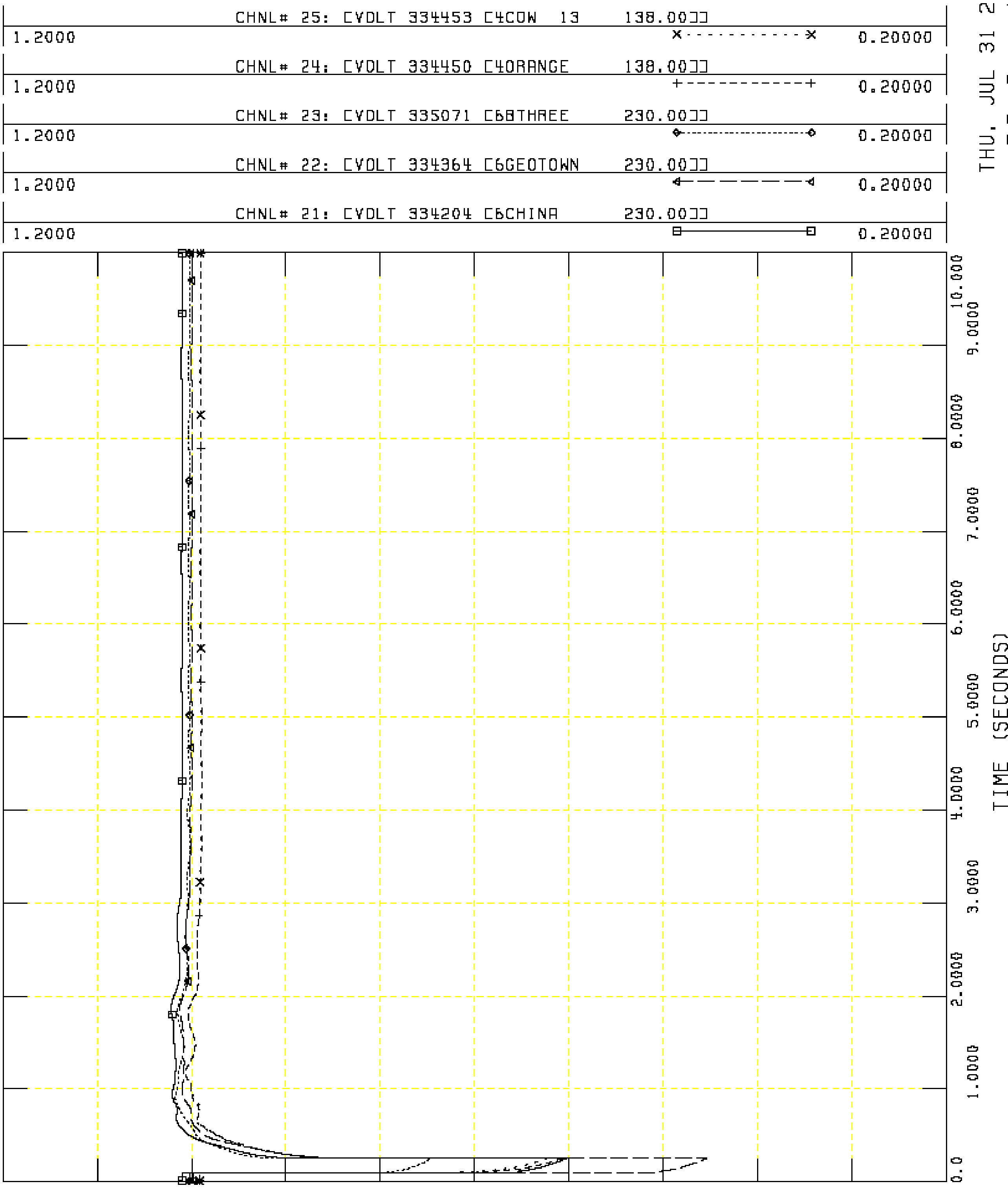


SIEMENS POWER TECHNOLOGIES INTERNATIONAL

GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)

FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out

THU, JUL 31 2008 15:25
PG 3: VOLTAGE



GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)

FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out

THU, JUL 31 2008 15:25
PG 4: FREQUENCY

CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60 — 61.000 to 59.000

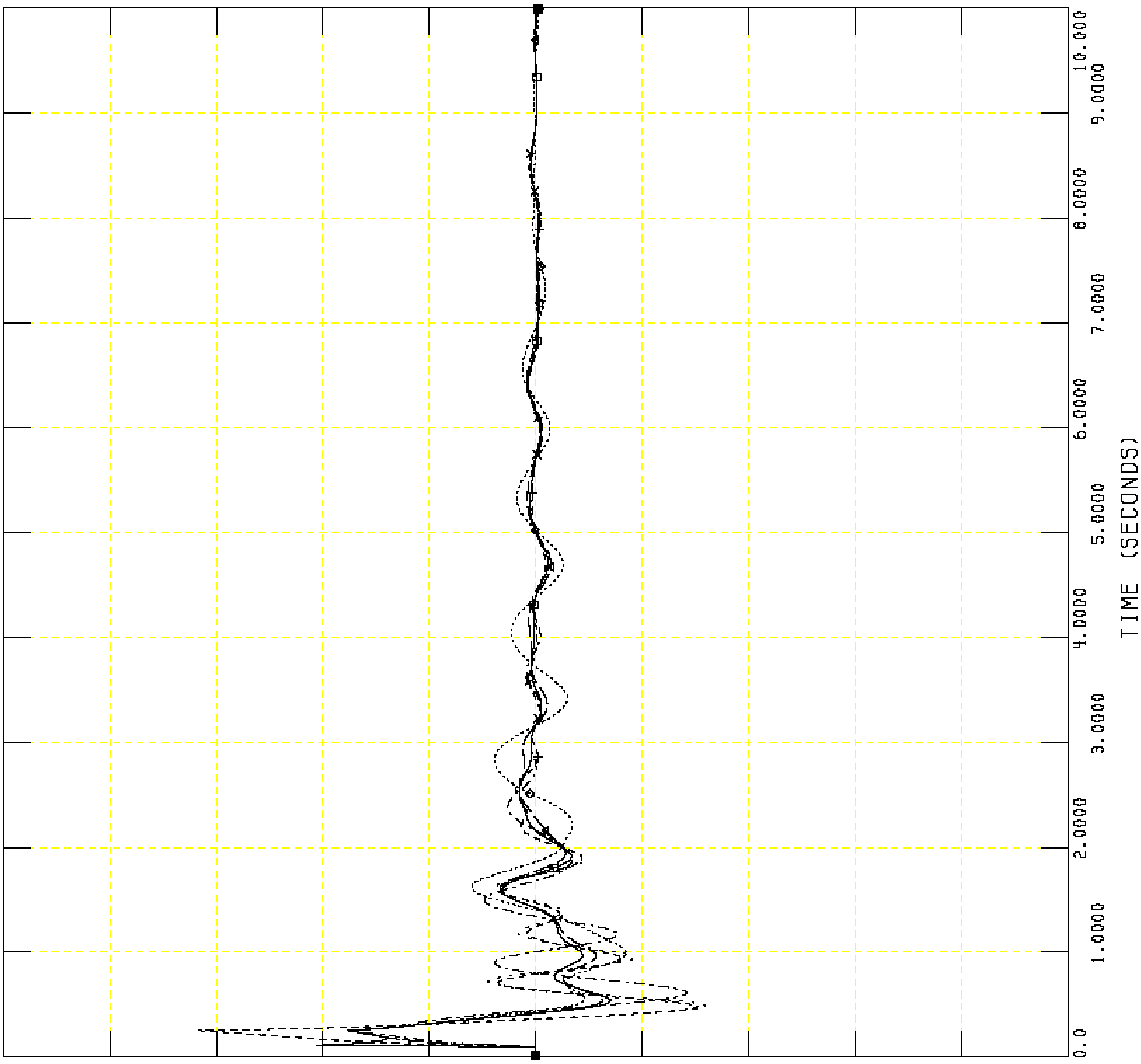
CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60 — 61.000 to 59.000

CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60 — 61.000 to 59.000

CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60 — 61.000 to 59.000

CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60 — 61.000 to 59.000

CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60 — 61.000 to 59.000

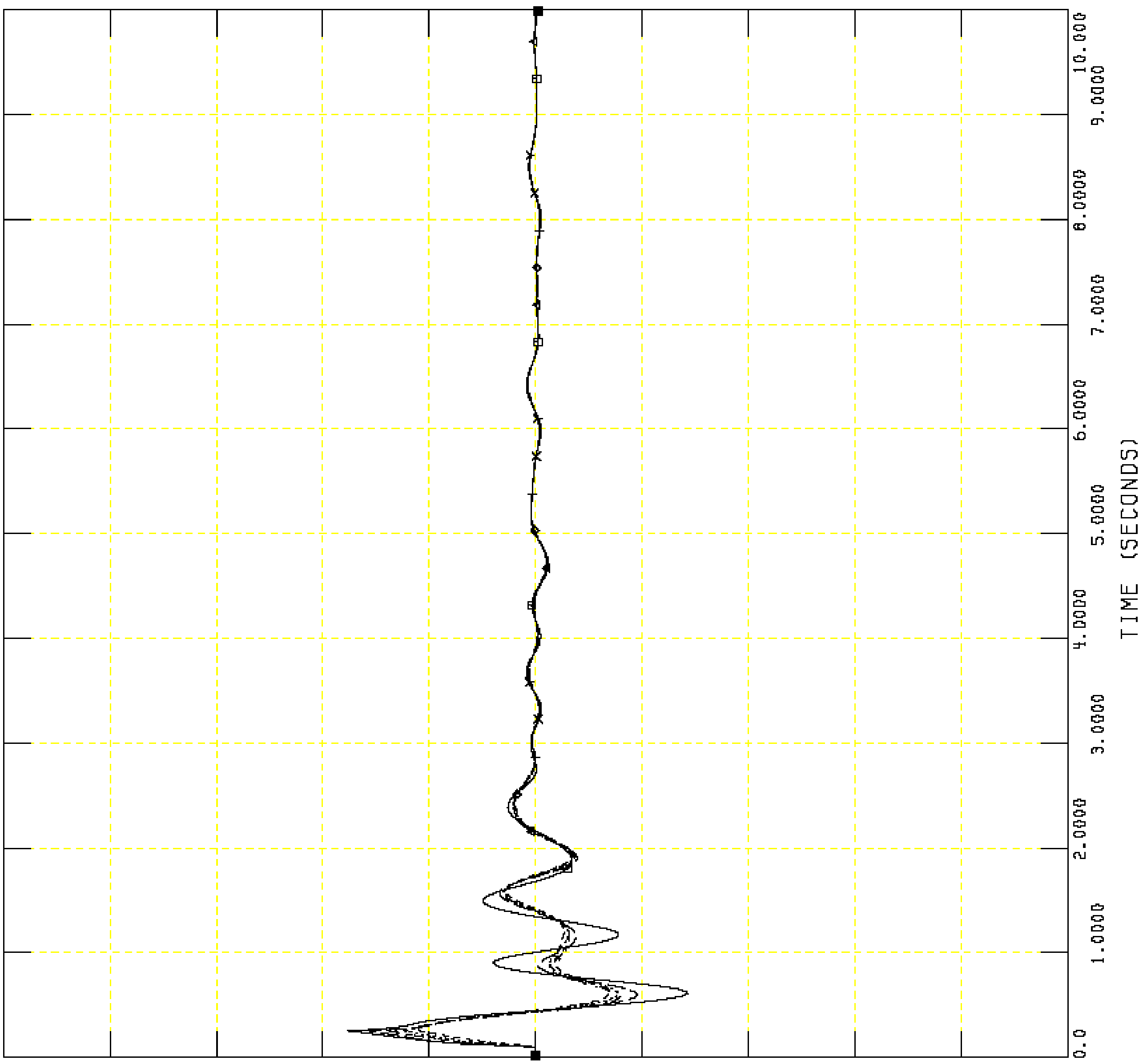


GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)

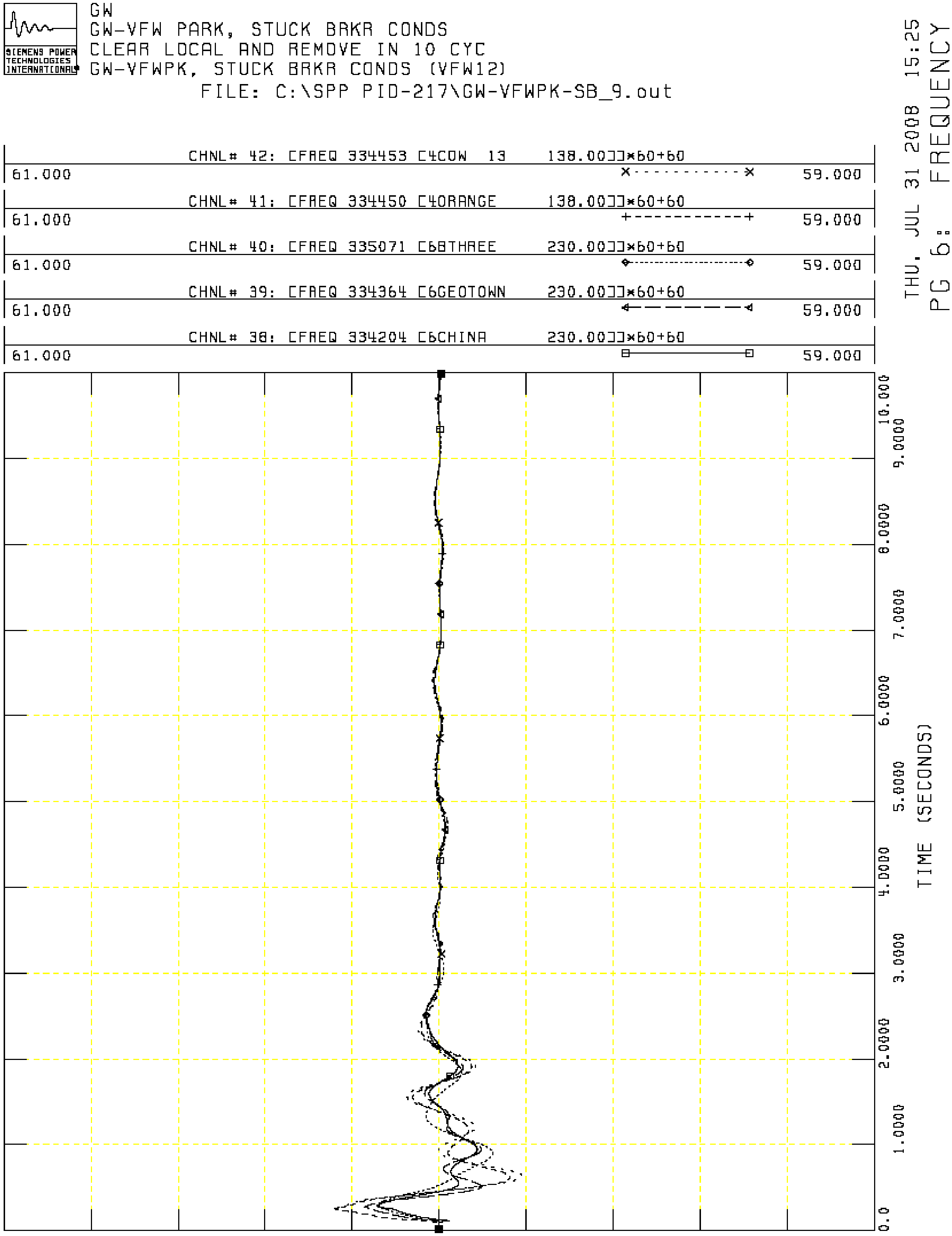
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out

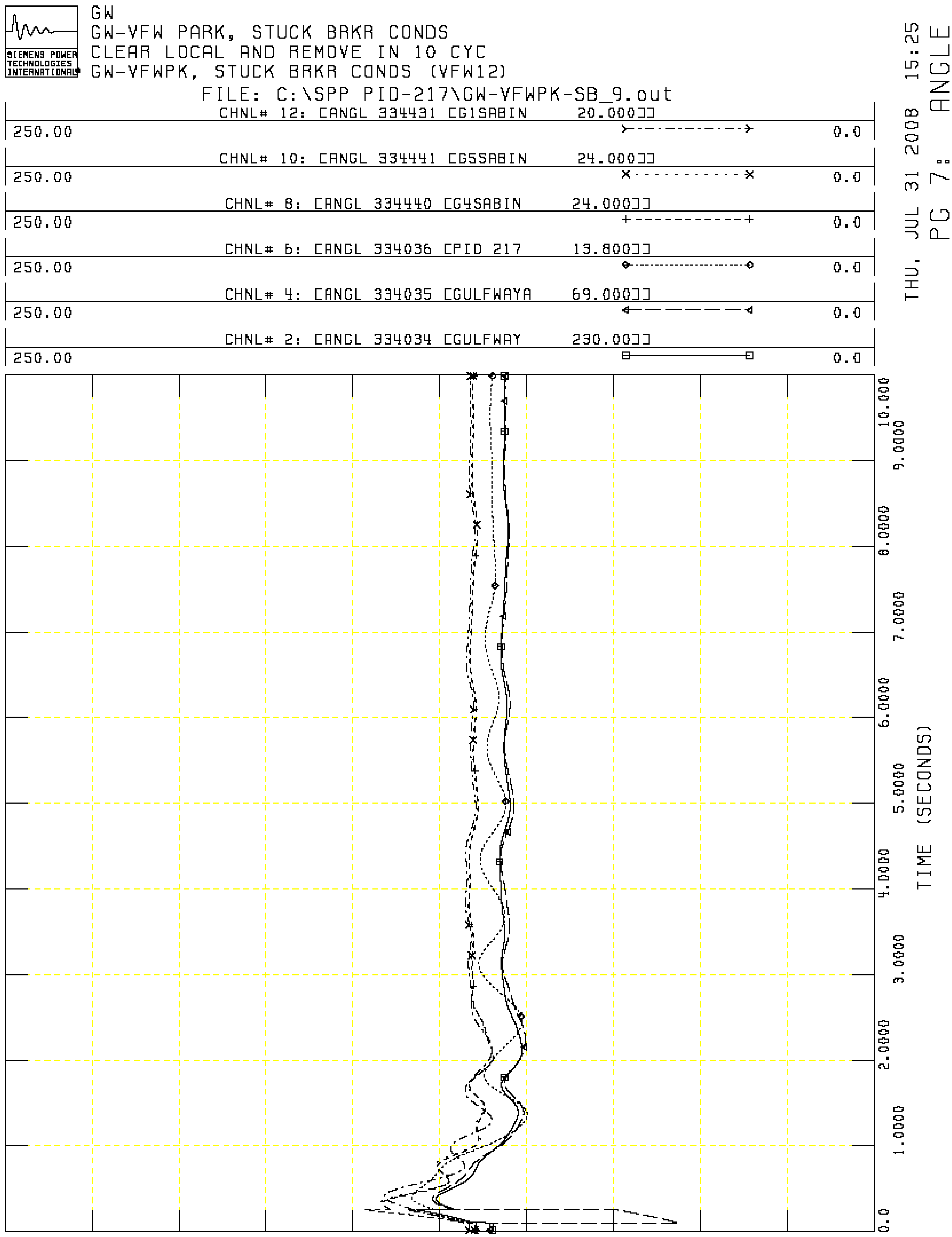
THU, JUL 31 2008 15:25
PG 5: FREQUENCY

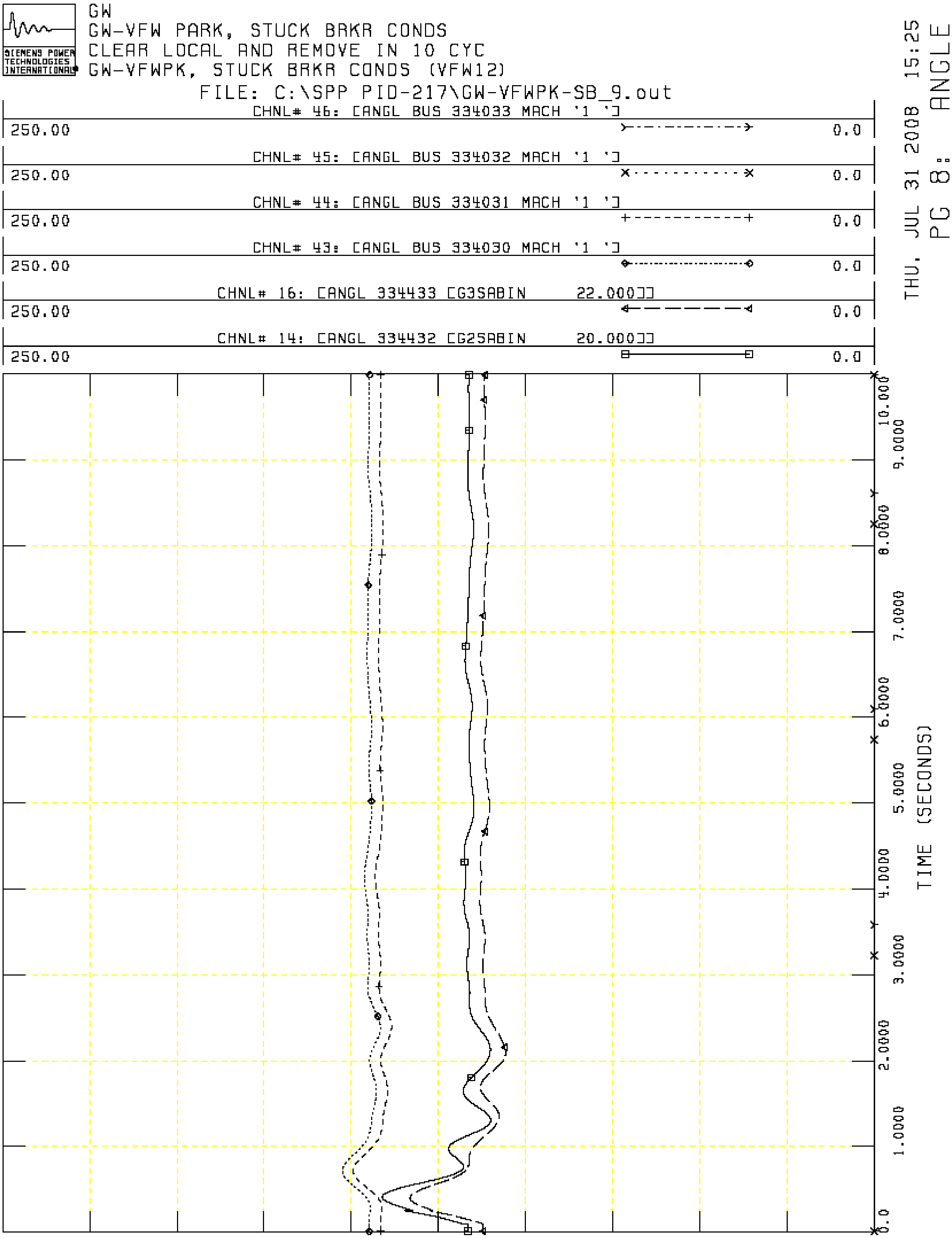
Min	Channel	Max
61.000	CHNL# 37: [FREQ 334414 [4LINDE 138.00]]*60+60	59.000
61.000	CHNL# 36: [FREQ 334413 [4PNEC BK 138.00]]*60+60	59.000
61.000	CHNL# 35: [FREQ 334399 [4NECHESO 138.00]]*60+60	59.000
61.000	CHNL# 34: [FREQ 334398 [4HAMPTON 138.00]]*60+60	59.000
61.000	CHNL# 33: [FREQ 334433 [G3SABIN 22.000]]*60+60	59.000
61.000	CHNL# 32: [FREQ 334432 [G2SABIN 20.000]]*60+60	59.000

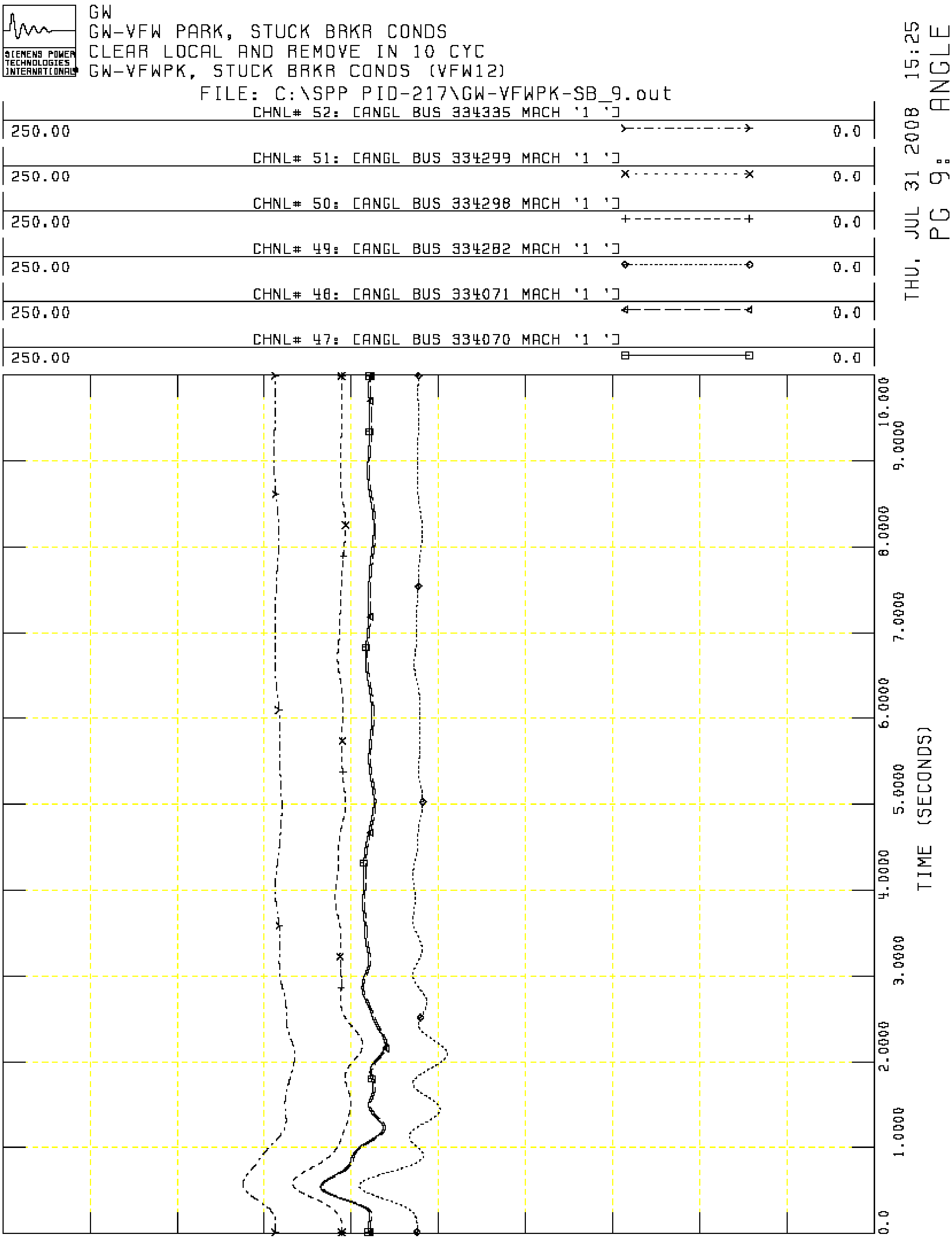


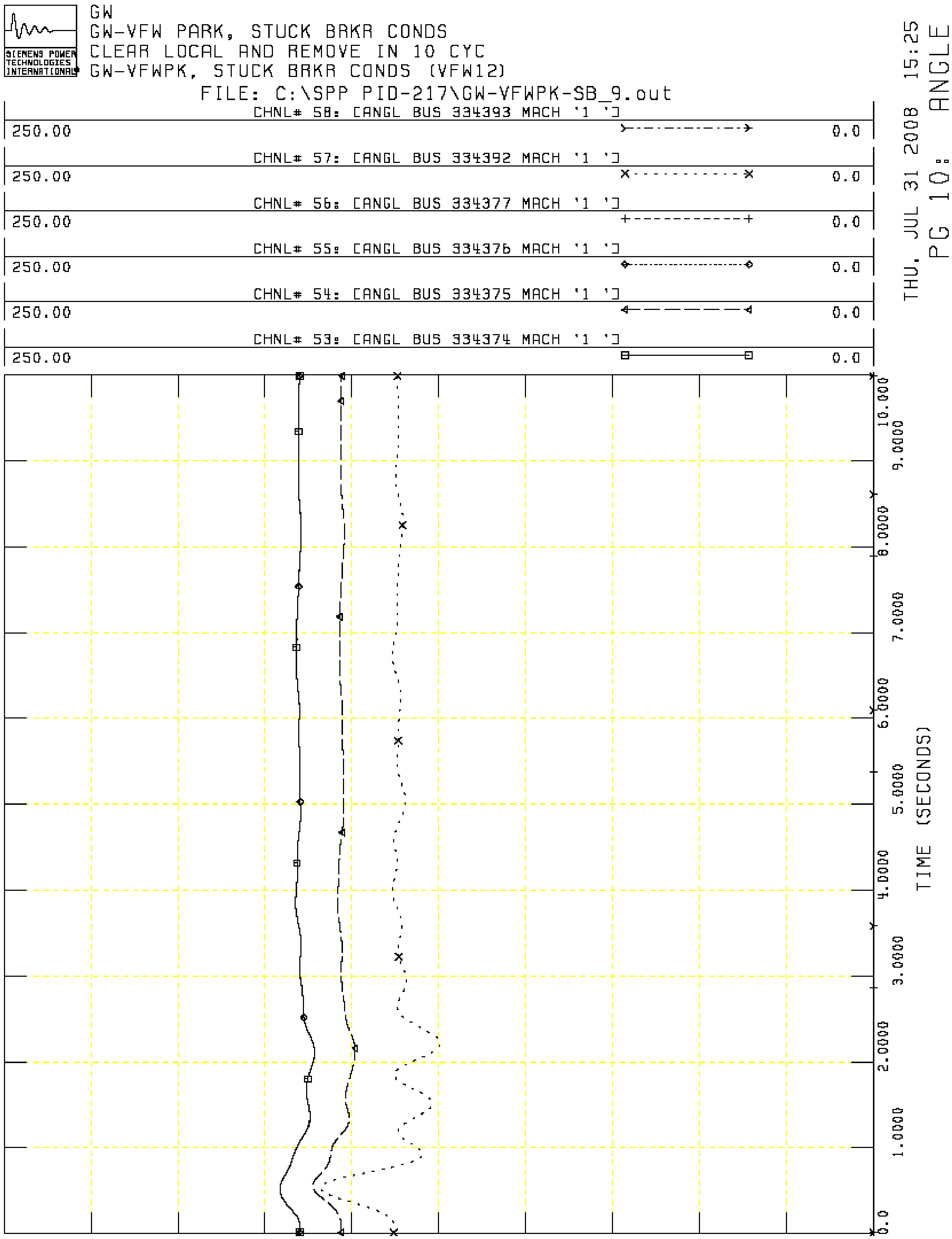
GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out




GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]
250.00 0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00 0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00 0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00 0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00 0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.00]]
250.00 0.0
THU, JUL 31 2008 15:25
PG 7: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000


GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out
CHNL# 46: [ANGL BUS 334033 MACH '1 ']
250.00 0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']
250.00 0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']
250.00 0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']
250.00 0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]
250.00 0.0
CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]
250.00 0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 15:25
PG 8: ANGLE


GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out
CHNL# 52: [ANGL BUS 334335 MACH '1 ']
250.00
0.0
CHNL# 51: [ANGL BUS 334299 MACH '1 ']
250.00
0.0
CHNL# 50: [ANGL BUS 334298 MACH '1 ']
250.00
0.0
CHNL# 49: [ANGL BUS 334282 MACH '1 ']
250.00
0.0
CHNL# 48: [ANGL BUS 334071 MACH '1 ']
250.00
0.0
CHNL# 47: [ANGL BUS 334070 MACH '1 ']
250.00
0.0
THU, JUL 31 2008 15:25
PG 9: ANGLE
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

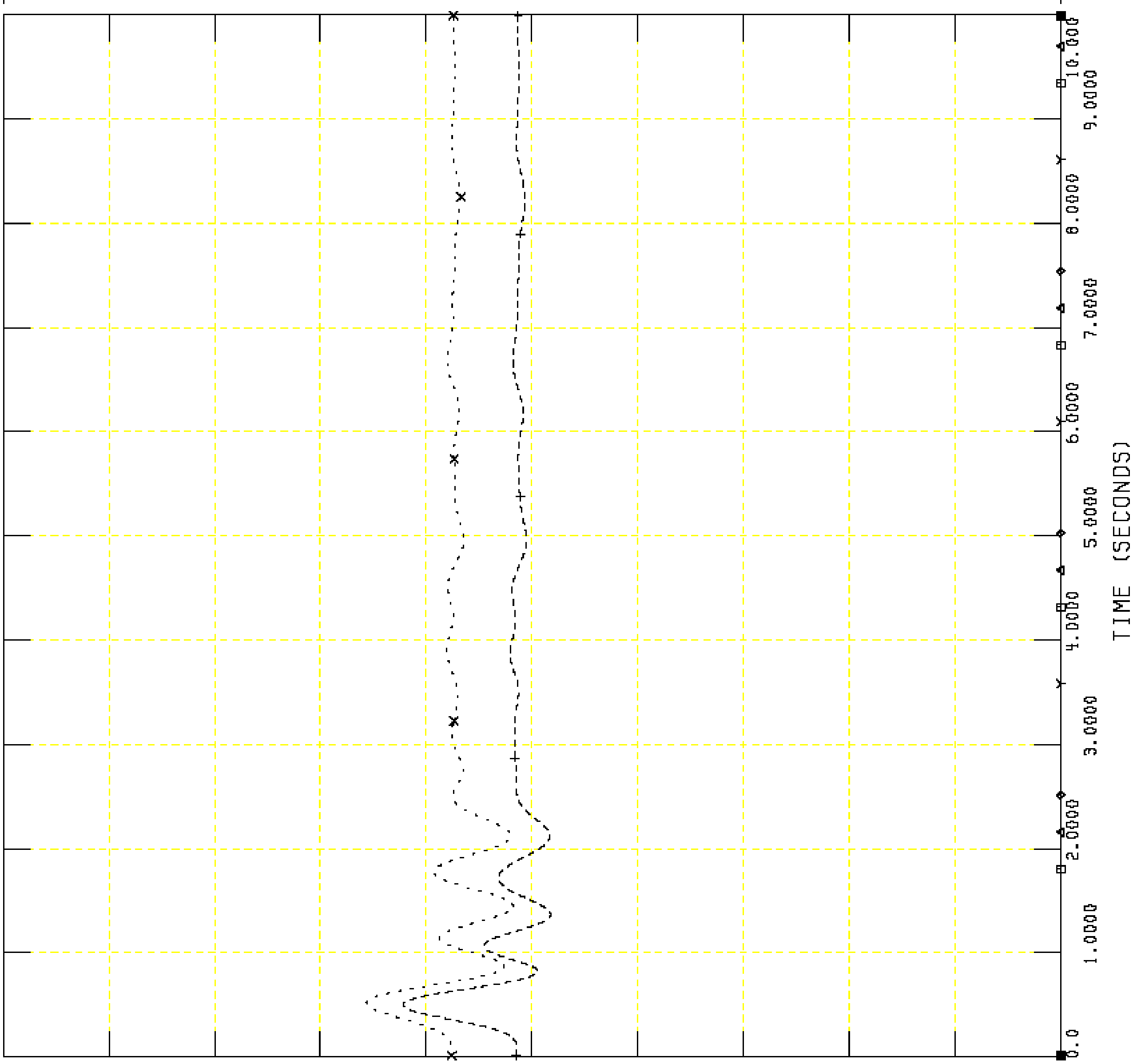

GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 58: [ANGL BUS 334393 MACH '1 ']
250.00 0.0
CHNL# 57: [ANGL BUS 334392 MACH '1 ']
250.00 0.0
CHNL# 56: [ANGL BUS 334377 MACH '1 ']
250.00 0.0
CHNL# 55: [ANGL BUS 334376 MACH '1 ']
250.00 0.0
CHNL# 54: [ANGL BUS 334375 MACH '1 ']
250.00 0.0
CHNL# 53: [ANGL BUS 334374 MACH '1 ']
250.00 0.0
THU, JUL 31 2008 15:25
PG 10: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

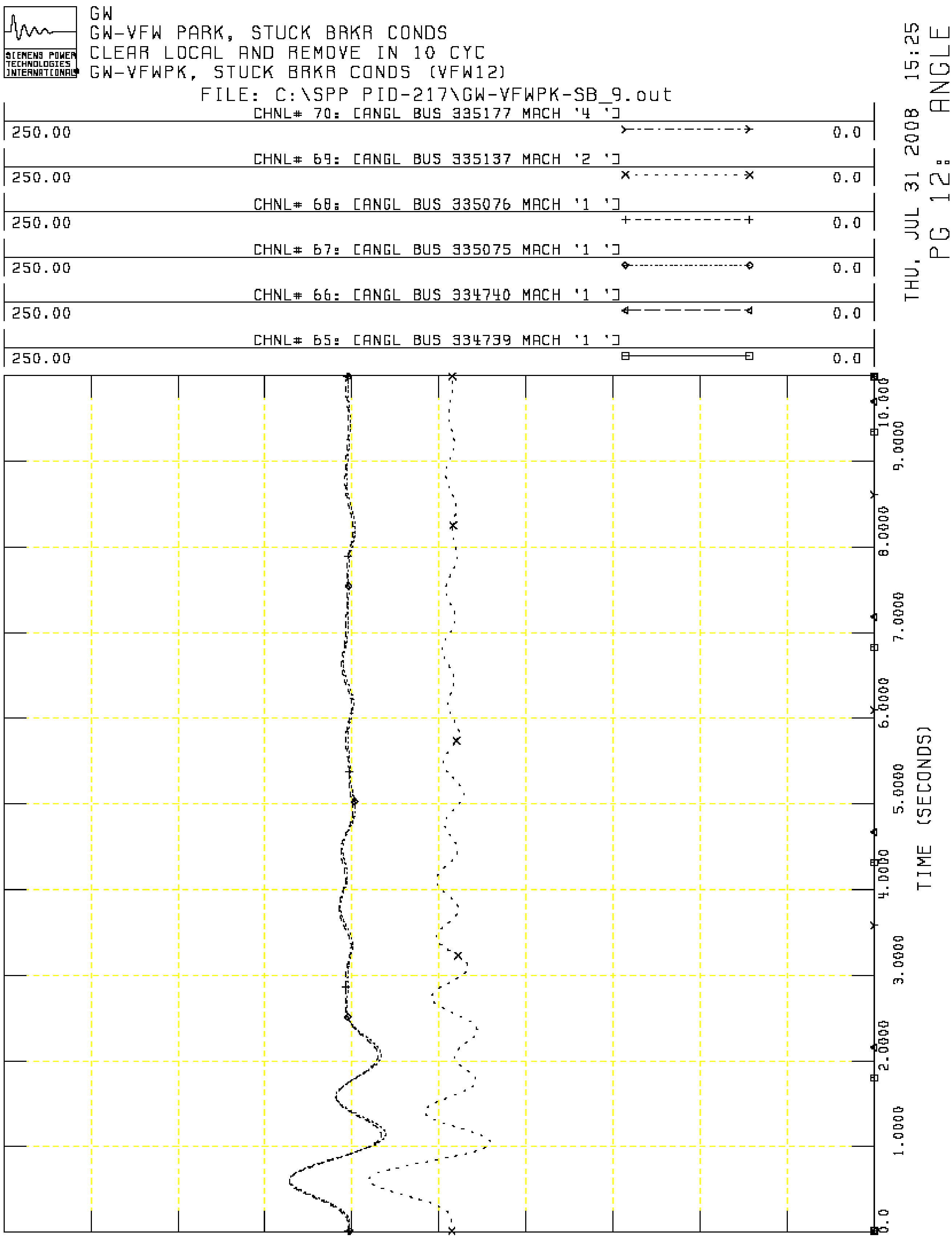
GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)

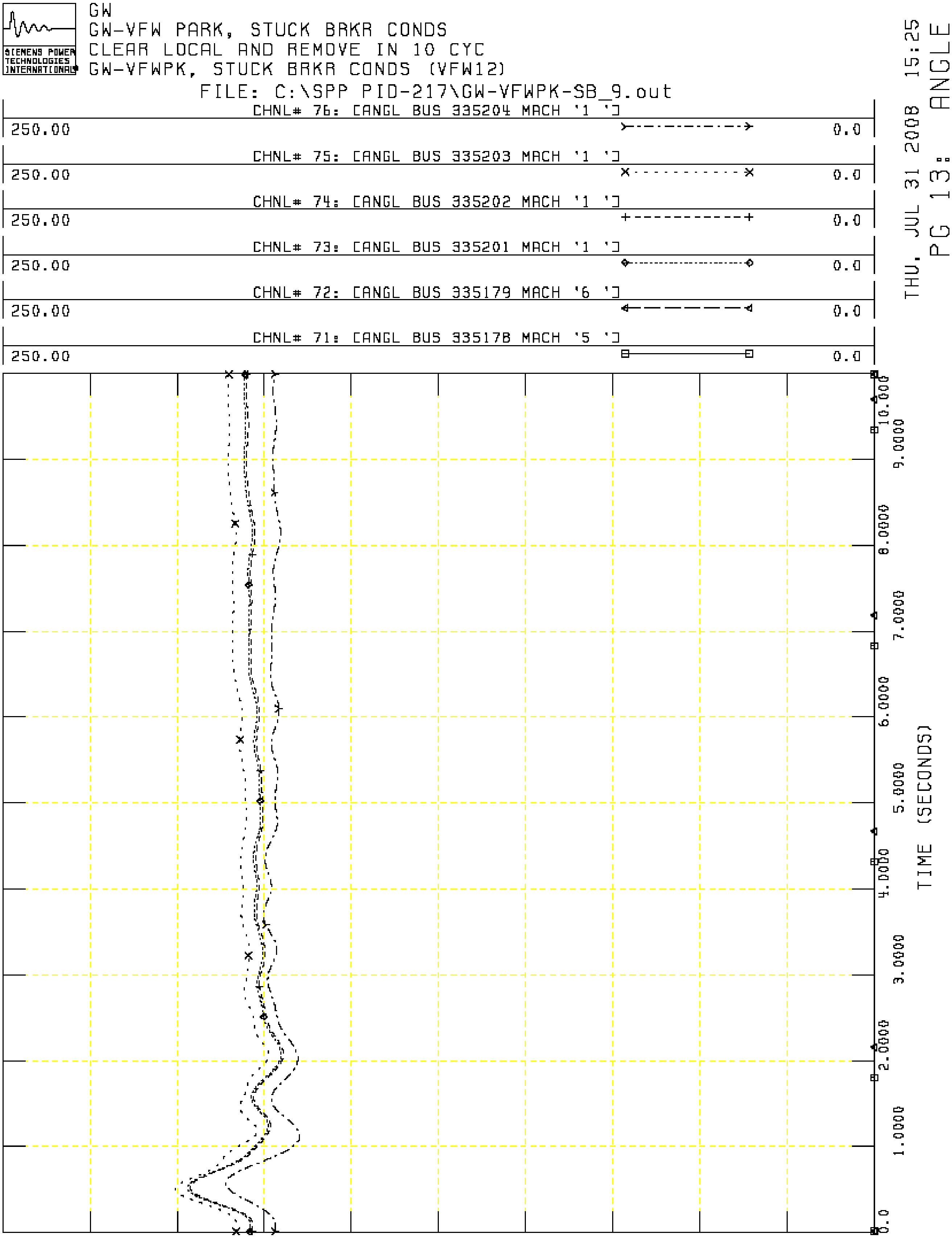
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out

THU, JUL 31 2008 15:25
PG 11: ANGLE

Channel	Min	Max
CHNL# 64: [ANGL BUS 334738 MACH '1 ']	250.00	0.0
CHNL# 63: [ANGL BUS 334467 MACH '1 ']	250.00	0.0
CHNL# 62: [ANGL BUS 334458 MACH '1 ']	250.00	0.0
CHNL# 61: [ANGL BUS 334457 MACH '1 ']	250.00	0.0
CHNL# 60: [ANGL BUS 334456 MACH '1 ']	250.00	0.0
CHNL# 59: [ANGL BUS 334394 MACH '1 ']	250.00	0.0



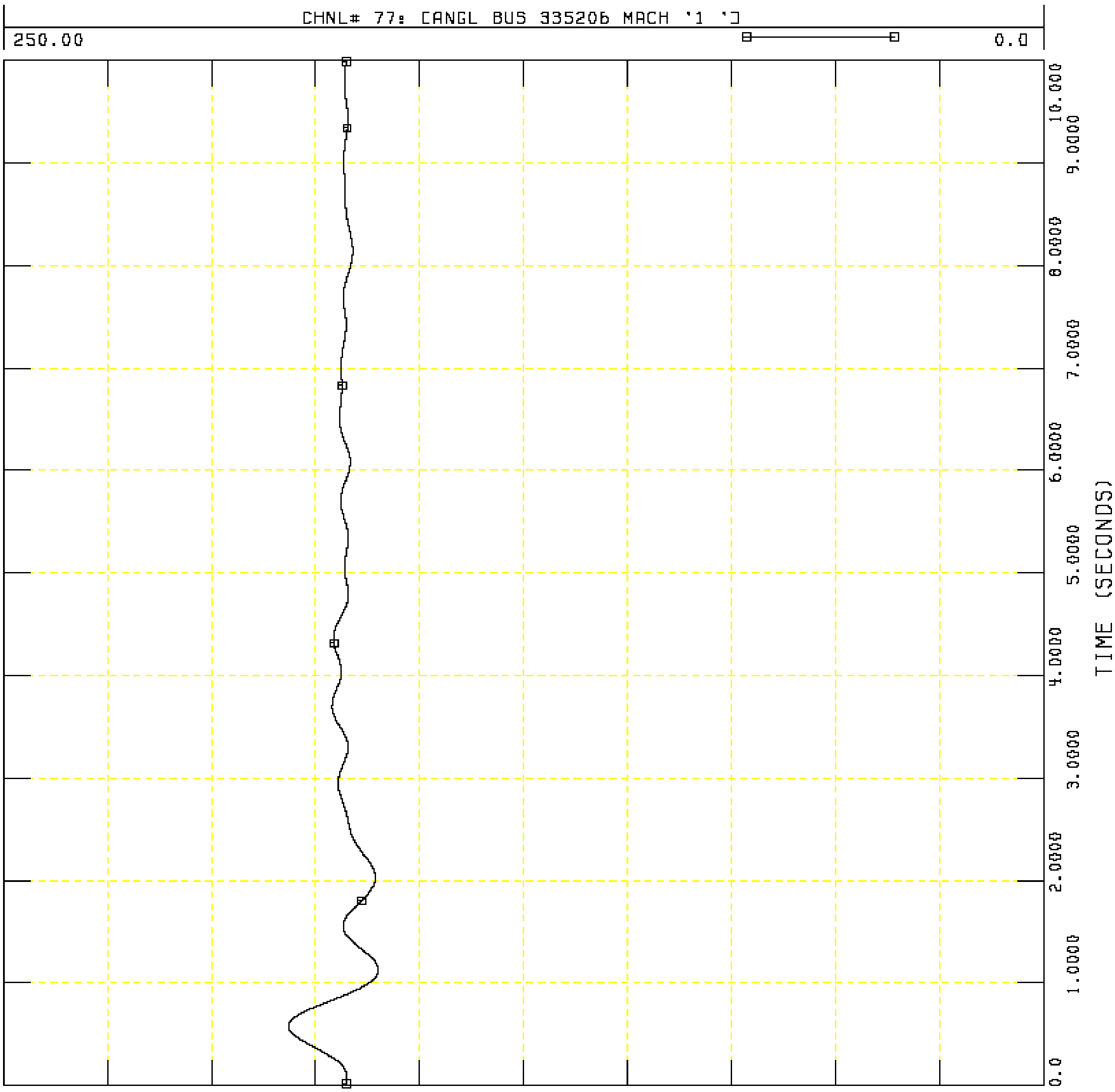

GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out
CHNL# 70: [ANGL BUS 335177 MACH '4 ']
250.00 0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']
250.00 0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']
250.00 0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']
250.00 0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']
250.00 0.0
CHNL# 65: [ANGL BUS 334739 MACH '1 ']
250.00 0.0
THU, JUL 31 2008 15:25
PG 12: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000


GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 76: [ANGL BUS 335204 MACH '1 ']
250.00
0.0
CHNL# 75: [ANGL BUS 335203 MACH '1 ']
250.00
0.0
CHNL# 74: [ANGL BUS 335202 MACH '1 ']
250.00
0.0
CHNL# 73: [ANGL BUS 335201 MACH '1 ']
250.00
0.0
CHNL# 72: [ANGL BUS 335179 MACH '6 ']
250.00
0.0
CHNL# 71: [ANGL BUS 335178 MACH '5 ']
250.00
0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 15:25
PG 13: ANGLE

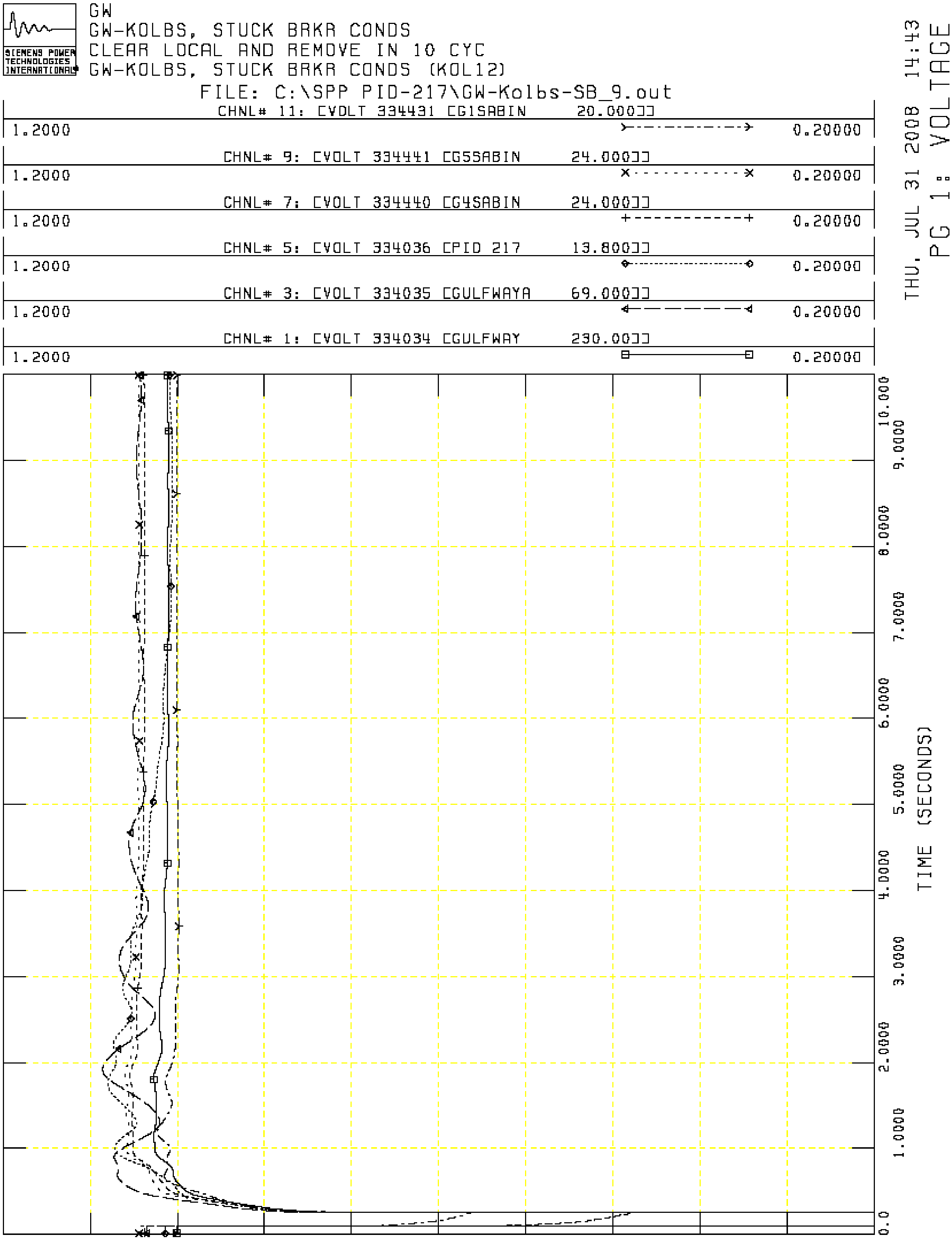
SIEMENS POWER TECHNOLOGIES INTERNATIONAL

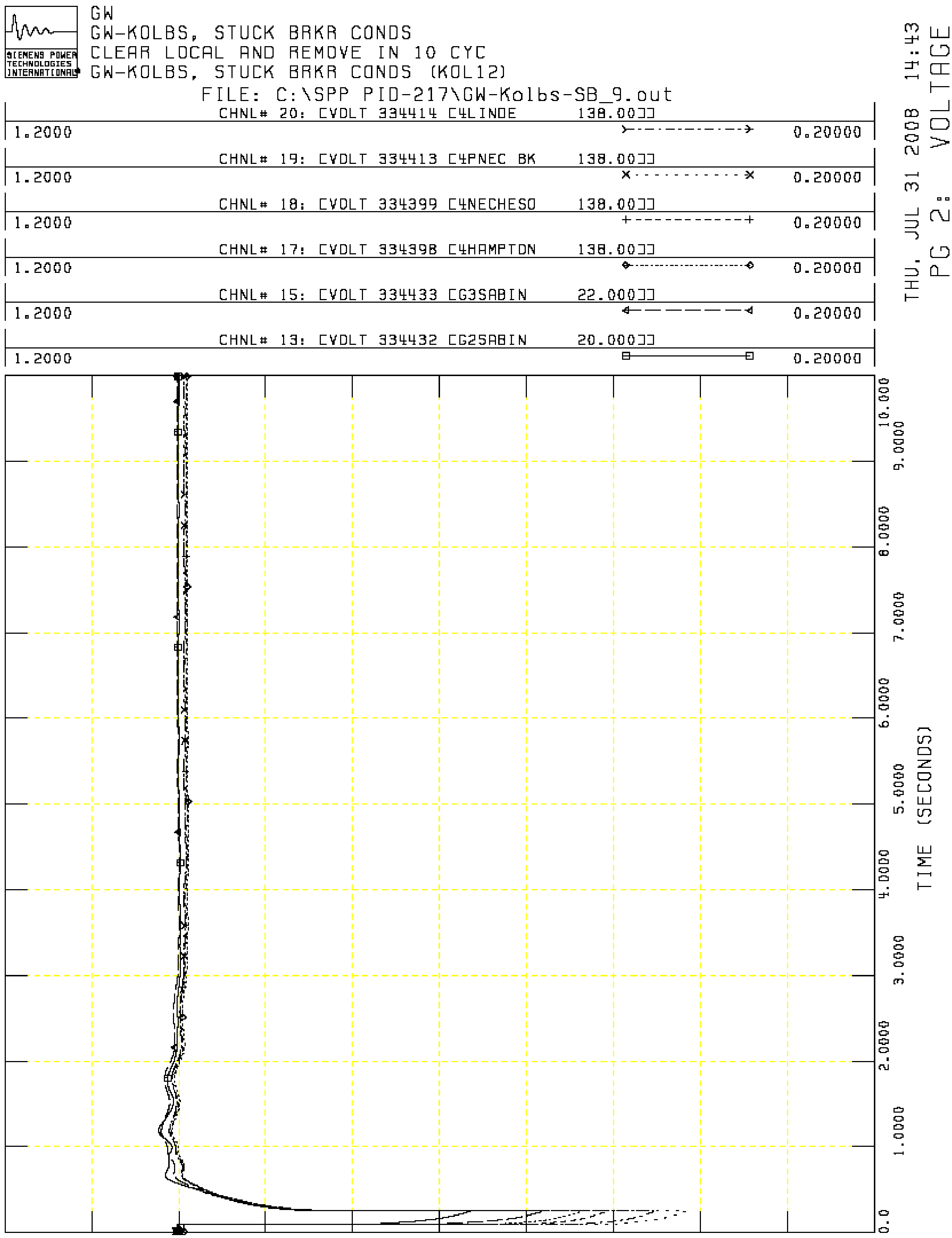
GW
GW-VFW PARK, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-VFWPK, STUCK BRKR CONDS (VFW12)
FILE: C:\SPP PID-217\GW-VFWPK-SB_9.out

THU, JUL 31 2008 15:25
PG 14: ANGLE

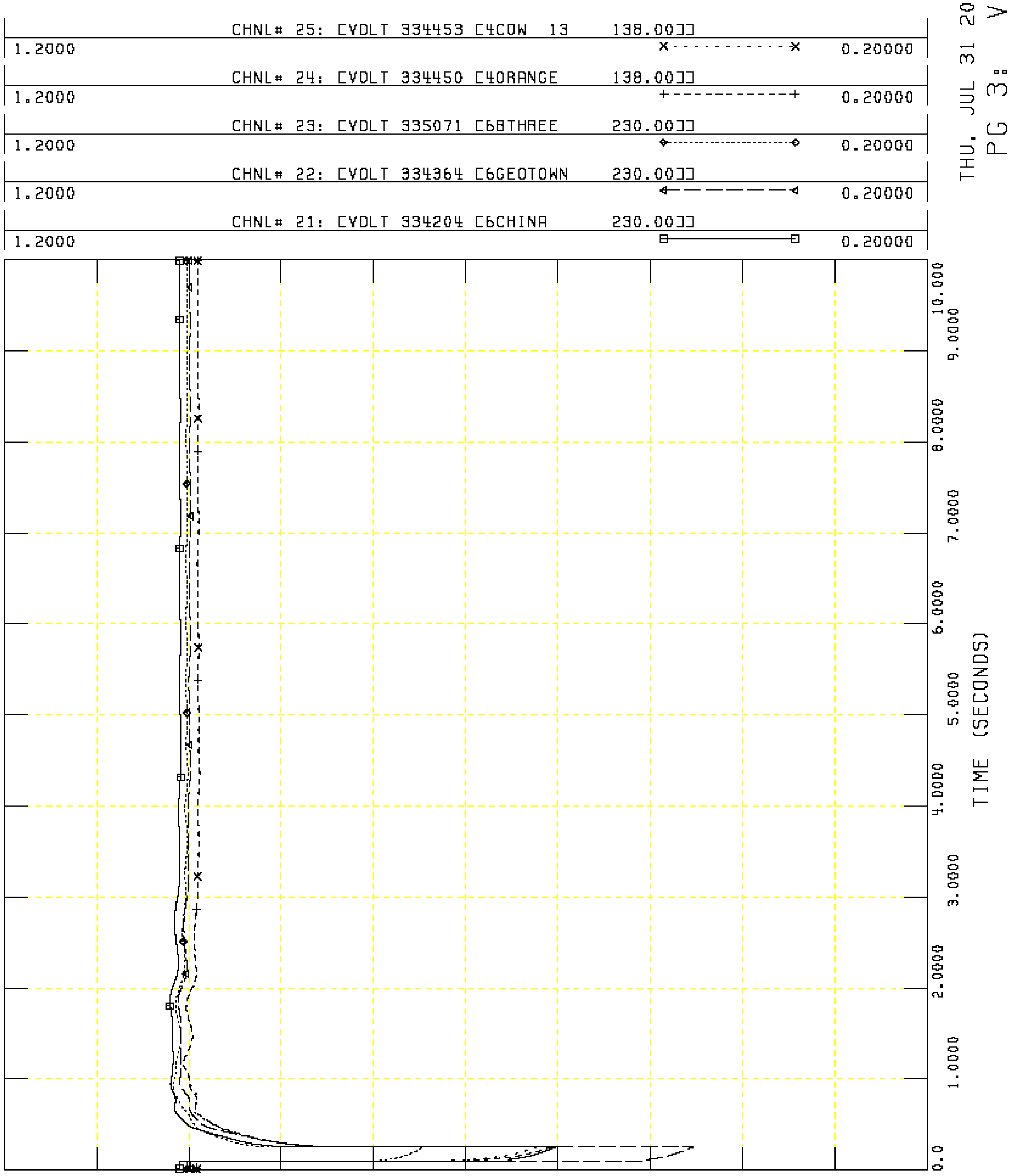


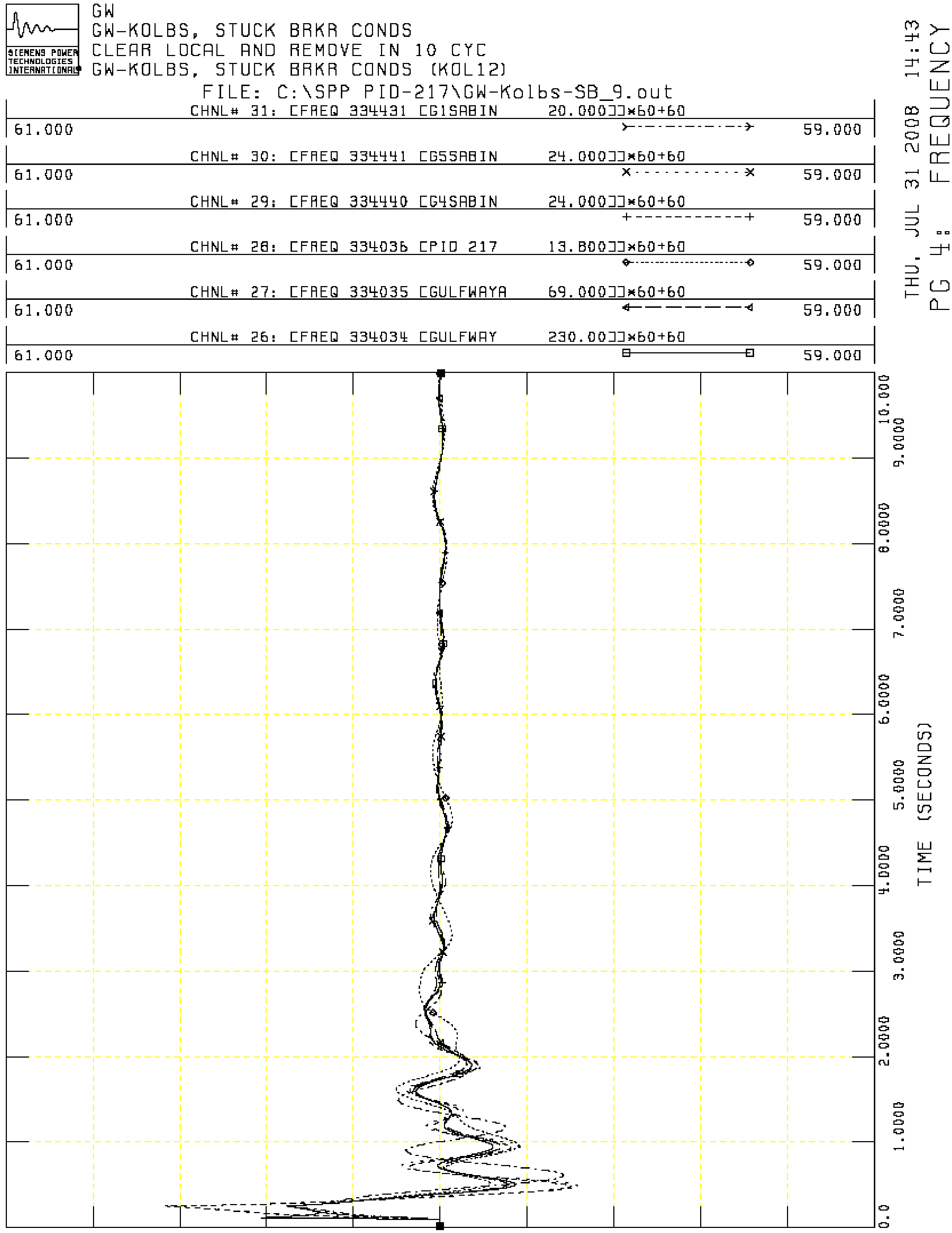
FAULT REFERENCE NO. 3
FAULT-KOLBS-STUCK BKR –KOL12- LOCATION GULFWAY


GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out
CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]
1.2000
0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000
0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000
0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000
0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000
0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000
0.20000
THU, JUL 31 2008 14:43
PG 1: VOLTAGE
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

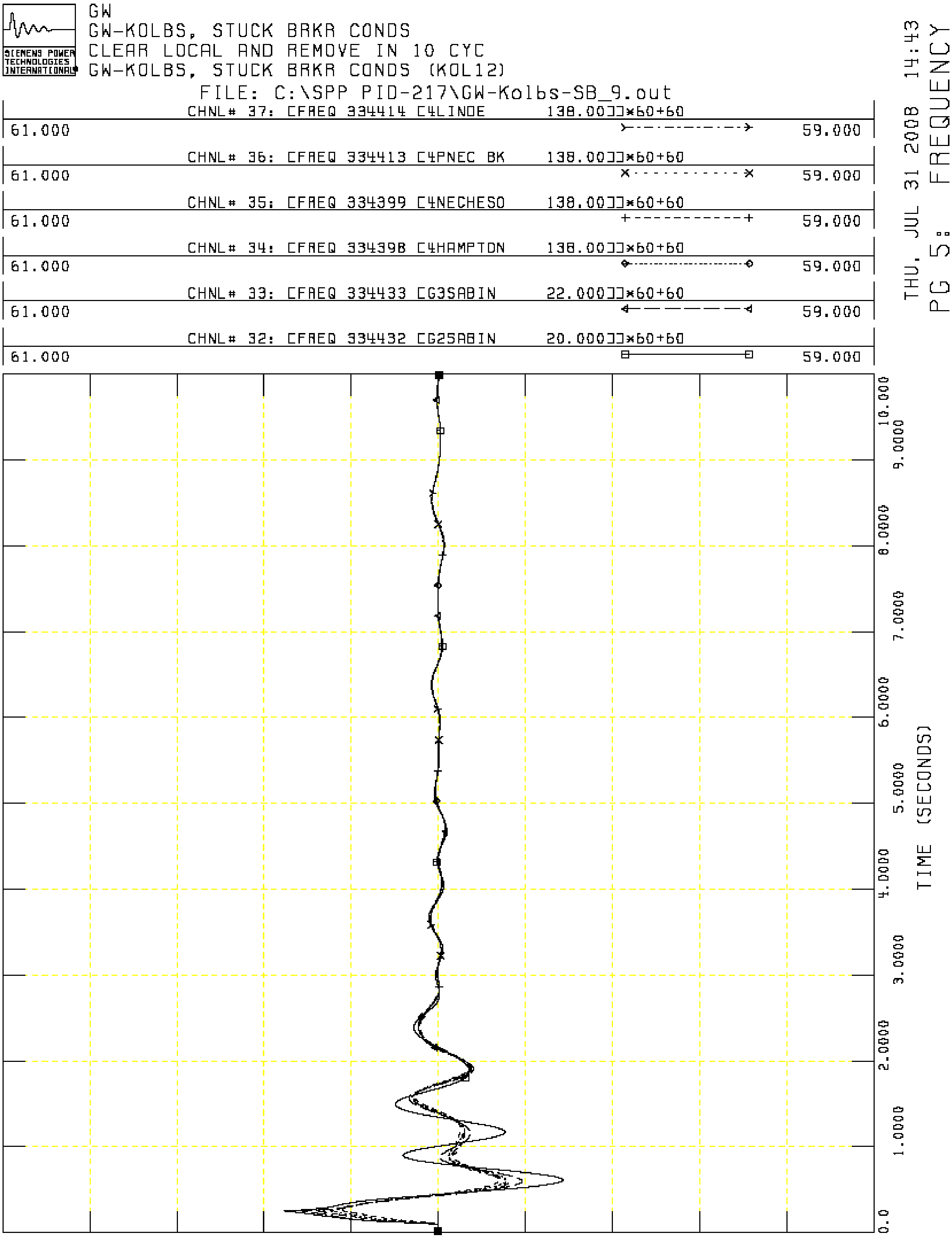

GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out
CHNL# 20: [VOLT 334414 [4LINDE 138.00]]
1.2000 0.20000
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]
1.2000 0.20000
CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]
1.2000 0.20000
CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]
1.2000 0.20000
CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]
1.2000 0.20000
CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]
1.2000 0.20000
THU, JUL 31 2008 14:43
PG 2: VOLTAGE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out

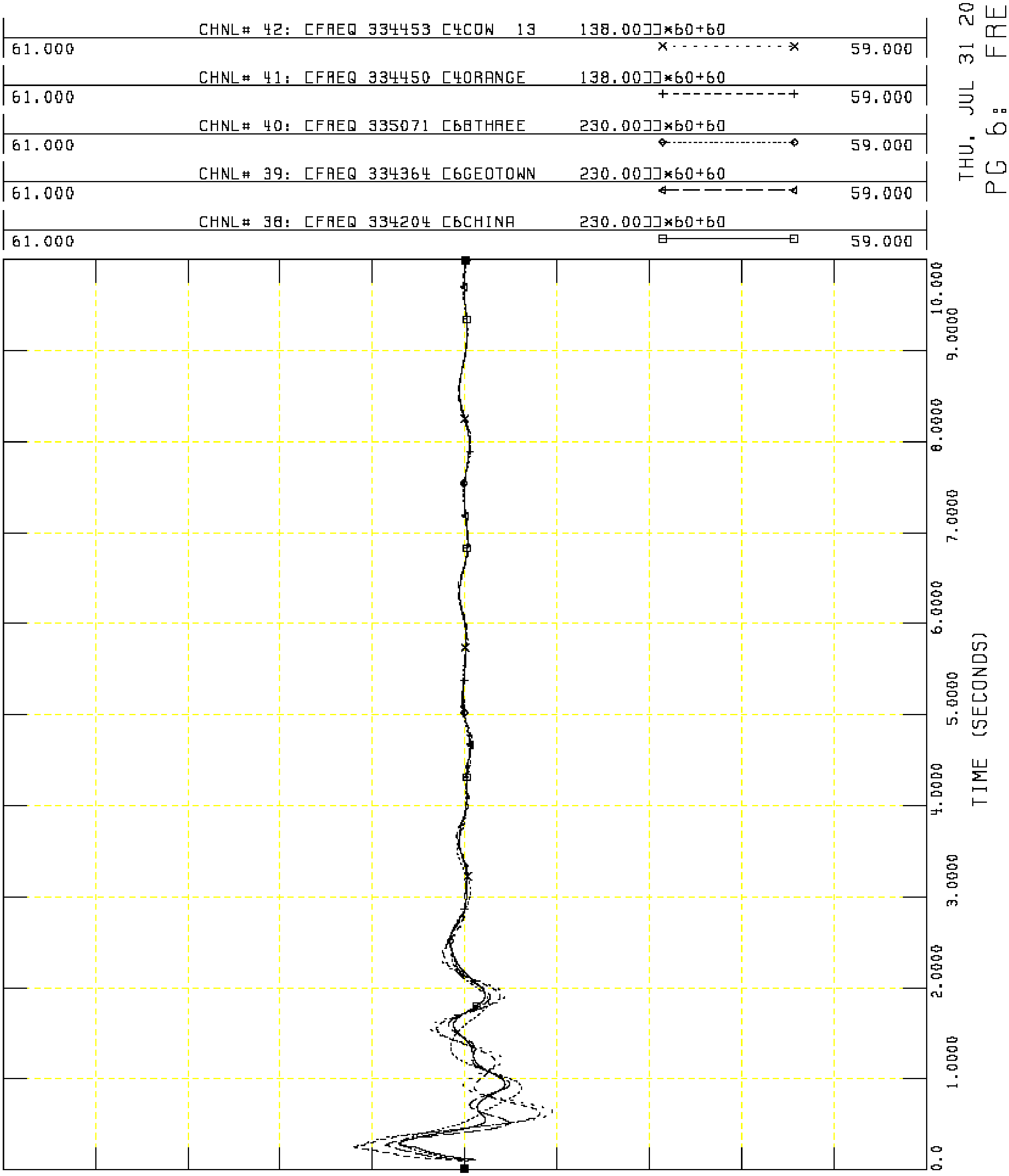


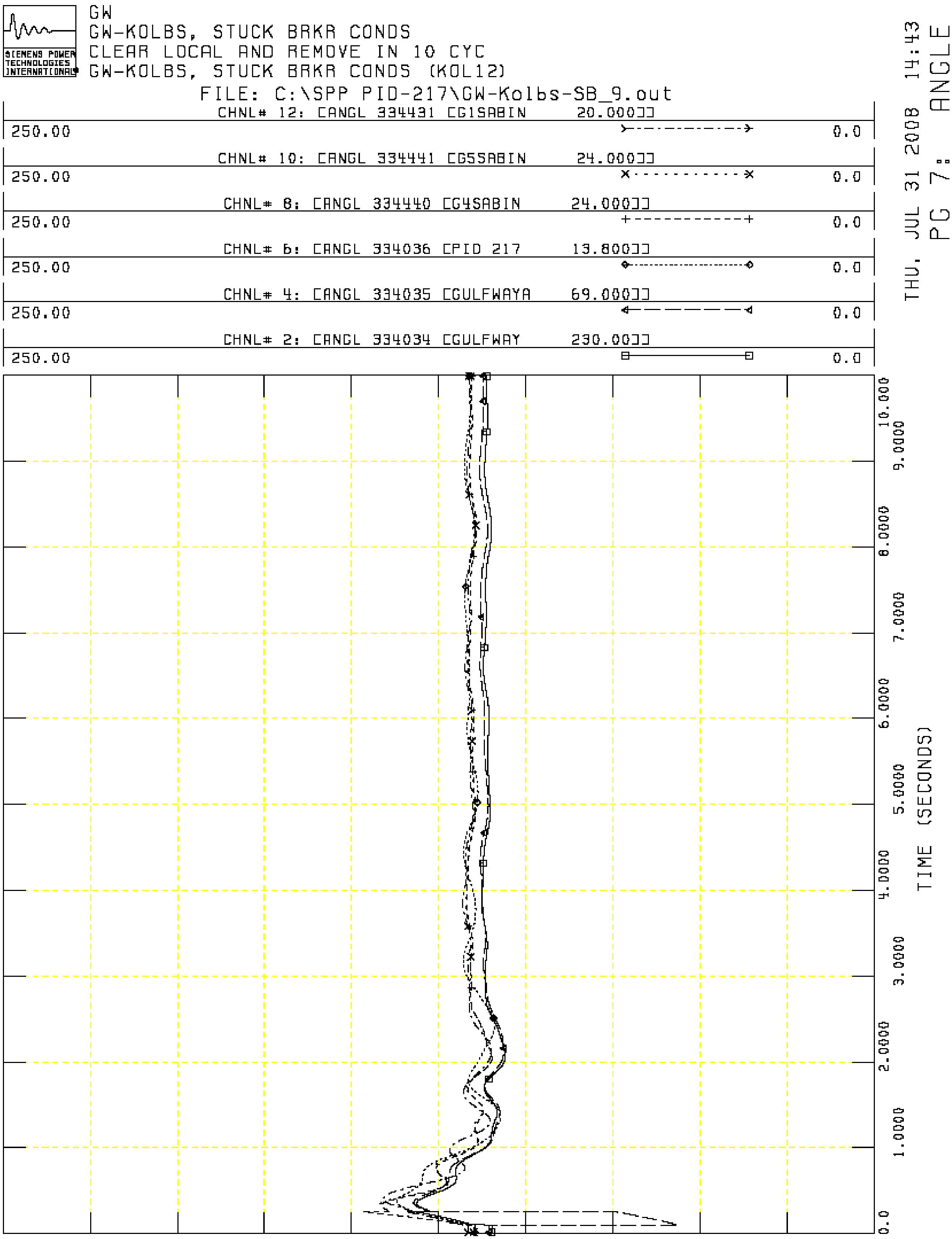


GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out
CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60
61.000 59.000
CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60
61.000 59.000
CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60
61.000 59.000
CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60
61.000 59.000
CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60
61.000 59.000
CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60
61.000 59.000
THU, JUL 31 2008 14:43
PG 4: FREQUENCY
0.0 1.0000 2.0000 3.0000 4.0000 5.0000 6.0000 7.0000 8.0000 9.0000 10.000
TIME (SECONDS)

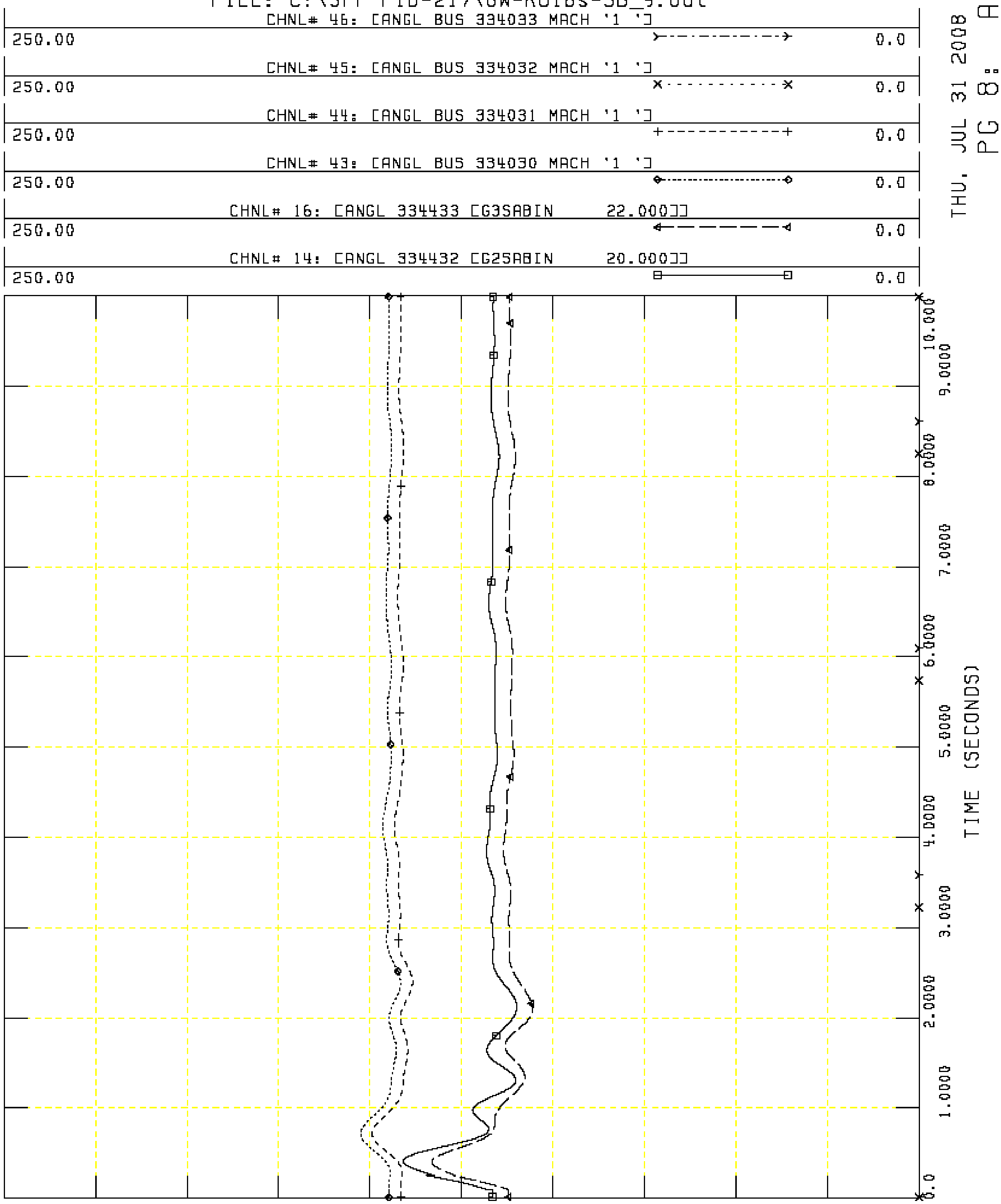

GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out
CHNL# 37: [FREQ 334414 C4LINDE 138.00]]*60+60
61.000 59.000
CHNL# 36: [FREQ 334413 C4PNEC BK 138.00]]*60+60
61.000 59.000
CHNL# 35: [FREQ 334399 C4NECHESO 138.00]]*60+60
61.000 59.000
CHNL# 34: [FREQ 334398 C4HAMPTON 138.00]]*60+60
61.000 59.000
CHNL# 33: [FREQ 334433 CG3SABIN 22.000]]*60+60
61.000 59.000
CHNL# 32: [FREQ 334432 CG2SABIN 20.000]]*60+60
61.000 59.000
THU, JUL 31 2008 14:43
PG 5: FREQUENCY
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out




GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]
250.00 0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00 0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00 0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00 0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00 0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.000]]
250.00 0.0
THU, JUL 31 2008 14:43
PG 7: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out



GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)

FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out

THU, JUL 31 2008 14:43
PG 9: ANGLE

CHNL# 52: [ANGL BUS 334335 MACH '1 ']
250.00 0.0

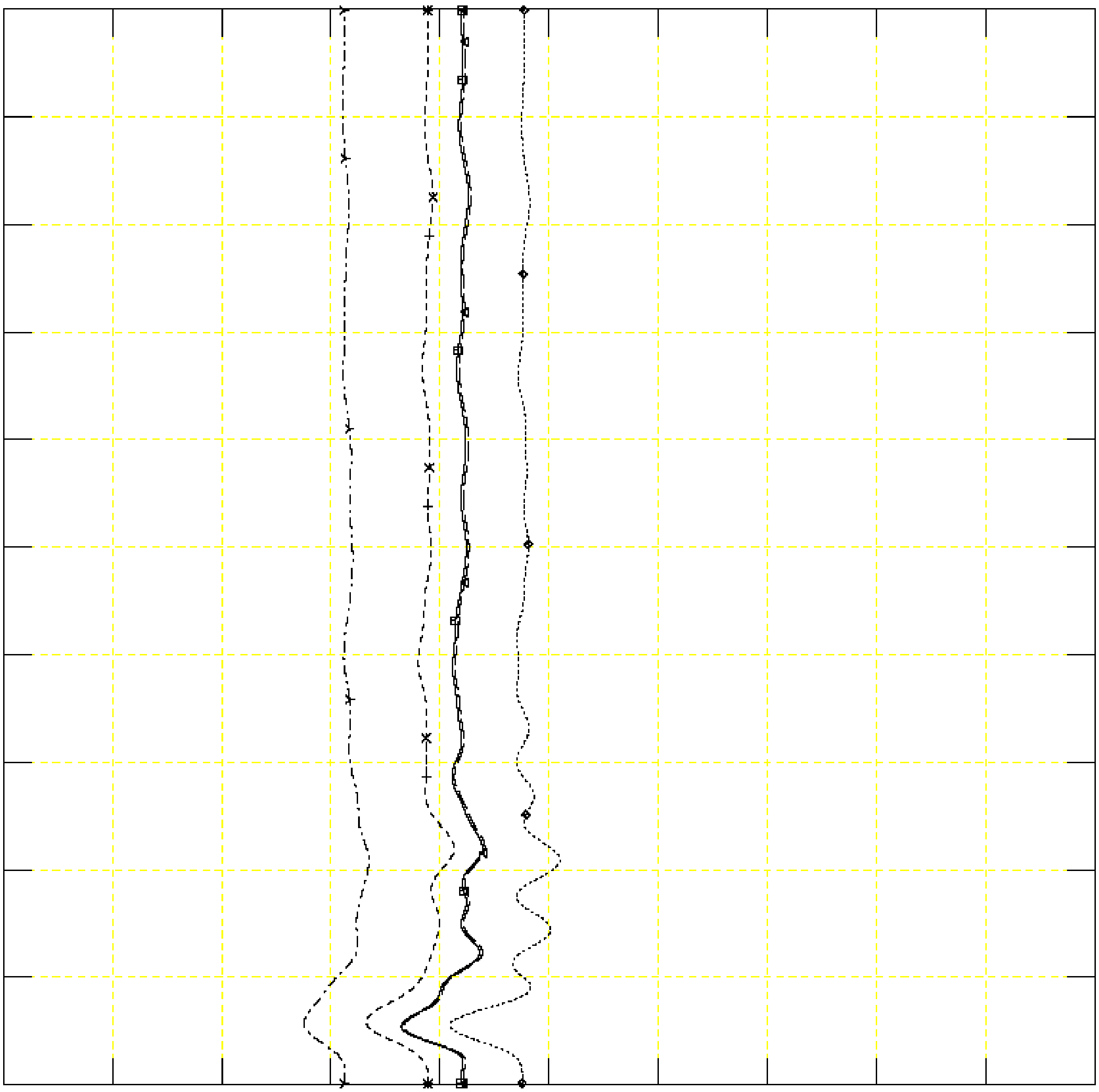
CHNL# 51: [ANGL BUS 334299 MACH '1 ']
250.00 0.0

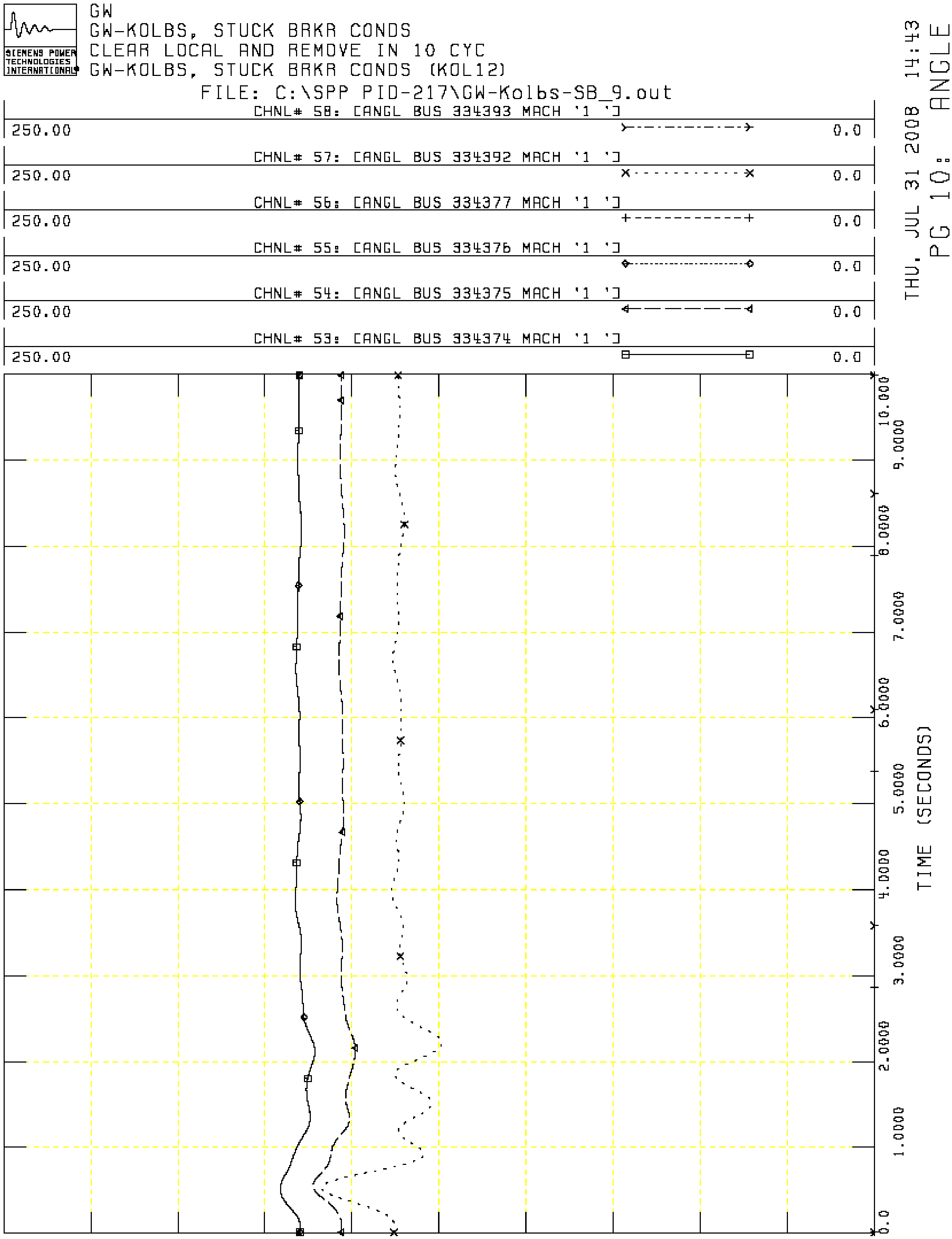
CHNL# 50: [ANGL BUS 334298 MACH '1 ']
250.00 0.0

CHNL# 49: [ANGL BUS 334282 MACH '1 ']
250.00 0.0

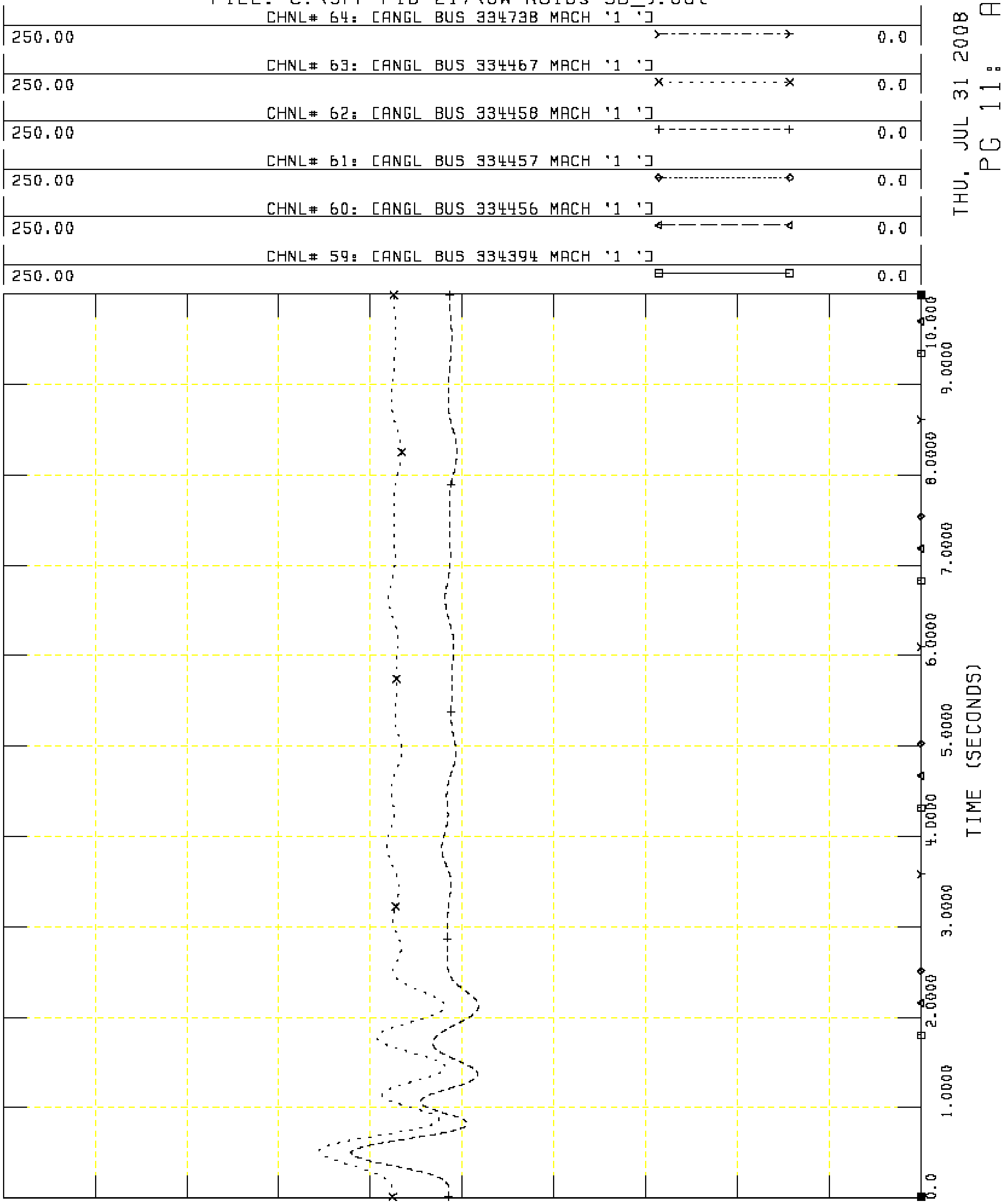
CHNL# 48: [ANGL BUS 334071 MACH '1 ']
250.00 0.0

CHNL# 47: [ANGL BUS 334070 MACH '1 ']
250.00 0.0

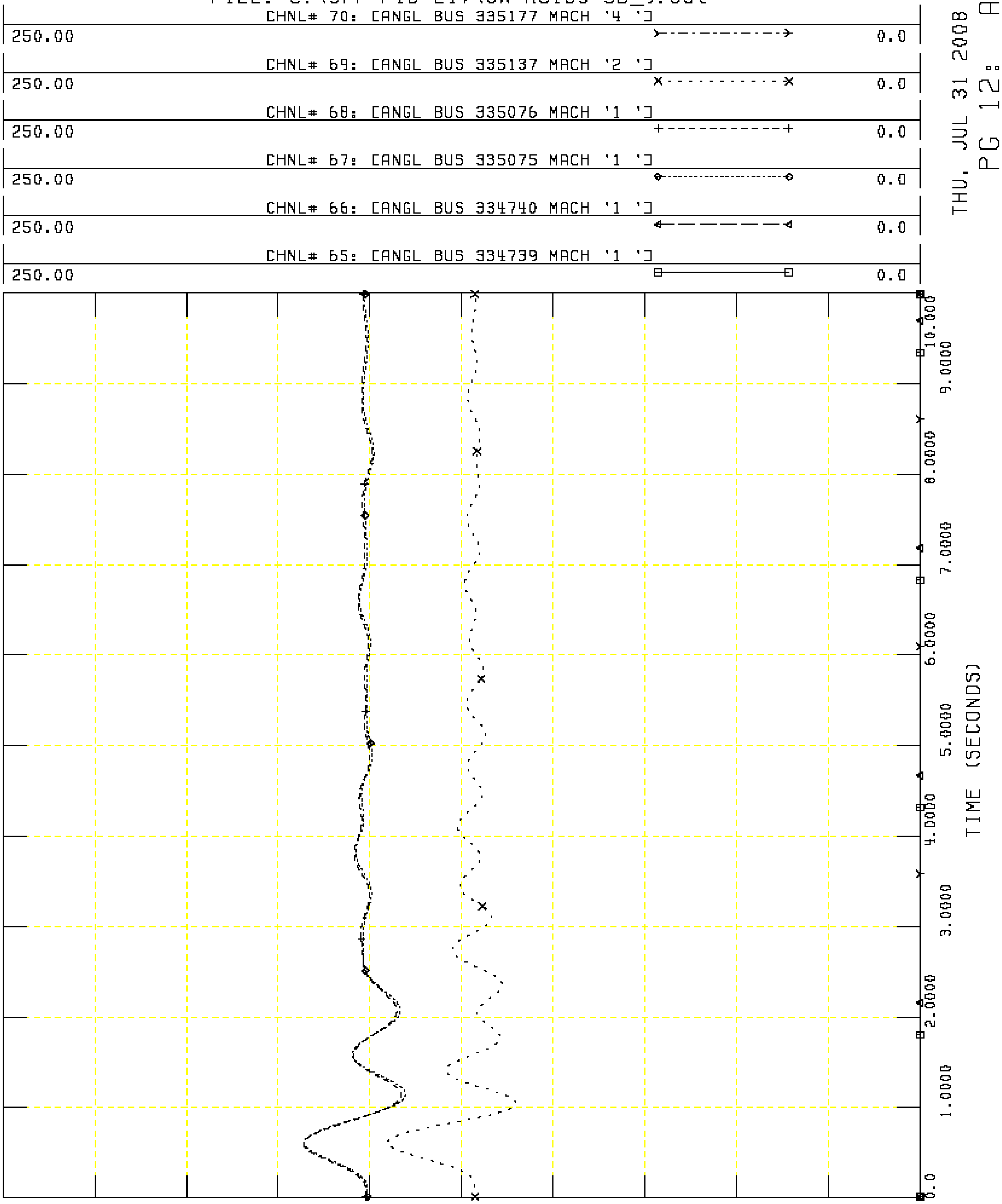



SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out
CHNL# 58: [ANGL BUS 334393 MACH '1 ']
250.00
0.0
CHNL# 57: [ANGL BUS 334392 MACH '1 ']
250.00
0.0
CHNL# 56: [ANGL BUS 334377 MACH '1 ']
250.00
0.0
CHNL# 55: [ANGL BUS 334376 MACH '1 ']
250.00
0.0
CHNL# 54: [ANGL BUS 334375 MACH '1 ']
250.00
0.0
CHNL# 53: [ANGL BUS 334374 MACH '1 ']
250.00
0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 14:43
PG 10: ANGLE

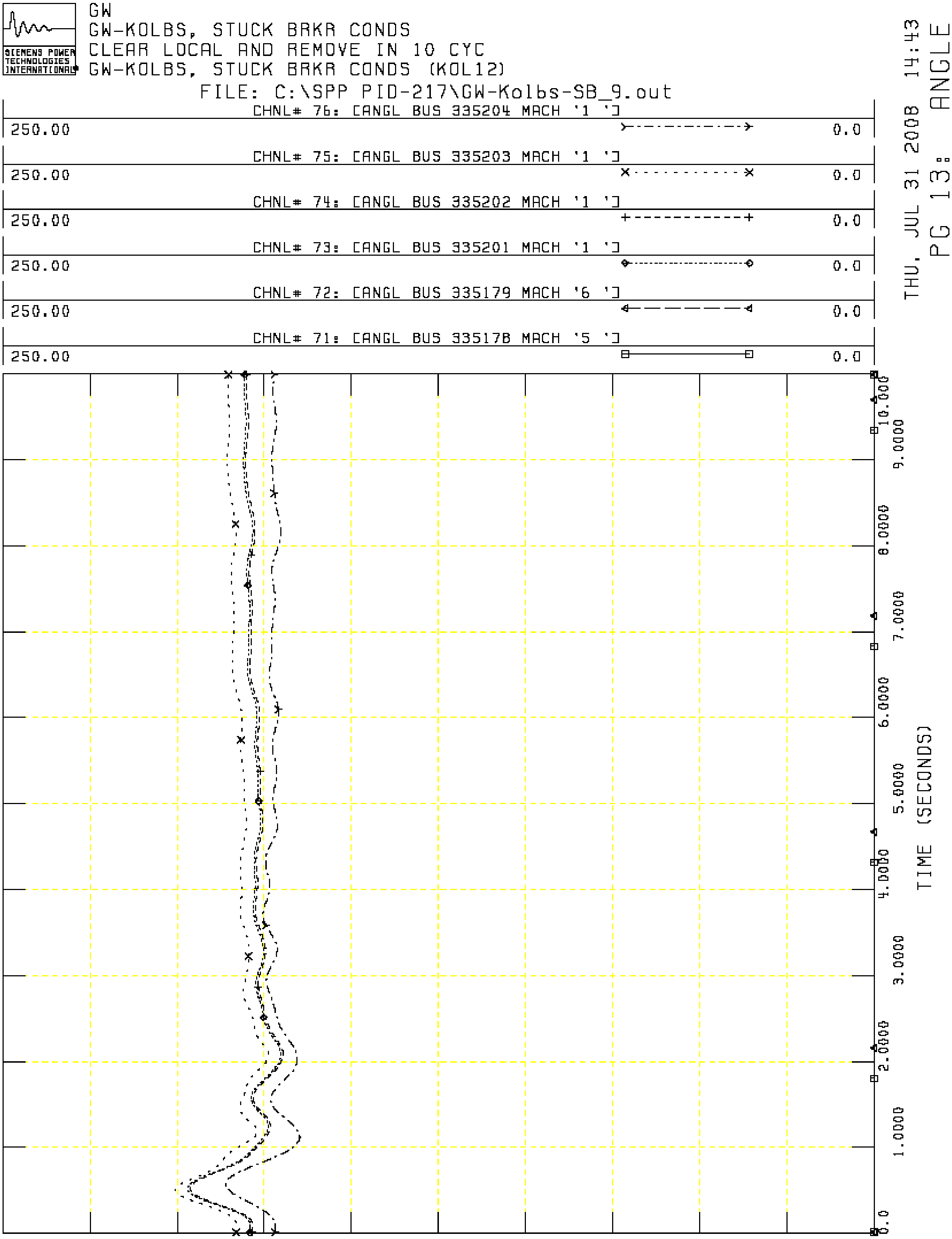
GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out



GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out

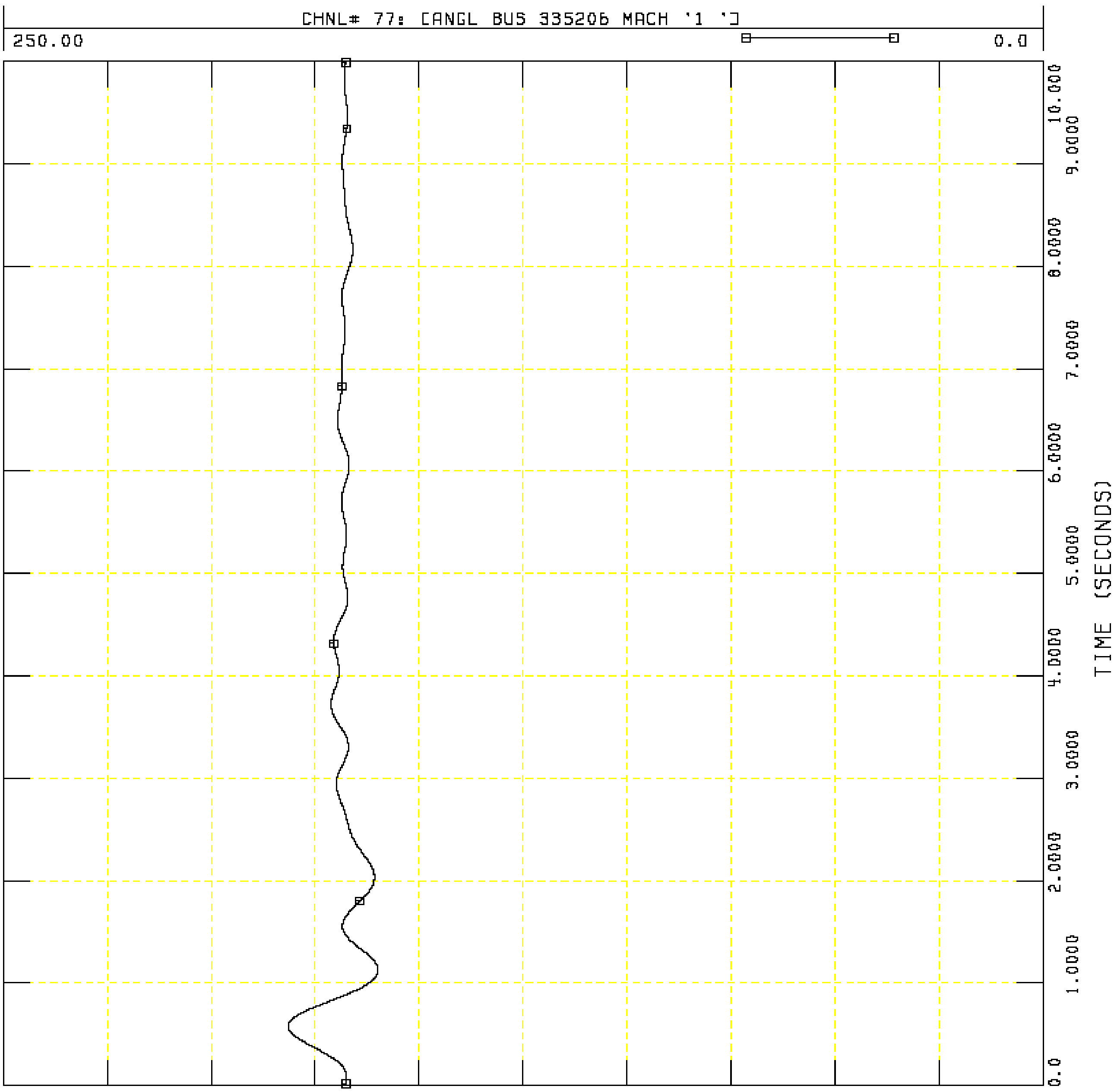


GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out



GW
GW-KOLBS, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-Kolbs-SB_9.out

THU, JUL 31 2008 14:43
PG 14: ANGLE



FAULT REFERENCE NO. 4
FAULT-KOLBS2-STUCK BKR –KOL34- LOCATION GULFWAY

SIEMENS POWER TECHNOLOGIES INTERNATIONAL

CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]
1.2000 0.20000

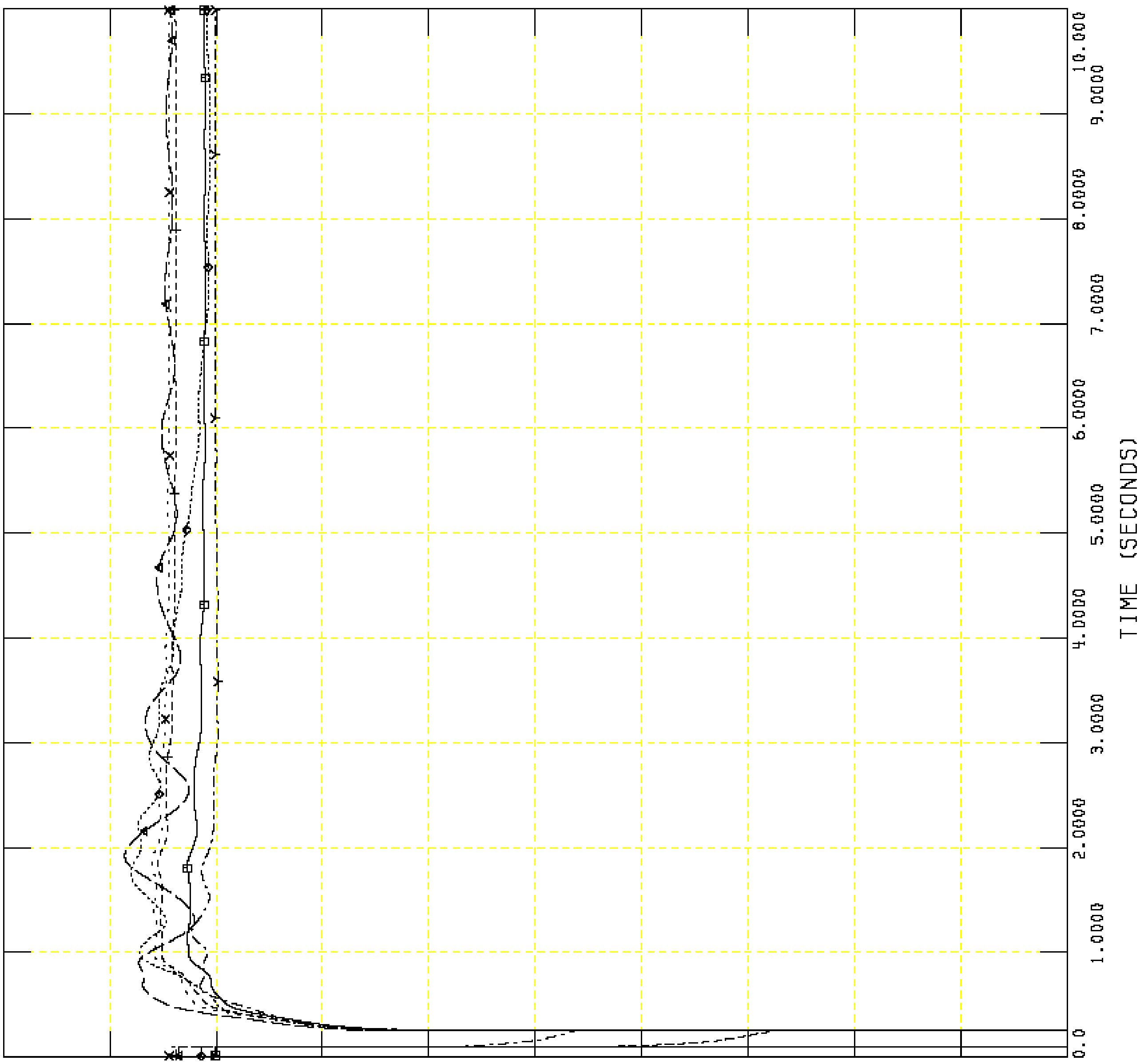
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000 0.20000

CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000 0.20000

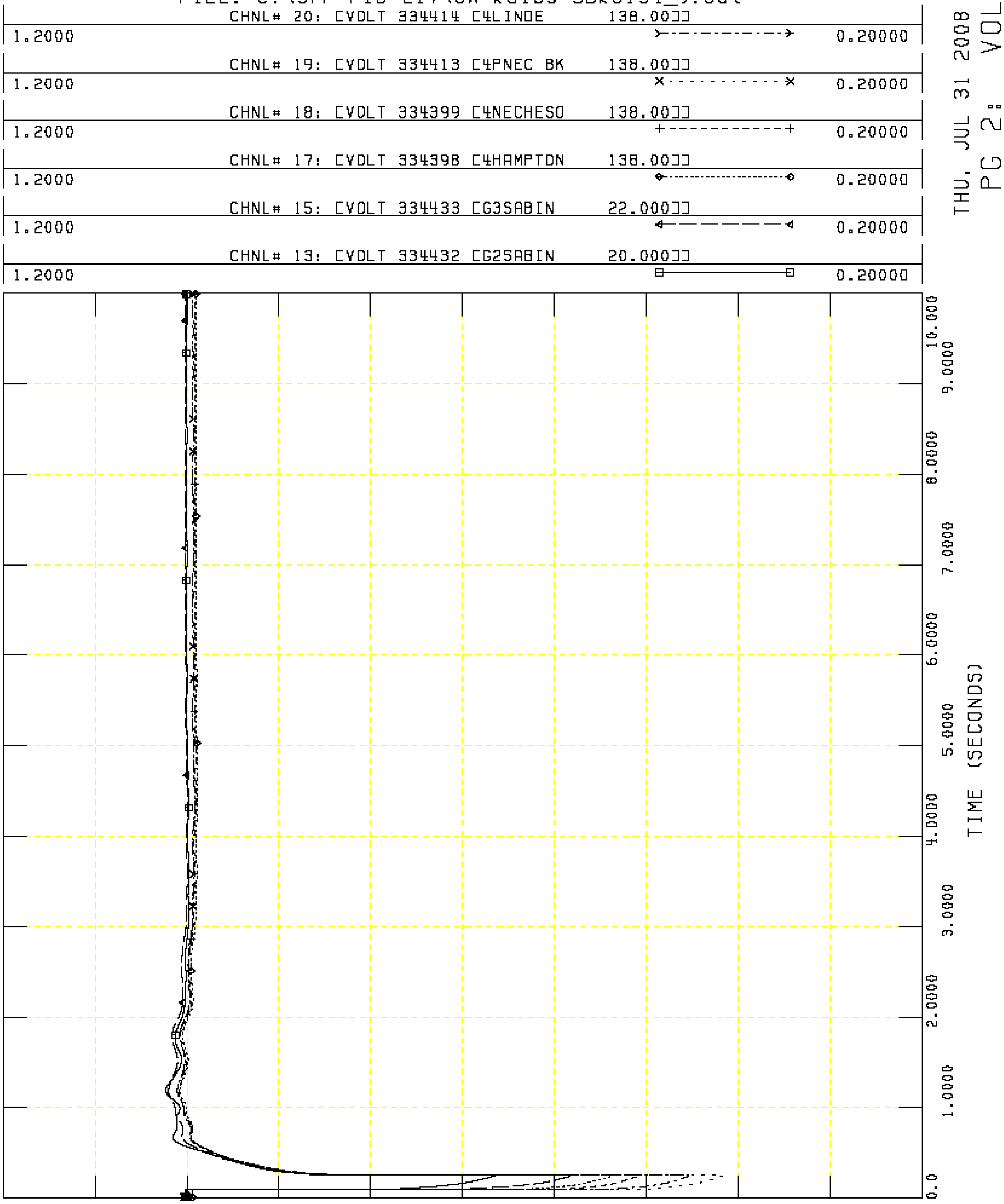
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000 0.20000

CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000 0.20000

CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000 0.20000



CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

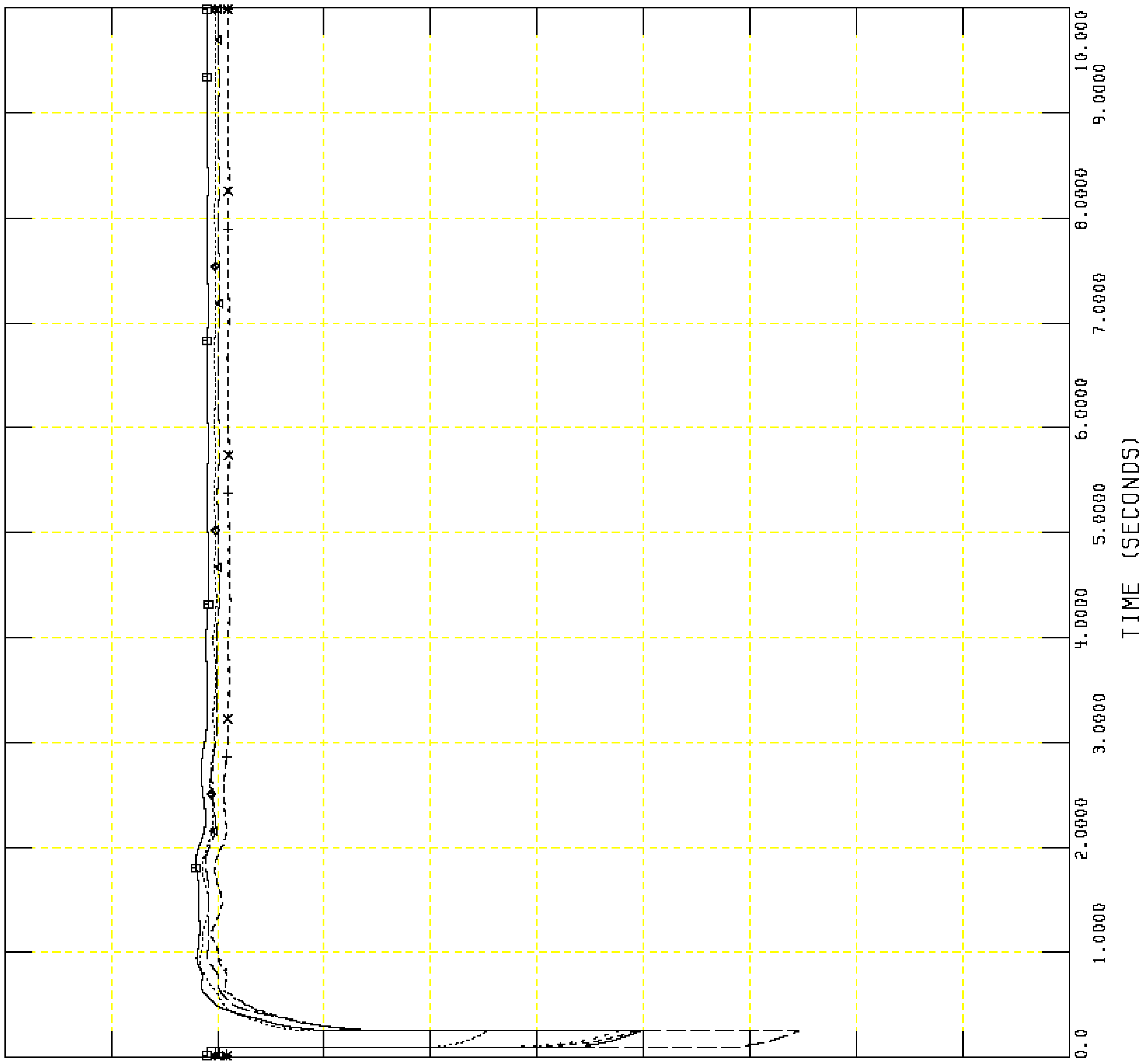


SIEMENS POWER TECHNOLOGIES INTERNATIONAL

CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

THU, JUL 31 2008 14:43
PG 3: VOLTAGE

1.2000	CHNL# 25: [VOLT 334453 [4COW 13 138.00]]	×- - - - - -×	0.20000
1.2000	CHNL# 24: [VOLT 334450 [4ORANGE 138.00]]	+- - - - - -+	0.20000
1.2000	CHNL# 23: [VOLT 335071 [6BTHREE 230.00]]	◇·········◇	0.20000
1.2000	CHNL# 22: [VOLT 334364 [6GEOTOWN 230.00]]	◁— — — —◁	0.20000
1.2000	CHNL# 21: [VOLT 334204 [6CHINA 230.00]]	□————□	0.20000



CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

THU, JUL 31 2008 14:43
PG 4: FREQUENCY

CHNL# 31: CFREQ 334431 CG1SABIN 20.000]]*60+60
61.000 59.000

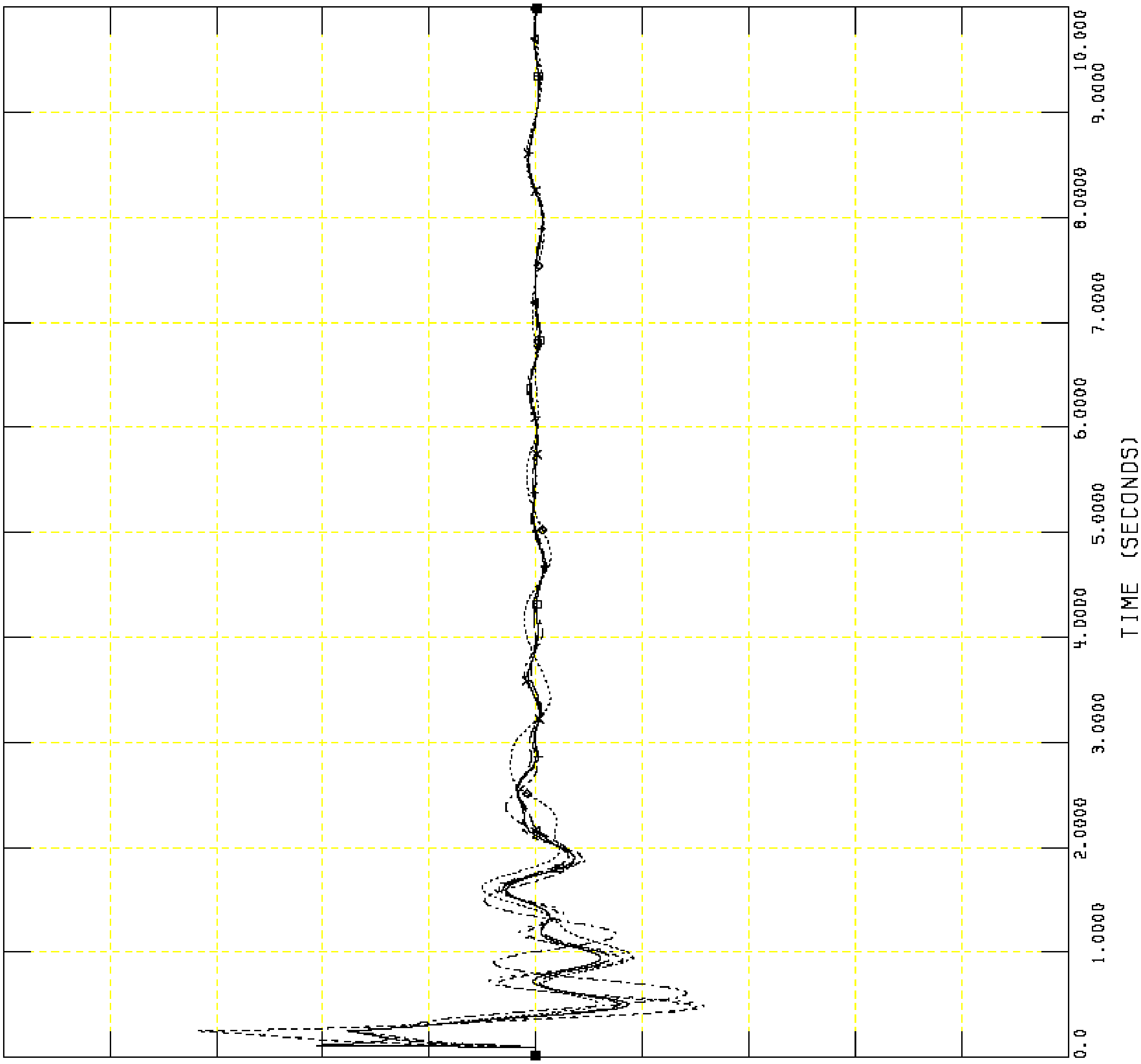
CHNL# 30: CFREQ 334441 CG5SABIN 24.000]]*60+60
61.000 59.000

CHNL# 29: CFREQ 334440 CG4SABIN 24.000]]*60+60
61.000 59.000

CHNL# 28: CFREQ 334036 CPID 217 13.800]]*60+60
61.000 59.000

CHNL# 27: CFREQ 334035 CGULFWAYA 69.000]]*60+60
61.000 59.000

CHNL# 26: CFREQ 334034 CGULFWAY 230.00]]*60+60
61.000 59.000

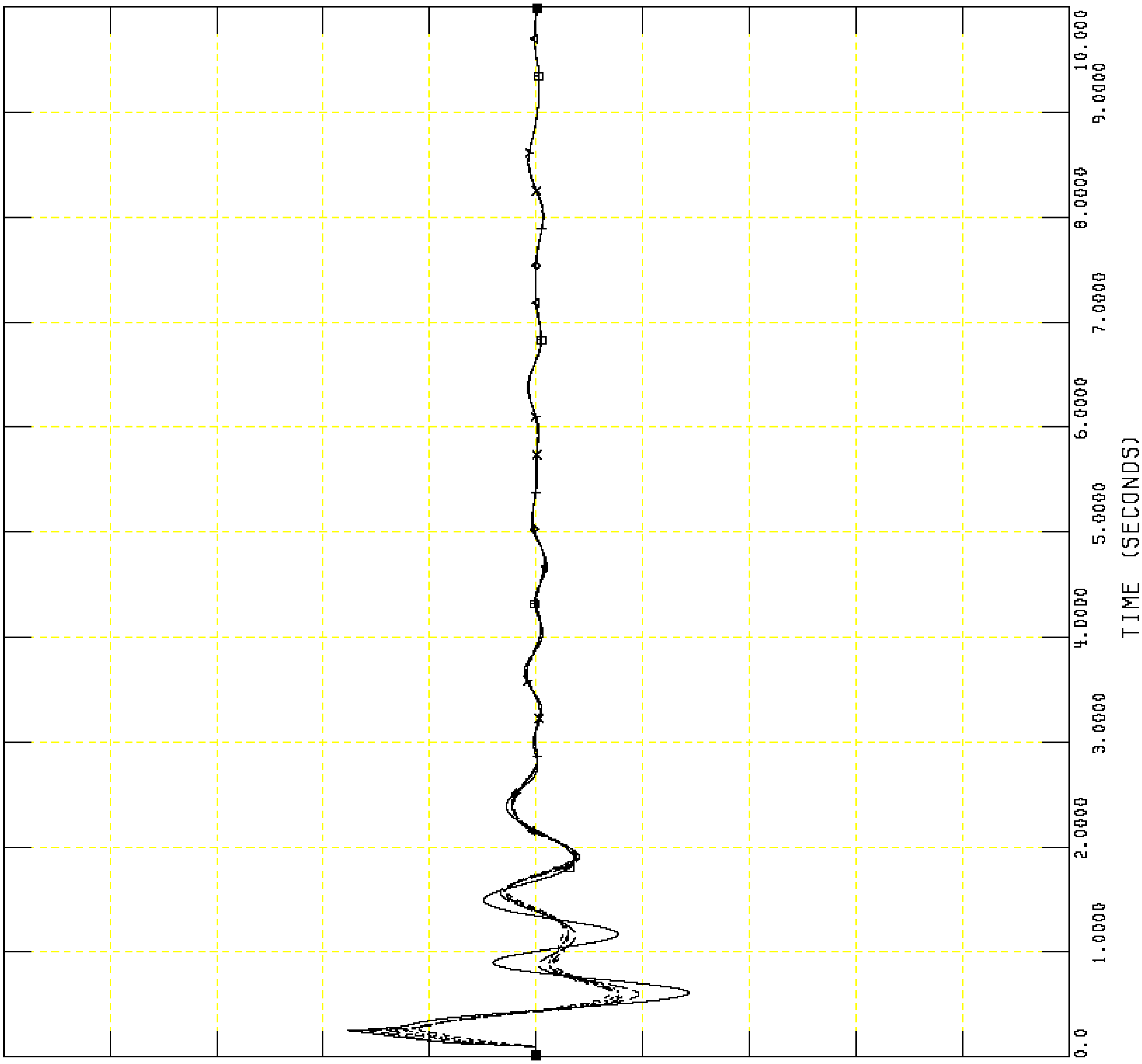


SIEMENS POWER TECHNOLOGIES INTERNATIONAL

CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

THU, JUL 31 2008 14:43
PG 5: FREQUENCY

Channel	Min	Max
CHNL# 37: [FREQ 334414 [4LINDE 138.00]]*60+60	61.000	59.000
CHNL# 36: [FREQ 334413 [4PNEC BK 138.00]]*60+60	61.000	59.000
CHNL# 35: [FREQ 334399 [4NECHESO 138.00]]*60+60	61.000	59.000
CHNL# 34: [FREQ 334398 [4HAMPTON 138.00]]*60+60	61.000	59.000
CHNL# 33: [FREQ 334433 [G3SABIN 22.000]]*60+60	61.000	59.000
CHNL# 32: [FREQ 334432 [G2SABIN 20.000]]*60+60	61.000	59.000



CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

THU, JUL 31 2008 14:43
PG 6: FREQUENCY

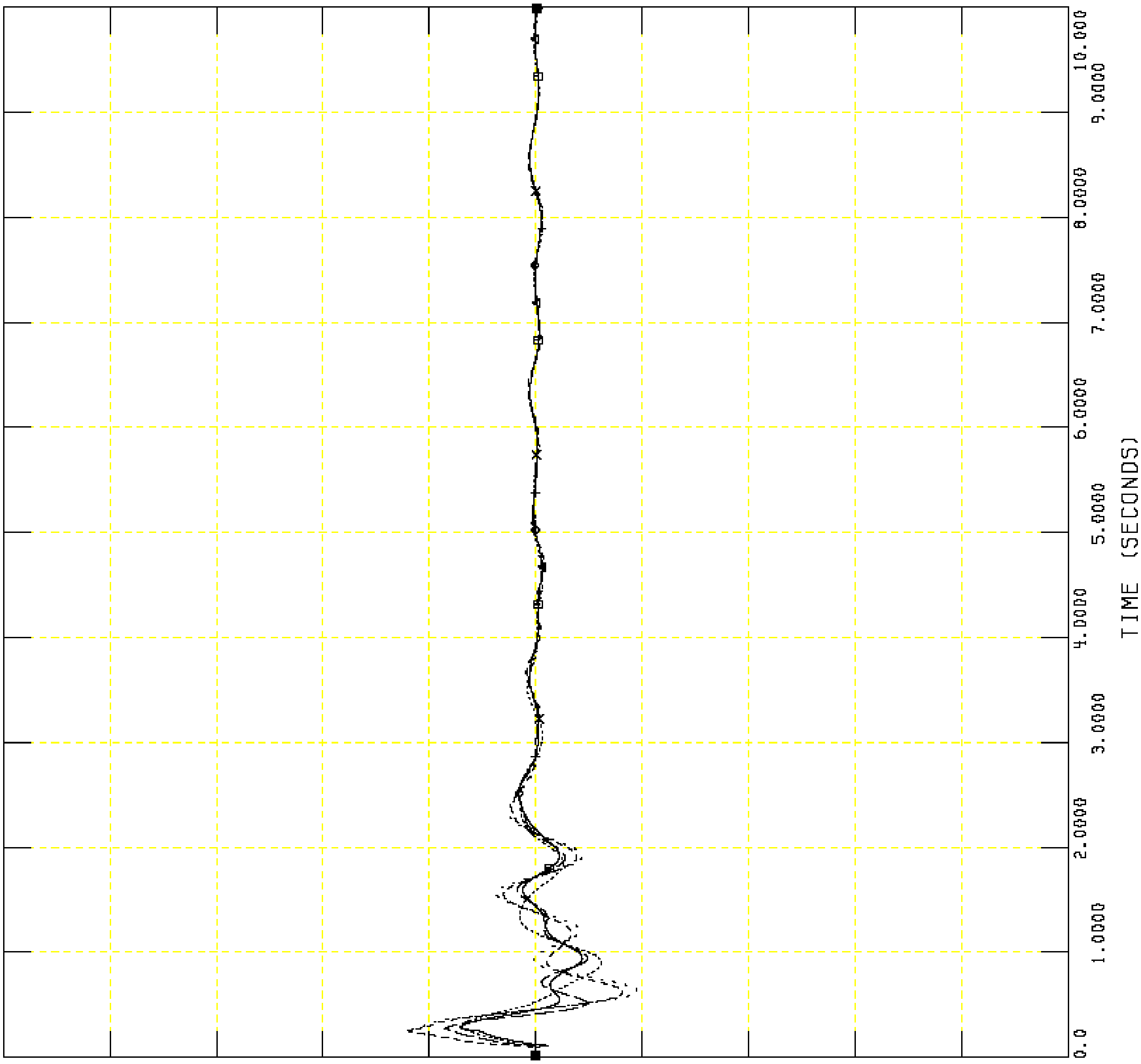
CHNL# 42: CFREQ 334453 C4COW 13 138.00]]*60+60
61.000 59.000

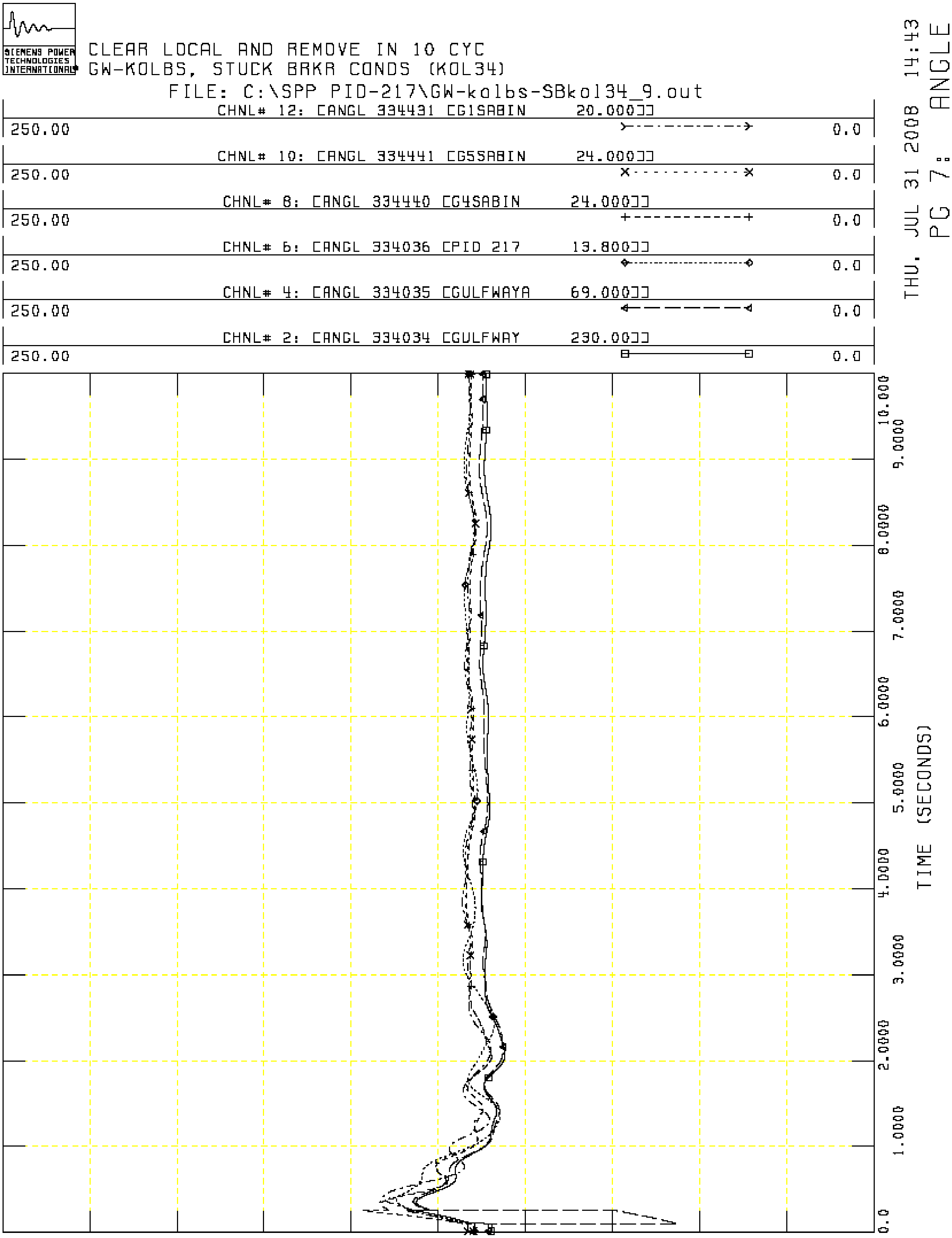
CHNL# 41: CFREQ 334450 C4ORANGE 138.00]]*60+60
61.000 59.000

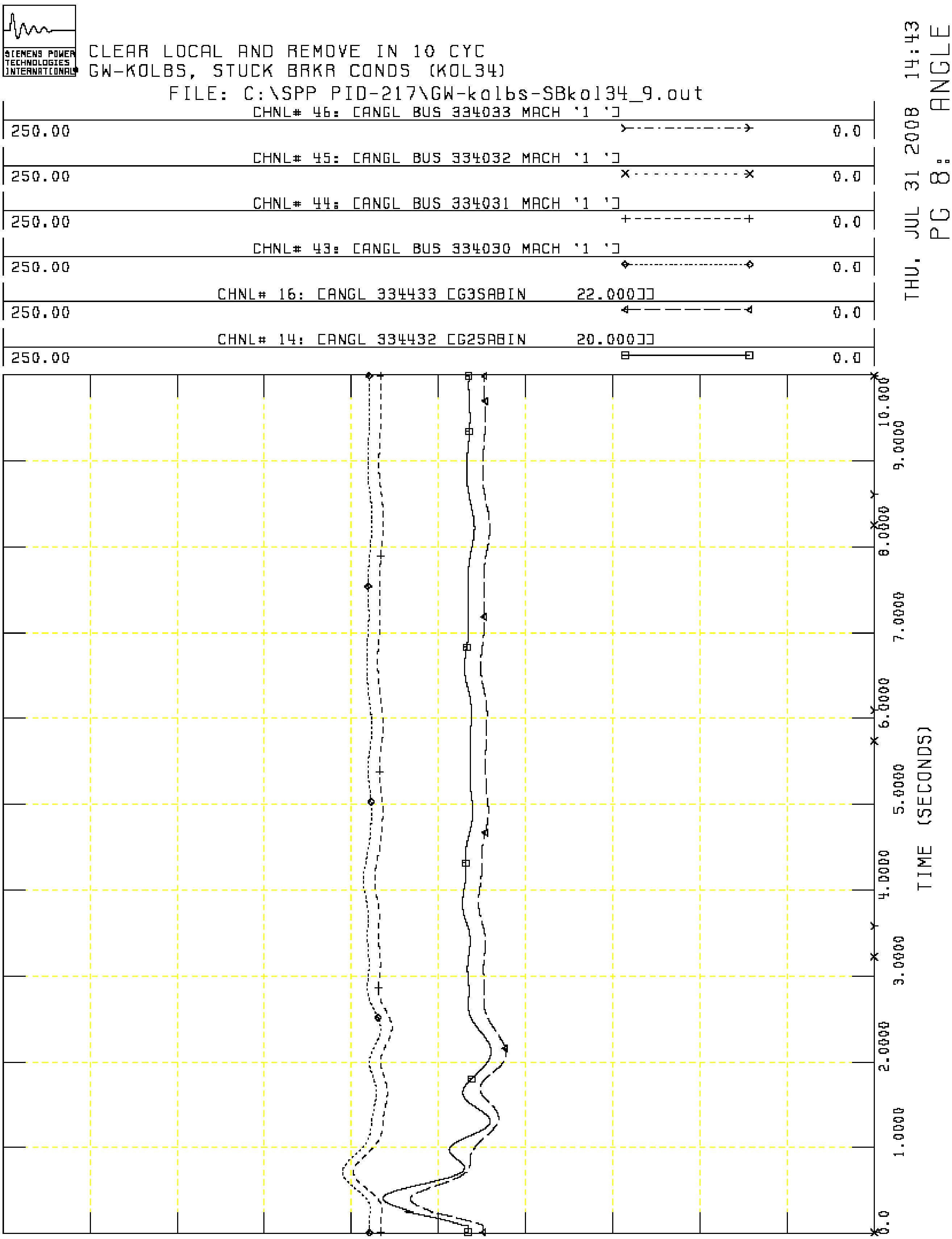
CHNL# 40: CFREQ 335071 C6BTHREE 230.00]]*60+60
61.000 59.000

CHNL# 39: CFREQ 334364 C6GEOTOWN 230.00]]*60+60
61.000 59.000

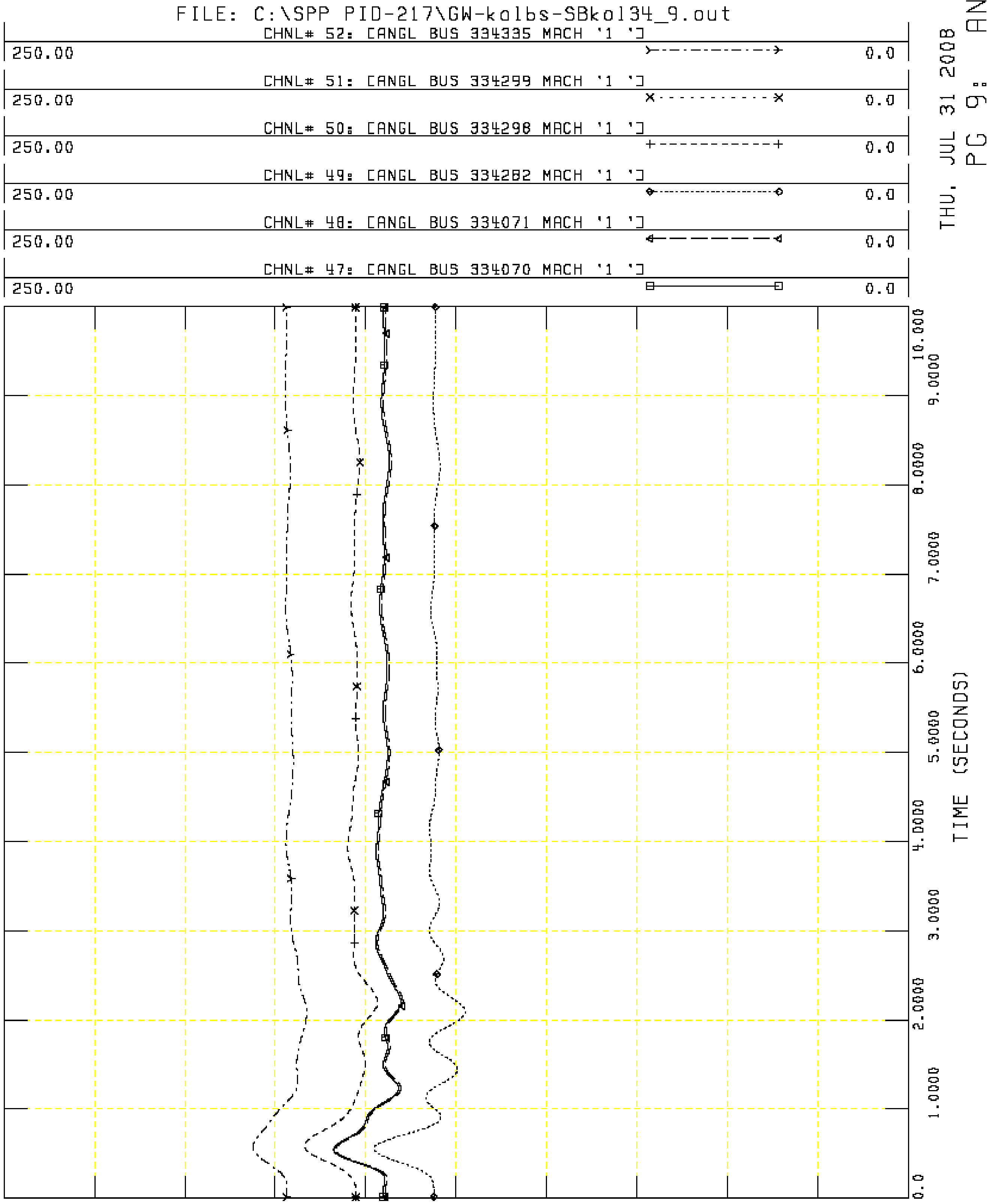
CHNL# 38: CFREQ 334204 C6CHINA 230.00]]*60+60
61.000 59.000

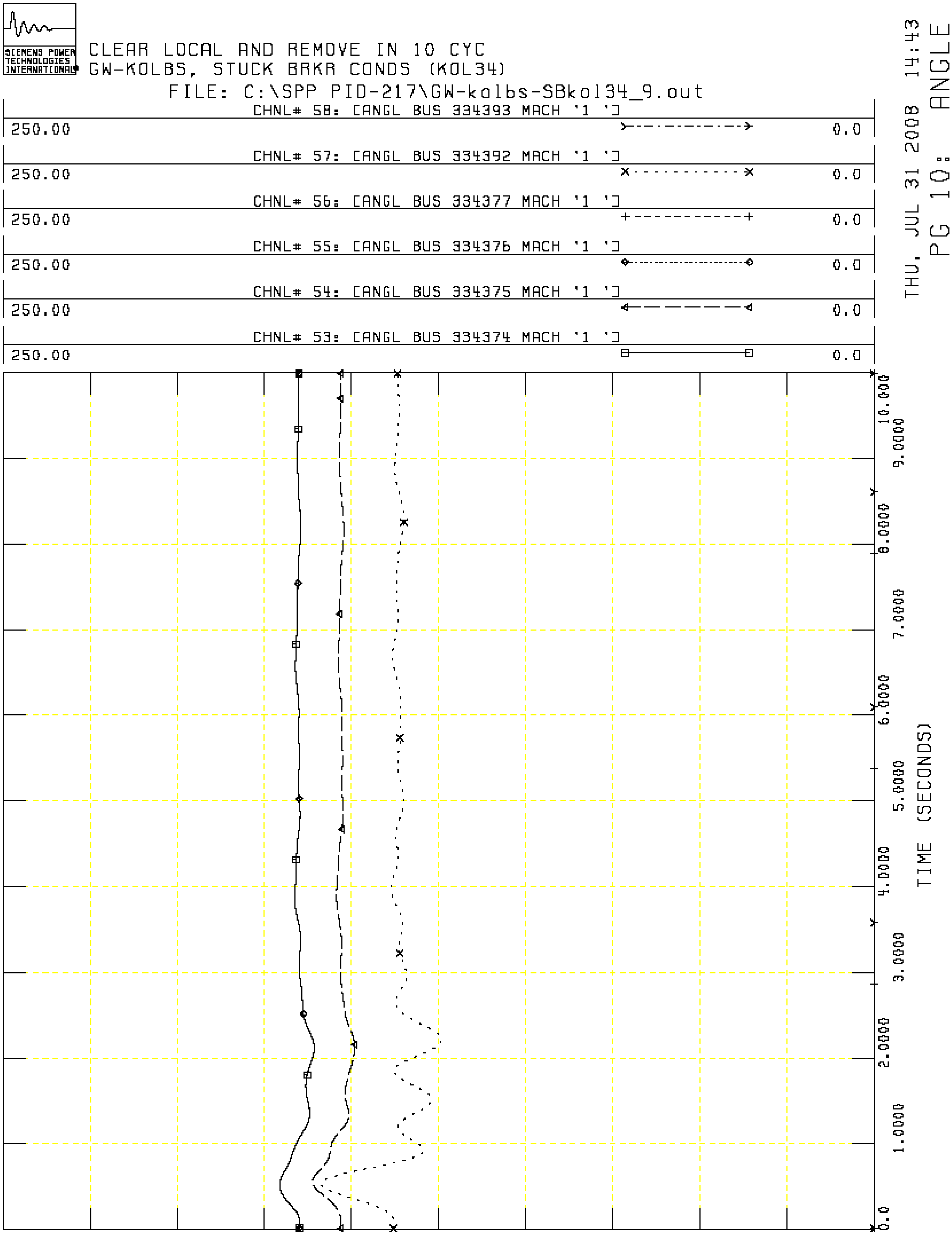



SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]
250.00 0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00 0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00 0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00 0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00 0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.00]]
250.00 0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 14:43
PG 7: ANGLE


SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out
CHNL# 46: [ANGL BUS 334033 MACH '1 ']
250.00
0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']
250.00
0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']
250.00
0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']
250.00
0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]
250.00
0.0
CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]
250.00
0.0
THU, JUL 31 2008 14:43
PG 8: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out




SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out
CHNL# 58: [ANGL BUS 334393 MACH '1 ']
250.00
0.0
CHNL# 57: [ANGL BUS 334392 MACH '1 ']
250.00
0.0
CHNL# 56: [ANGL BUS 334377 MACH '1 ']
250.00
0.0
CHNL# 55: [ANGL BUS 334376 MACH '1 ']
250.00
0.0
CHNL# 54: [ANGL BUS 334375 MACH '1 ']
250.00
0.0
CHNL# 53: [ANGL BUS 334374 MACH '1 ']
250.00
0.0
THU, JUL 31 2008 14:43
PG 10: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)

FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

CHNL# 64: [ANGL BUS 334738 MACH '1 ']
250.00 0.0

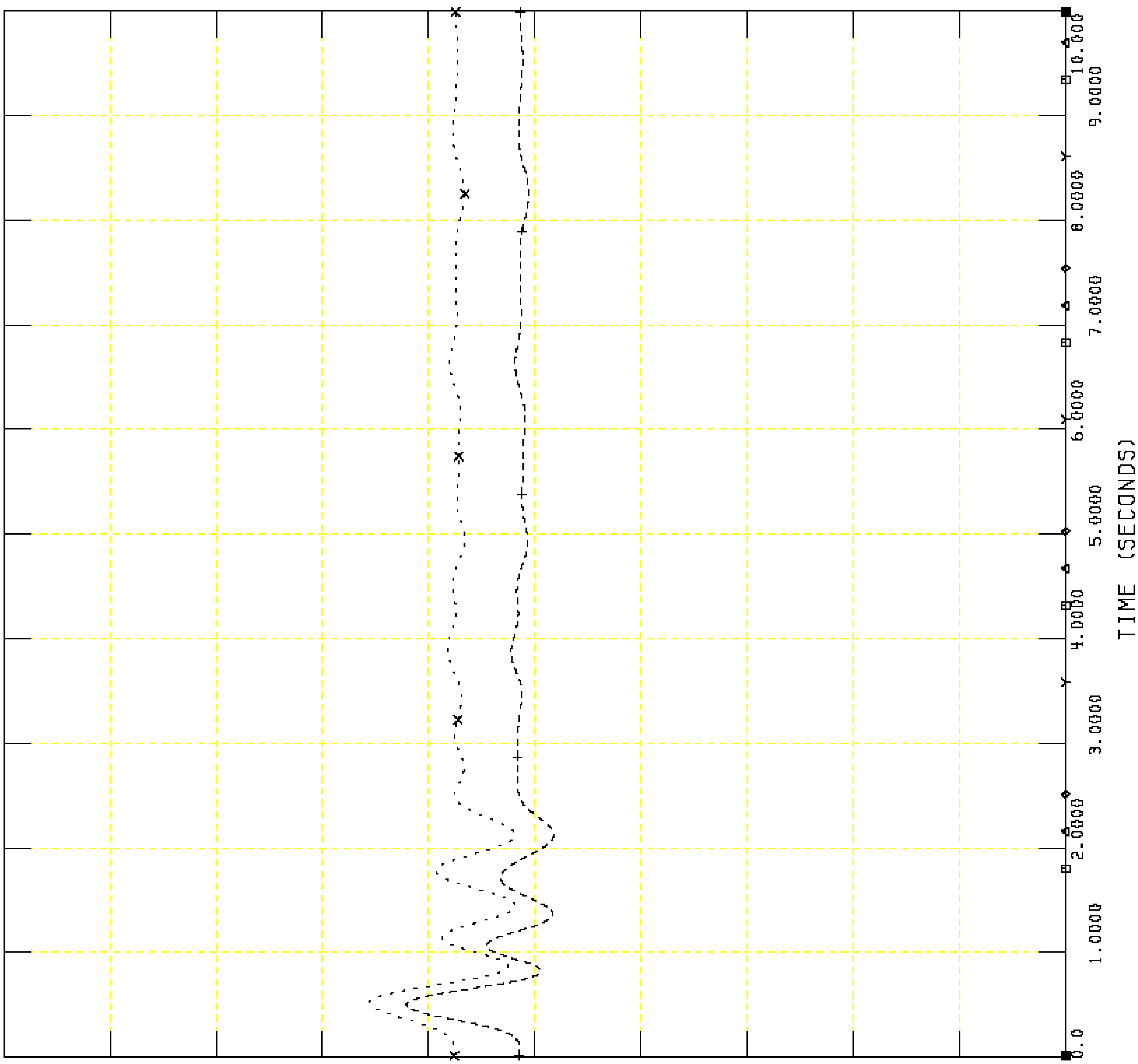
CHNL# 63: [ANGL BUS 334467 MACH '1 ']
250.00 0.0

CHNL# 62: [ANGL BUS 334458 MACH '1 ']
250.00 0.0

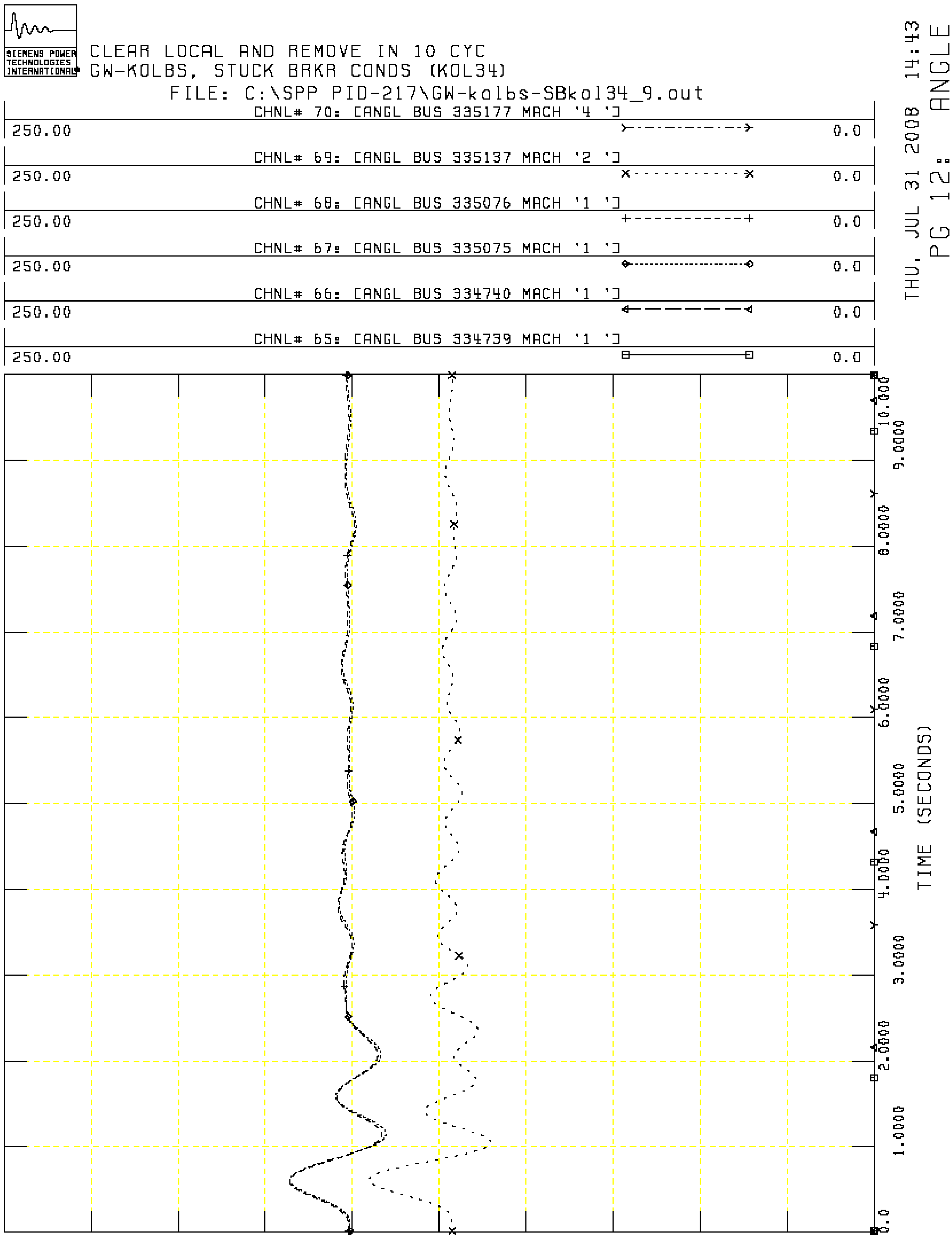
CHNL# 61: [ANGL BUS 334457 MACH '1 ']
250.00 0.0

CHNL# 60: [ANGL BUS 334456 MACH '1 ']
250.00 0.0

CHNL# 59: [ANGL BUS 334394 MACH '1 ']
250.00 0.0



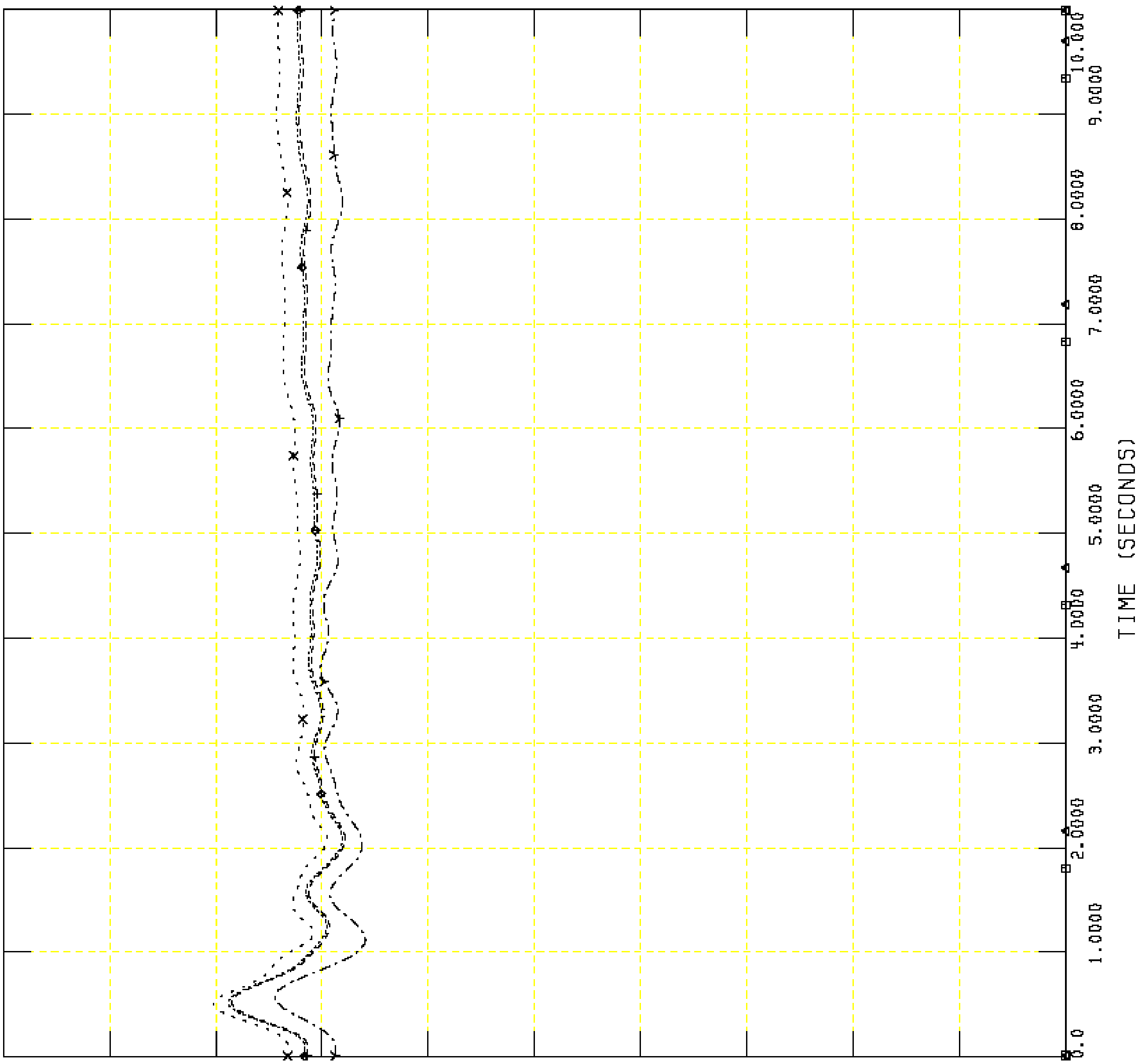
THU, JUL 31 2008 14:43
PG 11: ANGLE


SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out
CHNL# 70: [ANGL BUS 335177 MACH '4 ']
250.00
0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']
250.00
0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']
250.00
0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']
250.00
0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']
250.00
0.0
CHNL# 65: [ANGL BUS 334739 MACH '1 ']
250.00
0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 14:43
PG 12: ANGLE

CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

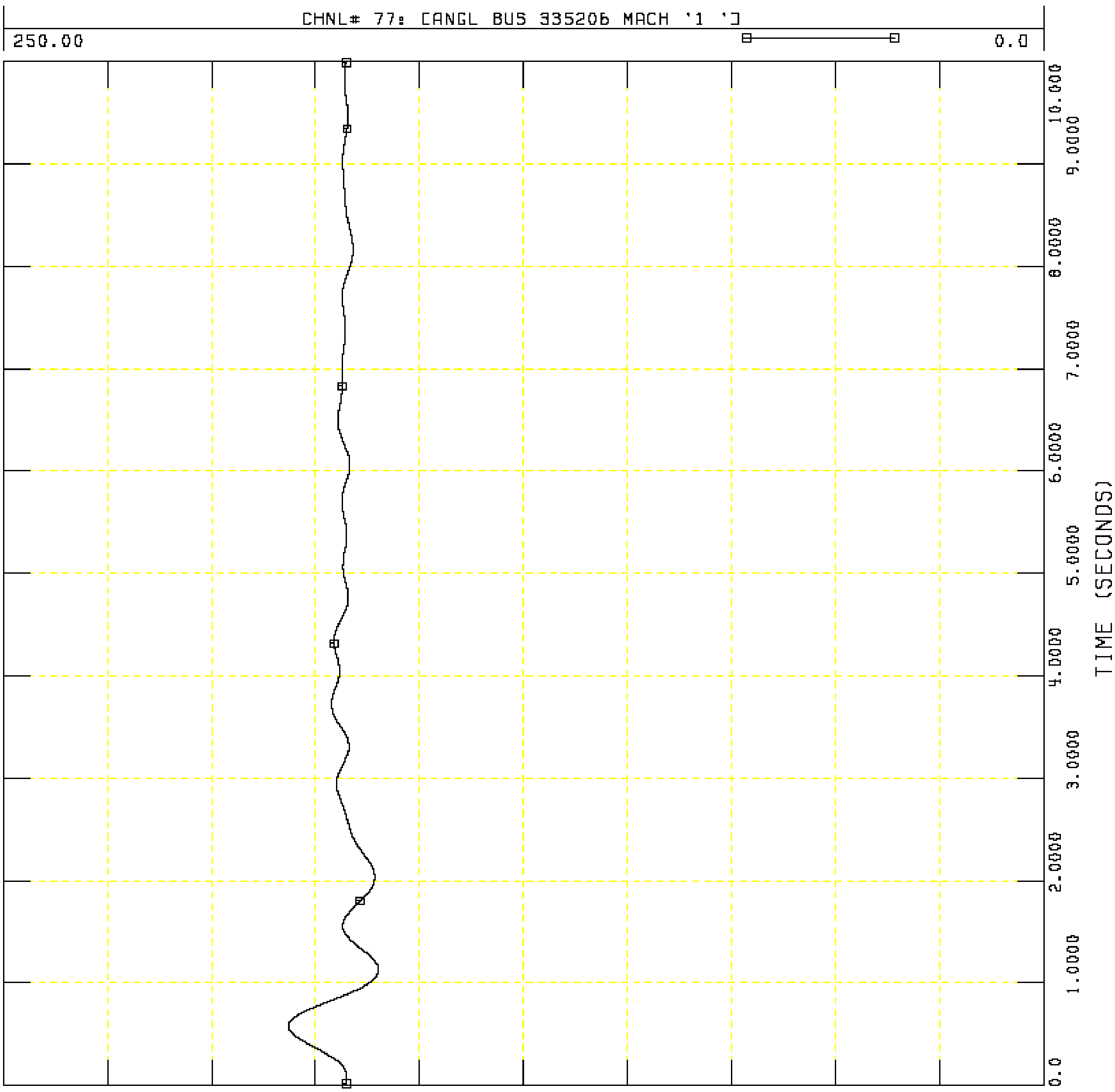
THU, JUL 31 2008 14:43
PG 13: ANGLE

CHNL# 76: [ANGL BUS 335204 MACH '1 '] 250.00 0.0
CHNL# 75: [ANGL BUS 335203 MACH '1 '] 250.00 0.0
CHNL# 74: [ANGL BUS 335202 MACH '1 '] 250.00 0.0
CHNL# 73: [ANGL BUS 335201 MACH '1 '] 250.00 0.0
CHNL# 72: [ANGL BUS 335179 MACH '6 '] 250.00 0.0
CHNL# 71: [ANGL BUS 335178 MACH '5 '] 250.00 0.0

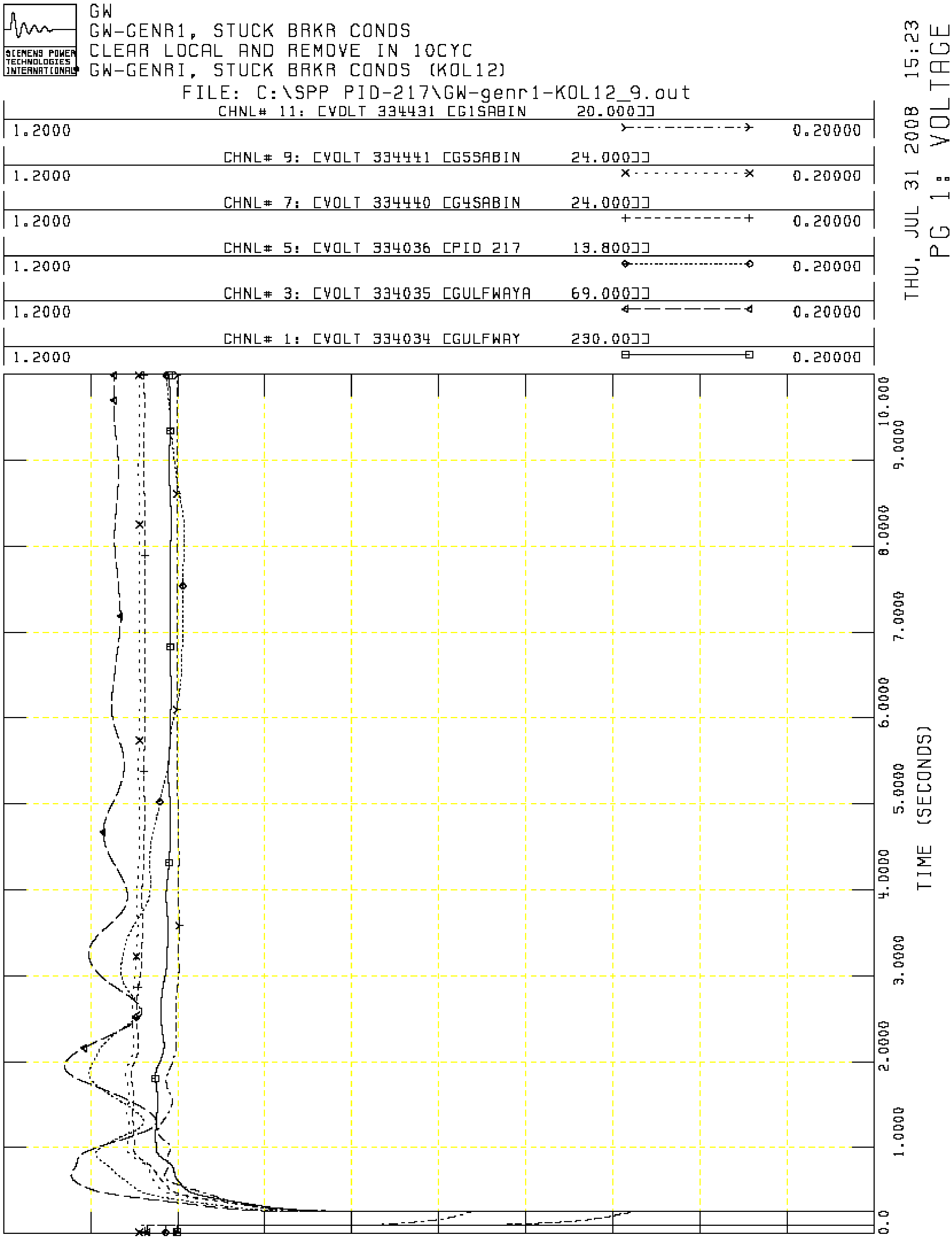


CLEAR LOCAL AND REMOVE IN 10 CYC
GW-KOLBS, STUCK BRKR CONDS (KOL34)
FILE: C:\SPP PID-217\GW-kolbs-SBkol34_9.out

THU, JUL 31 2008 14:43
PG 14: ANGLE



FAULT REFERENCE NO. 5
FAULT-GENR1-STUCK BKR –KOL12- LOCATION GULFWAY GENR1

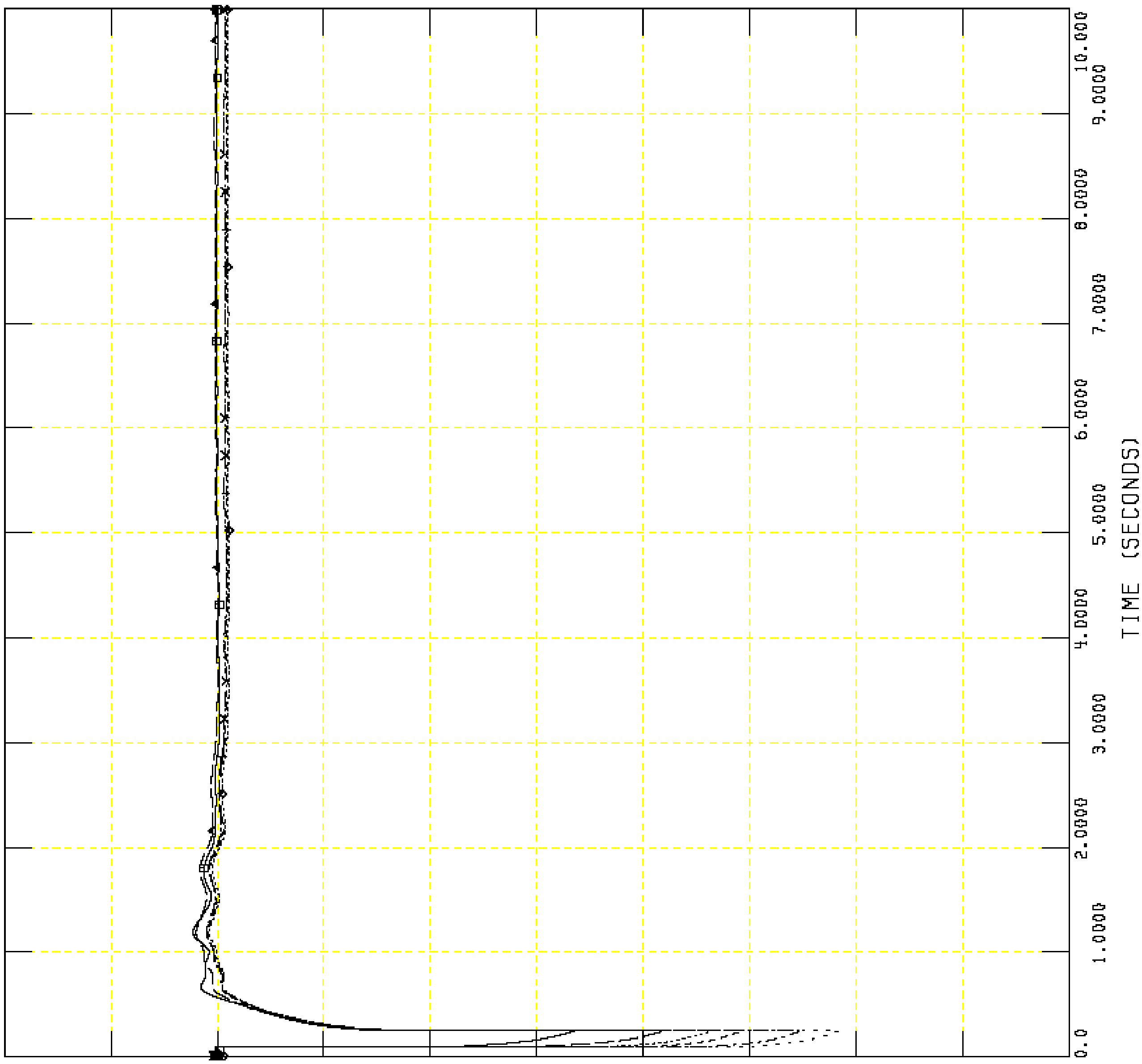

SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out
CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]
1.2000 0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000 0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000 0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000 0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000 0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000 0.20000
THU, JUL 31 2008 15:23
PG 1: VOLTAGE
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)

FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

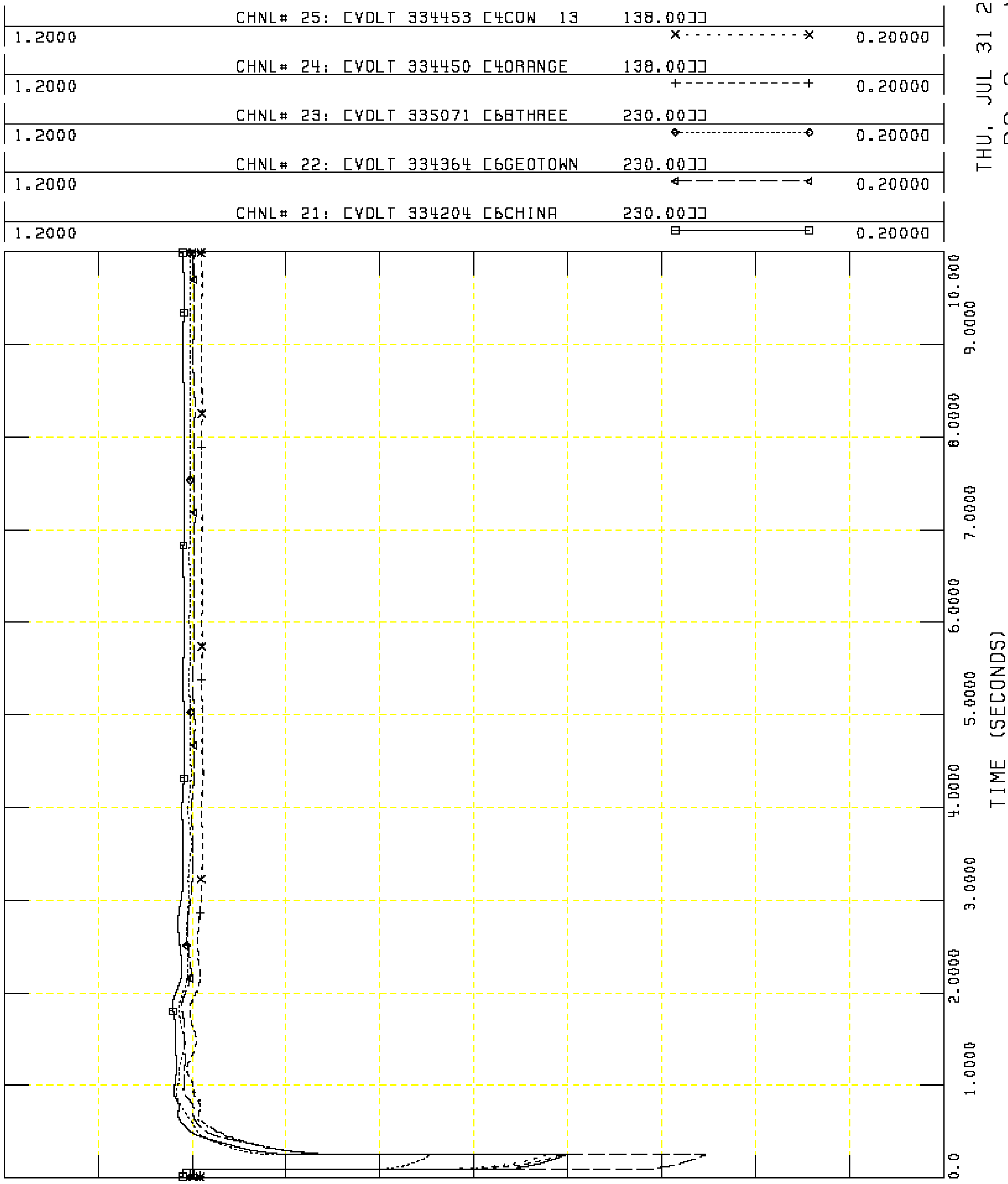
THU, JUL 31 2008 15:24
PG 2: VOLTAGE

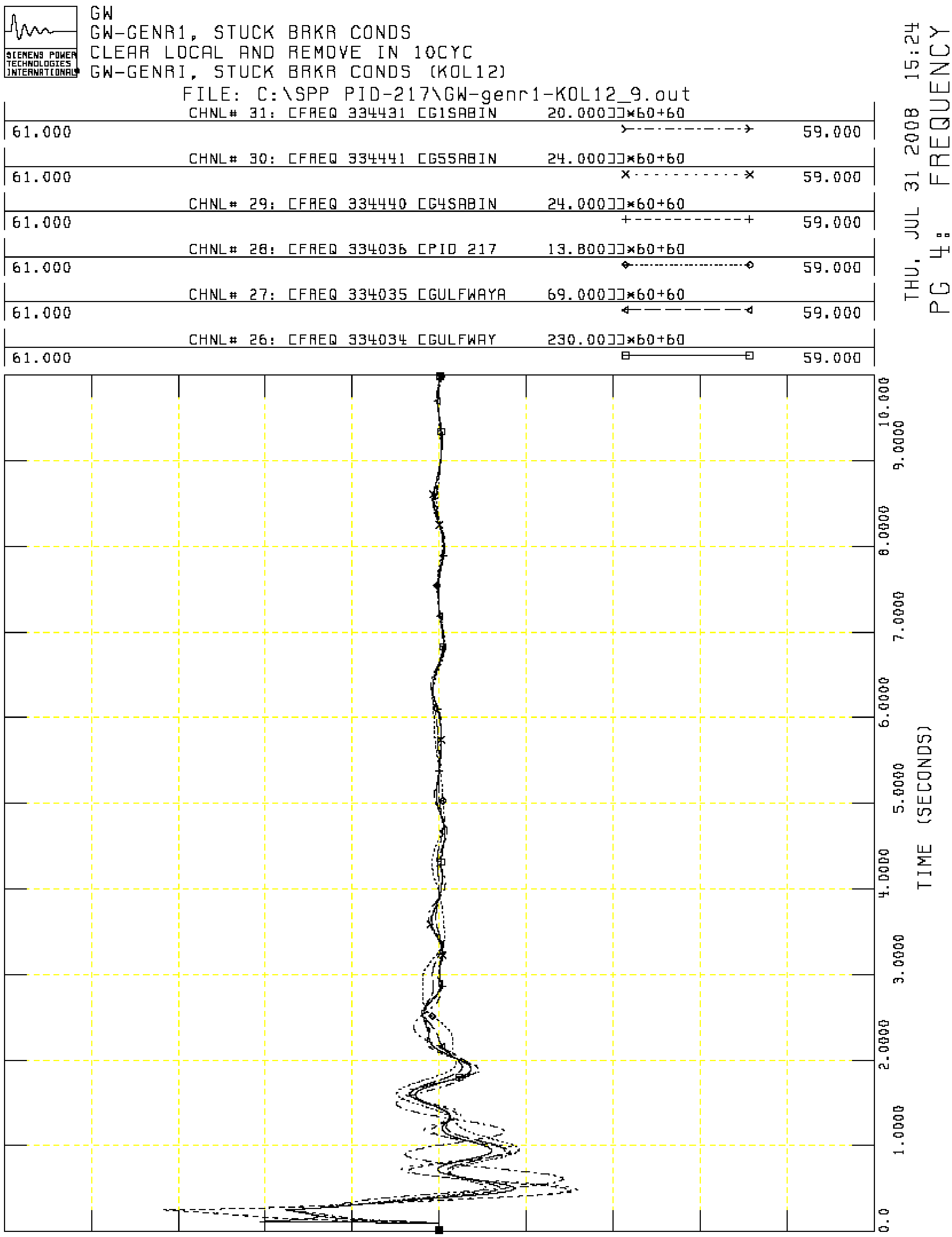
Channel	Min	Max
CHNL# 20: [VOLT 334414 [4LINDE 138.00]]	1.2000	0.20000
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]	1.2000	0.20000
CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]	1.2000	0.20000
CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]	1.2000	0.20000
CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]	1.2000	0.20000
CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]	1.2000	0.20000



GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

THU, JUL 31 2008 15:24
PG 3: VOLTAGE



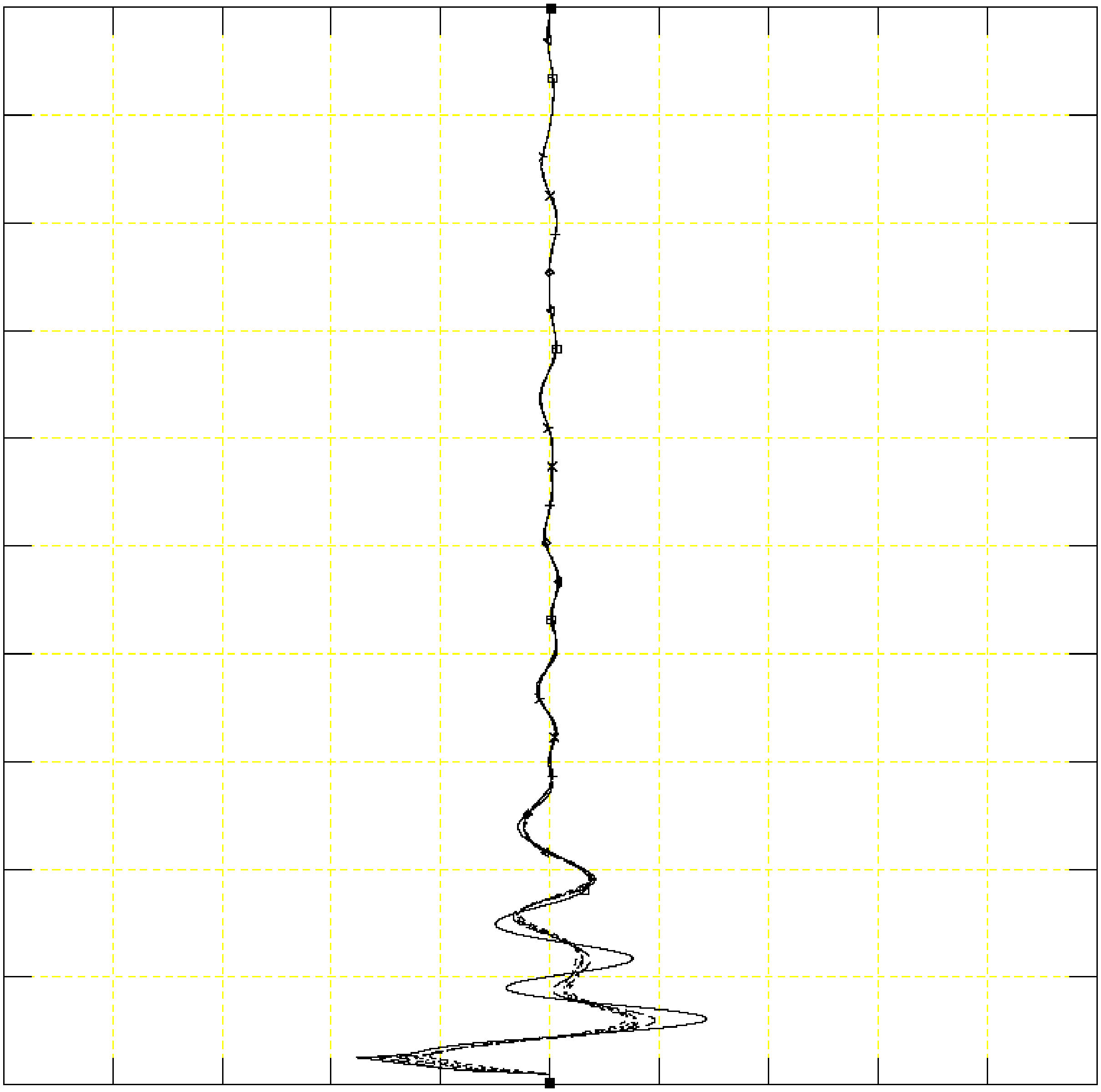

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out
CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60
61.000 59.000
CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60
61.000 59.000
CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60
61.000 59.000
CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60
61.000 59.000
CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60
61.000 59.000
CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60
61.000 59.000
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 15:24
PG 4: FREQUENCY
SIEMENS POWER TECHNOLOGIES INTERNATIONAL

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)

FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

THU, JUL 31 2008 15:24
PG 5: FREQUENCY

61.000	CHNL# 37: CFREQ 334414 C4LINDE	138.00]]*60+60	59.000
61.000	CHNL# 36: CFREQ 334413 C4PNEC BK	138.00]]*60+60	59.000
61.000	CHNL# 35: CFREQ 334399 C4NECHESO	138.00]]*60+60	59.000
61.000	CHNL# 34: CFREQ 334398 C4HAMPTDN	138.00]]*60+60	59.000
61.000	CHNL# 33: CFREQ 334433 CG3SABIN	22.000]]*60+60	59.000
61.000	CHNL# 32: CFREQ 334432 CG2SABIN	20.000]]*60+60	59.000



GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

THU, JUL 31 2008 15:24
PG 6: FREQUENCY

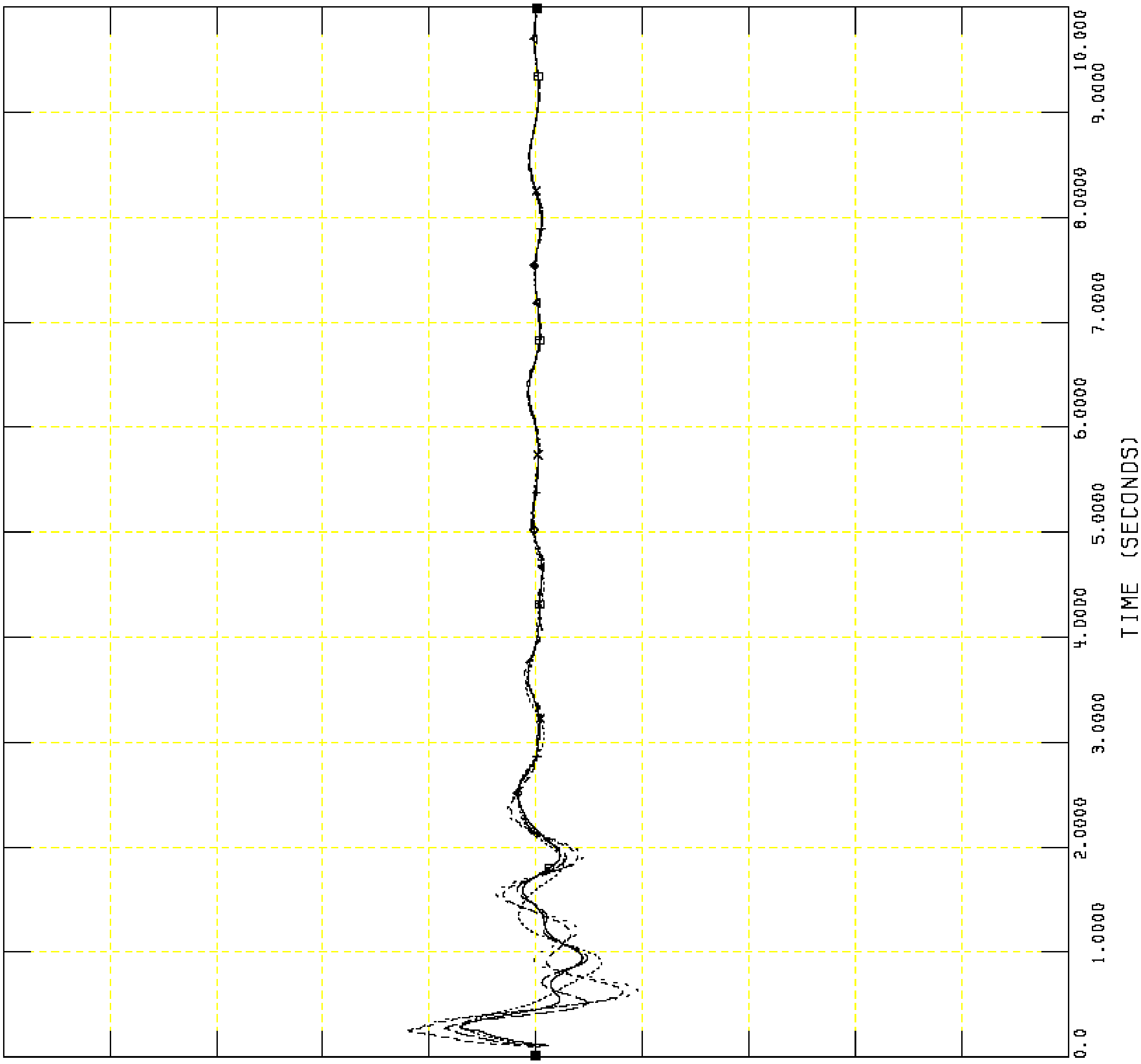
CHNL# 42: CFREQ 334453 C4COW 13 138.00]]*60+60
61.000 59.000

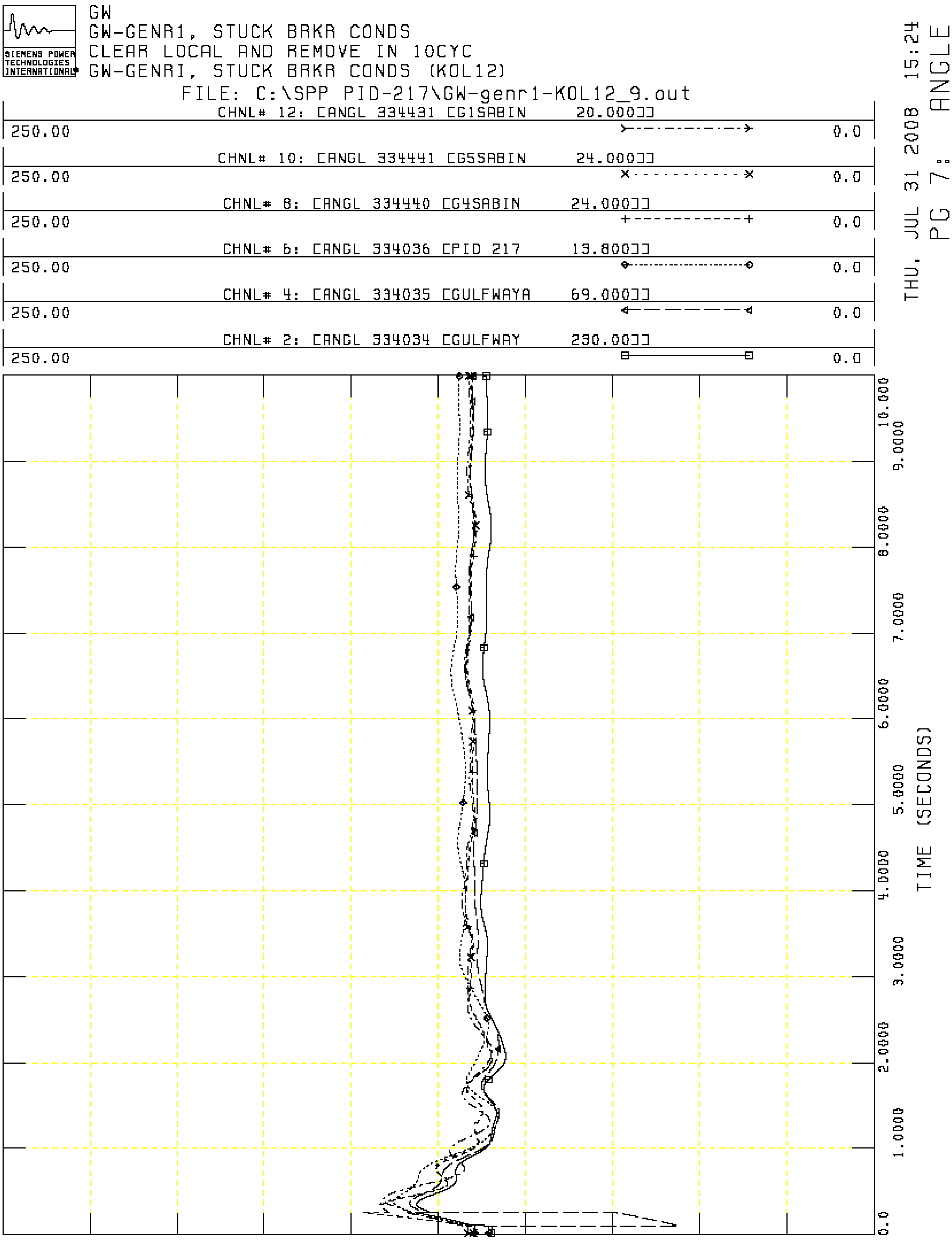
CHNL# 41: CFREQ 334450 C4ORANGE 138.00]]*60+60
61.000 59.000

CHNL# 40: CFREQ 335071 C68THREE 230.00]]*60+60
61.000 59.000

CHNL# 39: CFREQ 334364 C6GEOTOWN 230.00]]*60+60
61.000 59.000

CHNL# 38: CFREQ 334204 C6CHINA 230.00]]*60+60
61.000 59.000



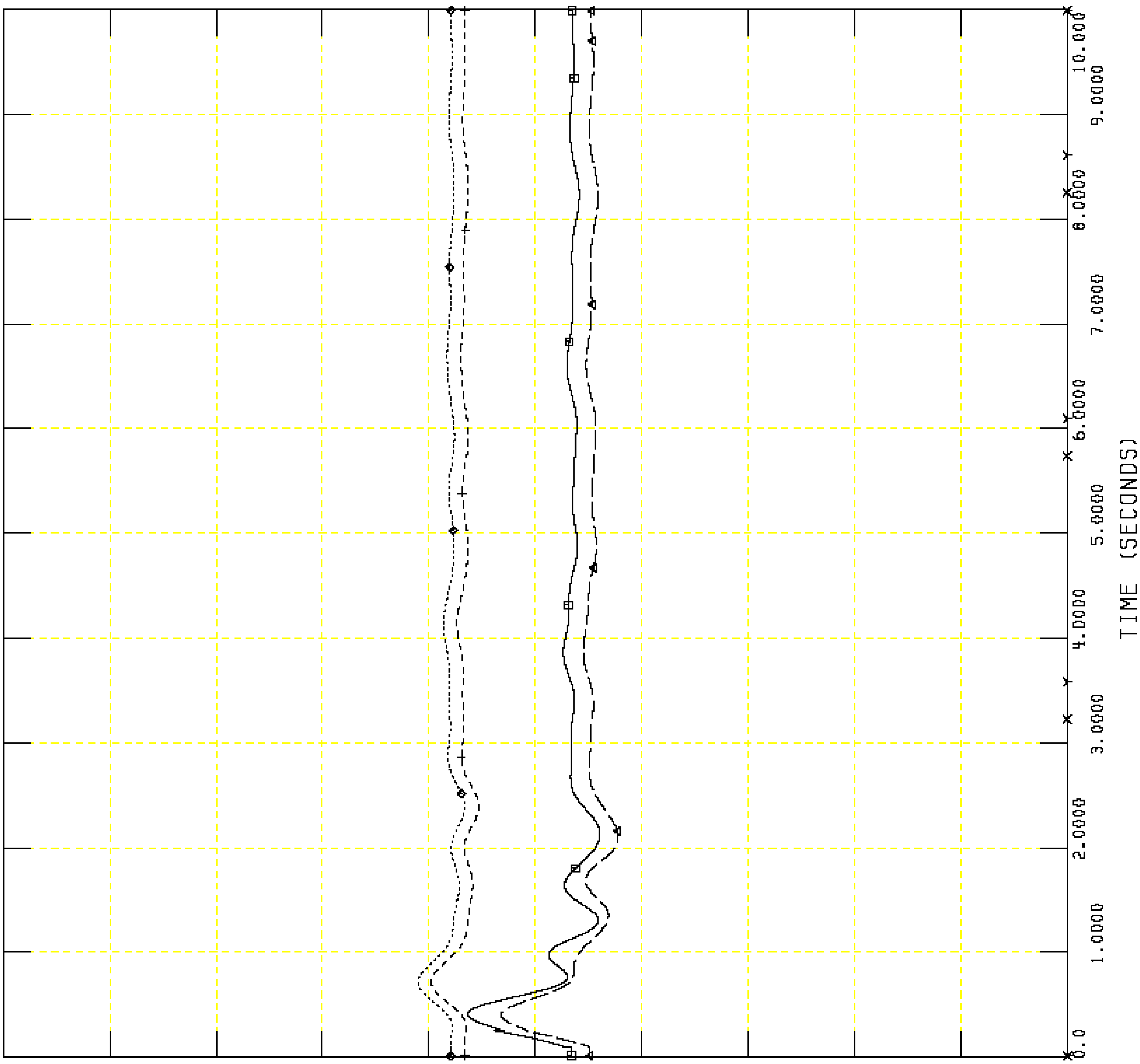

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]
250.00
0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00
0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00
0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00
0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00
0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.000]]
250.00
0.0
THU, JUL 31 2008 15:24
PG 7: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)

FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

THU, JUL 31 2008 15:24
PG 8: ANGLE

Min	Channel	Max
250.00	CHNL# 46: [ANGL BUS 334033 MACH '1 ']	0.0
250.00	CHNL# 45: [ANGL BUS 334032 MACH '1 ']	0.0
250.00	CHNL# 44: [ANGL BUS 334031 MACH '1 ']	0.0
250.00	CHNL# 43: [ANGL BUS 334030 MACH '1 ']	0.0
250.00	CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]	0.0
250.00	CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]	0.0

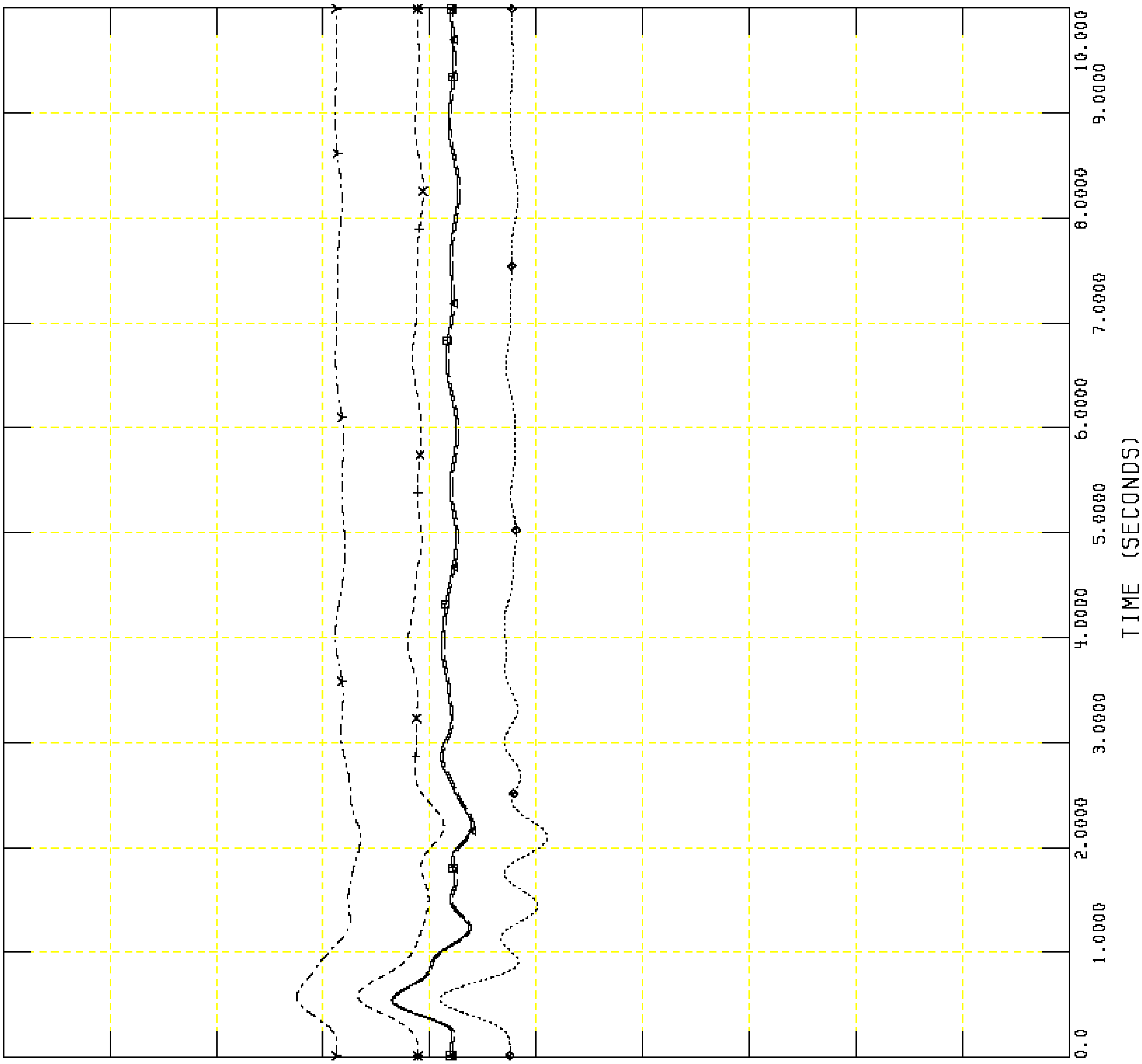


GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)

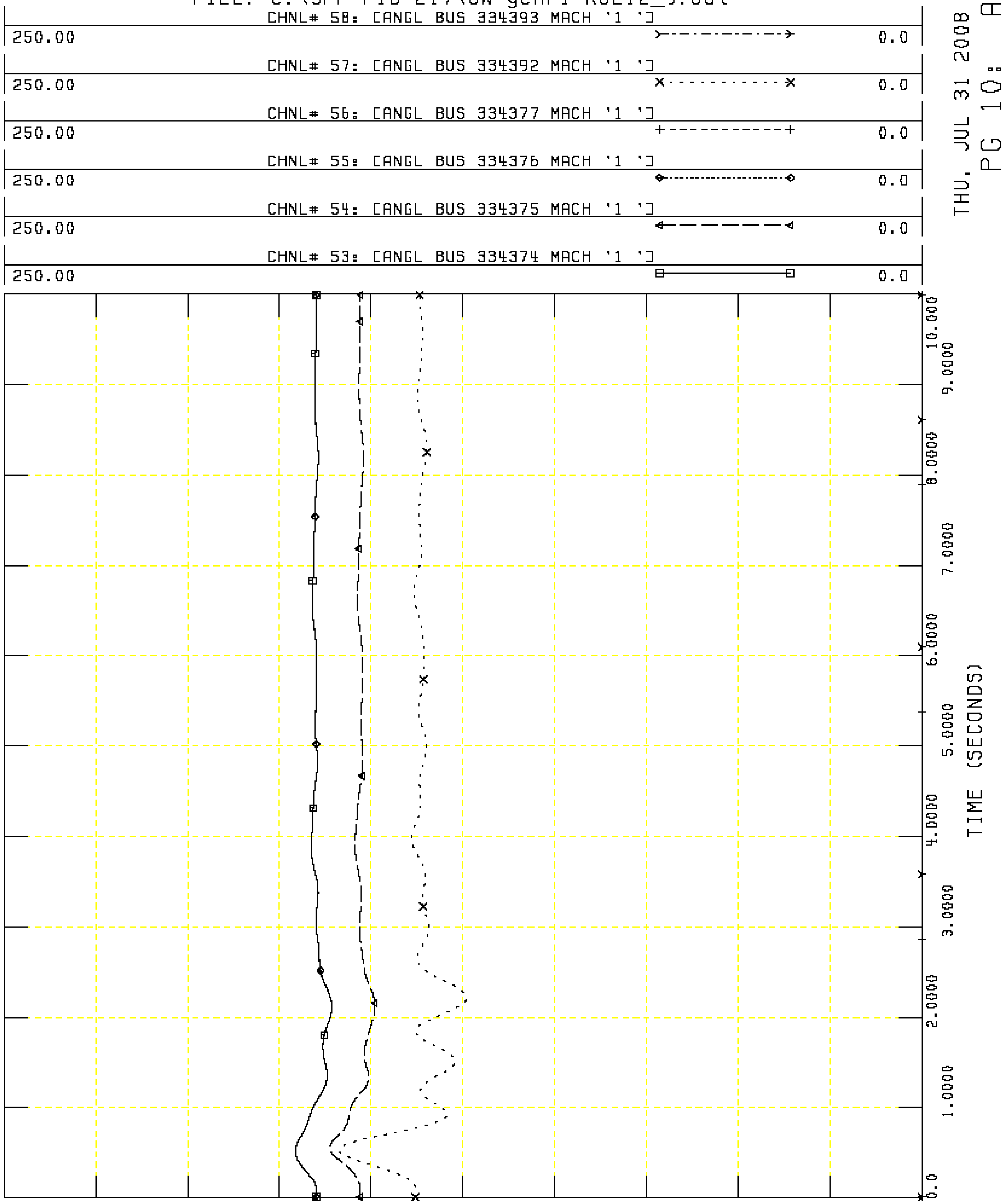
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

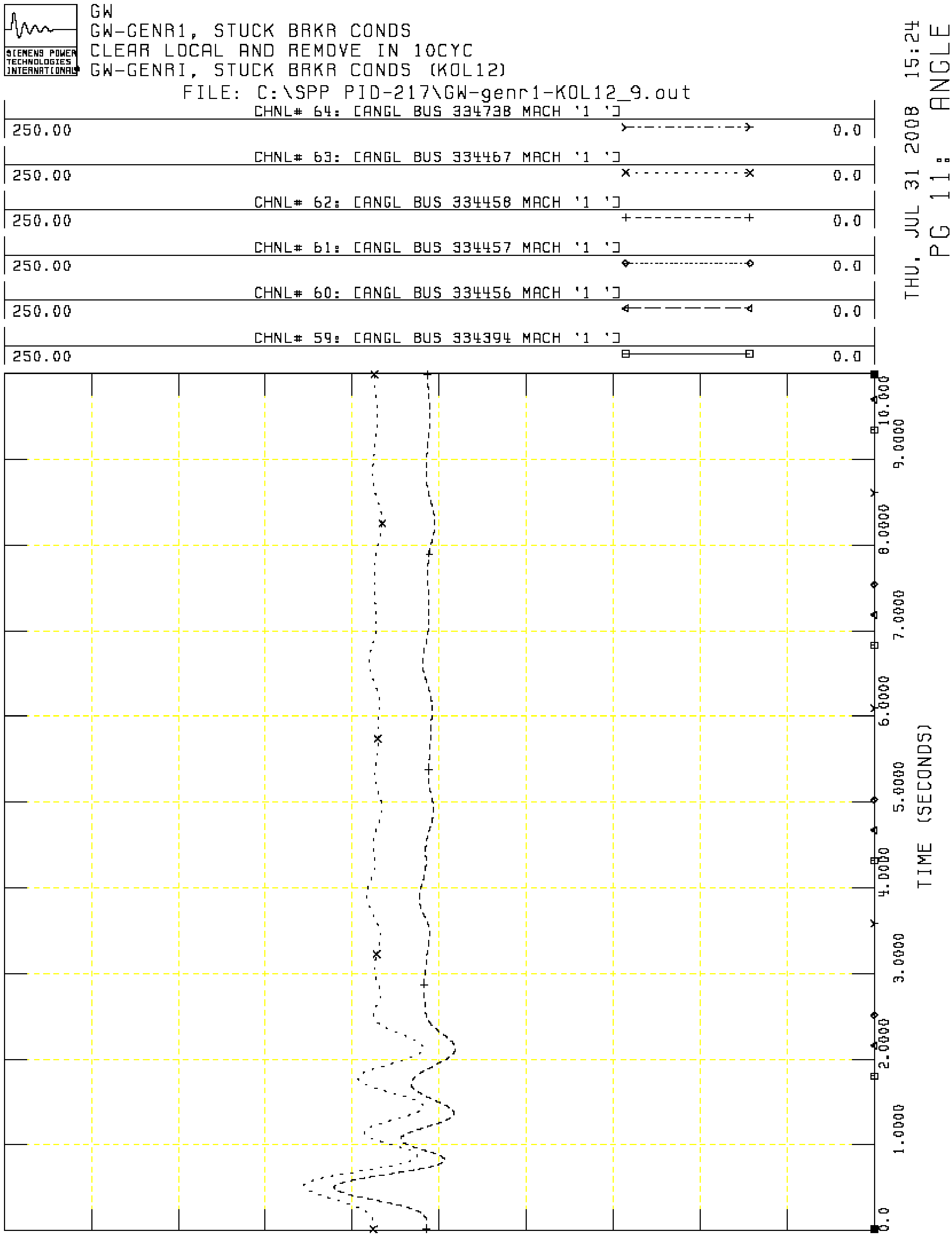
THU, JUL 31 2008 15:24
PG 9: ANGLE

Min	Channel	Max
250.00	CHNL# 52: [ANGL BUS 334335 MACH '1 ']	0.0
250.00	CHNL# 51: [ANGL BUS 334299 MACH '1 ']	0.0
250.00	CHNL# 50: [ANGL BUS 334298 MACH '1 ']	0.0
250.00	CHNL# 49: [ANGL BUS 334282 MACH '1 ']	0.0
250.00	CHNL# 48: [ANGL BUS 334071 MACH '1 ']	0.0
250.00	CHNL# 47: [ANGL BUS 334070 MACH '1 ']	0.0



GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out



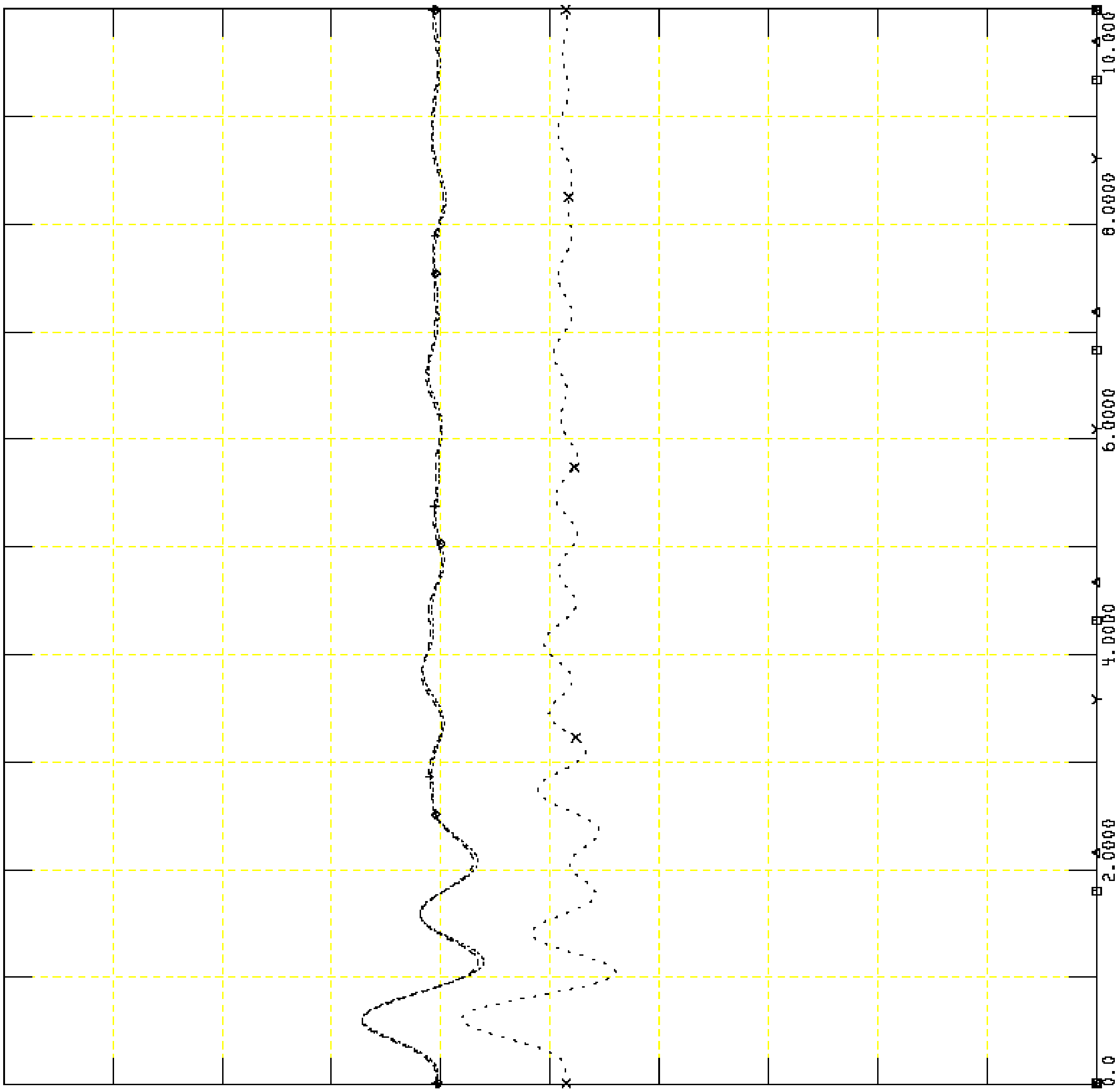

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out
CHNL# 64: [ANGL BUS 334738 MACH '1 ']
250.00
0.0
CHNL# 63: [ANGL BUS 334467 MACH '1 ']
250.00
0.0
CHNL# 62: [ANGL BUS 334458 MACH '1 ']
250.00
0.0
CHNL# 61: [ANGL BUS 334457 MACH '1 ']
250.00
0.0
CHNL# 60: [ANGL BUS 334456 MACH '1 ']
250.00
0.0
CHNL# 59: [ANGL BUS 334394 MACH '1 ']
250.00
0.0
THU, JUL 31 2008 15:24
PG 11: ANGLE
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

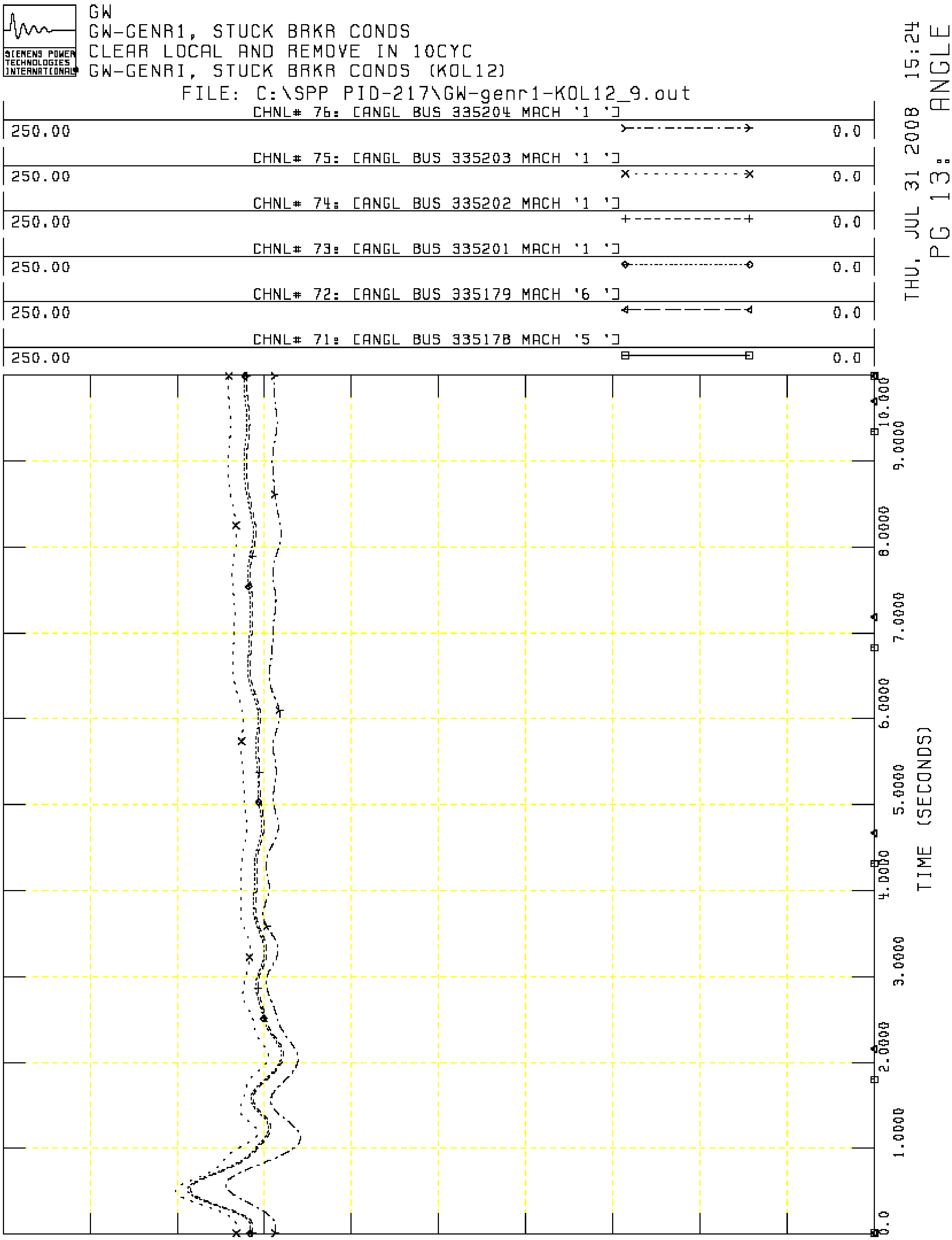
GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)

FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

THU, JUL 31 2008 15:24
PG 12: ANGLE

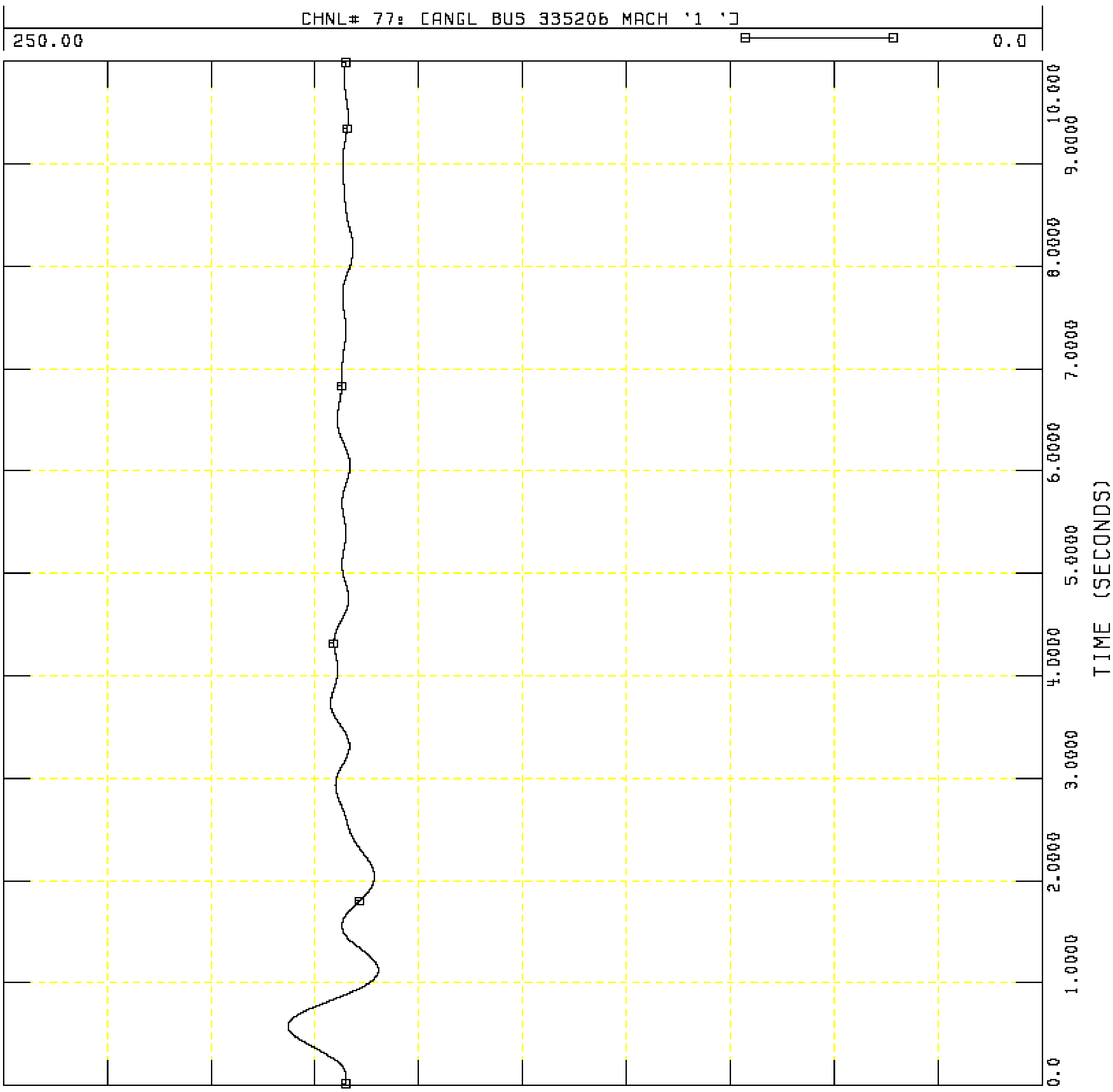
CHNL# 70: [ANGL BUS 335177 MACH '4 ']		
250.00		0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']		
250.00		0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']		
250.00		0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']		
250.00		0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']		
250.00		0.0
CHNL# 65: [ANGL BUS 334739 MACH '1 ']		
250.00		0.0



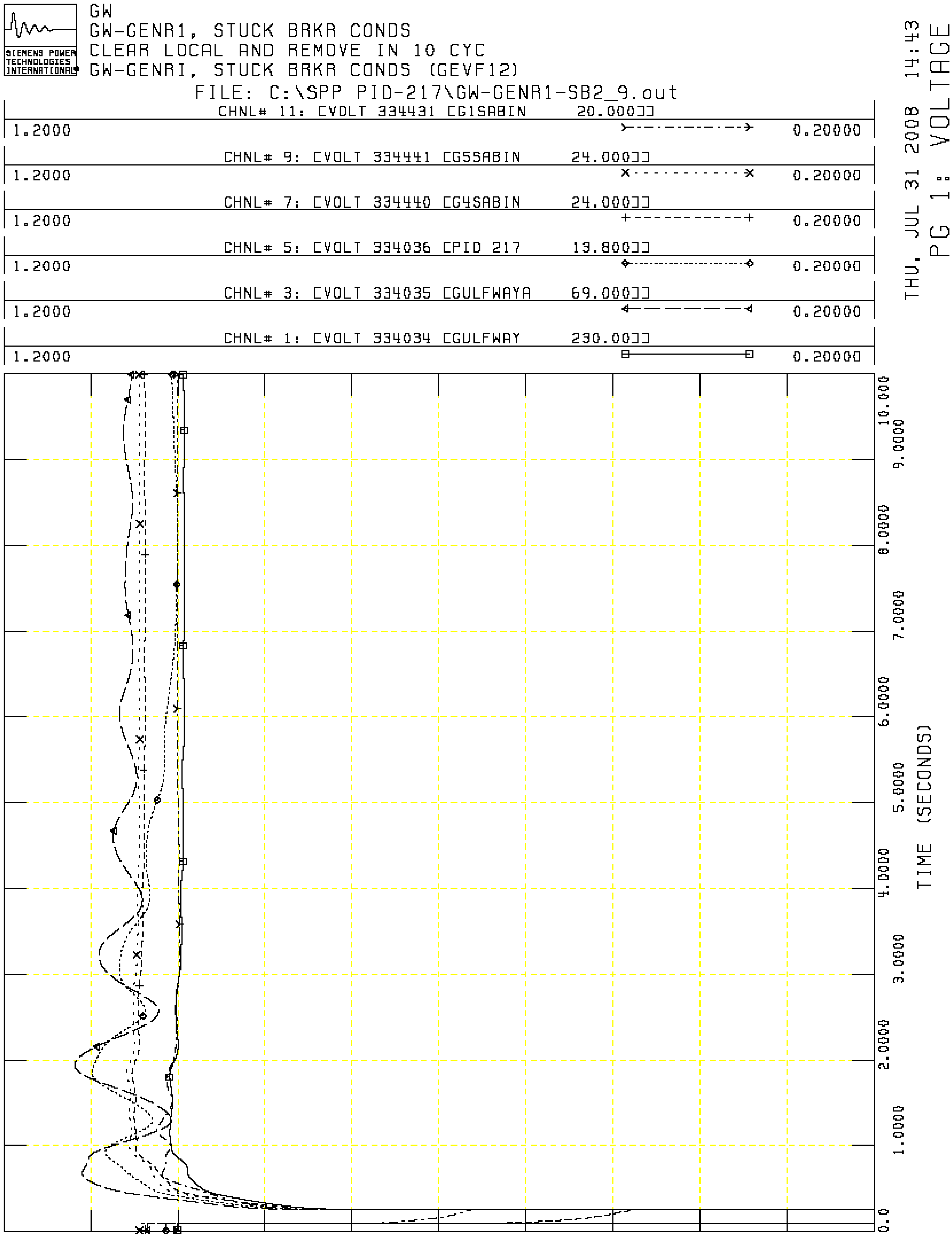

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out
CHNL# 76: [ANGL BUS 335204 MACH '1 ']
250.00 0.0
CHNL# 75: [ANGL BUS 335203 MACH '1 ']
250.00 0.0
CHNL# 74: [ANGL BUS 335202 MACH '1 ']
250.00 0.0
CHNL# 73: [ANGL BUS 335201 MACH '1 ']
250.00 0.0
CHNL# 72: [ANGL BUS 335179 MACH '6 ']
250.00 0.0
CHNL# 71: [ANGL BUS 335178 MACH '5 ']
250.00 0.0
THU, JUL 31 2008 15:24
PG 13: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
SIEMENS POWER TECHNOLOGIES INTERNATIONAL

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10CYC
GW-GENRI, STUCK BRKR CONDS (KOL12)
FILE: C:\SPP PID-217\GW-genr1-KOL12_9.out

THU, JUL 31 2008 15:24
PG 14: ANGLE



FAULT REFERECNE NO. 6
FAULT-GENR1-STUCK BKR2 –GEVF12- LOCATION GULFWAY GENR1


GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]
1.2000
0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000
0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000
0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000
0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000
0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000
0.20000
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 14:43
PG 1: VOLTAGE

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)

THU, JUL 31 2008 14:43
PG 2: VOLTAGE

FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out

CHNL# 20: [VOLT 334414 [4LINDE 138.00]]
1.2000 0.20000

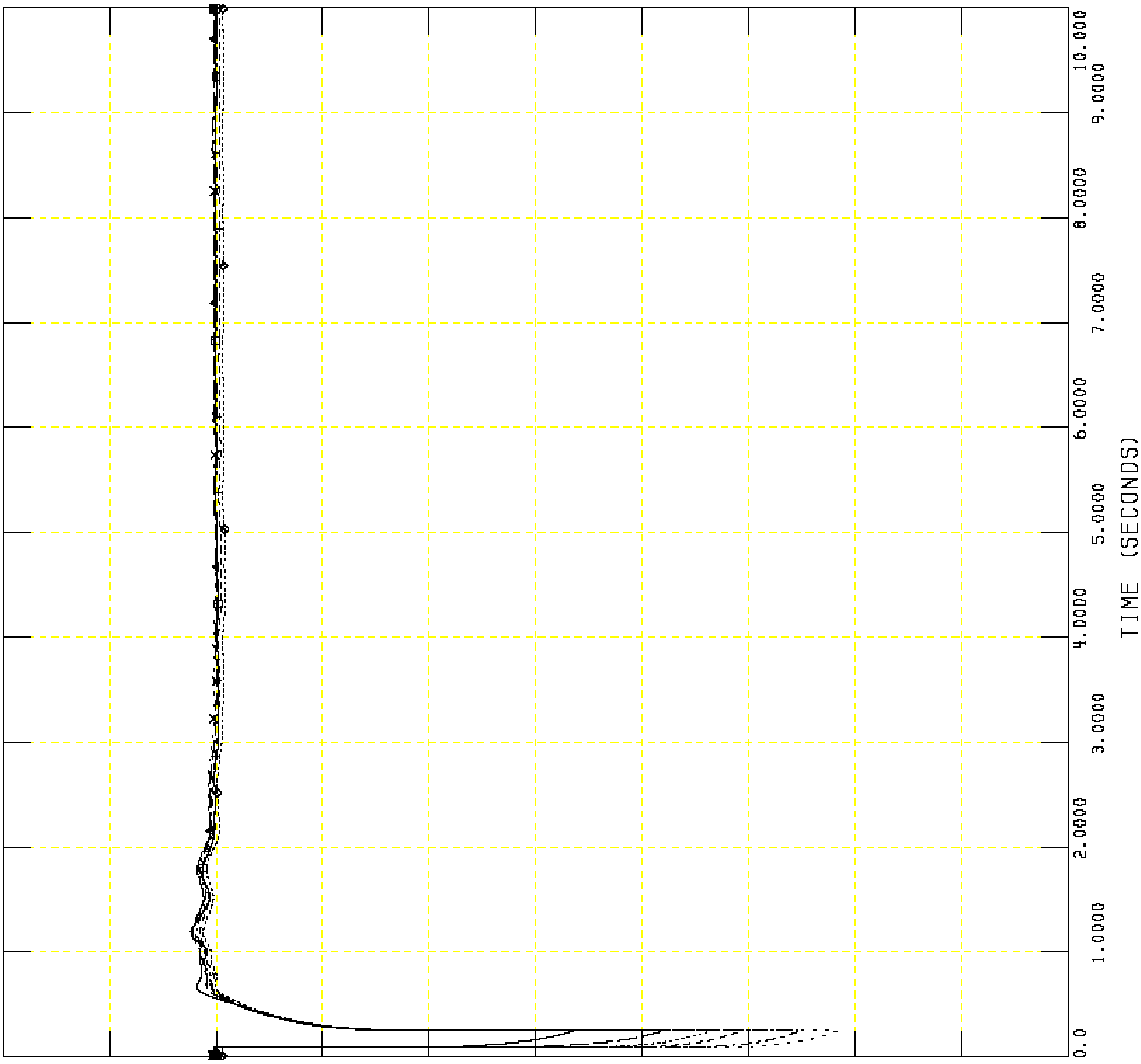
CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]
1.2000 0.20000

CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]
1.2000 0.20000

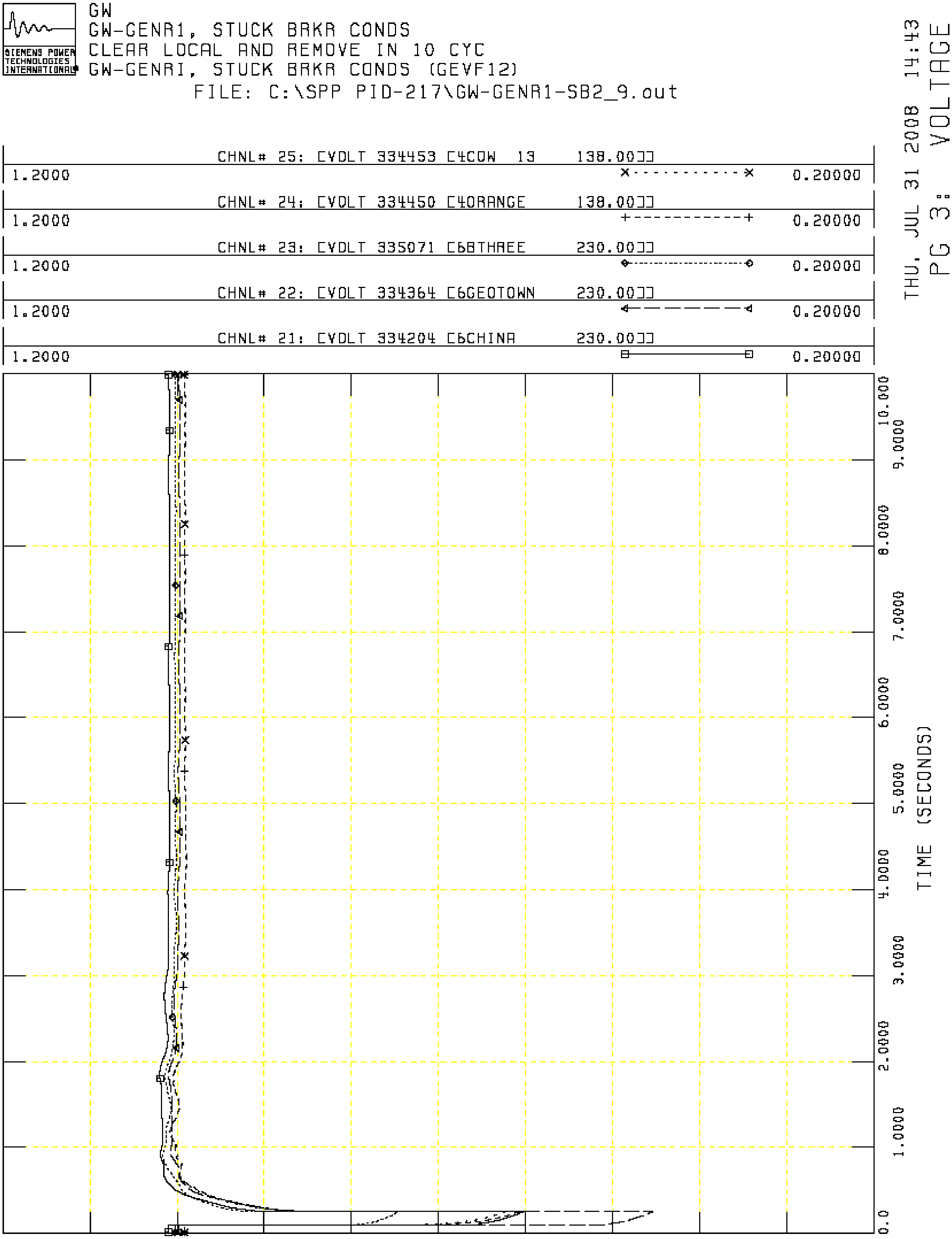
CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]
1.2000 0.20000

CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]
1.2000 0.20000

CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]
1.2000 0.20000



GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out



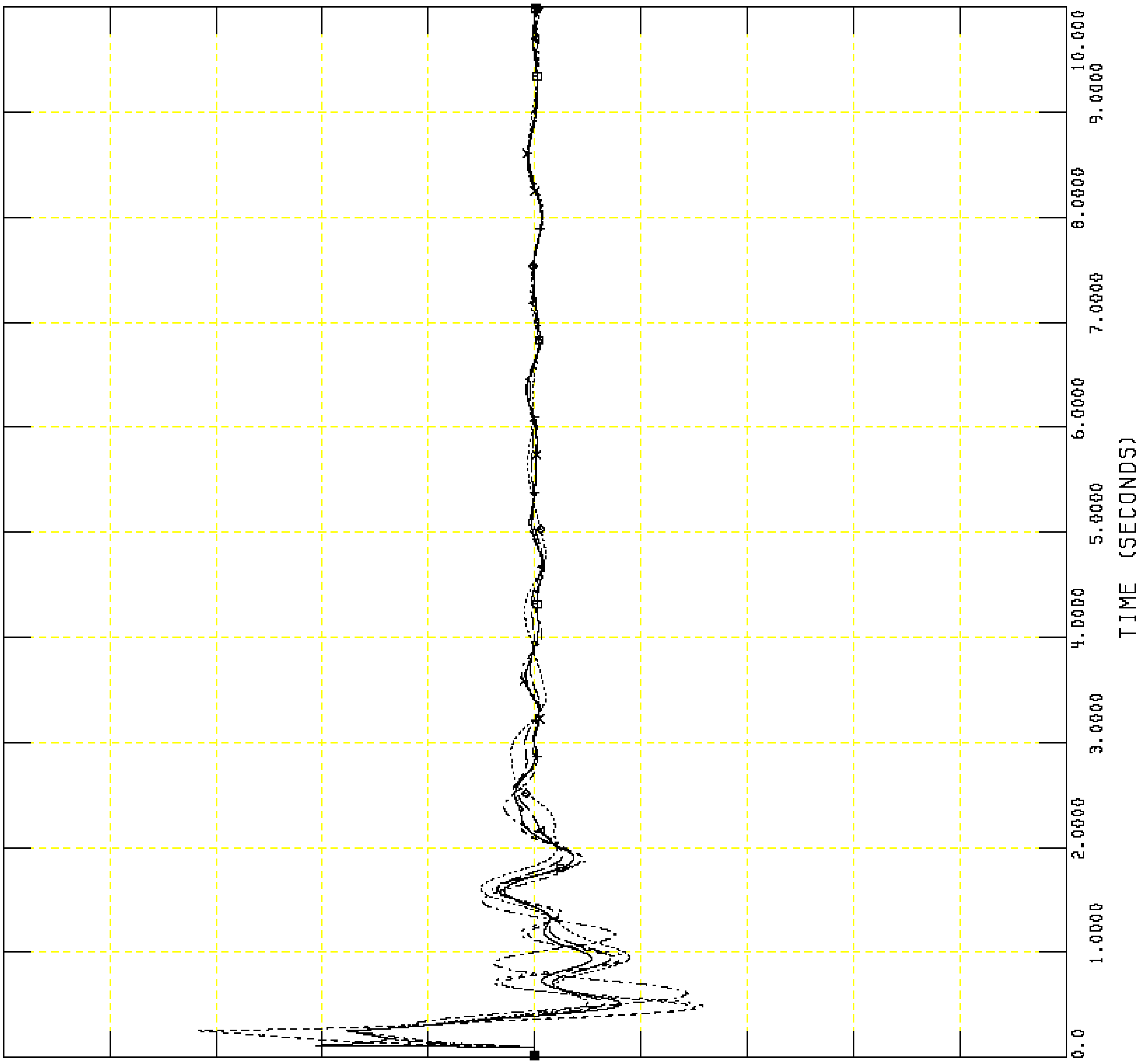
GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)

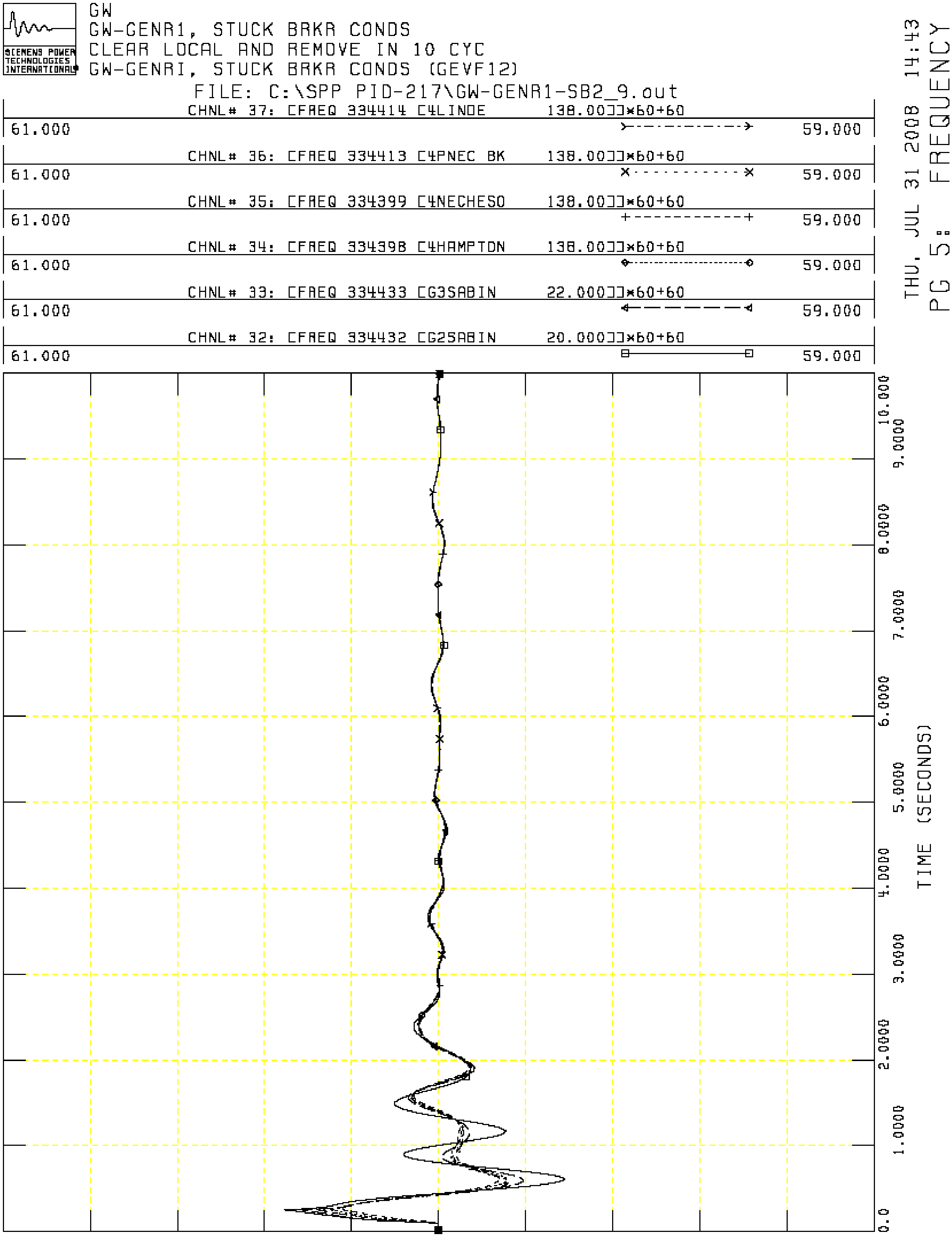
SIEMENS POWER TECHNOLOGIES INTERNATIONAL

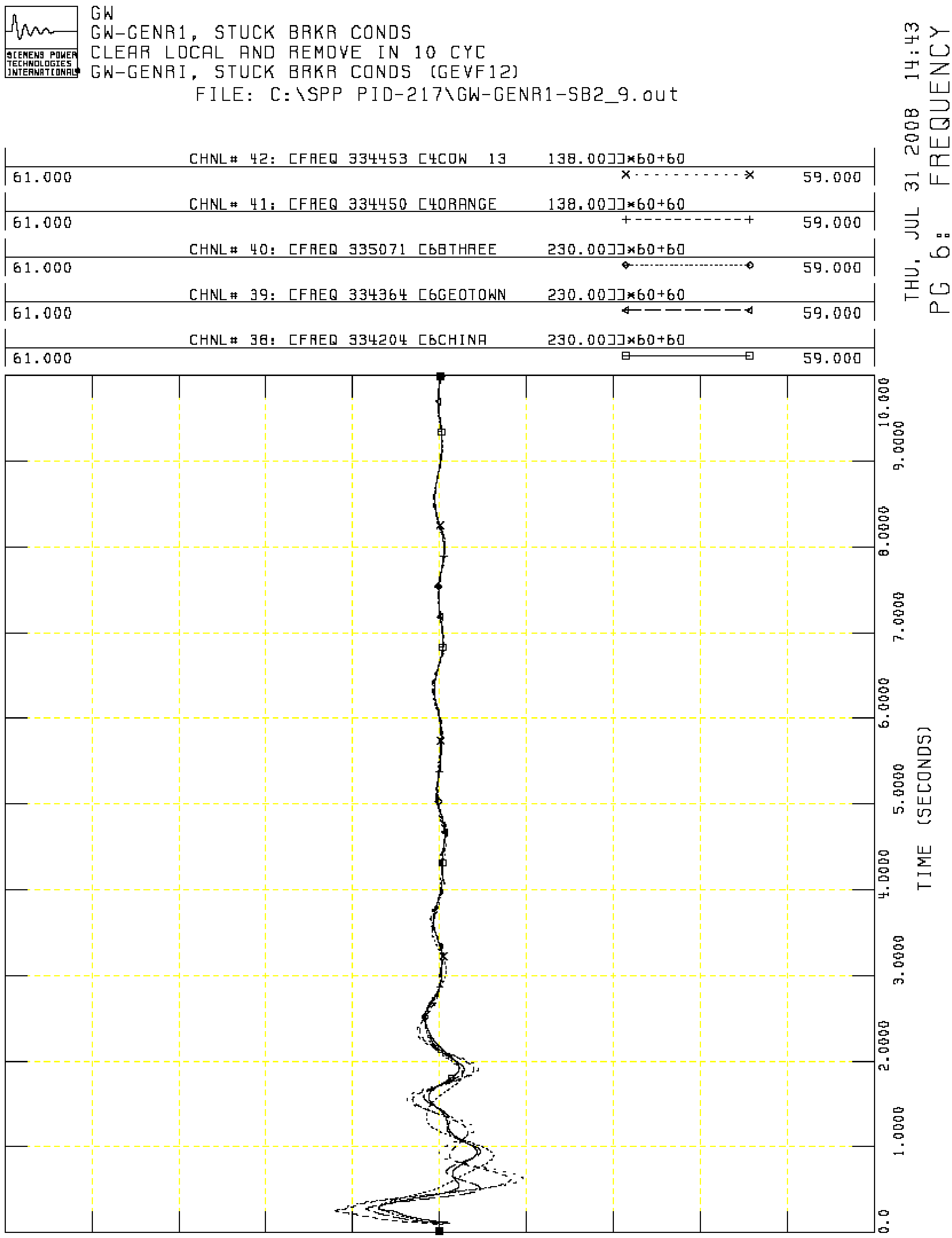
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out

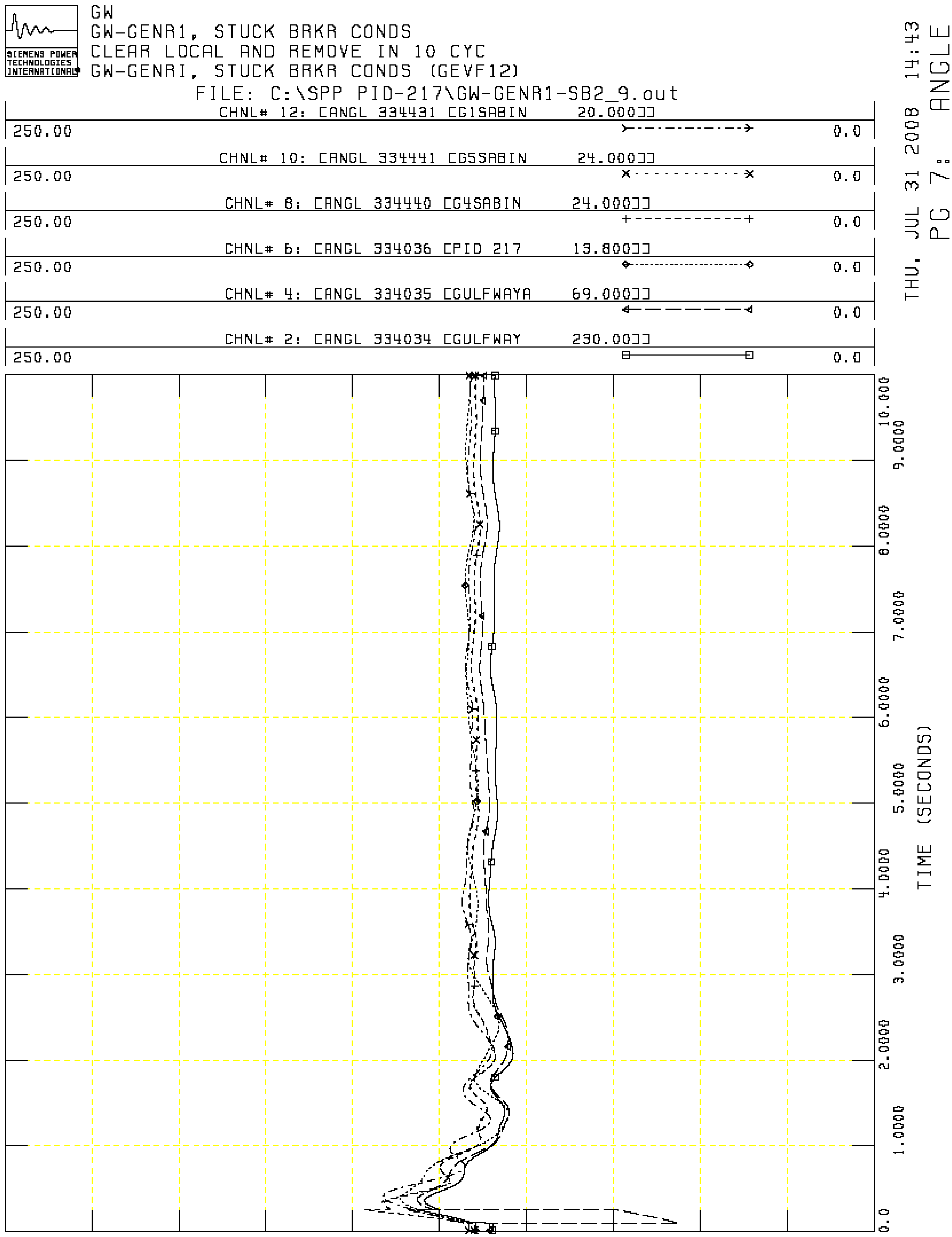
THU, JUL 31 2008 14:43
PG 4: FREQUENCY

Min	Channel	Scale	Max
61.000	CHNL# 31: [FREQ 334431 [G1SABIN	20.000]]*60+60	59.000
61.000	CHNL# 30: [FREQ 334441 [G5SABIN	24.000]]*60+60	59.000
61.000	CHNL# 29: [FREQ 334440 [G4SABIN	24.000]]*60+60	59.000
61.000	CHNL# 28: [FREQ 334036 [PID 217	13.800]]*60+60	59.000
61.000	CHNL# 27: [FREQ 334035 [GULFWAYA	69.000]]*60+60	59.000
61.000	CHNL# 26: [FREQ 334034 [GULFWAY	230.00]]*60+60	59.000

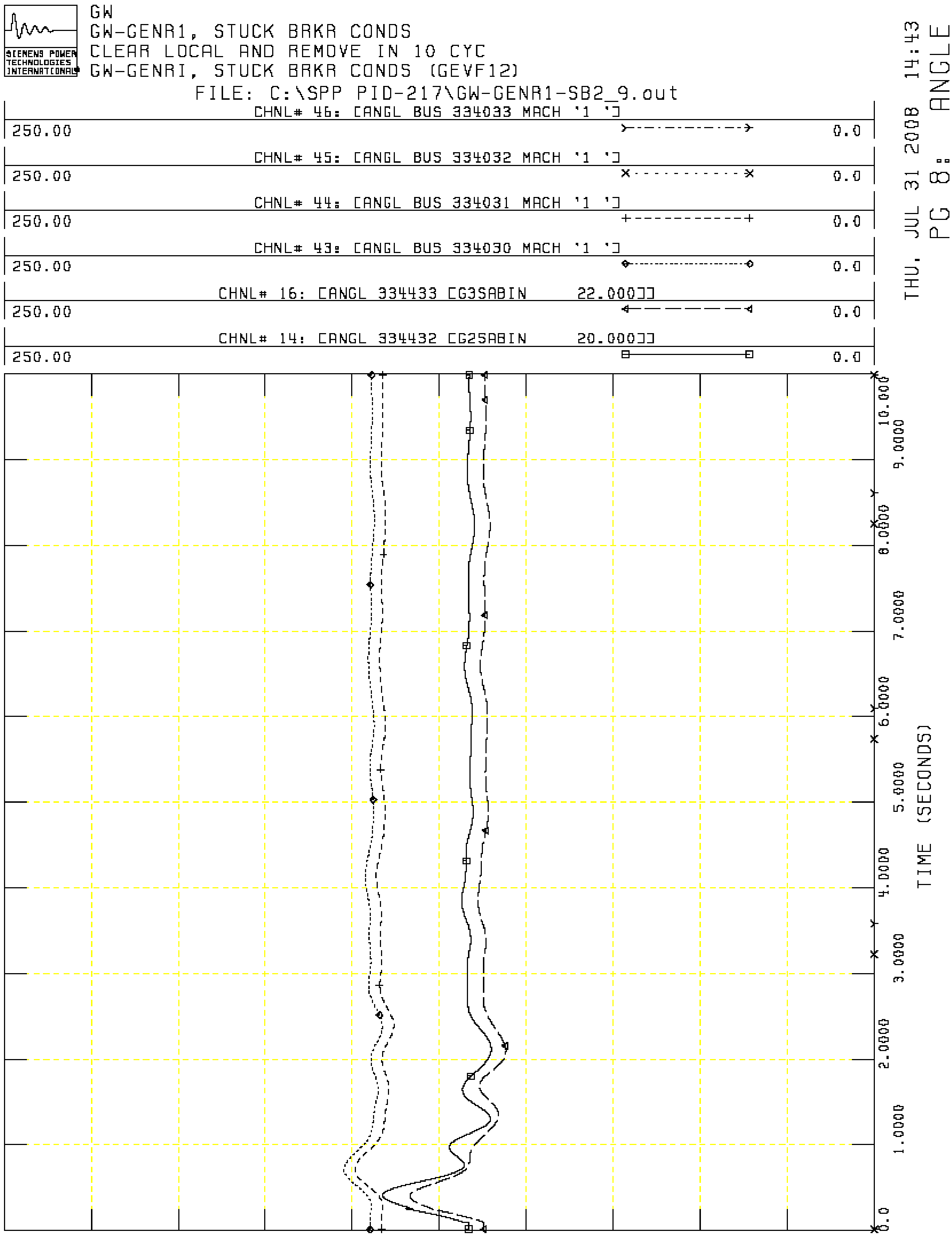


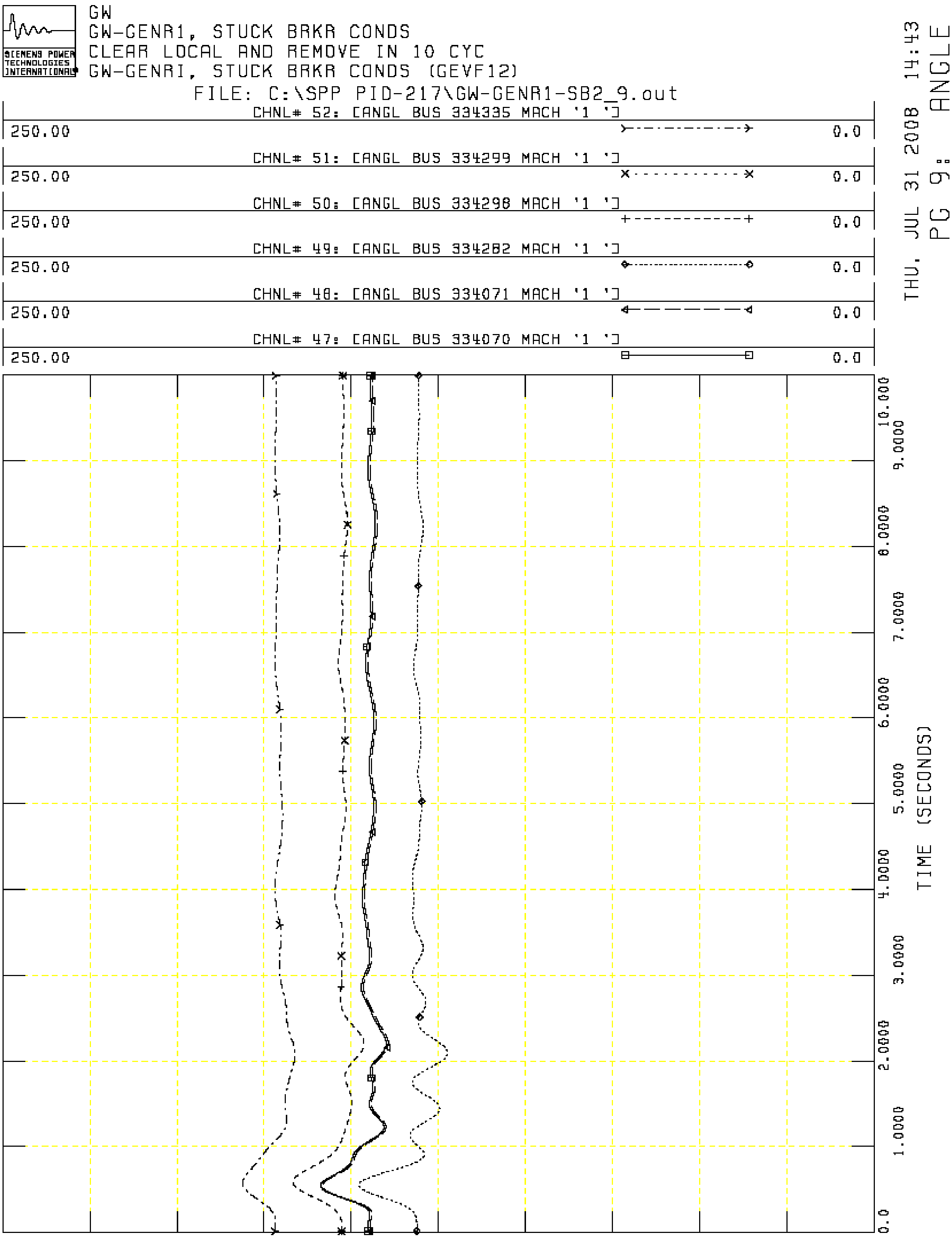

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 37: CFREQ 334414 C4LINDE 138.00]]*60+60
61.000 59.000
CHNL# 36: CFREQ 334413 C4PNEC BK 138.00]]*60+60
61.000 59.000
CHNL# 35: CFREQ 334399 C4NECHESO 138.00]]*60+60
61.000 59.000
CHNL# 34: CFREQ 334398 C4HAMPTON 138.00]]*60+60
61.000 59.000
CHNL# 33: CFREQ 334433 CG3SABIN 22.000]]*60+60
61.000 59.000
CHNL# 32: CFREQ 334432 CG2SABIN 20.000]]*60+60
61.000 59.000
THU, JUL 31 2008 14:43
PG 5: FREQUENCY
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)


GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 42: [FREQ 334453 [4COW 13 138.00]]*60+60
61.000 59.000
CHNL# 41: [FREQ 334450 [4ORANGE 138.00]]*60+60
61.000 59.000
CHNL# 40: [FREQ 335071 [6BTHREE 230.00]]*60+60
61.000 59.000
CHNL# 39: [FREQ 334364 [6GEOTOWN 230.00]]*60+60
61.000 59.000
CHNL# 38: [FREQ 334204 [6CHINA 230.00]]*60+60
61.000 59.000
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 14:43
PG 6: FREQUENCY



SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
CHNL# 12: [ANGL 334431 [G1SABIN 20.000]]
250.00 0.0
CHNL# 10: [ANGL 334441 [G5SABIN 24.000]]
250.00 0.0
CHNL# 8: [ANGL 334440 [G4SABIN 24.000]]
250.00 0.0
CHNL# 6: [ANGL 334036 [PID 217 13.800]]
250.00 0.0
CHNL# 4: [ANGL 334035 [GULFWAYA 69.000]]
250.00 0.0
CHNL# 2: [ANGL 334034 [GULFWAY 230.00]]
250.00 0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 14:43
PG 7: ANGLE


SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
CHNL# 46: [ANGL BUS 334033 MACH '1 ']
250.00 0.0
CHNL# 45: [ANGL BUS 334032 MACH '1 ']
250.00 0.0
CHNL# 44: [ANGL BUS 334031 MACH '1 ']
250.00 0.0
CHNL# 43: [ANGL BUS 334030 MACH '1 ']
250.00 0.0
CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]
250.00 0.0
CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]
250.00 0.0
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)
THU, JUL 31 2008 14:43
PG 8: ANGLE


GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
CHNL# 52: [ANGL BUS 334335 MACH '1 ']
250.00
0.0
CHNL# 51: [ANGL BUS 334299 MACH '1 ']
250.00
0.0
CHNL# 50: [ANGL BUS 334298 MACH '1 ']
250.00
0.0
CHNL# 49: [ANGL BUS 334282 MACH '1 ']
250.00
0.0
CHNL# 48: [ANGL BUS 334071 MACH '1 ']
250.00
0.0
CHNL# 47: [ANGL BUS 334070 MACH '1 ']
250.00
0.0
THU, JUL 31 2008 14:43
PG 9: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)

FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out

THU, JUL 31 2008 14:43
PG 10: ANGLE

CHNL# 58: [ANGL BUS 334393 MACH '1 ']
250.00 — 0.0

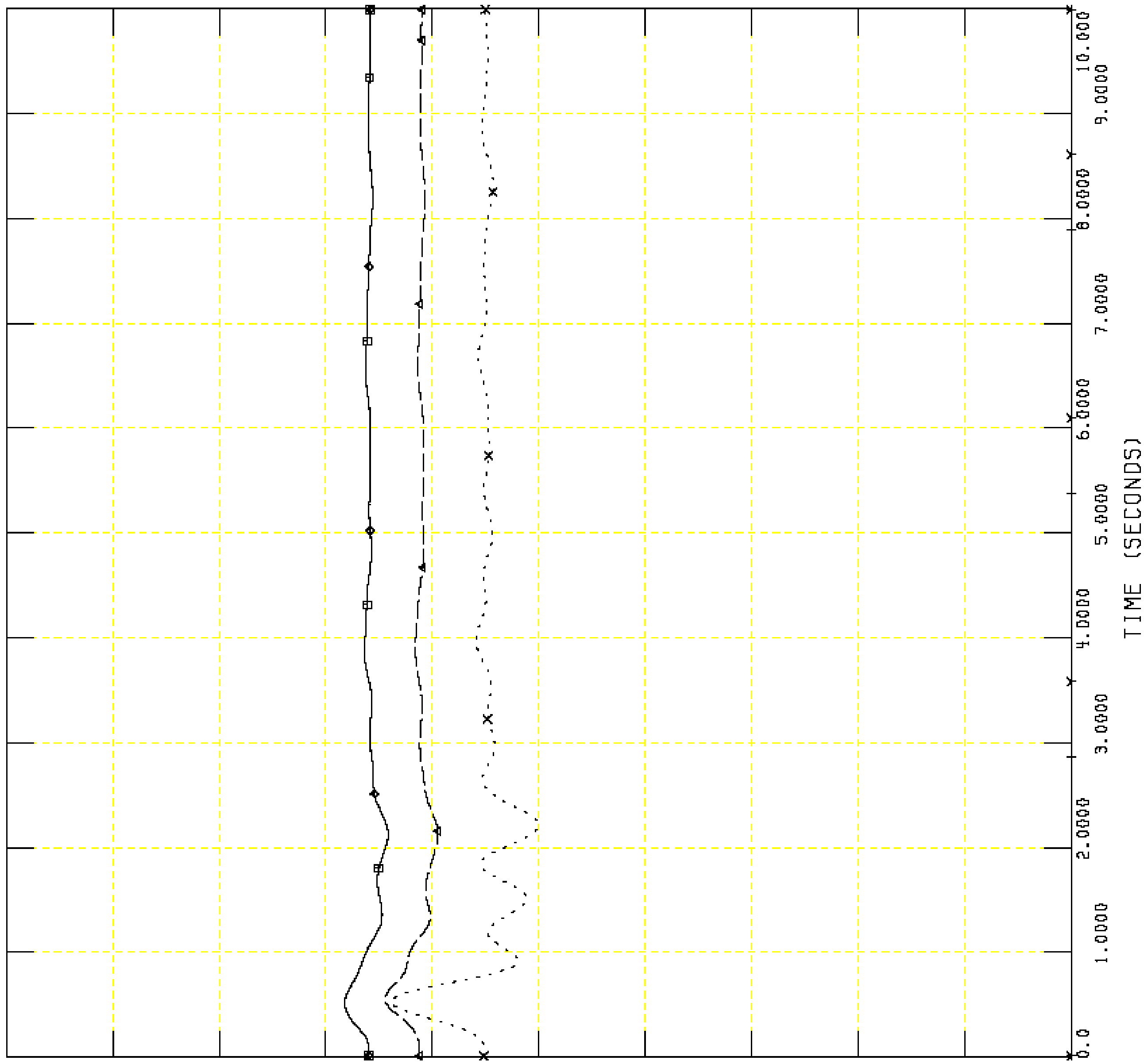
CHNL# 57: [ANGL BUS 334392 MACH '1 ']
250.00 — 0.0

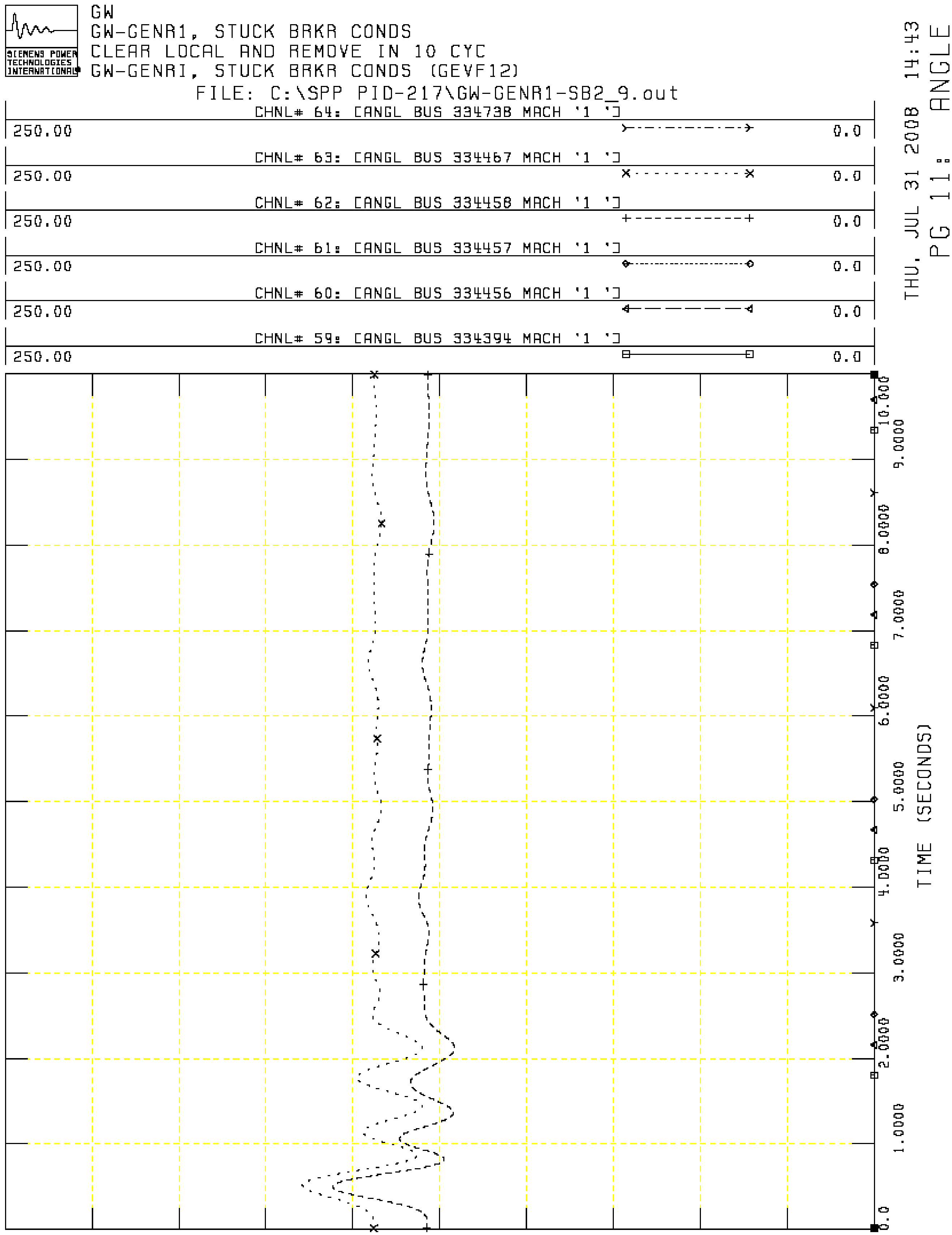
CHNL# 56: [ANGL BUS 334377 MACH '1 ']
250.00 — 0.0

CHNL# 55: [ANGL BUS 334376 MACH '1 ']
250.00 — 0.0

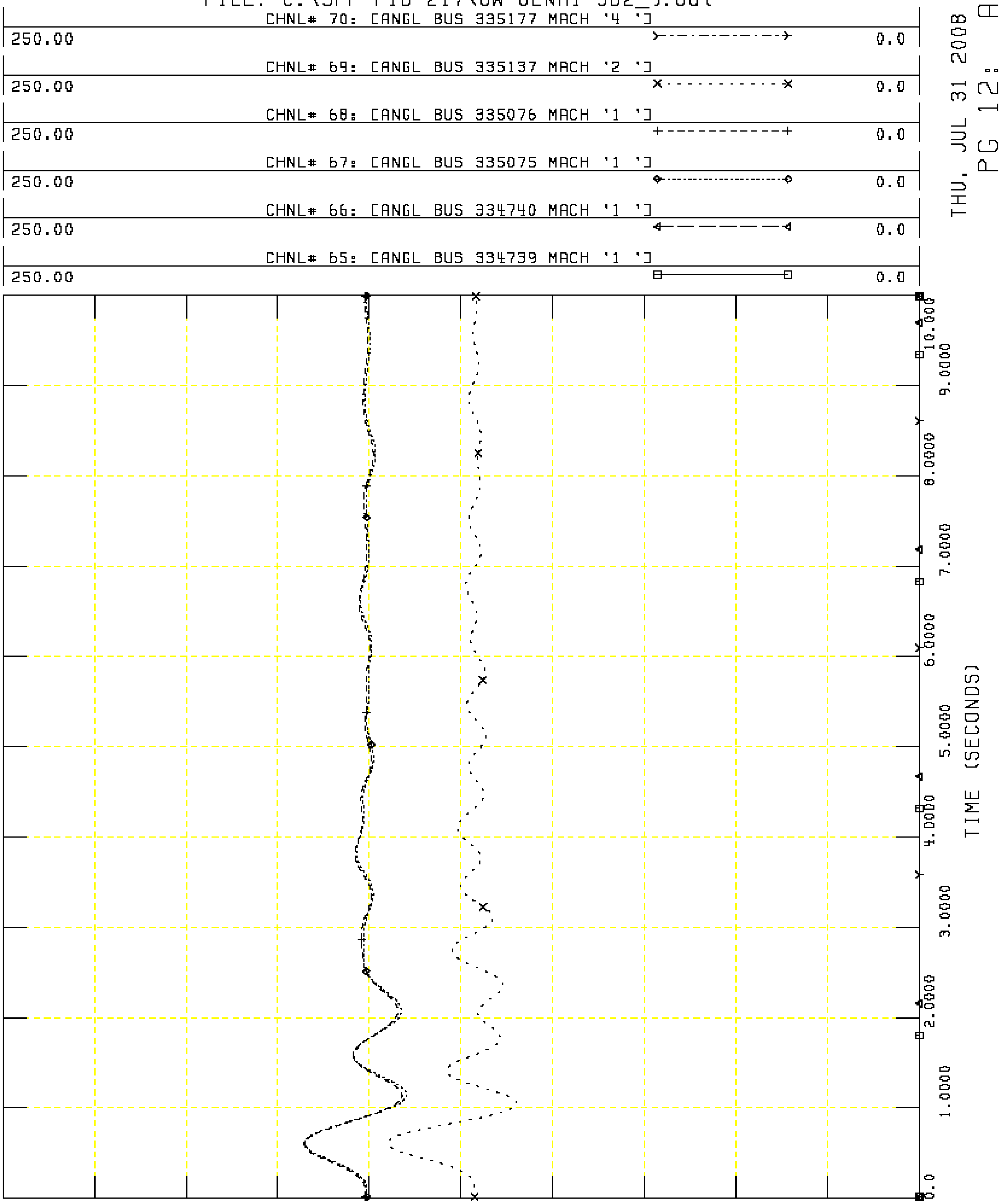
CHNL# 54: [ANGL BUS 334375 MACH '1 ']
250.00 — 0.0

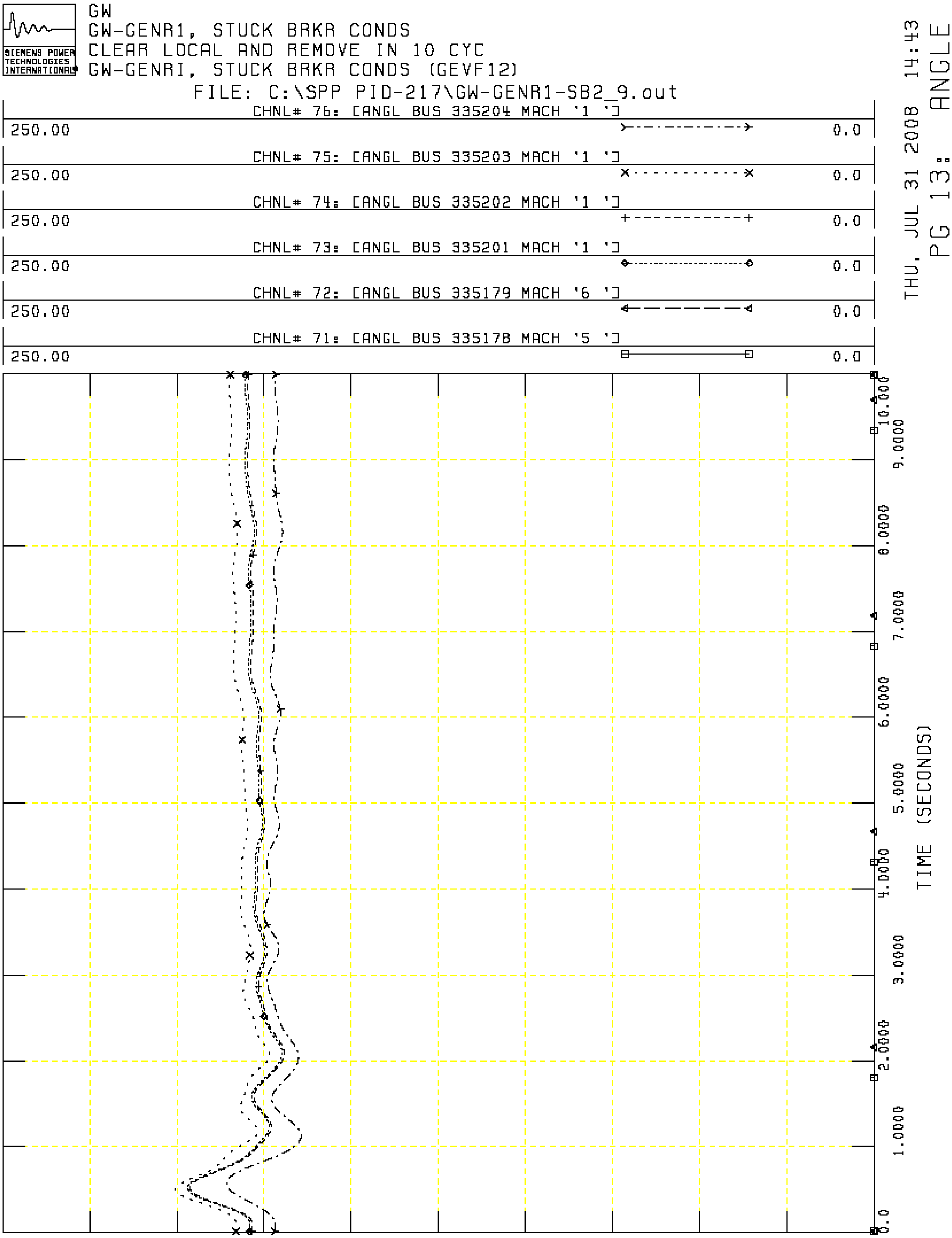
CHNL# 53: [ANGL BUS 334374 MACH '1 ']
250.00 — 0.0




SIEMENS POWER TECHNOLOGIES INTERNATIONAL
GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
CHNL# 64: [ANGL BUS 334738 MACH '1 ']
250.00
0.0
CHNL# 63: [ANGL BUS 334467 MACH '1 ']
250.00
0.0
CHNL# 62: [ANGL BUS 334458 MACH '1 ']
250.00
0.0
CHNL# 61: [ANGL BUS 334457 MACH '1 ']
250.00
0.0
CHNL# 60: [ANGL BUS 334456 MACH '1 ']
250.00
0.0
CHNL# 59: [ANGL BUS 334394 MACH '1 ']
250.00
0.0
THU, JUL 31 2008 14:43
PG 11: ANGLE
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

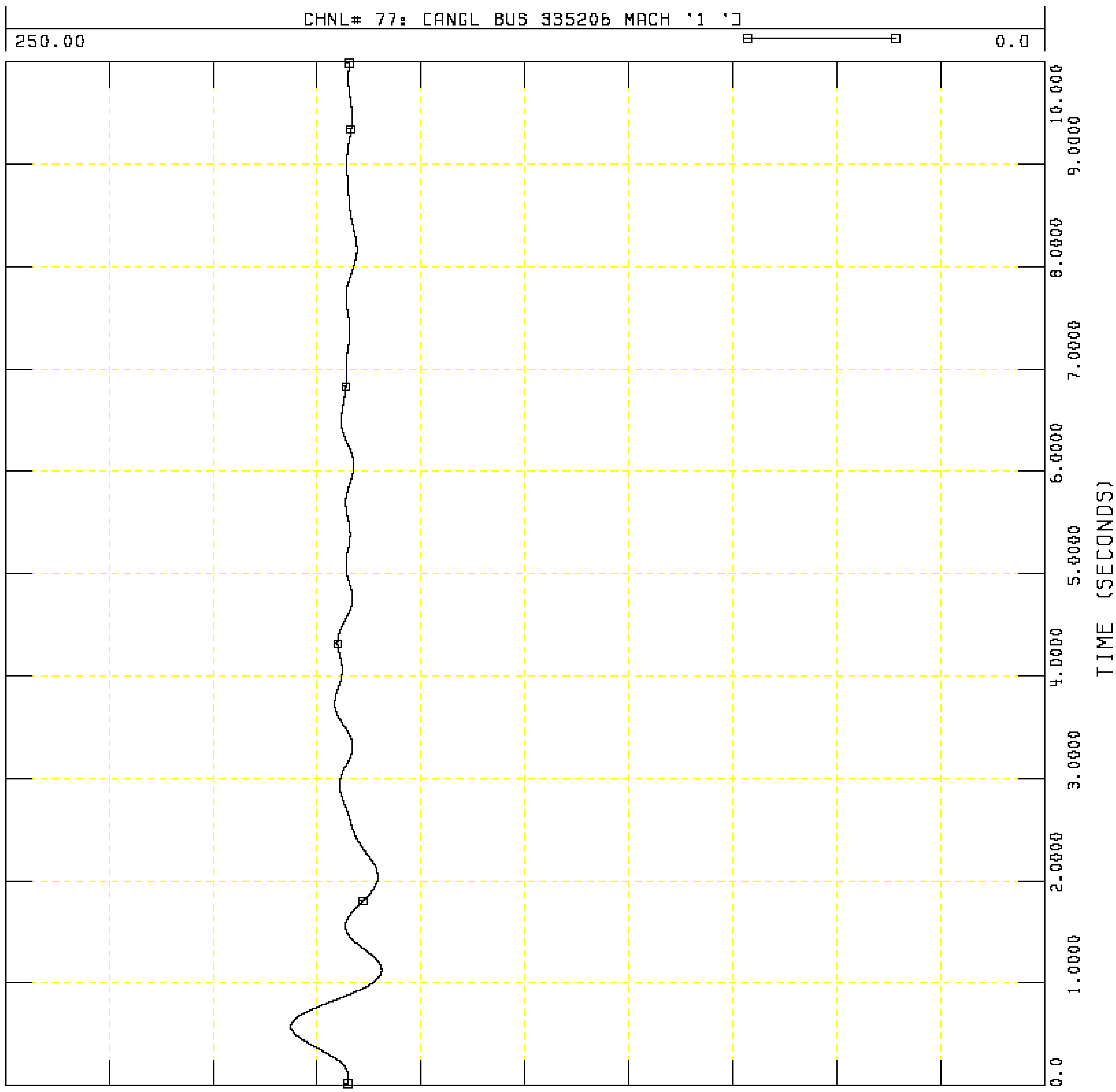
GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out



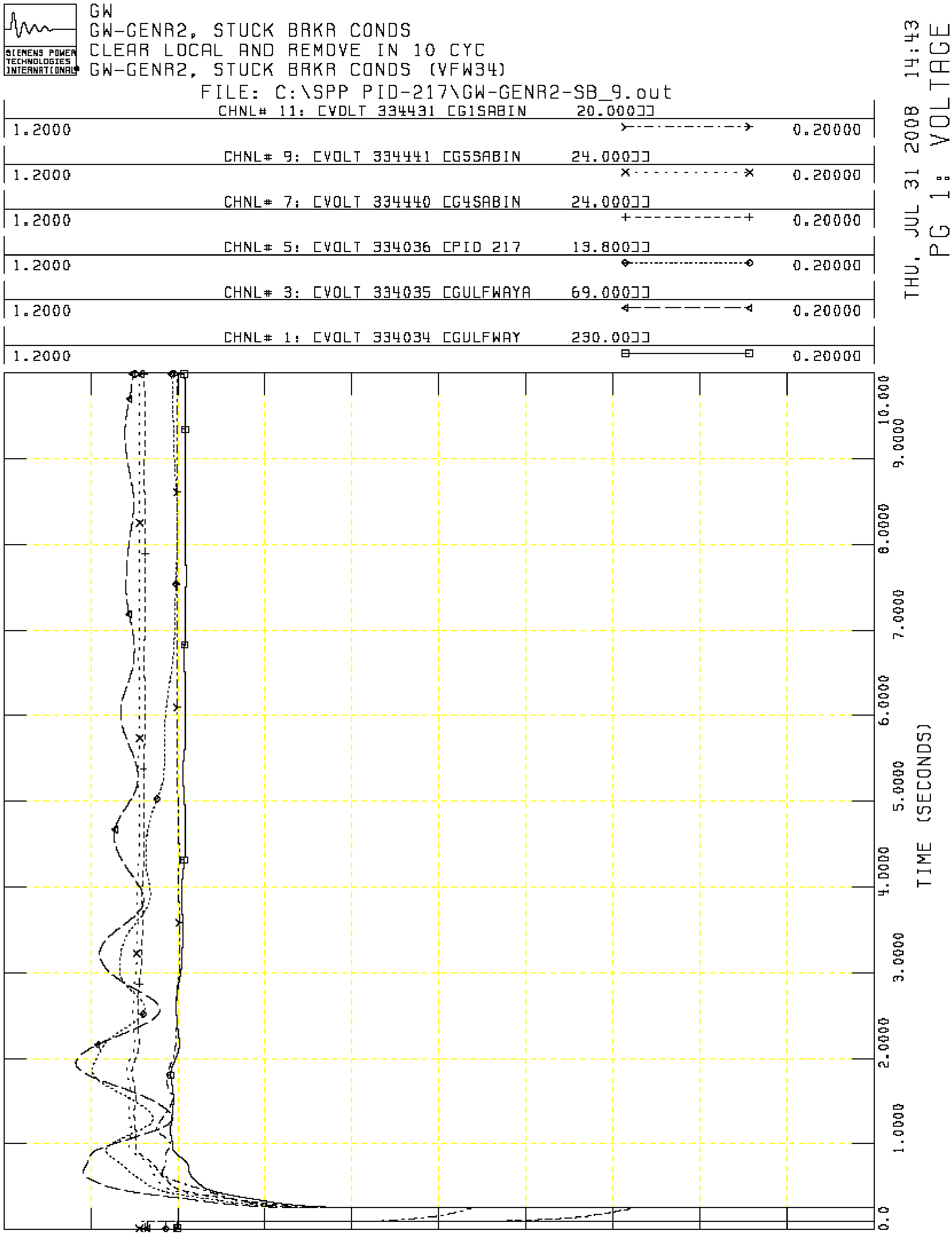

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out
SIEMENS POWER TECHNOLOGIES INTERNATIONAL
CHNL# 76: [ANGL BUS 335204 MACH '1 ']
250.00
0.0
CHNL# 75: [ANGL BUS 335203 MACH '1 ']
250.00
0.0
CHNL# 74: [ANGL BUS 335202 MACH '1 ']
250.00
0.0
CHNL# 73: [ANGL BUS 335201 MACH '1 ']
250.00
0.0
CHNL# 72: [ANGL BUS 335179 MACH '6 ']
250.00
0.0
CHNL# 71: [ANGL BUS 335178 MACH '5 ']
250.00
0.0
THU, JUL 31 2008 14:43
PG 13: ANGLE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

GW
GW-GENR1, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENRI, STUCK BRKR CONDS (GEVF12)
FILE: C:\SPP PID-217\GW-GENR1-SB2_9.out

THU, JUL 31 2008 14:43
PG 14: ANGLE



FAULT REFERENCE NO. 7
FAULT-GENR2-STUCK BKR2 –VFW34- LOCATION GULFWAY Genr2

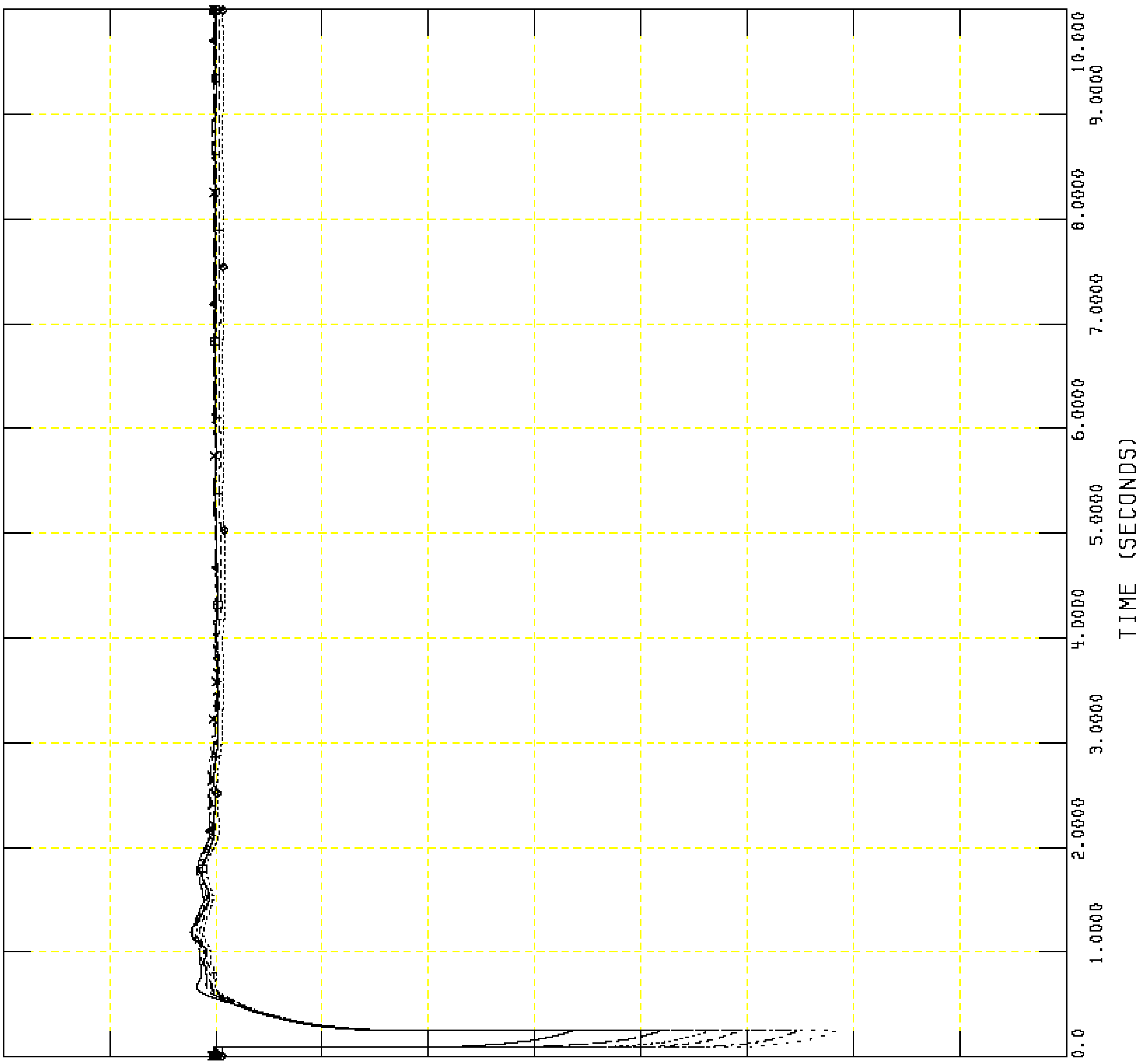

GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)
FILE: C:\SPP PID-217\GW-GENR2-SB_9.out
CHNL# 11: [VOLT 334431 [G1SABIN 20.000]]
1.2000
0.20000
CHNL# 9: [VOLT 334441 [G5SABIN 24.000]]
1.2000
0.20000
CHNL# 7: [VOLT 334440 [G4SABIN 24.000]]
1.2000
0.20000
CHNL# 5: [VOLT 334036 [PID 217 13.800]]
1.2000
0.20000
CHNL# 3: [VOLT 334035 [GULFWAYA 69.000]]
1.2000
0.20000
CHNL# 1: [VOLT 334034 [GULFWAY 230.00]]
1.2000
0.20000
THU, JUL 31 2008 14:43
PG 1: VOLTAGE
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)

FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

THU, JUL 31 2008 14:43
PG 2: VOLTAGE

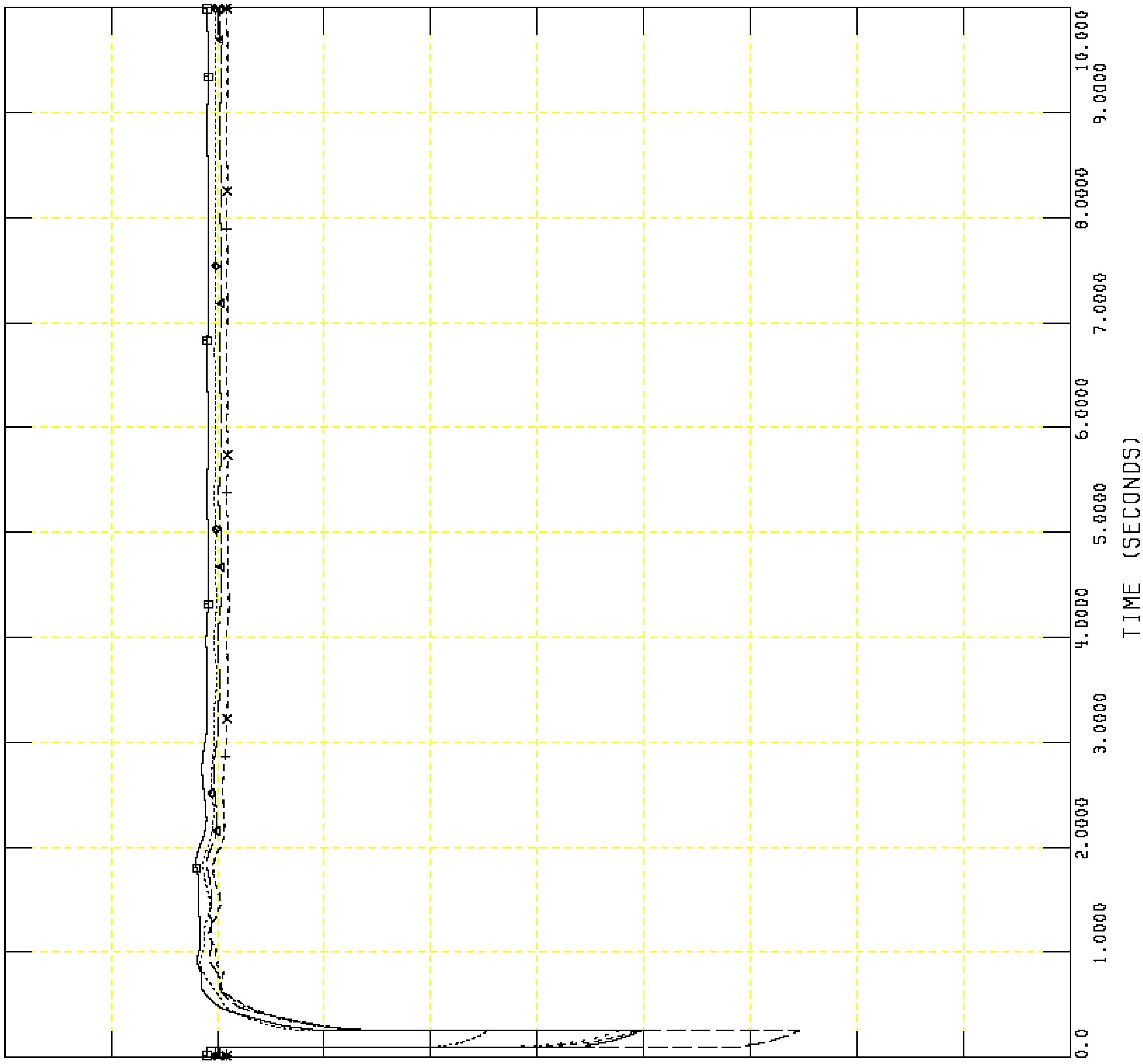
1.2000	CHNL# 20: [VOLT 334414 [4LINDE 138.00]]	0.20000
1.2000	CHNL# 19: [VOLT 334413 [4PNEC BK 138.00]]	0.20000
1.2000	CHNL# 18: [VOLT 334399 [4NECHESO 138.00]]	0.20000
1.2000	CHNL# 17: [VOLT 334398 [4HAMPTON 138.00]]	0.20000
1.2000	CHNL# 15: [VOLT 334433 [G3SABIN 22.000]]	0.20000
1.2000	CHNL# 13: [VOLT 334432 [G2SABIN 20.000]]	0.20000



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)
FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

THU, JUL 31 2008 14:43
PG 3: VOLTAGE

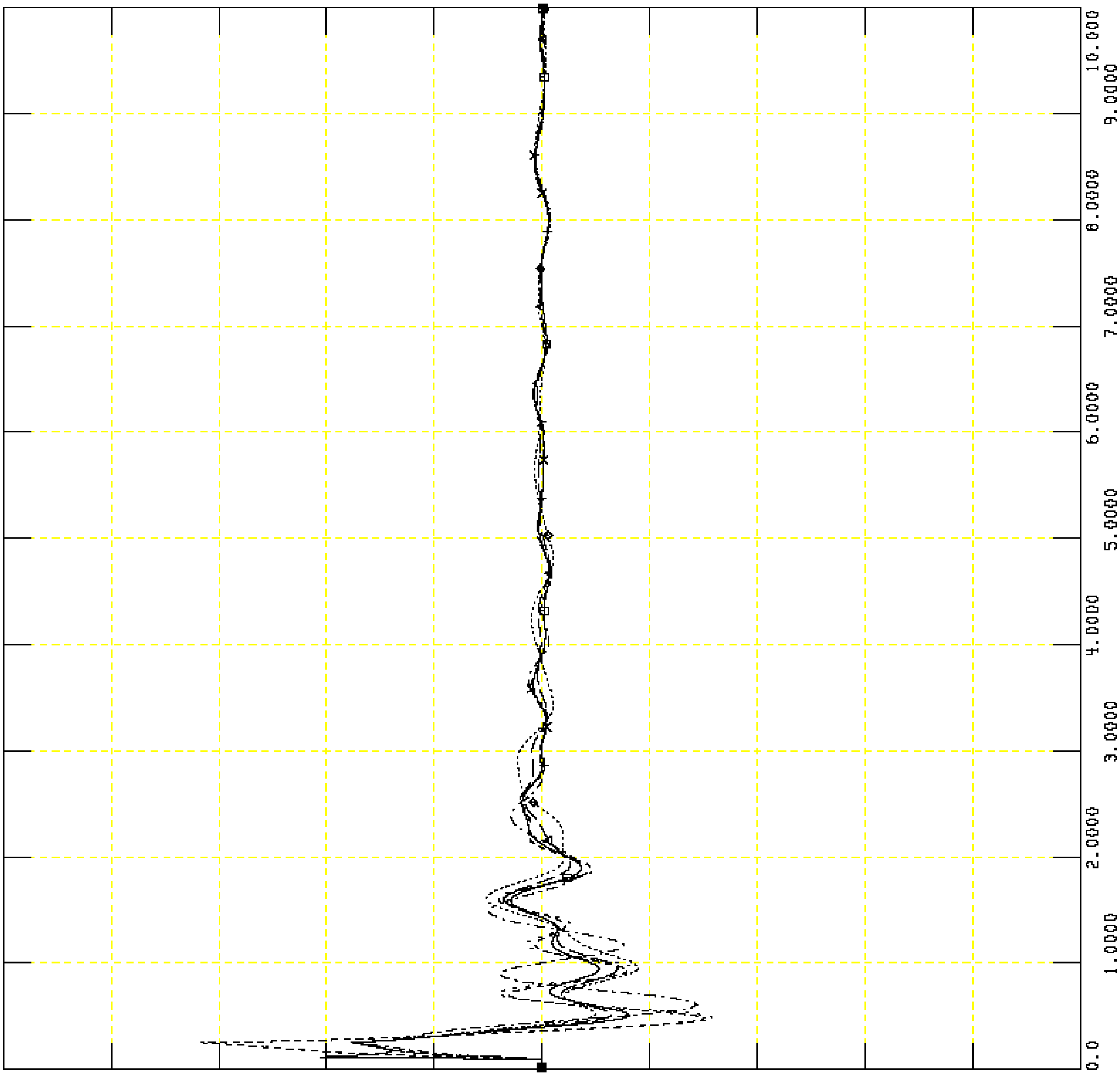
	CHNL# 25: [VOLT 334453 [4COW 13 138.00]]	×- - - - - - - - - - -×	
1.2000			0.20000
	CHNL# 24: [VOLT 334450 [4ORANGE 138.00]]	+-----------+	
1.2000			0.20000
	CHNL# 23: [VOLT 335071 [6BTHREE 230.00]]	◇···········◇	
1.2000			0.20000
	CHNL# 22: [VOLT 334364 [6GEOTOWN 230.00]]	△— — — — —△	
1.2000			0.20000
	CHNL# 21: [VOLT 334204 [6CHINA 230.00]]	□———————□	
1.2000			0.20000



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)

FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

	CHNL# 31: [FREQ 334431 [G1SABIN 20.000]]*60+60	
61.000		59.000
	CHNL# 30: [FREQ 334441 [G5SABIN 24.000]]*60+60	
61.000		59.000
	CHNL# 29: [FREQ 334440 [G4SABIN 24.000]]*60+60	
61.000		59.000
	CHNL# 28: [FREQ 334036 [PID 217 13.800]]*60+60	
61.000		59.000
	CHNL# 27: [FREQ 334035 [GULFWAYA 69.000]]*60+60	
61.000		59.000
	CHNL# 26: [FREQ 334034 [GULFWAY 230.00]]*60+60	
61.000		59.000



THU, JUL 31 2008 14:43
PG 4: FREQUENCY

GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)

FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

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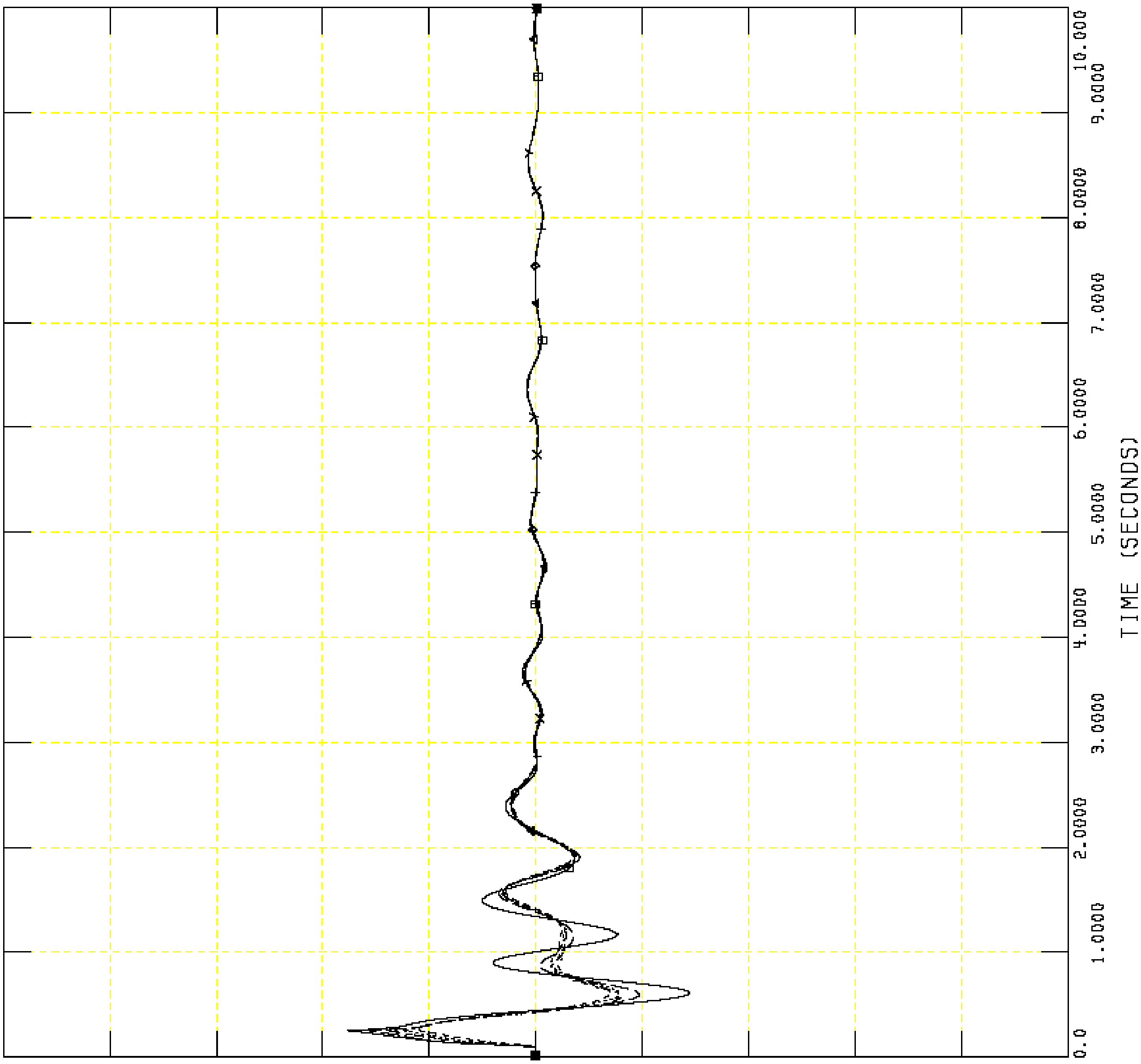
PG 5: FREQUENCY

CHNL# 37: [FREQ 334414 [4LINDE 138.00]]*60+60		
61.000		59.000
CHNL# 36: [FREQ 334413 [4PNEC BK 138.00]]*60+60		
61.000		59.000
CHNL# 35: [FREQ 334399 [4NECHESO 138.00]]*60+60		
61.000		59.000
CHNL# 34: [FREQ 334398 [4HAMPTON 138.00]]*60+60		
61.000		59.000
CHNL# 33: [FREQ 334433 [G3SABIN 22.000]]*60+60		
61.000		59.000
CHNL# 32: [FREQ 334432 [G2SABIN 20.000]]*60+60		
61.000		59.000



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)
FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

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PG 6: FREQUENCY

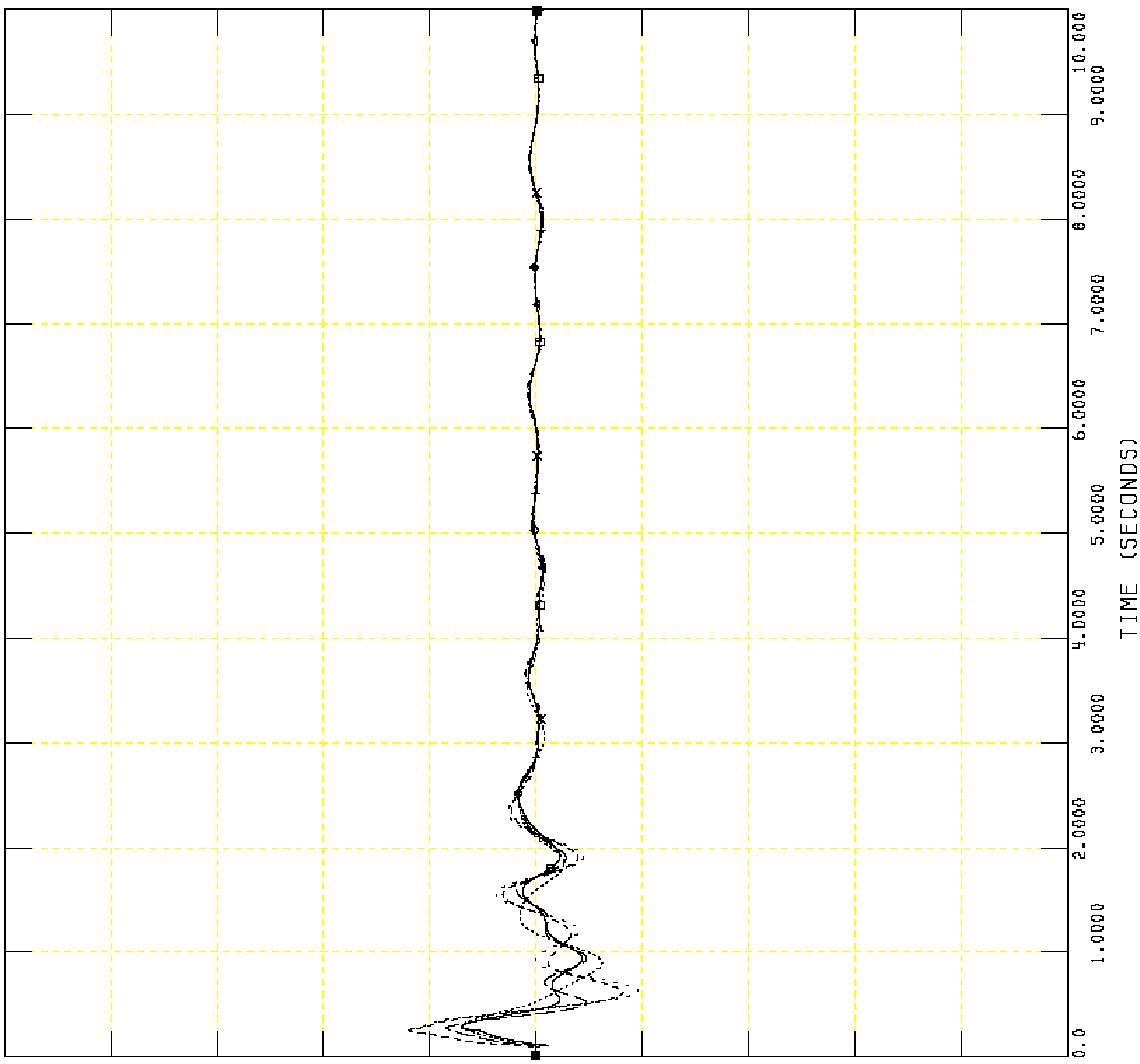
CHNL# 42: [FREQ 334453 [4COW 13 138.00]]*60+60
61.000 59.000

CHNL# 41: [FREQ 334450 [4ORANGE 138.00]]*60+60
61.000 59.000

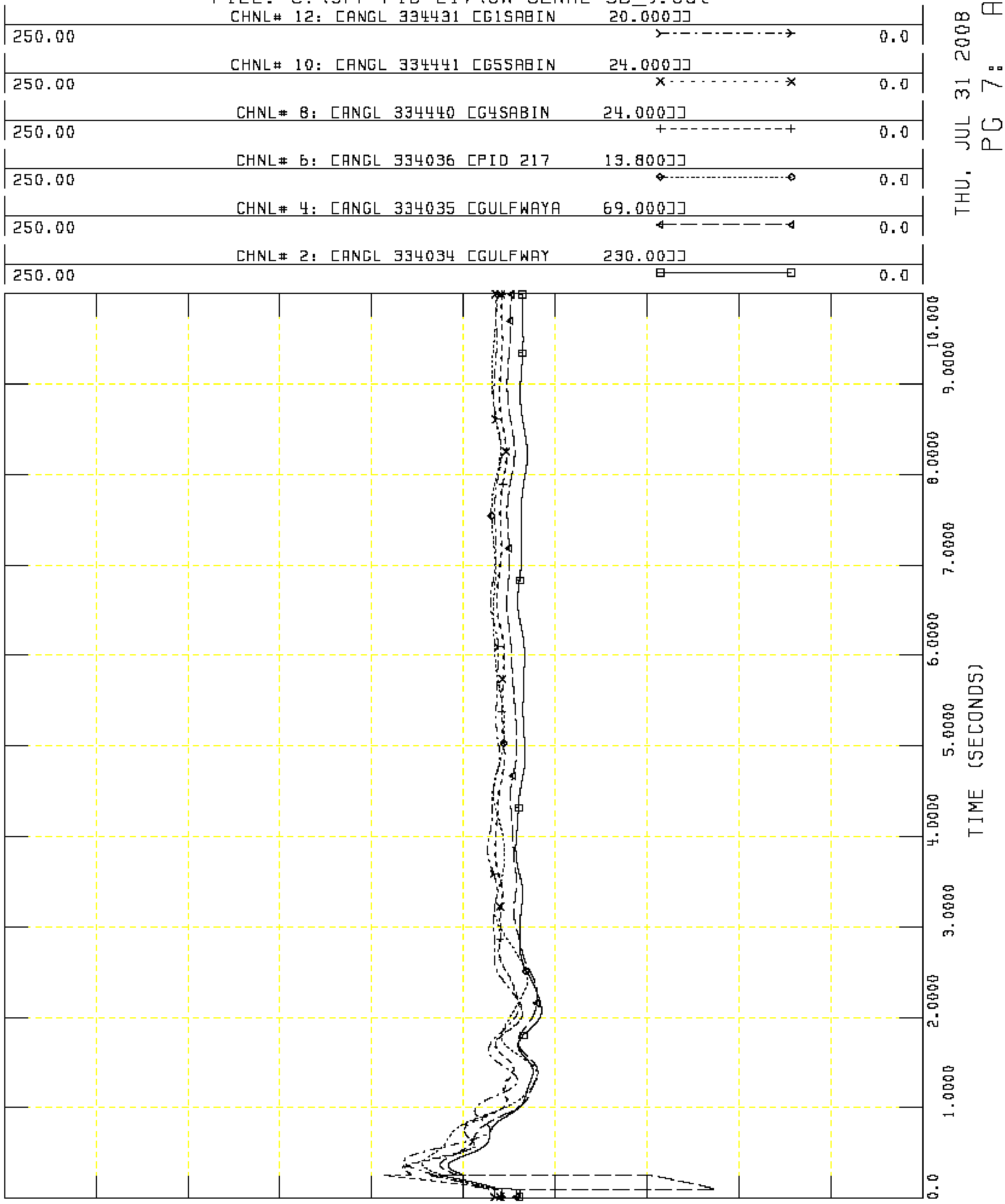
CHNL# 40: [FREQ 335071 [6BTHREE 230.00]]*60+60
61.000 59.000

CHNL# 39: [FREQ 334364 [6GEOTOWN 230.00]]*60+60
61.000 59.000

CHNL# 38: [FREQ 334204 [6CHINA 230.00]]*60+60
61.000 59.000



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)
FILE: C:\SPP PID-217\GW-GENR2-SB_9.out



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)

FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

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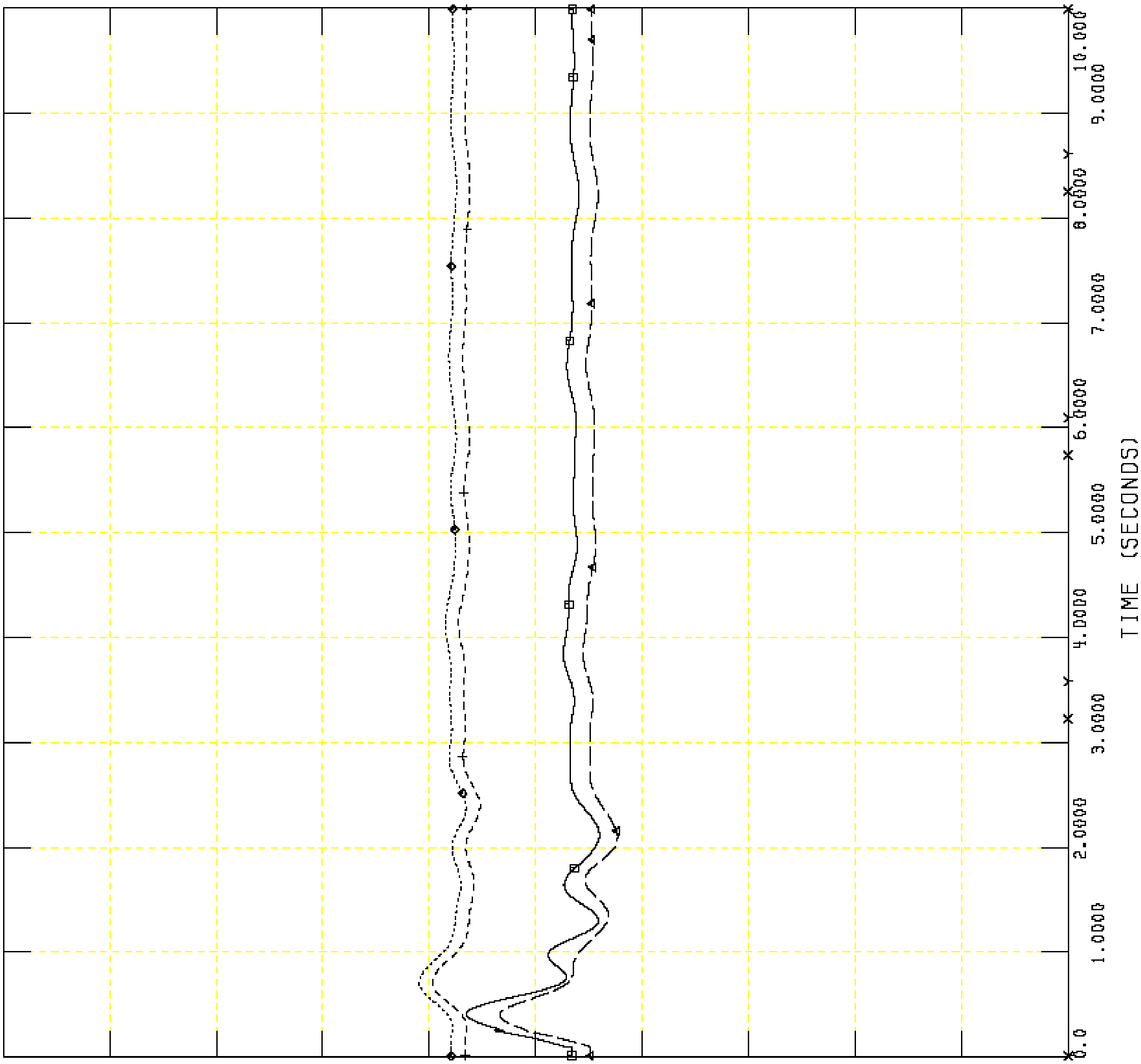
PG 8: ANGLE

	CHNL# 46: [ANGL BUS 334033 MACH '1 ']	
250.00		0.0
	CHNL# 45: [ANGL BUS 334032 MACH '1 ']	
250.00		0.0
	CHNL# 44: [ANGL BUS 334031 MACH '1 ']	
250.00		0.0
	CHNL# 43: [ANGL BUS 334030 MACH '1 ']	
250.00		0.0
	CHNL# 16: [ANGL 334433 [G3SABIN 22.000]]	
250.00		0.0
	CHNL# 14: [ANGL 334432 [G2SABIN 20.000]]	
250.00		0.0



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)
FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

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PG 9: ANGLE

CHNL# 52: [ANGL BUS 334335 MACH '1 ']
250.00 0.0

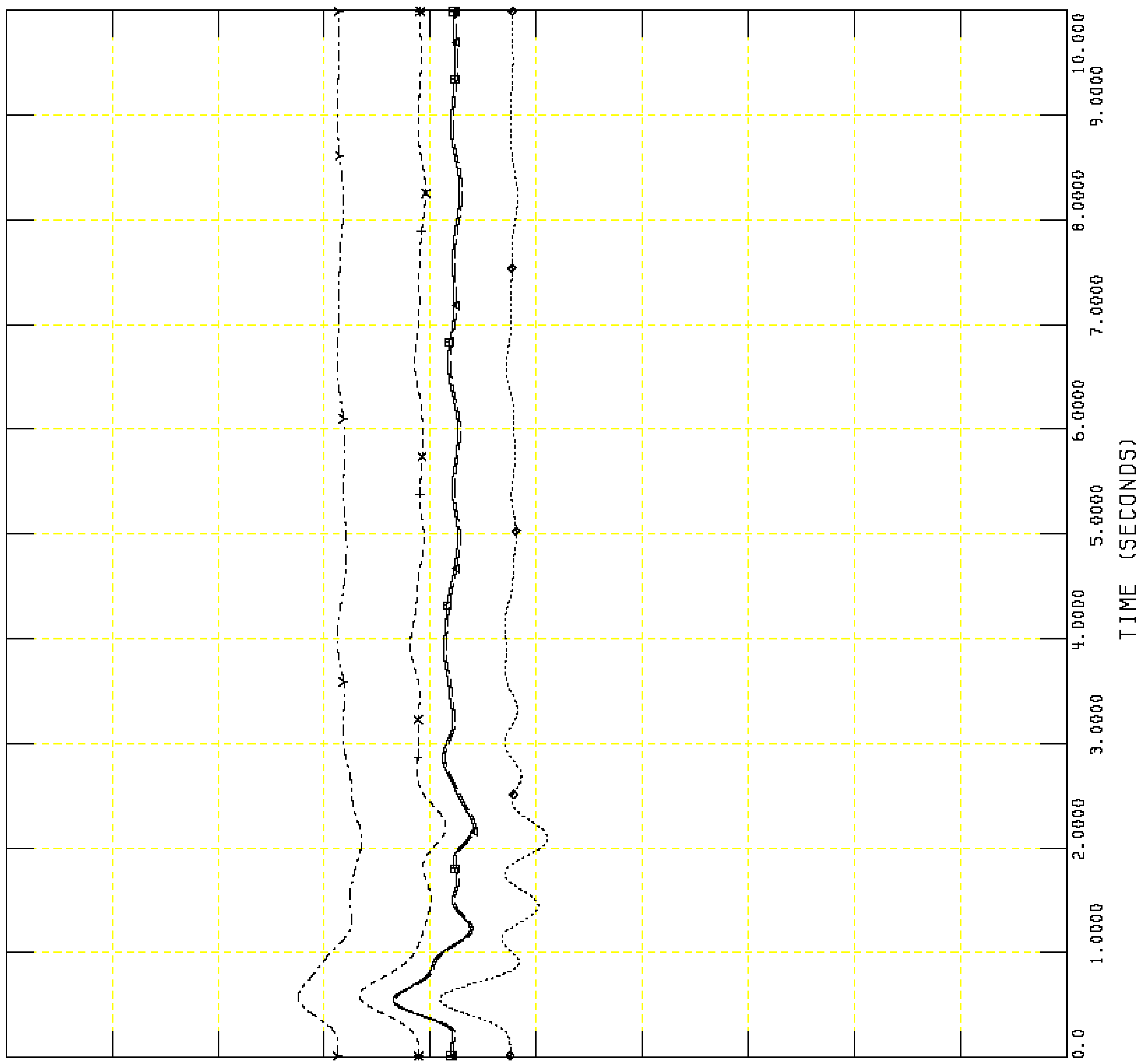
CHNL# 51: [ANGL BUS 334299 MACH '1 ']
250.00 0.0

CHNL# 50: [ANGL BUS 334298 MACH '1 ']
250.00 0.0

CHNL# 49: [ANGL BUS 334282 MACH '1 ']
250.00 0.0

CHNL# 48: [ANGL BUS 334071 MACH '1 ']
250.00 0.0

CHNL# 47: [ANGL BUS 334070 MACH '1 ']
250.00 0.0



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)

FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

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PG 10: ANGLE

CHNL# 58: [ANGL BUS 334393 MACH '1 ']
250.00 0.0

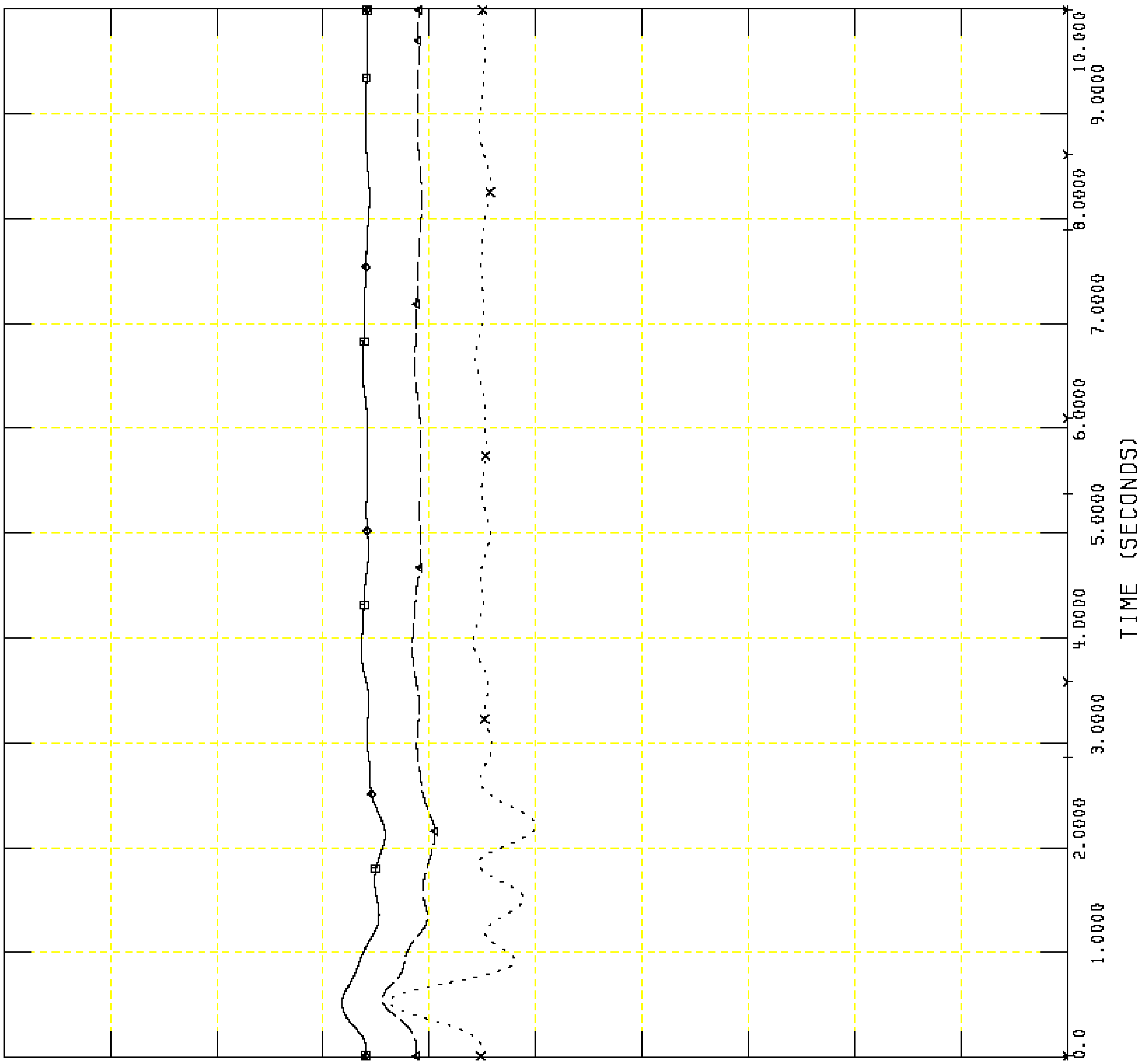
CHNL# 57: [ANGL BUS 334392 MACH '1 ']
250.00 0.0

CHNL# 56: [ANGL BUS 334377 MACH '1 ']
250.00 0.0

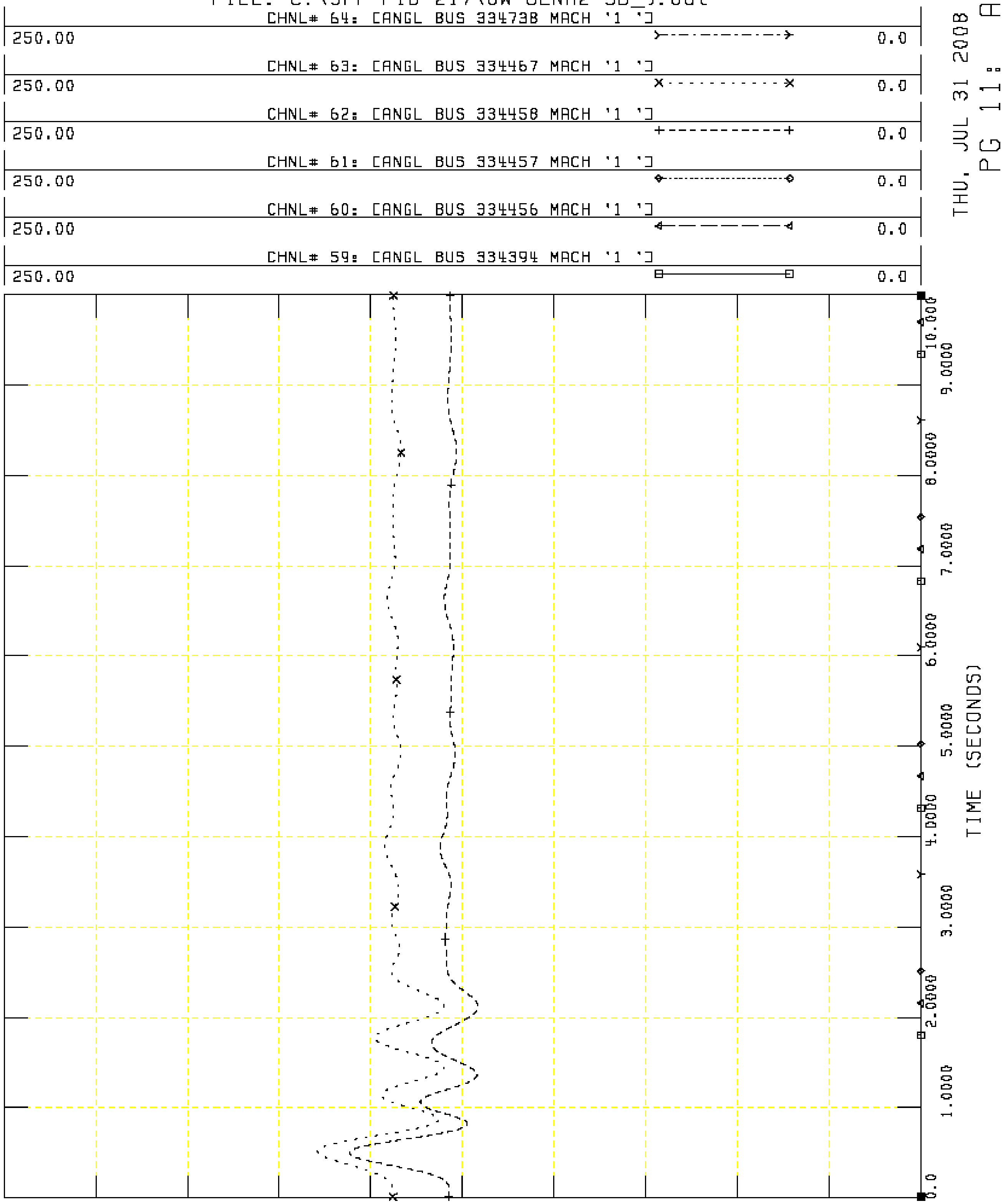
CHNL# 55: [ANGL BUS 334376 MACH '1 ']
250.00 0.0

CHNL# 54: [ANGL BUS 334375 MACH '1 ']
250.00 0.0

CHNL# 53: [ANGL BUS 334374 MACH '1 ']
250.00 0.0



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)
FILE: C:\SPP PID-217\GW-GENR2-SB_9.out



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)

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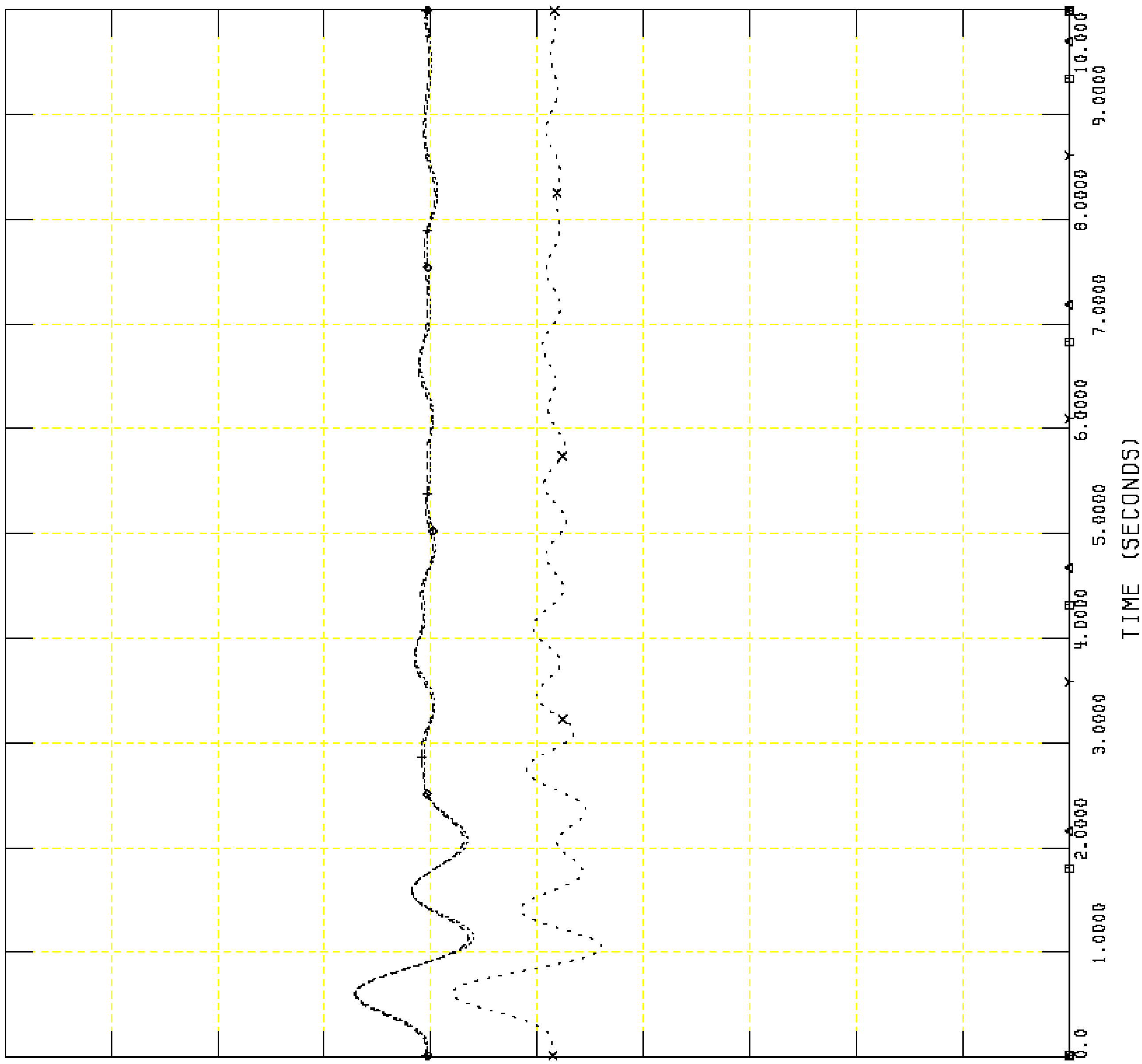
PG 12: ANGLE

Channel	Max	Min
CHNL# 70: [ANGL BUS 335177 MACH '4 ']	250.00	0.0
CHNL# 69: [ANGL BUS 335137 MACH '2 ']	250.00	0.0
CHNL# 68: [ANGL BUS 335076 MACH '1 ']	250.00	0.0
CHNL# 67: [ANGL BUS 335075 MACH '1 ']	250.00	0.0
CHNL# 66: [ANGL BUS 334740 MACH '1 ']	250.00	0.0
CHNL# 65: [ANGL BUS 334739 MACH '1 ']	250.00	0.0



GW
GW-GENR2, STUCK BRKR CONDS
CLEAR LOCAL AND REMOVE IN 10 CYC
GW-GENR2, STUCK BRKR CONDS (VFW34)

FILE: C:\SPP PID-217\GW-GENR2-SB_9.out

THU, JUL 31 2008 14:43
PG 13: ANGLE

CHNL# 76: [ANGL BUS 335204 MACH '1 ']
250.00 0.0

CHNL# 75: [ANGL BUS 335203 MACH '1 ']
250.00 0.0

CHNL# 74: [ANGL BUS 335202 MACH '1 ']
250.00 0.0

CHNL# 73: [ANGL BUS 335201 MACH '1 ']
250.00 0.0

CHNL# 72: [ANGL BUS 335179 MACH '6 ']
250.00 0.0

CHNL# 71: [ANGL BUS 335178 MACH '5 ']
250.00 0.0

GW
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THU, JUL 31 2008 14:43
PG 14: ANGLE