System Impact Study Report
PID 216
251MW Plant

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Executive Summary:

This System Impact Study is the second step of the interconnection process and is based on the PID-216 request for interconnection on Entergy's transmission system. This report is organized in two sections, namely, Section – A, Energy Resource Interconnection Service (ERIS) and Section – B, Network Resource Interconnection Service (NRIS – Section B).

The 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. 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 can be found in Section – B.

PID 216 intends to install a generating facility consisting of two (2) steam turbine generators tied to Wilton 230 kV bus through two (2) 230/18 kV transformers. The study evaluates injection of 251 MW to the Entergy Transmission System at the Wilton substation between the Panama and Romeville 230kV substations. The proposed Wilton 230kV substation would be located approximately 2.2 miles south of the Panama 230kVsubstation towards Romeville 230kV substation. The proposed generation was dispatched to 13 interfaces of Entergy's control area. The load flow study was performed on the latest available 2011 and 2015 Summer Peak case, using PSS/E and MUST software by Siemens Power Technologies International (Siemens-PTI). The short circuit study was performed on the Entergy system short circuit model using ASPEN software. The requested in-service date for this facility is January 1, 2010.

Results of the System Impact Study contend that under NRIS, the estimated upgrade cost with priors is $0 and without priors is $233,975,865.00. The estimated upgrade costs under ERIS with priors is $4,574,400.00 and without priors is $0.

Estimated Project Planning Upgrades for PID 216

Study	Estimated cost With Priors ($)	Estimated cost Without Priors ($)
NRIS	$0*	$233,975,865
ERIS	$4,574,400	$0

* Estimated Cost With Priors based upon inclusion of PID 208.

The costs of the upgrades are planning estimates only. Detailed cost estimates, accelerated costs and solutions for the limiting elements will be provided in the facilities study.

Section – A

Energy Resource Interconnection Service

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I. Objective

The purpose of this study is an evaluation of the system impact of the proposed generation on the Entergy transmission system. The study evaluates injection of 251 MW from the PID 216 plant to the Entergy Transmission System between the Panama and Romeville 230kV substations. The proposed Wilton 230kV substation would be located approximately 2.2 miles south of the Panama 230kVsubstation towards Romeville 230kV substation. The proposed generation was dispatched to 13 interfaces of Entergy's control area. The study also considers dispatch into the Entergy control area to provide additional information. The load flow study was performed on the latest available 2011 and 2015 Summer Peak case, using PSS/E and MUST software by Siemens Power Technologies International (Siemens-PTI). The short circuit study was performed on the Entergy system short circuit model using ASPEN software. The requested in-service date for this facility is January 1, 2010

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.

B. *Short Circuit Analysis*

The method used to determine if any short circuit problems would be caused by the addition of the PID-216 generation is as follows:

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-216 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-216 generation. The breakers identified to be upgraded through this comparison are *mandatory* upgrades.

C. ***Analysis Results***

There were no breakers that were found to be under-rated as a result of the additional short circuit current due to PID-216 generator without priors.

The results of the short circuit analysis indicates that the additional generation due to PID-216 generator causes 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 PID-216 plant with priors.

Table I: Underrated Breakers With Priors Included

Substation	Breaker	Duty % w/o PID 216	Max Fault w/o PID-216 (amps)	Duty % w/ PID 216	Max Fault with PID-216 (amps)	Interrupting Rating (amps)
Willow Glen 1 138 kV	9805-C	98.7	54294.6	100	55006.2	55000
	9810-C	98.7	54294.6	100	55006.2	55000
	9815-C	98.7	54294.6	100	55006.2	55000
	9830-C	98.7	54294.6	100	55006.2	55000
	9835-C	98.7	54294.6	100	55006.2	55000
	9890-C	98.7	54294.6	100	55006.2	55000
	9895-C	98.7	54294.6	100	55006.2	55000
Willow Glen 2 138 kV	9825-C	99.1	54510.1	100.4	55227.7	55000
	9850-C	99.1	54510.1	100.4	55227.7	55000
	9855-C	99.1	54510.1	100.4	55227.7	55000
	9860-C	99.1	54510.1	100.4	55227.7	55000
	9865-C	99.1	54510.1	100.4	55227.7	55000
	9900-C	99.1	54510.1	100.4	55227.7	55000
	9905-C	99.1	54510.1	100.4	55227.7	55000
	9910-C	99.1	54510.1	100.4	55227.7	55000
	9930-C	99.1	54510.1	100.4	55227.7	55000

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-216 generator and includes prior PID's 211, 213, and 215.

D. ***Problem Resolution***

Table III illustrates the station name, and the cost associated with upgrading the breakers at each station both for mandatory and optional breaker upgrades.

Substation	Number of Breakers	New Breaker Rating (amps)	Estimated cost of Breaker Upgrades ($)
Willow Glen 1 & 2	16	63000	$4,574,400

* Price based on 145 kV Breaker

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

The results of the short circuit analysis based upon the current configuration of the Entergy transmission system and Generation Interconnection Study Queue. Therefore, these results are subject to change.

III. Load Flow Study:

A. Model and Study Information

The following modifications were made to the base cases to reflect the latest information available:

- Entergy load was scaled to reflect the latest load forecast.
- Entergy generation was dispatched according to the most recent economic dispatch data.
- Confirmed firm transmission reservations were modeled for the years 2015, excluding short-term firm transactions on the same transmission interface.
- Generation in each of the 13 different control area interfaces and Entergy were scaled uniformly to accommodate the transfer.

This study considers the following four scenarios:

Table II-A: Scenarios

Scenario No.	Approved Future Transmission Projects	Pending Transmission Service and Interconnection Study Requests
1	Not Included	Not Included
2	Not Included	Included
3	Included	Not Included
4	Included	Included

With the above assumptions implemented, the First Contingency Incremental Transfer Capability (FCITC) values are calculated. The FCITC depends on various factors – the system load, generation dispatch, scheduled maintenance of equipment, and the configuration of the interconnected system and the power flows in effect among the interconnected systems. The FCITC is also dependent on previously confirmed firm reservations on the interface. In real-time operations, the dynamic nature of these factors may affect the transfer capability as reported in this study.

B. Analysis Results

Table II-B: Summary of Results

Interface		Summer Peak Case Used	FCITC Available for Scenario 1	FCITC Available for Scenario 3
AECI	Associated Electric Cooperative, Inc.	2011	0 MW	0 MW
AEP-W	American Electric Power - West	2011	0 MW	0 MW
AMRN	Ameren Transmission	2011	0 MW	0 MW
CLEC	CLECO	2011	0 MW	0 MW
EES	Entergy	2011	0 MW	0 MW
EMDE	Empire District Electric Co	2011	0 MW	0 MW
LAFA	Lafayette Utilities Sustem	2011	0 MW	0 MW
LAGN	Louisiana Generating, LLC	2011	0 MW	0 MW
LEPA	Louisiana Energy & Power Authority	2011	0 MW	0 MW
OKGE	Oklahoma Gas & Electric Company	2011	0 MW	0 MW
SMEPA	South Mississippi Electric Power Assoc.	2011	0 MW	0 MW
SOCO	Southern Company	2011	0 MW	0 MW
SWPA	Southwest Power Administration	2011	0 MW	0 MW
TVA	Tennessee Valley Authority	2011	0 MW	0 MW

Interface		Summer Peak Case Used	FCITC Available for Scenario 1	FCITC Available for Scenario 2	FCITC Available for Scenario 3	FCITC Available for Scenario 4
AECI	Associated Electric Cooperative, Inc.	2015	0 MW	0 MW	0 MW	0 MW
AEP-W	American Electric Power - West	2015	0 MW	0 MW	0 MW	0 MW
AMRN	Ameren Transmission	2015	0 MW	0 MW	0 MW	0 MW
CLEC	CLECO	2015	0 MW	0 MW	0 MW	0 MW
EES	Entergy	2015	0 MW	0 MW	0 MW	0 MW
EMDE	Empire District Electric Co	2015	0 MW	0 MW	0 MW	0 MW
LAFA	Lafayette Utilities Sustem	2015	0 MW	0 MW	0 MW	0 MW
LAGN	Louisiana Generating, LLC	2015	0 MW	0 MW	0 MW	0 MW
LEPA	Louisiana Energy & Power Authority	2015	0 MW	0 MW	0 MW	0 MW
OKGE	Oklahoma Gas & Electric Company	2015	0 MW	0 MW	0 MW	0 MW
SMEPA	South Mississippi Electric Power Assoc.	2015	0 MW	0 MW	0 MW	0 MW
SOCO	Southern Company	2015	0 MW	0 MW	0 MW	0 MW
SWPA	Southwest Power Administration	2015	0 MW	0 MW	0 MW	0 MW
TVA	Tennessee Valley Authority	2015	0 MW	0 MW	0 MW	0 MW

The results of this study are a preliminary evaluation of the system impact. The stated estimates are non-binding. No interconnection or transmission rights are implied via the results of this study. The costs of the upgrades are planning estimates only. Detailed cost estimates and solutions for the limiting elements will be provided in the Facilities Study. The results of the Facilities Study may be different depending on the existence of previously queued transmission service and interconnection service requests that continue to the Facilities Study phase, as well as transmission system configuration changes due to identified system upgrades.

C. Scenario 1

Without the approved future transmission projects and the pending transmission service & interconnection study requests, this analysis indicates that the export of the full output from PID-216 to 13 of Entergy's control area interfaces and dispatch within Entergy control area is limited by the following facilities:

2011 Summer Peak		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Acadia - Colonial Academy 138kV	$2,092,500							x							
Acadia GSU - Scanlan 138kV	$485,000							x							
Addis - Willow Glen 138kV	$10,672,500	x	x	x	x	x	x	x	x	x	x		x	x	x
ANO - Russellville North 161kV	$9,795,845	x	x			x					x			x	
Bonin - Cecelia 138kV	$4,792,500									x					
Bull Shoals - Bull Shoals Dam SPA 161kV	$427,500					x									
Cecelia - Semere 138kV	$137,500							x							
Cedar Hill - Tamina 138kV	$2,910,000		x												
Champagne - East Opelousas 138kV	$1,397,500	x	x		x	x	x	x			x			x	
Champagne - Krotz Spring 138kV	$15,569,784	x	x	x	x	x	x	x			x			x	
Chauvin - Ashland 115kV	$4,606,875									x					
Colonial Academy - Richard 138kV	$7,957,500							x							
Conroe Bulk - Plantation 138kV	$732,500		x												
Danville - North Magazine REA 161kV	$10,530,000		x			x					x			x	
Fairview - Gypsy 230kV	$34,728,000	x	x	x	x	x	x	x	x		x	x	x	x	x
French Settlement - Sorrento 230kV	$14,455,000	x	x	x	x	x	x				x	x	x	x	x
Gibson - Humphrey 115kV	$21,584,961	x	x	x	x	x	x	x	x		x		x	x	x
Gibson - Ramos 138kV	$5,753,263	x	x	x	x	x	x	x	x		x		x	x	x
Gibson 138/115kV transformer	$6,010,000	x	x	x	x	x	x	x	x		x		x	x	x
Greenwood - Humphrey 115kV	$2,700,000	x	x	x	x	x	x	x	x		x		x	x	x
Greenwood - Terrebone 115kV	$22,850,381	x	x	x	x	x	x	x	x		x		x	x	x
Habetz - Richard 138kV	$3,272,500							x							
Harrison East - Everton 161kV	$5,602,000					x									
Jonesboro - Jonesboro North (AECC) 161kV	$10,570,000													x	
Judice - Meaux 138kV	$10,000,000									x					
Judice - Scott1 138kV	$10,000,000									x					
Krotz Spring - Line 642 Tap 138kV	$3,235,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Lake Conway - Mayflower 115kV	$4,937,500													x	
Livonia - Line 642 Tap 138kV	$11,401,846	x	x	x	x	x	x	x	x		x	x	x	x	x
Livonia - Wilbert 138kV	$22,428,239	x	x	x	x	x	x	x	x		x	x	x	x	x
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	$TBD		x			x					x			x	

2011 Summer Peak		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Moril - Cecelia 138kV	$6,182,500									x					
North Crowley - Richard 138kV	$3,776,625							x							
North Crowley - Scott1 138kV	$39,707,607				x			x							
Plantation - Cedar Hill 138kV	$2,347,500		x												
Porter - Tamina 138kV	$127,500		x												
Raceland - Coteau 115kV	$3,065,000									x					
Richard - Scott1 138kV	$54,050,292							x							
Richard 500/138kV transformer 1	$7,560,000							x							
Russellville East - Russellville North 161kV	$5,954,000					x					x			x	
Russellville East - Russellville South 161kV	$7,687,000	x	x			x					x			x	
Scott1 - Bonin 138kV	$7,410,000							x							
Semere - Scott2 138kV	$24,345,000							x							
St. Joe - Hilltop 161kV	$3,170,000					x									
Sterlington 500/115kV transformer 2	$18,737,621						x								

2015 Summer Peak		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Acadia - Colonial Academy 138kV	$2,092,500							x							
Acadia GSU - Scanlan 138kV	$485,000							x							
Addis - Wilbert 138kV	$2,443,500							x							
Addis - Willow Glen 138kV	$10,672,500	x	x	x	x	x	x	x	x	x	x		x	x	x
ANO - Russellville North 161kV	$9,795,845	x	x			x					x			x	
Bull Shoals - Bull Shoals Dam SPA 161kV	$427,500					x									
Cedar Hill - Tamina 138kV	$2,910,000		x												
Champagne - East Opelousas 138kV	$1,397,500	x	x		x	x	x	x			x			x	
Champagne - Krotz Spring 138kV	$15,569,784	x	x	x	x	x	x	x	x		x	x	x	x	x
Chauvin - Ashland 115kV	$4,606,875									x					
Chauvin - Valentine 115kV	$6,571,125									x					
China Bulk - Sabine 230kV	$45,487,500		x												
Colonial Academy - Richard 138kV	$7,957,500							x							
Conroe Bulk - Plantation 138kV	$732,500		x												
Conway West - Lake Conway 115kV	$10,200,000													x	
Conway West 161/115kV transformer	$TBD													x	
Coteau - Houma 115kV	$4,975,000									x					
Danville - North Magazine REA 161kV	$10,530,000		x			x					x			x	
Duboin - Bayou Warehouse 138kV	$TBD							x							
Fairview - Gypsy 230kV	$34,728,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Fairview - Madisonville 230kV	$TBD							x							
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	$TBD										x				
French Settlement - Sorrento 230kV	$14,455,000	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Front Street - Michoud 230kV	$29,835,000	x	x	x		x					x	x	x	x	x
Gibson - Humphrey 115kV	$21,584,961	x	x	x	x	x	x	x	x		x		x	x	x
Gibson - Ramos 138kV	$5,753,263	x	x	x	x	x	x	x	x		x		x	x	x
Gibson 138/115kV transformer	$6,010,000				x			x							
Greenwood - Humphrey 115kV	$2,700,000	x	x	x	x	x	x	x	x		x		x	x	x
Greenwood - Terrebone 115kV	$22,850,381	x	x	x	x	x	x	x	x		x		x	x	x
Habetz - Richard 138kV	$3,272,500							x							
Harrison East - Everton 161kV	$5,602,000					x									
Harrison East - Summit 161kV	$26,975,000					x									
Hartburg - Inland Orange 230kV	$2,985,000						x								

2015 Summer Peak		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Hot Springs Village - Cheetah 115kV	$2,137,500													x	
Independence SES - Moorefield 161kV	$17,760,000					x					x			x	
Jonesboro - Jonesboro North (AECC) 161kV	$10,570,000													x	
Judice - Scott1 138kV	$10,000,000				x										
Krotz Spring - Line 642 Tap 138kV	$3,235,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Lake Conway - Mayflower 115kV	$4,937,500													x	
Livonia - Line 642 Tap 138kV	$11,401,846	x	x	x	x	x	x	x	x		x	x	x	x	x
Livonia - Wilbert 138kV	$22,428,239	x	x	x	x	x	x	x	x		x	x	x	x	x
Melborne - Sage 161kV	$7,155,000					x					x			x	
North Crowley - Richard 138kV	$3,776,625							x							
North Crowley - Scott1 138kV	$39,707,607							x							
Oak Ridge - Porter 138kV	$2,997,000		x												
Plantation - Cedar Hill 138kV	$2,347,500		x												
Pleasant Hill 500/161kV transformer	$30,389,000					x								x	
Porter - Tamina 138kV	$127,500		x												
Raceland - Coteau 115kV	$3,065,000									x					
Richard - Scott1 138kV	$54,050,292							x							
Russellville East - Russellville North 161kV	$5,954,000	x	x			x					x			x	
Russellville East - Russellville South 161kV	$7,687,000	x	x	x		x					x			x	
Russellville South - Dardanelle Dam 161kV	$4,470,000					x					x			x	
Scott1 - Bonin 138kV	$7,410,000							x							
Semere - Scott2 138kV	$24,345,000							x							
St. Joe - Hilltop 161kV	$3,170,000					x									
Sterlington 500/115kV transformer 2	$18,737,621						x								
Terrebone 230/115kV transformer	$5,250,000									x					

For the detailed information about the FCITC calculation for each interface, please refer to the appended study results in Appendix C.

D. Scenario 2:

Without the approved future transmission projects, but with the pending transmission service & interconnection study requests, this analysis indicates that the export of the full output from PID-216 to 13 of Entergy's control area interfaces and dispatch within Entergy control area is limited by the following facilities:

2015 Summer Peak + Prior transactions		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Acadia - Colonial Academy 138kV	$2,092,500							x							
Acadia GSU - Scanlan 138kV	$485,000							x							
Addis - Willow Glen 138kV	$10,672,500				x			x							
ANO - Russellville North 161kV	$9,795,845	x	x	x		x					x			x	
Baxter Wilson - Ray Braswell 500kV	$42,920,000	x	x	x		x	x				x	x	x	x	x
Big Cajun 2 - Webre 500kV	$69,431,250				x			x							
Bull Shoals - Bull Shoals Dam SPA 161kV	$427,500					x									
Calico Rock - Melborne 161kV	$24,945,000					x								x	
Calico Rock - Norfolk 161kV	$12,180,000													x	
Cecelia - Semere 138kV	$137,500							x							
Chauvin - Ashland 115kV	$4,606,875									x					
Colonial Academy - Richard 138kV	$7,957,500				x			x							
Conway West - Lake Conway 115kV	$10,200,000													x	
Conway West 161/115kV transformer	$ TBD													x	
Danville - North Magazine REA 161kV	$10,530,000		x			x					x			x	
Derbigny - Nine Mile 230kV	$2,660,850						x					x	x		x
Downsville - Sterlington 115kV	$17,769,000		x												
Fairview - Gypsy 230kV	$34,728,000	x	x	x	x	x	x	x	x		x	x	x	x	x
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	$TBD										x				
Florence - South Jackson 115kV	$5,715,000											x			
French Settlement - Sorrento 230kV	$14,455,000	x	x	x	x	x	x	x	x	x	x	x	x	x	x
French Settlement - Springfield 230kV	$29,750,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Front Street - Michoud 230kV	$29,835,000	x	x	x	x	x	x		x		x	x	x	x	x
Gibson - Humphrey 115kV	$21,584,961							x							
Greenbrier - Quitman 161kV	$6,450,000													x	
Greenwood - Humphrey 115kV	$2,700,000				x			x							
Greenwood - Terrebone 115kV	$22,850,381				x			x							
Habetz - Richard 138kV	$3,272,500				x			x							

2015 Summer Peak + Prior transactions		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Hammond - Springfield 230kV	$9,450,000	x	x	x		x	x				x	x	x	x	x
Harrison East - Everton 161kV	$5,602,000					x									
Harrison East - Summit 161kV	$26,975,000					x									
Hot Springs Village - Cheetah 115kV	$2,137,500													x	
Independence SES - Moorefield 161kV	$17,760,000					x					x			x	
Jonesboro - Jonesboro North (AECC) 161kV	$10,570,000													x	
Judice - Meaux 138kV	$10,000,000				x										
Judice - Scott1 138kV	$10,000,000				x			x							
Lake Conway - Mayflower 115kV	$4,937,500													x	
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	$ TBD		x			x					x			x	
Melborne - Sage 161kV	$7,155,000					x					x			x	
Moril - Cecelia 138kV	$6,182,500				x										
Newport - Newport Industrial 161kV	$TBD													x	
North Crowley - Richard 138kV	$3,776,625							x							
North Crowley - Scott1 138kV	$39,707,607				x			x							
Pleasant Hill 500/161kV transformer	$30,389,000					x								x	
Port Hudson 230/138 transformer 1	$TBD									x					
Port Hudson 230/138 transformer 2	$TBD									x					
Raceland - Coteau 115kV	$3,065,000				x			x		x					
Ray Braswell 500/115kV transformer 1	$8,100,000	x		x		x					x	x	x	x	x
Ray Braswell 500/230kV transformer 1	$8,100,000	x	x	x		x					x	x	x	x	x
Ray Braswell 500/230kV transformer 2	$8,100,000	x	x	x		x					x	x	x	x	x
Richard - Scott1 138kV	$54,050,292				x			x							
Richard 500/138kV transformer 1	$7,560,000							x							
Russellville East - Russellville North 161kV	$5,954,000	x	x	x		x					x			x	
Russellville East - Russellville South 161kV	$7,687,000	x	x	x		x					x			x	
Russellville South - Dardanelle Dam 161kV	$4,470,000	x	x	x		x					x			x	
Scott1 - Bonin 138kV	$7,410,000							x							
Semere - Scott2 138kV	$24,345,000				x			x							
St. Joe - Hilltop 161kV	$3,170,000					x					x				
Sterlington 500/115kV transformer 1	$18,737,621		x			x			x		x			x	
Sterlington 500/115kV transformer 2	$18,737,621	x	x		x	x			x		x			x	
Terrebone 230/115kV transformer	$5,250,000				x			x		x					

2015 Summer Peak + Prior transactions		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Wells 500/230kV transformer	$TBD							x							
Winnfield 230/115kV transformer	$5,670,000	x	x			x					x			x	

For the detailed information about the FCITC calculation for each interface, please refer to the appended study results in Appendix D.

E. Scenario 3:

With the approved Amite South Import (ASI) future transmission projects, but without the pending transmission service & interconnection study requests, this analysis indicates that the export of the full output from PID 216 to 13 of Entergy's control area interfaces and dispatch within Entergy control area is limited by the following facilities:

2011s+ ASI Upgrades		Sink													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Acadia - Colonial Academy 138kV	$2,092,500							x							
Acadia GSU - Scanlan 138kV	$485,000							x							
Addis - Willow Glen 138kV	$10,672,500	x	x	x	x	x	x	x	x	x	x		x	x	x
ANO - Russellville North 161kV	$9,795,845	x	x			x					x			x	
Bonin - Cecelia 138kV	$4,792,500									x					
Bull Shoals - Bull Shoals Dam SPA 161kV	$427,500					x									
Cecelia - Semere 138kV	$137,500							x							
Champagne - East Opelousas 138kV	$1,397,500		x		x	x	x	x			x			x	
Champagne - Krotz Spring 138kV	$15,569,784	x	x	x	x	x	x	x			x			x	
Chauvin - Ashland 115kV	$4,606,875									x					
Colonial Academy - Richard 138kV	$7,957,500							x							
Danville - North Magazine REA 161kV	$10,530,000		x			x					x			x	
Fairview - Gypsy 230kV	$34,728,000	x	x	x	x	x	x	x	x		x	x	x	x	x
French Settlement - Sorrento 230kV	$14,455,000	x	x	x	x	x	x				x	x	x	x	x
Gibson - Humphrey 115kV	$21,584,961	x	x	x	x	x	x	x	x		x		x	x	x
Gibson - Ramos 138kV	$5,753,263	x	x	x	x	x	x	x	x		x		x	x	x
Gibson 138/115kV transformer	$6,010,000	x	x	x	x	x	x	x	x		x		x	x	x
Greenwood - Humphrey 115kV	$2,700,000	x	x	x	x	x	x	x	x		x		x	x	x
Greenwood - Terrebone 115kV	$22,850,381	x	x	x	x	x	x	x	x		x		x	x	x
Habetz - Richard 138kV	$3,272,500							x							
Harrison East - Everton 161kV	$5,602,000					x									
Jonesboro - Jonesboro North (AECC) 161kV	$10,570,000													x	
Judice - Meaux 138kV	$10,000,000									x					
Judice - Scott1 138kV	$10,000,000									x					
Krotz Spring - Line 642 Tap 138kV	$3,235,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Lake Conway - Mayflower 115kV	$4,937,500													x	
Livonia - Line 642 Tap 138kV	$11,401,846	x	x	x	x	x	x	x	x		x	x	x	x	x
Livonia - Wilbert 138kV	$22,428,239	x	x	x	x	x	x	x	x		x	x	x	x	x
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	$ TBD		x			x					x			x	

2011s+ ASI Upgrades		Sink													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Moril - Cecelia 138kV	$6,182,500									x					
North Crowley - Richard 138kV	$3,776,625							x							
North Crowley - Scott1 138kV	$39,707,607				x			x							
Porter - Tamina 138kV	$127,500		x												
Raceland - Coteau 115kV	$3,065,000									x					
Richard - Scott1 138kV	$54,050,292							x							
Richard 500/138kV transformer 1	$7,560,000							x							
Russellville East - Russellville North 161kV	$5,954,000					x					x			x	
Russellville East - Russellville South 161kV	$7,687,000		x			x					x			x	
Scott1 - Bonin 138kV	$7,410,000							x							
Semere - Scott2 138kV	$24,345,000							x							
St. Joe - Hilltop 161kV	$3,170,000					x									
Sterlington 500/115kV transformer 2	$18,737,621						x								

2015 Summer Peak + ASI Upgrades		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Acadia - Colonial Academy 138kV	$2,092,500							x							
Acadia GSU - Scanlan 138kV	$485,000							x							
Addis - Wilbert 138kV	$2,443,500							x							
Addis - Willow Glen 138kV	$10,672,500	x	x	x	x	x	x	x	x	x	x		x	x	x
ANO - Russellville North 161kV	$9,795,845	x	x			x					x			x	
Bull Shoals - Bull Shoals Dam SPA 161kV	$427,500					x									
Cedar Hill - Tamina 138kV	$2,910,000		x												
Champagne - East Opelousas 138kV	$1,397,500		x		x	x	x	x			x			x	
Champagne - Krotz Spring 138kV	$15,569,784	x	x	x	x	x	x	x	x		x	x	x	x	x
Chauvin - Ashland 115kV	$4,606,875									x					
Chauvin - Valentine 115kV	$6,571,125									x					
China Bulk - Sabine 230kV	$45,487,500		x												
Colonial Academy - Richard 138kV	$7,957,500							x							
Conroe Bulk - Plantation 138kV	$732,500		x												
Conway West - Lake Conway 115kV	$10,200,000													x	
Conway West 161/115kV transformer	$ TBD													x	
Coteau - Houma 115kV	$4,975,000									x					
Danville - North Magazine REA 161kV	$10,530,000		x			x					x			x	
Duboin - Bayou Warehouse 138kV	$TBD							x							
Fairview - Gypsy 230kV	$34,728,000	x	x	x	x	x	x	x	x		x	x	x	x	x
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	$TBD										x				
French Settlement - Sorrento 230kV	$14,455,000	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Front Street - Michoud 230kV	$29,835,000	x		x		x					x	x	x	x	x
Gibson - Humphrey 115kV	$21,584,961	x	x	x	x	x	x	x	x		x		x	x	x
Gibson - Ramos 138kV	$5,753,263	x	x	x	x	x	x	x	x		x		x	x	x
Gibson 138/115kV transformer	$6,010,000				x			x							
Greenwood - Humphrey 115kV	$2,700,000	x	x	x	x	x	x	x	x		x		x	x	x
Greenwood - Terrebone 115kV	$22,850,381	x	x	x	x	x	x	x	x		x		x	x	x
Habetz - Richard 138kV	$3,272,500							x							
Harrison East - Everton 161kV	$5,602,000					x									
Harrison East - Summit 161kV	$26,975,000					x									
Hartburg - Inland Orange 230kV	$2,985,000		x				x								
Hot Springs Village - Cheetah 115kV	$2,137,500													x	

2015 Summer Peak + ASI Upgrades		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EDE**	**EES**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Independence SES - Moorefield 161kV	$17,760,000					x					x			x	
Jonesboro - Jonesboro North (AECC) 161kV	$10,570,000													x	
Judice - Scott1 138kV	$10,000,000				x										
Krotz Spring - Line 642 Tap 138kV	$3,235,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Lake Conway - Mayflower 115kV	$4,937,500													x	
Livonia - Line 642 Tap 138kV	$11,401,846	x	x	x	x	x	x	x	x		x	x	x	x	x
Livonia - Wilbert 138kV	$22,428,239	x	x	x	x	x	x	x	x		x	x	x	x	x
Melborne - Sage 161kV	$7,155,000					x					x			x	
North Crowley - Richard 138kV	$3,776,625							x							
North Crowley - Scott1 138kV	$39,707,607							x							
Plantation - Cedar Hill 138kV	$2,347,500		x												
Pleasant Hill 500/161kV transformer	$30,389,000					x								x	
Porter - Tamina 138kV	$127,500		x												
Raceland - Coteau 115kV	$3,065,000									x					
Richard - Scott1 138kV	$54,050,292							x							
Russellville East - Russellville North 161kV	$5,954,000	x	x			x					x			x	
Russellville East - Russellville South 161kV	$7,687,000	x	x	x		x					x			x	
Russellville South - Dardanelle Dam 161kV	$4,470,000					x					x			x	
Scott1 - Bonin 138kV	$7,410,000							x							
Semere - Scott2 138kV	$24,345,000							x							
St. Joe - Hilltop 161kV	$3,170,000					x									
Sterlington 500/115kV transformer 2	$18,737,621						x								
Terrebone 230/115kV transformer	$5,250,000									x					

For the detailed information about the FCITC calculation for each interface, please refer to the appended study results in Appendix E.

F. Scenario 4:

With the approved Amite South Import (ASI) future transmission projects and the pending transmission service & interconnection study requests, this analysis indicates that the export of the full output from PID 216 to 13 of Entergy's control area interfaces and dispatch within Entergy control area is limited by the following facilities:

2015 Summer Peak + ASI Upgrades + Prior		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EES**	**EMDE**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Acadia - Colonial Academy 138kV	$2,092,500							x							
Acadia GSU - Scanlan 138kV	$485,000							x							
Addis - Willow Glen 138kV	$10,672,500				x			x							
ANO - Russellville North 161kV	$9,795,845	x	x				x				x			x	
Baxter Wilson - Ray Braswell 500kV	$42,920,000	x	x	x		x	x				x	x	x	x	x
Big Cajun 2 - Webre 500kV	$69,431,250				x			x							
Bull Shoals - Bull Shoals Dam SPA 161kV	$427,500						x								
Calico Rock - Melborne 161kV	$24,945,000						x							x	
Calico Rock - Norfolk 161kV	$12,180,000													x	
Cecelia - Semere 138kV	$137,500							x							
Chauvin - Ashland 115kV	$4,606,875									x					
Colonial Academy - Richard 138kV	$7,957,500				x			x							
Conway West - Lake Conway 115kV	$10,200,000													x	
Conway West 161/115kV transformer	$ TBD													x	
Danville - North Magazine REA 161kV	$10,530,000		x				x				x			x	
Derbigny - Nine Mile 230kV	$2,660,850	x		x		x	x					x	x		x
Downsville - Sterlington 115kV	$17,769,000		1												
Fairview - Gypsy 230kV	$34,728,000	x	x	x	x	x	x	x	x		x	x	x	x	x
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	$TBD										x				
Flander - Acadian 230kV (LAFA)	$TBD				x										
Flander - Hopkins 138kV (CLECO/LAFA)	$TBD				x										
Florence - South Jackson 115kV	$5,715,000											x			
French Settlement - Sorrento 230kV	$14,455,000	x	x	x	x	x	x	x	x	x	x	x	x	x	x
French Settlement - Springfield 230kV	$29,750,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Front Street - Michoud 230kV	$29,835,000	x	x	x	x	x	x	x	x		x	x	x	x	x
Gibson - Humphrey 115kV	$21,584,961							x							
Greenbrier - Quitman 161kV	$6,450,000													x	

2015 Summer Peak + ASI Upgrades + Prior		Interface													
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EES**	**EMDE**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Greenwood - Humphrey 115kV	$2,700,000				x			x							
Greenwood - Terrebone 115kV	$22,850,381				x			x							
Habetz - Richard 138kV	$3,272,500				x			x							
Hammond - Springfield 230kV	$9,450,000	x	x	x			x				x	x	x	x	x
Harrison East - Everton 161kV	$5,602,000						x								
Harrison East - Summit 161kV	$26,975,000						x								
Hot Springs Village - Cheetah 115kV	$2,137,500													x	
Independence SES - Moorefield 161kV	$17,760,000						x				x			x	
Jonesboro - Jonesboro North (AECC) 161kV	$10,570,000													x	
Judice - Meaux 138kV	$10,000,000				x										
Judice - Scott1 138kV	$10,000,000				x			x							
Lake Conway - Mayflower 115kV	$4,937,500													x	
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	$ TBD		x				x				x			x	
Melborne - Sage 161kV	$7,155,000						x				x			x	
Moril - Cecelia 138kV	$6,182,500				x										
Newport - Newport Industrial 161kV	$TBD													x	
North Crowley - Richard 138kV	$3,776,625							x							
North Crowley - Scott1 138kV	$39,707,607				x			x							
Pleasant Hill 500/161kV transformer	$30,389,000						x							x	
Port Hudson 230/138 transformer 1	$TBD									x					
Port Hudson 230/138 transformer 2	$TBD									x					
Raceland - Coteau 115kV	$3,065,000				x			x		x					
Ray Braswell 500/115kV transformer 1	$8,100,000	x		x			x				x	x	x	x	x
Ray Braswell 500/230kV transformer 1	$8,100,000	x	x	x			x				x	x	x	x	x
Ray Braswell 500/230kV transformer 2	$8,100,000	x	x	x			x				x	x	x	x	x
Richard - Scott1 138kV	$54,050,292				x			x							
Richard 500/138kV transformer 1	$7,560,000							x							
Russellville East - Russellville North 161kV	$5,954,000	x	x				x				x			x	
Russellville East - Russellville South 161kV	$7,687,000	x	x	x			x				x			x	
Russellville South - Dardanelle Dam 161kV	$4,470,000	x	x	x			x				x			x	
Scott1 - Bonin 138kV	$7,410,000							x							
Semere - Scott2 138kV	$24,345,000				x			x							
St. Joe - Hilltop 161kV	$3,170,000						x				x				

2015 Summer Peak + ASI Upgrades + Prior		Interface												
Limiting Element	**Cost**	**AECI**	**AEPW**	**AMRN**	**CLECO**	**EES**	**EMDE**	**LAFA**	**LAGN**	**LEPA**	**OKGE**	**SMEPA**	**SOCO**	**SPA**	**TVA**
Sterlington 500/115kV transformer 1	$18,737,621		x				x		x		x			x	
Sterlington 500/115kV transformer 2	$18,737,621	x	x		x		x		x		x			x	
Terrebone 230/115kV transformer	$5,250,000				x			x		x					
Winnfield 230/115kV transformer	$5,670,000	x	x				x				x			x	

For the detailed information about the FCITC calculation for each interface, please refer to the appended study results in Appendix F.

APPENDIX A: Prior Translations Included in the FCITC calculation for PID 216

Generator Interconnection				
PID	**Location**	**MW**	**kV**	**Year In Service**
208	Fancy Point	1594	500	2015
211	Lewis Creek	570	138	2011

Transmission Service				
OASIS #	**POR**	**POD**	**MW**	**Begin**
1460876	EES	AEPW	75	3/1/2009
1460878	EES	AEPW	75	3/1/2009
1460879	EES	AEPW	75	3/1/2009
1460881	EES	AEPW	75	3/1/2009
1460900	AEPW	LEPA	116	1/1/2009
1478781	EES	EES	804	1/1/2008
1481059	LAGN	DENL	60	2/1/2011
1481111	LAGN	CNWY	50	2/1/2011
1481119	LAGN	BUBA	30	2/1/2011
1481235	LAGN	LEPA	50	2/1/2011
1481438	LAGN	EES	20	2/1/2011
1483241	LAGN	SOCO	103	1/1/2010
1483243	LAGN	SOCO	206	1/1/2010
1483244	LAGN	SOCO	309	1/1/2010
1520043	LAGN	EES	20	1/1/2011

APPENDIX B: Approved Future Projects Included in the FCITC calculation for PID 216

Year	**Approved Future Projects**
2007 – 2010	2007CP_2009_Approved_ELL-S_Amite_South_Area_Improvements_PhaseII.idv
	2007CP_2009_Approved_ELL-S_EGSI-LA_Amite_South_Area_Improvements_PhaseIII.idv
	2008CP_EAI 2008 Maumelle Approved.idv
	2008CP_EAI 2010 SMEPA Approved.idv
	2011_Approved_ETI_Western_Region_Reliability_Improvement_Phase3_Interim

Year	**Proposed Projects for prior generator interconnection requests**
2015	Webre – Richard 500kV transmission line (56 miles triple bundled 954)
	Fancy Point – Hartburg/Mount Olive line tap 500kV transmission line
	Cypress – Jacinto 230kV transmission line
	Hartburg – Sabine 230kV transmission line
	Lewis Creek – Conroe 230kV transmission line

APPENDIX C: Results for Scenario 1:

2011

AECI

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	48
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	105
Champagne - East Opelousas 138kV	Webre - Wells 500kV	147
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	154
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	242
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	250

AEP-W

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Porter - Tamina 138kV	Oak Ridge - Porter 138kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Cedar Hill - Tamina 138kV	Oak Ridge - Porter 138kV	0
Plantation - Cedar Hill 138kV	Oak Ridge - Porter 138kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Conroe Bulk - Plantation 138kV	Oak Ridge - Porter 138kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	38
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	107
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	118
Porter - Tamina 138kV	Metro - Oak Ridge 138kV	118
Champagne - East Opelousas 138kV	Webre - Wells 500kV	119
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	133
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	166
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	189

AMRN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	50
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	103
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	154
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	251

CLECO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0

Limiting Element	Contingency Element	ATC
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	19
Champagne - East Opelousas 138kV	Webre - Wells 500kV	87
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	104
North Crowley - Scott1 138kV	Wells 500/230kV transformer	158
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	194
Livonia - Wilbert 138kV	Richard - Wells 500kV	230
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	231

EMDE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	45
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	97
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	103
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	103
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	108
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	110
Champagne - East Opelousas 138kV	Webre - Wells 500kV	139
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	157
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	161
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	206
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	226
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	243

EES

Limiting Element	Contingency Element	ATCV
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	51
Champagne - East Opelousas 138kV	Webre - Wells 500kV	138
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	197
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	247
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	251

LAGN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	59

LAFA

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Habetz - Richard 138kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Semere - Scott2 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Habetz - Richard 138kV	0
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Richard - Scott1 138kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Habetz - Richard 138kV	0
Colonial Academy - Richard 138kV	Greenwood - Terrebone 115kV	0

Limiting Element	Contingency Element	ATC
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	0
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	0
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	4
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	5
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	8
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	9
Gibson 138/115kV transformer	Webre - Wells 500kV	15
Colonial Academy - Richard 138kV	Habetz - Richard 138kV	26
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	26
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	27
Champagne - East Opelousas 138kV	Webre - Wells 500kV	27
Champagne - East Opelousas 138kV	Webre - Wells 500kV	28
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	34
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	37
North Crowley - Scott1 138kV	Wells 500/230kV transformer	45
Acadia GSU - Scanlan 138kV	Point Des Mouton - Wells 230kV	55
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	64
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	65
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	79
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	84
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	85
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	100
Acadia - Colonial Academy 138kV	Greenwood - Terrebone 115kV	107
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	129
Acadia - Colonial Academy 138kV	Habetz - Richard 138kV	160
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	163
Greenwood - Humphrey 115kV	Point Des Mouton - Wells 230kV	175
Richard - Scott1 138kV	Habetz - Richard 138kV	184
Acadia GSU - Scanlan 138kV	Greenwood - Terrebone 115kV	188
Livonia - Wilbert 138kV	Richard - Wells 500kV	189
Greenwood - Humphrey 115kV	Bonin - Labbe 230kV (LAFA)	194
Cecelia - Semere 138kV	Point Des Mouton - Wells 230kV	195
Greenwood - Humphrey 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	196
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	210
Cecelia - Semere 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	224
Champagne - East Opelousas 138kV	Point Des Mouton - Wells 230kV	231
Acadia GSU - Scanlan 138kV	Habetz - Richard 138kV	236
Gibson - Humphrey 115kV	Point Des Mouton - Wells 230kV	240
Cecelia - Semere 138kV	Bonin - Labbe 230kV (LAFA)	250

LEPA

Limiting Element	Contingency Element	ATC
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	63
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	94
Chauvin - Ashland 115kV	Coteau - Houma 115kV	100
Bonin - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	104

OKGE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	43
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	73
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	96
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	111
Champagne - East Opelousas 138kV	Webre - Wells 500kV	131
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	160
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	183
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	212

SMEPA

Limiting Element	Contingency Element	ATC
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	69
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	139

SOCO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	65
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	92
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	153

SWPA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Hergett JCWL - Jonesboro 161kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Independence SES - Moorefield 161kV	25
Gibson 138/115kV transformer	Webre - Wells 500kV	45
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	86
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Moorefield 161kV	87
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	108
Champagne - East Opelousas 138kV	Webre - Wells 500kV	138
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	148
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	157
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	159
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Cushman 161 kV	204
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	226
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Cushman 161kV	245

TVA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	56
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	99
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	150

2015

AECI

Limiting Element	Contingency Element	ATC
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	129
Gibson - Ramos 138kV	Webre - Wells 500kV	143
Front Street - Michoud 230kV	Franklin - McKnight 500kV	218

AEP-W

Limiting Element	Contingency Element	ATC
Porter - Tamina 138kV	Oak Ridge - Porter 138kV	0
Cedar Hill - Tamina 138kV	Oak Ridge - Porter 138kV	0
Plantation - Cedar Hill 138kV	Oak Ridge - Porter 138kV	0
Conroe Bulk - Plantation 138kV	Oak Ridge - Porter 138kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Porter - Tamina 138kV	Metro - Oak Ridge 138kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Oak Ridge - Porter 138kV	Porter - Tamina 138kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0

Limiting Element	Contingency Element	ATC
Cedar Hill - Tamina 138kV	Metro - Oak Ridge 138kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
China Bulk - Sabine 230kV	Amelia Bulk - China Bulk 230kV	0
Plantation - Cedar Hill 138kV	Metro - Oak Ridge 138kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Oak Ridge - Porter 138kV	Cedar Hill - Tamina 138kV	99
Livonia - Wilbert 138kV	Richard - Wells 500kV	100
Gibson - Ramos 138kV	Webre - Wells 500kV	111
Oak Ridge - Porter 138kV	Plantation - Cedar Hill 138kV	198
Front Street - Michoud 230kV	Franklin - McKnight 500kV	248

AMRN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	134
Gibson - Ramos 138kV	Webre - Wells 500kV	148
Front Street - Michoud 230kV	Franklin - McKnight 500kV	215

CLECO

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Greenwood - Humphrey 115kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Judice - Scott1 138kV	Gibson - Humphrey 115kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	49
Livonia - Wilbert 138kV	Richard - Wells 500kV	51
Judice - Scott1 138kV	Gibson 138/115kV transformer	87
Judice - Scott1 138kV	Gibson - Ramos 138kV	87
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	209
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	209
Greenwood - Humphrey 115kV	Richard - Wells 500kV	216
Gibson 138/115kV transformer	Webre - Wells 500kV	227

EMDE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Pleasant Hill 500/161kV transformer	3Wnd: OPEN B$0129 1	0
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Bull Shoals - Lead Hills 161kV	0
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Clevcov - Lead HL 161kV	4
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	19
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	20
ANO - Russellville North 161kV	Morrilton East - Pleasant Hill 161kV	30
Melborne - Sage 161kV	ANO - Fort Smith 500kV	40
Harrison East - Summit 161kV	St. Joe - Hilltop 161kV	43
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	45
St. Joe - Hilltop 161kV	Eureka Springs - Osage Springs 161kV	50
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	59
Harrison East - Summit 161kV	Everton - St. Joe 161kV	84
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	86
Harrison East - Everton 161kV	Flippin - Summit 161kV	90
Livonia - Wilbert 138kV	Richard - Wells 500kV	121
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	123

Limiting Element	Contingency Element	ATC
Gibson - Ramos 138kV	Webre - Wells 500kV	134
Melborne - Sage 161kV	Sage - Guion 161kV	152
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	159
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	160
Harrison East - Summit 161kV	Harrison East - Everton 161kV	166
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	175
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	175
Melborne - Sage 161kV	Mountain View - Guion 161kV	178
Melborne - Sage 161kV	Dell - Independence SES 500kV	190
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	193
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	212
Front Street - Michoud 230kV	Franklin - McKnight 500kV	225
Independence SES - Moorefield 161kV	Independence SES - Keo 500kV	226
Melborne - Sage 161kV	Cash - Newport AB 161kV	232

EES

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	120
Gibson - Ramos 138kV	Webre - Wells 500kV	151
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	175
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	175
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	194

LAGN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - Mcknight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	Hammond - Springfield 230kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	182
Gibson - Ramos 138kV	Webre - Wells 500kV	229

LAFA

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	Richard - Wells 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - Mcknight 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Fairview - Gypsy 230kV	Hammond - Springfield 230kV	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0

Limiting Element	Contingency Element	ATC
Gibson - Ramos 138kV	Webre - Wells 500kV	44
Livonia - Wilbert 138kV	Richard - Wells 500kV	46
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	48
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	54
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	73
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	86
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	89
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	102
North Crowley - Scott1 138kV	Richard - Scott1 138kV	106
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	119
Fairview - Madisonville 230kV	Richard - Wells 500kV	131
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	137
Duboin - Bayou Warehouse 138kV	Webre - Wells 500kV	139
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	152
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	159
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	162
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	179
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	187
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	188
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	201
Gibson 138/115kV transformer	Webre - Wells 500kV	202
Acadia GSU - Scanlan 138kV	Point Des Mouton - Wells 230kV	208
Greenwood - Humphrey 115kV	Richard - Wells 500kV	216
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	218
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	221
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	234
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	236
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	236
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	238
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	244
Champagne - East Opelousas 138kV	Point Des Mouton - Wells 230kV	245
Addis - Wilbert 138kV	Webre - Wells 500kV	248

LEPA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - Mcknight 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	68
Chauvin - Ashland 115kV	Coteau - Houma 115kV	91
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	125

OKGE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	Contingency FG 5003: BUS 'VALIANT7 345' TO BUS 'PITTSB-7 345'	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	57
Livonia - Wilbert 138kV	Richard - Wells 500kV	115
Gibson - Ramos 138kV	Webre - Wells 500kV	126
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	187
Front Street - Michoud 230kV	Franklin - McKnight 500kV	231

SMEPA

Limiting Element	Contingency Element	ATC
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	165
Front Street - Michoud 230kV	Fairview - Gypsy 230kV	206
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	214

SOCO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	170
Gibson - Ramos 138kV	Webre - Wells 500kV	190
Front Street - Michoud 230kV	Franklin - McKnight 500kV	199

SWPA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Hergett JCWL - Jonesboro 161kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Conway West 161/115kV transformer	Pleasant Hill 500/161kV transformer	0
Jonesboro - Jonesboro North (AECC) 161kV	Independence SES - Moorefield 161kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Moorefield 161kV	0
Pleasant Hill 500/161kV transformer	3Wnd: OPEN B$0129 1	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Cushman 161 kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Cushman 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Sage 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill 161/115kV transformer	0
Jonesboro - Jonesboro North (AECC) 161kV	Greenbrier - Pleasant Hill 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill - Texas East Station 8 115kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Melborne - Sage 161kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Conway West - Lake Conway 115kV	Pleasant Hill 500/161kV transformer	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
ANO - Russellville North 161kV	Morrilton East - Pleasant Hill 161kV	14
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	15
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	15
Melborne - Sage 161kV	ANO - Fort Smith 500kV	33
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	45
Hot Springs Village - Cheetah 115kV	Russellville East - Russellville South 161kV	64
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	66
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	98
Melborne - Sage 161kV	Sage - Guion 161kV	118

Limiting Element	Contingency Element	ATC
Livonia - Wilbert 138kV	Richard - Wells 500kV	121
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	123
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	126
Gibson - Ramos 138kV	Webre - Wells 500kV	133
Melborne - Sage 161kV	Mountain View - Guion 161kV	139
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	139
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	148
Melborne - Sage 161kV	Dell - Independence SES 500kV	151
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	166
Independence SES - Moorefield 161kV	Independence SES - Keo 500kV	174
Melborne - Sage 161kV	Cash - Newport AB 161kV	178
Melborne - Sage 161kV	Cash - Jonesboro 161kV	198
Front Street - Michoud 230kV	Franklin - McKnight 500kV	225
Melborne - Sage 161kV	Newport - Swifton 161kV	230

TVA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	149
Gibson - Ramos 138kV	Webre - Wells 500kV	165
Front Street - Michoud 230kV	Franklin - McKnight 500kV	207

APPENDIX D: Results for Scenario 2:

AECI

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	59
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	150
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	150
Hammond - Springfield 230kV	Franklin - McKnight 500kV	194

AEP-W

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
Downsville - Sterlington 115kV	Eldorado EHV - Sterlington 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0

Limiting Element	Contingency Element	ATC
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	65
Hammond - Springfield 230kV	Franklin - McKnight 500kV	213
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	236
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	236

AMRN

Limiting Element	Contingency Element	ATC
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	58
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	142
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	142
Hammond - Springfield 230kV	Franklin - McKnight 500kV	193

CLECO

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	0
Judice - Scott1 138kV	Greenwood - Humphrey 115kV	0
Judice - Scott1 138kV	Gibson - Humphrey 115kV	0
Judice - Scott1 138kV	Gibson 138/115kV transformer	0
Judice - Scott1 138kV	Gibson - Ramos 138kV	0
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Semere - Scott2 138kV	Wells 500/230kV transformer	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0

Limiting Element	Contingency Element	ATC
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	0
Judice - Meaux 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
North Crowley - Scott1 138kV	Wells 500/230kV transformer	0
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Judice - Meaux 138kV	Greenwood - Humphrey 115kV	0
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Judice - Meaux 138kV	Gibson - Humphrey 115kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Greenwood - Terrebone 115kV	Judice - Scott1 138kV	0
Greenwood - Terrebone 115kV	Wells 500/230kV transformer	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Judice - Meaux 138kV	Gibson 138/115kV transformer	0
Judice - Meaux 138kV	Gibson - Ramos 138kV	0
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	0
Big Cajun 2 - Webre 500kV	Fancy Point - McKnight 500kV	0
Big Cajun 2 - Webre 500kV	Fancy Point - McKnight 500kV	0
Moril - Cecelia 138kV	Judice - Scott1 138kV	64
Richard - Scott1 138kV	North Crowley - Richard 138kV	69
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	95
North Crowley - Scott1 138kV	Wells 500/230kV transformer	115
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	168
Greenwood - Humphrey 115kV	Bonin - Labbe 230kV (LAFA)	168
Moril - Cecelia 138kV	Greenwood - Terrebone 115kV	219
Greenwood - Humphrey 115kV	Point Des Mouton - Wells 230kV	239

EMDE

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Pleasant Hill 500/161kV transformer	ANO 500/161kV transformer	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
ANO - Russellville North 161kV	Morrilton East - Pleasant Hill 161kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	0
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	0
St. Joe - Hilltop 161kV	Eureka Springs - Osage Springs 161kV	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	0
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	0
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	0
Harrison East - Everton 161kV	Flippin - Summit 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Bull Shoals - Lead Hills 161kV	0
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	0
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	0
Harrison East - Summit 161kV	St. Joe - Hilltop 161kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
Harrison East - Summit 161kV	Everton - St. Joe 161kV	0

Limiting Element	Contingency Element	ATC
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0
Melborne - Sage 161kV	Sage - Guion 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Clevcov - Lead HL 161kV	0
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	1
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	17
Melborne - Sage 161kV	Mountain View - Guion 161kV	23
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	29
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	60
Melborne - Sage 161kV	Cash - Newport AB 161kV	68
Harrison East - Summit 161kV	Harrison East - Everton 161kV	75
Harrison East - Everton 161kV	Harrison East - Summit 161kV	77
Independence SES - Moorefield 161kV	Bee Branch AECC - Quitman 161kV	87
Melborne - Sage 161kV	Cash - Jonesboro 161kV	95
Harrison East - Everton 161kV	Eureka Springs - Osage Springs 161kV	121
Melborne - Sage 161kV	Newport - Swifton 161kV	128
Harrison East - Everton 161kV	ANO - Fort Smith 500kV	155
Melborne - Sage 161kV	Hoxies AECC - Swifton 161 kV	164
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	170
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	170
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	192
Hammond - Springfield 230kV	Franklin - McKnight 500kV	198

EES

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	Franklin - McKnight 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	75
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	95
Hammond - Springfield 230kV	Franklin - McKnight 500kV	248

LAFA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Semere - Scott2 138kV	Bonin - Cecelia 138kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Habetz - Richard 138kV	0
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Fairview - Gypsy 230kV	Hammond - Springfield 230kV	0
Semere - Scott2 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	0
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
Colonial Academy - Richard 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Habetz - Richard 138kV	0
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Greenwood - Terrebone 115kV	Habetz - Richard 138kV	0
Colonial Academy - Richard 138kV	Habetz - Richard 138kV	0
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	0
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Richard 500/138kV transformer 2	0
Greenwood - Terrebone 115kV	Judice - Scott1 138kV	0
North Crowley - Scott1 138kV	Wells 500/230kV transformer	0
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Bonin - Cecelia 138kV	0
Greenwood - Terrebone 115kV	Wells 500/230kV transformer	0
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Acadia GSU - Scanlan 138kV	Point Des Mouton - Wells 230kV	0
Acadia - Colonial Academy 138kV	Greenwood - Terrebone 115kV	0
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	0

Limiting Element	Contingency Element	ATC
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	0
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Bonin 230/138kV transformer (LAFA)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	0
Acadia - Colonial Academy 138kV	Habetz - Richard 138kV	0
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	0
Big Cajun 2 - Webre 500kV	Fancy Point - McKnight 500kV	0
Judice - Scott1 138kV	Scott1 - Bonin 138kV	0
Big Cajun 2 - Webre 500kV	Fancy Point - McKnight 500kV	0
Acadia GSU - Scanlan 138kV	Greenwood - Terrebone 115kV	0
Richard - Scott1 138kV	Habetz - Richard 138kV	1
Richard - Scott1 138kV	North Crowley - Richard 138kV	17
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	27
Acadia GSU - Scanlan 138kV	Habetz - Richard 138kV	39
French Settlement - Sorrento 230kV	Front Street - Michoud 230kV	51
Richard - Scott1 138kV	Greenwood - Terrebone 115kV	58
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	60
Richard - Scott1 138kV	North Crowley - Scott1 138kV	68
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	68
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	68
North Crowley - Richard 138kV	Habetz - Richard 138kV	82
Habetz - Richard 138kV	Acadian - Bonin 230kV (LAFA)	85
Richard - Scott1 138kV	Wells 500/230kV transformer	96
Acadia - Colonial Academy 138kV	Wells 500/230kV transformer	110
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	125
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	134
North Crowley - Richard 138kV	Greenwood - Terrebone 115kV	147
Cecelia - Semere 138kV	Point Des Mouton - Wells 230kV	153
Greenwood - Humphrey 115kV	Point Des Mouton - Wells 230kV	155
Cecelia - Semere 138kV	Bonin - Labbe 230kV (LAFA)	160
Greenwood - Humphrey 115kV	Bonin - Labbe 230kV (LAFA)	161
North Crowley - Richard 138kV	Wells 500/230kV transformer	178
Greenwood - Humphrey 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	182
Acadia GSU - Scanlan 138kV	Wells 500/230kV transformer	188
Cecelia - Semere 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	188
Wells 500/230kV transformer	Franklin - McKnight 500kV	191
Habetz - Richard 138kV	Flander - Acadian 230kV (LAFA)	219
Habetz - Richard 138kV	Greenwood - Terrebone 115kV	226
Gibson - Humphrey 115kV	Point Des Mouton - Wells 230kV	241

LAGN

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0

French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Franklin - Mcknight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
Fairview - Gypsy 230kV	Hammond - Springfield 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	123

LEPA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Franklin - Mcknight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Chauvin - Ashland 115kV	Coteau - Houma 115kV	0
Port Hudson 230/138 transformer 1	Port Hudson 230/138 transformer 2	0
Port Hudson 230/138 transformer 2	Port Hudson 230/138 transformer 1	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	0
Terrebone 230/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	0
Terrebone 230/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	0
Terrebone 230/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	0
Terrebone 230/115kV transformer	Bayou Vista - ELPTAP 138kV (CLECO)	0
Terrebone 230/115kV transformer	Bayou Vista - BERWKTP4 138kV (CLECO)	0
Terrebone 230/115kV transformer	Ramos - BERWKTP4 138kV (CLECO)	0
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	0

OKGE

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	Contingency FG 5003: BUS 'VALIANT7 345' TO BUS 'PITTSB-7 345'	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	61
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	188
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	188
Hammond - Springfield 230kV	Franklin - McKnight 500kV	202

SMEPA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover 500/115kV transformer	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Ray Braswell 500/230kV transformer 2	Ray Braswell 500/230kV transformer 1	0
Ray Braswell 500/230kV transformer 1	Ray Braswell 500/230kV transformer 2	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	51
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	66
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	145
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	145
Hammond - Springfield 230kV	Franklin - McKnight 500kV	169
Florence - South Jackson 115kV	Bogalusa - Adams Creek 500/230kV transformer	246
Florence - South Jackson 115kV	Bogalusa - Franklin 500kV	246

SOCO

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	57
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	88
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	126
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	126
Hammond - Springfield 230kV	Franklin - McKnight 500kV	189

SWPA

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Hergett JCWL - Jonesboro 161kV	0
Conway West 161/115kV transformer	Pleasant Hill 500/161kV transformer	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Pleasant Hill 500/161kV transformer	ANO 500/161kV transformer	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Independence SES - Moorefield 161kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Moorefield 161kV	0
Conway West - Lake Conway 115kV	Pleasant Hill 500/161kV transformer	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Cushman 161 kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
ANO - Russellville North 161kV	Morrilton East - Pleasant Hill 161kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Cushman 161kV	0

Limiting Element	Contingency Element	ATC
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Sage 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill 161/115kV transformer	0
Jonesboro - Jonesboro North (AECC) 161kV	Greenbrier - Pleasant Hill 161kV	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill - Texas East Station 8 115kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Melborne - Sage 161kV	0
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	0
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0
Melborne - Sage 161kV	Sage - Guion 161kV	0
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	1
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	14
Melborne - Sage 161kV	Mountain View - Guion 161kV	18
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	22
Hot Springs Village - Cheetah 115kV	Russellville East - Russellville South 161kV	37
Melborne - Sage 161kV	Cash - Newport AB 161kV	52
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	60
Independence SES - Moorefield 161kV	Bee Branch AECC - Quitman 161kV	70
Melborne - Sage 161kV	Cash - Jonesboro 161kV	72
Melborne - Sage 161kV	Newport - Swifton 161kV	102
ANO - Russellville North 161kV	Pleasant Hill - ANO 500kV	113
Melborne - Sage 161kV	Hoxies AECC - Swifton 161 kV	130
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	159
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	173
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	173
ANO - Russellville North 161kV	Pleasant Hill 500/161kV transformer	179
Hammond - Springfield 230kV	Franklin - McKnight 500kV	198
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	204
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	218
Newport - Newport Industrial 161kV	Harrisburg Tap - Marked Tree 161kV	222
Greenbrier - Quitman 161kV	Morrilton East - Pleasant Hill 161kV	232

TVA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0

French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	57
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	99
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	118
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	118
Hammond - Springfield 230kV	Franklin - McKnight 500kV	187

APPENDIX E: Results for Scenario 3:

2011

AECI

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	60
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	121
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	237
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	242

AEP-W

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Porter - Tamina 138kV	Oak Ridge - Porter 138kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0

Limiting Element	Contingency Element	ATC
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	48
Champagne - East Opelousas 138kV	Webre - Wells 500kV	109
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	114
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	130
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	139
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	185

AMRN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	63
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	120
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	238
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	246

CLECO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0

Limiting Element	Contingency Element	ATC
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	25
Champagne - East Opelousas 138kV	Webre - Wells 500kV	79
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	101
North Crowley - Scott1 138kV	Wells 500/230kV transformer	161
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	188
Livonia - Wilbert 138kV	Richard - Wells 500kV	226
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	250

EES

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	64
Champagne - East Opelousas 138kV	Webre - Wells 500kV	126
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	159
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	246

EMDE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0

Limiting Element	Contingency Element	ATC
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	57
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	99
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	105
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	109
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	115
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	123
Champagne - East Opelousas 138kV	Webre - Wells 500kV	127
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	163
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	211
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	221
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	245

LAGN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	74

LAFA

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Habetz - Richard 138kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Greenwood - Terrebone 115kV	Habetz - Richard 138kV	0
North Crowley - Scott1 138kV	Richard - Scott1 138kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Habetz - Richard 138kV	0
Colonial Academy - Richard 138kV	Greenwood - Terrebone 115kV	0
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	0
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	7
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	8
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	9
Gibson 138/115kV transformer	Webre - Wells 500kV	19
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	25
Colonial Academy - Richard 138kV	Habetz - Richard 138kV	26
Champagne - East Opelousas 138kV	Webre - Wells 500kV	26

Limiting Element	Contingency Element	ATC
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	26
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	33
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	37
North Crowley - Scott1 138kV	Wells 500/230kV transformer	46
Acadia GSU - Scanlan 138kV	Point Des Mouton - Wells 230kV	55
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	64
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	65
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	81
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	85
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	100
Acadia - Colonial Academy 138kV	Greenwood - Terrebone 115kV	109
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	129
Acadia - Colonial Academy 138kV	Habetz - Richard 138kV	160
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	164
Greenwood - Humphrey 115kV	Point Des Mouton - Wells 230kV	181
Richard - Scott1 138kV	Habetz - Richard 138kV	185
Livonia - Wilbert 138kV	Richard - Wells 500kV	186
Acadia GSU - Scanlan 138kV	Greenwood - Terrebone 115kV	190
Cecelia - Semere 138kV	Point Des Mouton - Wells 230kV	195
Greenwood - Humphrey 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	202
Greenwood - Humphrey 115kV	Bonin - Labbe 230kV (LAFA)	203
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	205
Cecelia - Semere 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	225
Champagne - East Opelousas 138kV	Point Des Mouton - Wells 230kV	230
Acadia GSU - Scanlan 138kV	Habetz - Richard 138kV	237
Gibson - Humphrey 115kV	Point Des Mouton - Wells 230kV	245
Cecelia - Semere 138kV	Bonin - Labbe 230kV (LAFA)	250

LEPA

Limiting Element	Contingency Element	ATC
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	65
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	91
Bonin - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	100
Chauvin - Ashland 115kV	Coteau - Houma 115kV	100

OKGE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	53
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	78
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	100
Champagne - East Opelousas 138kV	Webre - Wells 500kV	120
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	125
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	188
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	207

SMEPA

Limiting Element	Contingency Element	ATC
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	109
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	168

SOCO

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	80
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	120
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	215

SWPA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Hergett JCWL - Jonesboro 161kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Independence SES - Moorefield 161kV	26
Gibson 138/115kV transformer	Webre - Wells 500kV	57
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Moorefield 161kV	88
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	90
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	123
Champagne - East Opelousas 138kV	Webre - Wells 500kV	127
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	157
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	163
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Cushman 161 kV	206
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	221
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Cushman 161kV	246
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	248

TVA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	69
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	118
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	229

2015

AECI

Limiting Element	Contingency Element	ATC
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	121
Gibson - Ramos 138kV	Webre - Wells 500kV	146
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	208
Front Street - Michoud 230kV	Franklin - McKnight 500kV	227

AEP-W

Limiting Element	Contingency Element	ATC
Porter - Tamina 138kV	Oak Ridge - Porter 138kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Cedar Hill - Tamina 138kV	Oak Ridge - Porter 138kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Plantation - Cedar Hill 138kV	Oak Ridge - Porter 138kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Conroe Bulk - Plantation 138kV	Oak Ridge - Porter 138kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
China Bulk - Sabine 230kV	Amelia Bulk - China Bulk 230kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	94
Gibson - Ramos 138kV	Webre - Wells 500kV	114
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	224
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	231

AMRN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0

French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	126
Gibson - Ramos 138kV	Webre - Wells 500kV	151
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	206
Front Street - Michoud 230kV	Franklin - McKnight 500kV	224

CLECO

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Judice - Scott1 138kV	Greenwood - Humphrey 115kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Judice - Scott1 138kV	Gibson - Humphrey 115kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	46
Gibson - Ramos 138kV	Webre - Wells 500kV	51
Judice - Scott1 138kV	Gibson 138/115kV transformer	86
Judice - Scott1 138kV	Gibson - Ramos 138kV	86
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	179
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	179
Greenwood - Humphrey 115kV	Richard - Wells 500kV	218
Gibson 138/115kV transformer	Webre - Wells 500kV	227

EMDE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Pleasant Hill 500/161kV transformer	3Wnd: OPEN B$0129 1	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0

Limiting Element	Contingency Element	ATC
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Bull Shoals - Lead Hills 161kV	0
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Clevcov - Lead HL 161kV	7
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	24
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	24
Melborne - Sage 161kV	ANO - Fort Smith 500kV	45
Harrison East - Summit 161kV	St. Joe - Hilltop 161kV	45
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	48
St. Joe - Hilltop 161kV	Eureka Springs - Osage Springs 161kV	53
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	64
Harrison East - Summit 161kV	Everton - St. Joe 161kV	86
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	90
Harrison East - Everton 161kV	Flippin - Summit 161kV	93
Livonia - Wilbert 138kV	Richard - Wells 500kV	113
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	128
Gibson - Ramos 138kV	Webre - Wells 500kV	137
Melborne - Sage 161kV	Sage - Guion 161kV	156
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	163
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	165
Harrison East - Summit 161kV	Harrison East - Everton 161kV	168
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	179
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	179
Melborne - Sage 161kV	Mountain View - Guion 161kV	182
Melborne - Sage 161kV	Dell - Independence SES 500kV	195

Limiting Element	Contingency Element	ATC
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	197
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	212
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	220
Independence SES - Moorefield 161kV	Independence SES - Keo 500kV	229
Front Street - Michoud 230kV	Franklin - McKnight 500kV	233
Melborne - Sage 161kV	Cash - Newport AB 161kV	236

EES

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	109
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	147
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	147
Gibson - Ramos 138kV	Webre - Wells 500kV	153
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	160

LAFA

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0

Limiting Element	Contingency Element	ATC
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	38
Gibson - Ramos 138kV	Webre - Wells 500kV	46
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	48
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	53
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	73
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	86
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	89
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	102
North Crowley - Scott1 138kV	Richard - Scott1 138kV	106
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	119
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	137
Duboin - Bayou Warehouse 138kV	Webre - Wells 500kV	141
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	152
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	158
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	162
Semere - Scott2 138kV	Wells 500/230kV transformer	164
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	178
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	187
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	188
North Crowley - Scott1 138kV	Wells 500/230kV transformer	191
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	201
Gibson 138/115kV transformer	Webre - Wells 500kV	202
Greenwood - Humphrey 115kV	Richard - Wells 500kV	203
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	207
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	207
Acadia GSU - Scanlan 138kV	Point Des Mouton - Wells 230kV	208
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	218
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	221
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	231
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	239
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	244
Champagne - East Opelousas 138kV	Point Des Mouton - Wells 230kV	244
Addis - Wilbert 138kV	Webre - Wells 500kV	245

LAGN

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	151
Gibson - Ramos 138kV	Webre - Wells 500kV	181
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	223
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	223

LEPA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - Mcknight 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	66
Chauvin - Ashland 115kV	Coteau - Houma 115kV	91
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	126

OKGE

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0

Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	Contingency FG 5003: BUS 'VALIANT7 345' TO BUS 'PITTSB-7 345'	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	63
Livonia - Wilbert 138kV	Richard - Wells 500kV	107
Gibson - Ramos 138kV	Webre - Wells 500kV	129
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	195
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	215
Front Street - Michoud 230kV	Franklin - McKnight 500kV	239

SMEPA

Limiting Element	**Contingency Element**	**ATC**
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	163
Front Street - Michoud 230kV	Franklin - McKnight 500kV	174
French Settlement - Sorrento 230kV	Webre - Wells 500kV	236

SOCO

Limiting Element	**Contingency Element**	**ATC**
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0

Livonia - Wilbert 138kV	Richard - Wells 500kV	161
Gibson - Ramos 138kV	Webre - Wells 500kV	192
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	195
Front Street - Michoud 230kV	Franklin - McKnight 500kV	208

SWPA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Hergett JCWL - Jonesboro 161kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Conway West 161/115kV transformer	Pleasant Hill 500/161kV transformer	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Independence SES - Moorefield 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Moorefield 161kV	0
Pleasant Hill 500/161kV transformer	3Wnd: OPEN B$0129 1	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Cushman 161 kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Cushman 161kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Sage 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill 161/115kV transformer	0
Jonesboro - Jonesboro North (AECC) 161kV	Greenbrier - Pleasant Hill 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill - Texas East Station 8 115kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Melborne - Sage 161kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Conway West - Lake Conway 115kV	Pleasant Hill 500/161kV transformer	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
ANO - Russellville North 161kV	Morrilton East - Pleasant Hill 161kV	18
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	19
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	19
Melborne - Sage 161kV	ANO - Fort Smith 500kV	37
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	49
Hot Springs Village - Cheetah 115kV	Russellville East - Russellville South 161kV	67

Limiting Element	Contingency Element	ATC
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	69
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	101
Livonia - Wilbert 138kV	Richard - Wells 500kV	113
Melborne - Sage 161kV	Sage - Guion 161kV	121
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	126
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	129
Gibson - Ramos 138kV	Webre - Wells 500kV	137
Melborne - Sage 161kV	Mountain View - Guion 161kV	142
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	142
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	151
Melborne - Sage 161kV	Dell - Independence SES 500kV	155
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	172
Independence SES - Moorefield 161kV	Independence SES - Keo 500kV	176
Melborne - Sage 161kV	Cash - Newport AB 161kV	181
Melborne - Sage 161kV	Cash - Jonesboro 161kV	201
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	212
Front Street - Michoud 230kV	Franklin - McKnight 500kV	233
Melborne - Sage 161kV	Newport - Swifton 161kV	234

TVA

Limiting Element	Contingency Element	ATC
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	140
Gibson - Ramos 138kV	Webre - Wells 500kV	168
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	201
Front Street - Michoud 230kV	Franklin - McKnight 500kV	216

APPENDIX F: Results for Scenario 4:

AECI

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	68
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	101
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	154
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	154
Hammond - Springfield 230kV	Franklin - McKnight 500kV	216

AEP-W

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Downsville - Sterlington 115kV	Eldorado EHV - Sterlington 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0

Limiting Element	Contingency Element	ATC
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	75
Hammond - Springfield 230kV	Franklin - McKnight 500kV	239
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	243
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	243

AMRN

Limiting Element	Contingency Element	ATC
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	67
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	99
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	145
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	145
Hammond - Springfield 230kV	Franklin - McKnight 500kV	214

CLECO

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Judice - Scott1 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Judice - Scott1 138kV	Greenwood - Terrebone 115kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Judice - Scott1 138kV	Greenwood - Humphrey 115kV	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	0
Judice - Scott1 138kV	Gibson - Humphrey 115kV	0
Fairview - Gypsy 230kV	Franklin - McKnight 500kV	0
Judice - Scott1 138kV	Gibson 138/115kV transformer	0
Judice - Scott1 138kV	Gibson - Ramos 138kV	0
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Judice - Meaux 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Semere - Scott2 138kV	Wells 500/230kV transformer	0

Limiting Element	Contingency Element	ATC
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	0
Judice - Meaux 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
North Crowley - Scott1 138kV	Wells 500/230kV transformer	0
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Judice - Meaux 138kV	Greenwood - Humphrey 115kV	0
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Judice - Meaux 138kV	Gibson - Humphrey 115kV	0
Moril - Cecelia 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Greenwood - Terrebone 115kV	Judice - Scott1 138kV	0
Greenwood - Terrebone 115kV	Wells 500/230kV transformer	0
Judice - Meaux 138kV	Gibson 138/115kV transformer	0
Judice - Meaux 138kV	Gibson - Ramos 138kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	0
Big Cajun 2 - Webre 500kV	Fancy Point - McKnight 500kV	0
Moril - Cecelia 138kV	Judice - Scott1 138kV	66
Richard - Scott1 138kV	North Crowley - Richard 138kV	72
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	116
North Crowley - Scott1 138kV	Wells 500/230kV transformer	117
Flander - Hopkins 138kV (CLECO/LAFA)	Greenwood - Terrebone 115kV	134
Greenwood - Humphrey 115kV	Bonin - Labbe 230kV (LAFA)	161
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	169
Flander - Acadian 230kV (LAFA)	Habetz - Richard 138kV	215
Moril - Cecelia 138kV	Greenwood - Terrebone 115kV	219
Greenwood - Humphrey 115kV	Point Des Mouton - Wells 230kV	230

EMDE

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Pleasant Hill 500/161kV transformer	ANO 500/161kV transformer	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	St. Joe - Hilltop 161kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Everton - St. Joe 161kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Harrison East - Everton 161kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
ANO - Russellville North 161kV	Morrilton East - Pleasant Hill 161kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
St. Joe - Hilltop 161kV	Bull Shoals - Flippin 161kV	0
Harrison East - Everton 161kV	Bull Shoals - Bull Shoals Dam SPA 161kV	0
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	0
St. Joe - Hilltop 161kV	Flippin - Summit 161kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
Harrison East - Everton 161kV	Bull Shoals - Flippin 161kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
St. Joe - Hilltop 161kV	Eureka Springs - Osage Springs 161kV	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	0
St. Joe - Hilltop 161kV	Harrison East - Summit 161kV	0
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	0
Harrison East - Everton 161kV	Flippin - Summit 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Bull Shoals - Lead Hills 161kV	0
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	0
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	0
Harrison East - Summit 161kV	St. Joe - Hilltop 161kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
Harrison East - Summit 161kV	Everton - St. Joe 161kV	0
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0

Limiting Element	Contingency Element	ATC
Melborne - Sage 161kV	Sage - Guion 161kV	0
Bull Shoals - Bull Shoals Dam SPA 161kV	Clevcov - Lead HL 161kV	0
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	3
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	19
Melborne - Sage 161kV	Mountain View - Guion 161kV	24
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	30
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	70
Melborne - Sage 161kV	Cash - Newport AB 161kV	70
Harrison East - Summit 161kV	Harrison East - Everton 161kV	77
Harrison East - Everton 161kV	Harrison East - Summit 161kV	79
Independence SES - Moorefield 161kV	Bee Branch AECC - Quitman 161kV	88
Melborne - Sage 161kV	Cash - Jonesboro 161kV	96
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	105
Harrison East - Everton 161kV	Eureka Springs - Osage Springs 161kV	122
Melborne - Sage 161kV	Newport - Swifton 161kV	130
Harrison East - Everton 161kV	ANO - Fort Smith 500kV	157
Melborne - Sage 161kV	Hoxies AECC - Swifton 161 kV	166
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	174
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	174
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	194
Hammond - Springfield 230kV	Franklin - McKnight 500kV	221

EES

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Fairview - Gypsy 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	89
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	90

LAFA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0

Limiting Element	Contingency Element	ATC
Semere - Scott2 138kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Bonin - Cecelia 138kV	0
North Crowley - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Colonial Academy - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
Semere - Scott2 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Acadia - Colonial Academy 138kV	Bonin - Labbe 230kV (LAFA)	0
Semere - Scott2 138kV	Habetz - Richard 138kV	0
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	0
Greenwood - Terrebone 115kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
Richard - Scott1 138kV	Bonin - Labbe 230kV (LAFA)	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Fairview - Gypsy 230kV	Hammond - Springfield 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Semere - Scott2 138kV	Flander - Hopkins 138kV (CLECO/LAFA)	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
North Crowley - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Acadia GSU - Scanlan 138kV	Bonin - Labbe 230kV (LAFA)	0
Habetz - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Colonial Academy - Richard 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Point Des Mouton - Wells 230kV	0
Colonial Academy - Richard 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Habetz - Richard 138kV	0
North Crowley - Richard 138kV	Bonin - Labbe 230kV (LAFA)	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
North Crowley - Scott1 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Habetz - Richard 138kV	0
Colonial Academy - Richard 138kV	Habetz - Richard 138kV	0
Acadia - Colonial Academy 138kV	Point Des Mouton - Wells 230kV	0
Richard - Scott1 138kV	Point Des Mouton - Wells 230kV	0
Greenwood - Terrebone 115kV	Richard 500/138kV transformer 2	0
Greenwood - Terrebone 115kV	Judice - Scott1 138kV	0
North Crowley - Scott1 138kV	Wells 500/230kV transformer	0
Acadia - Colonial Academy 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Bonin - Cecelia 138kV	0
Greenwood - Terrebone 115kV	Wells 500/230kV transformer	0
Richard - Scott1 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Acadia GSU - Scanlan 138kV	Point Des Mouton - Wells 230kV	0
Acadia - Colonial Academy 138kV	Greenwood - Terrebone 115kV	0
Greenwood - Terrebone 115kV	Big Cajun 2 - Webre 500kV	0
Habetz - Richard 138kV	Point Des Mouton - Wells 230kV	0
North Crowley - Richard 138kV	Point Des Mouton - Wells 230kV	0

Limiting Element	Contingency Element	ATC
Acadia GSU - Scanlan 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
North Crowley - Scott1 138kV	Bonin 230/138kV transformer (LAFA)	0
Scott1 - Bonin 138kV	Bonin - Labbe 230kV (LAFA)	0
Acadia - Colonial Academy 138kV	Habetz - Richard 138kV	0
North Crowley - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Habetz - Richard 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	0
Colonial Academy - Richard 138kV	Wells 500/230kV transformer	0
Judice - Scott1 138kV	Scott1 - Bonin 138kV	0
Big Cajun 2 - Webre 500kV	Fancy Point - McKnight 500kV	0
Acadia GSU - Scanlan 138kV	Greenwood - Terrebone 115kV	0
Richard - Scott1 138kV	Habetz - Richard 138kV	2
Richard - Scott1 138kV	North Crowley - Richard 138kV	18
Scott1 - Bonin 138kV	Point Des Mouton - Wells 230kV	27
Acadia GSU - Scanlan 138kV	Habetz - Richard 138kV	40
Richard - Scott1 138kV	Greenwood - Terrebone 115kV	59
Scott1 - Bonin 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	60
Richard 500/138kV transformer 1	Richard 500/138kV transformer 2	69
Richard - Scott1 138kV	North Crowley - Scott1 138kV	69
North Crowley - Richard 138kV	Habetz - Richard 138kV	82
Habetz - Richard 138kV	Acadian - Bonin 230kV (LAFA)	86
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	92
Richard - Scott1 138kV	Wells 500/230kV transformer	97
Acadia - Colonial Academy 138kV	Wells 500/230kV transformer	111
Addis - Willow Glen 138kV	Louisiana Station - Wilbert 138kV	135
North Crowley - Richard 138kV	Greenwood - Terrebone 115kV	147
Greenwood - Humphrey 115kV	Point Des Mouton - Wells 230kV	151
Cecelia - Semere 138kV	Point Des Mouton - Wells 230kV	154
Greenwood - Humphrey 115kV	Bonin - Labbe 230kV (LAFA)	154
Cecelia - Semere 138kV	Bonin - Labbe 230kV (LAFA)	161
Greenwood - Humphrey 115kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	177
North Crowley - Richard 138kV	Wells 500/230kV transformer	179
Cecelia - Semere 138kV	Point Des Mouton (LAFA) - Labbe (LAFA) 230kV	189
Acadia GSU - Scanlan 138kV	Wells 500/230kV transformer	189
Habetz - Richard 138kV	Flander - Acadian 230kV (LAFA)	220
Habetz - Richard 138kV	Greenwood - Terrebone 115kV	226
Gibson - Humphrey 115kV	Point Des Mouton - Wells 230kV	235

LAGN

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Sterlington 500/115kV transformer 1	Sterlington 500/115kV transformer 2	0
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0

Limiting Element	Contingency Element	ATC
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Fairview - Gypsy 230kV	Hammond - Springfield 230kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	155

LEPA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - Mcknight 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Terrebone 230/115kV transformer	Bayou Sales - Teche 138kV (CLECO)	0
Terrebone 230/115kV transformer	Bayou Sales - WaxLake 138kV (CLECO)	0
Terrebone 230/115kV transformer	ELPTAP - Wax Lake 138kV (CLECO)	0
Terrebone 230/115kV transformer	Bayou Vista - ELPTAP 138kV (CLECO)	0
Raceland - Coteau 115kV	Terrebone 230/115kV transformer	0
Port Hudson 230/138 transformer 2	Port Hudson 230/138 transformer 1	0
Port Hudson 230/138 transformer 1	Port Hudson 230/138 transformer 2	0
Chauvin - Ashland 115kV	Coteau - Houma 115kV	0
Terrebone 230/115kV transformer	Bayou Vista - BERWKTP4 138kV (CLECO)	0
Terrebone 230/115kV transformer	Ramos - BERWKTP4 138kV (CLECO)	0
Terrebone 230/115kV transformer	Raceland - Coteau 115kV	0
French Settlement - Sorrento 230kV	Front Street - Michoud 230kV	0

OKGE

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
FG 5003: BUS 'BRKN BW4 138' TO BUS 'BETHEL 4 138'	Contingency FG 5003: BUS 'VALIANT7 345' TO BUS 'PITTSB-7 345'	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0

Limiting Element	Contingency Element	ATC
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
St. Joe - Hilltop 161kV	ANO - Fort Smith 500kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	71
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	193
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	193
Hammond - Springfield 230kV	Franklin - McKnight 500kV	226

SMEPA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover 500/115kV transformer	0
Ray Braswell 500/230kV transformer 2	Ray Braswell 500/230kV transformer 1	0
Ray Braswell 500/230kV transformer 1	Ray Braswell 500/230kV transformer 2	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	59
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	64
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	149
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	149
Hammond - Springfield 230kV	Franklin - McKnight 500kV	186
Florence - South Jackson 115kV	Bogalusa - Adams Creek 500/230kV transformer	248
Florence - South Jackson 115kV	Bogalusa - Franklin 500kV	248

SOCO

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	66
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	84

Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	129
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	129
Hammond - Springfield 230kV	Franklin - McKnight 500kV	210

SWPA

Limiting Element	Contingency Element	ATC
Sterlington 500/115kV transformer 2	Eldorado EHV - Sterlington 500kV	0
Lake Conway - Mayflower 115kV	Pleasant Hill 500/161kV transformer	0
Sterlington 500/115kV transformer 1	Eldorado EHV - Sterlington 500kV	0
ANO - Russellville North 161kV	ANO - Fort Smith 500kV	0
Danville - North Magazine REA 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Hergett JCWL - Jonesboro 161kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Conway West 161/115kV transformer	Pleasant Hill 500/161kV transformer	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
Pleasant Hill 500/161kV transformer	ANO 500/161kV transformer	0
Russellville East - Russellville North 161kV	ANO - Fort Smith 500kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Russellville East - Russellville South 161kV	ANO - Fort Smith 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Winnfield 230/115kV transformer	Clarence (CLECO) - Montgomery 230kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Independence SES - Moorefield 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Moorefield 161kV	0
Conway West - Lake Conway 115kV	Pleasant Hill 500/161kV transformer	0
Jonesboro - Jonesboro North (AECC) 161kV	Batesville - Cushman 161 kV	0
ANO - Russellville North 161kV	Morrilton East - Pleasant Hill 161kV	0
Independence SES - Moorefield 161kV	ANO - Fort Smith 500kV	0
Independence SES - Moorefield 161kV	Dell - Independence SES 500kV	0
'MANSFLD4 138' TO BUS 'IPAPER 4 138'	Contingency of FlowGate 5029 DOLHILL7 345 TO SW SHV 7 345	0
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Cushman 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Mt. Pleasant - Sage 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill 161/115kV transformer	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Greenbrier - Pleasant Hill 161kV	0
Independence SES - Moorefield 161kV	Newport - Newport Industrial 161kV	0
Russellville South - Dardanelle Dam 161kV	ANO - Fort Smith 500kV	0
Melborne - Sage 161kV	ANO - Fort Smith 500kV	0
Independence SES - Moorefield 161kV	Newport AB - Newport Industrial 161kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Jim Hill - Texas East Station 8 115kV	0
Jonesboro - Jonesboro North (AECC) 161kV	Melborne - Sage 161kV	0
Melborne - Sage 161kV	Dell - Independence SES 500kV	0
Independence SES - Moorefield 161kV	Cash - Newport AB 161kV	0
Independence SES - Moorefield 161kV	Cash - Jonesboro 161kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0

Limiting Element	Contingency Element	ATC
Independence SES - Moorefield 161kV	Newport - Swifton 161kV	0
Winnfield 230/115kV transformer	Clarence - Messick 230kV (CLECO)	0
Melborne - Sage 161kV	Newport - Newport Industrial 161kV	0
Melborne - Sage 161kV	Sage - Guion 161kV	0
Independence SES - Moorefield 161kV	Hoxies AECC - Swifton 161 kV	2
Independence SES - Moorefield 161kV	Hoxies AECC - Walnut Ridge 161kV	15
Melborne - Sage 161kV	Mountain View - Guion 161kV	19
Melborne - Sage 161kV	Newport AB - Newport Industrial 161kV	23
Hot Springs Village - Cheetah 115kV	Russellville East - Russellville South 161kV	39
Melborne - Sage 161kV	Cash - Newport AB 161kV	53
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	69
Independence SES - Moorefield 161kV	Bee Branch AECC - Quitman 161kV	71
Melborne - Sage 161kV	Cash - Jonesboro 161kV	74
Melborne - Sage 161kV	Newport - Swifton 161kV	103
ANO - Russellville North 161kV	Pleasant Hill - ANO 500kV	114
Melborne - Sage 161kV	Hoxies AECC - Swifton 161 kV	131
Calico Rock - Melborne 161kV	ANO - Fort Smith 500kV	161
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	177
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	177
ANO - Russellville North 161kV	Pleasant Hill 500/161kV transformer	181
Calico Rock - Melborne 161kV	Dell - Independence SES 500kV	205
Calico Rock - Norfolk 161kV	ANO - Fort Smith 500kV	220
Hammond - Springfield 230kV	Franklin - McKnight 500kV	221
Newport - Newport Industrial 161kV	Harrisburg Tap - Marked Tree 161kV	223
Greenbrier - Quitman 161kV	Morrilton East - Pleasant Hill 161kV	233

TVA

Limiting Element	Contingency Element	ATC
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Ray Braswell 500/115kV transformer 1	Lakeover - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	65
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	94
Ray Braswell 500/230kV transformer 1	Lakeover - Ray Braswell 500kV	121
Ray Braswell 500/230kV transformer 2	Lakeover - Ray Braswell 500kV	121
Hammond - Springfield 230kV	Franklin - McKnight 500kV	208

IV. Transient Stability Analysis

A. Model Information

When the Transient Stability Analysis for PID-216 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-216 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 configuration of the new Wilton Switching Station (SS) with the 2 - 230/18 kV transformers and 2 - 159 MW - generators.

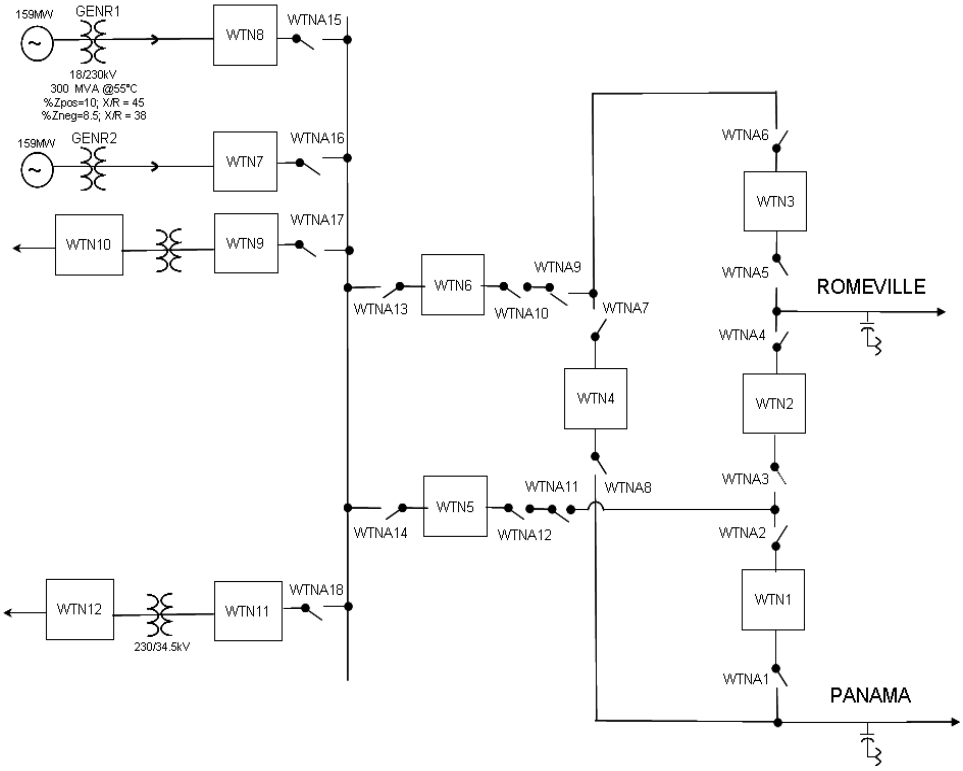


Figure 1V-1: Transmission configuration at Wilton 230kV with PID-216.

The new PID-216 generations was added to the model via a new 230/18kV interconnection at the New Wilton S.E.S 230 kV bus. The new Wilton Switching Station (SS) was added to the model 5 miles from the Romeville SS. Refer to Figure 1V-2 for the System Area Study diagram. The stability studies were conducted to assess the impact of PID-216 injecting 318 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; for the reactive part 100% was modeled with a constant impedance model.

PID-216 provided dynamic models of their generation equipment for use in this study. The generators were modeled using the standard PSS/E **GENROU** model.

PID-216 also provided data for the excitation system. The data for the PID-216 gas turbine excitation system was modeled using the PSS/E **ESST4B** model. The Power System Stabilizer (PSS) data was provided with the interconnection request. The PSS was modeled using the PSS/E **PSS2A** model. PID-216 provided the data for the turbine-governor controls. The gas turbine generator governor model was modeled using the PSS/E IEEEG1 model. The data used for the proposed PID-216 generators, exciters, power system stabilizers and governor models are shown in **Appendix A.A.**

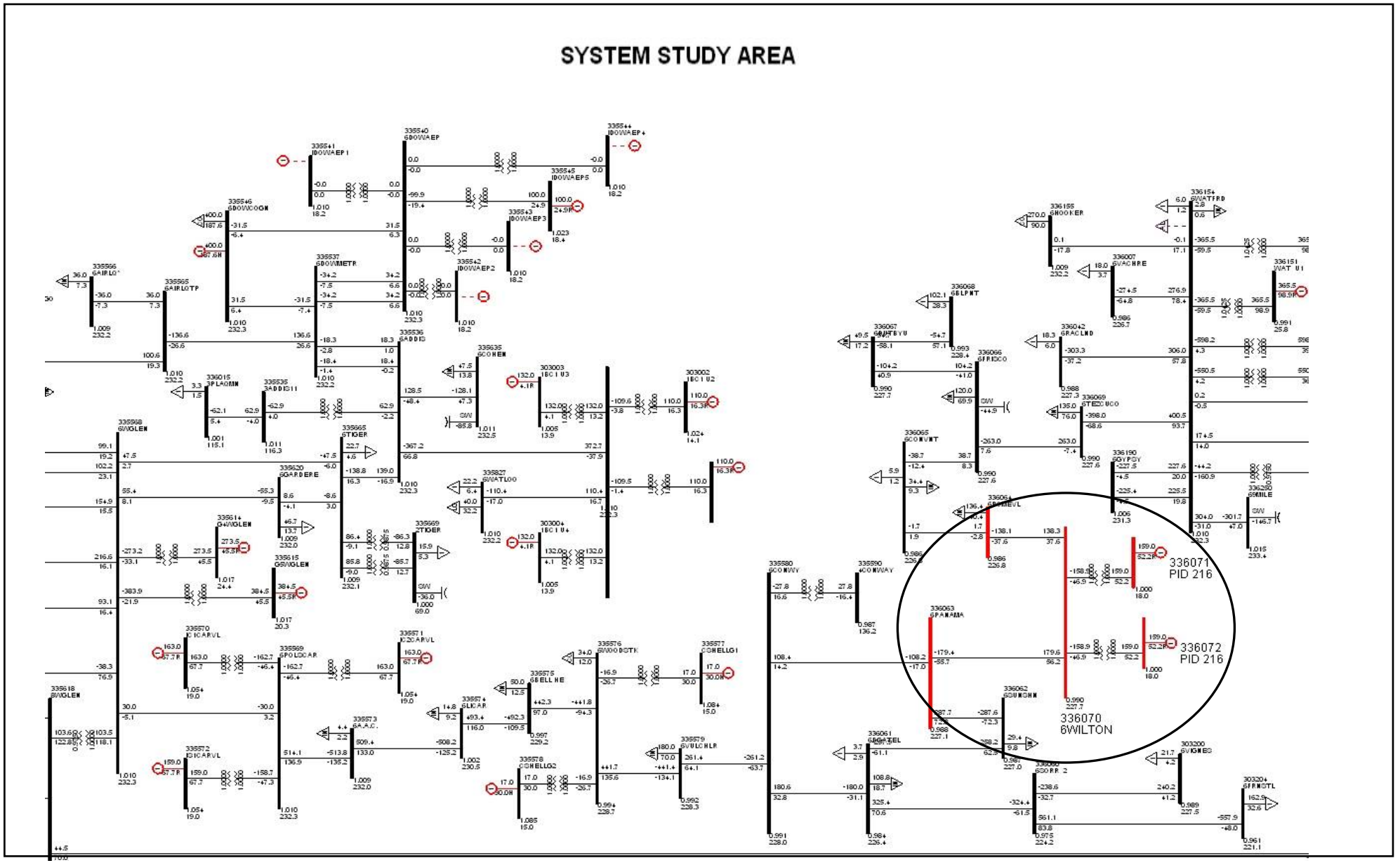


Figure IV-2: System Study Area

B. Transient Stability Analysis

Stability simulations were run to examine the transient behavior of the PID-216 generators 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 Wilton 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-216 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. Note single-line-to-ground faults were not simulated for the analysis reported on here.

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-1. The substation configurations for the adjacent substations with the fault locations are included in the Appendix A.D for reference.

Faults 1 through 4 of Table IV-2A represent the normal clearing 3-phase faults. Faults 1A through 4 of Table IV-2B represent faults with stuck breakers with the appropriate delayed back-up clearing times. Stuck Breaker Fault 3 and 4 were simulated for completeness.

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-PANAMA	--	WILTON	3PH	6	WTN1 / WTN4	WILTON-PANAMA	Yes	Yes
2	FAULT-ROMEVILLE	--	WILTON	3PH	6	WTN3 / WTN2	WILTON-ROMEVILLE	Yes	Yes
3	FAULT-GENR1	--	WILTON-GENR1	3PH	6	WTN8	WILTON GENR1	Yes	Yes
4	FAULT-GENR2	--	WILTON-GENR2	3PH	6	WTN7	WILTON 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						
1A	FAULT-ROMEVILLE_SB	WILTON	3PH	6	9	WTN2	WTN3	WTN1/WTN5	WILTON – ROMEVILLE	Yes	Yes
1B	FAULT-ROMEVILLE_SB	WILTON	3PH	6	9	WTN3	WTN2	WTN6/WTN4	WILTON - ROMEVILLE	Yes	Yes
2A	FAULT-PANAMA_SB	WILTON	3PH	6	9	WTN1	WTN4	WTN2/WTN5	WILTON - PANAMA	Yes	Yes
2B	FAULT-PANAMA_SB	WILTON	3PH	6	9	WTN4	WTN1	WTN3/WTN6	WITLON - PANAMA	Yes	Yes
3	FAULT-GENR1	WILTON	3PH	6	9	WTN8	WTN5/WTN6 WTN7/WTN9 WTN11	/	WILTON GENR1 WILTON GENR2	Yes	Yes
4	FAULR-GENR2	WILTON	3PH	6	9	WTN7	WTN5/WTN6 WTN8/WTN9 WTN11	/	WILTON GENR1 WILTON GENR2	Yes	Yes

C. 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.C.

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-216 unit does not degrade the Entergy system performance.

The plots for voltages, frequency and machine angles in the local area following Fault 1A of Table V1-2B are shown in Figure IV-3 through Figure IV-8. Plots of relevant parameters (machine angles, frequencies, and bus voltages) are shown in Appendix A.C.

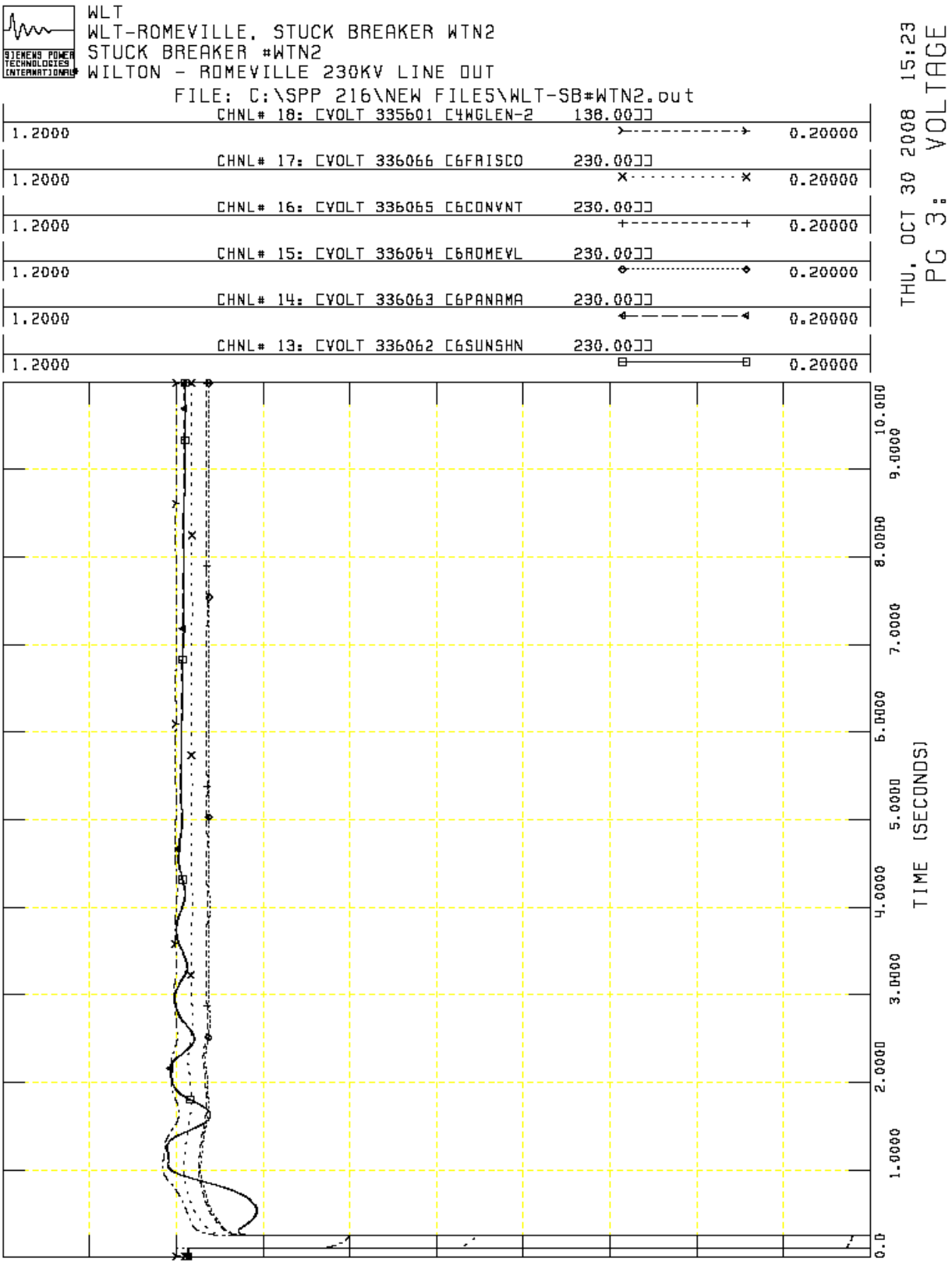


Figure IV-3: Local area voltages following Fault-1A Table IV-2B with PID-216

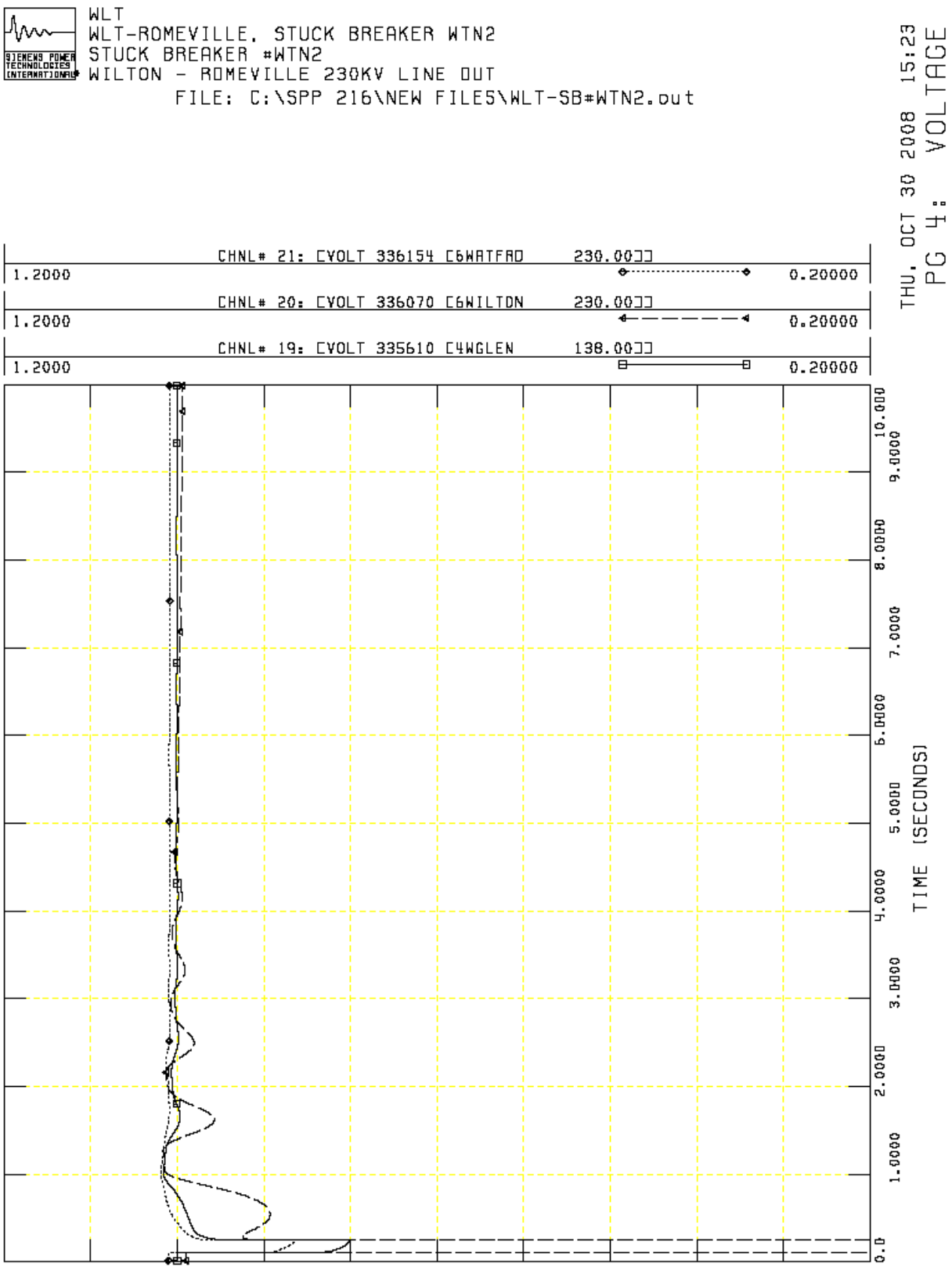


Figure IV-4: Local area voltages following Fault-1A Table IV-2B with PID-216

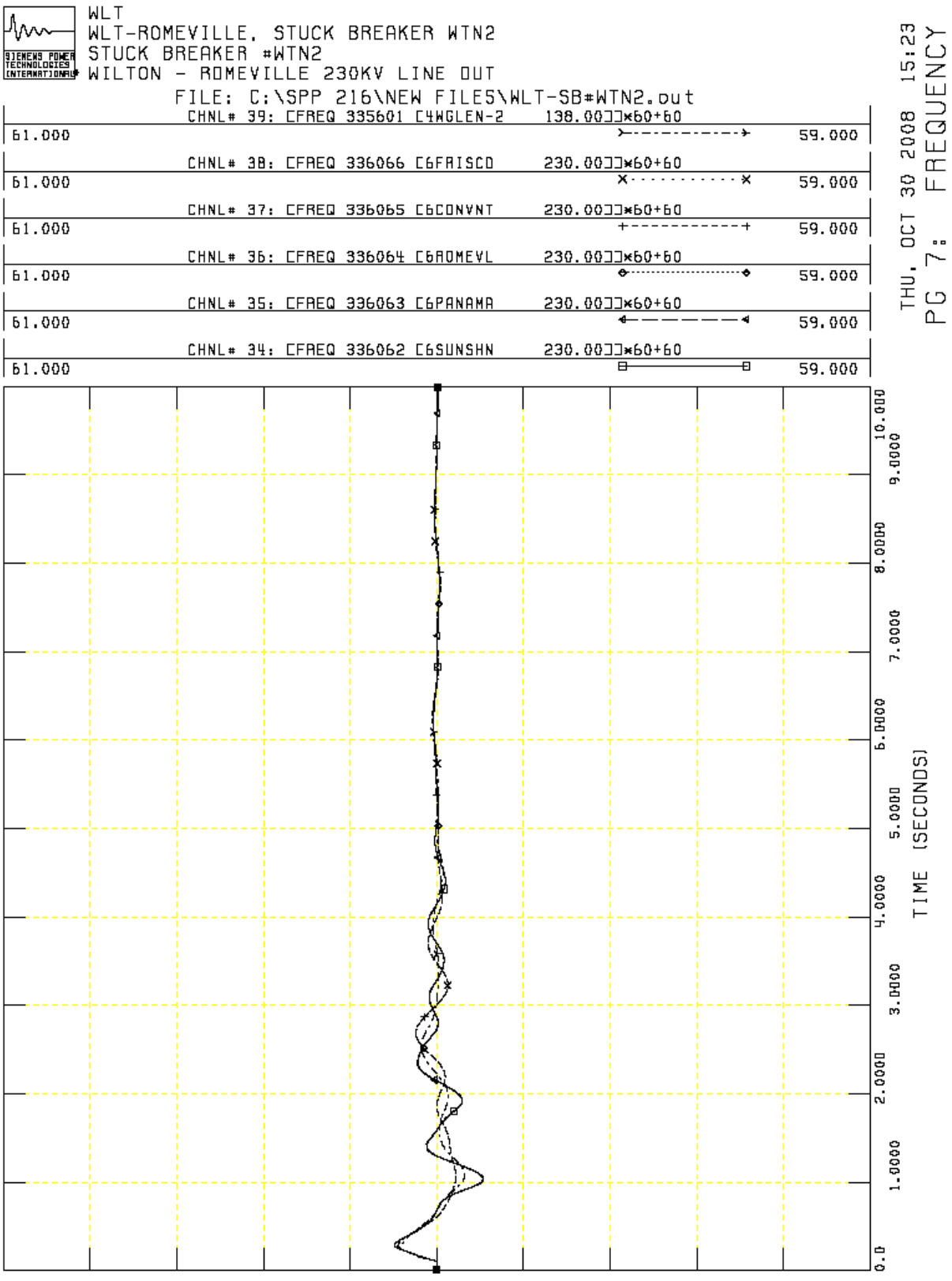


Figure IV-5: Local area frequency following Fault-1A Table IV-2B with PID-216

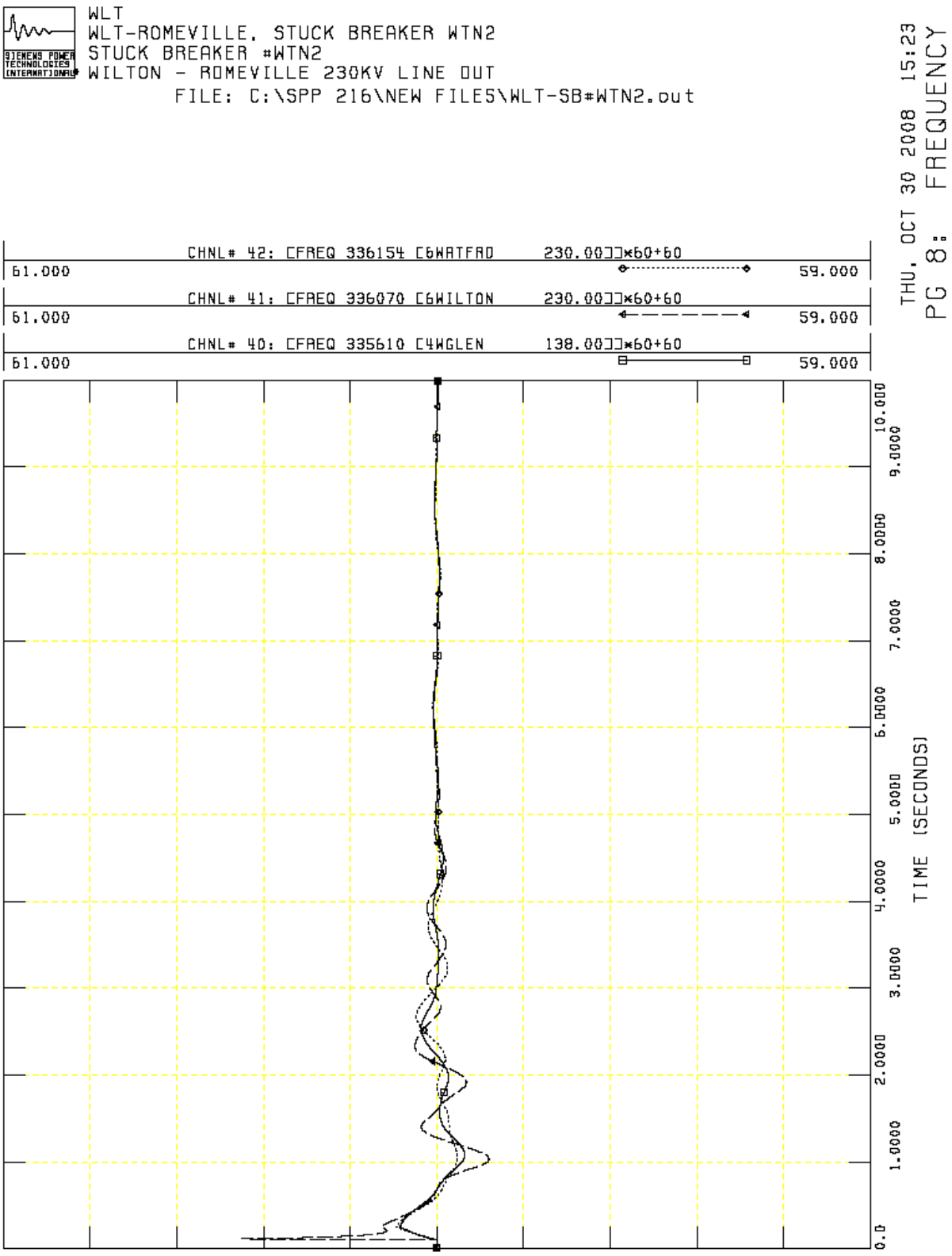


Figure IV-6: Local area frequency following Fault-1A Table IV-2B with PID-216

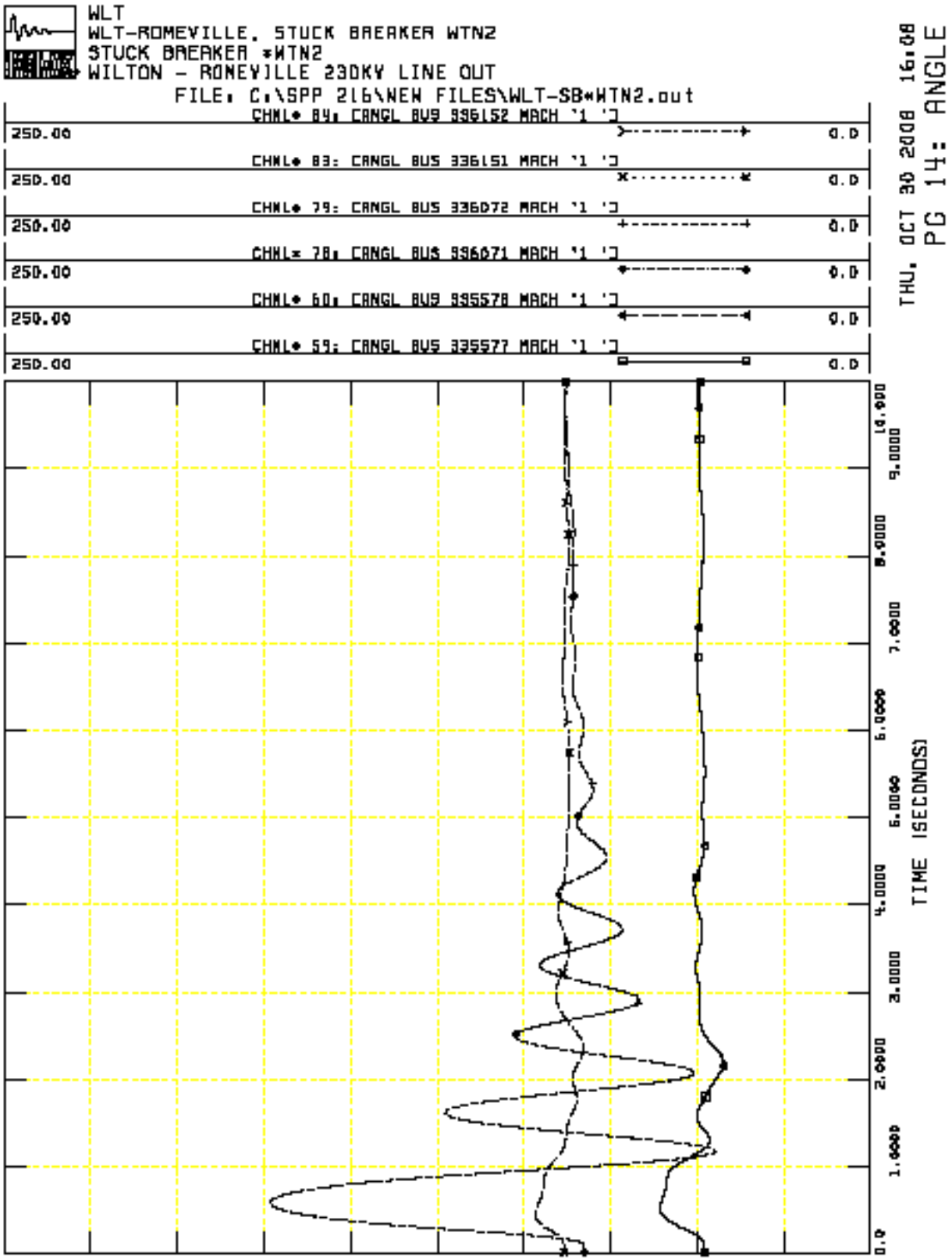


Figure IV-7: Local area angles following Fault-1A Table IV-2B with PID-216

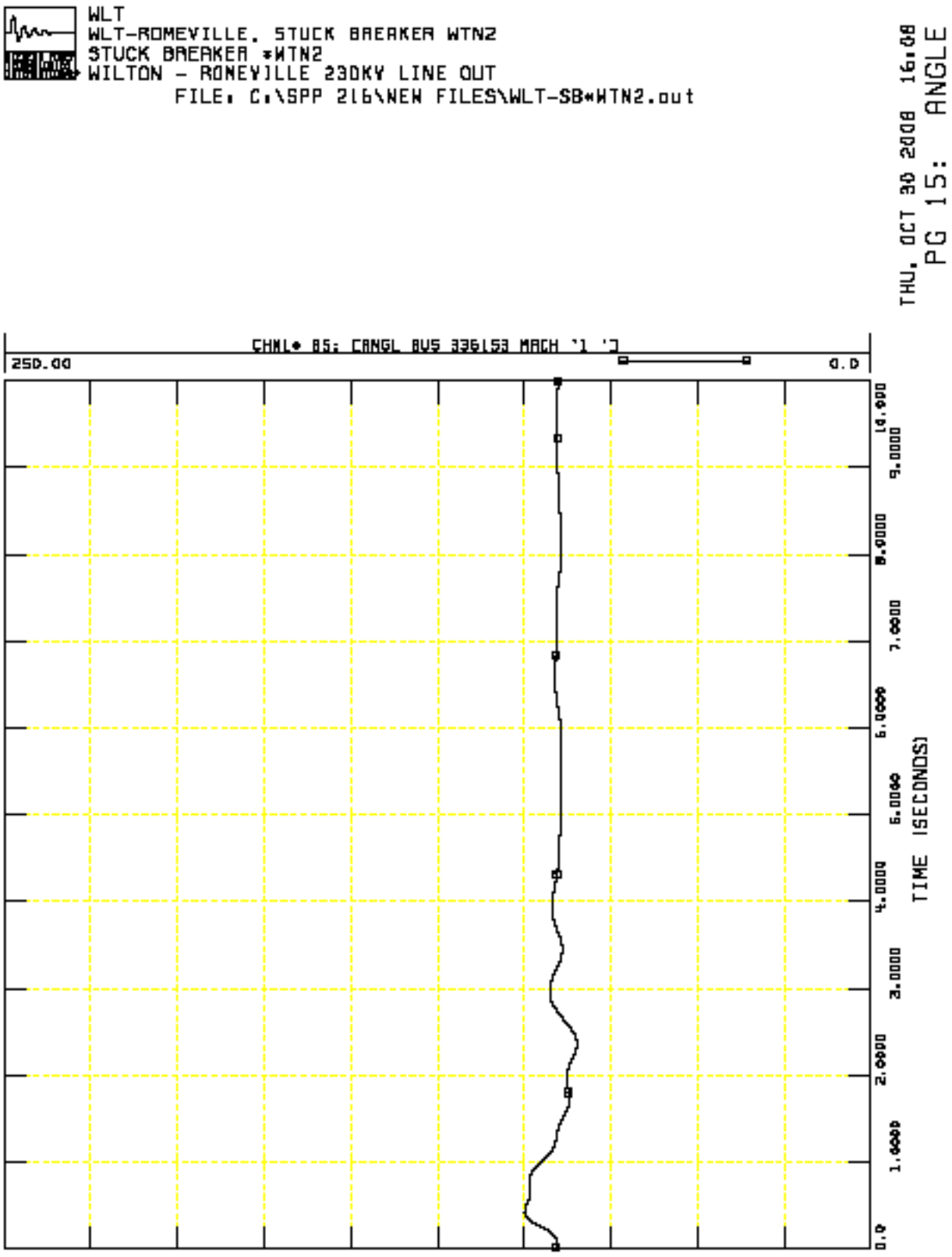


Figure IV-8: Local area frequency following Fault-1A Table IV-2B with PID-216

In summary, when considering the new PID-216 (318 MW) generation at the Wilton 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-216 plant is in-service.

Due to restructuring of the utility industry, there has been a large increase of merchant generation activity on the Entergy system. These generators are 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 WECC area over the last several years and the opinion of leading experts in the stability area, Power System Stabilizers (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 generation intending to interconnect to its transmission system to install PSS on their respective units. Please refer to Appendix A.B for Entergy's Policy Statement on PSS Requirements.

APPENDIX A.A
DATA PROVIDED BY CUSTOMER

A.A.1 LARGE GENERATING FACILITY DATA

Entergy Services, Inc.
FERC Electric Tariff
Third Revised Volume No. 3

Original Sheet No. 382

Attachment A to Appendix 1
Interconnection Request

LARGE GENERATING FACILITY DATA

UNIT RATINGS

kVA 193,000/193,400 °F 95 Voltage 18,000
Power Factor .85
Speed (RPM) 3,600 Connection (e.g. Wye) Wye
Short Circuit Ratio .5218 Frequency, Hertz 60
Stator Amperes at Rated kVA 6,190 Field Volts 370
Max Turbine MW 150,955 °F 95

COMBINED TURBINE-GENERATOR-EXCITER INERTIA DATA

Inertia Constant, H = 3.474 kW sec/kVA
Moment-of-Inertia, WR^2 = 223,966 lb. ft.^{2}

REACTANCE DATA (PER UNIT-RATED KVA)

		DIRECT AXIS		QUADRATURE AXIS
Synchronous – saturated	X_{dv}	1.780	X_{qv}	1.64
Synchronous – unsaturated	X_{di}	1.780	X_{qi}	1.64
Transient – saturated	X'_{dv}	0.180	X'_{qv}	0.409
Transient – unsaturated	X'_{di}	0.190	X'_{qi}	0.409
Subtransient – saturated	X''_{dv}	0.135	X''_{qv}	0.134
Subtransient – unsaturated	X''_{di}	0.155	X''_{qi}	0.156
Negative Sequence – saturated	$X2_v$	0.135		
Negative Sequence – unsaturated	$X2_i$	0.156		
Zero Sequence – saturated	$X0_v$	0.145		
Zero Sequence – unsaturated	$X0_i$	0.145		
Leakage Reactance	Xl_m	0.120		

Issued by: Randall Helmick
Vice President, Transmission

Effective: July 13, 2007

Issued on: July 13, 2007

FIELD TIME CONSTANT DATA (SEC)

Open Circuit	T'_{do}	5.912	T'_{qo}	0.521
Three-Phase Short Circuit Transient	T'_{d3}	0.562	T'_{q}	0.174
Line to Line Short Circuit Transient	T'_{d2}	0.895		
Line to Neutral Short Circuit Transient	T'_{d1}	1.213		
Short Circuit Subtransient	T''_{d}	0.023	T''_{q}	0.023
Open Circuit Subtransient	T''_{do}	0.031	T''_{qo}	0.069

ARMATURE TIME CONSTANT DATA (SEC)

Three Phase Short Circuit	T_{a3}	0.295
Line to Line Short Circuit	T_{a2}	0.296
Line to Neutral Short Circuit	T_{a1}	0.503

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	.00039
Negative	R_2	0.0170
Zero	R_0	0.0119

Rotor Short Time Thermal Capacity I_2^2t = 10
Field Current at Rated kVA, Armature Voltage and PF = 974 amps
Field Current at Rated kVA and Armature Voltage, 0 PF = 1,130 amps
Three Phase Armature Winding Capacitance = .153 microfarad
Field Winding Resistance = 0.2657 ohms 125 °C
Armature Winding Resistance (Per Phase) = 0.00121 ohms 25 °C

CURVES

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

SATURATION - 483HA988
"V" - 483 HA 989
REACTIVE - 483HA990

GENERATOR STEP-UP TRANSFORMER DATA RATINGS

Capacity (Self-cooled/Maximum Nameplate)

300,000 / 300,000 kVA

Voltage Ratio(Generator Side/System side/Tertiary)

13.8 / 230 / N/A kV

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

DELTA / WYE / DELTA

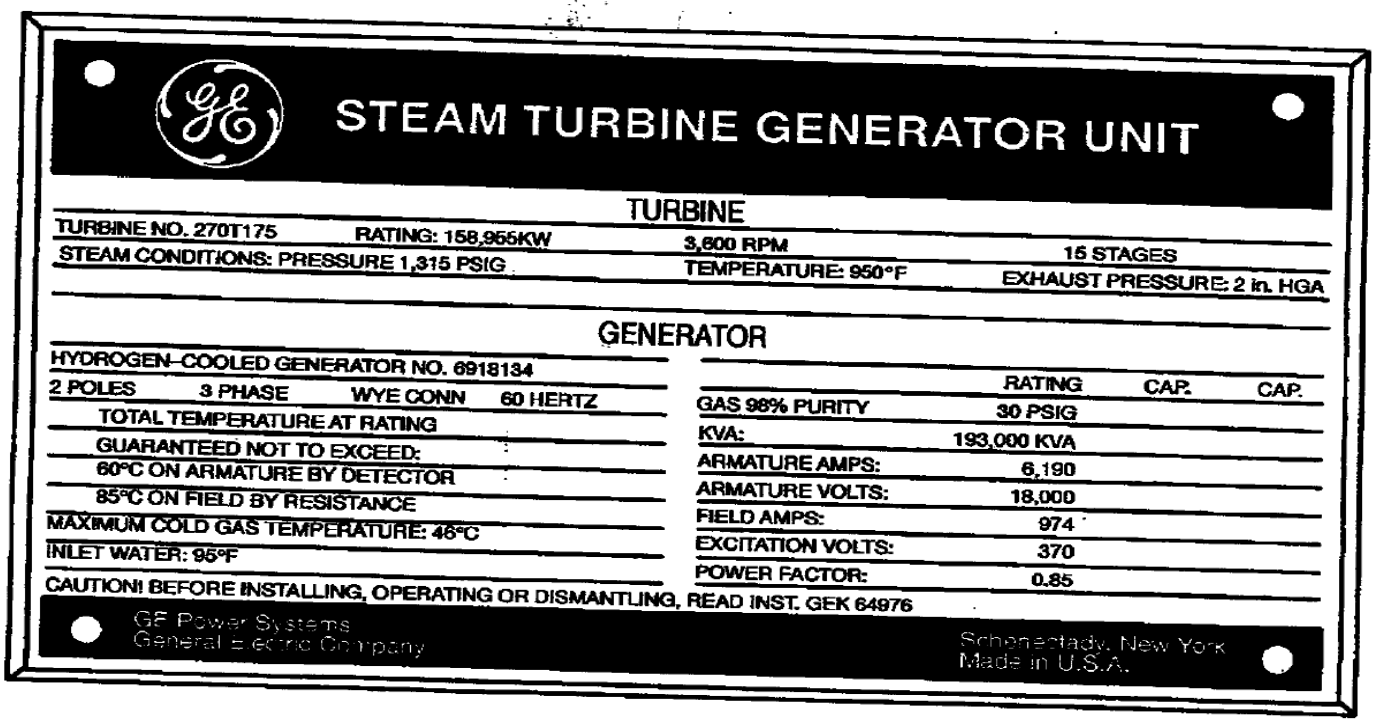
Fixed Taps Available ± 5%, ± 2.5%, RATED

Present Tap Setting N/A

IMPEDANCE

Positive Z_1 (on self-cooled kVA rating) 10 % 45 X/R

Zero Z_0 (on self-cooled kVA rating) 8.5 % 38 X/R



STEAM TURBINE GENERATOR UNIT

TURBINE

TURBINE NO. 270T175	RATING: 158,955KW	3,600 RPM	15 STAGES
STEAM CONDITIONS: PRESSURE 1,315 PSIG		TEMPERATURE: 950°F	EXHAUST PRESSURE: 2 in. HGA

GENERATOR

HYDROGEN-COOLED GENERATOR NO. 6918134

2 POLES 3 PHASE WYE CONN 60 HERTZ

TOTAL TEMPERATURE AT RATING

GUARANTEED NOT TO EXCEED:

60°C ON ARMATURE BY DETECTOR

85°C ON FIELD BY RESISTANCE

MAXIMUM COLD GAS TEMPERATURE: 46°C

INLET WATER: 95°F

	RATING	CAP.	CAP.
GAS 98% PURITY	30 PSIG		
KVA:	193,000 KVA		
ARMATURE AMPS:	6,190		
ARMATURE VOLTS:	18,000		
FIELD AMPS:	974		
EXCITATION VOLTS:	370		
POWER FACTOR:	0.85		

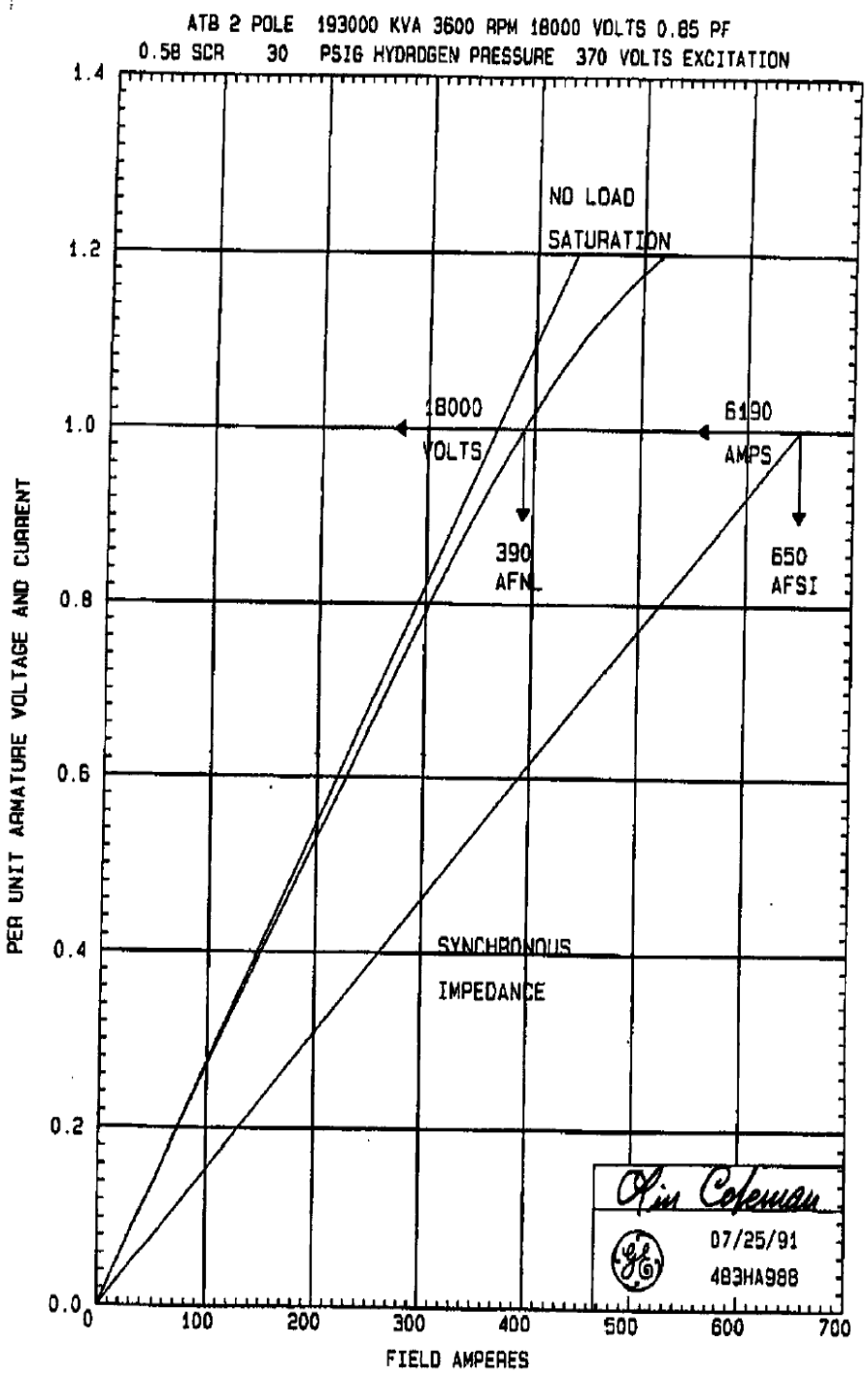
CAUTION! BEFORE INSTALLING, OPERATING OR DISMANTLING, READ INST. GEK 64976

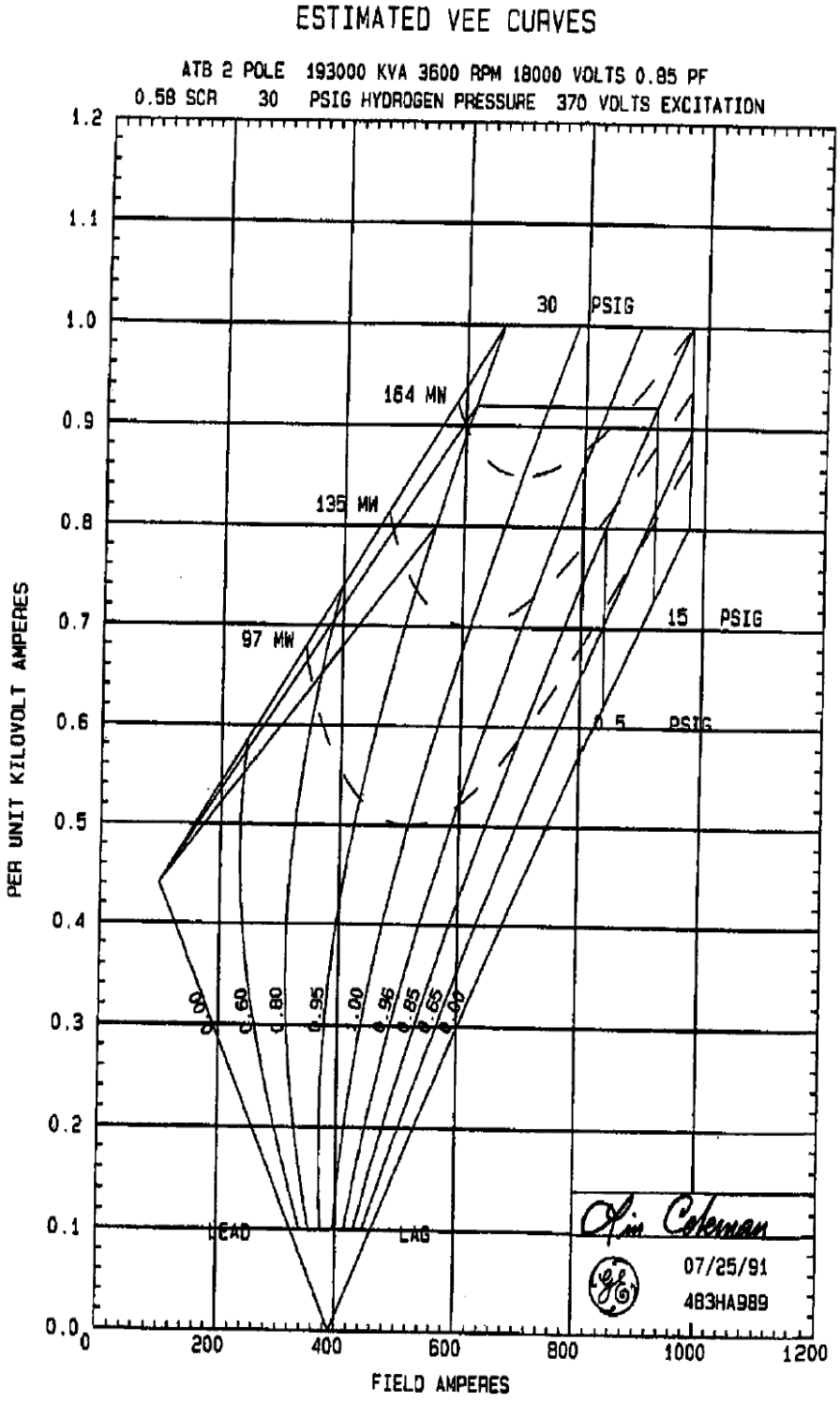
GE Power Systems
General Electric Company

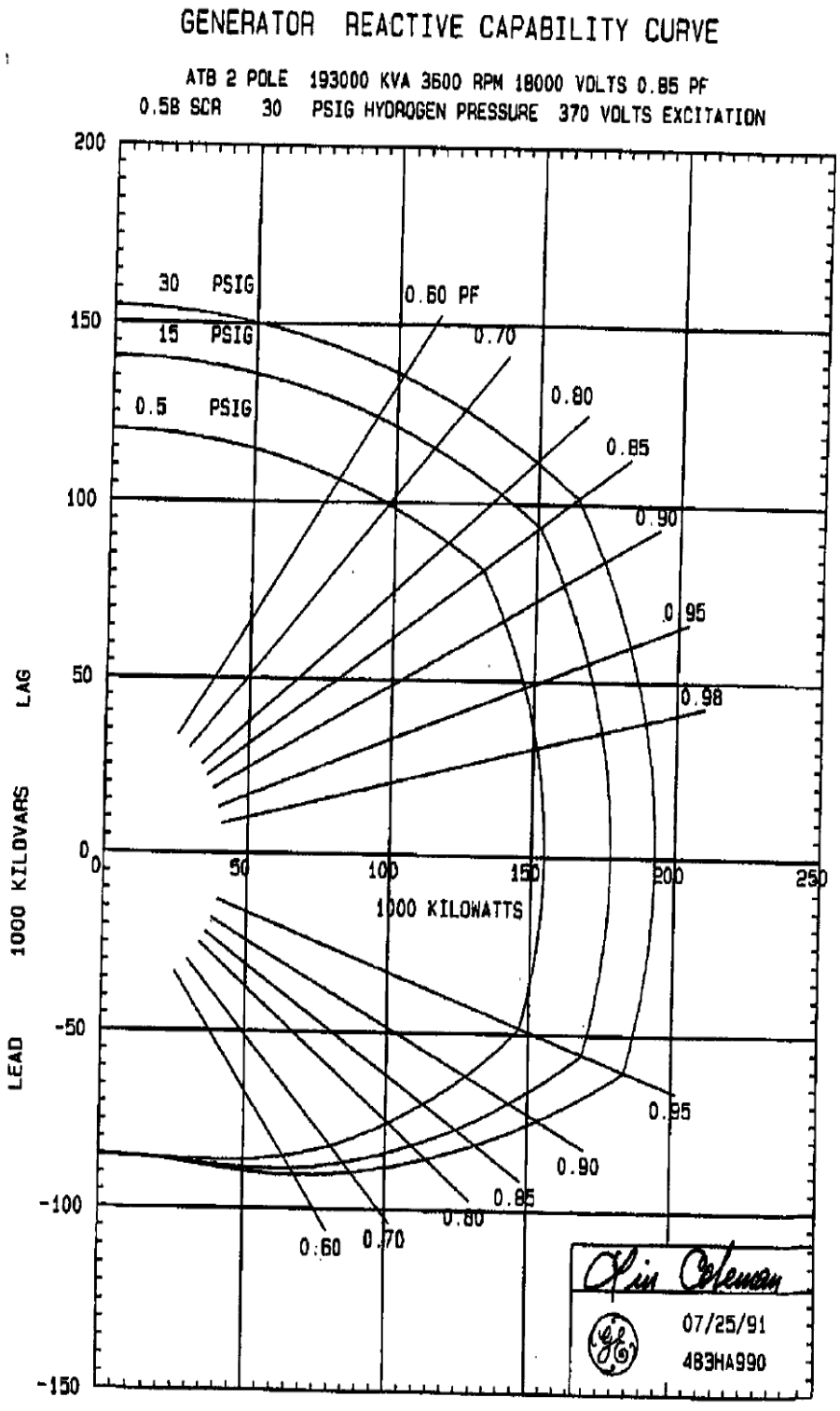
Schenectady, New York
Made in U.S.A.

STEAM TURBINE GENERATOR NAMEPLATE
DWG. 350A4300

ESTIMATED SATURATION AND SYNCHRONOUS IMPEDANCE CURVES




ESTIMATED VEE CURVES
ATB 2 POLE 193000 KVA 3600 RPM 18000 VOLTS 0.85 PF
0.58 SCR 30 PSIG HYDROGEN PRESSURE 370 VOLTS EXCITATION
PER UNIT KILOVOLT AMPERES
FIELD AMPERES
30 PSIG
15 PSIG
0.5 PSIG
164 MW
135 MW
97 MW
1.00
0.60
0.80
0.95
1.00
0.95
0.85
0.85
0.90
LEAD
LAG
Jim Coleman
07/25/91
483HA989


GENERATOR REACTIVE CAPABILITY CURVE
ATB 2 POLE 193000 KVA 3600 RPM 18000 VOLTS 0.85 PF
0.5B SCR 30 PSIG HYDROGEN PRESSURE 370 VOLTS EXCITATION
30 PSIG
15 PSIG
0.5 PSIG
0.60 PF
0.70
0.80
0.85
0.90
0.95
0.98
0.95
0.90
0.85
0.80
0.70
0.60
1000 KILOWATTS
1000 KILOVARS
LAG
LEAD
200
150
100
50
0
-50
-100
-150
50
100
150
200
250
07/25/91
483HA990

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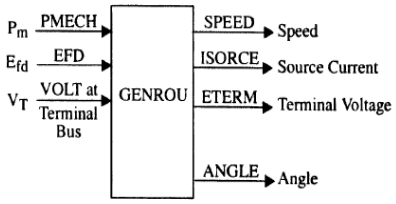
PIO 216

GENROU

Round Rotor Generator Model (Quadratic Saturation)

This model is located at system bus #_____ IBUS,
machine #_____ I.
This model uses CONs starting with #_____ J,
and STATEs starting with #_____ K,
The machine MVA is 195 for each of 1
units = 195 MBASE.
ZSORCE for this machine is _____ + j _____ on the above MBASE



CONs	#	Value	Description
J		5.912	T'_{do} (>0) (sec) ✓
J+1		.031	T''_{do} (>0) (sec) ✓
J+2		.521	T'_{qo} (>0) (sec) ✓
J+3		.069	T''_{qo} (>0) (sec) ✓
J+4		3.494	Inertia, H ✓
J+5		0.0	Speed damping, D ? → 0
J+6		1.78	X_d ✓
J+7		1.64	X_q ✓
J+8		.19	X'_d ✓
J+9		.409	X'_q ✓
J+10		.155	$X''_d = X''_q$ ✓
J+11		.12	X_l ✓
J+12		.06	S(1.0)
J+13		.23	S(1.2)

0.031
0.052
0.069

STATEs	#	Description
K		E'_q
K+1		E'_d
K+2		ψkd
K+3		ψkq
K+4		Δ speed (pu)
K+5		Angle (radians)

qt
Sat factor 1.0 p.u 5lux
Sat factor 1.2 p.u

Typical
S1 .05
S2 .26

Note: X_d, X_q, X'_d, X'_q, X''_d, X''_q, X_l, H, and D are in pu, machine MVA base.

X''_q must be equal to X''_d.

IBUS, 'GENROU', I, T'_{do}, T''_{do}, T'_{qo}, T''_{qo}, H, D, X_d, X_q, X'_d, X'_q, X''_d, X_l, S(1.0), S(1.2)/

EXCITATION SYSTEM DATA

Identify appropriate IEEE model block diagram of excitation system and power system stabilizer (PSS) for computer representation in power system stability simulations and the corresponding excitation system and PSS constants for use in the model.
EXST4B and PSS2A SEE ATTACHED

GOVERNOR SYSTEM DATA

Identify appropriate IEEE model block diagram of governor system for computer representation in power system stability simulations and the corresponding governor system constants for use in the model.
IEEEG1 SEE ATTACHED

WIND GENERATORS

Number of generators to be interconnected pursuant to this Interconnection Request:

_____

Elevation: _____ _____ Single Phase _____ Three Phase

Inverter manufacturer, model name, number, and version:

_____

List of adjustable setpoints for the protective equipment or software:

_____

Note: A completed General Electric Company Power Systems Load Flow (PSLF) data sheet or other compatible formats, such as IEEE and PTI power flow models, must be supplied with the Interconnection Request. If other data sheets are more appropriate to the proposed device, then they shall be provided and discussed at Scoping Meeting.

2. Excitation Models (EXST4B and PSS2A)

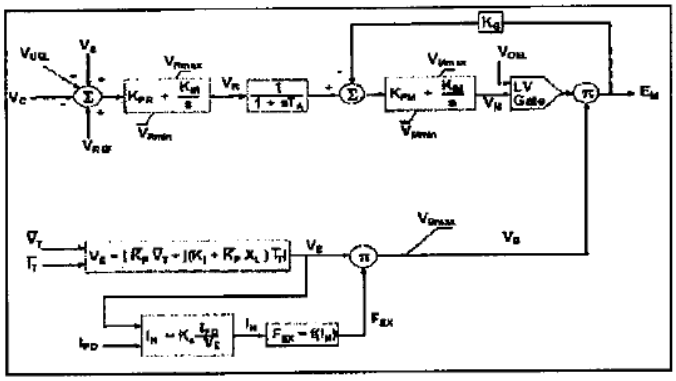
CUSTOMER MODEL

Customer	NUCOR
Unit	(formerly Martins Creek - PPL)
Req./Des. Number	T174/175 - Gen 6943876, 6916134
Prepared By	Sandy Murdoch
Date	6-Jun-06
Comments	EX2100 Bus Fed - Preliminary Model

MVA =	158	kV =	18	pf =	0.85	RPM =	3600
Rfd(100C) =	0.345	IFAG =	368	IFFL =	974		

TR	Voltage Transducer T.C.	0.00
KPR	AVR Proportional Gain	4.05
KIR	AVR Integral Gain	4.05
VRmax	AVR Positive Limit	1.00
VRmin	AVR Negative Limit	-0.80
TA	AVR Time constant	0.01
KG	FVR Feedback Gain	0.00
KPM	FVR Proportional Gain	1.00
KIM	FVR Integral Gain	0.00
VMmax	FVR Positive Limit	1.00
VMmin	FVR Negative limit	-0.80
KP	Potential Forcing Term	4.93
Theta-P	Forcing Term Angle - degrees	0.00
KI	Current Forcing Term	0.00
XL	p-bar Leakage reactance	0.00
VB max	Limit on Forcing (XFMR sat.)	6.16
KC	Commutation Loss Term	0.11

IEEE Model Type ST4B - Reference "Computer Models for Representation of Digital-based Excitation Systems", IEEE Trans. EC, Vol. 11, No. 3, September 1996, pps 607-615.



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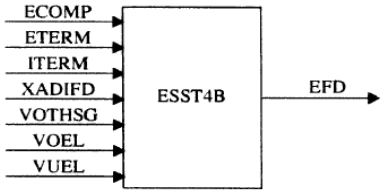
PID 216

ESST4B

IEEE Type ST4B Potential or Compounded Source-Controlled Rectifier Exciter

This model is located at system bus #_____ IBUS,
machine #_____ I.
This model uses CONs starting with #_____ J,
and STATEs starting with #_____ K.



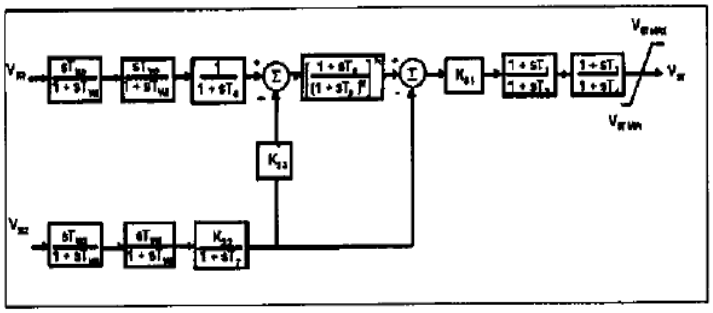
CONs	#	Value	Description
J		0.0	T_R (sec)
J+1		4.05	K_{PR}
J+2		4.06	K_{IR}
J+3		1.0	V_{RMAX}
J+4		-.8	V_{RMIN}
J+5		.01	T_A (sec)
J+6		1.0	K_{PM}
J+7		0.0	K_{IM}
J+8		1.0	V_{MMAX}
J+9		-.8	V_{MMIN}
J+10		0.0	K_G
J+11		4.93	K_P
J+12		0.0	K_I
J+13		6.16	V_{BMAX}
J+14		.11	K_C
J+15		0.0	X_L
J+16		0.0	THETAP

STATEs	#	Description
K		Sensed V_T
K+1		Regulator integrator
K+2		Regulator output, V_R
K+3		V_M

IBUS, 'ESST4B', I, T_R, K_{PR}, K_{IR}, V_{RMAX}, V_{RMIN}, T_A, K_{PM}, K_{IM}, V_{MMAX}, V_{MMIN}, K_G, K_P, K_I, V_{BMAX}, K_C, X_L, THETAP/

IEEE PSS2A Model Constants			
Customer	NUCOR		
Unit	(formerly Martins Creek - PPL)		
Req./Des. #	T174/175 - Gen 6943875, 6918134		
Prepared by	Sandy Murdoch		
Date	June 6, 2008		
Comment	EX2100 Bus Fed - Preliminary Model		
VS1	Machine Speed (pu)		
VS2	Electrical Power (pu)		
		Preliminary Value	Suggested Range
TW1	Washout Time Constant	2	2 - 15
TW2	Washout Time Constant	2	2 - 15
TW3	Washout Time Constant	2	2 - 15
TW4	Washout Time Constant	0	0
T1	1st Lead Time Constant	0.2	0.1 - 2
T2	1st Lag Time Constant	0.05	0.01 - 1
T3	2nd Lead Time Constant	0.2	0.1 - 2
T4	2nd Lag Time Constant	0.05	0.01 - 1
T6	Filter Time Constant	0	0
T7	Filter Time Constant	2	2 - 15
T8	RTF Numerator	0.5	5 x RTF Denominator
T9	RTF Denominator	0.1	0.01 - 40
N	RTF Order	1	1
M	RTF # Poles	5	5
KS1	PSS Gain	10	0-100
KS2	Inertia Gain (=Tw/2H)	0.288	Tw/(2H)
KS3	Pe Gain	1	1
VSTmax	Positive Output Limit (pu)	0.1	0.02 - 0.1
VSTmin	Negative Output Limit (pu)	-0.1	-0.02 - -0.1

The data on this sheet is **GENERIC** and should **NOT** be used with equipment in the field.
Such data should only come from tuning studies which determine the optimal PSS settings.



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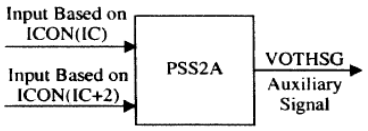
PID 216

PSS2A

IEEE Dual-Input Stabilizer Model

This model is located at system bus #_____ IBUS,
machine #_____ I.
This model uses CONs starting with #_____ J,
and STATEs starting with #_____ K,
and VARs starting with #_____ L,
and ICONs starting with #_____ IC.



ICONs	#	Value	Description
IC		1	ICS1, first stabilizer input code: 1 - rotor speed deviation (pu) 2 - bus frequency deviation (pu) 3 - generator electrical power on MBASE base (pu) 4 - generator accelerating power (pu) 5 - bus voltage (pu) 6 - derivative of pu bus voltage
IC+1		0	REMBUS1, first remote bus number
IC+2		3	ICS2, second stabilizer input code: 1 - rotor speed deviation (pu) 2 - bus frequency deviation (pu) 3 - generator electrical power on MBASE base (pu) 4 - generator accelerating power (pu) 5 - bus voltage (pu) 6 - derivative of pu bus voltage
IC+3		0	REMBUS2, second remote bus number
IC+4		5	M, ramp tracking filter IEEE
IC+5		1	N, ramp tracking filter IEEE

CONs	#	Value	Description
J		2	T_{w1} (>0)
J+1		2	T_{w2}
J+2		0	T_6
J+3		2	T_{w3} (>0)
J+4		0	T_{w4}
J+5		2	T_7
J+6		.288	K_{S2}
J+7		1	K_{S3}
J+8		.5	T_8

CONs	#	Value	Description
J+9		.1	T_9 (>0)
J+10		10	K_{S1}
J+11		.2	T_1
J+12		.05	T_2
J+13		.2	T_3
J+14		.05	T_4
J+15		.1	V_{STMAX}
J+16		-0.1	V_{STMIN}

STATEs	#	Description
K		Washout - first signal
K+1		Washout - first signal
K+2		Transducer - first signal
K+3		Washout - second signal
K+4		Washout - second signal
K+5		Transducer - second signal
K+6 . . . K+13		Ramp Tracking Filter
K+14		First lead-lag
K+15		Second lead-lag

VARs	#	Description
L		Memory
L+1		Derivative of pu bus voltage - first bus
L+2		Memory
L+3		Derivative of pu bus voltage - second bus

3. Turbine-Governor Model (IEEEG1)

Model Name: **ieeeg1** For Nucor 159 MW Non-Reheat Double Flow Turbines

Description IEEE steam turbine/governor model (with deadband and nonlinear valve gain added)

Prerequisites: One or two generator models ahead of this model in the dynamic models table

Inputs: Shaft speed

Invocation: ieeeg1 [<nh>] {<nameh> <kvh>} <idh> [<nl>] {<namel> <kvl>} <idl> : [mwcap=<159>]

Parameters:

EPCL Variable	*EHC Data*	*Description*
K	20	Governor gain (reciprocal of droop), p.u.
T1	0	Governor lag time constant, sec.
T2	0	Governor lead time constant, sec.
T3	0.15	Valve positioner time constant, sec.
Uo	0.05	Maximum valve opening velocity, p.u./sec.
Uc	-0.1	Maximum valve closing velocity, p.u./sec (< 0.)
Pmax	1.0	Maximum valve opening, p.u. of mwcap.
Pmin	0	Minimum valve opening, p.u. of mwcap
T4	0.05	Inlet piping/steam bowl time constant, sec.
K1	0.65	Fraction of hp shaft power after first boiler pass
K2	0	Fraction of lp shaft power after first boiler pass
T5	0	Time constant of second boiler pass, sec
K3	0	Fraction of hp shaft power after second boiler pass

K4	0	Fraction of lp shaft power after second boiler pass
T6	0.40	Time constant of third boiler pass, sec. (cross-over)
K5	0.35	Fraction of hp shaft power after third boiler pass
K6	0	Fraction of lp shaft power after third boiler pass
T7	0	Time constant of fourth boiler pass, sec
K7	0	Fraction of hp shaft power after fourth boiler pass
K8	0	Fraction of lp shaft power after fourth boiler pass
db1	0	Intentional deadband width, Hz.
eps	0	Intentional db hysteresis, Hz.
db2	0	Unintentional deadband, MW
GV1	na	Nonlinear gain point 1, p.u. gv
Pgv1	na	Nonlinear gain point 1, p.u. power
GV2	na	Nonlinear gain point 2, p.u. gv
Pgv2	na	Nonlinear gain point 2, p.u. power
GV3	na	Nonlinear gain point 3, p.u. gv
Pgv3	na	Nonlinear gain point 3, p.u. power
GV4	na	Nonlinear gain point 4, p.u. gv
Pgv4	na	Nonlinear gain point 4, p.u. power
GV5	na	Nonlinear gain point 5, p.u. gv
Pgv5	na	Nonlinear gain point 5, p.u. power
GV6	na	Nonlinear gain point 6, p.u. gv
Pgv6	na	Nonlinear gain point 6, p.u. power

Notes:

a) Per unit parameters are on base of total turbine MW capability. If no value is entered for "mwcap", the generator MVA base is used. (If there are two generators, the sum of the MVA bases is used.)

b) T3 must be greater than zero. All other time constants may be zero.

c) <nh> <nameh> <kvh> <idh> identify the first of two generators controlled by this governor. These must identify a generator that is in the working case.

<nl> <namel> <kvl> <idl> identify the second of two generators controlled by this governor. These may be omitted if only one generator is controlled.

d) The two generators identified by the invocation of this model are normally the high and low pressure machines, respectively, of a cross compound steam turbine set, or the gas and steam turbine machines of a combined cycle plant. The second machine may be absent and, in this case, the model can be used to approximate the behavior of a wide range of types of single shaft turbine.

e) The gains K1-K8 and time constants T5-T7 describe the division of power output among turbine stages and the transfer of energy in the boiler or combustion prime mover.

f)) Each generator must be represented in the load flow by data stated on its own MVA base. The values of K1, K3, K5, K7 must be specified to describe the proportionate development of power on the first turbine shaft. K2, K4, K6, K8 must describe the second turbine shaft. Normally

K1 + K3 + K5 + K7 = 1.0

K2 + K4 + K6 + K8 = 1.0

The division of power between the two shafts is in proportion to the values of MBASE of the two generators. The initial condition load flow should, therefore, have the two generators loaded to the same fraction of the MVA base.

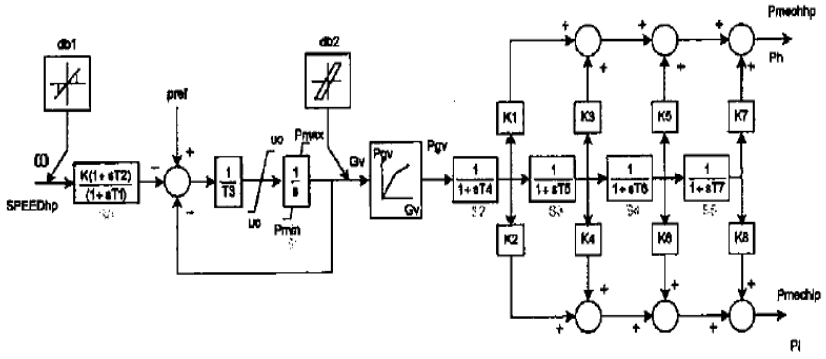
g) The deadbands are implemented as described in section 3.10.2.

h) The nonlinear gain between gate position and power may be input with up to 6 points. The (0.,0.) and (1.,1.) points are assumed and need not be input. The output is not allowed to go beyond 0. and 1. However, if Pmax > 1., the input and output are scaled by Pmax.

If GV1 is input as a negative number, the default full-arc steam valve curve (see section 3.10.2) will be used. If input is omitted or if all zero values are input, a straight line is used.

Output Channels:

Record Level	*Name*	*Description*
1	ph	High pressure turbine shaft power, MW.
1	pl	Low pressure turbine shaft power, MW

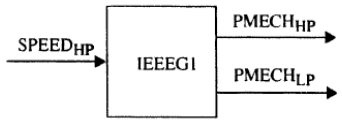


IEEEG1

IEEE Type 1 Speed-Governing Model

This model is located at system bus #_____ IBUS,
machine #_____ I.
This model may be located at system bus #_____ JBUS,
machine #_____ M.
This model uses CONs starting with #_____ J,
and STATEs starting with #_____ K,
and VARs starting with #_____ L.

Note: JBUS and JM are set to zero for noncross compound.



CONs	#	Value	Description
J		20	K
J+1		0	T_1 (sec)
J+2		0	T_2 (sec)
J+3		.15	T_3 (>0) (sec)
J+4		.05	U_o (pu/sec)
J+5		-0.1	U_c (<0.) (pu/sec)
J+6		1.0	P_{MAX} (pu on machine MVA rating)
J+7		0	P_{MIN} (pu on machine MVA rating)
J+8		.05	T_4 (sec)
J+9		.65	K_1
J+10		0	K_2
J+11		0	T_5 (sec)
J+12		0	K_3
J+13		0	K_4
J+14		0.4	T_6 (sec)
J+15		.35	K_5
J+16		0	K_6
J+17		0	T_7 (sec)
J+18		0	K_7
J+19		0	K_8

STATEs	#	Description
K		First governor integrator
K+1		Governor output
K+2		First turbine integrator
K+3		Second turbine integrator
K+4		Third turbine integrator
K+5		Fourth turbine integrator

VARs	#	Description
L		Reference
L+1		Internal memory

IBUS, 'IEEEG1', I, JBUS, M, K, T_1, T_2, T_3, U_o, U_c, P_{MAX}, P_{MIN}, T_4, K_1, K_2, T_5, K_3, K_4, T_6, K_5, K_6, T_7, K_7, K_8/

? $K1 + K3 + K5 + K7 = 1.0$
$K2 + K4 + K6 + K8 = 1.0$

Check INTO

A.A.2 DATA USED IN STABILITY MODEL

Load Flow Models

The **PID-216** plant equipment data are listed in Appendix A.A. No other elements were added to the Entergy system.

Stability Models

The **PID-216** 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

```
336070,'6WILTON     ', 230.0000,1,     0.000,     0.000, 351, 122,0.99005,  34.4838,   1
336071,'PID 216     ',  18.0000,2,     0.000,     0.000, 351, 122,1.00000,  36.2233,   1
336072,'PID 216     ',  18.0000,2,     0.000,     0.000, 351, 122,1.00000,  36.2233,   1
0 / END OF BUS DATA, BEGIN LOAD DATA
0 / END OF LOAD DATA, BEGIN GENERATOR DATA
336071,'1 ',   159.000,    52.241,   100.000,   -85.000,1.00000,     0,   193.000,   0.00000,   1.00000,   0.00000,   0.00000,1.00000,1,
100.0,   159.000,     0.000,   1,1.0000
336072,'1 ',   159.000,    52.241,   100.000,   -85.000,1.00000,     0,   193.000,   0.00000,   1.00000,   0.00000,   0.00000,1.00000,1,
100.0,   159.000,     0.000,   1,1.0000
0 / END OF GENERATOR DATA, BEGIN BRANCH DATA
336063, 336070,'1 ',   0.00041,   0.00313,   0.00658,  460.00,  460.00,    0.00,  0.00000,  0.00000,  0.00000,  0.00000,1,   0.00,
1,1.0000
336064,-336070,'1 ',   0.00096,   0.00729,   0.01534,  460.00,  460.00,    0.00,  0.00000,  0.00000,  0.00000,  0.00000,1,   0.00,
1,1.0000
0 / END OF BRANCH DATA, BEGIN TRANSFORMER DATA
336070,336071,     0,'1 ',1,1,1,   0.00000,   0.00000,2,'           ',1,   1,1.0000
   0.00030,   0.01900,   100.00
1.00000,   0.000,   0.000,   999.00,   999.00,   999.00,-1, 336070, 1.10000, 0.90000, 1.10000, 0.90000,  33, 0, 0.00000, 0.00000
1.00000,   0.000
336070,336072,     0,'1 ',1,1,1,   0.00000,   0.00000,2,'           ',1,   1,1.0000
   0.00030,   0.01900,   100.00
1.00000,   0.000,   0.000,   999.00,   999.00,   999.00,-1, 336070, 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,  1205.000,    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
 122,'AMSCOR      '
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

```
// MACHINE ST1
336071 'GENROU'  1          5.912       0.031       0.521       0.069
            3.474       0.0         1.78        1.64        0.19
            0.409       0.155       0.12        .06         0.23       / ST1_PID216 18.0 \ RTH_4August08
336071 'PSS2A'   1          1           0           3           0
            5           1           2           2           0
            2           0           2           0.288       1.0
            0.5         0.10        10.0        0.2         0.05
            0.2         0.05        0.1         -0.1                   / ST1_PID216 18.0 \ RTH_4August08
336071 'ESST4B'  1          0.0         4.05        4.06        1.0
            -0.80       0.01        1.0         0.0         1.0
            -0.80       0.0         4.93        0.0         6.16
            0.11        0.0         0.0                             / ST1_PID216 18.0 \ RTH_4August08
336071, 'IEEEG1',  1, 0, 0, 20, 0, 0.00, 0.15, 0.05, -0.1, 1.00, 0.00, 0.05, 0.65, 0.00, 0.00, 0.00, 0.00, 0.4, 0.35, 0.00, 0.00, 0.00, 0.00, /

// MACHINE ST1
336072 'GENROU'  1          5.912       0.031       0.521       0.069
            3.474       0.0         1.78        1.64        0.19
            0.409       0.155       0.12        .06         0.23       / ST1_PID216 18.0 \ RTH_4August08
336072 'PSS2A'   1          1           0           3           0
            5           1           2           2           0
            2           0           2           0.288       1.0
            0.5         0.10        10.0        0.2         0.05
            0.2         0.05        0.1         -0.1                   / ST1_PID216 18.0 \ RTH_4August08
336072 'ESST4B'  1          0.0         4.05        4.06        1.0
            -0.80       0.01        1.0         0.0         1.0
            -0.80       0.0         4.93        0.0         6.16
            0.11        0.0         0.0                             / ST1_PID216 18.0 \ RTH_4August08
336072, 'IEEEG1',  1, 0, 0, 20, 0, 0.00, 0.15, 0.05, -0.1, 1.00, 0.00, 0.05, 0.65, 0.00, 0.00, 0.00, 0.00, 0.4, 0.35, 0.00, 0.00, 0.00, 0.00, /
```

APPENDIX A.B
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

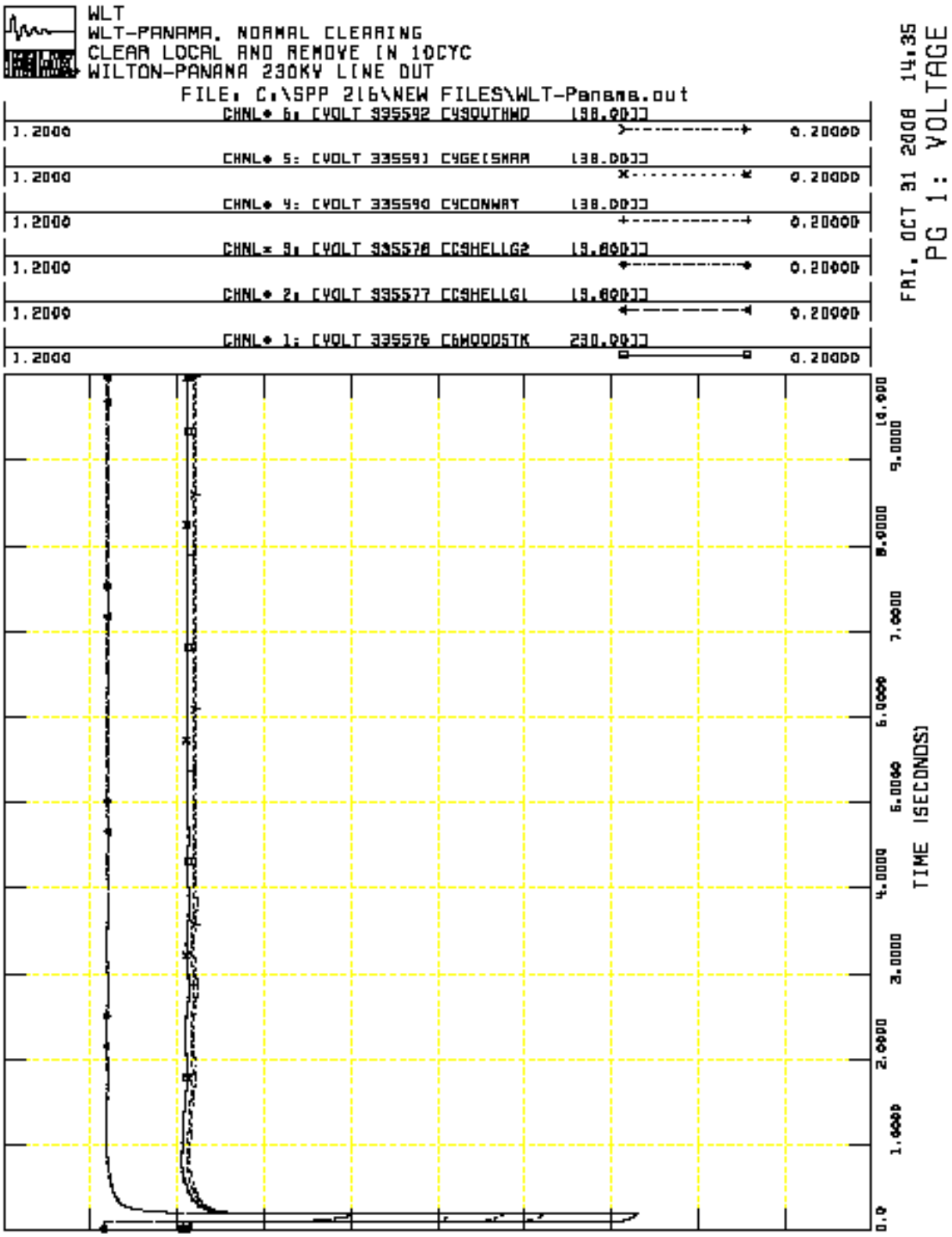
APPENDIX A.C
TRANSIENT STABILITY DATA AND PLOTS

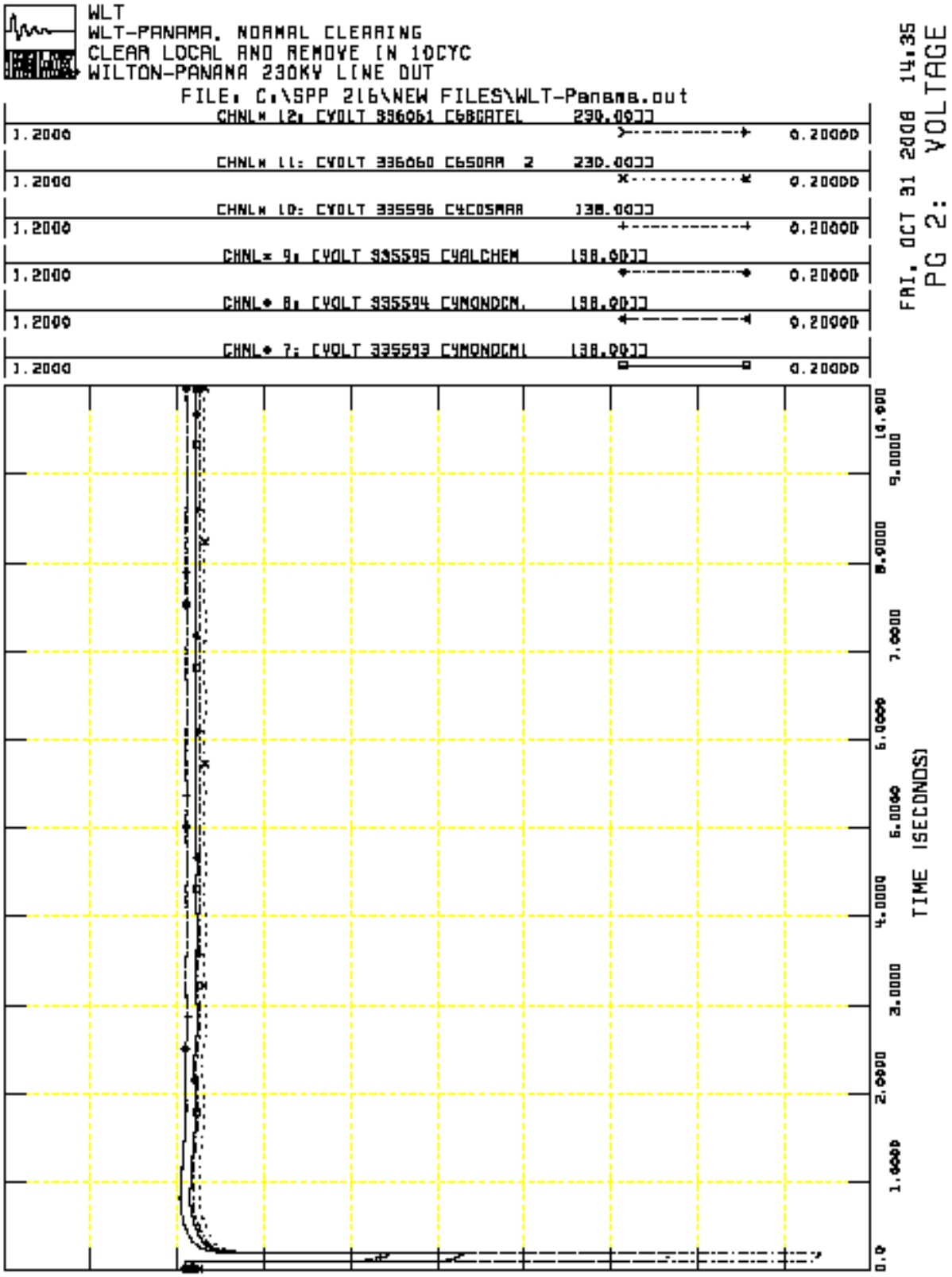
Plots illustrating the results from the simulated cases have been provided. For all cases, machine angle and frequency plots are given for representative generators in the vicinity of major 230kV or 138kV buses in the area near the proposed PID-216 generation.

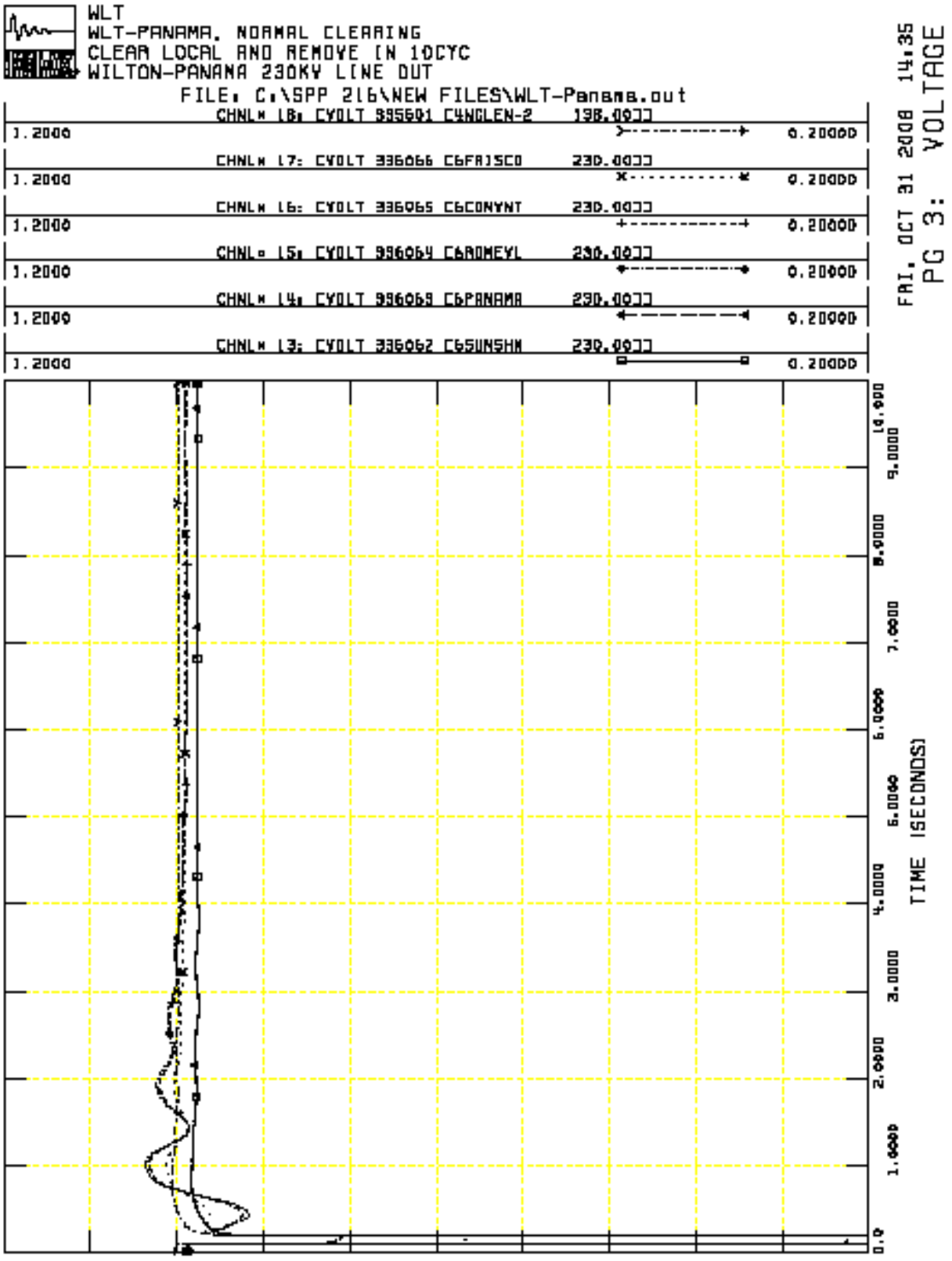
PLOTS

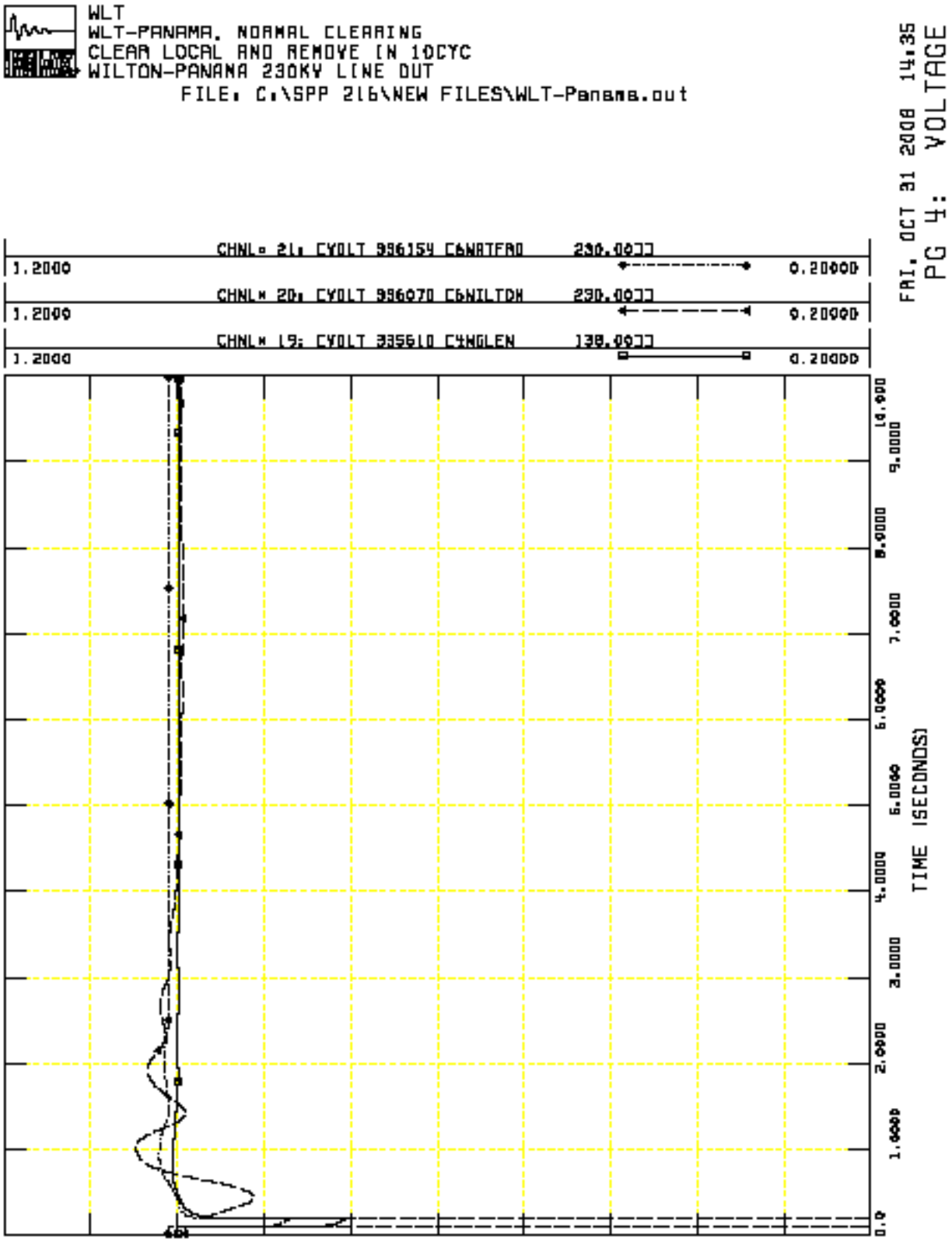
TABLE IV-2A FAULT CASES SIMULATED IN THIS STUDY: 3 PHASE FAULTS WITH NORMAL CLEARING

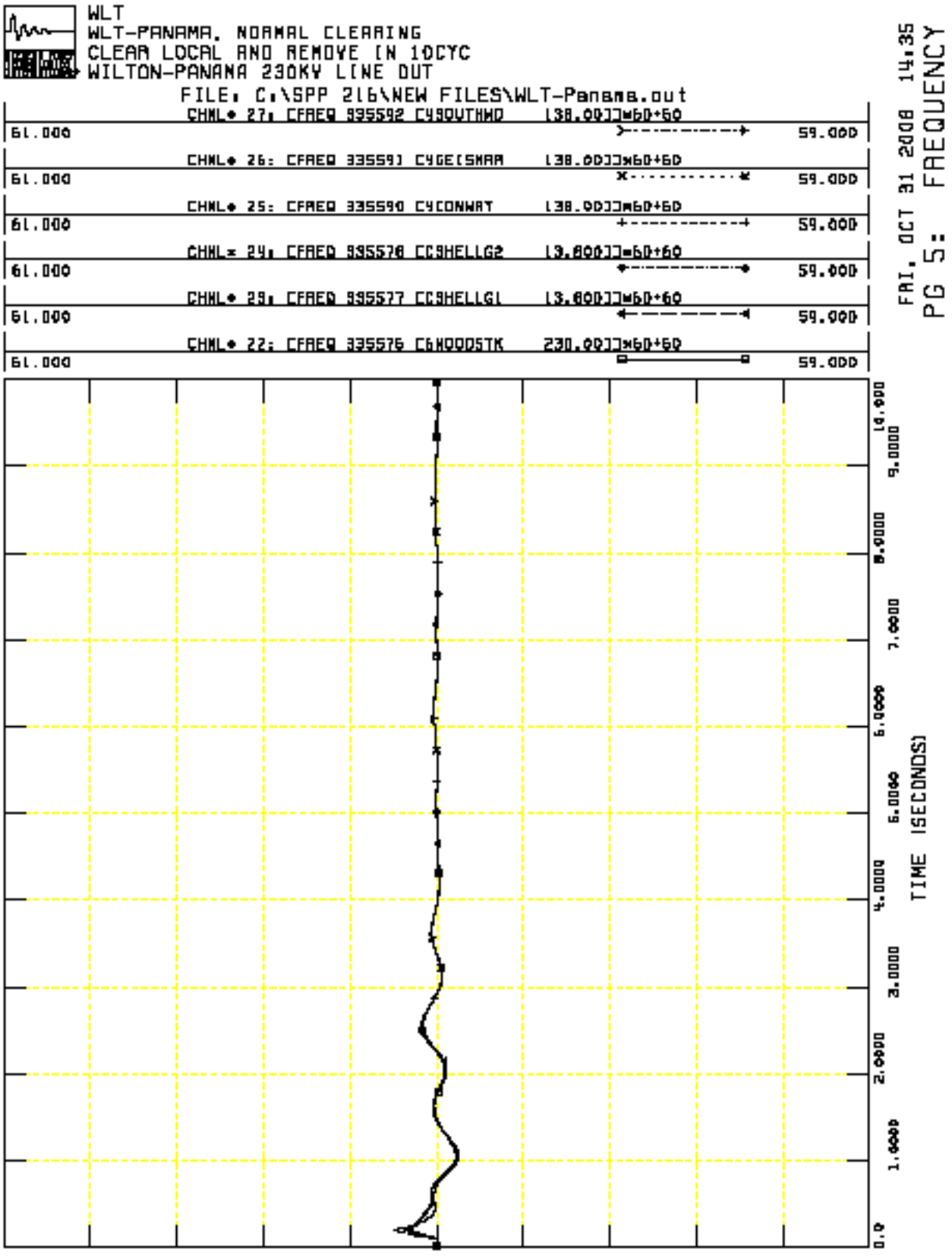
FAULT REFERENCE NO. 1
FAULT-PANAMA - LOCATION WILTON

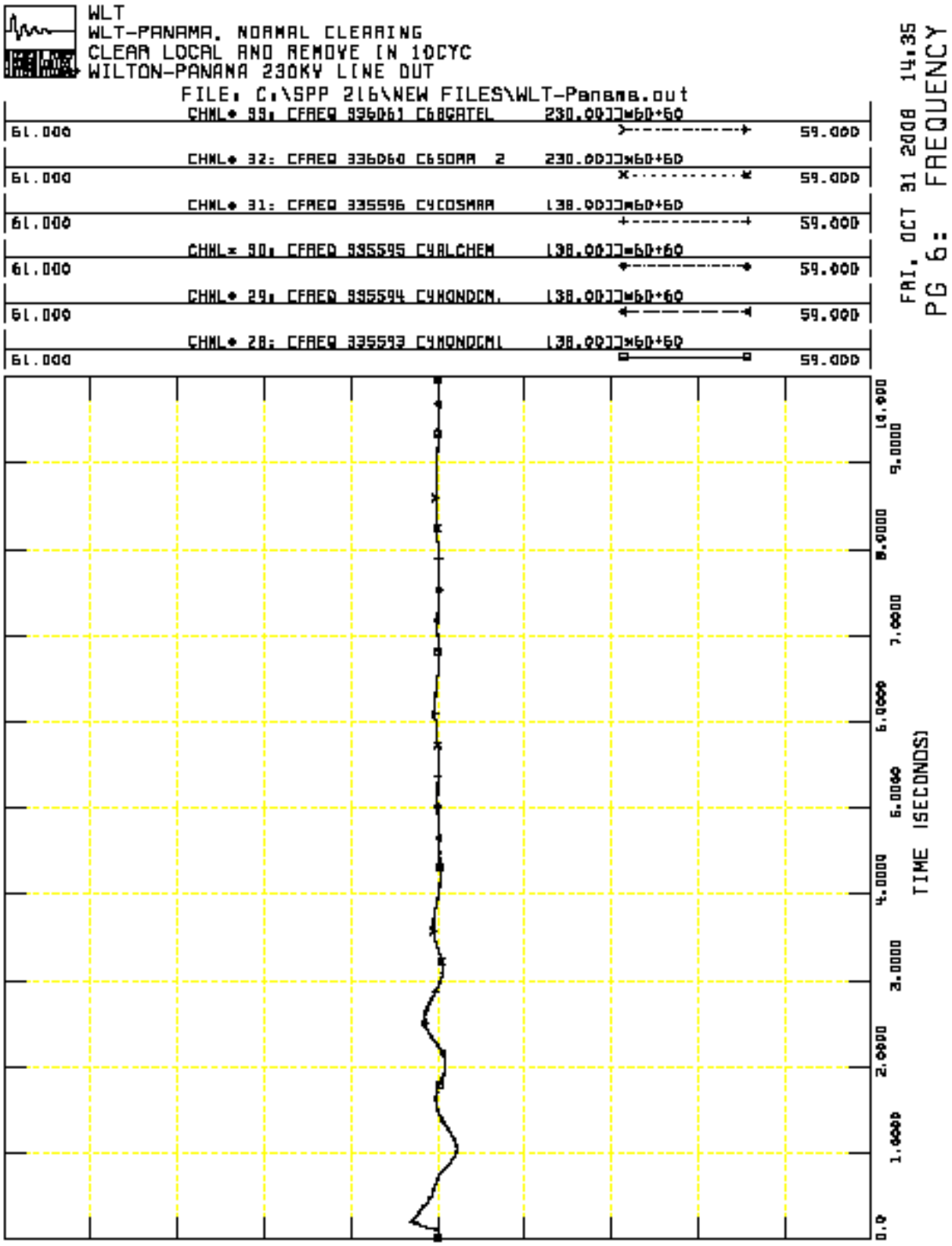

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
CHNL# 6: CVOLT 335592 C4SOUTHWD [98.00]]
CHNL# 5: CVOLT 335591 C4GE[SMAR [38.00]]
CHNL# 4: CVOLT 335590 C4CONWAY [38.00]]
CHNL# 3: CVOLT 335578 CCSHELLG2 [8.800]]
CHNL# 2: CVOLT 335577 CCSHELLG1 [8.800]]
CHNL# 1: CVOLT 335576 C6WOODSTK 230.00]]
1.2000
0.20000
FRI, OCT 31 2008 14:35
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

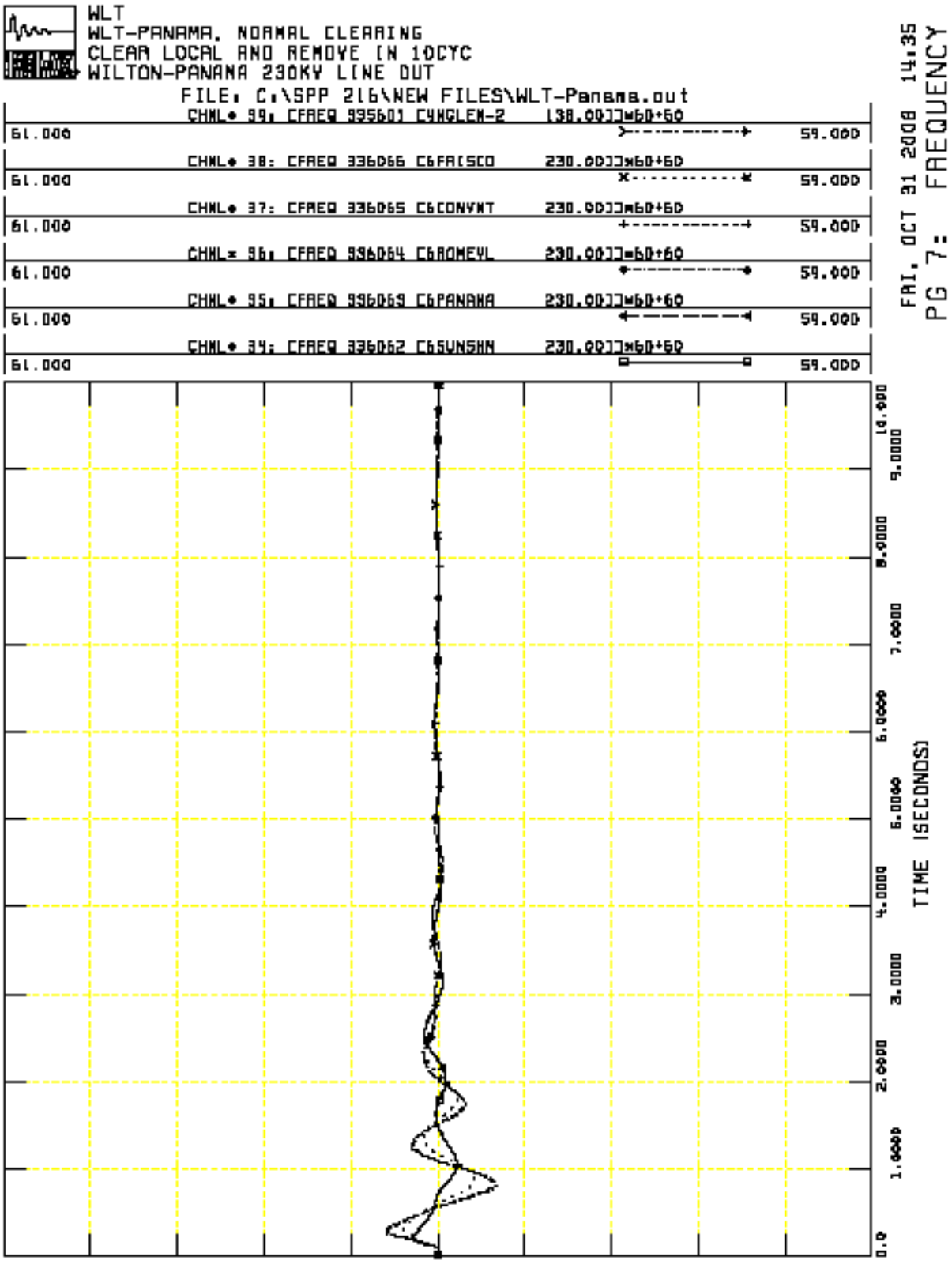

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOTE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 2: VOLTAGE
CHNL# 12: CYOLT 336061 C6BGATEL 230.0000
CHNL# 11: CYOLT 336060 C6SOAR 2 230.0000
CHNL# 10: CYOLT 335596 C4COSMAR 138.0000
CHNL# 9: CYOLT 335595 CYALCHEM 138.0000
CHNL# 8: CYOLT 335594 CYMONDCM. 138.0000
CHNL# 7: CYOLT 335593 CYMONDCM1 138.0000
1.2000
0.20000
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

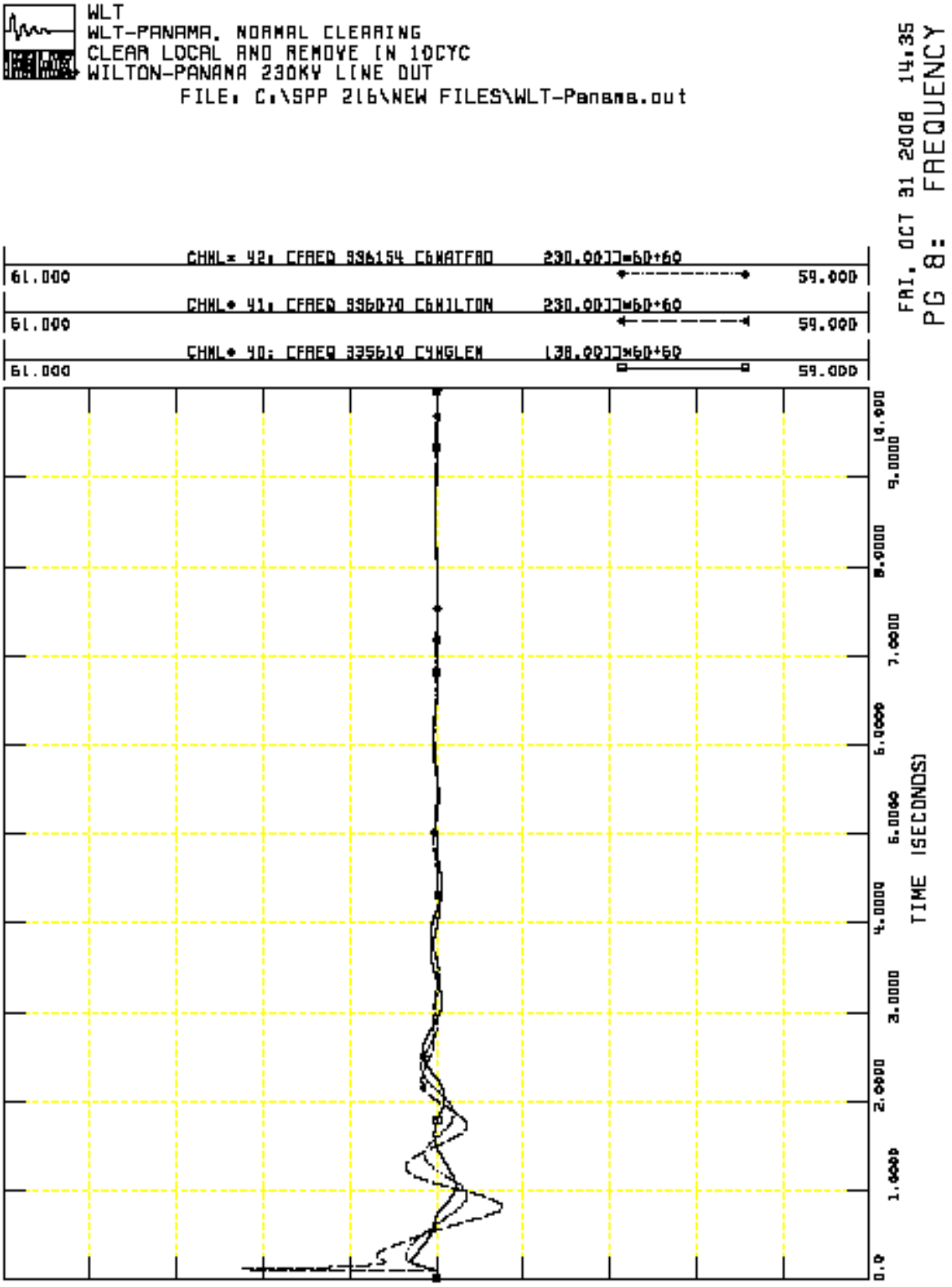

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 3: VOLTAGE
CHNL# 18: CYOLT 335601 C4NGLEN-2 138.0000
CHNL# 17: CYOLT 336066 C6FAISCO 230.0000
CHNL# 16: CYOLT 336065 C6CONYNT 230.0000
CHNL# 15: CYOLT 336064 C6ROMEYL 230.0000
CHNL# 14: CYOLT 336063 C6PANAMA 230.0000
CHNL# 13: CYOLT 336062 C6SUNSHN 230.0000
1.2000
0.20000
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

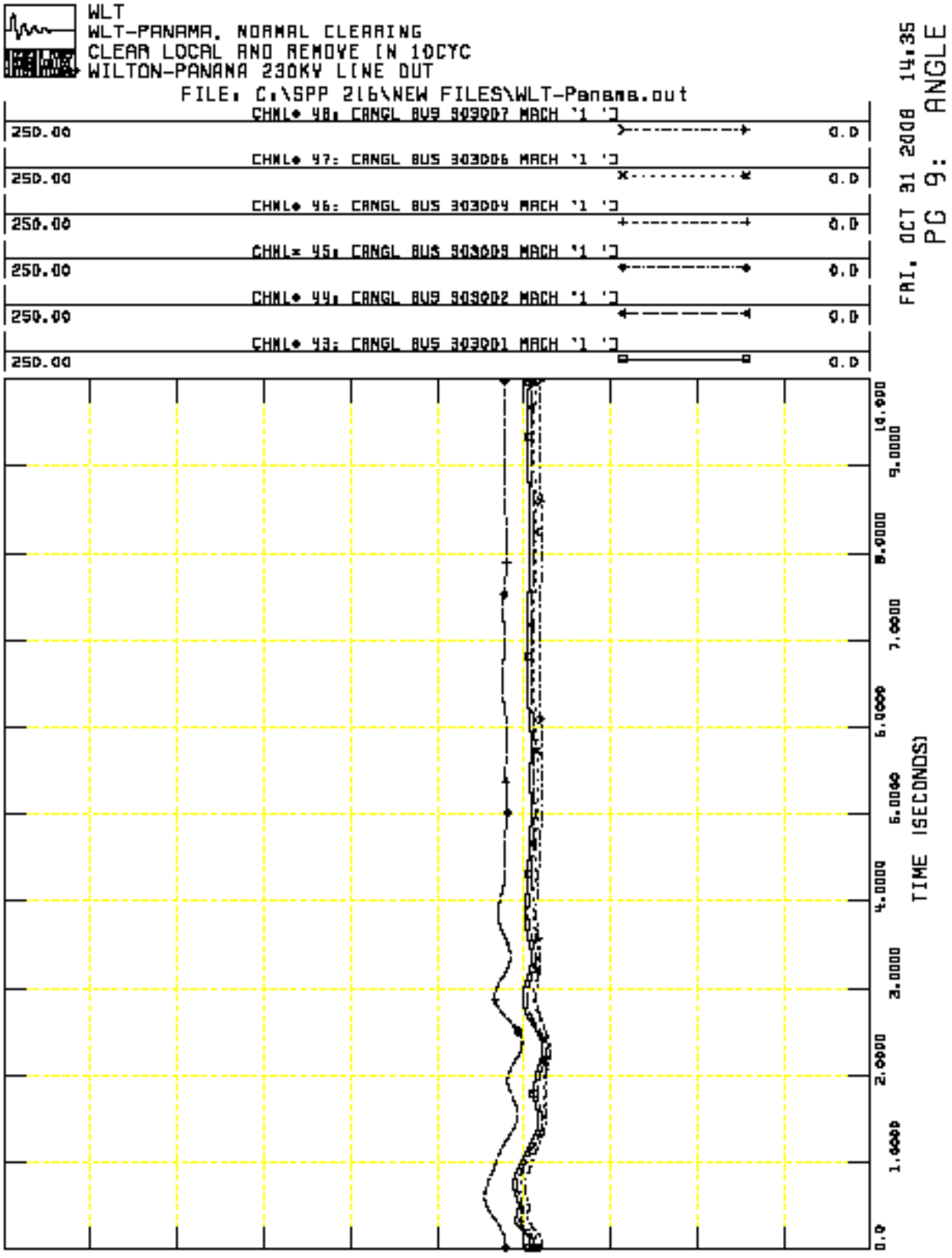

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 4: VOLTAGE
CHNL: 21: CYOLT 996154 C6WATFRD 230.0000
1.2000
0.20000
CHNL: 20: CYOLT 996070 C6WILTON 230.0000
1.2000
0.20000
CHNL: 19: CYOLT 335610 C4WGLEN 138.0000
1.2000
0.20000
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

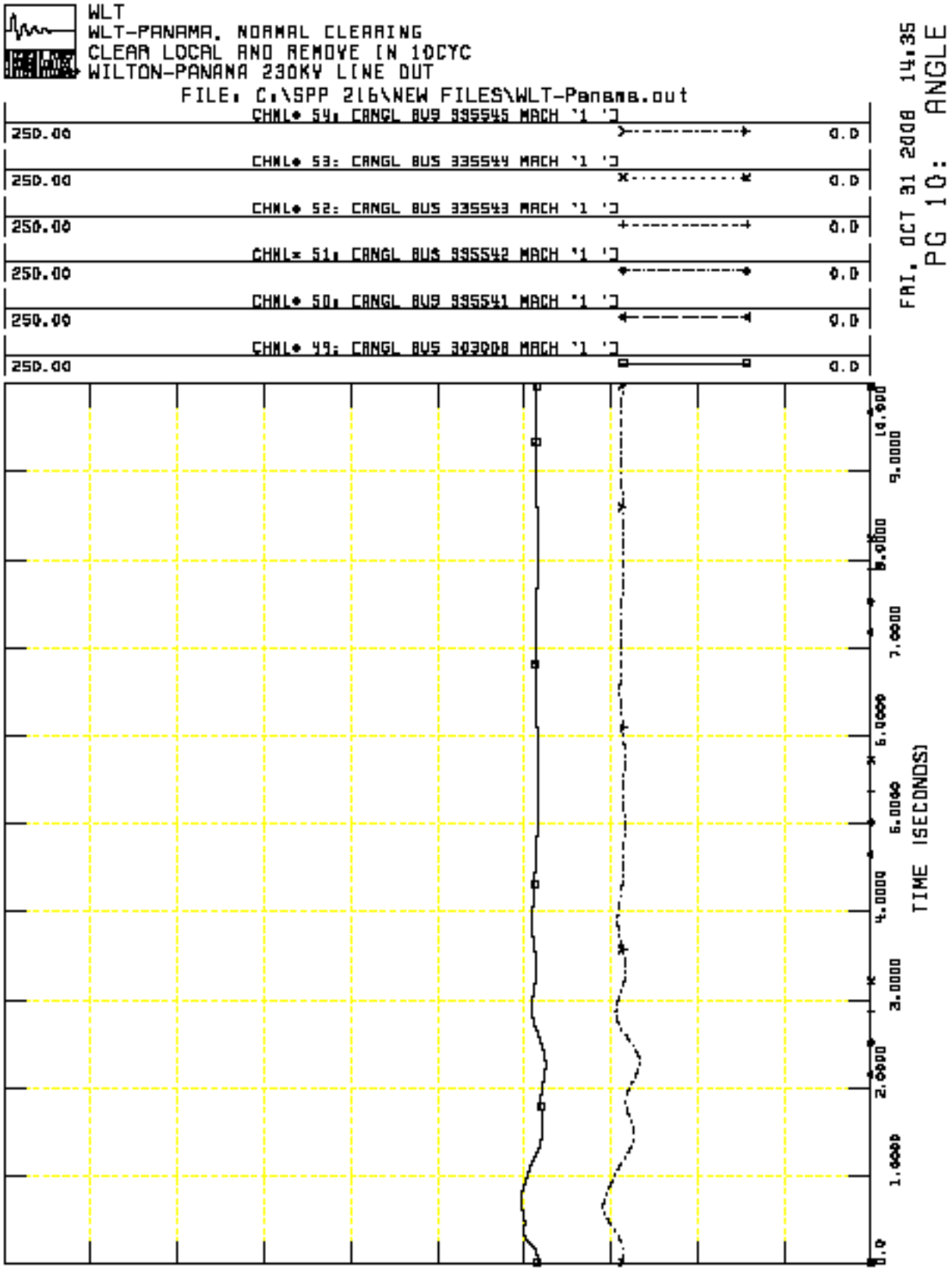

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 5: FREQUENCY
61.000
59.000
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
6.0000
7.0000
8.0000
9.0000
10.000

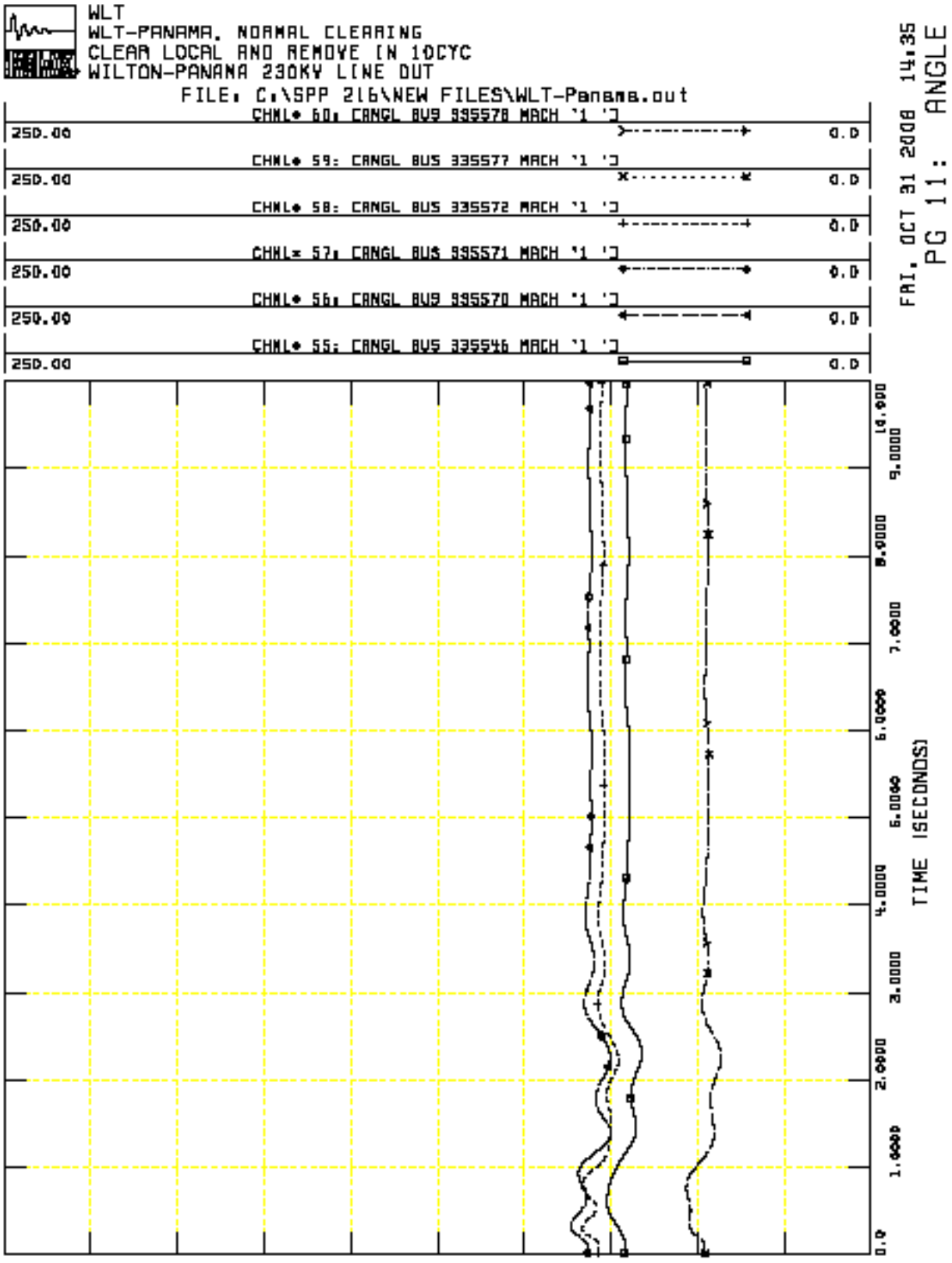

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
CHNL# 33: CFREQ 336061 C68GATEL 230.00]]*60+60
61.000
59.000
CHNL# 32: CFREQ 336060 C65ORR 2 230.00]]*60+60
61.000
59.000
CHNL# 31: CFREQ 335596 CYCOSMRR [38.00]]*60+60
61.000
59.000
CHNL# 30: CFREQ 335595 CYALCHEM [38.00]]*60+60
61.000
59.000
CHNL# 29: CFREQ 335594 CYMONDCN, [38.00]]*60+60
61.000
59.000
CHNL# 28: CFREQ 335593 CYMONDCML [38.00]]*60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 6: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

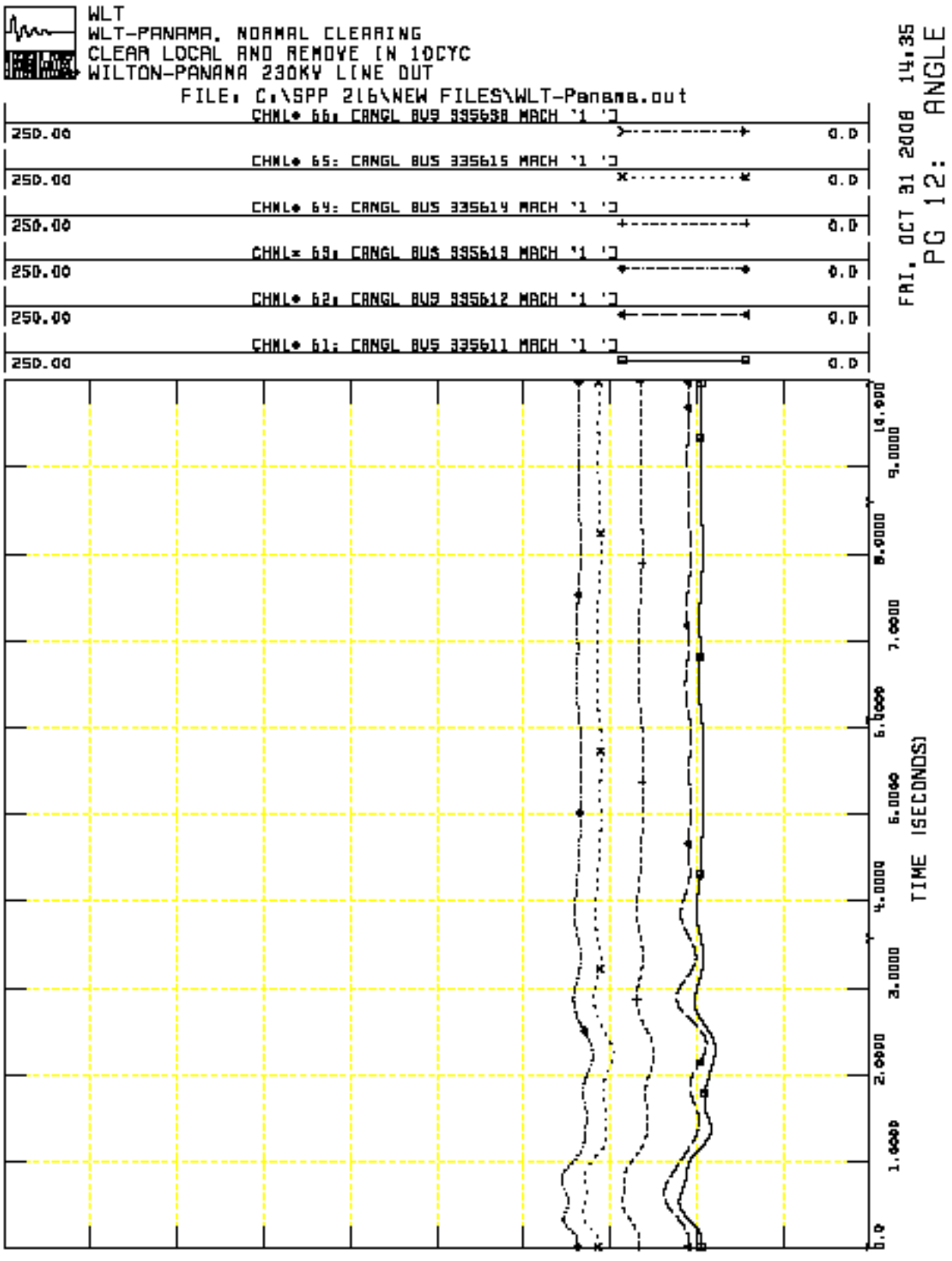

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
CHNL# 39: CFREQ 335601 C4HGLEN-2 138.000]*60+60
61.000
59.000
CHNL# 38: CFREQ 336066 C6FAIRCO 230.000]*60+60
61.000
59.000
CHNL# 37: CFREQ 336065 C6CONVNT 230.000]*60+60
61.000
59.000
CHNL# 36: CFREQ 336064 C6ROMEVL 230.000]*60+60
61.000
59.000
CHNL# 35: CFREQ 336063 C6PANAMA 230.000]*60+60
61.000
59.000
CHNL# 34: CFREQ 336062 C6SUNSHN 230.000]*60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 7: FREQUENCY
14.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

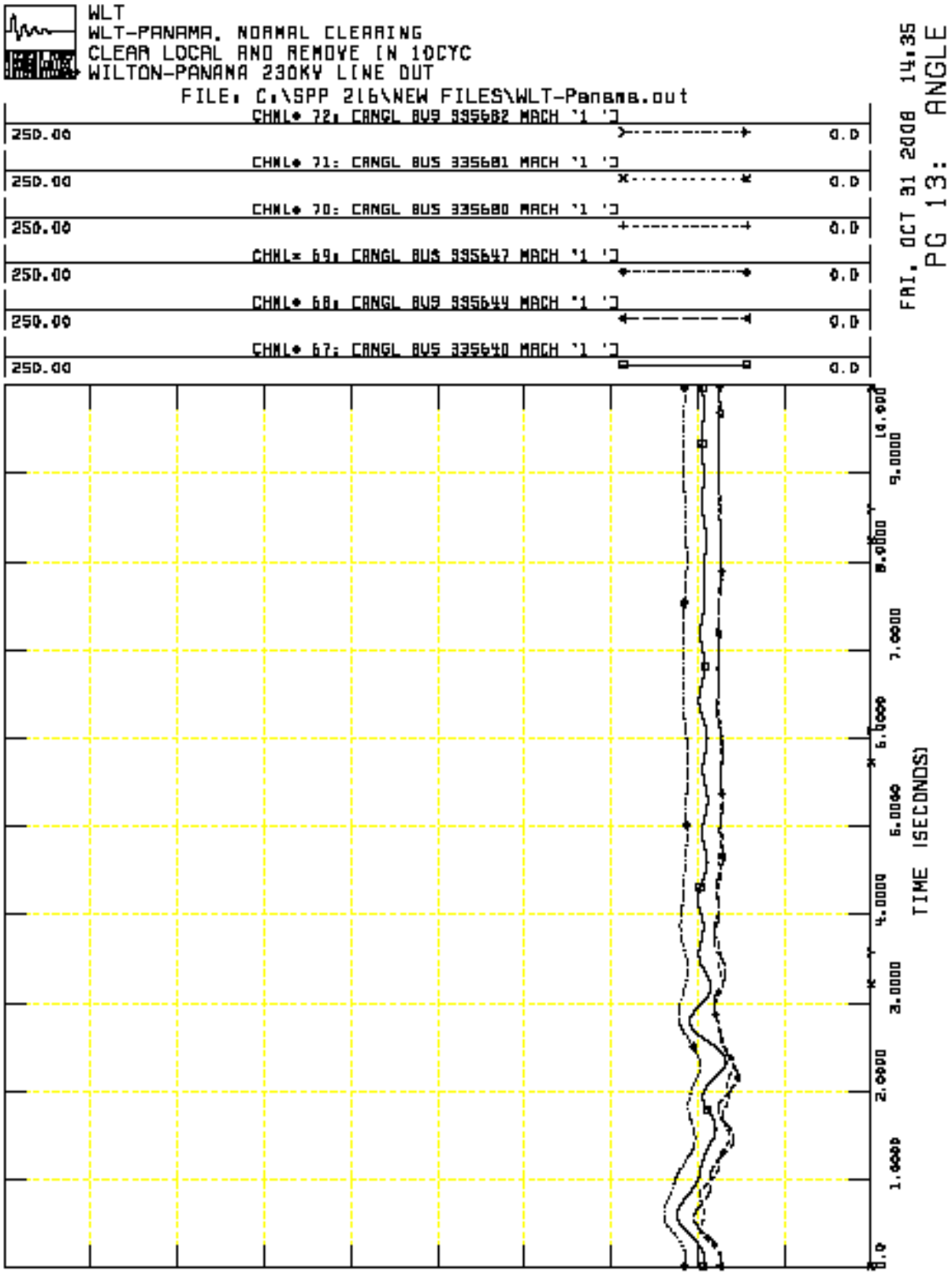

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 8: FREQUENCY
CHNL= 42: CFREQ 336154 CHATFRD 230.00]]=60+60
61.000
59.000
CHNL= 41: CFREQ 336070 CHILTON 230.00]]=60+60
61.000
59.000
CHNL= 40: CFREQ 335610 CYNGLEN 138.00]]=60+60
61.000
59.000
0.0
2.0000
4.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

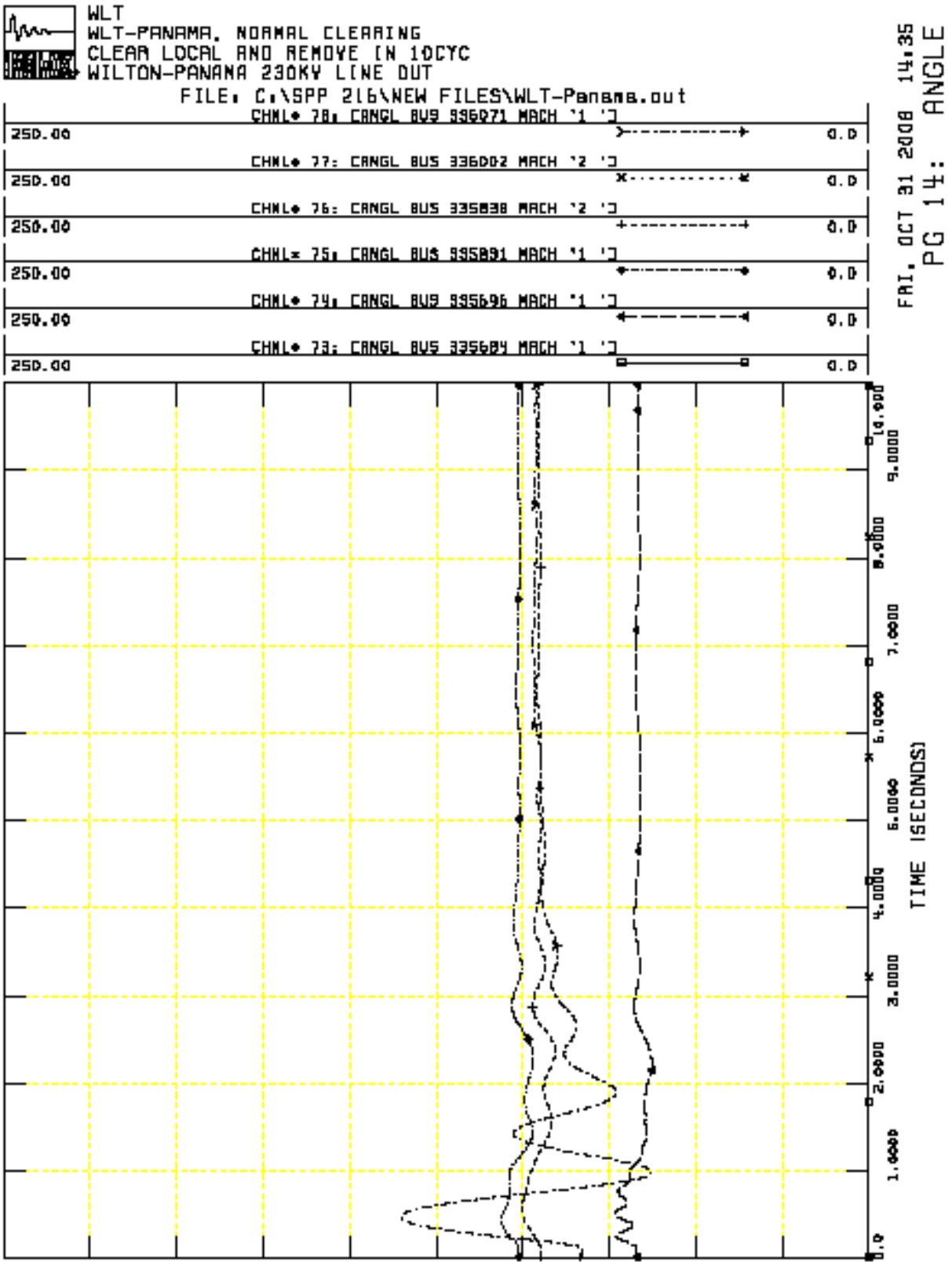

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 9: ANGLE
CHNL# 48: CANGL BUS 303007 MACH '1 '
CHNL# 47: CANGL BUS 303006 MACH '1 '
CHNL# 46: CANGL BUS 303004 MACH '1 '
CHNL# 45: CANGL BUS 303003 MACH '1 '
CHNL# 44: CANGL BUS 303002 MACH '1 '
CHNL# 43: CANGL BUS 303001 MACH '1 '
250.00
0.0
0.0000
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)


WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 10: ANGLE
CHNL# 54: CANGL BUS 335545 MACH '1 '1
CHNL# 53: CANGL BUS 335544 MACH '1 '1
CHNL# 52: CANGL BUS 335543 MACH '1 '1
CHNL# 51: CANGL BUS 335542 MACH '1 '1
CHNL# 50: CANGL BUS 335541 MACH '1 '1
CHNL# 49: CANGL BUS 303008 MACH '1 '1
250.00
0.0
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000


WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 11: ANGLE
CHNL# 60: CANGL BUS 335578 MACH '1 '
CHNL# 59: CANGL BUS 335577 MACH '1 '
CHNL# 58: CANGL BUS 335572 MACH '1 '
CHNL# 57: CANGL BUS 335571 MACH '1 '
CHNL# 56: CANGL BUS 335570 MACH '1 '
CHNL# 55: CANGL BUS 335546 MACH '1 '
250.00
0.0
TIME (SECONDS)


WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 12: ANGLE
CHNL# 66: CANGL BUS 335638 MACH '1 '
CHNL# 65: CANGL BUS 335615 MACH '1 '
CHNL# 64: CANGL BUS 335614 MACH '1 '
CHNL# 63: CANGL BUS 335613 MACH '1 '
CHNL# 62: CANGL BUS 335612 MACH '1 '
CHNL# 61: CANGL BUS 335611 MACH '1 '
250.00
0.0
0.0000
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)


WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
CHNL# 72: CANGL BUS 335682 MACH '1 '
CHNL# 71: CANGL BUS 335681 MACH '1 '
CHNL# 70: CANGL BUS 335680 MACH '1 '
CHNL# 69: CANGL BUS 335647 MACH '1 '
CHNL# 68: CANGL BUS 335644 MACH '1 '
CHNL# 67: CANGL BUS 335640 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 13: ANGLE
TIME (SECONDS)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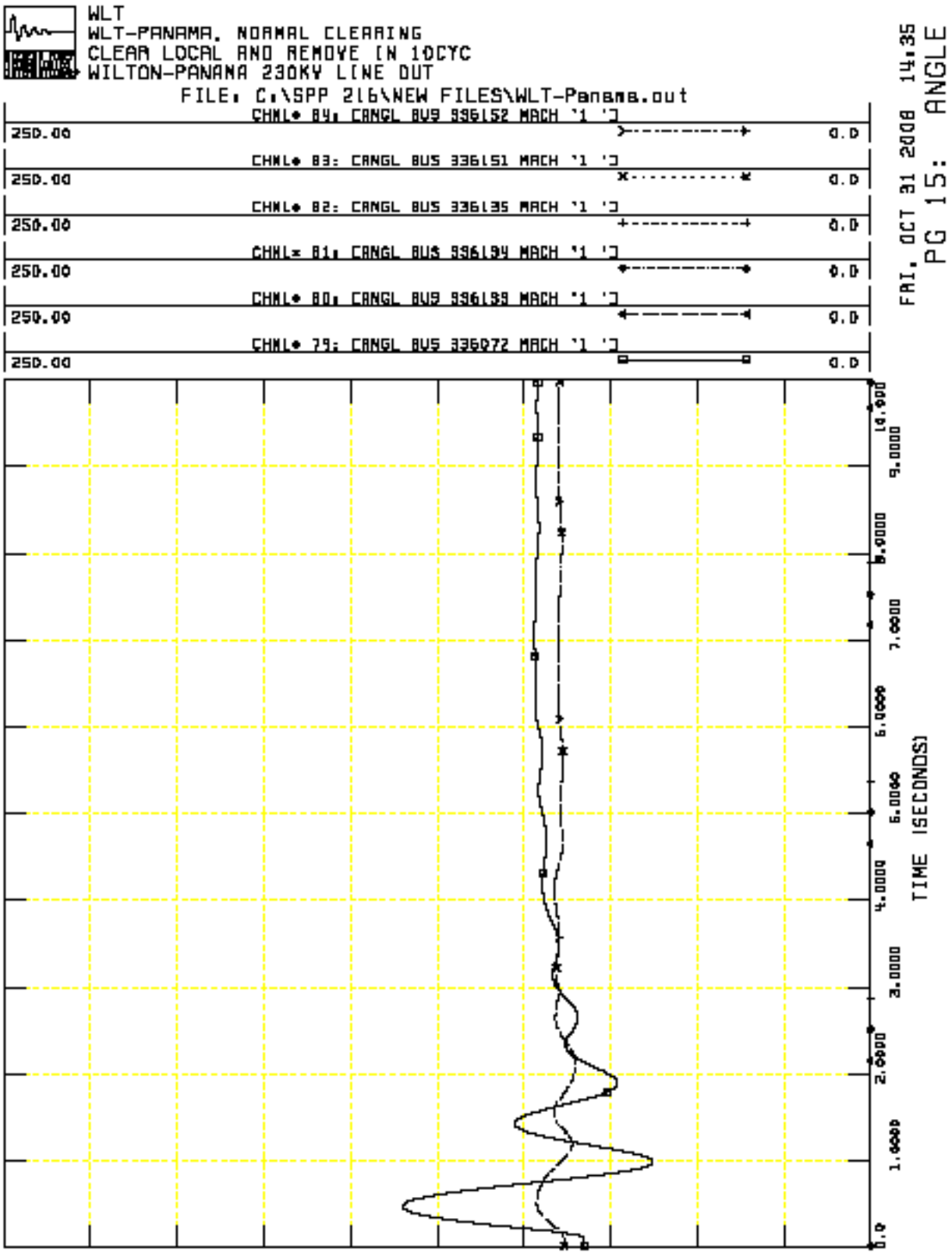
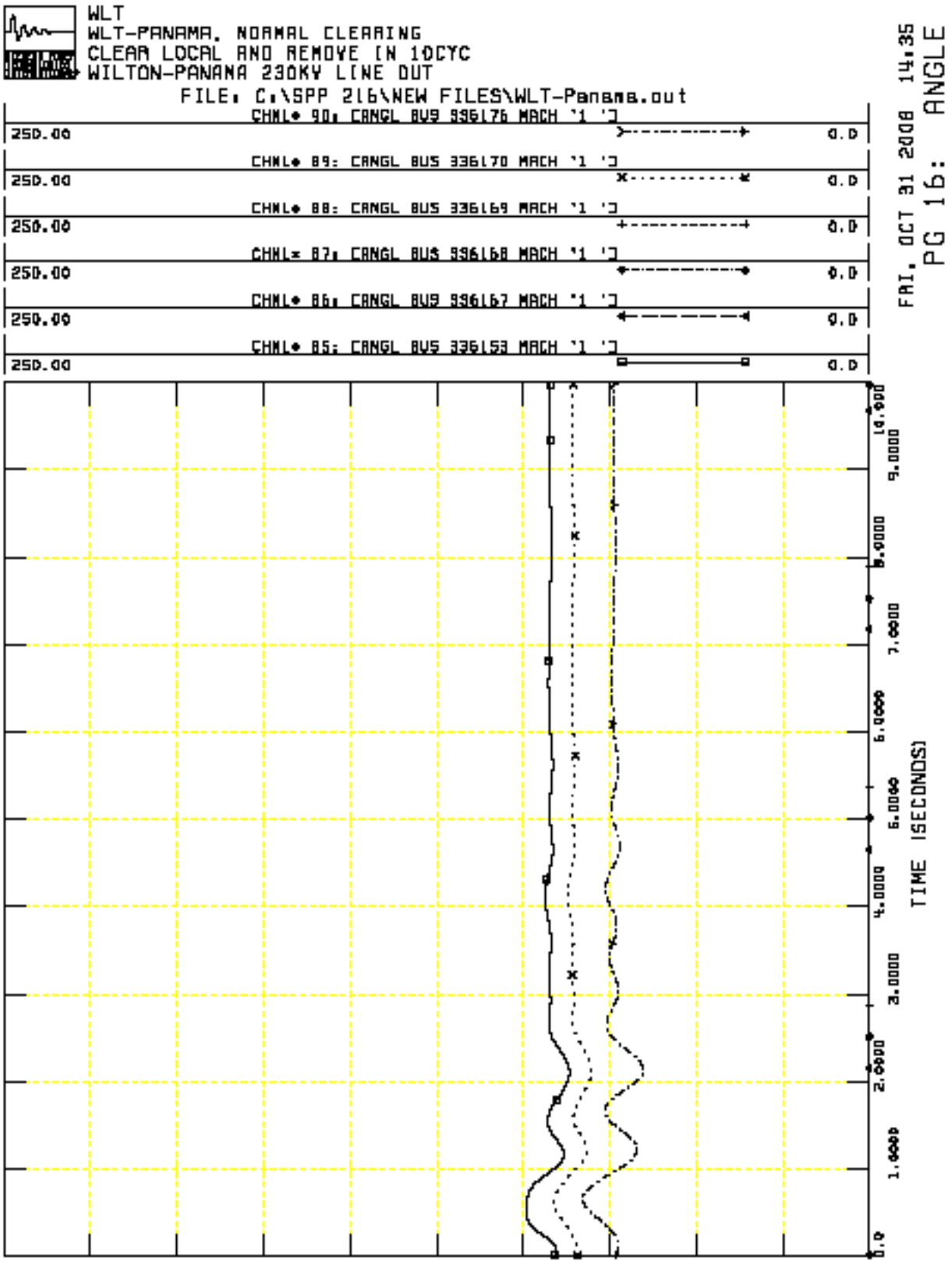
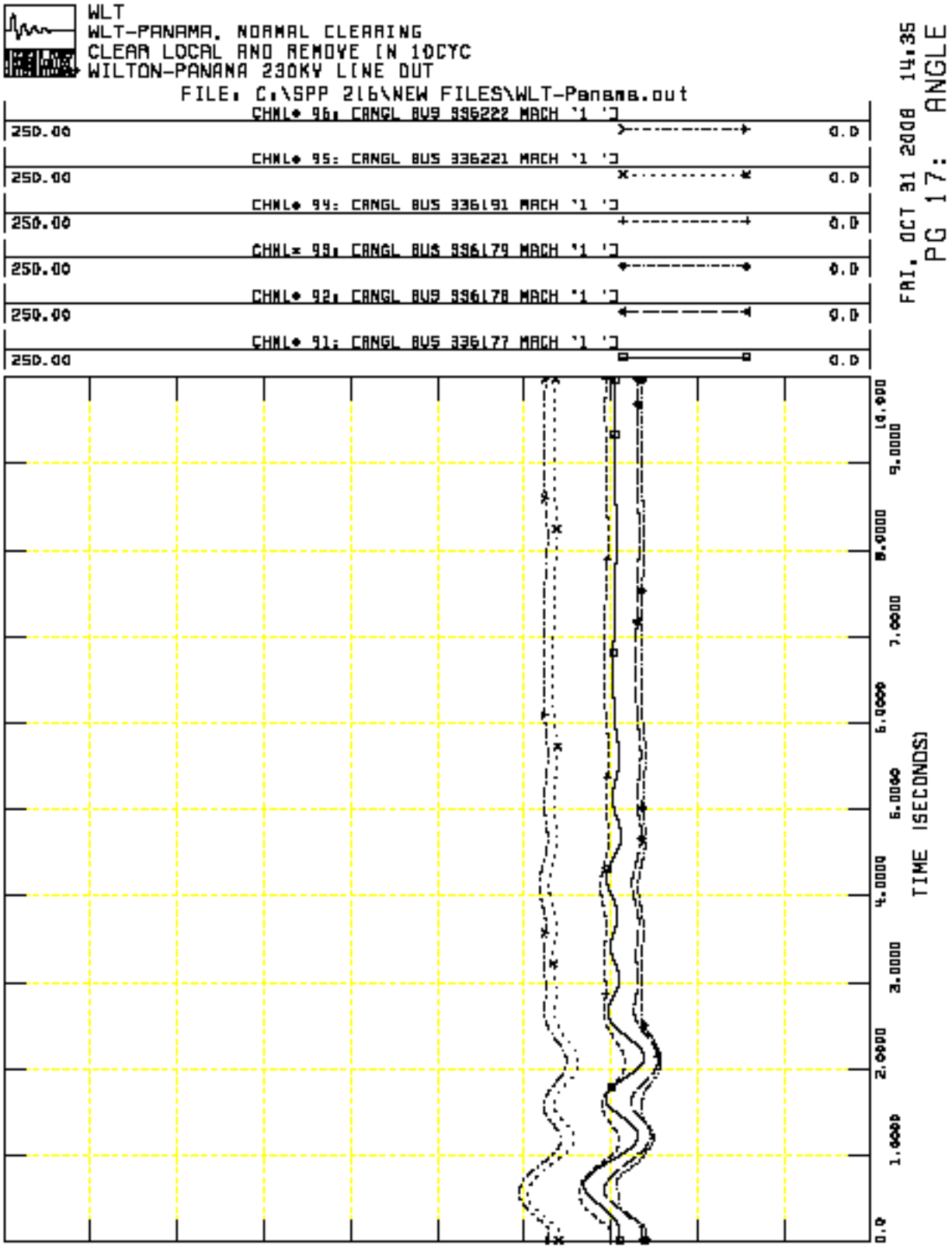
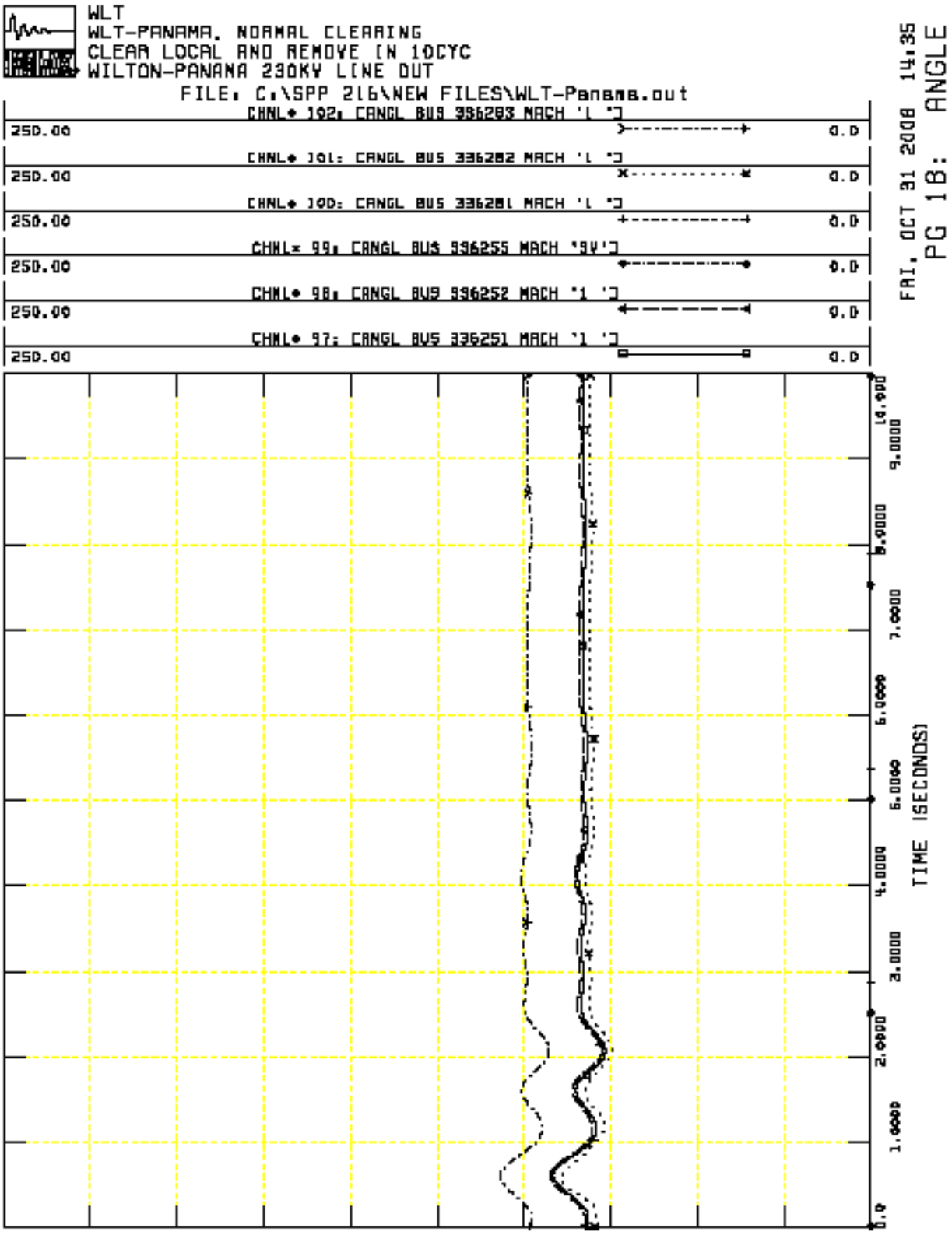
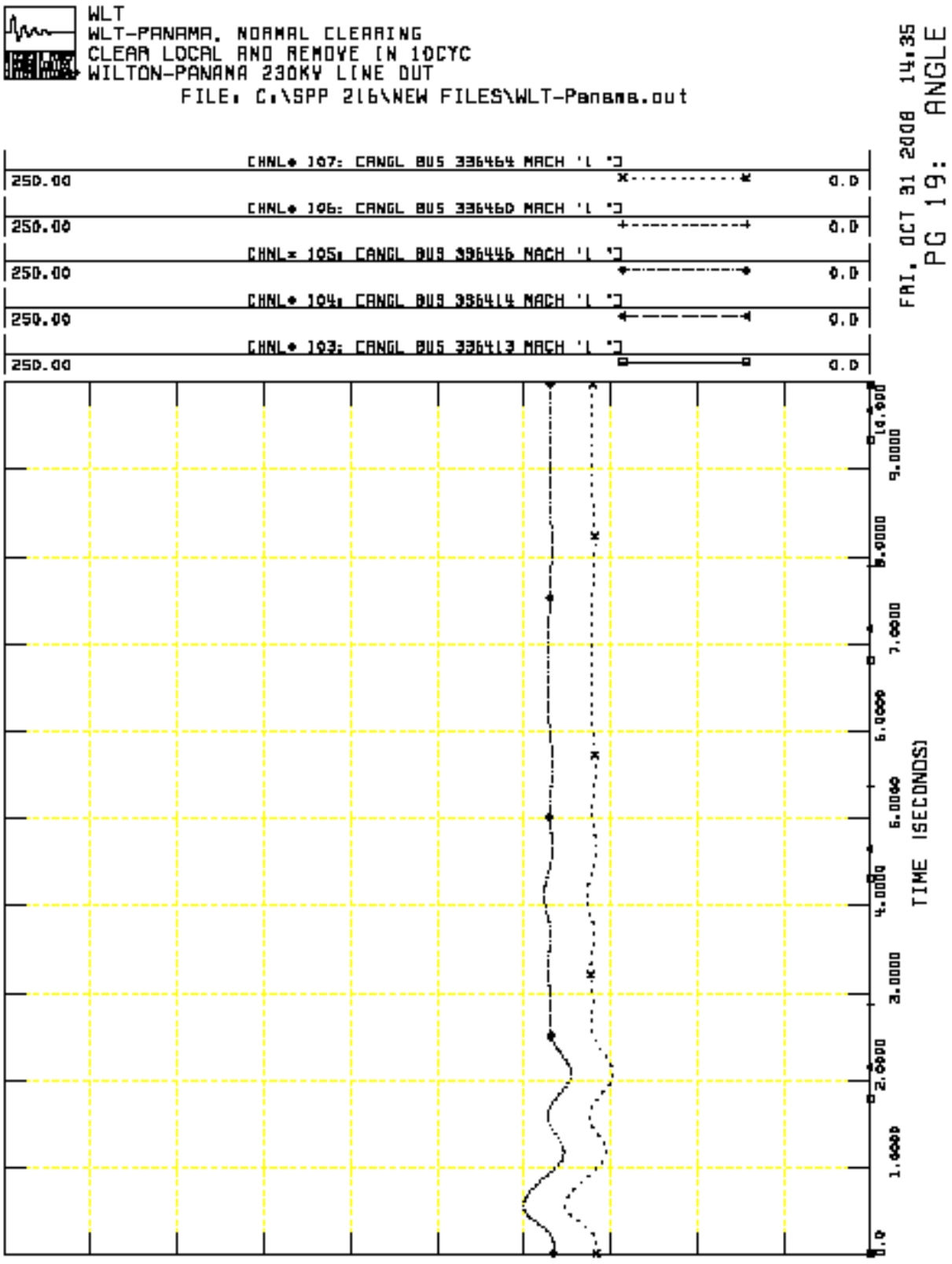
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 14: ANGLE
CHNL# 78: CANGL BUS 336071 MACH '1 '
CHNL# 77: CANGL BUS 336002 MACH '2 '
CHNL# 76: CANGL BUS 335838 MACH '2 '
CHNL# 75: CANGL BUS 335891 MACH '1 '
CHNL# 74: CANGL BUS 335696 MACH '1 '
CHNL# 73: CANGL BUS 335604 MACH '1 '
250.00
0.0
TIME (SECONDS)


WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 15: ANGLE
CHNL# 84: CANGL BUS 336152 MACH '1 '
CHNL# 83: CANGL BUS 336151 MACH '1 '
CHNL# 82: CANGL BUS 336135 MACH '1 '
CHNL# 81: CANGL BUS 336194 MACH '1 '
CHNL# 80: CANGL BUS 336189 MACH '1 '
CHNL# 79: CANGL BUS 336072 MACH '1 '
250.00
0.0
TIME (SECONDS)

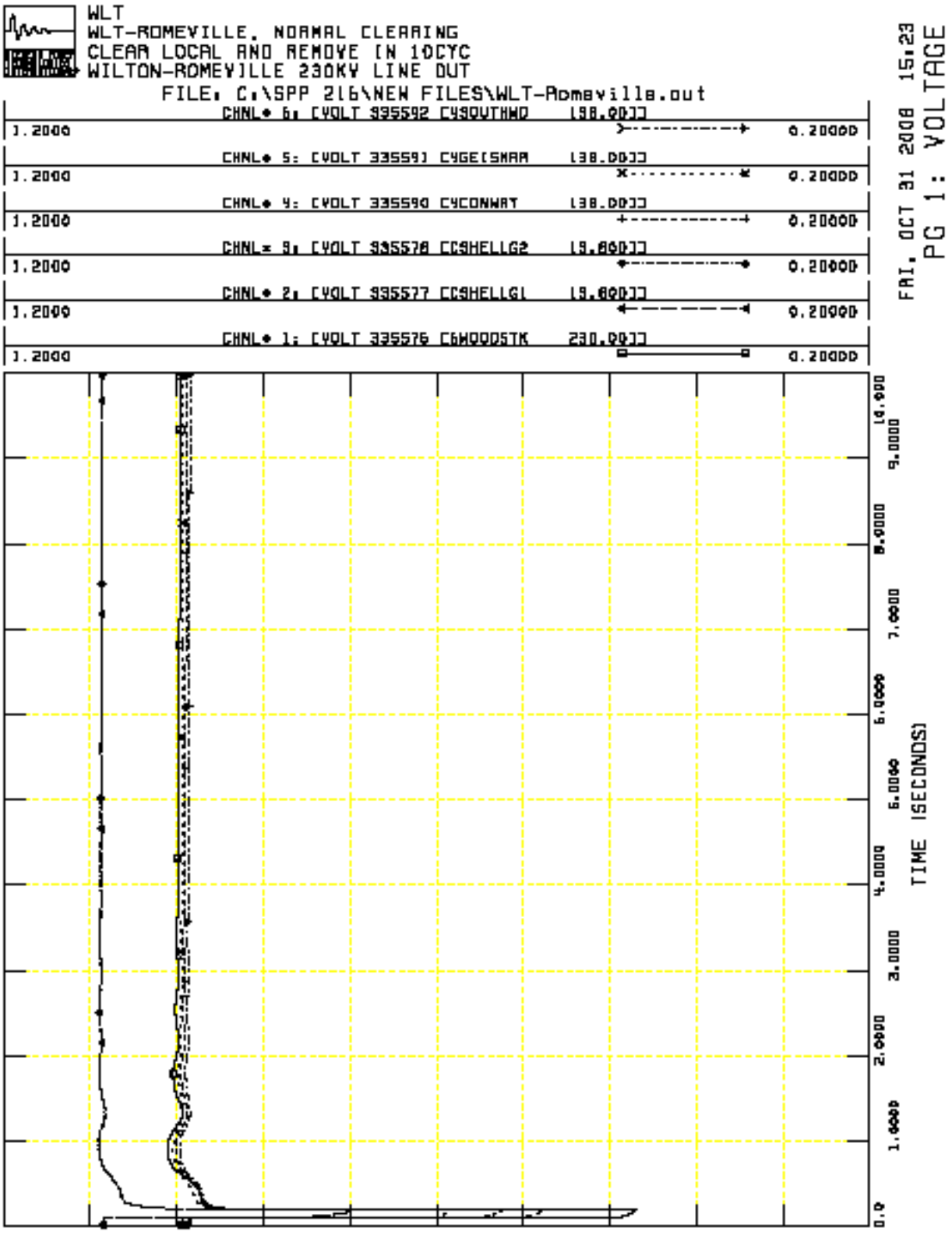

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 16: ANGLE
CHNL# 90: CANGL BUS 336176 MACH '1 '
CHNL# 89: CANGL BUS 336170 MACH '1 '
CHNL# 88: CANGL BUS 336169 MACH '1 '
CHNL# 87: CANGL BUS 336168 MACH '1 '
CHNL# 86: CANGL BUS 336167 MACH '1 '
CHNL# 85: CANGL BUS 336153 MACH '1 '
250.00
0.0
TIME (SECONDS)

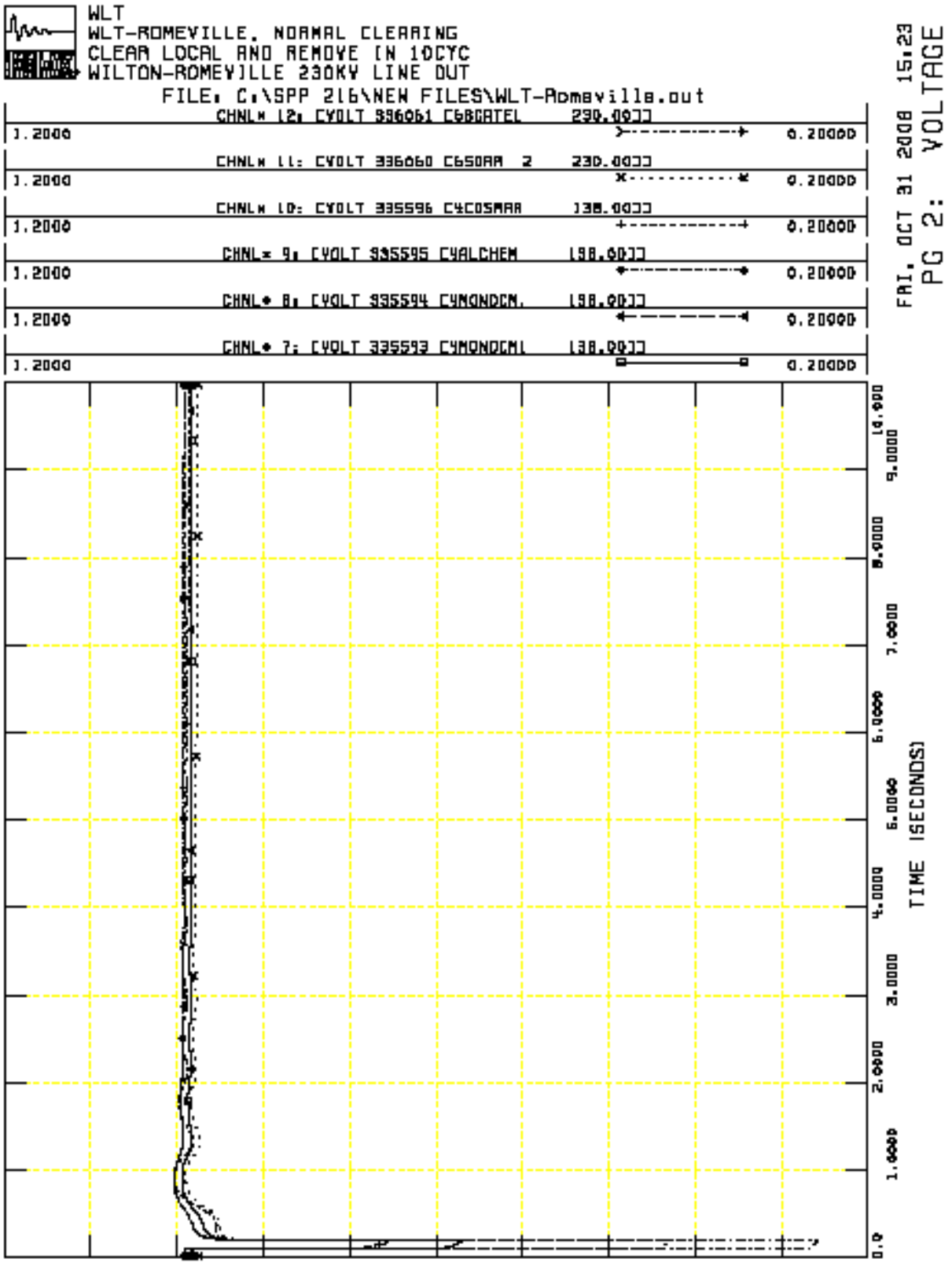

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
CHNL# 96: CANGL BUS 336222 MACH '1 '
CHNL# 95: CANGL BUS 336221 MACH '1 '
CHNL# 94: CANGL BUS 336191 MACH '1 '
CHNL# 93: CANGL BUS 336179 MACH '1 '
CHNL# 92: CANGL BUS 336178 MACH '1 '
CHNL# 91: CANGL BUS 336177 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 17: 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

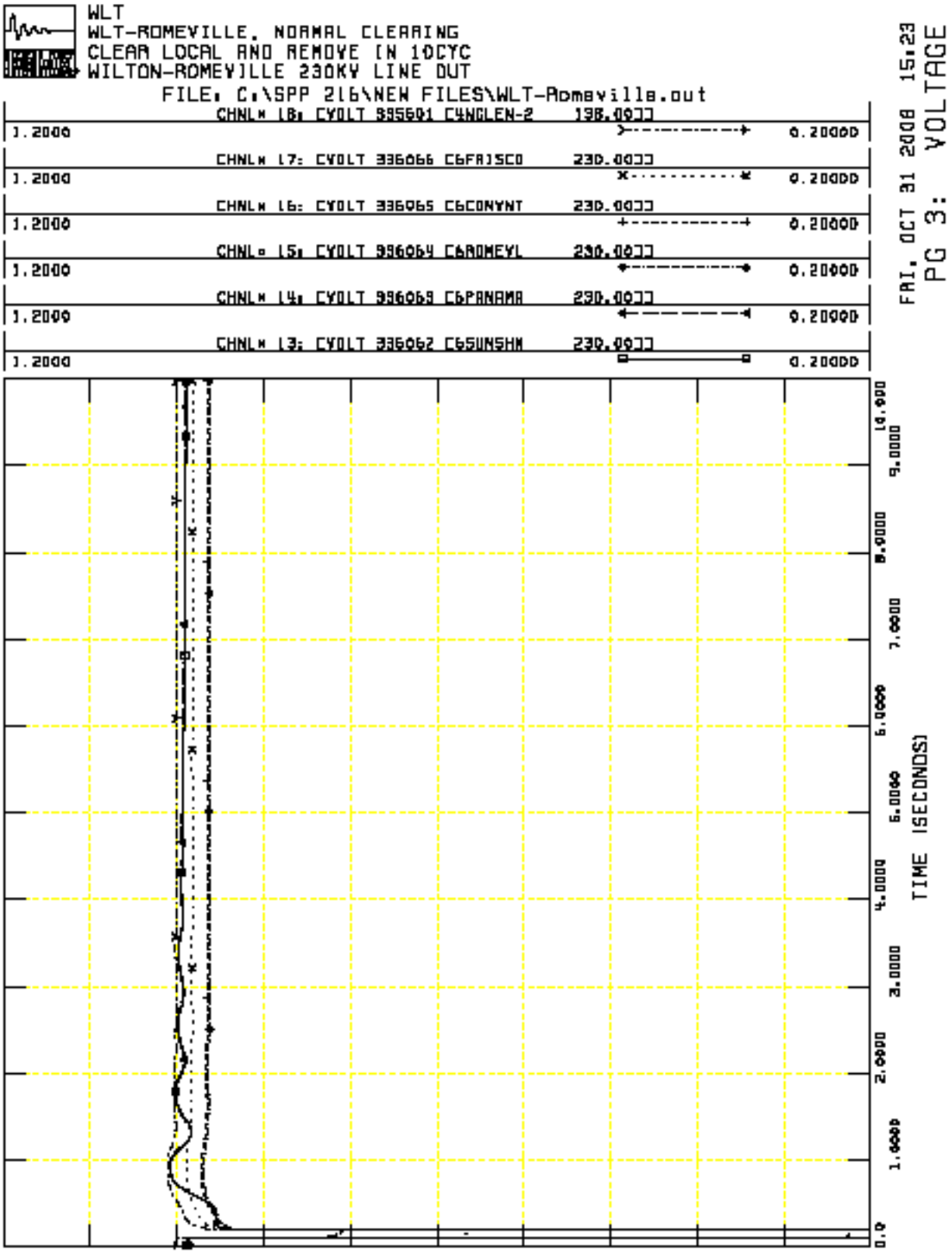

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
CHNL# 102: CANGL BUS 336283 MACH 'L '
CHNL# 101: CANGL BUS 336282 MACH 'L '
CHNL# 100: CANGL BUS 336281 MACH 'L '
CHNL# 99: CANGL BUS 336255 MACH '9V'
CHNL# 98: CANGL BUS 336252 MACH '1 '
CHNL# 97: CANGL BUS 336251 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 18: ANGLE
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

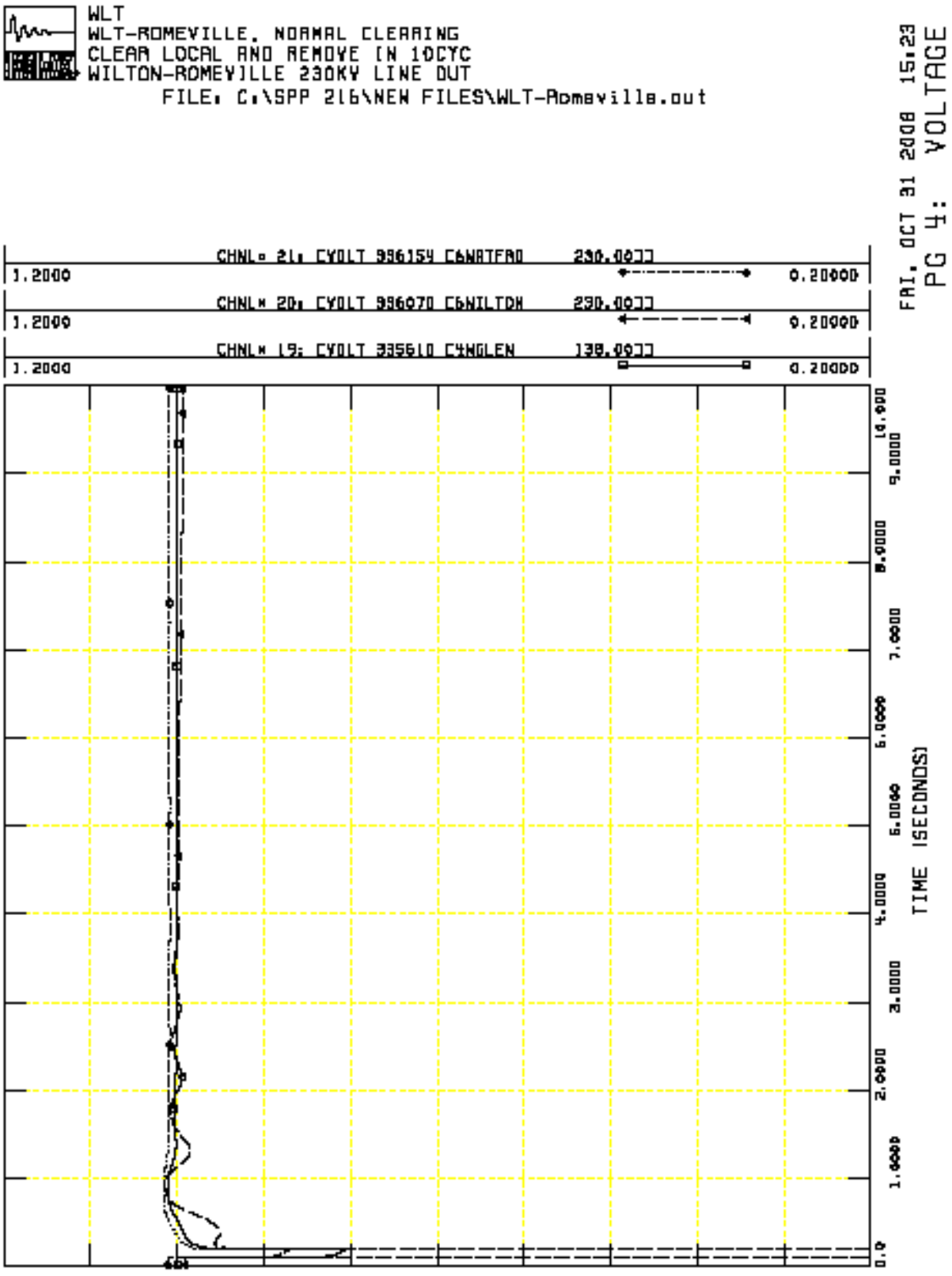

WLT
WLT-PANAMA, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Panama.out
FRI, OCT 31 2008 14:35
PG 19: ANGLE
CHNL# 107: CANGL BUS 336464 MACH '1 '
CHNL# 106: CANGL BUS 336460 MACH '1 '
CHNL# 105: CANGL BUS 336446 MACH '1 '
CHNL# 104: CANGL BUS 336414 MACH '1 '
CHNL# 103: CANGL BUS 336413 MACH '1 '
250.00
0.0
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

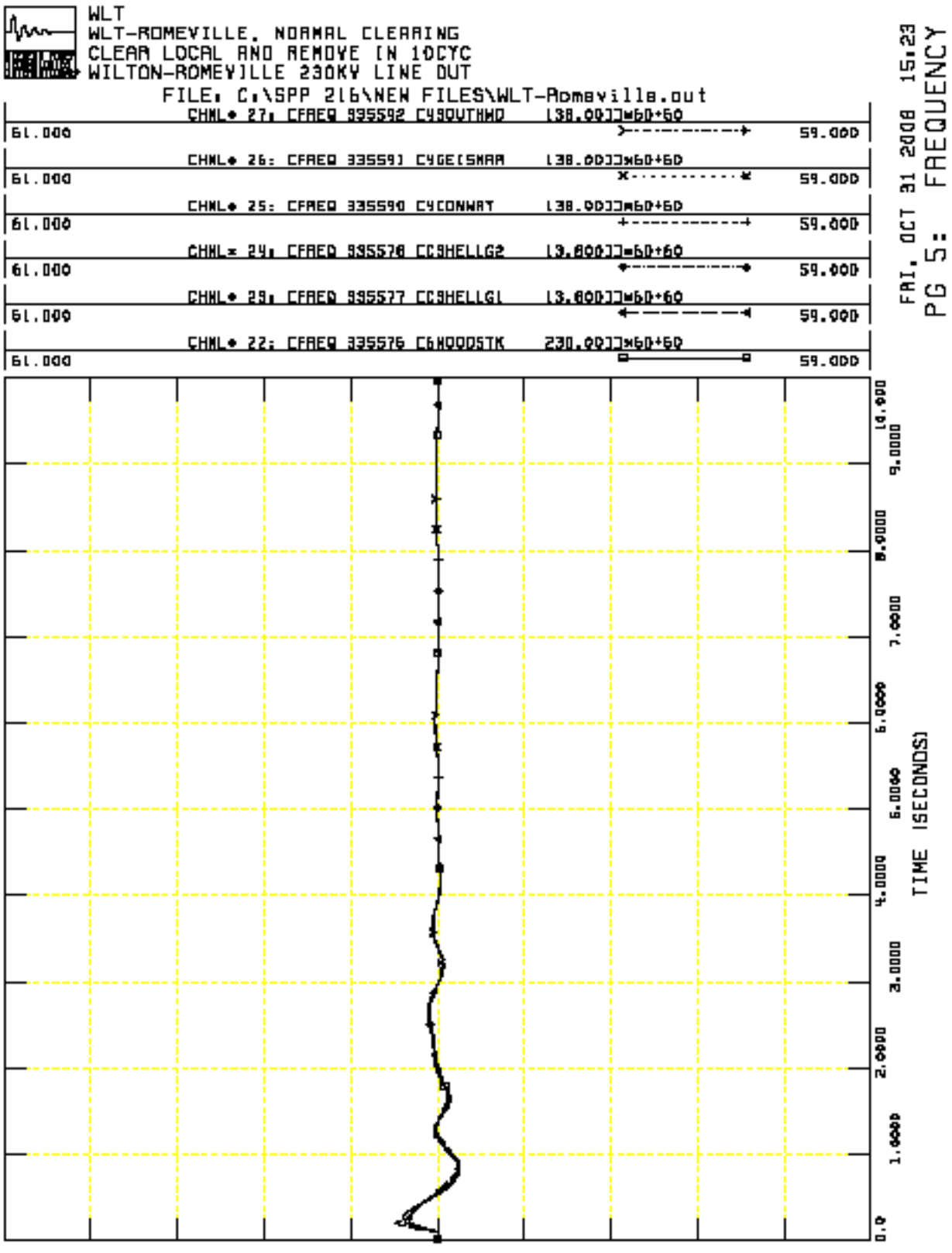
FAULT REFERENCE NO. 2
FAULT-ROMEVILLE - LOCATION WILTON

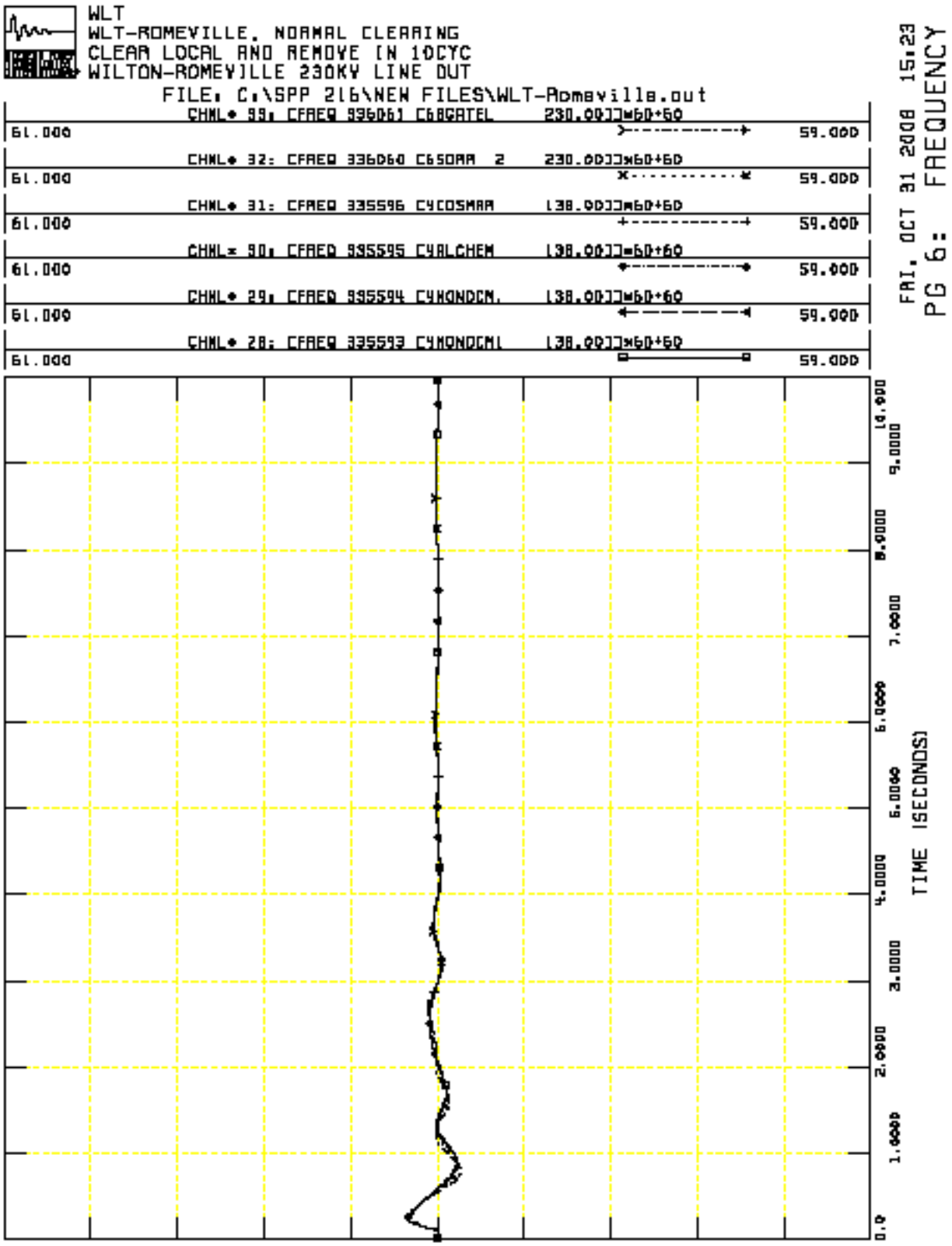

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOTE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 6: [VOLT 335592 CY90UTHWD [38.00]]
1.2000
0.20000
CHNL# 5: [VOLT 335591 CYGE(SMAR [38.00]]
1.2000
0.20000
CHNL# 4: [VOLT 335590 CYCONWAT [38.00]]
1.2000
0.20000
CHNL# 3: [VOLT 335578 CCSHELLG2 [9.600]]
1.2000
0.20000
CHNL# 2: [VOLT 335577 CCSHELLG1 [9.600]]
1.2000
0.20000
CHNL# 1: [VOLT 335576 C6WOODSTK 230.00]]
1.2000
0.20000
FRI, OCT 31 2008 15:23
PG 1: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

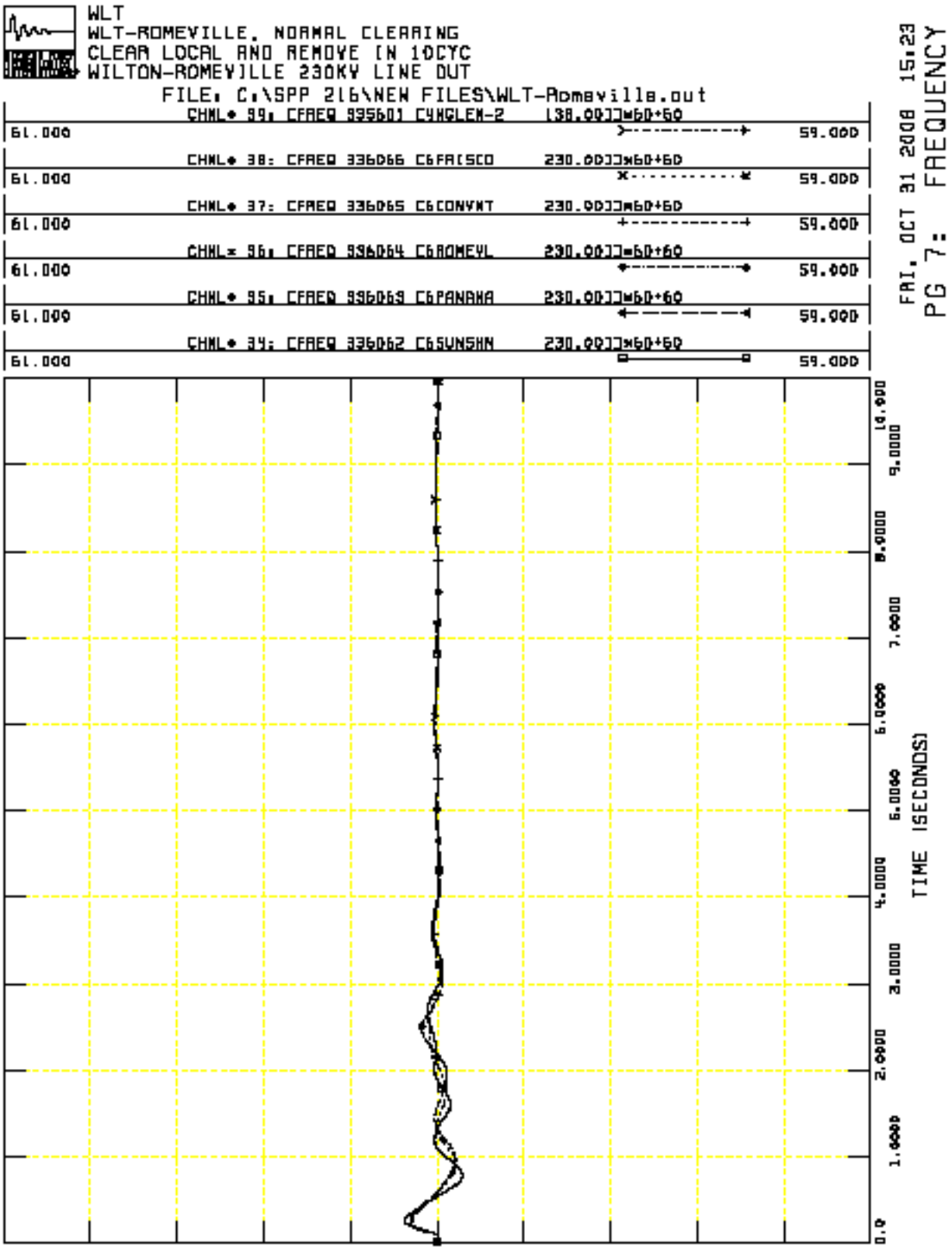

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 2: VOLTAGE
CHNL# 12: CYOLT 336061 C6BGATEL 230.0000
CHNL# 11: CYOLT 336060 C6SOAA 2 230.0000
CHNL# 10: CYOLT 335596 C4COSMAA 138.0000
CHNL# 9: CYOLT 335595 C4ALCHEM 138.0000
CHNL# 8: CYOLT 335594 C4MONDCM. 138.0000
CHNL# 7: CYOLT 335593 C4MONDCM1 138.0000
1.2000
0.20000
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

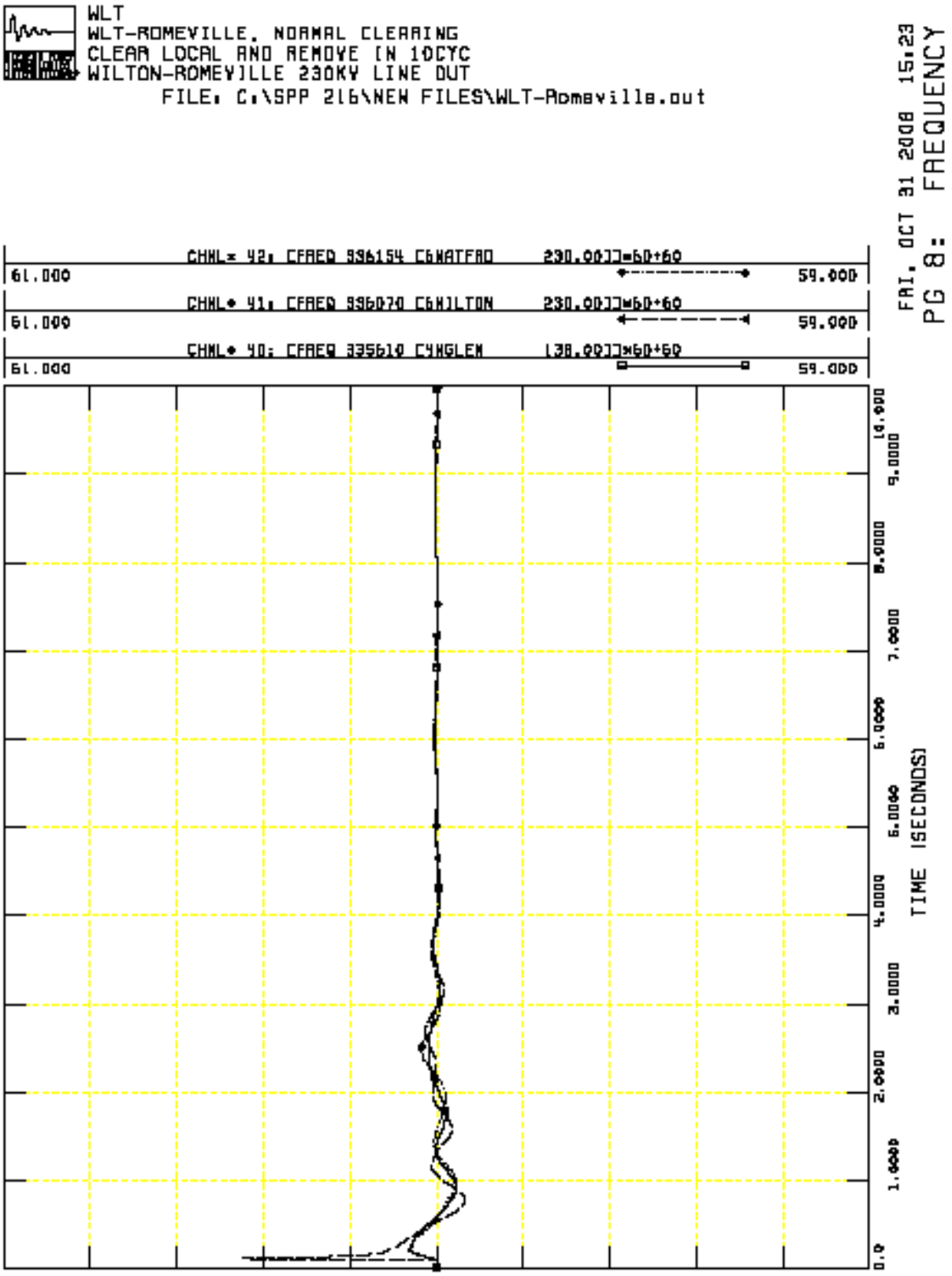

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 8: CYOLT 995601 C4NGLEN-2 198.0000
CHNL# 7: CYOLT 336066 C6FAIRCO 230.0000
CHNL# 6: CYOLT 336065 C6CONYNT 230.0000
CHNL# 5: CYOLT 996064 C6ROMEVL 230.0000
CHNL# 4: CYOLT 996069 C6PANAMA 230.0000
CHNL# 3: CYOLT 336062 C6SUNSHN 230.0000
1.2000
0.20000
FRI, OCT 31 2008 15:23
PG 3: VOLTAGE
TIME (SECONDS)

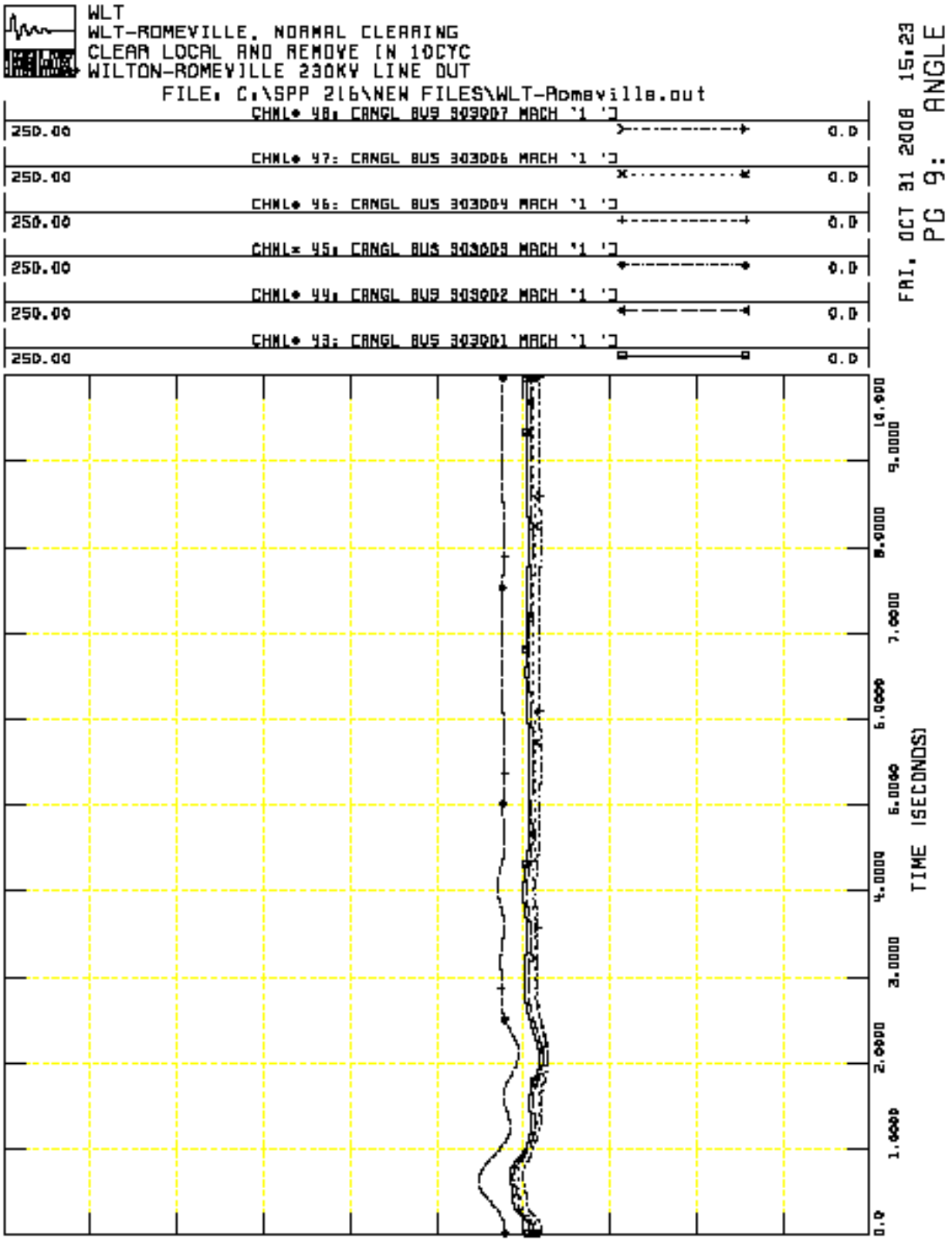

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 4: VOLTAGE
CHNL: 21: CYOLT 936154 C6WATFRD 230.0000
1.2000
0.20000
CHNL: 20: CYOLT 936070 C6WILTON 230.0000
1.2000
0.20000
CHNL: 19: CYOLT 335610 C4MGLEN 138.0000
1.2000
0.20000
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

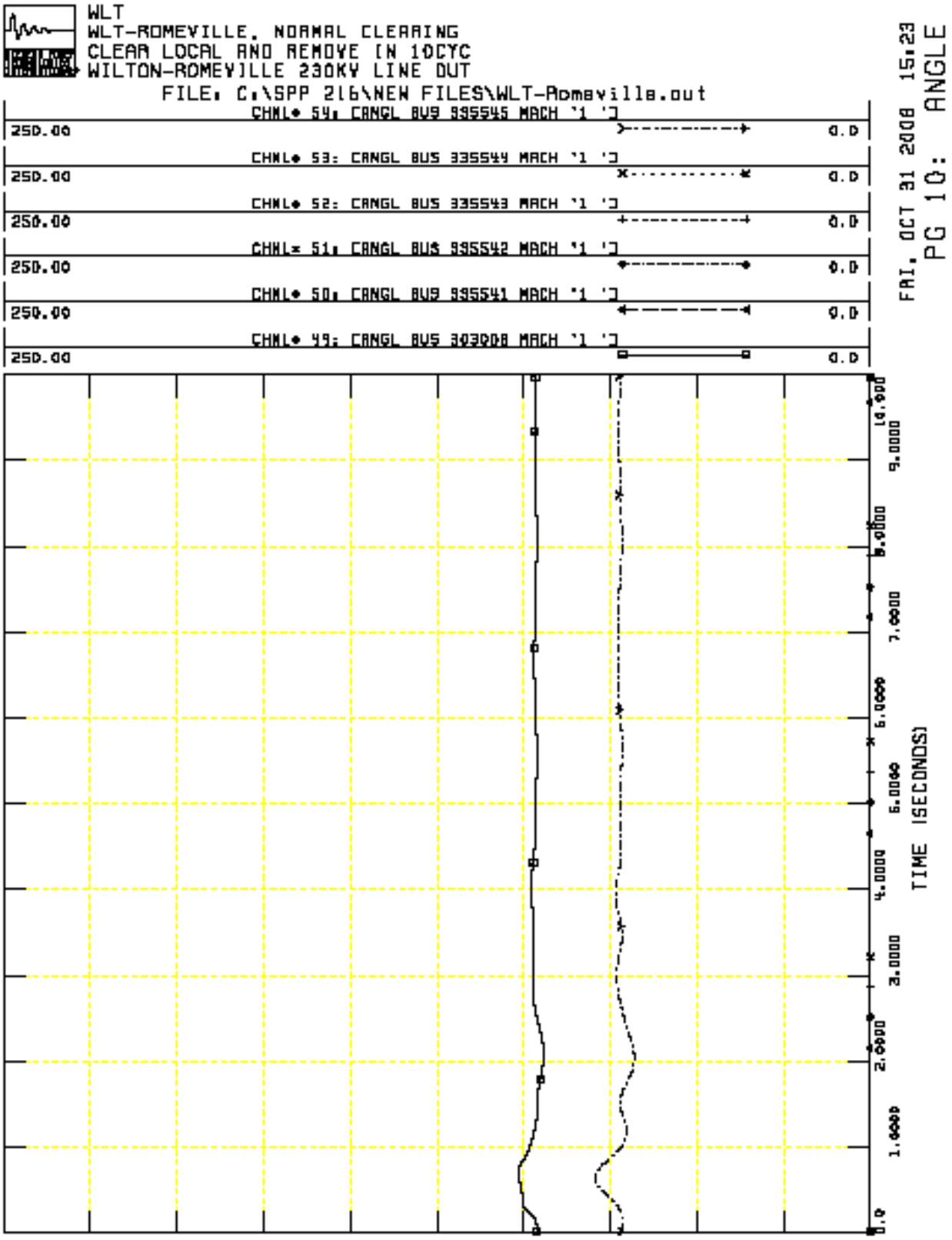

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 27: CFREQ 335592 C4SOUTHMD [38.00]]*60+60
61.000
59.000
CHNL# 26: CFREQ 335591 C4GE[SMAR [38.00]]*60+60
61.000
59.000
CHNL# 25: CFREQ 335590 C4CONWAT [38.00]]*60+60
61.000
59.000
CHNL# 24: CFREQ 335578 CC3HELLG2 [3.800]]*60+60
61.000
59.000
CHNL# 23: CFREQ 335577 CC3HELLG1 [3.800]]*60+60
61.000
59.000
CHNL# 22: CFREQ 335576 C6HOODSTK 230.00]]*60+60
61.000
59.000
FRI, OCT 31 2008 15:23
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)

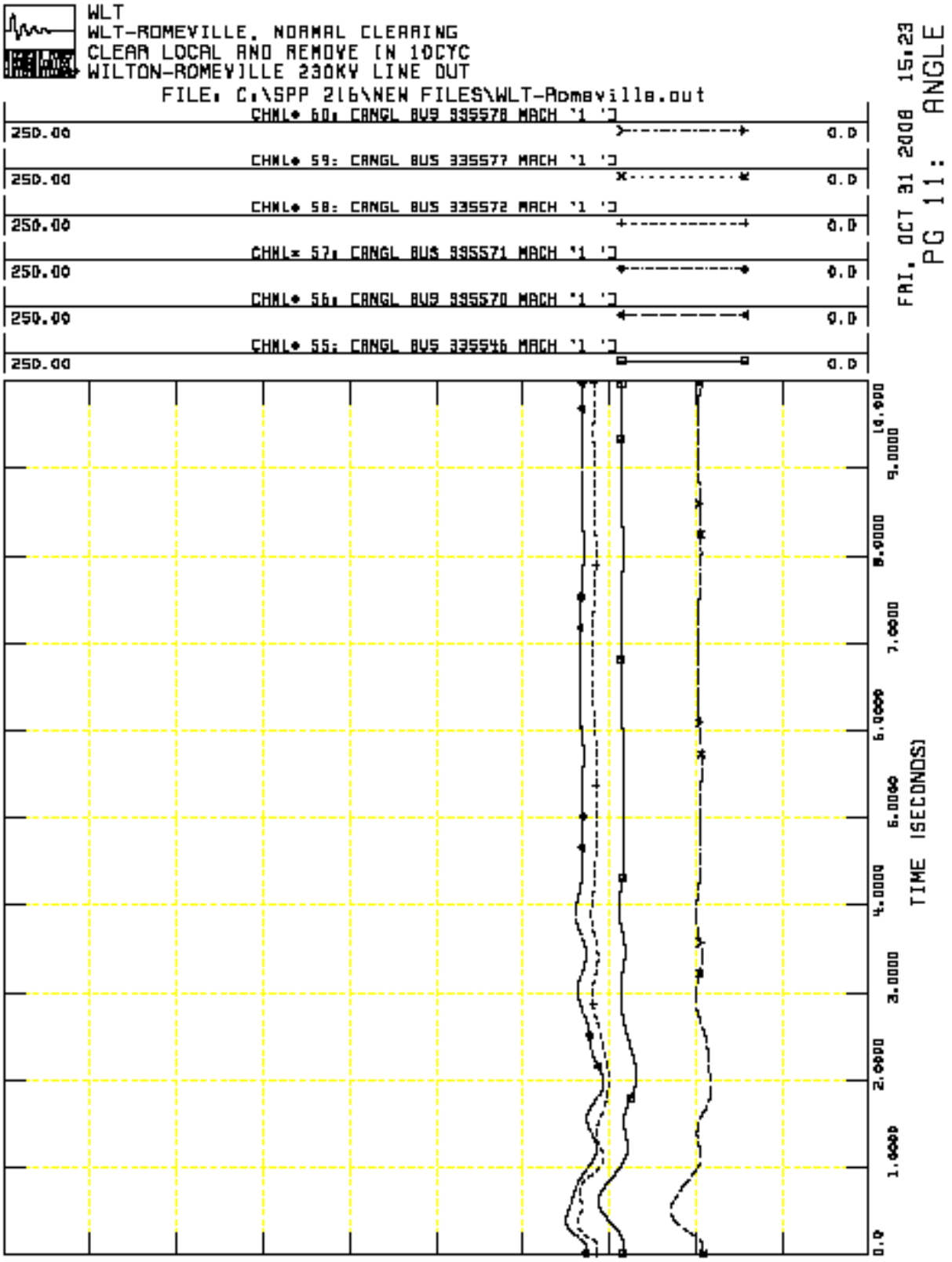

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 6: FREQUENCY
CHNL# 33: CFREQ 336061 C68GATEL 230.00JJW60+60
CHNL# 32: CFREQ 336060 C65ORR 2 230.00JJW60+60
CHNL# 31: CFREQ 335596 C4COSMAR 138.00JJW60+60
CHNL# 30: CFREQ 335595 C4ALCHEM 138.00JJW60+60
CHNL# 29: CFREQ 335594 C4KONDCM. 138.00JJW60+60
CHNL# 28: CFREQ 335593 C4KONDCM1 138.00JJW60+60
61.000
59.000
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

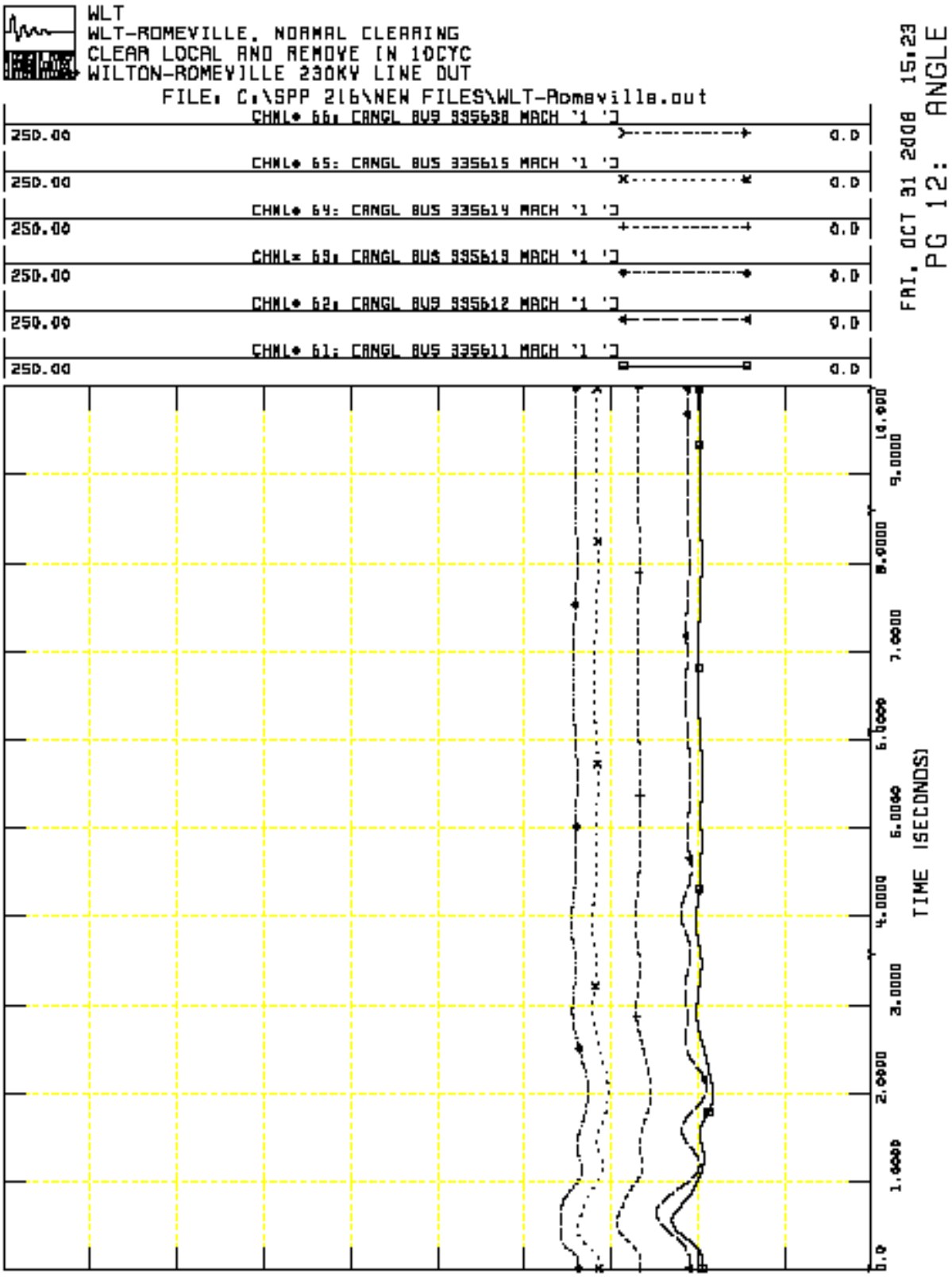

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 39: CFREQ 336061 C4HGLEN-2 138.0000W60+60
61.000
59.000
CHNL# 38: CFREQ 336066 C6FRISCO 230.0000W60+60
61.000
59.000
CHNL# 37: CFREQ 336065 C6CONVNT 230.0000W60+60
61.000
59.000
CHNL# 36: CFREQ 336064 C6ROMEVL 230.0000W60+60
61.000
59.000
CHNL# 35: CFREQ 336069 C6PANAMA 230.0000W60+60
61.000
59.000
CHNL# 34: CFREQ 336062 C6SUNSHN 230.0000W60+60
61.000
59.000
FRI, OCT 31 2008 15:23
PG 7: FREQUENCY
14.000
9.0000
8.0000
7.0000
6.0000
5.0040
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

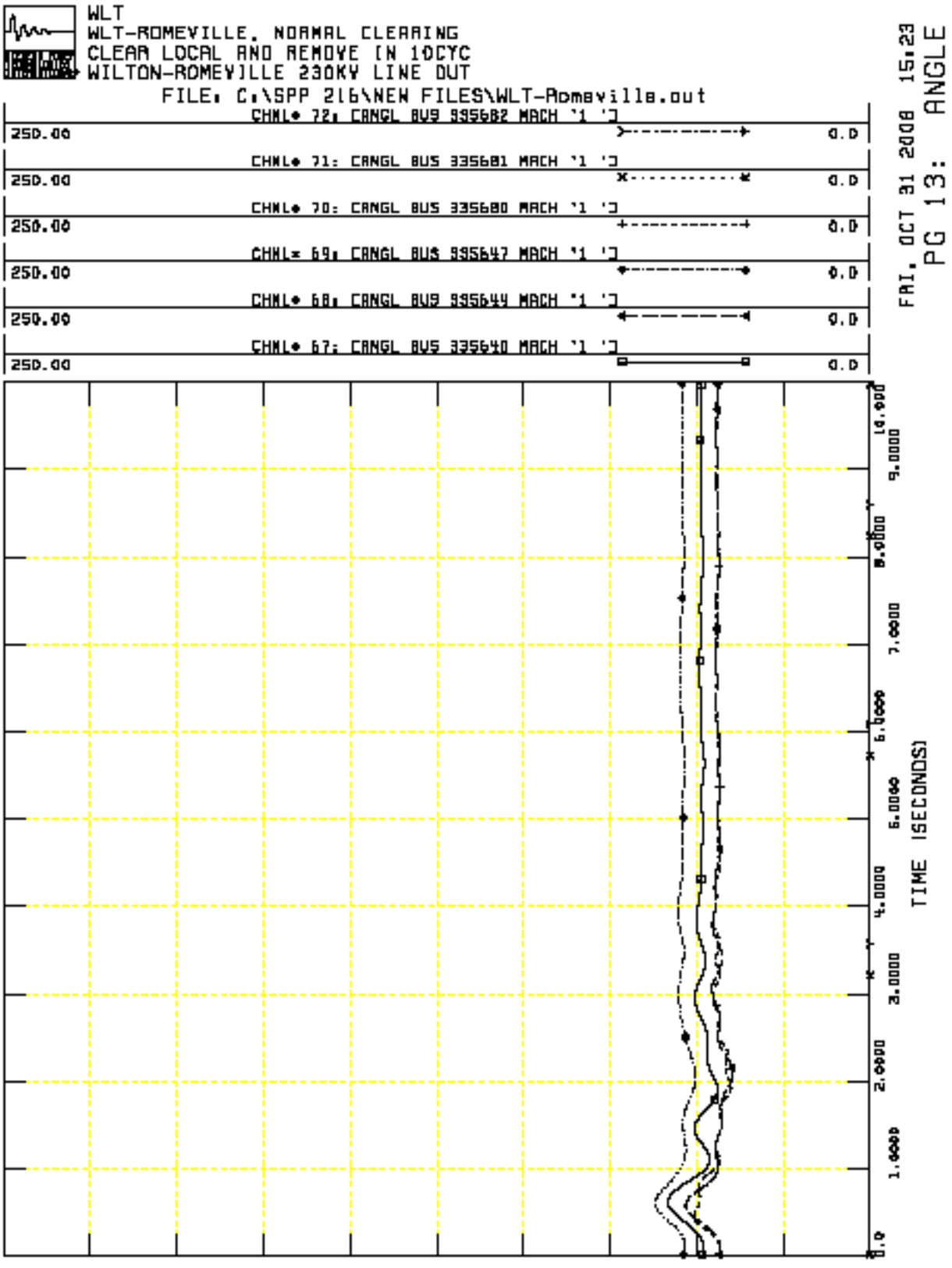

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 8: FREQUENCY
CHNL= 42: CFREQ 936154 C6WATFRD 230.00]]=60+60
61.000
59.000
CHNL* 41: CFREQ 936070 C6WILTON 230.00]]=60+60
61.000
59.000
CHNL* 40: CFREQ 335610 CYNGLEN 138.00]]=60+60
61.000
59.000
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

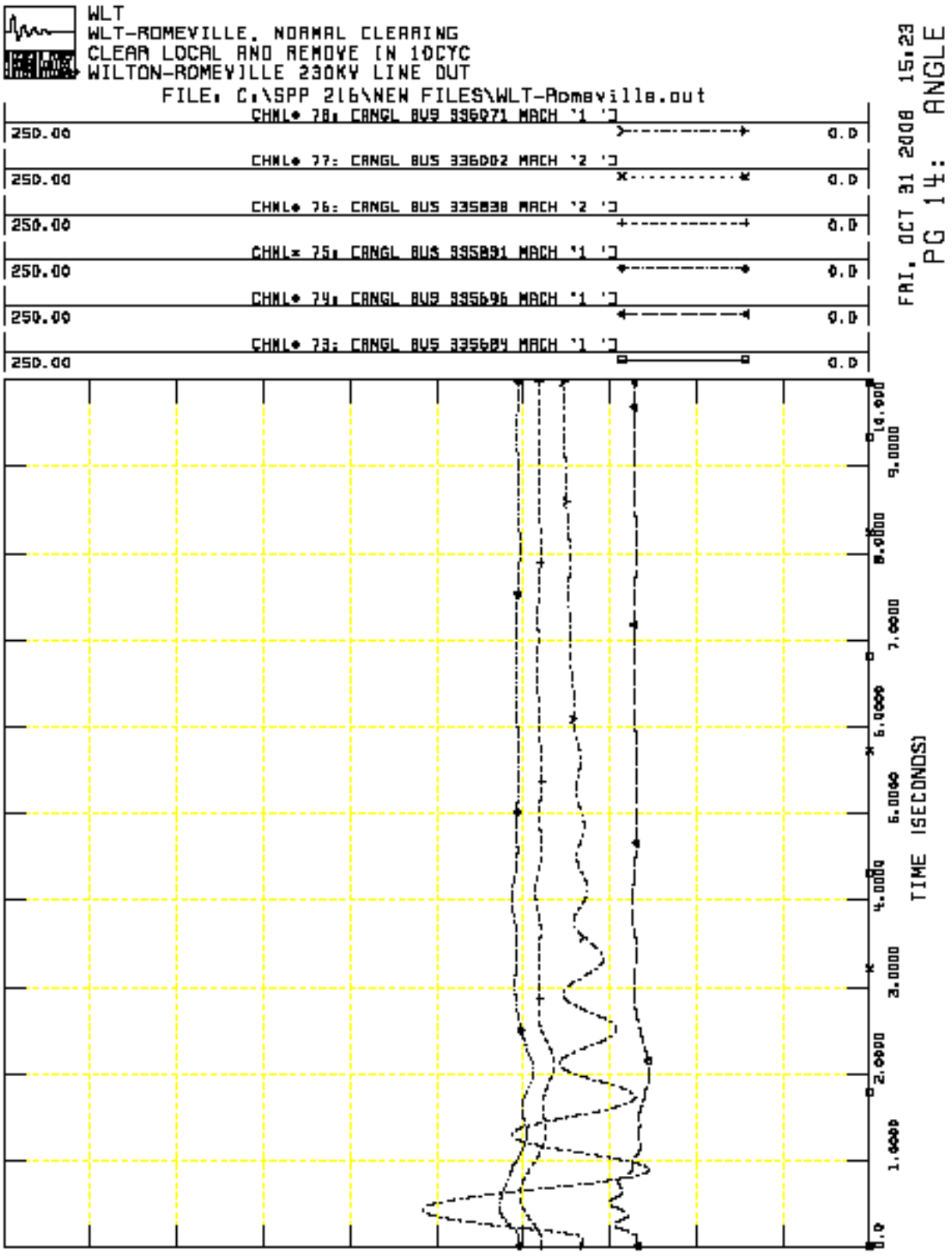

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 9: ANGLE
CHNL# 48: CANGL BUS 303007 MACH '1 '
CHNL# 47: CANGL BUS 303006 MACH '1 '
CHNL# 46: CANGL BUS 303004 MACH '1 '
CHNL# 45: CANGL BUS 303003 MACH '1 '
CHNL# 44: CANGL BUS 303002 MACH '1 '
CHNL# 43: CANGL BUS 303001 MACH '1 '
250.00
0.0
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

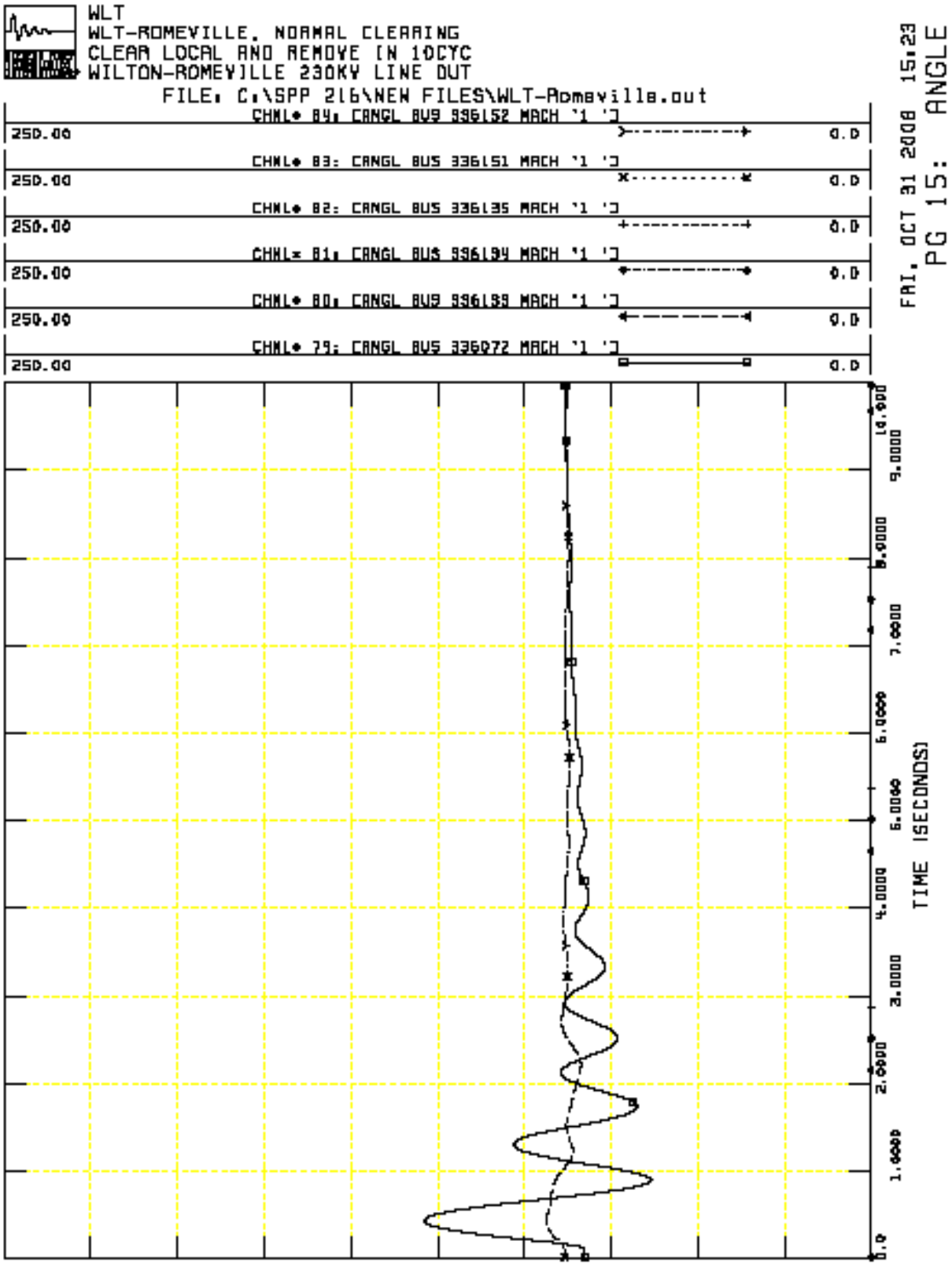

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 10: ANGLE
CHNL# 54: CANGL BUS 335545 MACH '1 '
CHNL# 53: CANGL BUS 335544 MACH '1 '
CHNL# 52: CANGL BUS 335543 MACH '1 '
CHNL# 51: CANGL BUS 335542 MACH '1 '
CHNL# 50: CANGL BUS 335541 MACH '1 '
CHNL# 49: CANGL BUS 303008 MACH '1 '
250.00
0.0
TIME (SECONDS)

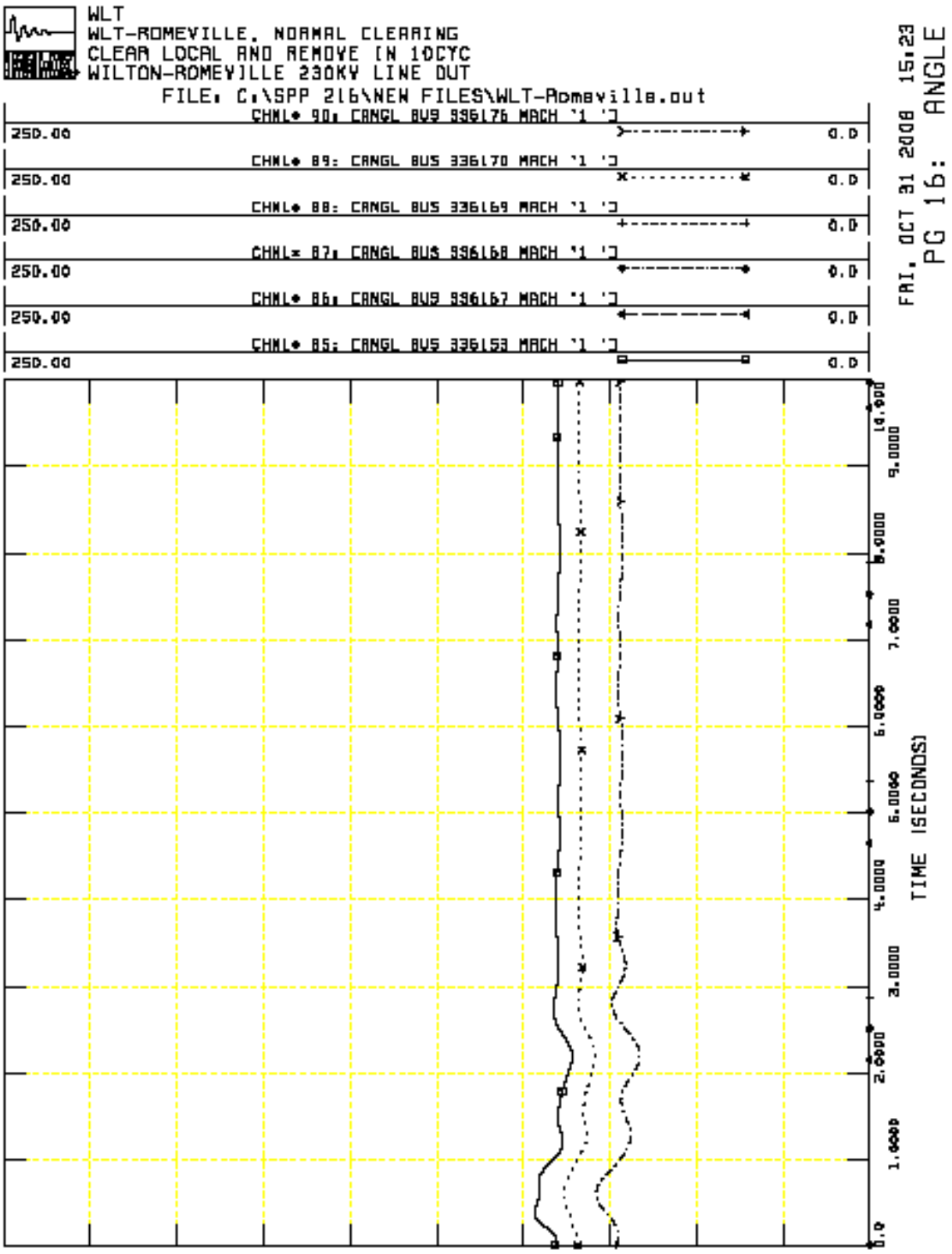

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 60: CANGL BUS 335578 MACH '1 '
CHNL# 59: CANGL BUS 335577 MACH '1 '
CHNL# 58: CANGL BUS 335572 MACH '1 '
CHNL# 57: CANGL BUS 335571 MACH '1 '
CHNL# 56: CANGL BUS 335570 MACH '1 '
CHNL# 55: CANGL BUS 335546 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 11: ANGLE
TIME (SECONDS)

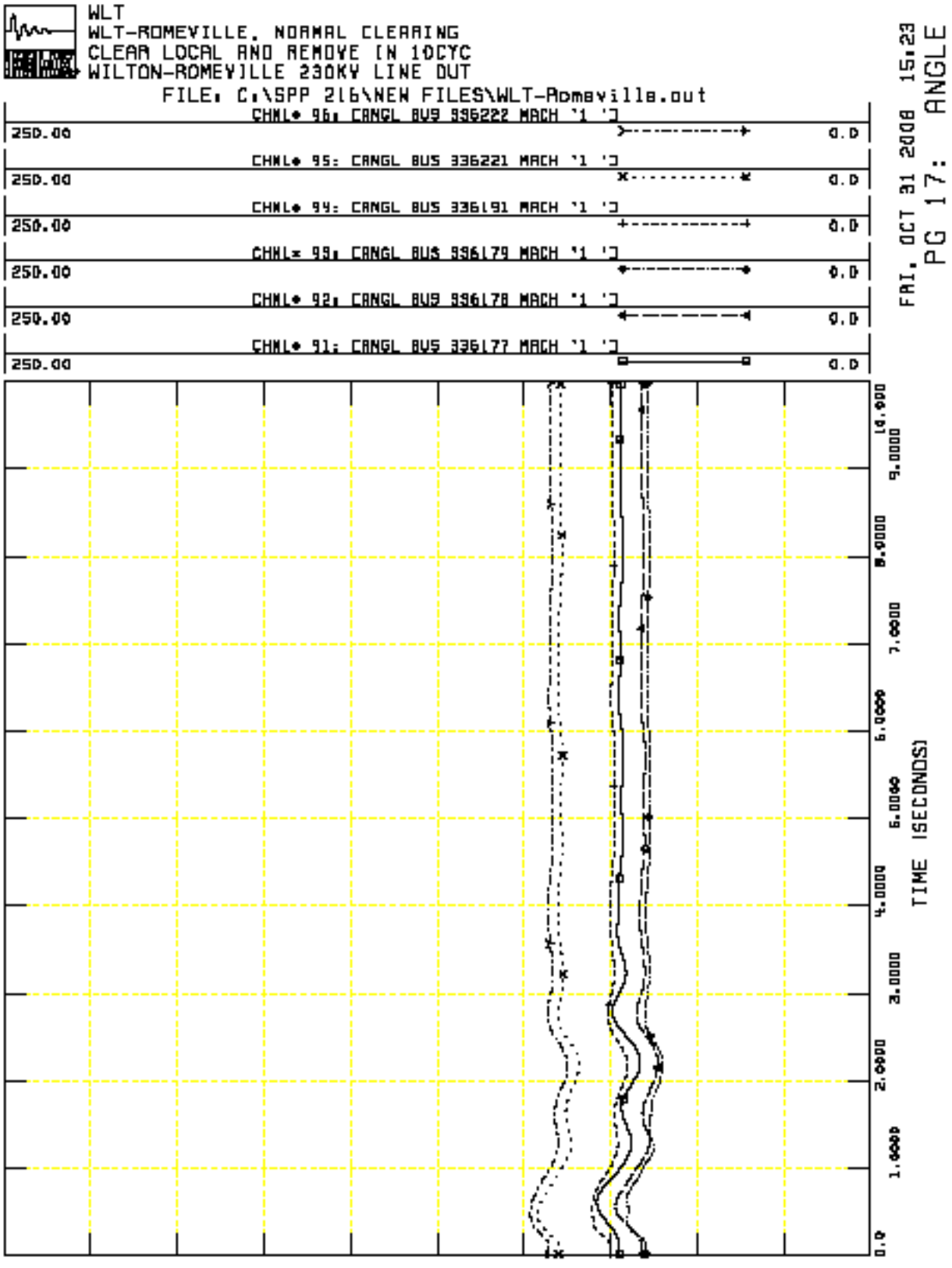

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 66: CANGL BUS 335638 MACH '1 '
CHNL# 65: CANGL BUS 335615 MACH '1 '
CHNL# 64: CANGL BUS 335614 MACH '1 '
CHNL# 63: CANGL BUS 335613 MACH '1 '
CHNL# 62: CANGL BUS 335612 MACH '1 '
CHNL# 61: CANGL BUS 335611 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
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


WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 72: CANGL BUS 335682 MACH '1 '
CHNL# 71: CANGL BUS 335681 MACH '1 '
CHNL# 70: CANGL BUS 335680 MACH '1 '
CHNL# 69: CANGL BUS 335647 MACH '1 '
CHNL# 68: CANGL BUS 335644 MACH '1 '
CHNL# 67: CANGL BUS 335640 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
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


WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 14: ANGLE
CHNL# 78: CANGL BUS 336071 MACH '1 '
CHNL# 77: CANGL BUS 336002 MACH '2 '
CHNL# 76: CANGL BUS 335838 MACH '2 '
CHNL# 75: CANGL BUS 335891 MACH '1 '
CHNL# 74: CANGL BUS 335696 MACH '1 '
CHNL# 73: CANGL BUS 335604 MACH '1 '
250.00
0.0
TIME (SECONDS)


WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 15: ANGLE
CHNL# 84: CANGL BUS 336152 MACH '1 'J
CHNL# 83: CANGL BUS 336151 MACH '1 'J
CHNL# 82: CANGL BUS 336135 MACH '1 'J
CHNL# 81: CANGL BUS 336134 MACH '1 'J
CHNL# 80: CANGL BUS 336139 MACH '1 'J
CHNL# 79: CANGL BUS 336072 MACH '1 'J
250.00
0.0
TIME (SECONDS)


WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 16: ANGLE
CHNL# 90: CANGL BUS 336176 MACH '1 '
CHNL# 89: CANGL BUS 336170 MACH '1 '
CHNL# 88: CANGL BUS 336169 MACH '1 '
CHNL# 87: CANGL BUS 336168 MACH '1 '
CHNL# 86: CANGL BUS 336167 MACH '1 '
CHNL# 85: CANGL BUS 336153 MACH '1 '
250.00
0.0
TIME (SECONDS)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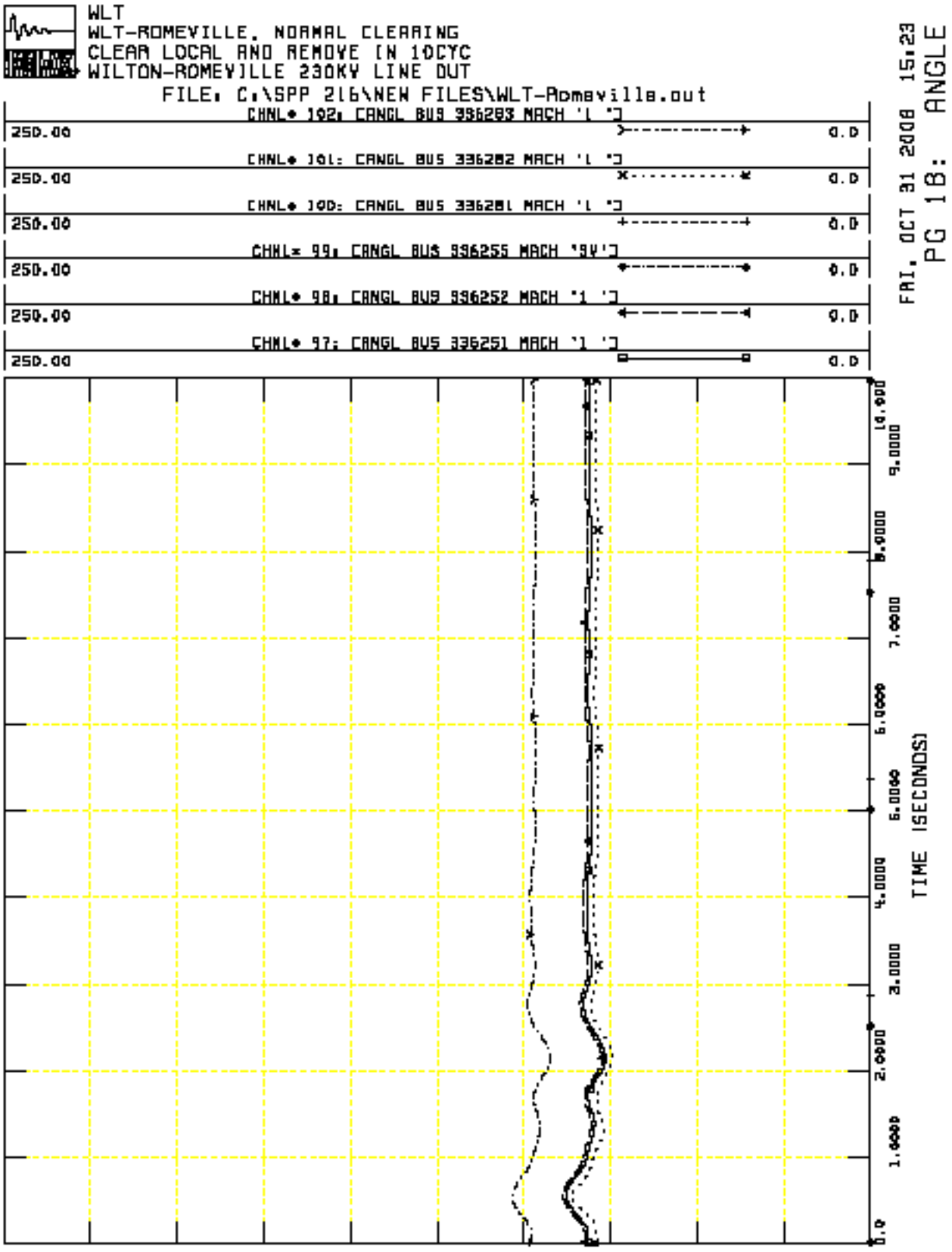
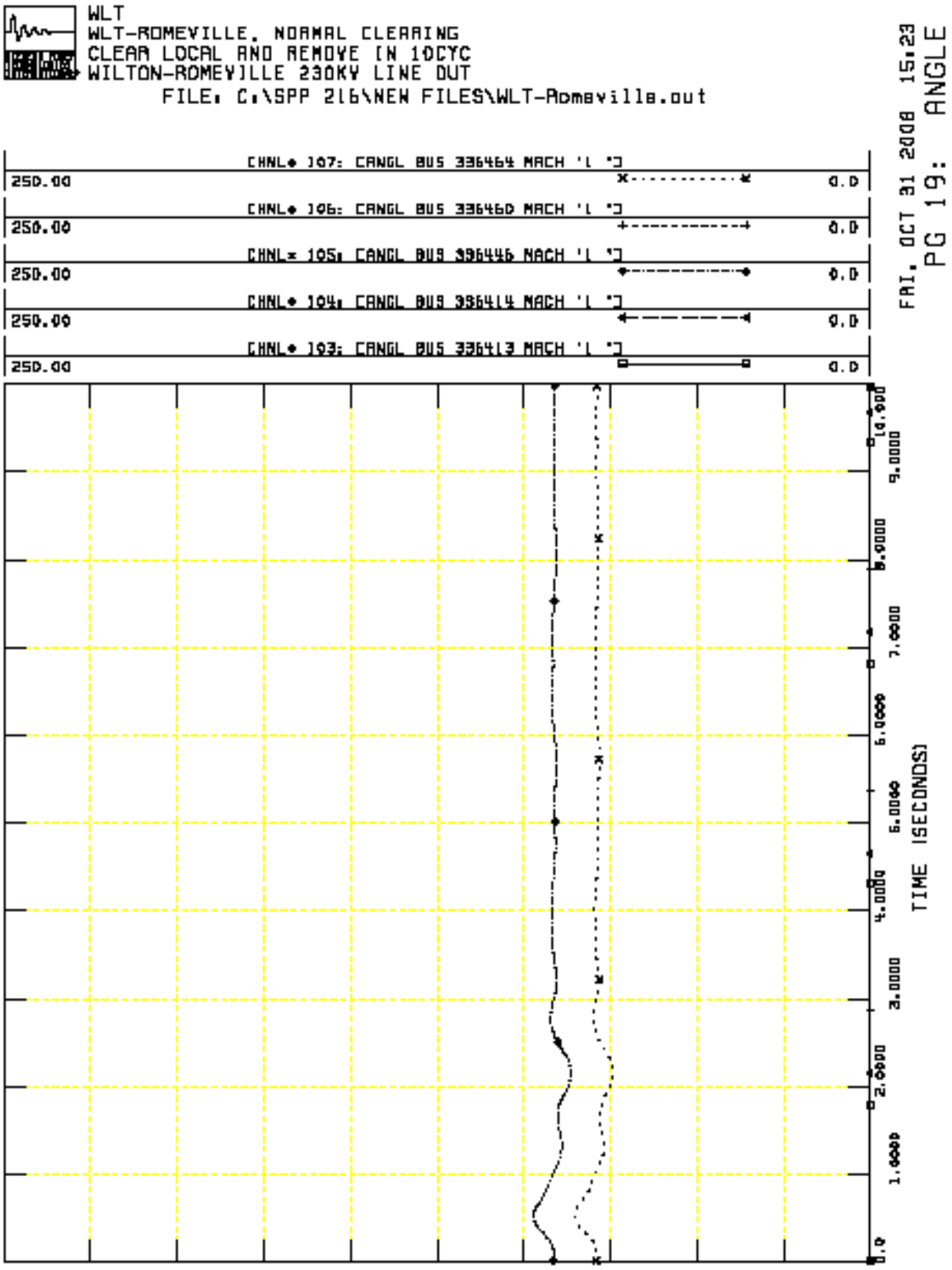
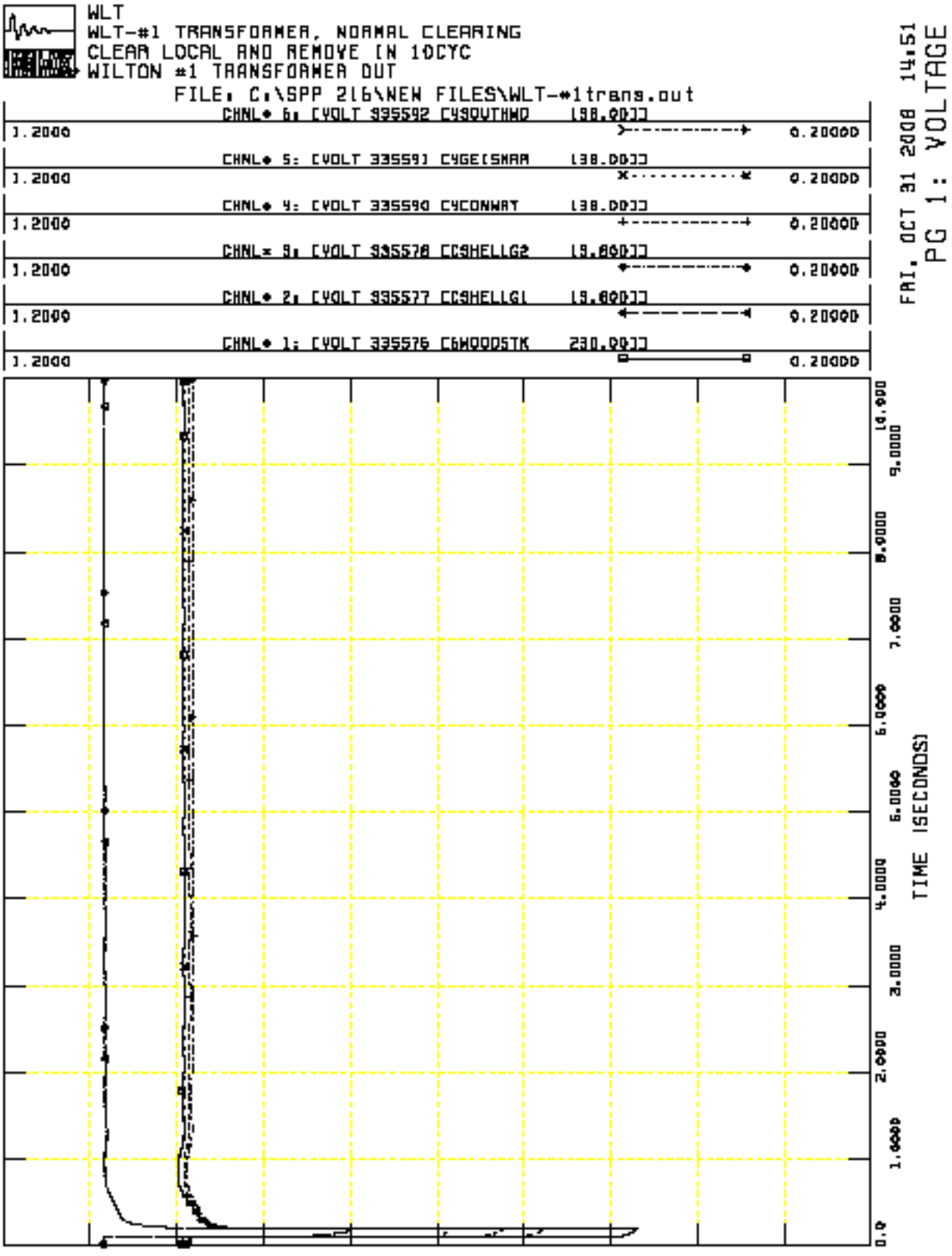
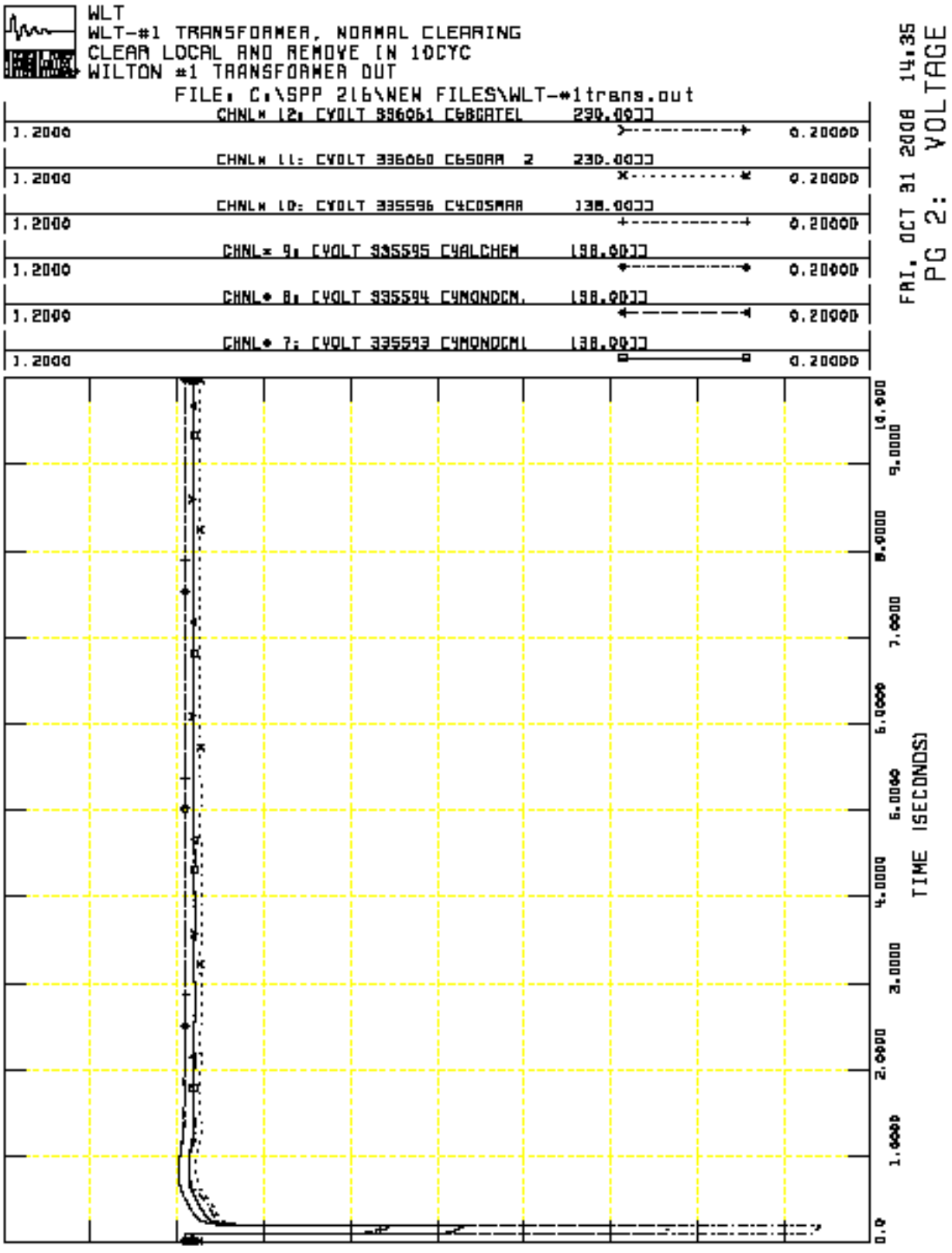
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 17: ANGLE
CHNL# 96: CANGL BUS 336222 MACH '1 '
CHNL# 95: CANGL BUS 336221 MACH '1 '
CHNL# 94: CANGL BUS 336191 MACH '1 '
CHNL# 93: CANGL BUS 336179 MACH '1 '
CHNL# 92: CANGL BUS 336178 MACH '1 '
CHNL# 91: CANGL BUS 336177 MACH '1 '
250.00
0.0
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

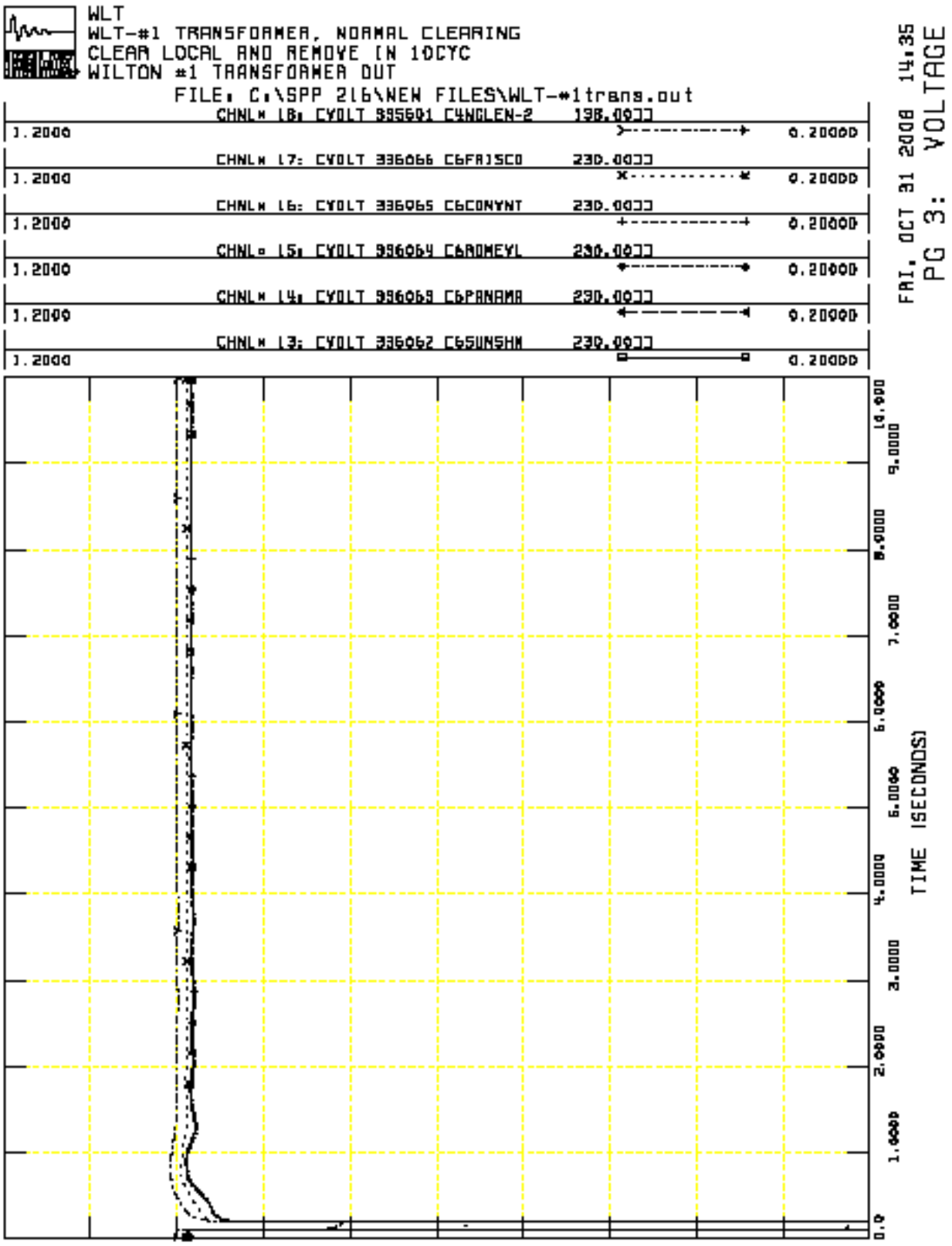

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
CHNL# 102: CANGL BUS 336283 MACH '1 '
250.00
0.0
CHNL# 101: CANGL BUS 336282 MACH '1 '
250.00
0.0
CHNL# 100: CANGL BUS 336281 MACH '1 '
250.00
0.0
CHNL# 99: CANGL BUS 336255 MACH '8Y'
250.00
0.0
CHNL# 98: CANGL BUS 336252 MACH '1 '
250.00
0.0
CHNL# 97: CANGL BUS 336251 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 1B: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

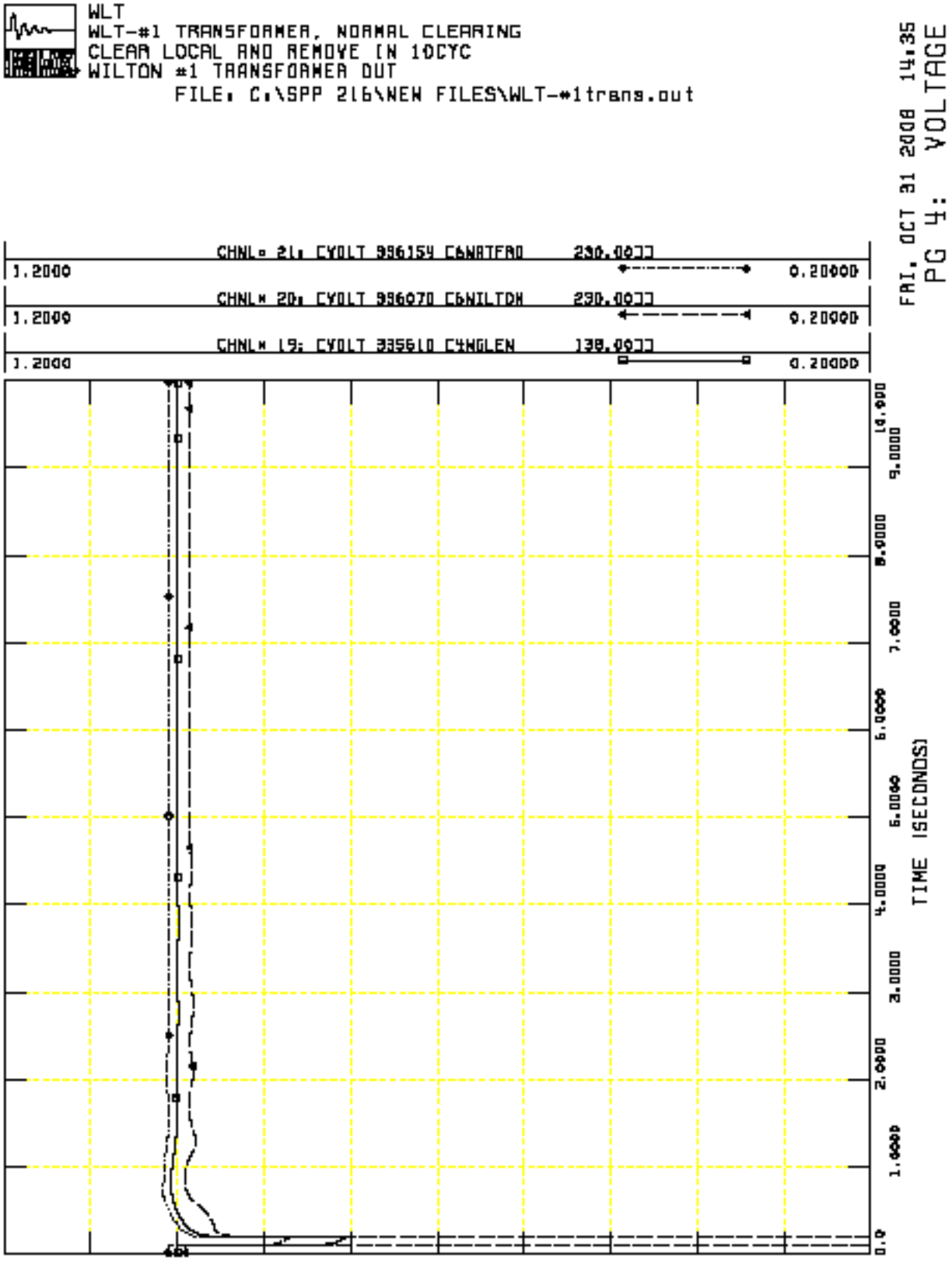

WLT
WLT-ROMEVILLE, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON-ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-Romeville.out
FRI, OCT 31 2008 15:23
PG 19: ANGLE
CHNL# 107: CANGL BUS 336464 MACH 'L '
CHNL# 106: CANGL BUS 336460 MACH 'L '
CHNL# 105: CANGL BUS 336446 MACH 'L '
CHNL# 104: CANGL BUS 336414 MACH 'L '
CHNL# 103: CANGL BUS 336413 MACH 'L '
250.00
0.0
TIME (SECONDS)

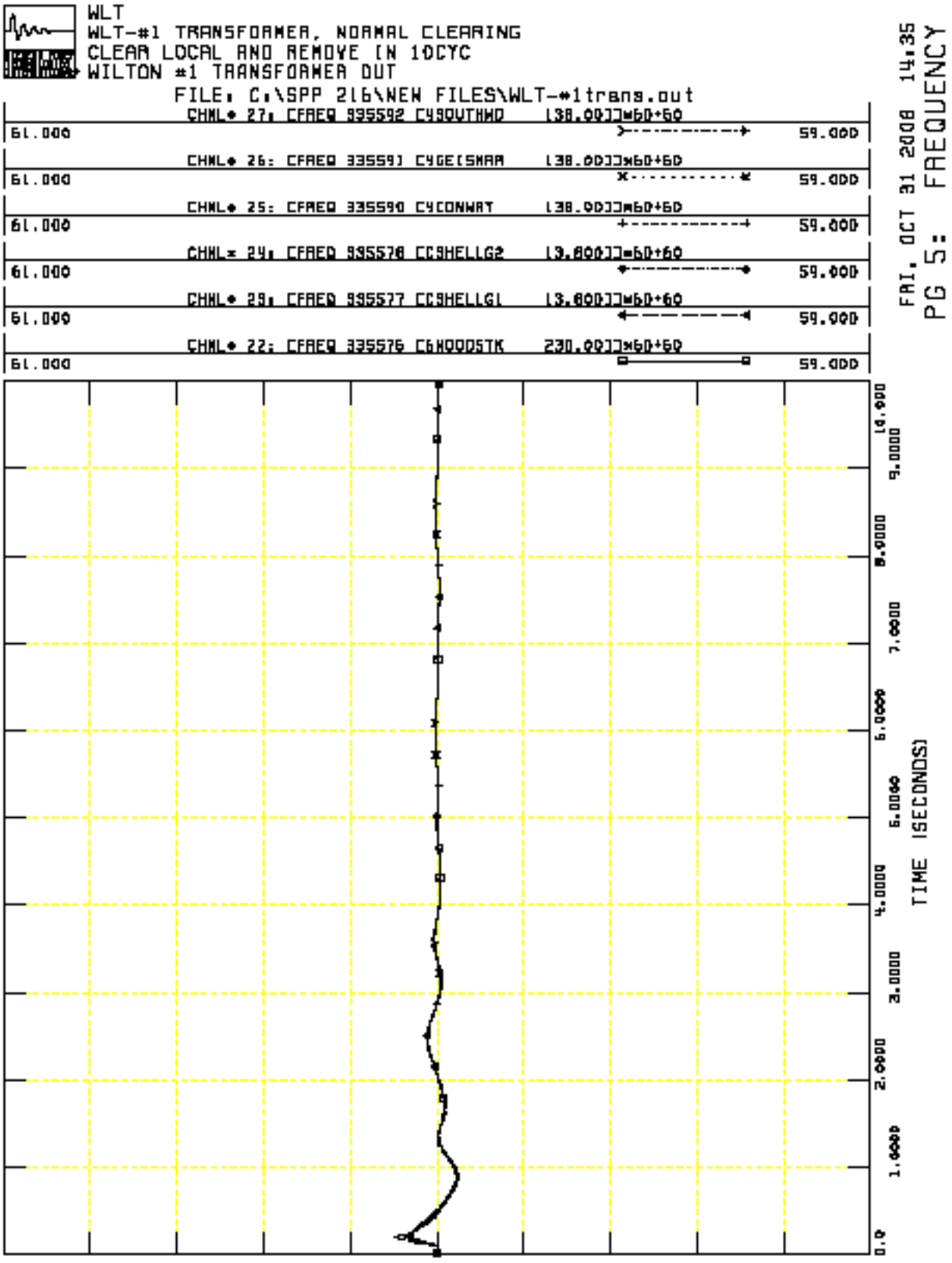
FAULT REFERENCE NO. 3
FAULT-GENR1 - LOCATION WILTON GENR1

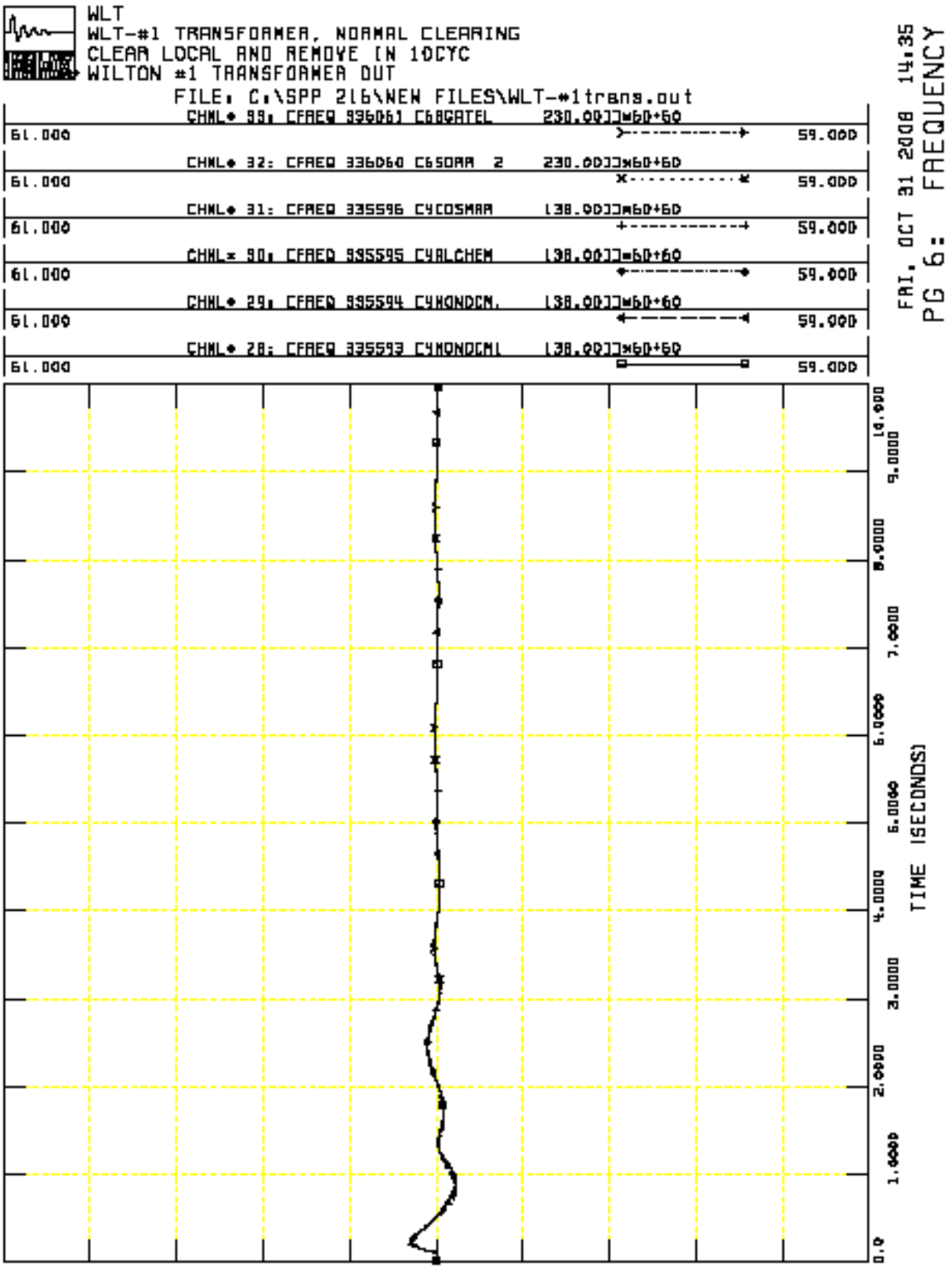

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 6: [VOLT 335592 C4SOUTHWD 138.000]
1.2000
0.20000
CHNL# 5: [VOLT 335591 C4GE[SMAR 138.000]
1.2000
0.20000
CHNL# 4: [VOLT 335590 C4CONWAY 138.000]
1.2000
0.20000
CHNL# 3: [VOLT 335578 CC3HELLG2 13.8000]
1.2000
0.20000
CHNL# 2: [VOLT 335577 CC3HELLG1 13.8000]
1.2000
0.20000
CHNL# 1: [VOLT 335576 C6WOODSTK 230.000]
1.2000
0.20000
FRI, OCT 31 2008 14:51
PG 1: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

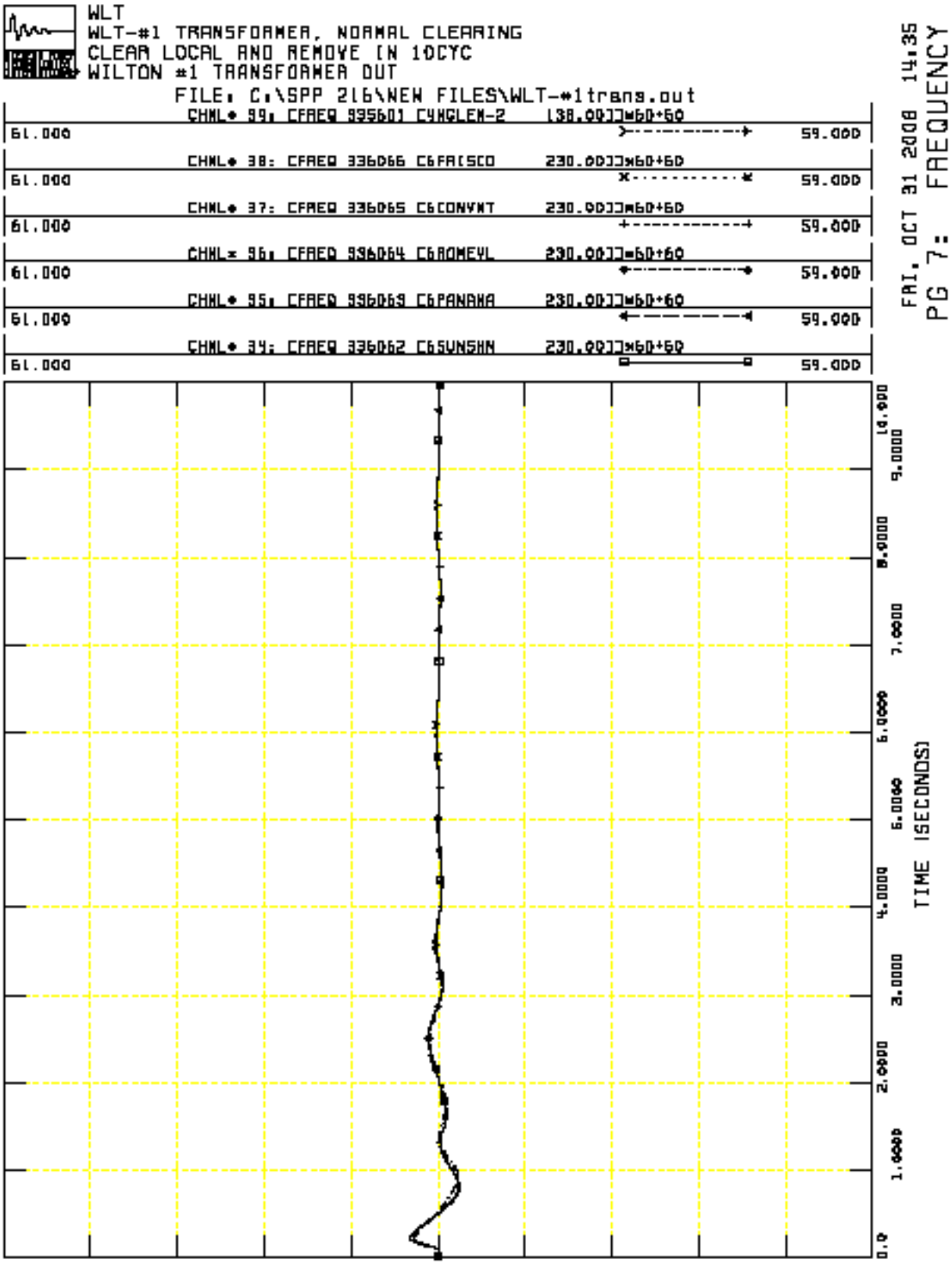

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 12: CYOLT 336061 C6BCATEL 230.0000
1.2000
0.20000
CHNL# 11: CYOLT 336060 C650AA 2 230.0000
1.2000
0.20000
CHNL# 10: CYOLT 335596 C4COSMAA 138.0000
1.2000
0.20000
CHNL# 9: CYOLT 335595 C4ALCHEM 138.0000
1.2000
0.20000
CHNL# 8: CYOLT 335594 C4MONDCM. 138.0000
1.2000
0.20000
CHNL# 7: CYOLT 335593 C4MONDCM1 138.0000
1.2000
0.20000
FRI, OCT 31 2008 14:35
PG 2: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

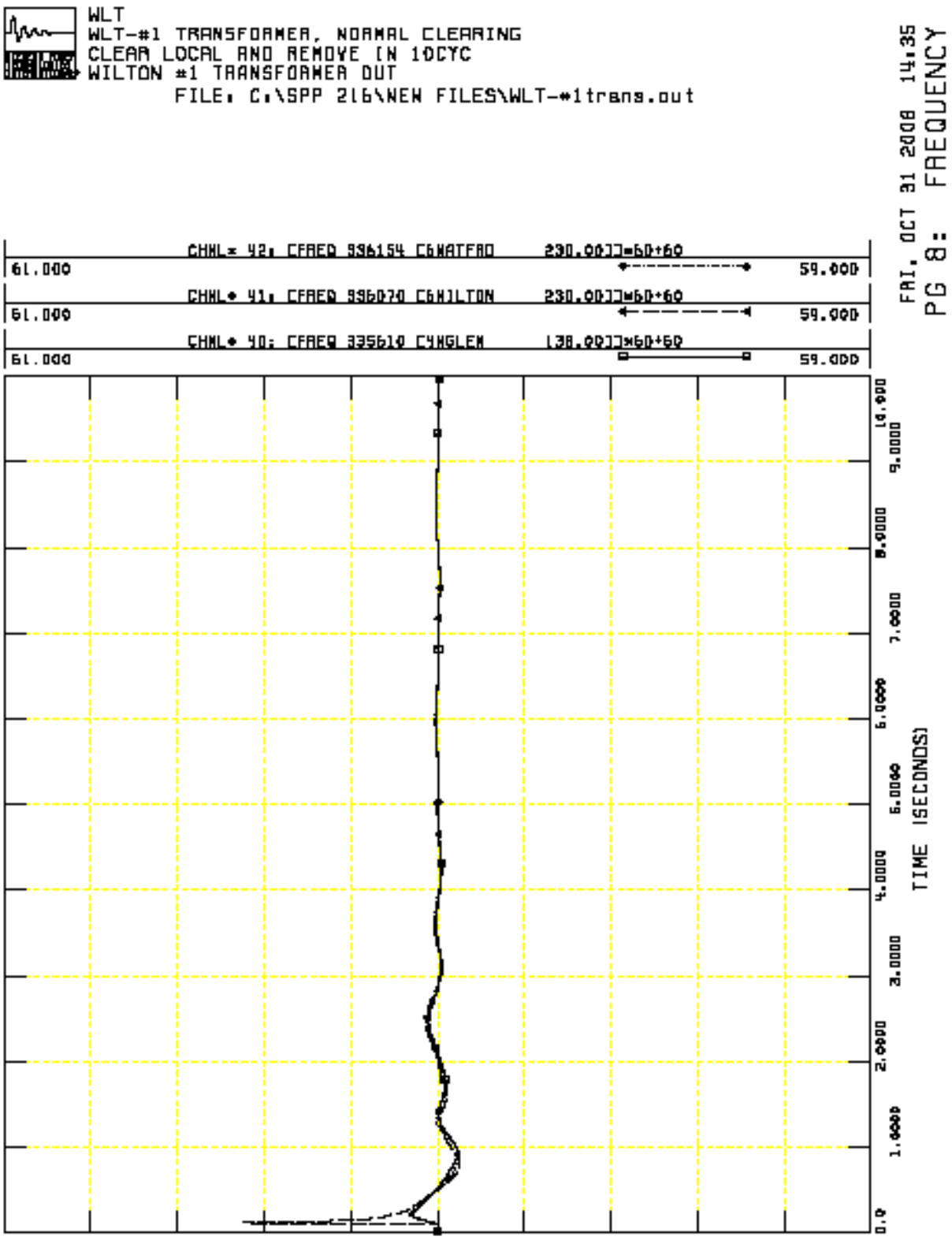

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 8: CYOLT 995601 C4NGLEN-2 138.0000
CHNL# 7: CYOLT 336066 C6FAISCO 230.0000
CHNL# 6: CYOLT 336065 C6CONYNT 230.0000
CHNL# 5: CYOLT 996064 C6ROMEYL 230.0000
CHNL# 4: CYOLT 996063 C6PANAMA 230.0000
CHNL# 3: CYOLT 336062 C6SUNSHN 230.0000
1.2000
0.20000
FRI, OCT 31 2008 14:35
PG 3: 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

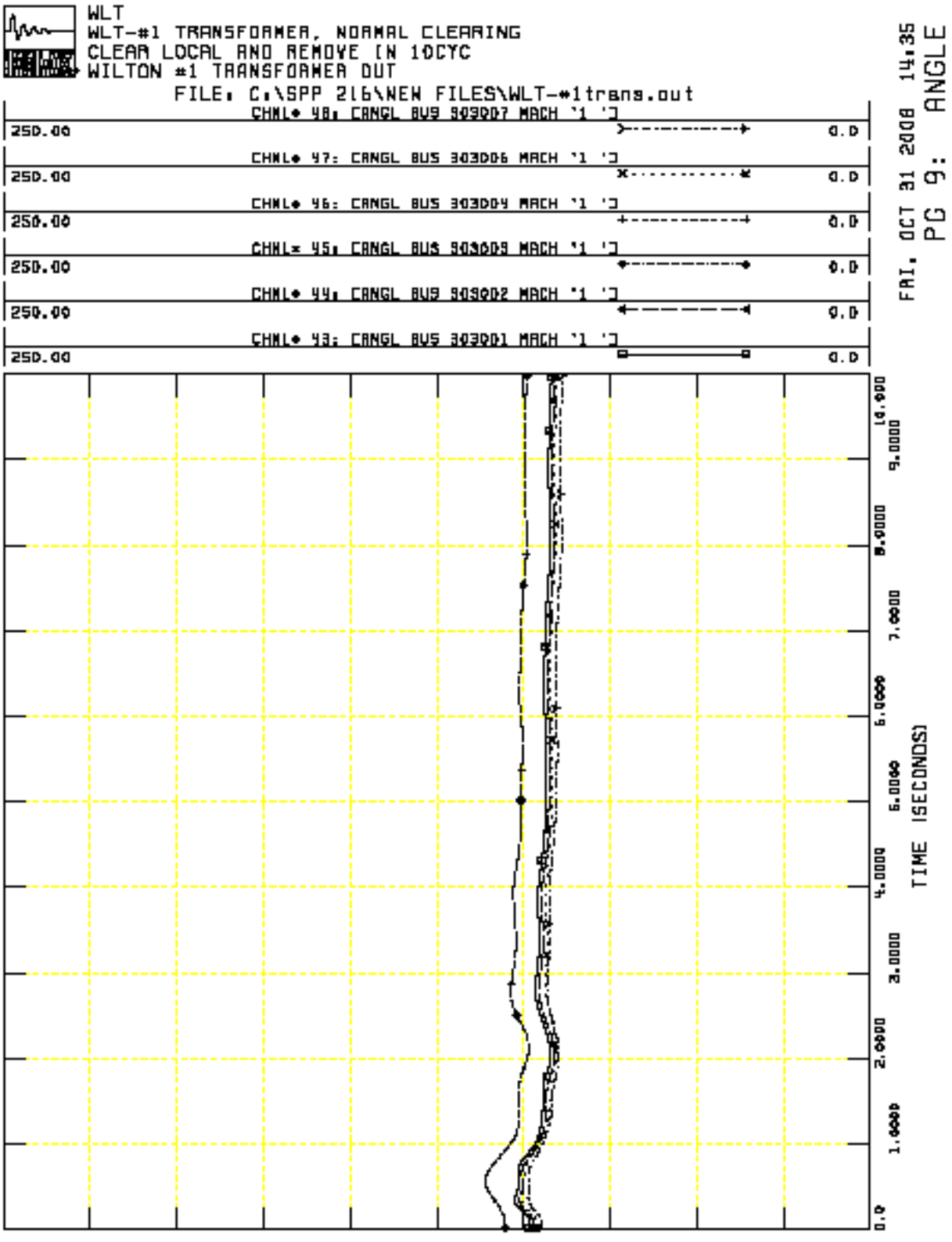

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
FRI, OCT 31 2008 14:35
PG 4: VOLTAGE
CHNL: 21: CYOLT 996154 C6WATFRD 230.0000
1.2000
0.20000
CHNL: 20: CYOLT 996070 C6WILTON 230.0000
1.2000
0.20000
CHNL: 19: CYOLT 335610 C4WGLEN 138.0000
1.2000
0.20000
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

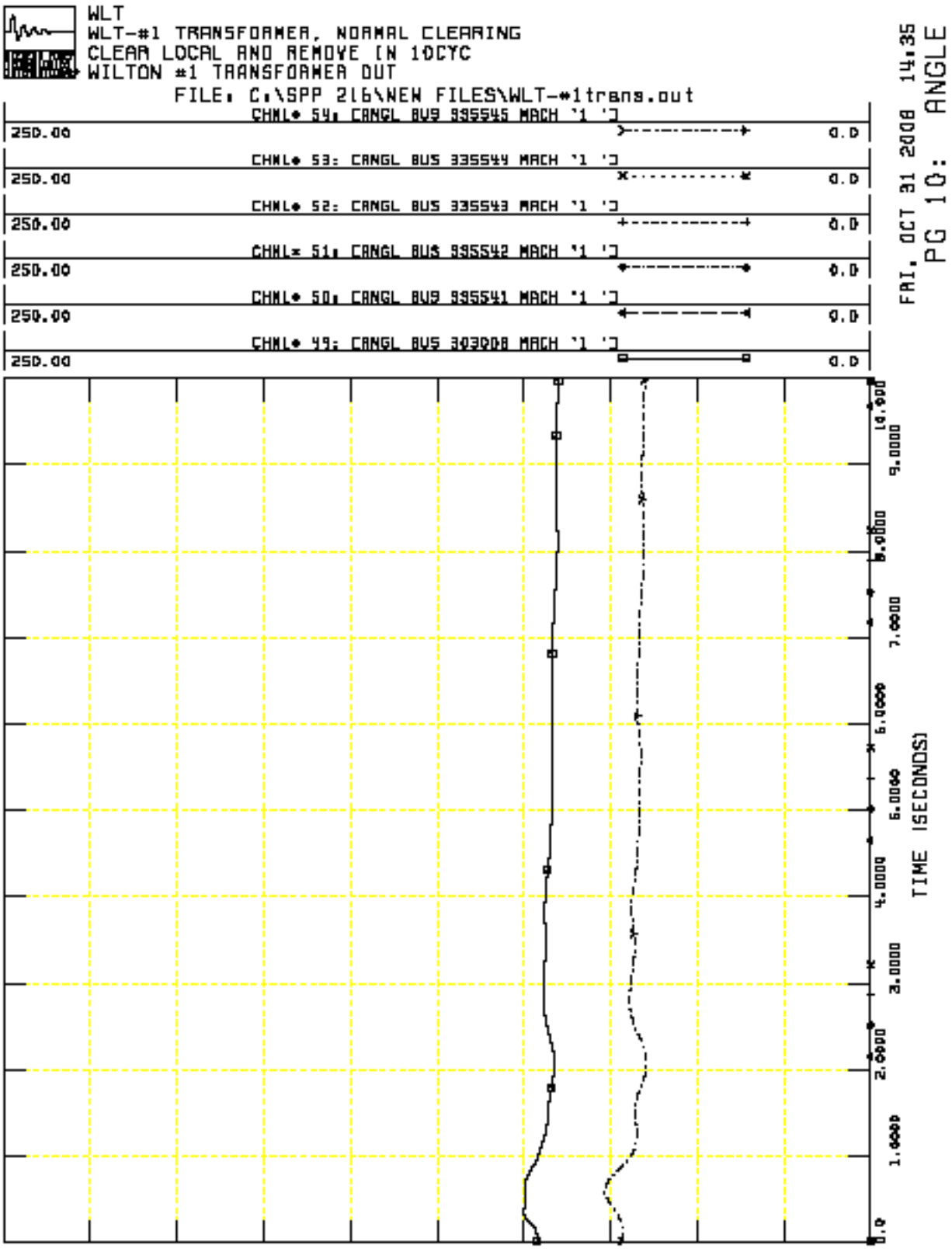

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 27: CFREQ 335592 C4SOUTHWD 138.00]]x60+60
61.000
59.000
CHNL# 26: CFREQ 335591 C4GE[SMAR 138.00]]x60+60
61.000
59.000
CHNL# 25: CFREQ 335590 C4CONWAY 138.00]]x60+60
61.000
59.000
CHNL# 24: CFREQ 335578 CC3HELLG2 13.800]]x60+60
61.000
59.000
CHNL# 23: CFREQ 335577 CC3HELLG1 13.800]]x60+60
61.000
59.000
CHNL# 22: CFREQ 335576 C6HOODSTK 230.00]]x60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 5: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

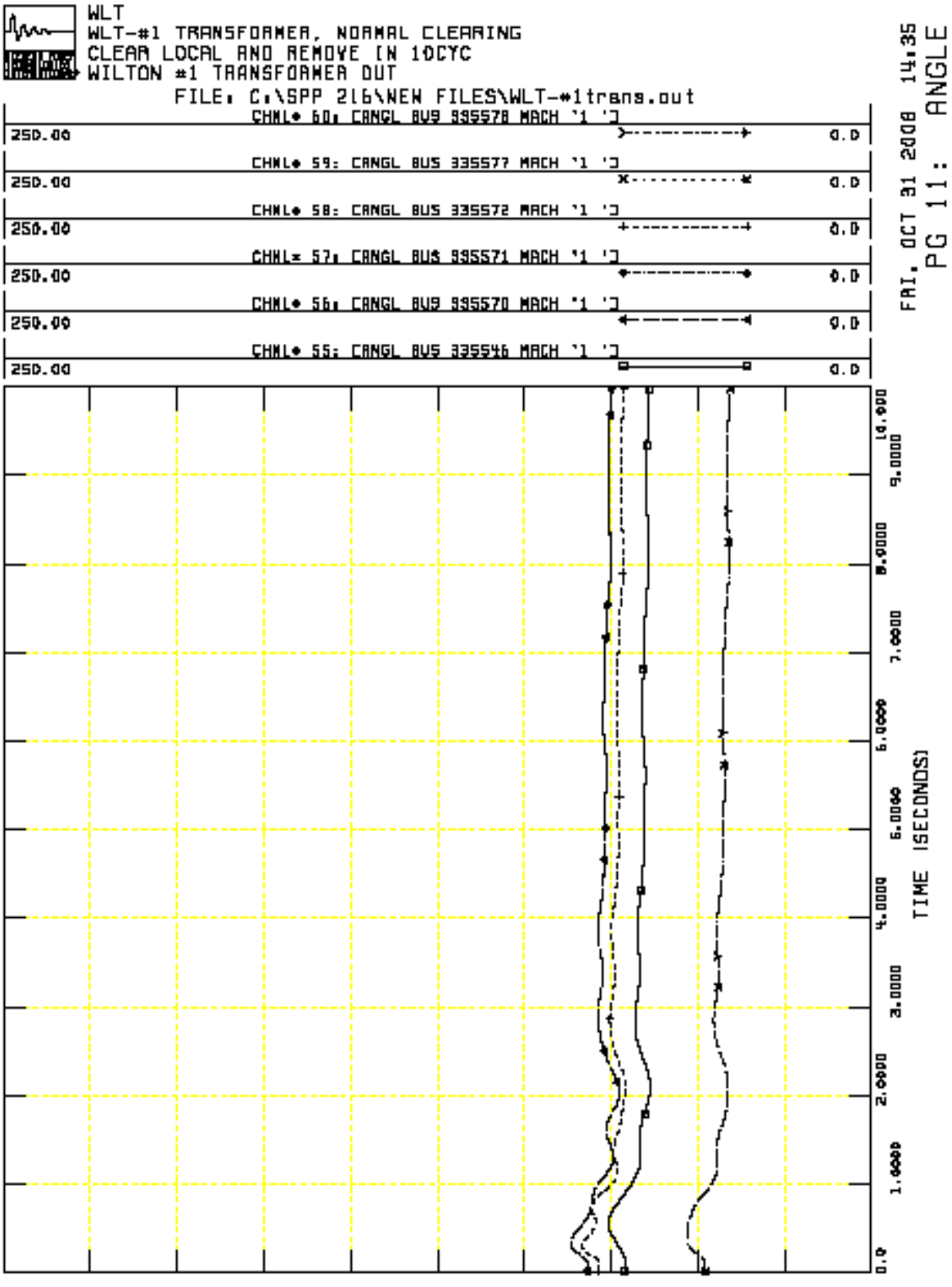

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 33: CFREQ 336061 C68GATEL 230.0000*60+60
61.000
59.000
CHNL# 32: CFREQ 336060 C65OMA 2 230.0000*60+60
61.000
59.000
CHNL# 31: CFREQ 335596 C4COSMAA 138.0000*60+60
61.000
59.000
CHNL# 30: CFREQ 335595 C4ALCHEM 138.0000*60+60
61.000
59.000
CHNL# 29: CFREQ 335594 C4MONDCM. 138.0000*60+60
61.000
59.000
CHNL# 28: CFREQ 335593 C4MONDCM1 138.0000*60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 6: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

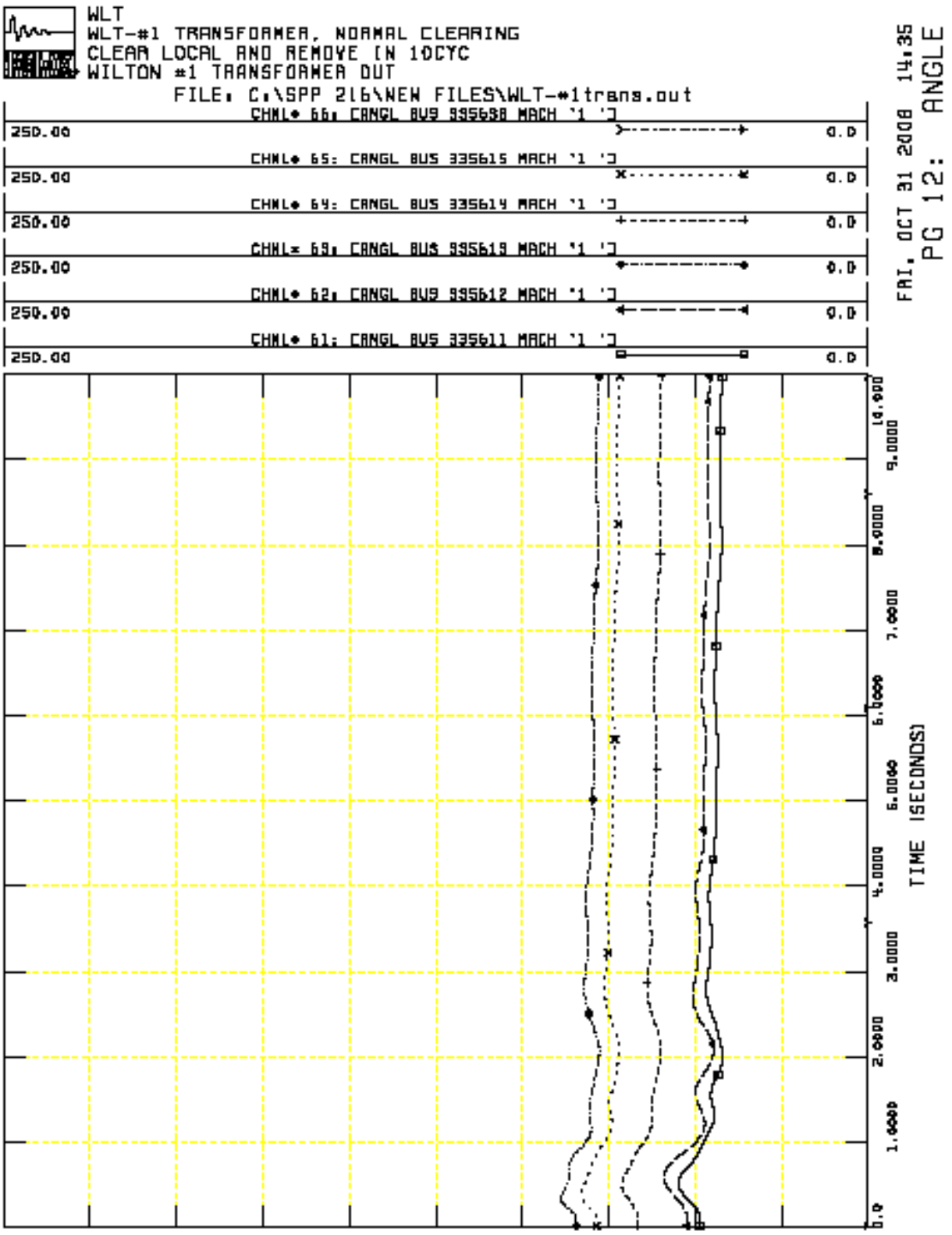

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 39: CFREQ 335601 C4HGLEN-2 138.00]]#60+60
61.000
59.000
CHNL# 38: CFREQ 336066 C6FAIRCO 230.00]]#60+60
61.000
59.000
CHNL# 37: CFREQ 336065 C6CONVNT 230.00]]#60+60
61.000
59.000
CHNL# 36: CFREQ 336064 C6ROMEVL 230.00]]#60+60
61.000
59.000
CHNL# 35: CFREQ 336063 C6PANAMA 230.00]]#60+60
61.000
59.000
CHNL# 34: CFREQ 336062 C6SUNSHN 230.00]]#60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 7: 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)

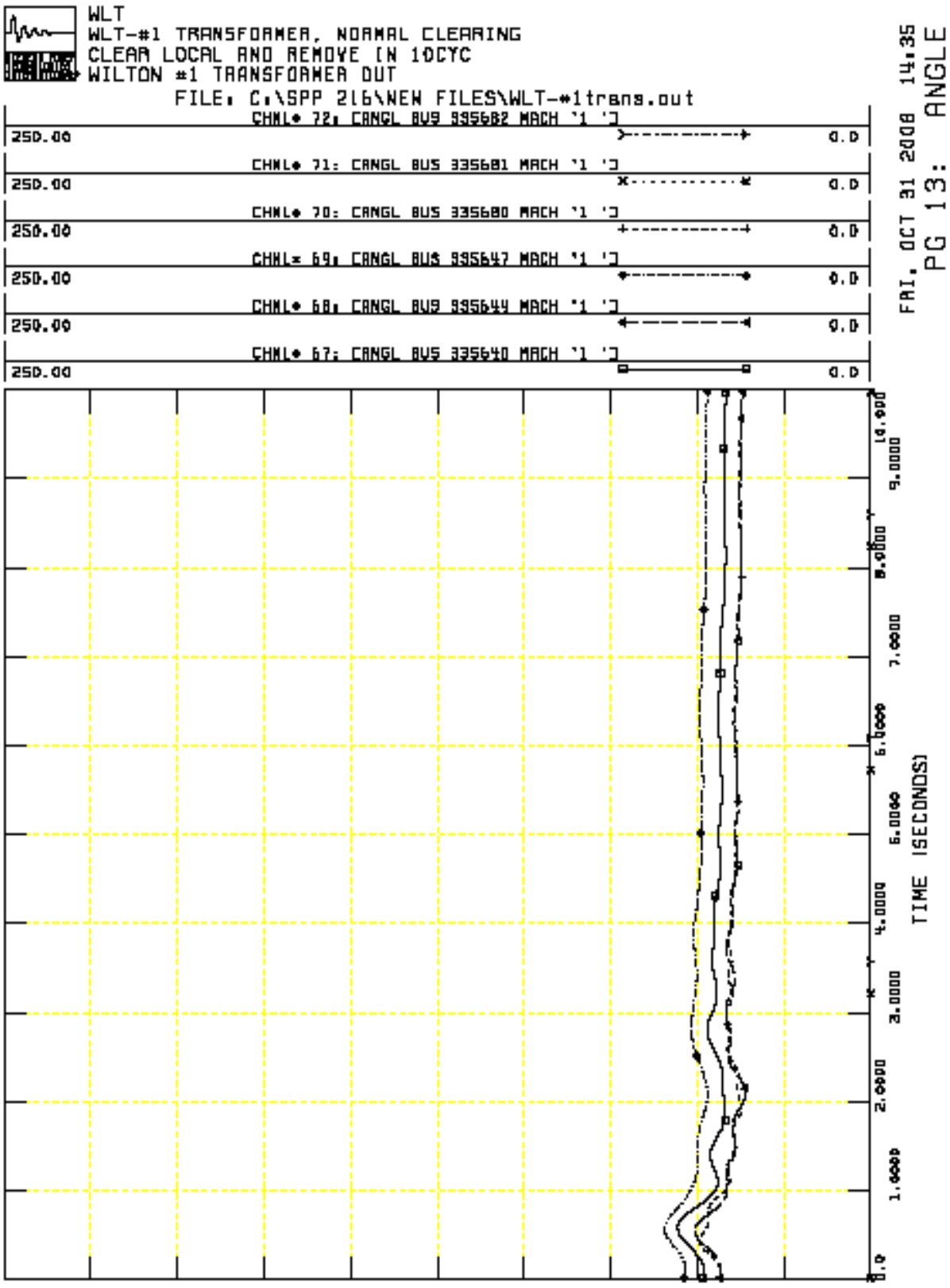

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
FRI, OCT 31 2008 14:35
PG 8: FREQUENCY
CHNL= 42: CFREQ 936154 C6WATFRD 230.00]]=60+60
61.000
59.000
CHNL= 41: CFREQ 936070 C6WILTON 230.00]]=60+60
61.000
59.000
CHNL= 40: CFREQ 335610 CYMGLEN 138.00]]=60+60
61.000
59.000
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

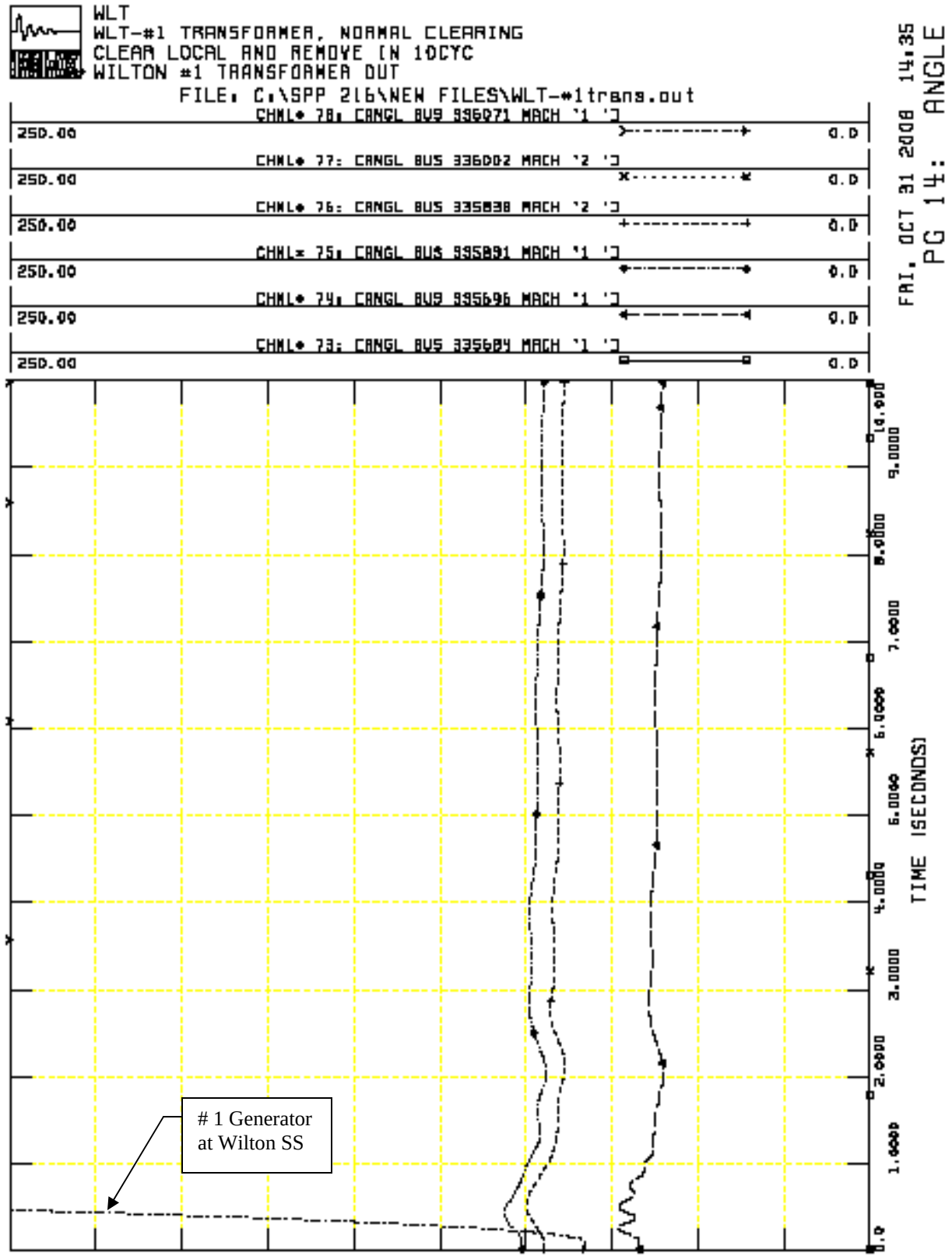

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 48: CANGL BUS 303007 MACH '1 '
CHNL# 47: CANGL BUS 303006 MACH '1 '
CHNL# 46: CANGL BUS 303004 MACH '1 '
CHNL# 45: CANGL BUS 303003 MACH '1 '
CHNL# 44: CANGL BUS 303002 MACH '1 '
CHNL# 43: CANGL BUS 303001 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
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

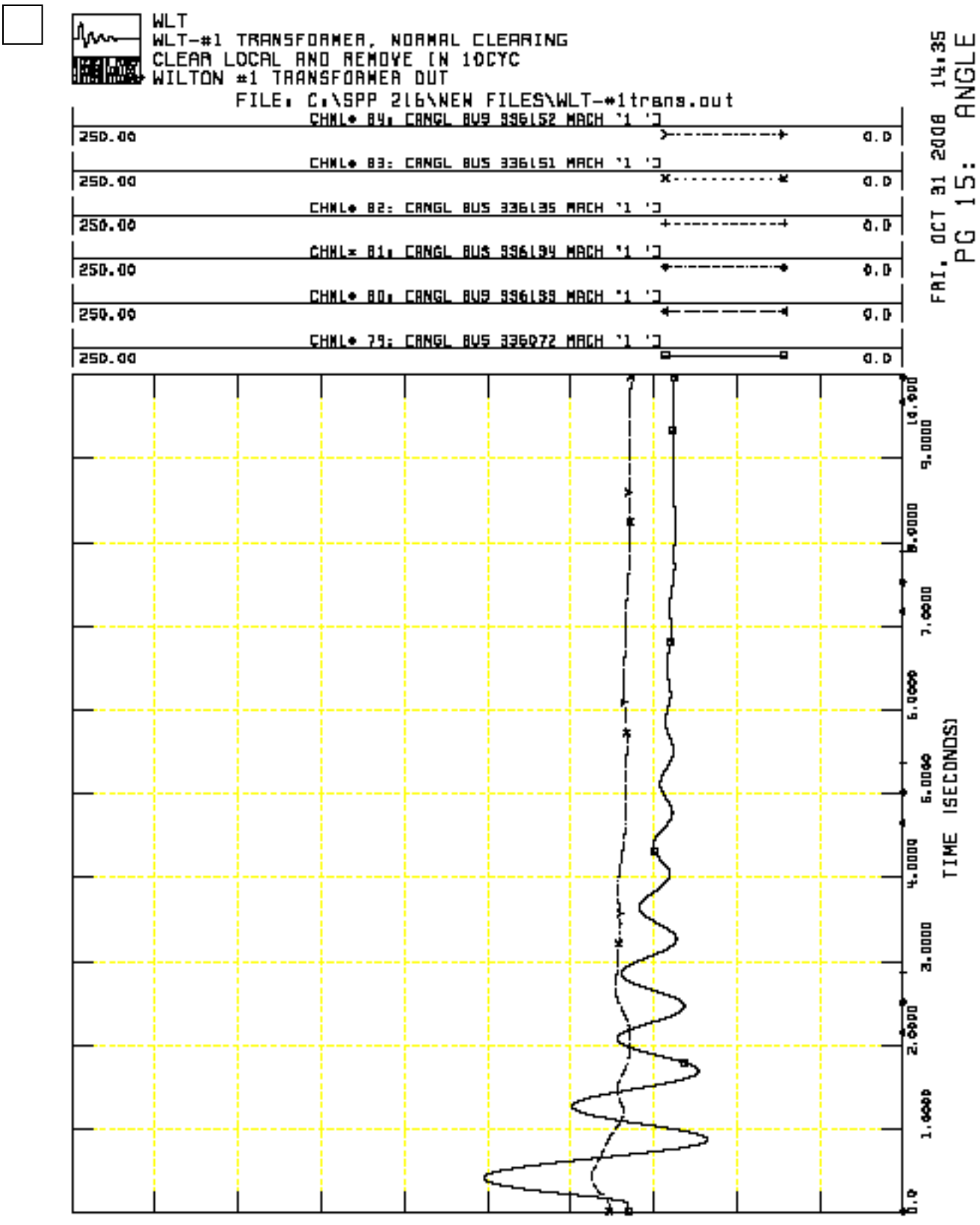

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
FRI, OCT 31 2008 14:35
PG 10: ANGLE
CHNL# 54: CANGL BUS 335545 MACH '1 '
CHNL# 53: CANGL BUS 335544 MACH '1 '
CHNL# 52: CANGL BUS 335543 MACH '1 '
CHNL# 51: CANGL BUS 335542 MACH '1 '
CHNL# 50: CANGL BUS 335541 MACH '1 '
CHNL# 49: CANGL BUS 303908 MACH '1 '
250.00
0.0
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

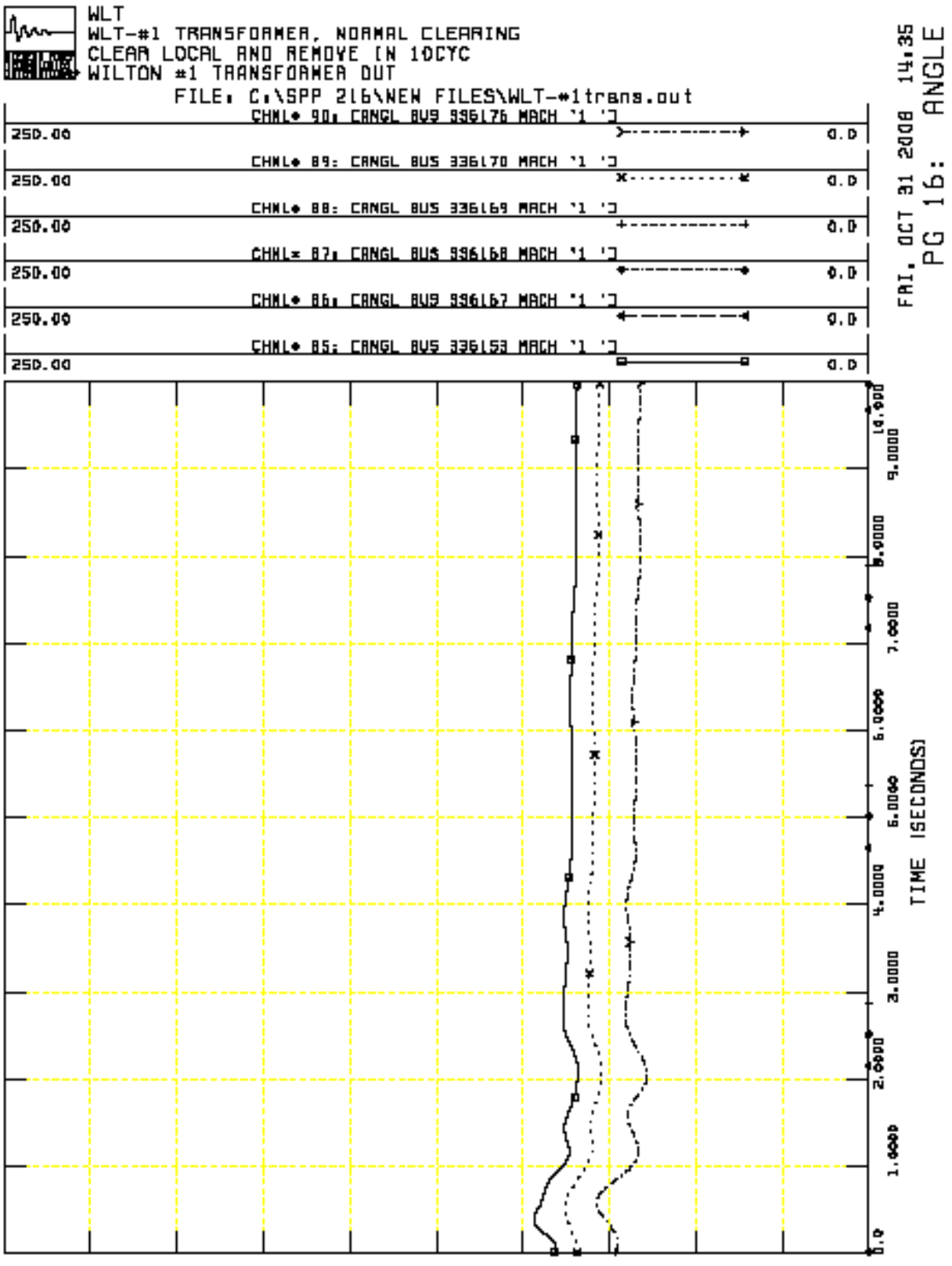

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 60: CANGL BUS 335578 MACH '1 '
250.00
0.0
CHNL# 59: CANGL BUS 335577 MACH '1 '
250.00
0.0
CHNL# 58: CANGL BUS 335572 MACH '1 '
250.00
0.0
CHNL# 57: CANGL BUS 335571 MACH '1 '
250.00
0.0
CHNL# 56: CANGL BUS 335570 MACH '1 '
250.00
0.0
CHNL# 55: CANGL BUS 335546 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
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)

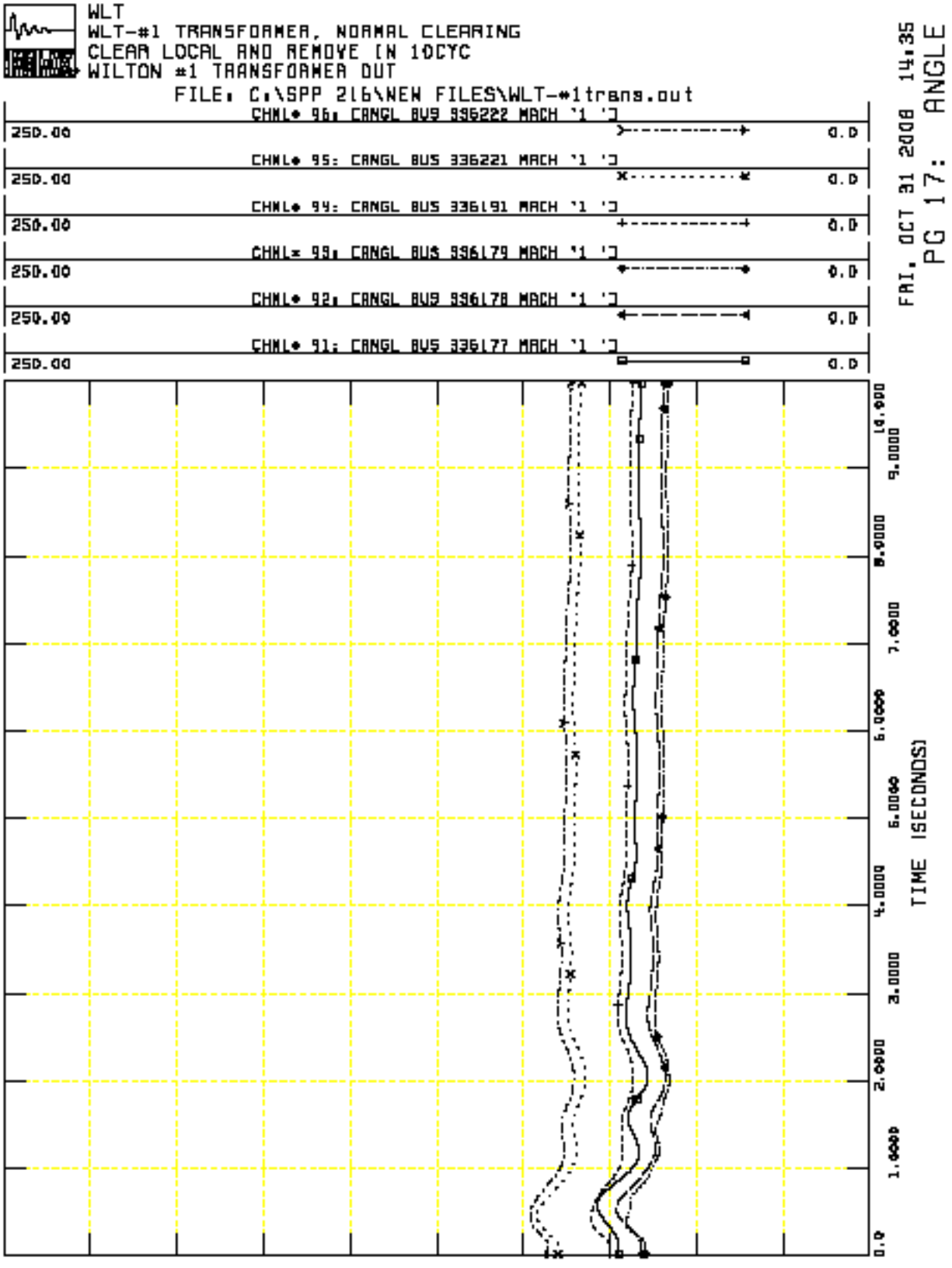

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 66: CANGL BUS 335638 MACH '1 '
CHNL# 65: CANGL BUS 335615 MACH '1 '
CHNL# 64: CANGL BUS 335614 MACH '1 '
CHNL# 63: CANGL BUS 335613 MACH '1 '
CHNL# 62: CANGL BUS 335612 MACH '1 '
CHNL# 61: CANGL BUS 335611 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 12: ANGLE
TIME (SECONDS)

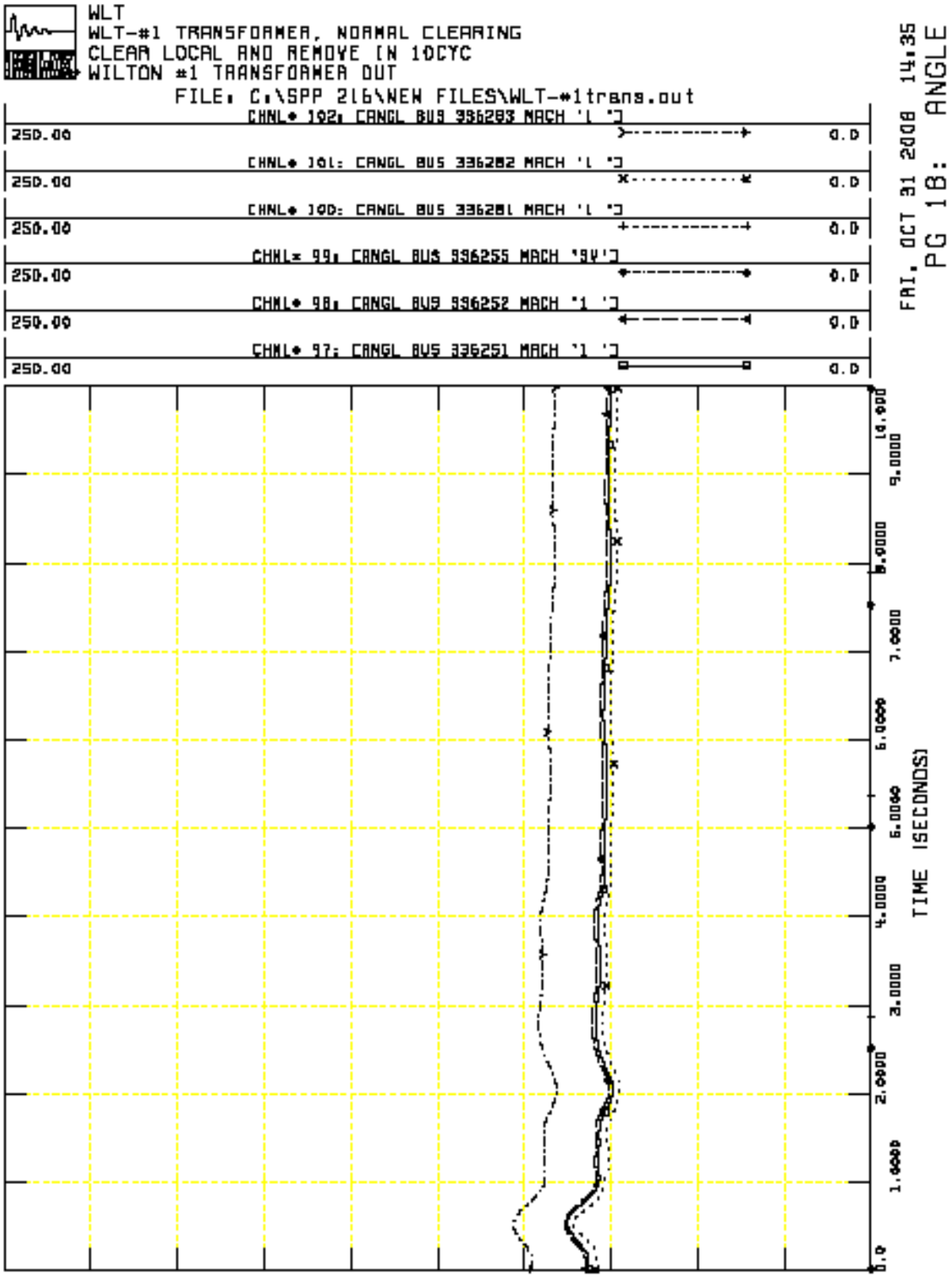

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 72: CANGL BUS 335682 MACH '1 '
CHNL# 71: CANGL BUS 335681 MACH '1 '
CHNL# 70: CANGL BUS 335680 MACH '1 '
CHNL# 69: CANGL BUS 335647 MACH '1 '
CHNL# 68: CANGL BUS 335644 MACH '1 '
CHNL# 67: CANGL BUS 335640 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 13: ANGLE
TIME (SECONDS)

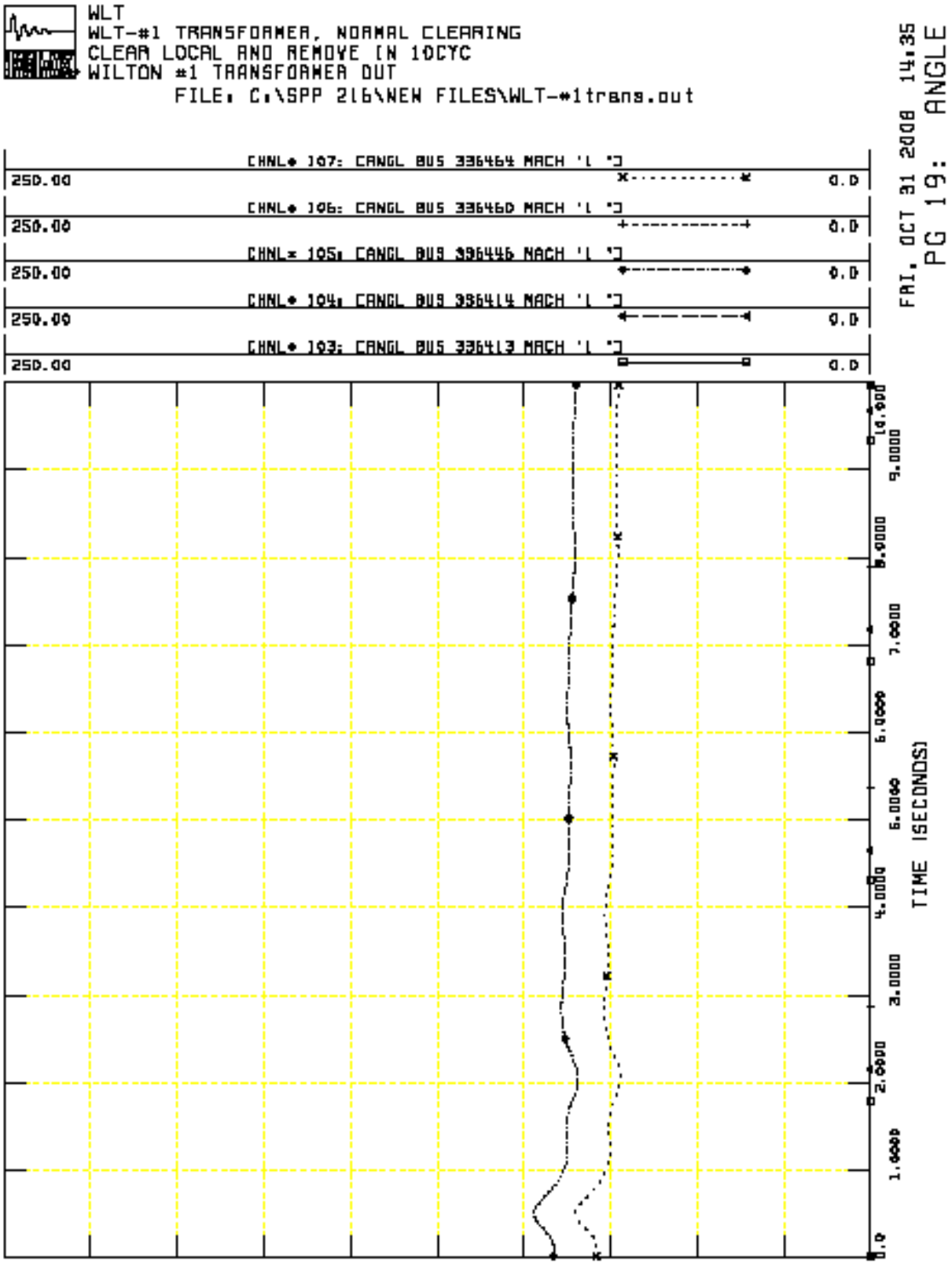

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
FRI, OCT 31 2008 14:35
PG 14: ANGLE
CHNL# 78: CANGL BUS 336071 MACH '1 '
CHNL# 77: CANGL BUS 336002 MACH '2 '
CHNL# 76: CANGL BUS 335838 MACH '2 '
CHNL# 75: CANGL BUS 335891 MACH '1 '
CHNL# 74: CANGL BUS 335696 MACH '1 '
CHNL# 73: CANGL BUS 335604 MACH '1 '
250.00
0.0
1 Generator at Wilton SS
TIME (SECONDS)


WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 84: CANGL BUS 336152 MACH '1 '
250.00
0.0
CHNL# 83: CANGL BUS 336151 MACH '1 '
250.00
0.0
CHNL# 82: CANGL BUS 336135 MACH '1 '
250.00
0.0
CHNL# 81: CANGL BUS 336134 MACH '1 '
250.00
0.0
CHNL# 80: CANGL BUS 336133 MACH '1 '
250.00
0.0
CHNL# 79: CANGL BUS 336072 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 15: ANGLE
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

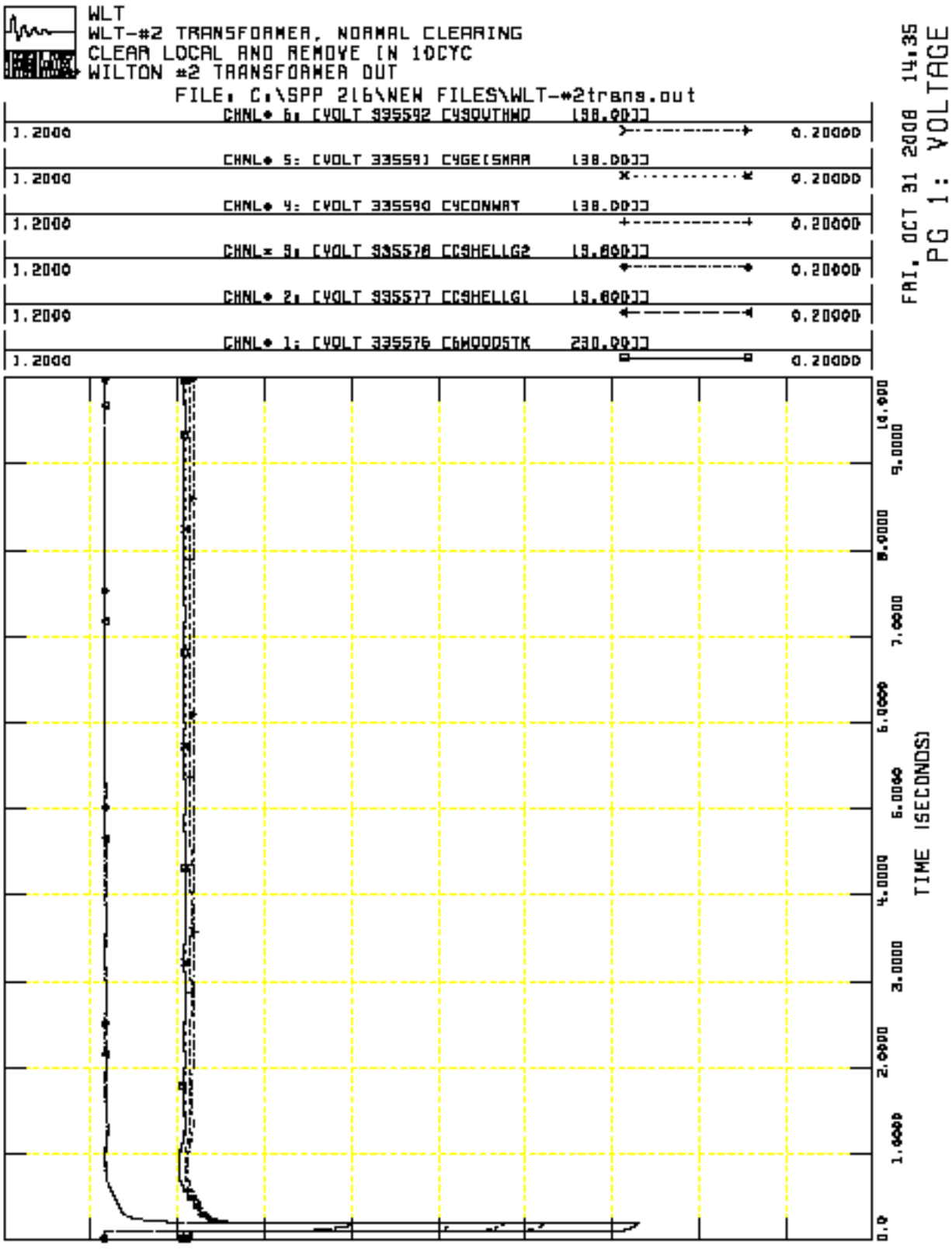

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
FRI, OCT 31 2008 14:35
PG 16: ANGLE
CHNL# 90: CANGL BUS 996176 MACH '1 '
CHNL# 89: CANGL BUS 336170 MACH '1 '
CHNL# 88: CANGL BUS 336169 MACH '1 '
CHNL# 87: CANGL BUS 996168 MACH '1 '
CHNL# 86: CANGL BUS 996167 MACH '1 '
CHNL# 85: CANGL BUS 336153 MACH '1 '
250.00
0.0
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

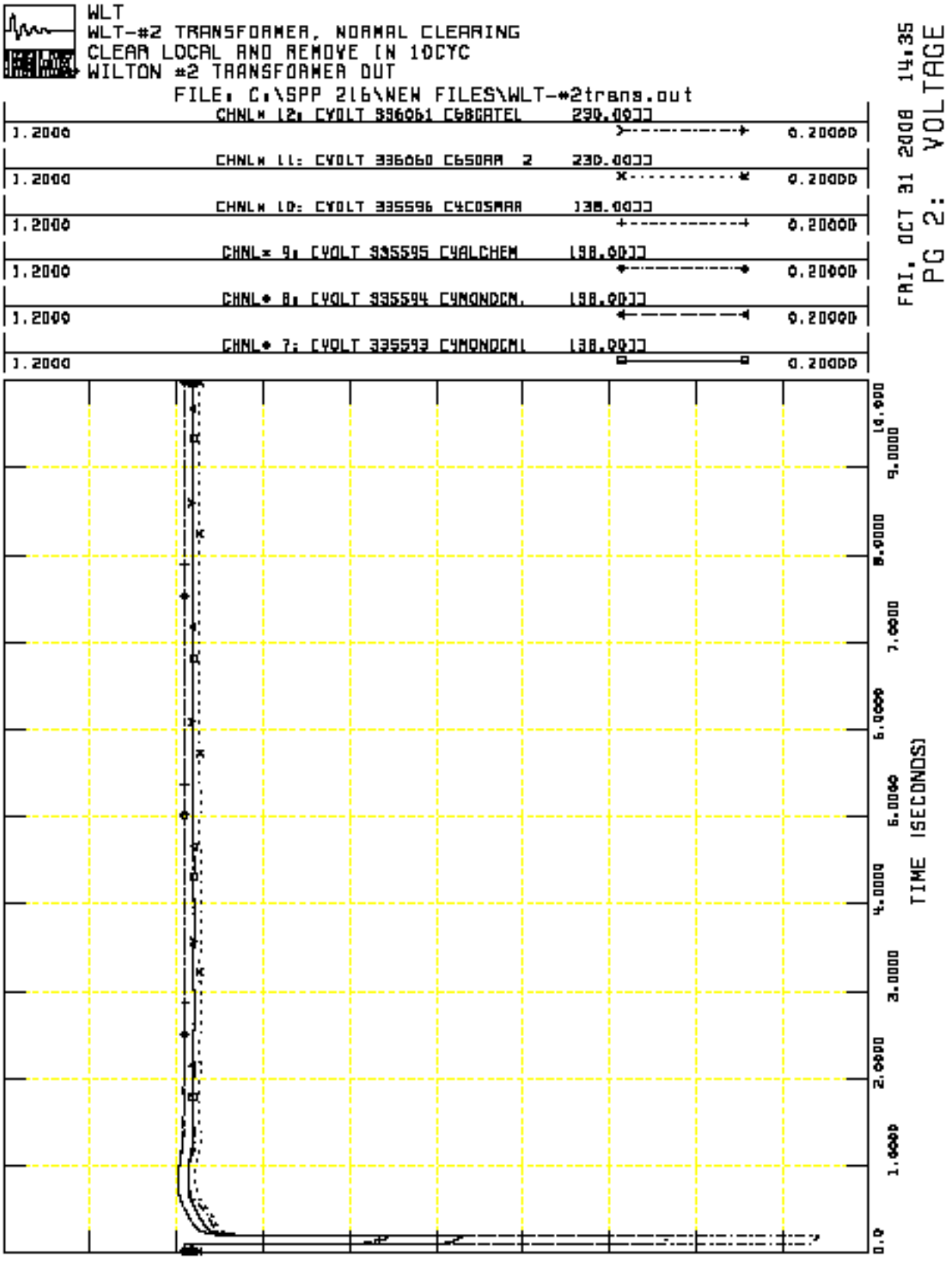

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
FRI, OCT 31 2008 14:35
PG 17: ANGLE
CHNL# 96: CANGL BUS 336222 MACH '1 '
CHNL# 95: CANGL BUS 336221 MACH '1 '
CHNL# 94: CANGL BUS 336191 MACH '1 '
CHNL# 93: CANGL BUS 336179 MACH '1 '
CHNL# 92: CANGL BUS 336178 MACH '1 '
CHNL# 91: CANGL BUS 336177 MACH '1 '
250.00
0.0
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

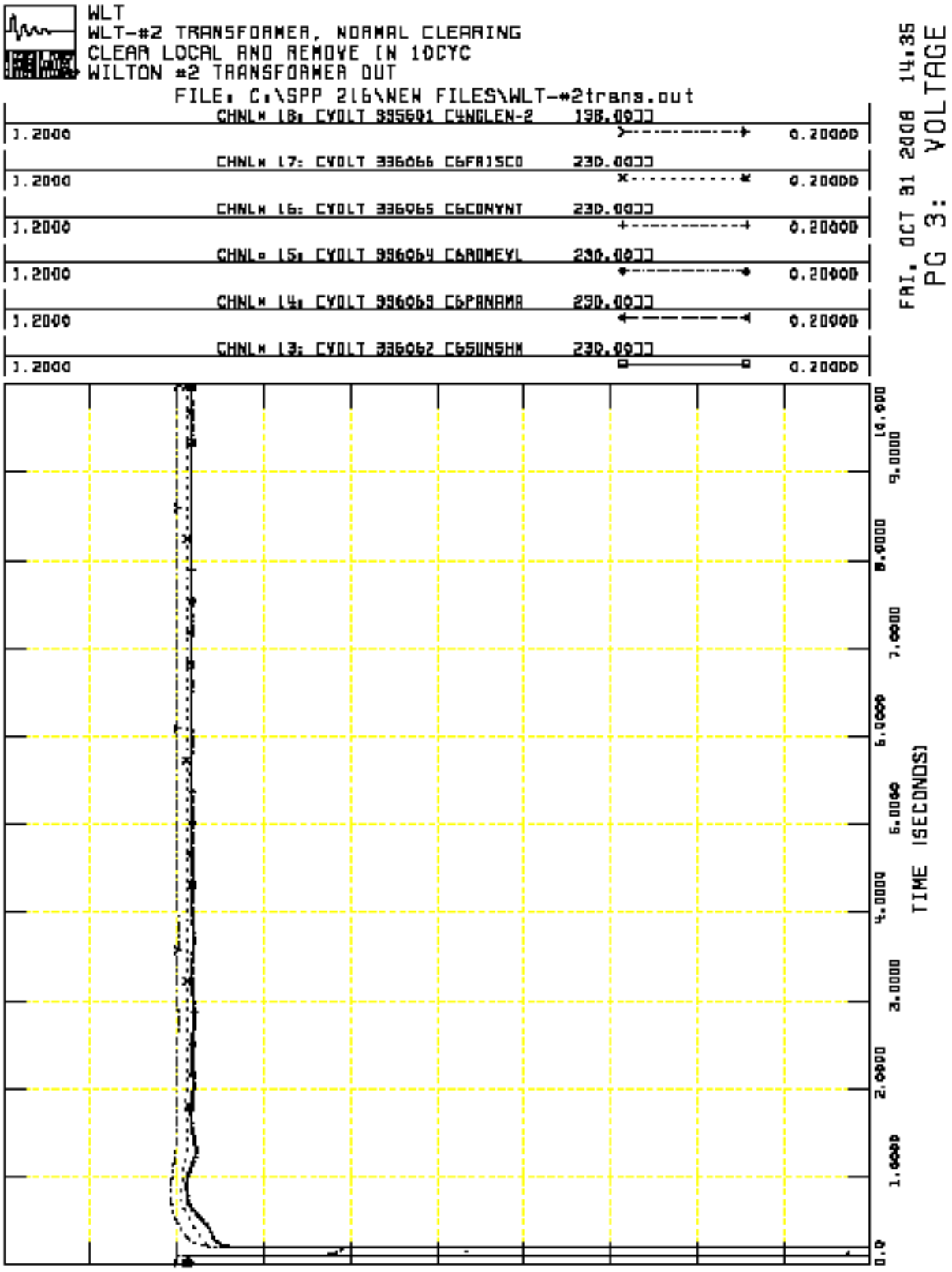

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
CHNL# 102: CANGL BUS 336283 MACH '1 '
250.00
0.0
CHNL# 101: CANGL BUS 336282 MACH '1 '
250.00
0.0
CHNL# 100: CANGL BUS 336281 MACH '1 '
250.00
0.0
CHNL# 99: CANGL BUS 336255 MACH '8V'
250.00
0.0
CHNL# 98: CANGL BUS 336252 MACH '1 '
250.00
0.0
CHNL# 97: CANGL BUS 336251 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 18: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

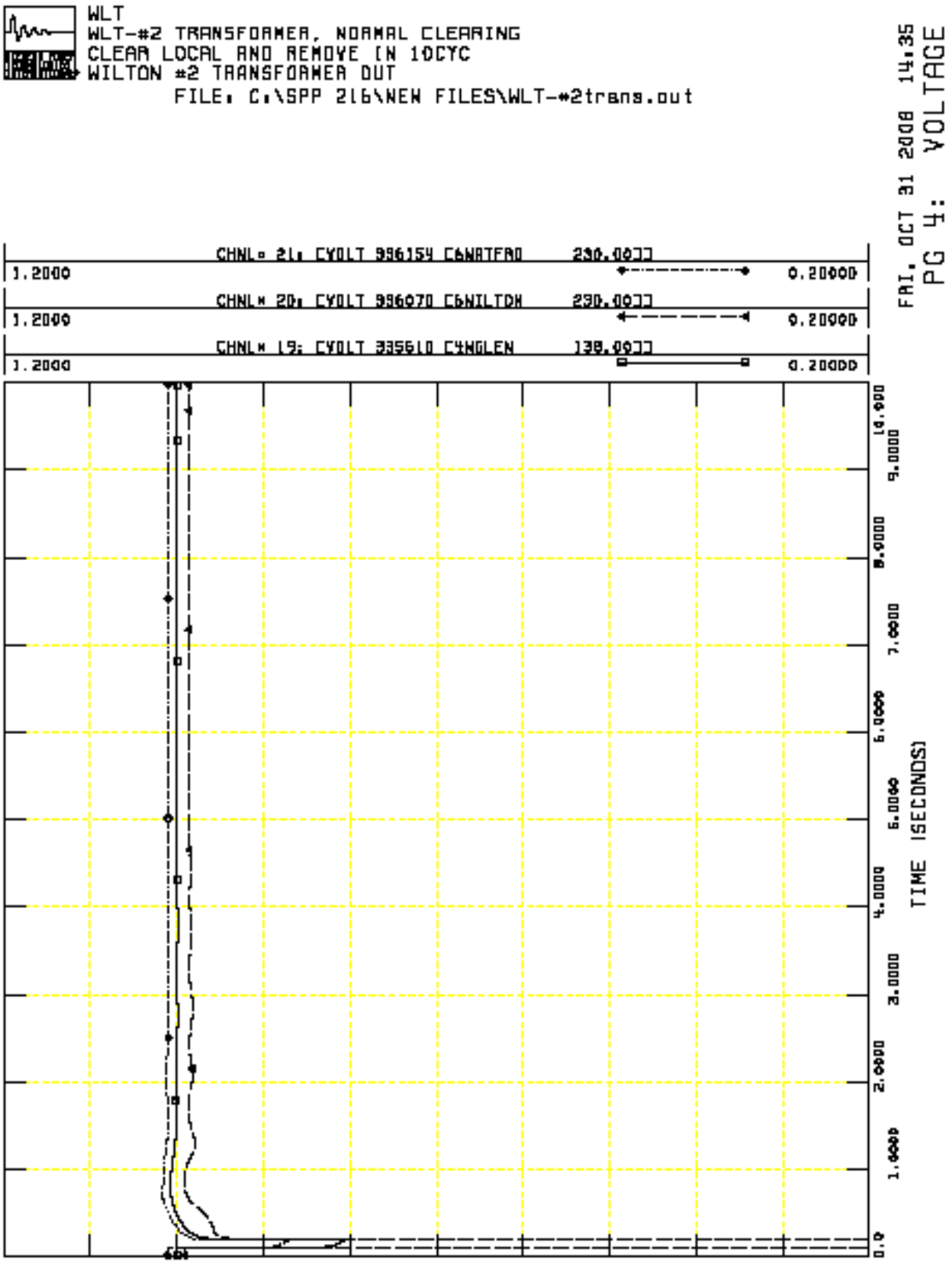

WLT
WLT-#1 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #1 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#1trans.out
FRI, OCT 31 2008 14:35
PG 19: ANGLE
CHNL# 107: CANGL BUS 336464 MACH '1 '
CHNL# 106: CANGL BUS 336460 MACH '1 '
CHNL# 105: CANGL BUS 336446 MACH '1 '
CHNL# 104: CANGL BUS 336414 MACH '1 '
CHNL# 103: CANGL BUS 336413 MACH '1 '
250.00
0.0
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

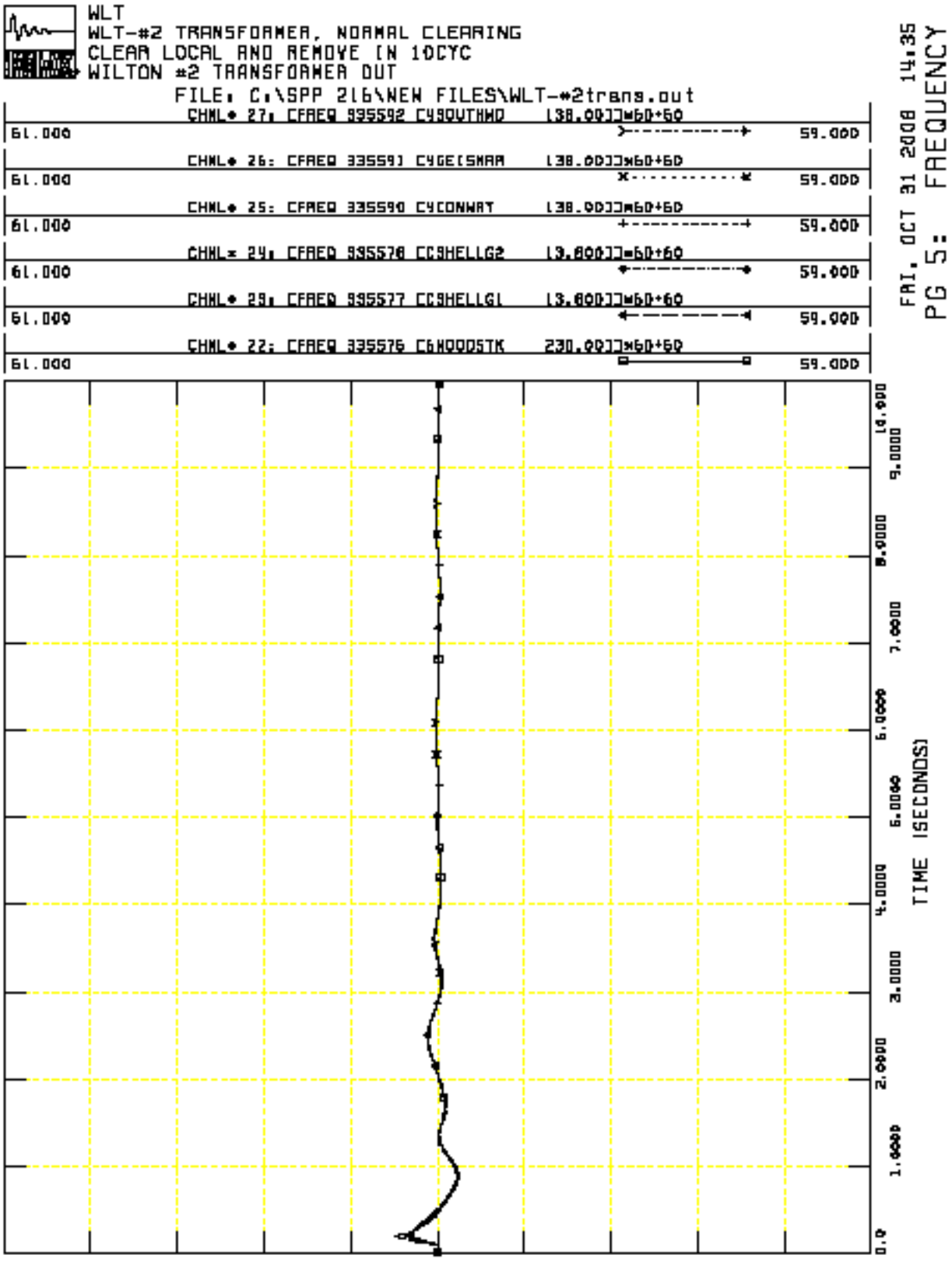
FAULT REFERENCE NO. 4
FAULT-GENR2- LOCATION WILTON GENR2

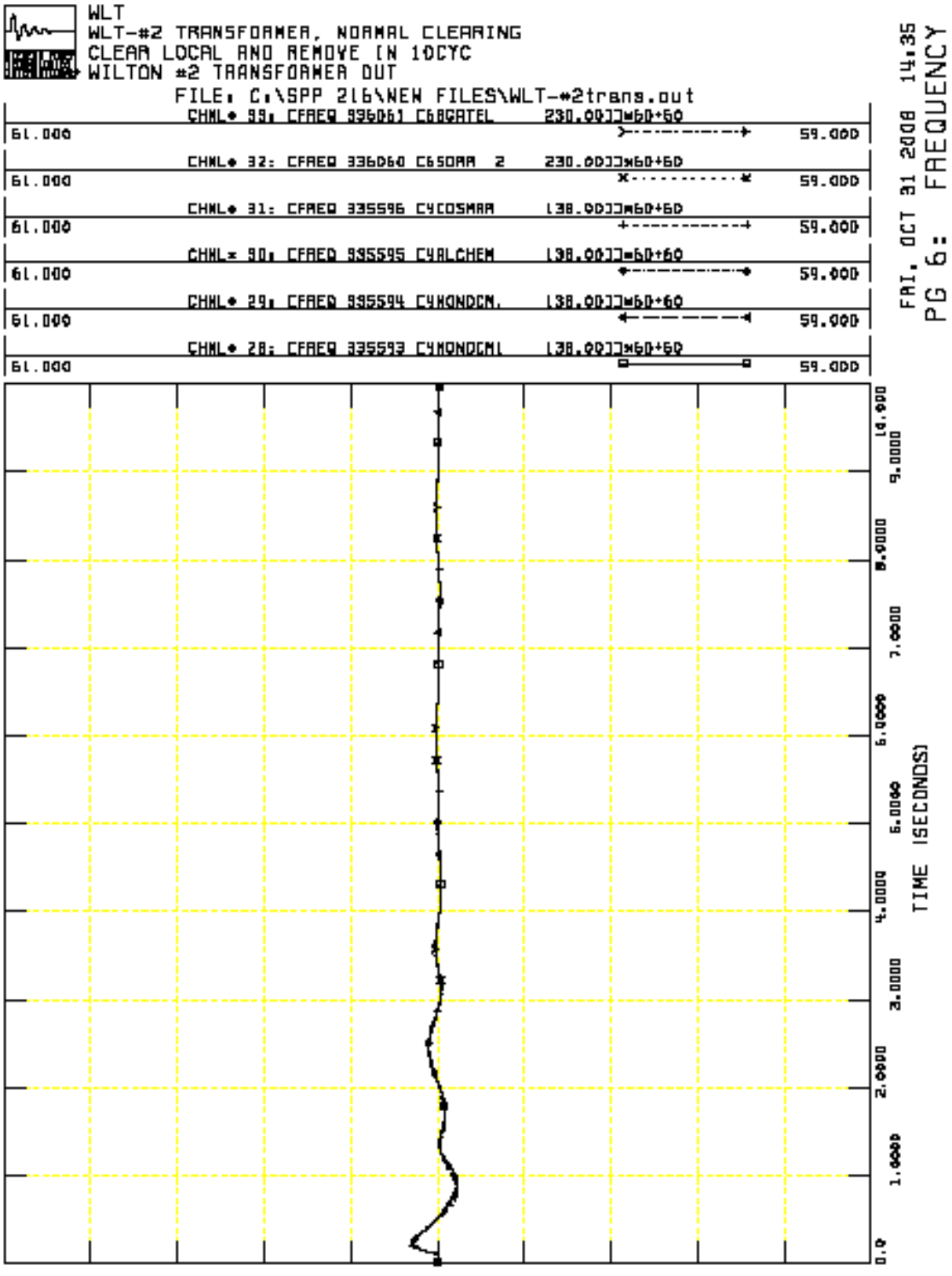

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 6: CVOLT 335592 CYSOUTHWD [98.000]
1.2000
0.20000
CHNL# 5: CVOLT 33559] CYGE[SMAR [38.000]
1.2000
0.20000
CHNL# 4: CVOLT 335590 CYCONWAT [38.000]
1.2000
0.20000
CHNL# 3: CVOLT 335578 CCSHELLG2 [9.6000]
1.2000
0.20000
CHNL# 2: CVOLT 335577 CCSHELLG1 [9.6000]
1.2000
0.20000
CHNL# 1: CVOLT 335576 C6W0005TK 230.000]
1.2000
0.20000
FRI, OCT 31 2008 14:35
PG 1: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

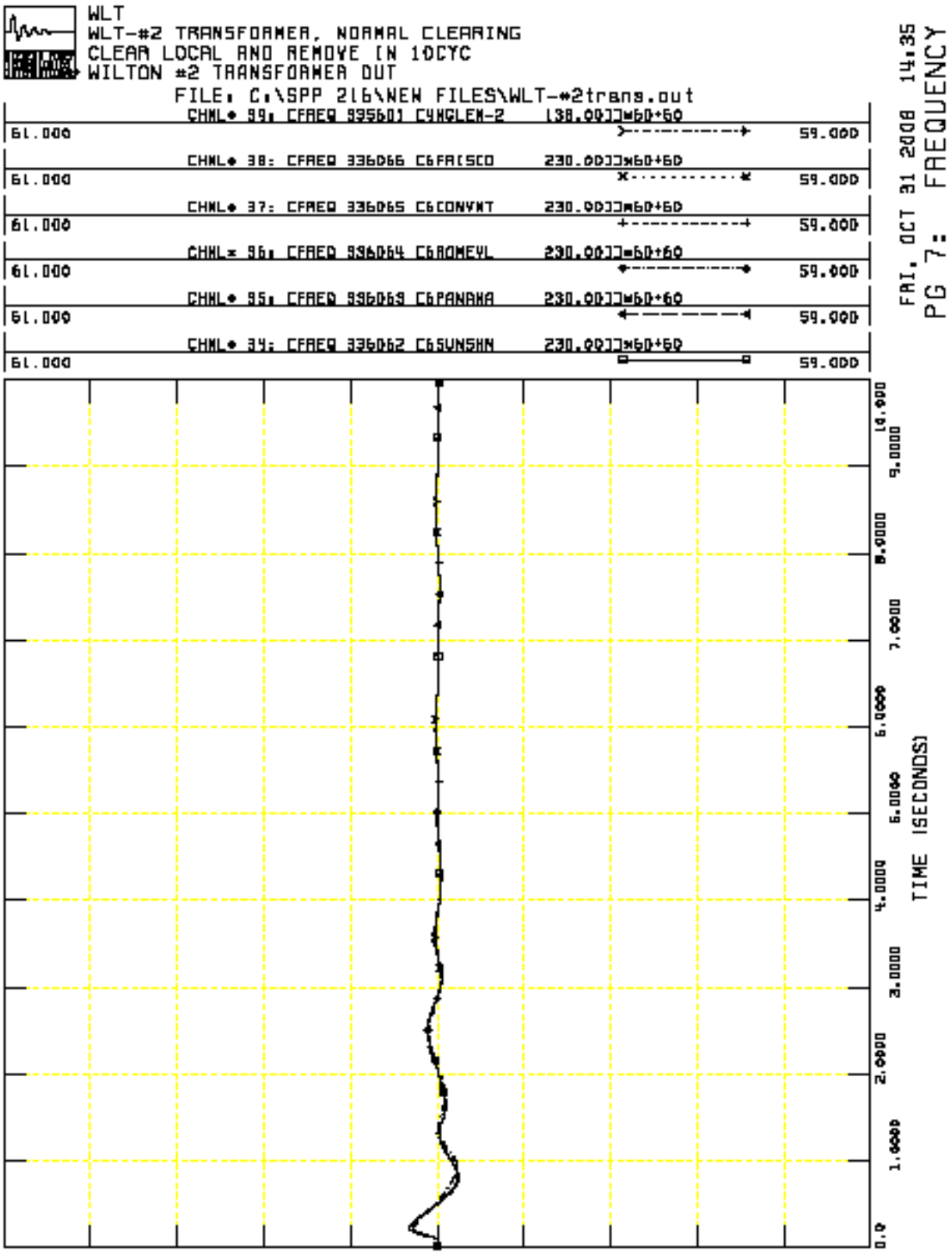

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 12: CYOLT 336061 C6BGATEL 230.0000
1.2000
0.20000
CHNL# 11: CYOLT 336060 C6SOAA 2 230.0000
1.2000
0.20000
CHNL# 10: CYOLT 335596 C4COSMAA 138.0000
1.2000
0.20000
CHNL# 9: CYOLT 335595 C4ALCHEM 138.0000
1.2000
0.20000
CHNL# 8: CYOLT 335594 C4MONDCM. 138.0000
1.2000
0.20000
CHNL# 7: CYOLT 335593 C4MONDCML 138.0000
1.2000
0.20000
FRI, OCT 31 2008 14:35
PG 2: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

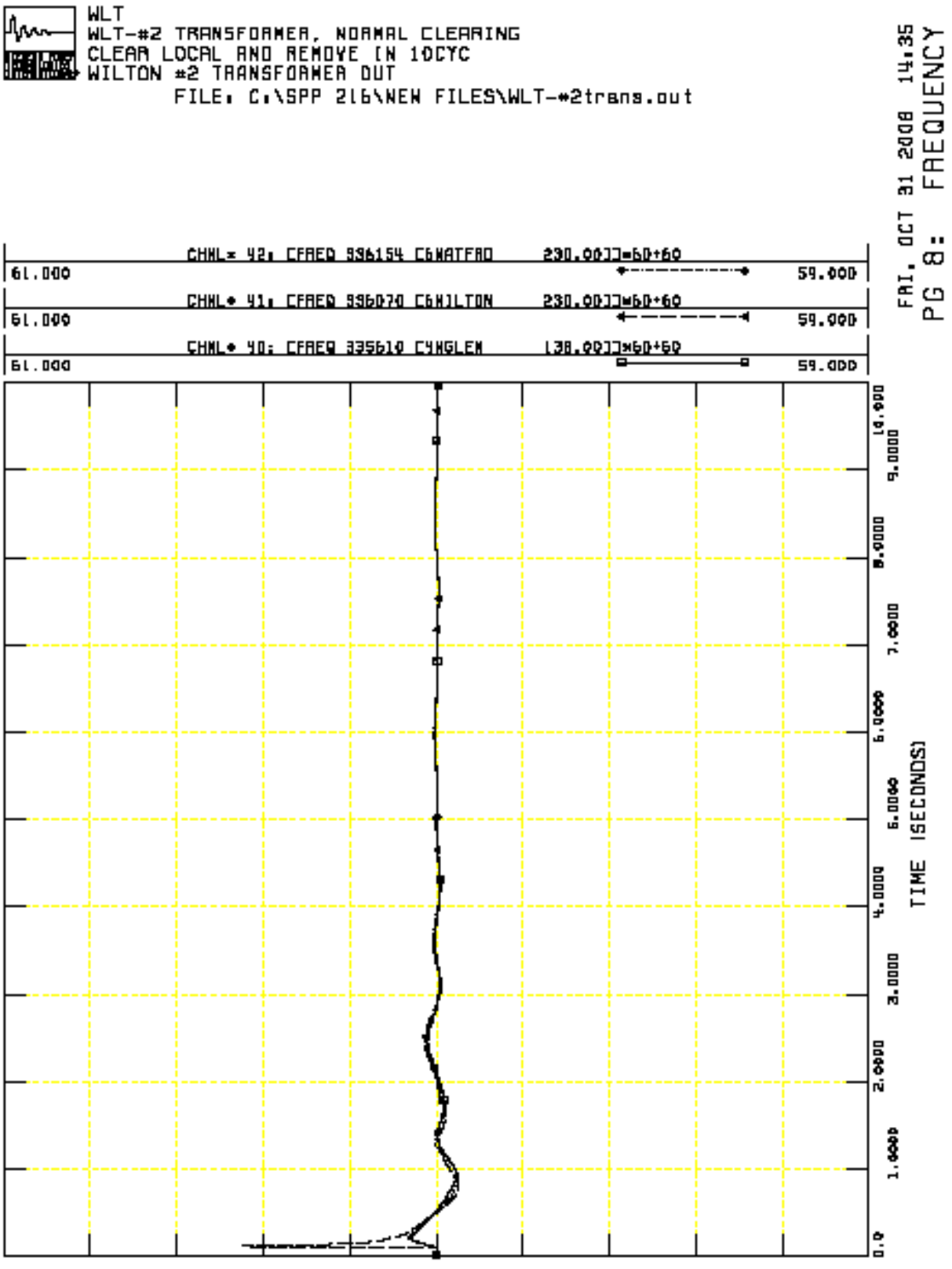

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 18: CYOLT 995691 C4NGLEN-2 198.0000
CHNL# 17: CYOLT 336066 C6FAISCO 230.0000
CHNL# 16: CYOLT 336065 C6CONYNT 230.0000
CHNL# 15: CYOLT 996064 C6ROMEYL 230.0000
CHNL# 14: CYOLT 996063 C6PANAMA 230.0000
CHNL# 13: CYOLT 336062 C6SUNSHN 230.0000
1.2000
0.20000
FRI, OCT 31 2008 14:35
PG 3: VOLTAGE
TIME (SECONDS)

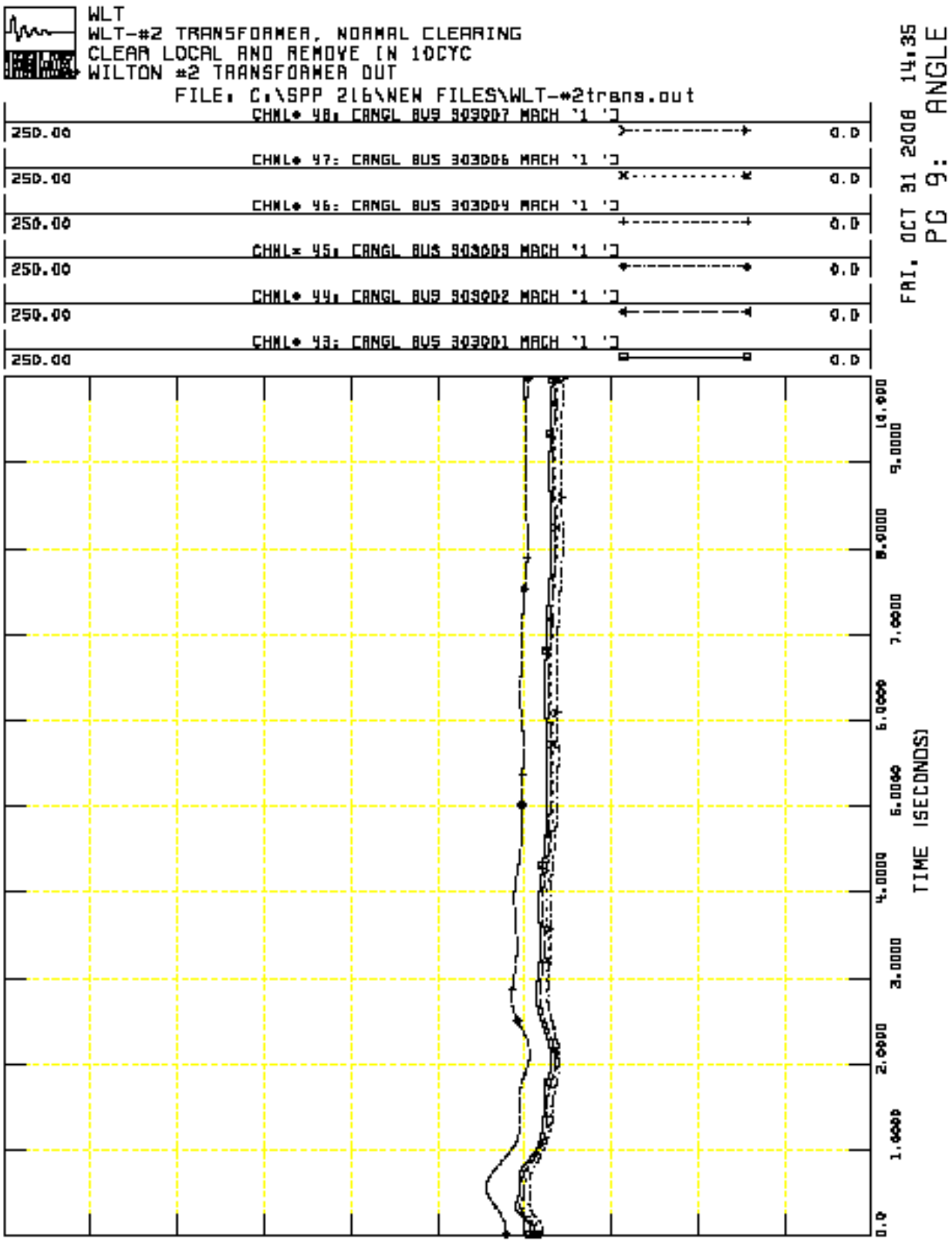

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
FRI, OCT 31 2008 14:35
PG 4: VOLTAGE
CHNL: 21: CYOLT 996154 C6WATFRD 230.000
1.2000
0.20000
CHNL: 20: CYOLT 996070 C6WILTON 230.000
1.2000
0.20000
CHNL: 19: CYOLT 335610 C4WGLEN 138.000
1.2000
0.20000
14.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

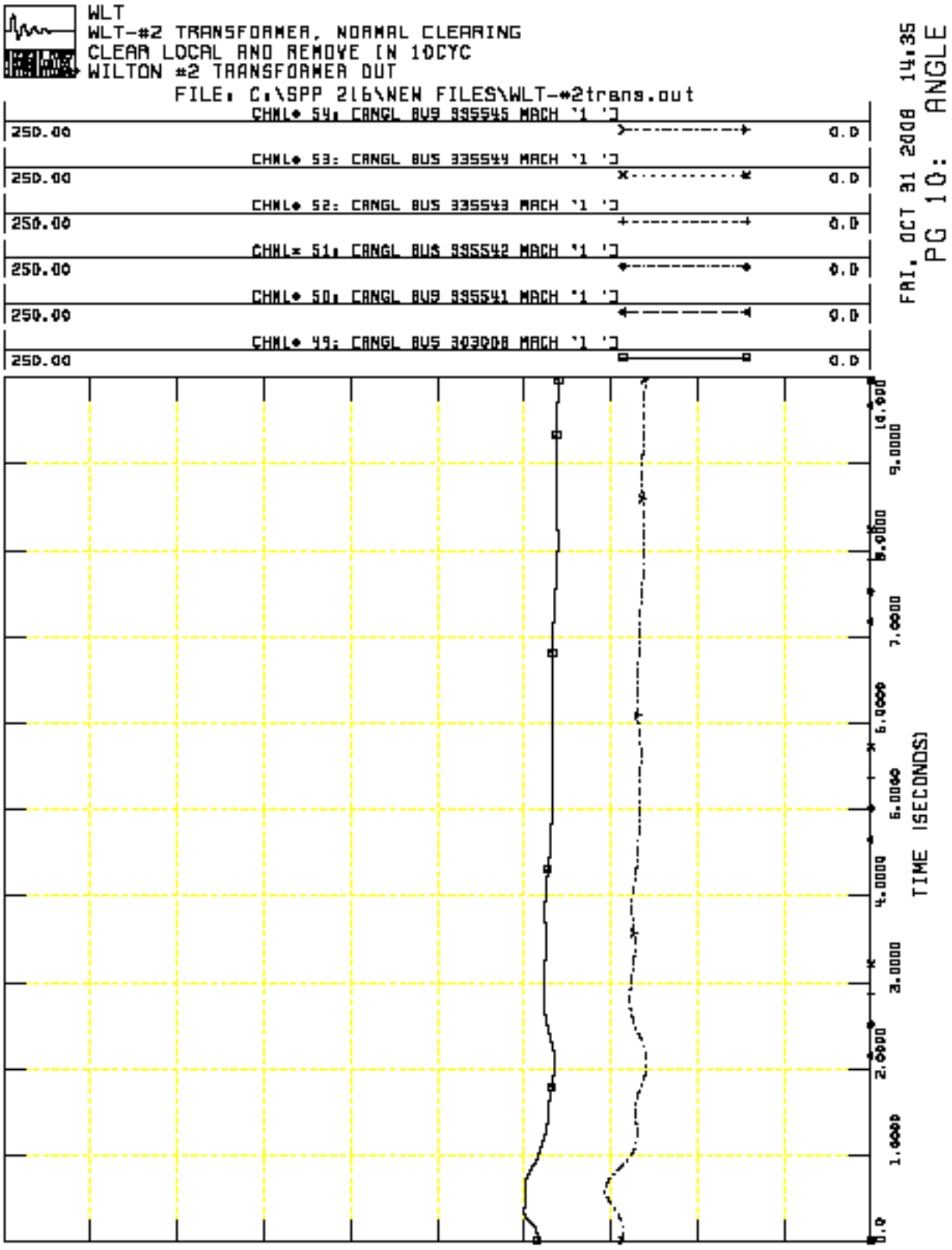

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 27: CFREQ 935592 C4SOUTHWD 138.000]*60+60
61.000
59.000
CHNL# 26: CFREQ 335591 C4GE(SMAR 138.000]*60+60
61.000
59.000
CHNL# 25: CFREQ 335590 C4CONWAY 138.000]*60+60
61.000
59.000
CHNL* 24: CFREQ 335578 CC3HELLG2 13.8000]*60+60
61.000
59.000
CHNL* 23: CFREQ 335577 CC3HELLG1 13.8000]*60+60
61.000
59.000
CHNL* 22: CFREQ 335576 C6WOODSTK 230.000]*60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 5: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

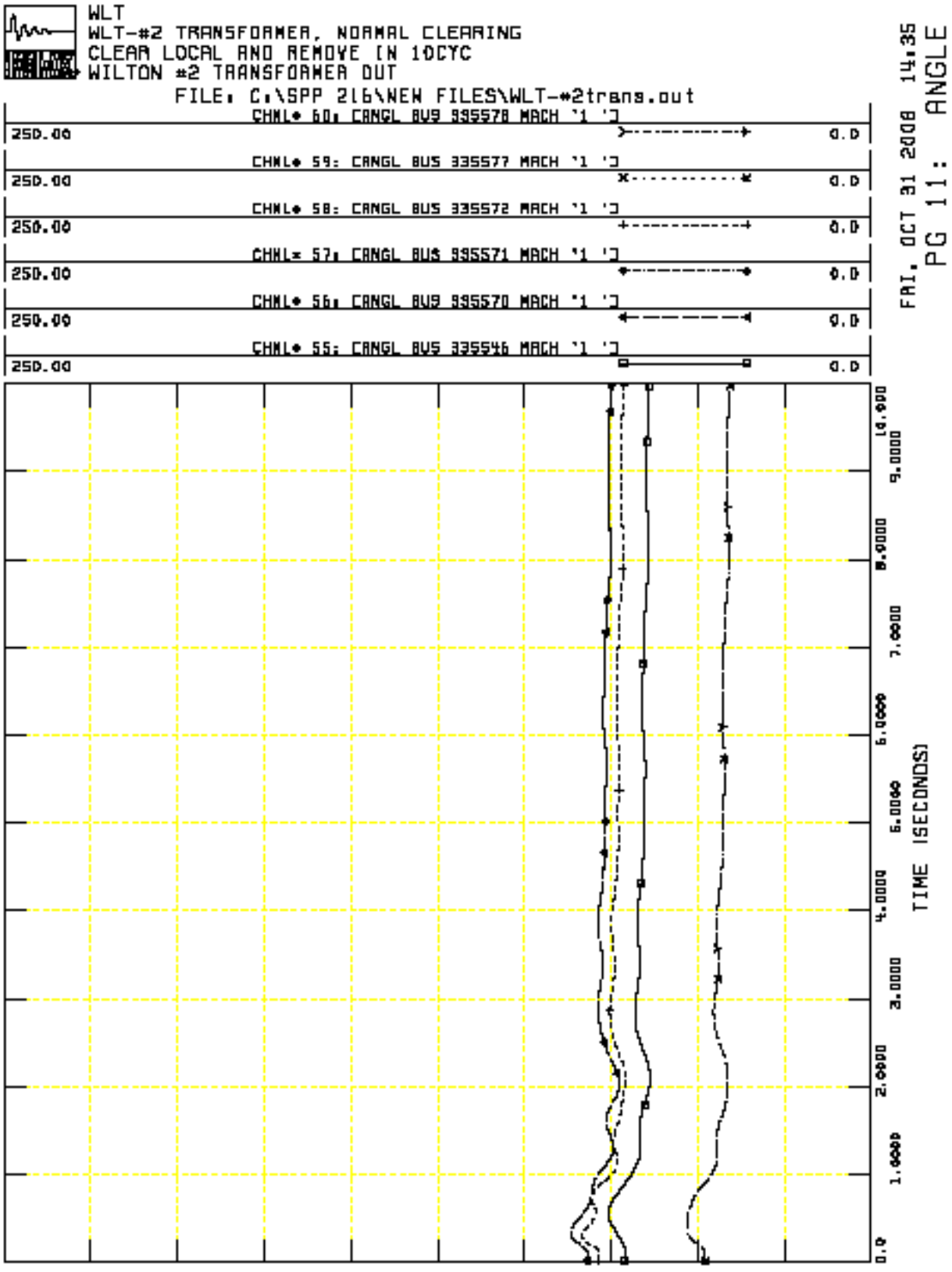

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 33: CFREQ 336061 C68GATEL 230.00]]#60+60
61.000
59.000
CHNL# 32: CFREQ 336060 C65DAA 2 230.00]]#60+60
61.000
59.000
CHNL# 31: CFREQ 335596 C4COSMAA 138.00]]#60+60
61.000
59.000
CHNL# 30: CFREQ 335595 C4ALCHEM 138.00]]#60+60
61.000
59.000
CHNL# 29: CFREQ 335594 C4MONDCM, 138.00]]#60+60
61.000
59.000
CHNL# 28: CFREQ 335593 C4MONDCM1 138.00]]#60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 6: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

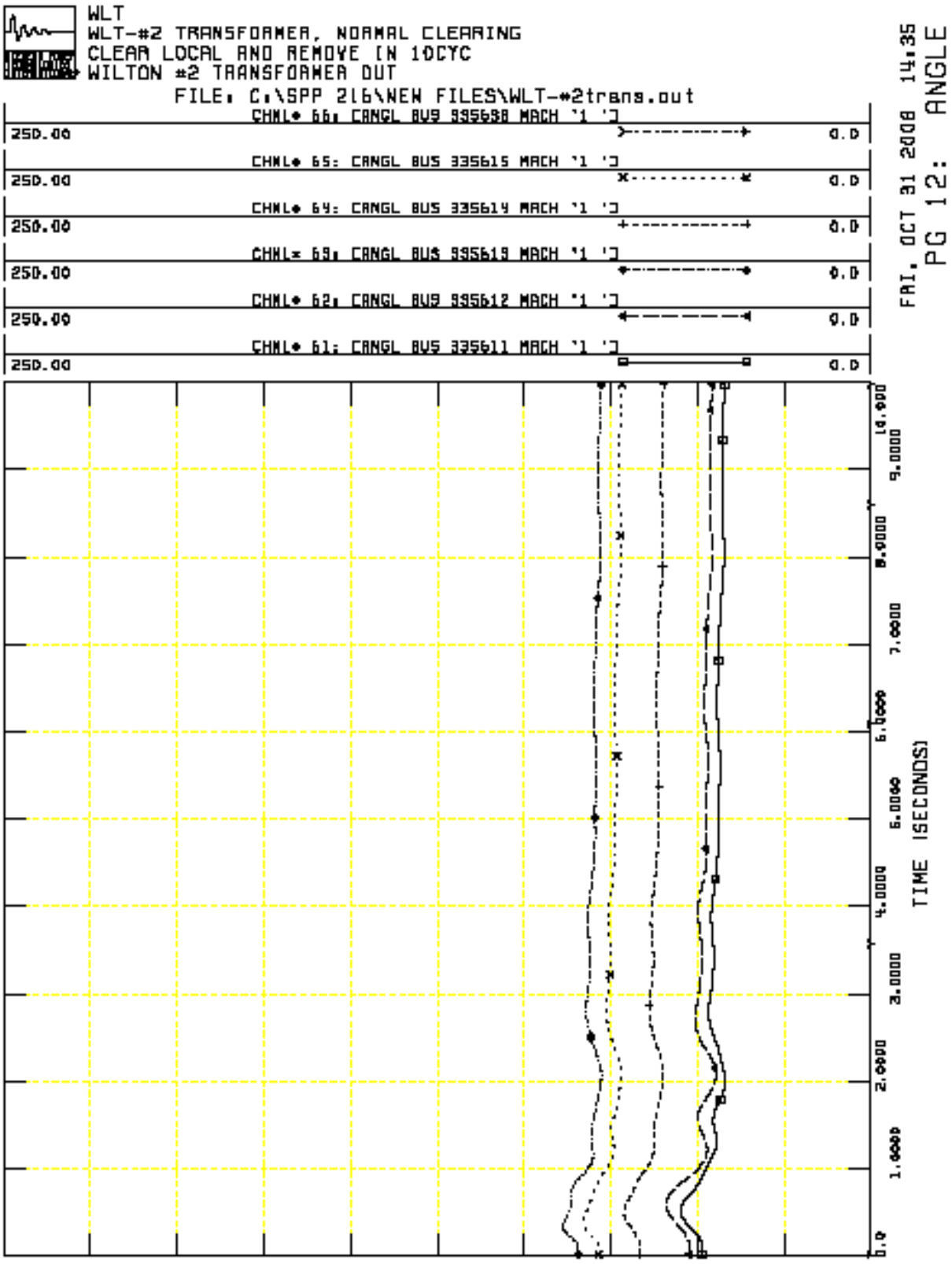

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 39: CFREQ 995601 C4MGLEN-2 138.000]#60+60
61.000
59.000
CHNL# 38: CFREQ 336066 C6FAIRCO 230.000]#60+60
61.000
59.000
CHNL# 37: CFREQ 336065 C6CONVNT 230.000]#60+60
61.000
59.000
CHNL# 36: CFREQ 996064 C6ROMEVL 230.000]#60+60
61.000
59.000
CHNL# 35: CFREQ 996069 C6PANAMA 230.000]#60+60
61.000
59.000
CHNL# 34: CFREQ 336062 C6SUNSHN 230.000]#60+60
61.000
59.000
FRI, OCT 31 2008 14:35
PG 7: FREQUENCY
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

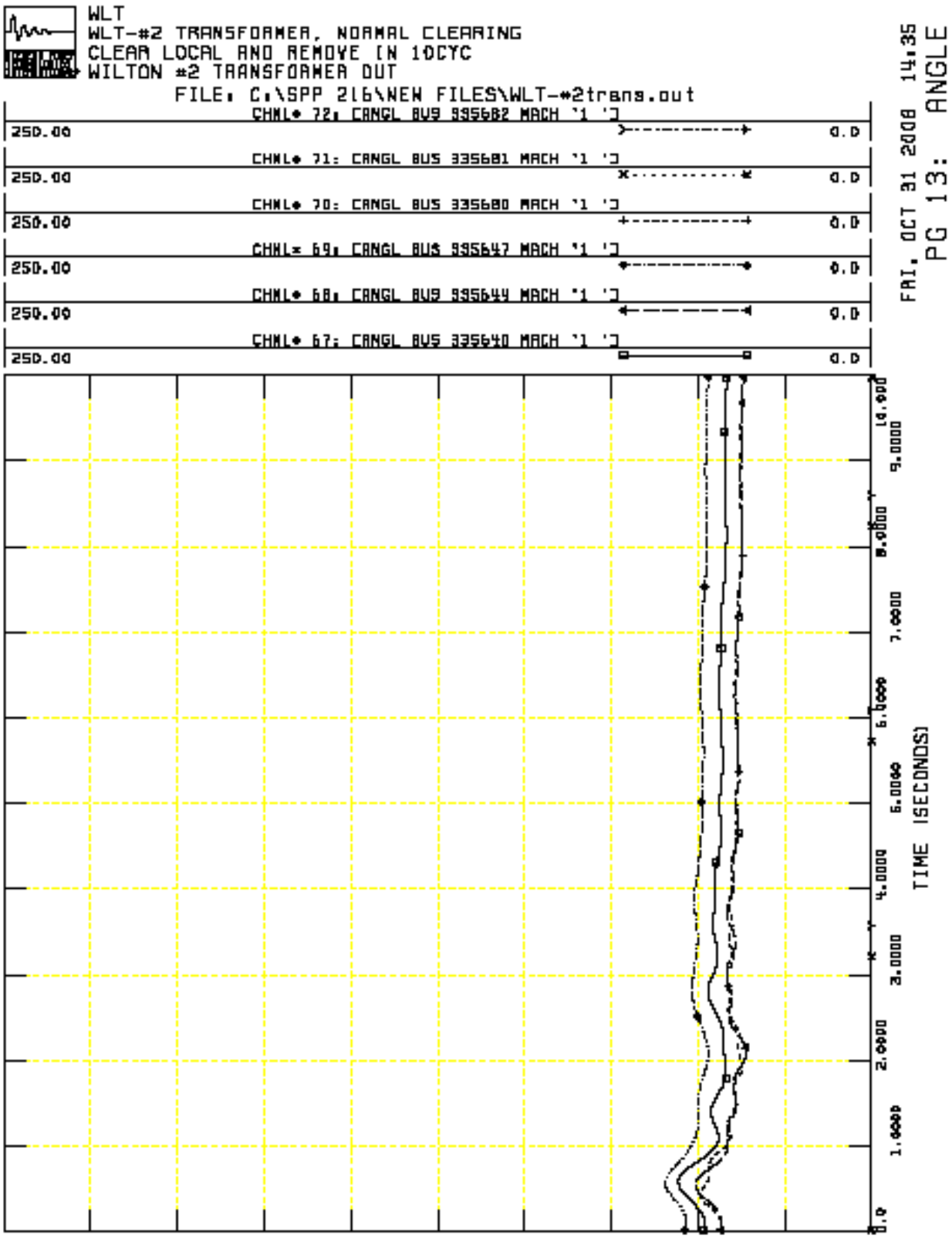

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
FRI, OCT 31 2008 14:35
PG 8: FREQUENCY
CHNL= 42: CFREQ 936154 C6WATFRD 230.0000=60+60
61.000
59.000
CHNL= 41: CFREQ 996070 C6WILTON 230.0000=60+60
61.000
59.000
CHNL= 40: CFREQ 335610 C4WGLEN 138.0000=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)

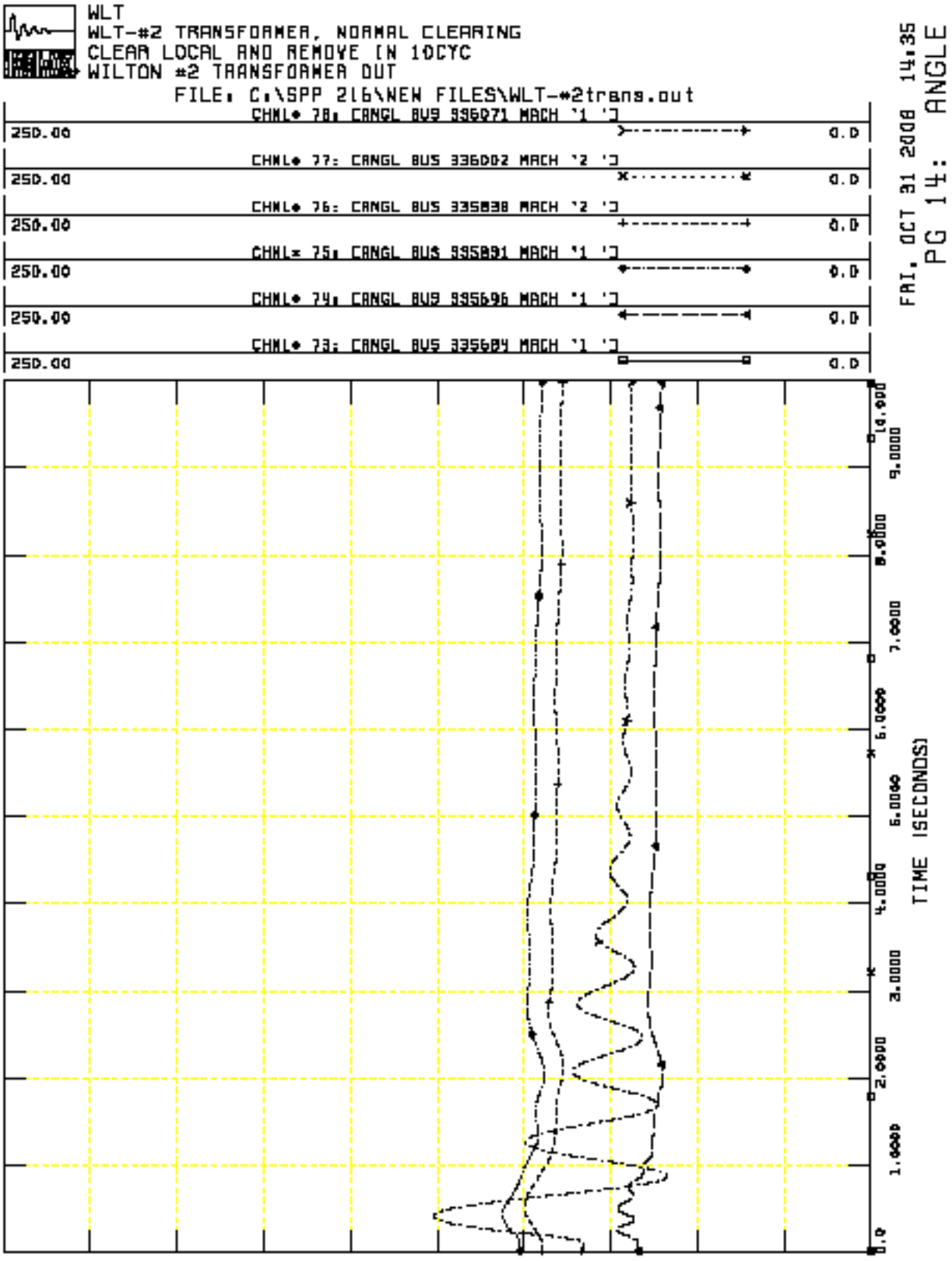

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 48: CANGL BUS 303007 MACH '1 '
CHNL# 47: CANGL BUS 303006 MACH '1 '
CHNL# 46: CANGL BUS 303004 MACH '1 '
CHNL# 45: CANGL BUS 303003 MACH '1 '
CHNL# 44: CANGL BUS 303002 MACH '1 '
CHNL# 43: CANGL BUS 303001 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 9: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

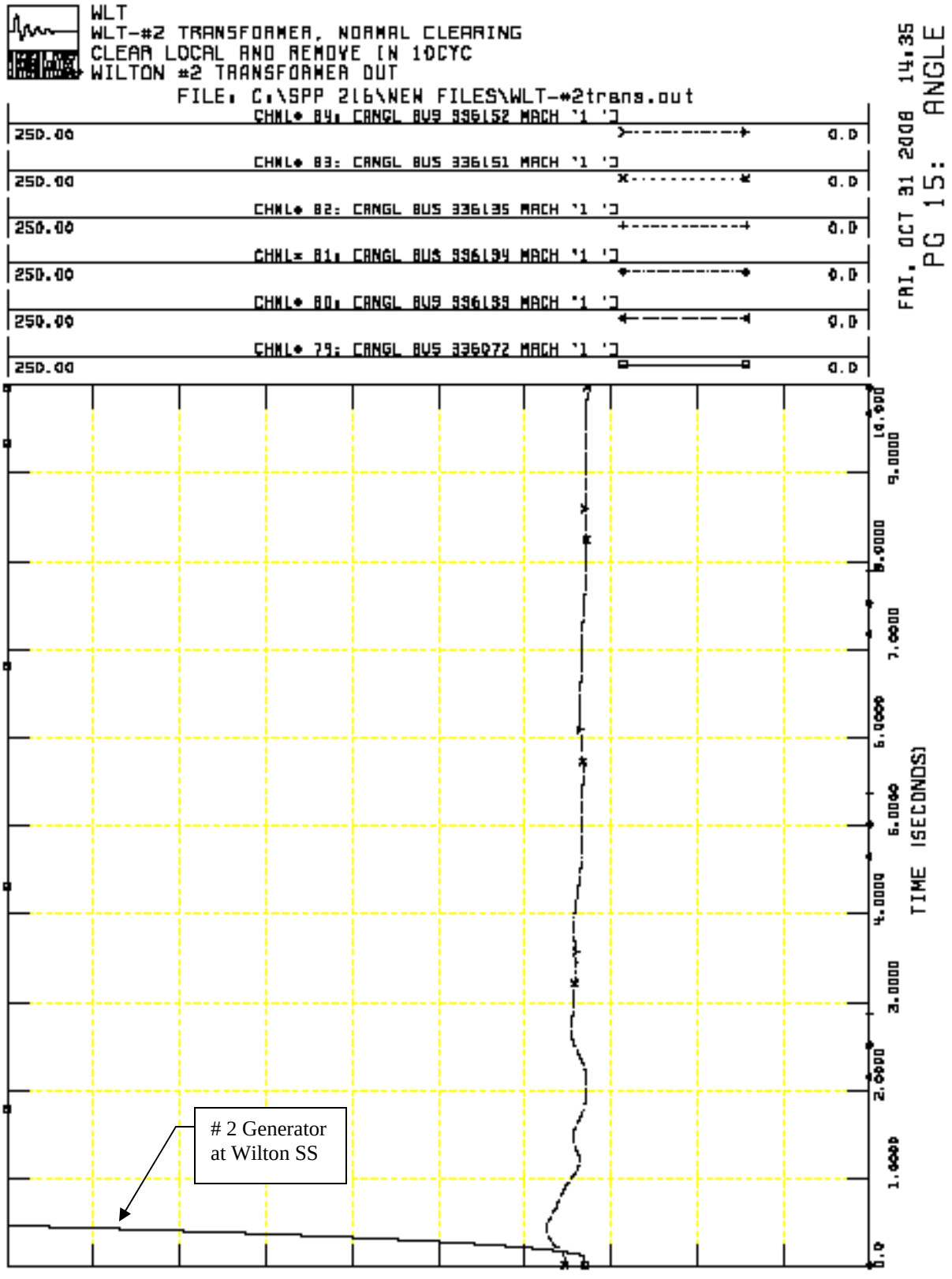

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 54: CANGL BUS 335545 MACH '1 '
CHNL# 53: CANGL BUS 335544 MACH '1 '
CHNL# 52: CANGL BUS 335543 MACH '1 '
CHNL# 51: CANGL BUS 335542 MACH '1 '
CHNL# 50: CANGL BUS 335541 MACH '1 '
CHNL# 49: CANGL BUS 303008 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
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

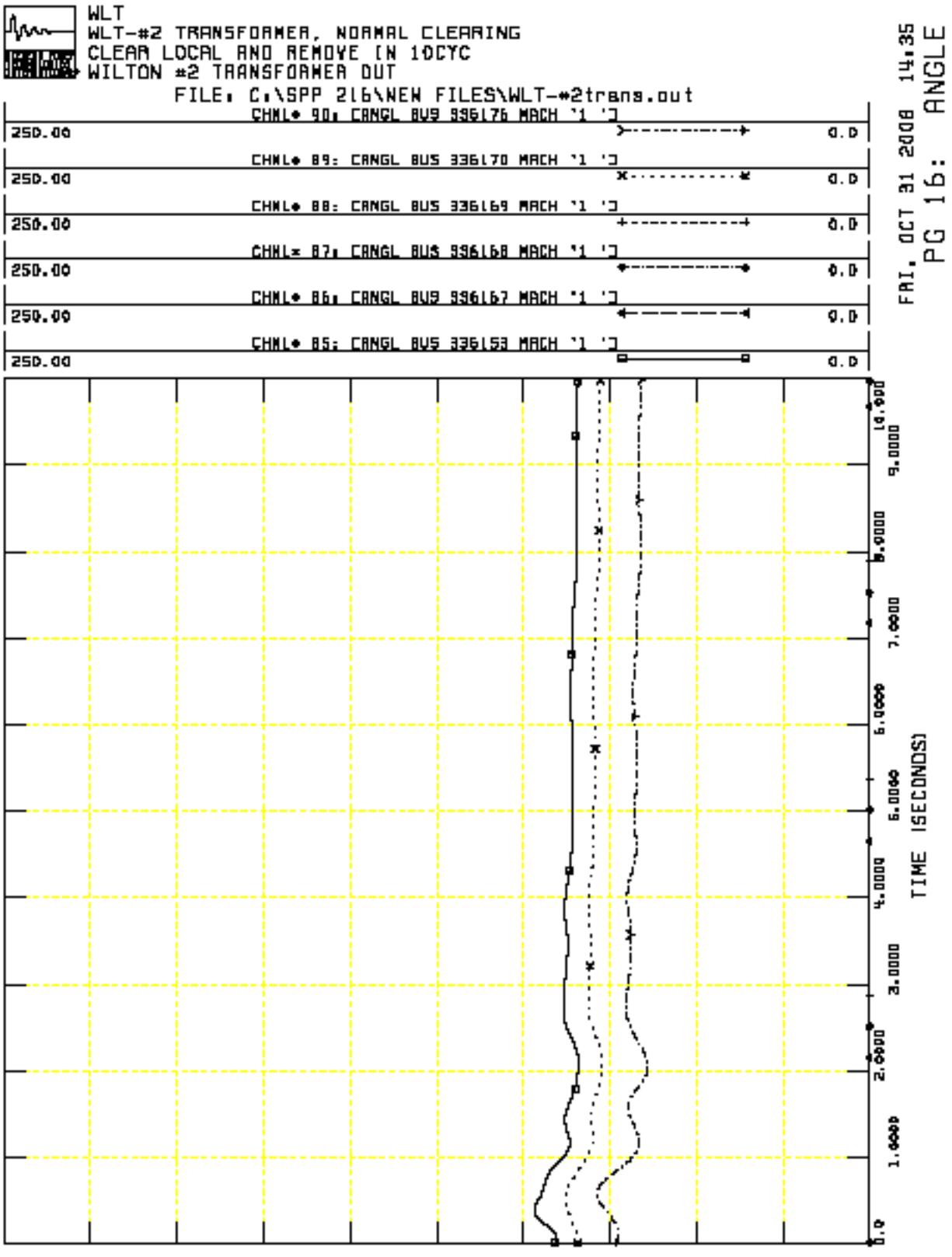

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 60: CANGL BUS 335578 MACH '1 '
CHNL# 59: CANGL BUS 335577 MACH '1 '
CHNL# 58: CANGL BUS 335572 MACH '1 '
CHNL# 57: CANGL BUS 335571 MACH '1 '
CHNL# 56: CANGL BUS 335570 MACH '1 '
CHNL# 55: CANGL BUS 335546 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 11: 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

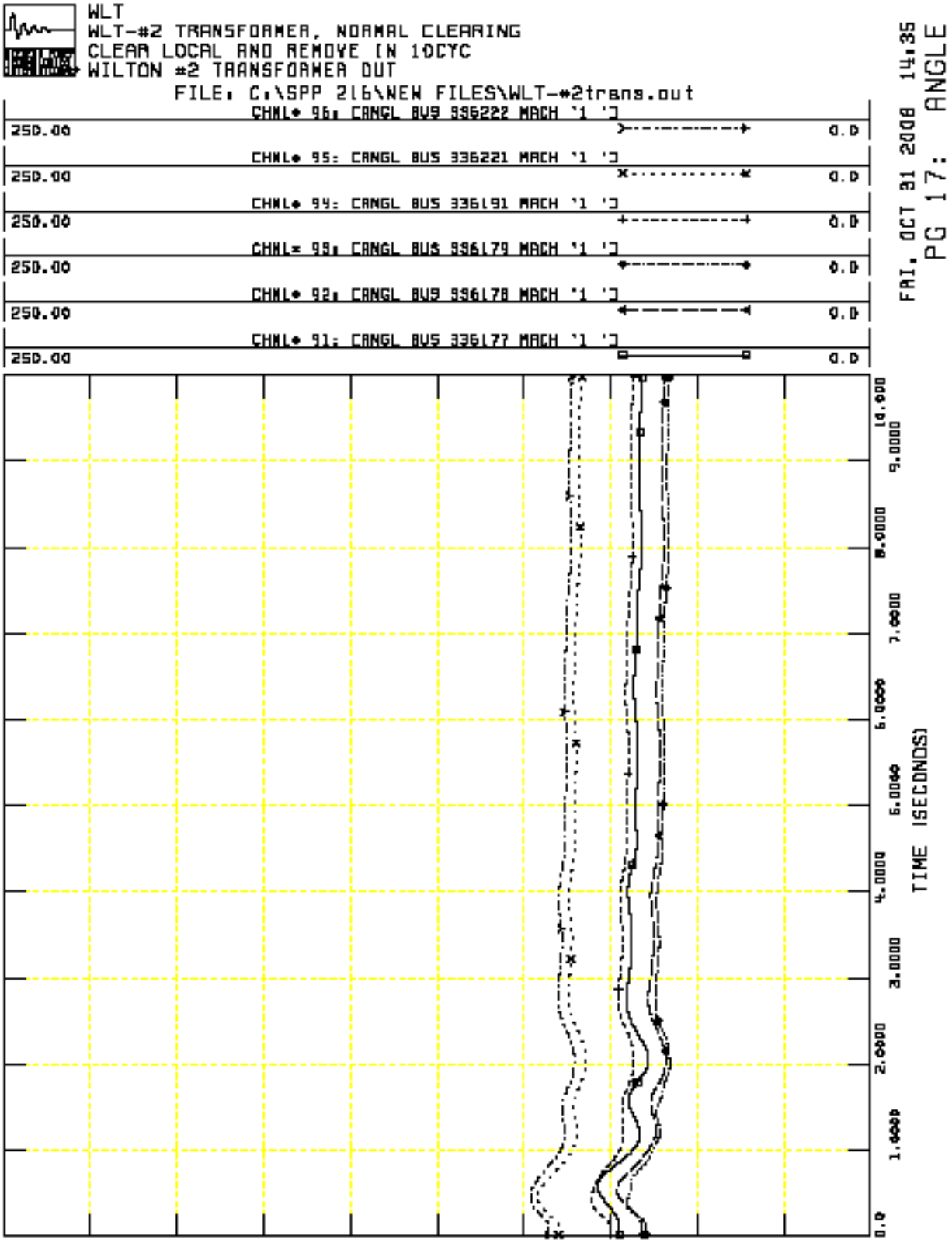

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 66: CANGL BUS 335638 MACH '1 '
CHNL# 65: CANGL BUS 335615 MACH '1 '
CHNL# 64: CANGL BUS 335614 MACH '1 '
CHNL# 63: CANGL BUS 335613 MACH '1 '
CHNL# 62: CANGL BUS 335612 MACH '1 '
CHNL# 61: CANGL BUS 335611 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 12: ANGLE
TIME (SECONDS)

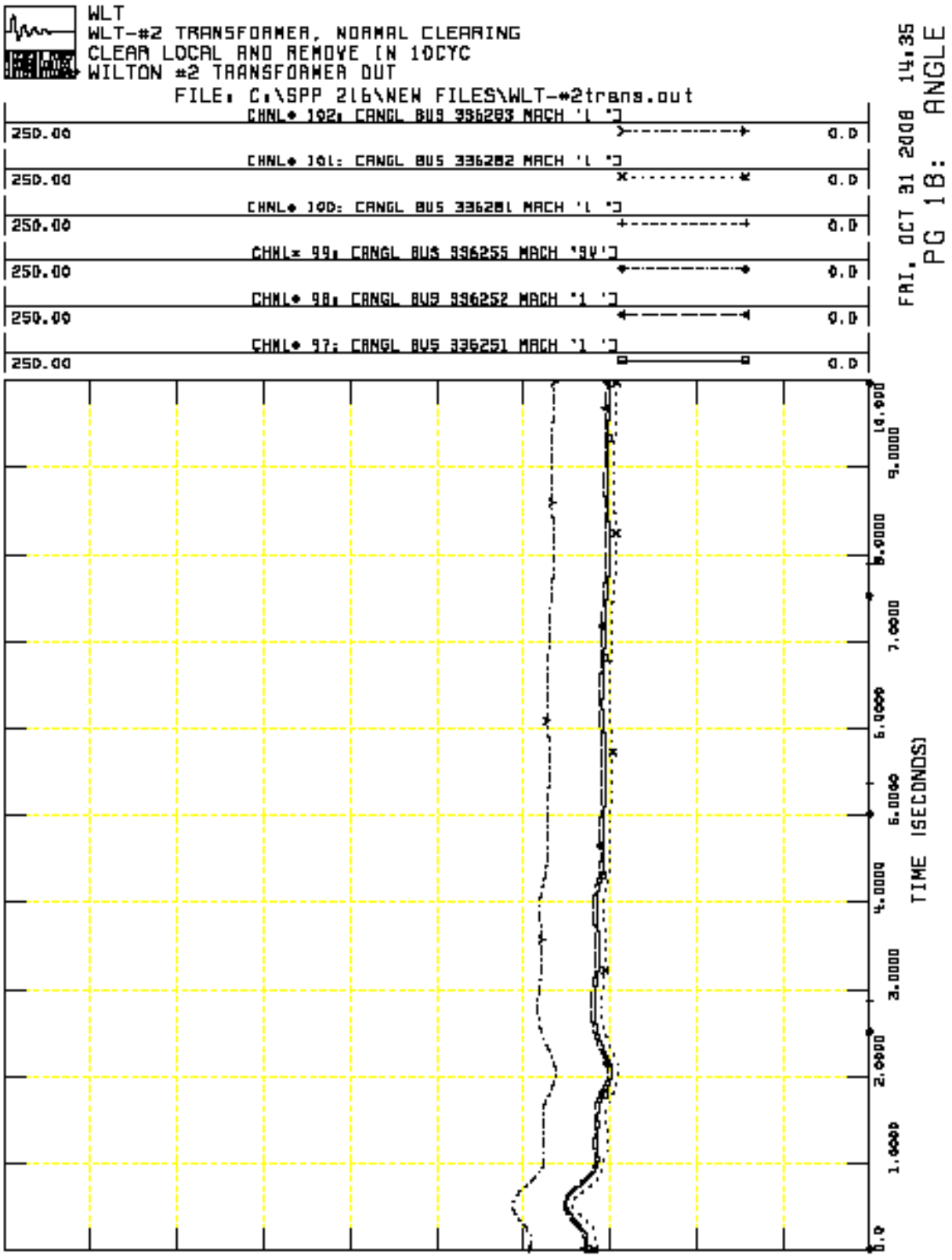

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
FRI, OCT 31 2008 14:35
PG 13: ANGLE
CHNL# 72: CANGL BUS 335682 MACH '1 '
CHNL# 71: CANGL BUS 335681 MACH '1 '
CHNL# 70: CANGL BUS 335680 MACH '1 '
CHNL# 69: CANGL BUS 335647 MACH '1 '
CHNL# 68: CANGL BUS 335644 MACH '1 '
CHNL# 67: CANGL BUS 335640 MACH '1 '
250.00
0.0
0.0000
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

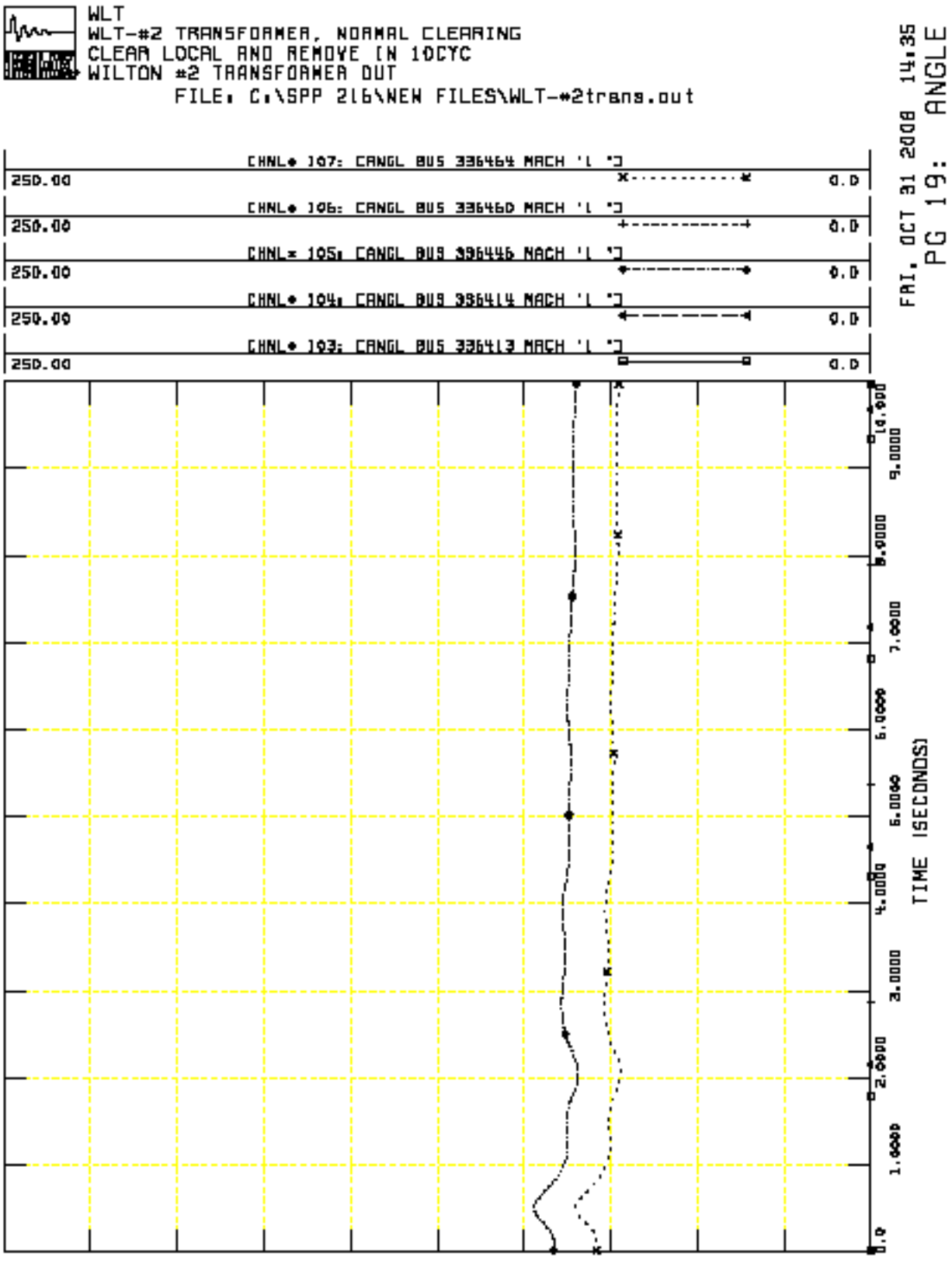

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 78: CANGL BUS 336071 MACH '1 '
250.00
0.0
CHNL# 77: CANGL BUS 336002 MACH '2 '
250.00
0.0
CHNL# 76: CANGL BUS 335838 MACH '2 '
250.00
0.0
CHNL# 75: CANGL BUS 335891 MACH '1 '
250.00
0.0
CHNL# 74: CANGL BUS 335696 MACH '1 '
250.00
0.0
CHNL# 73: CANGL BUS 335604 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 14: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)


WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 84: CANGL BUS 336152 MACH '1 '
CHNL# 83: CANGL BUS 336151 MACH '1 '
CHNL# 82: CANGL BUS 336135 MACH '1 '
CHNL# 81: CANGL BUS 336134 MACH '1 '
CHNL# 80: CANGL BUS 336139 MACH '1 '
CHNL# 79: CANGL BUS 336072 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 15: ANGLE
2 Generator at Wilton SS
TIME (SECONDS)


WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 90: CANGL BUS 996176 MACH '1 '
250.00
0.0
CHNL# 89: CANGL BUS 336170 MACH '1 '
250.00
0.0
CHNL# 88: CANGL BUS 336169 MACH '1 '
250.00
0.0
CHNL# 87: CANGL BUS 996168 MACH '1 '
250.00
0.0
CHNL# 86: CANGL BUS 996167 MACH '1 '
250.00
0.0
CHNL# 85: CANGL BUS 336153 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 16: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

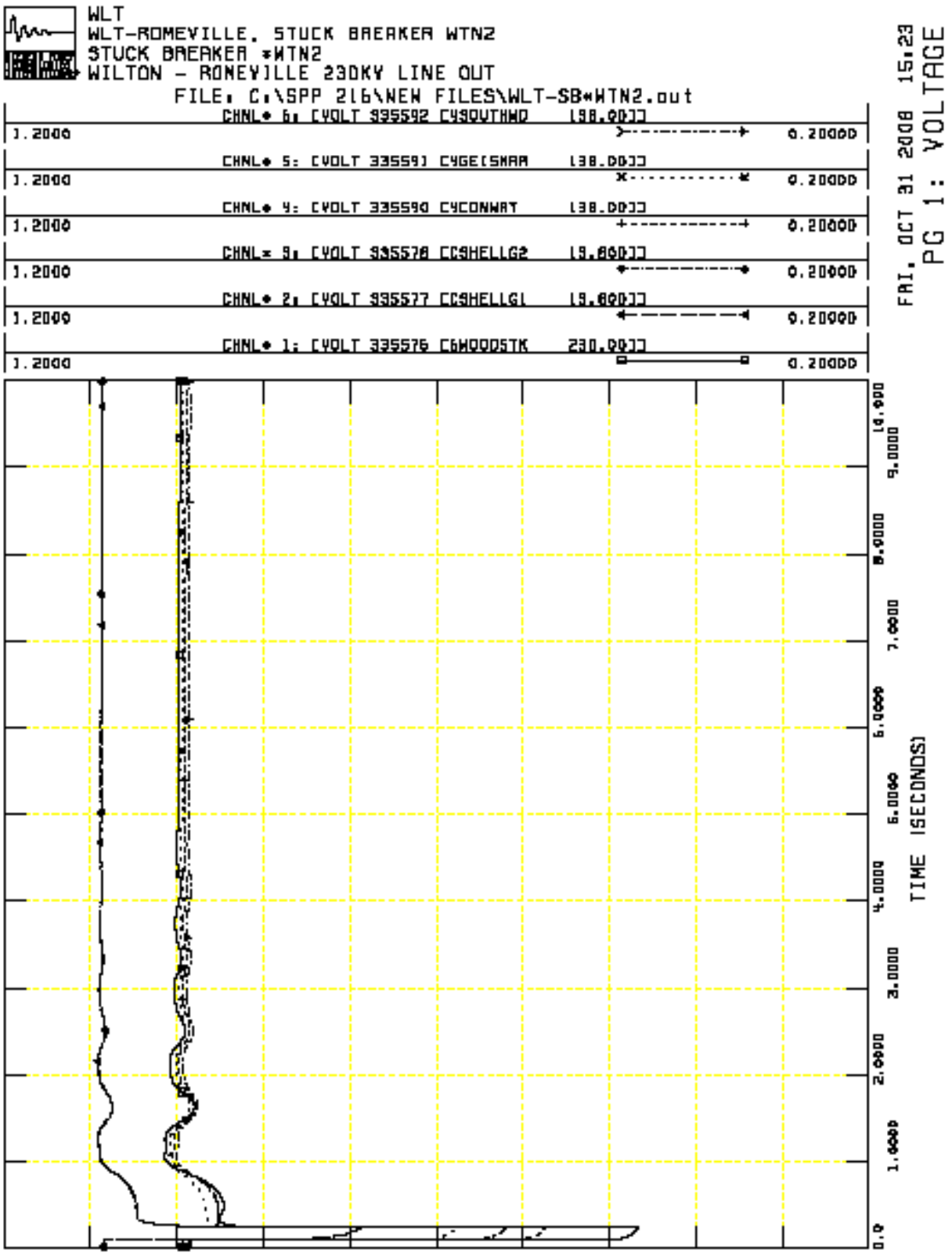

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
FRI, OCT 31 2008 14:35
PG 17: ANGLE
CHNL# 96: CANGL BUS 336222 MACH '1 '
CHNL# 95: CANGL BUS 336221 MACH '1 '
CHNL# 94: CANGL BUS 336191 MACH '1 '
CHNL# 93: CANGL BUS 336179 MACH '1 '
CHNL# 92: CANGL BUS 336178 MACH '1 '
CHNL# 91: CANGL BUS 336177 MACH '1 '
250.00
0.0
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

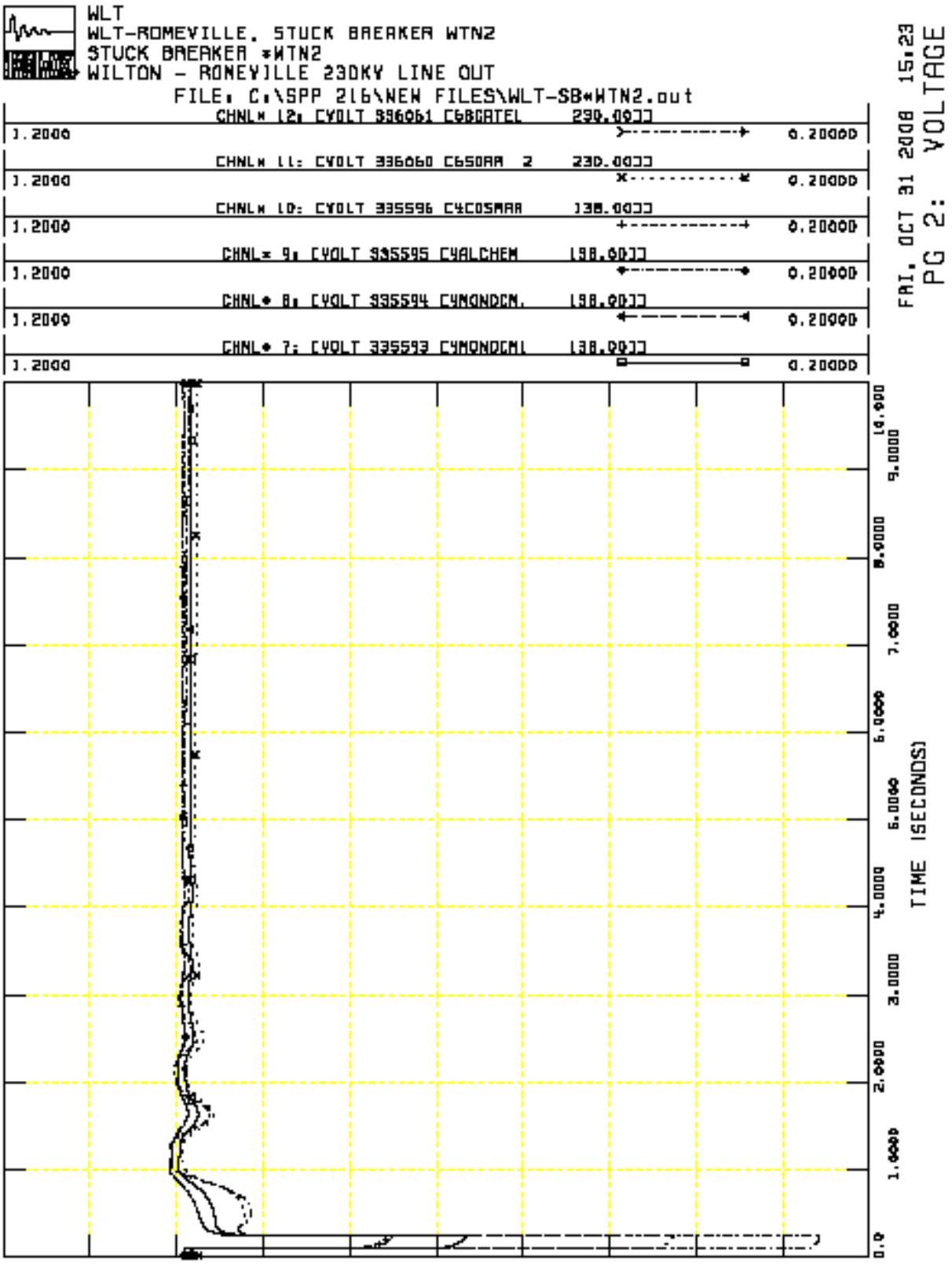

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
CHNL# 102: CANGL BUS 336283 MACH '1 '
250.00
0.0
CHNL# 101: CANGL BUS 336282 MACH '1 '
250.00
0.0
CHNL# 100: CANGL BUS 336281 MACH '1 '
250.00
0.0
CHNL# 99: CANGL BUS 336255 MACH '8V'
250.00
0.0
CHNL# 98: CANGL BUS 336252 MACH '1 '
250.00
0.0
CHNL# 97: CANGL BUS 336251 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:35
PG 18: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

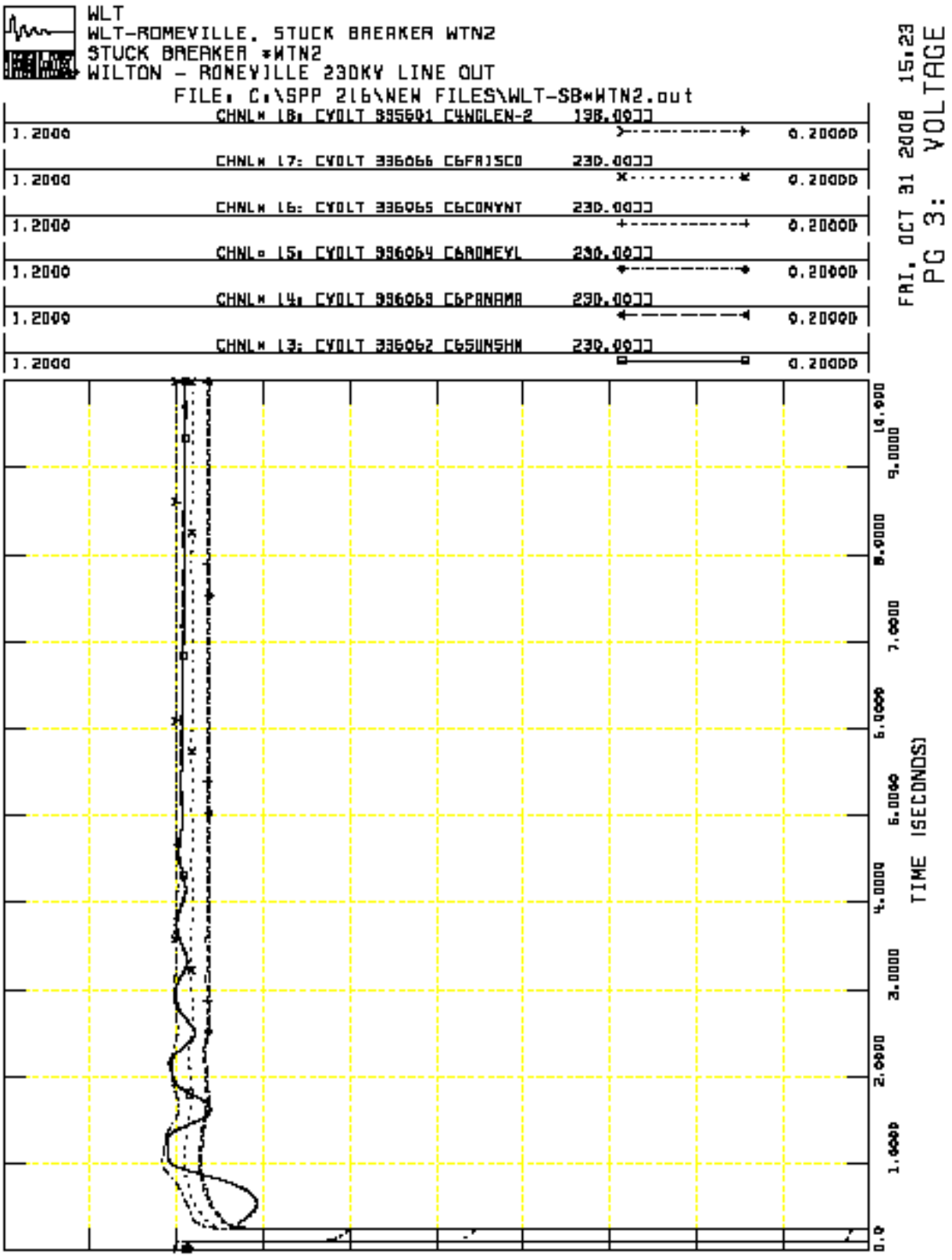

WLT
WLT-#2 TRANSFORMER, NORMAL CLEARING
CLEAR LOCAL AND REMOVE IN 10CYC
WILTON #2 TRANSFORMER OUT
FILE: C:\SPP 216\NEW FILES\WLT-#2trans.out
FRI, OCT 31 2008 14:35
PG 19: ANGLE
CHNL# 107: CANGL BUS 336464 MACH 'L '1
CHNL# 106: CANGL BUS 336460 MACH 'L '1
CHNL# 105: CANGL BUS 336446 MACH 'L '1
CHNL# 104: CANGL BUS 336414 MACH 'L '1
CHNL# 103: CANGL BUS 336413 MACH 'L '1
250.00
0.0
0.0000
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000
TIME (SECONDS)

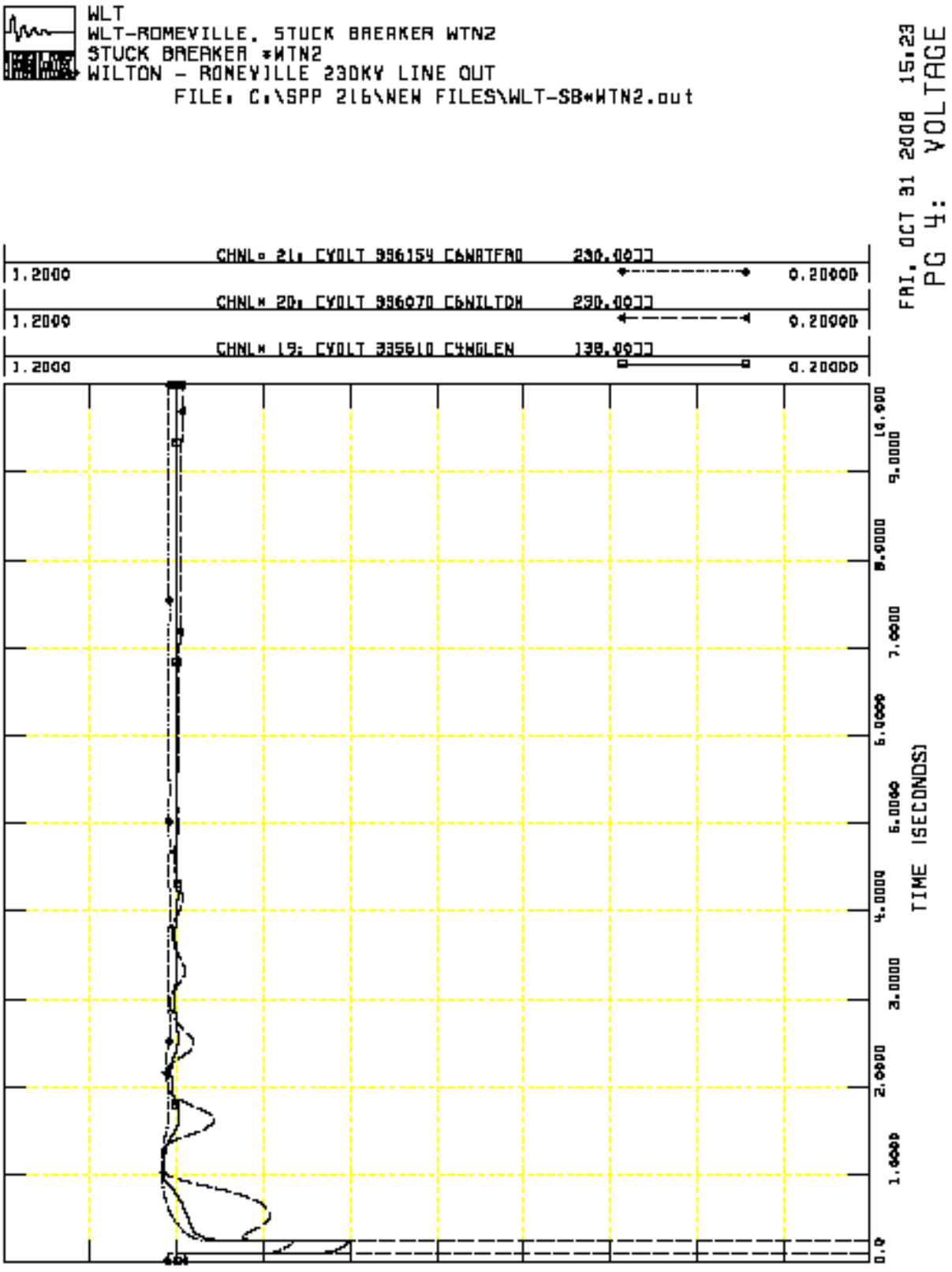
PLOTS
TABLE V1-2B FAULT CASES SIMULATED IN THIS STUDY:
FAULTS WITH STUCK BREAKER CONDITIIONS

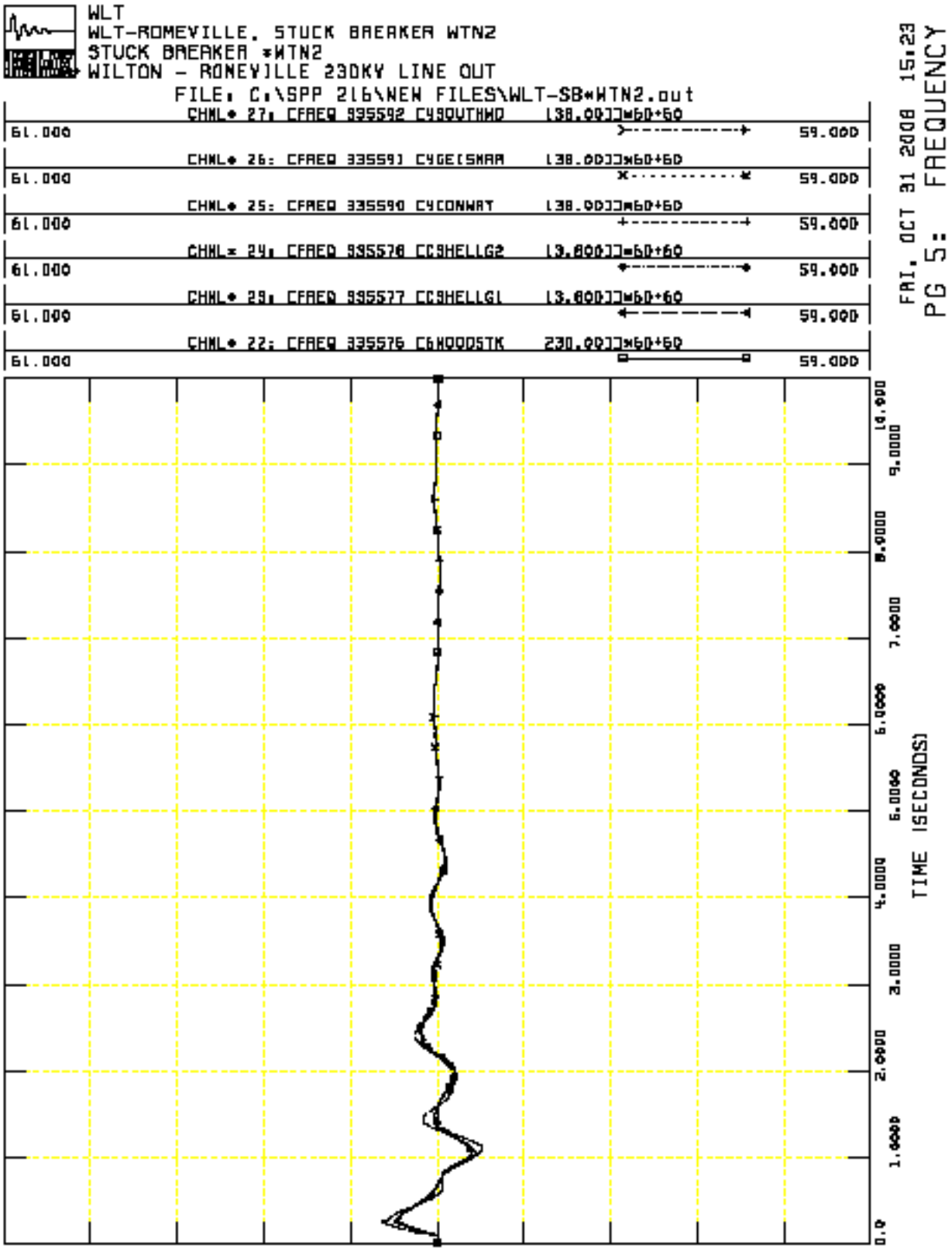
FAULT REFERENCE NO. 1A & 1B
FAULT-ROMEVILLE-STUCK BKR –WTN2- LOCATION WILTON
FAULT-ROMEVILLE-STUCK BKR–WTN3- LOCATION WILTON

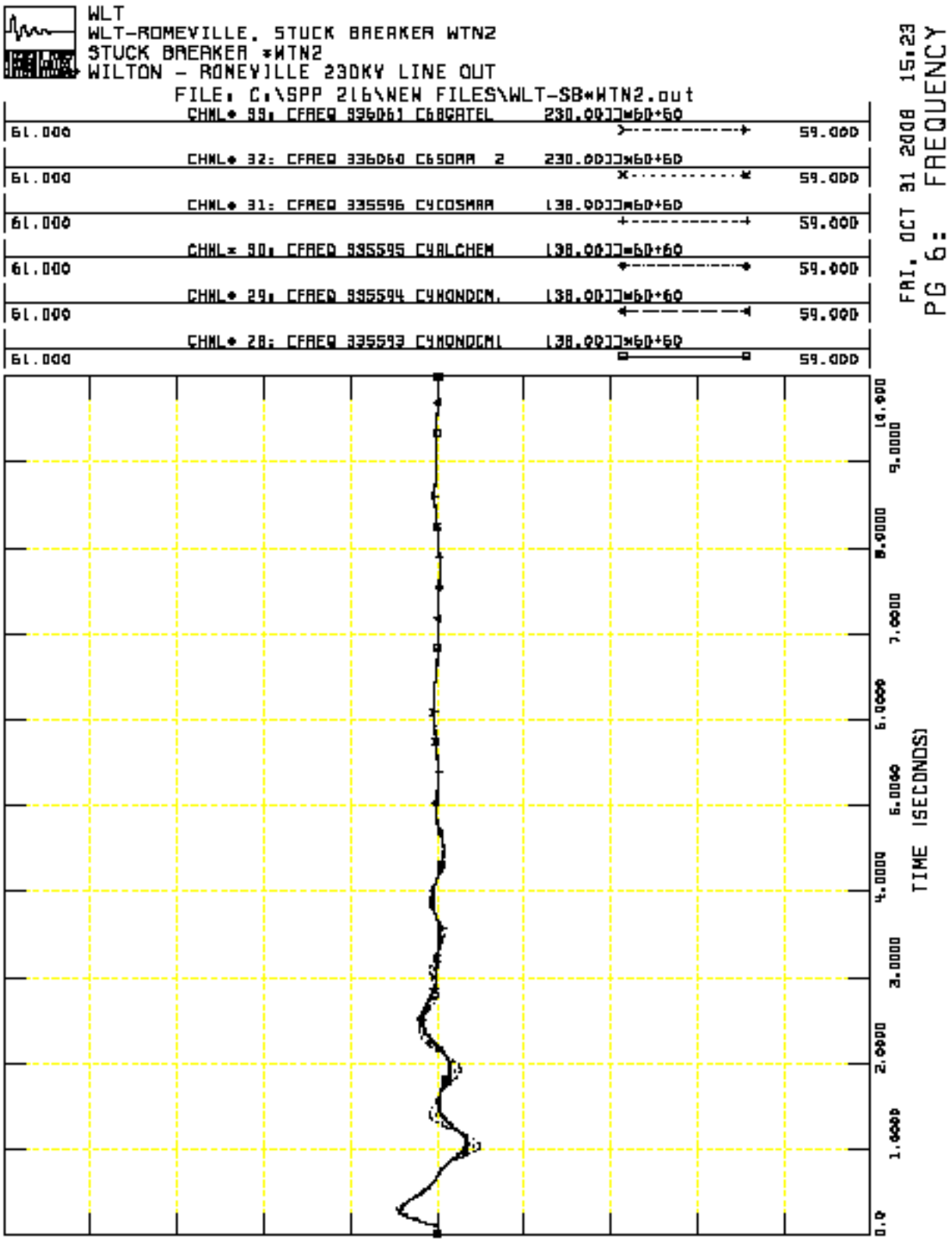

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 6: [VOLT 335592 CY5OUTHWD [38.000]
CHNL* 5: [VOLT 335591 CYGE[SMAR [38.000]
CHNL* 4: [VOLT 335590 CYCONWAT [38.000]
CHNL* 3: [VOLT 335578 CC5HELLG2 [5.6000]
CHNL* 2: [VOLT 335577 CC5HELLG1 [5.6000]
CHNL* 1: [VOLT 335575 C6WOOD5TK 230.000]
1.2000
0.20000
FRI, OCT 31 2008 15:23
PG 1: VOLTAGE
TIME (SECONDS)

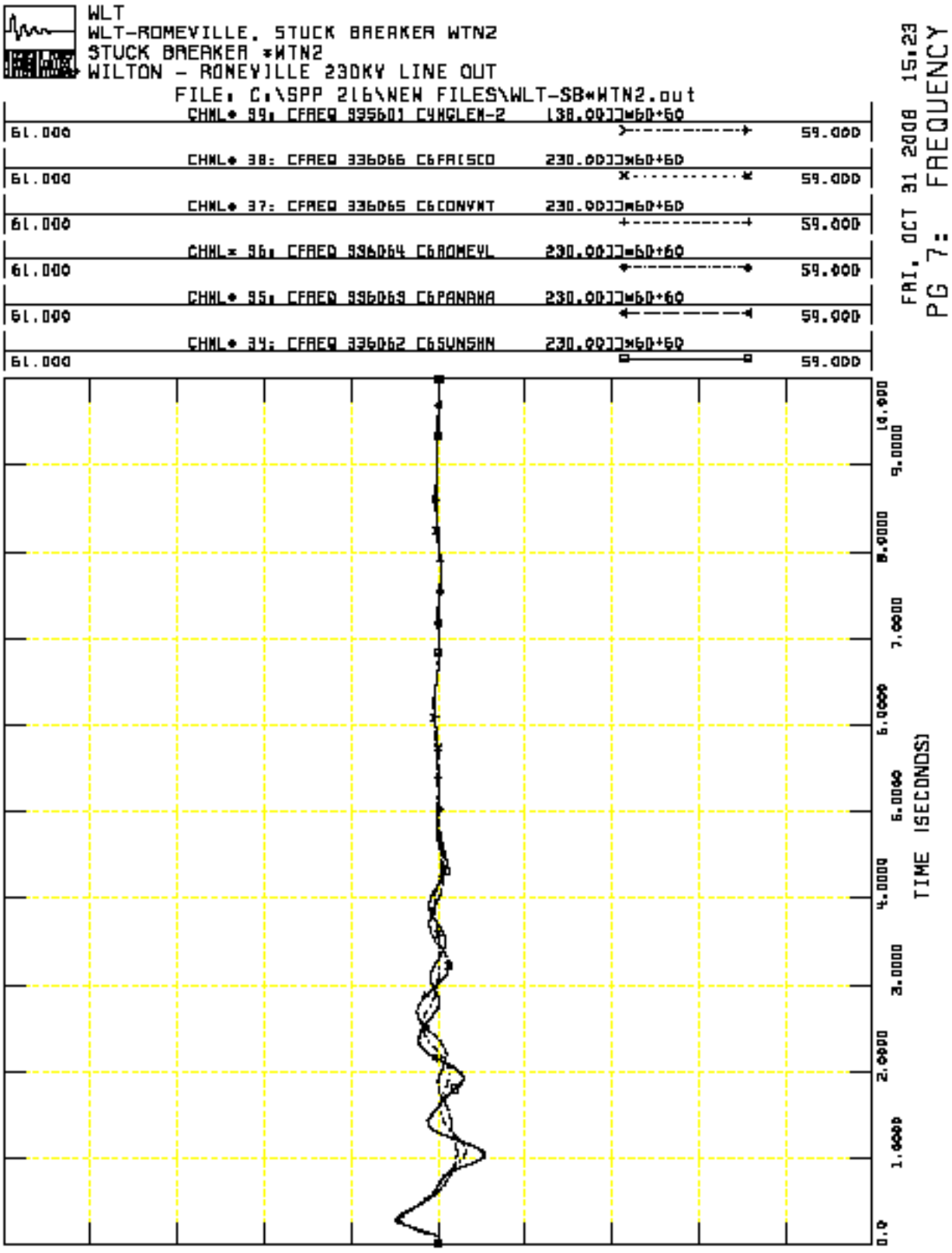

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 12: CVOLT 336061 C6BGATEL 230.000
1.2000
0.20000
CHNL* 11: CVOLT 336060 C6SOAA 2 230.000
1.2000
0.20000
CHNL* 10: CVOLT 335596 C4COSMAA 138.000
1.2000
0.20000
CHNL* 9: CVOLT 335595 C4ALCHEM 138.000
1.2000
0.20000
CHNL* 8: CVOLT 335594 C4MONDCM. 138.000
1.2000
0.20000
CHNL* 7: CVOLT 335593 C4MONDCM1 138.000
1.2000
0.20000
FRI, OCT 31 2008 15:23
PG 2: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

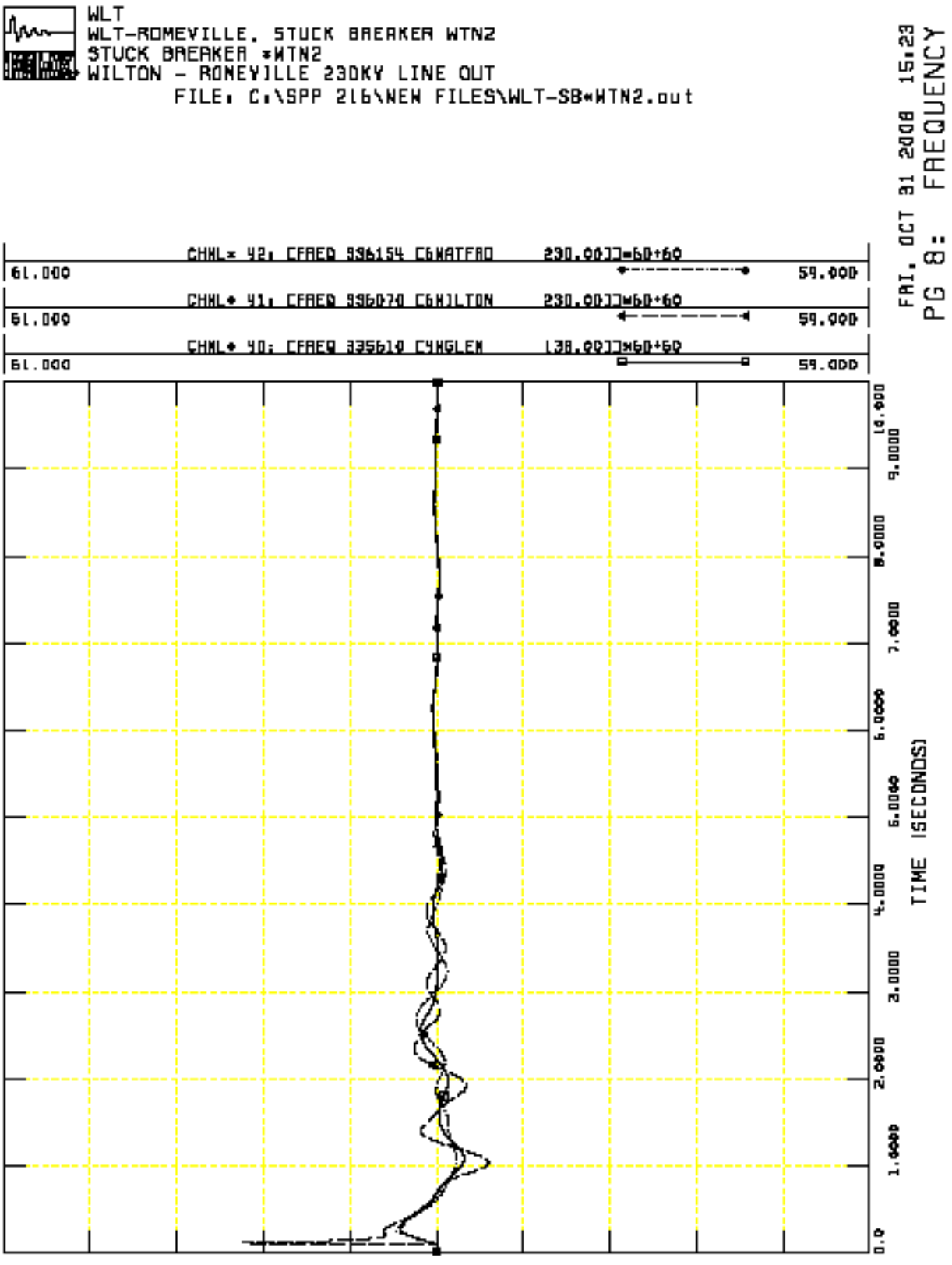

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 18: CVOLT 335601 C4NGLEN-2 198.0000
1.2000
0.20000
CHNL* 17: CVOLT 336066 C6FRISCO 230.0000
1.2000
0.20000
CHNL* 16: CVOLT 336065 C6CONYNT 230.0000
1.2000
0.20000
CHNL* 15: CVOLT 336064 C6ROMEVL 230.0000
1.2000
0.20000
CHNL* 14: CVOLT 336063 C6PANAMA 230.0000
1.2000
0.20000
CHNL* 13: CVOLT 336062 C6SUNSHN 230.0000
1.2000
0.20000
FRI, OCT 31 2008 15:23
PG 3: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

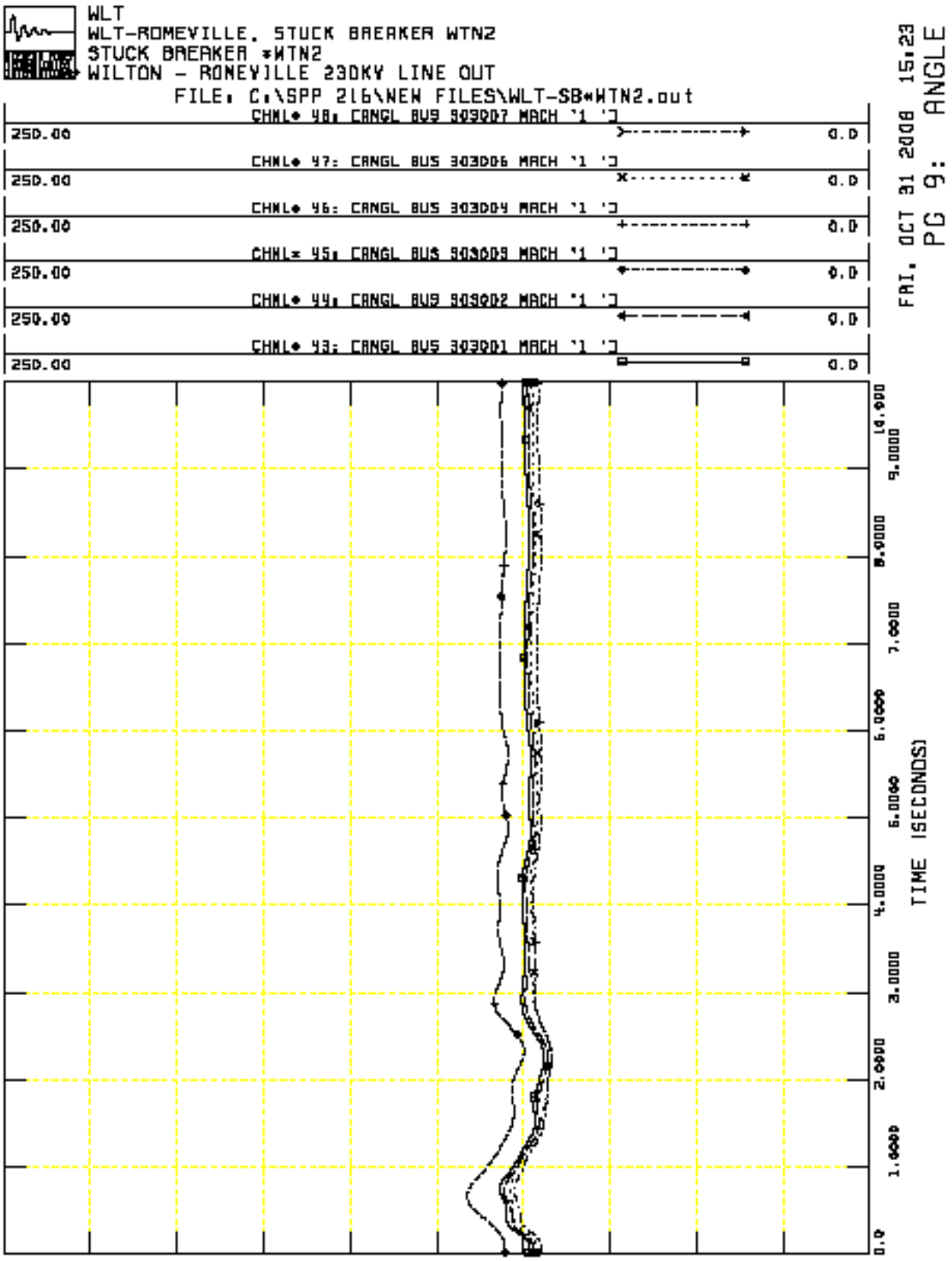

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
FRI, OCT 31 2008 15:23
PG 4: VOLTAGE
CHNL: 21: CVOLT 936154 C6NRTFRD 230.0000
1.2000
0.20000
CHNL* 20: CVOLT 936070 C6NILTON 230.0000
1.2000
0.20000
CHNL* 19: CVOLT 935610 C4NGLEN 138.0000
1.2000
0.20000
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

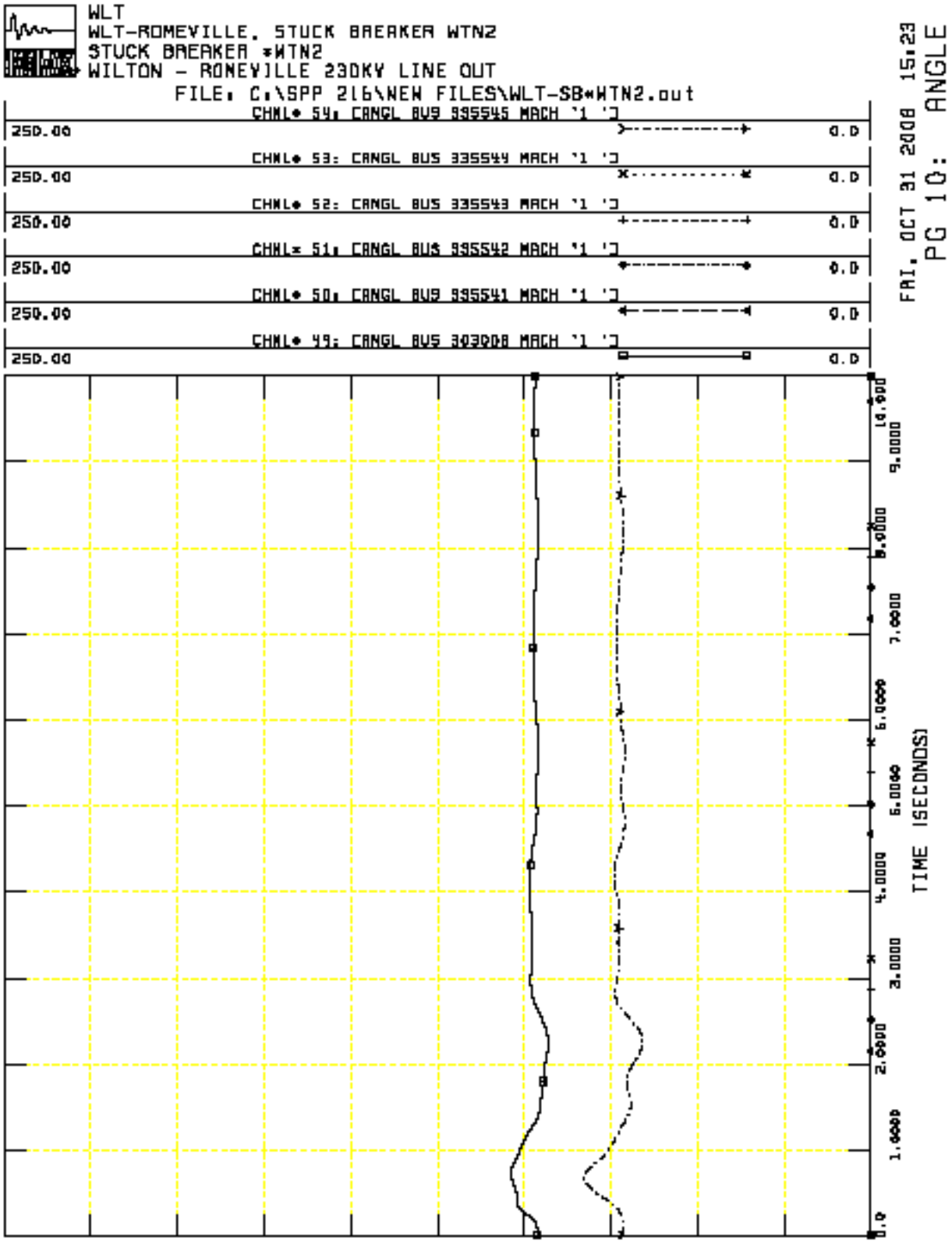

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 27: CFREQ 335592 C4SOUTHWD 138.00]]*60+60
61.000
59.000
CHNL* 26: CFREQ 335591 C4GE[SMAR 138.00]]*60+60
61.000
59.000
CHNL* 25: CFREQ 335590 C4CONWAY 138.00]]*60+60
61.000
59.000
CHNL* 24: CFREQ 335578 CC3HELLG2 13.800]]*60+60
61.000
59.000
CHNL* 23: CFREQ 335577 CC3HELLG1 13.800]]*60+60
61.000
59.000
CHNL* 22: CFREQ 335576 C6WOODSTK 230.00]]*60+60
61.000
59.000
FRI, OCT 31 2008 15:23
PG 5: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

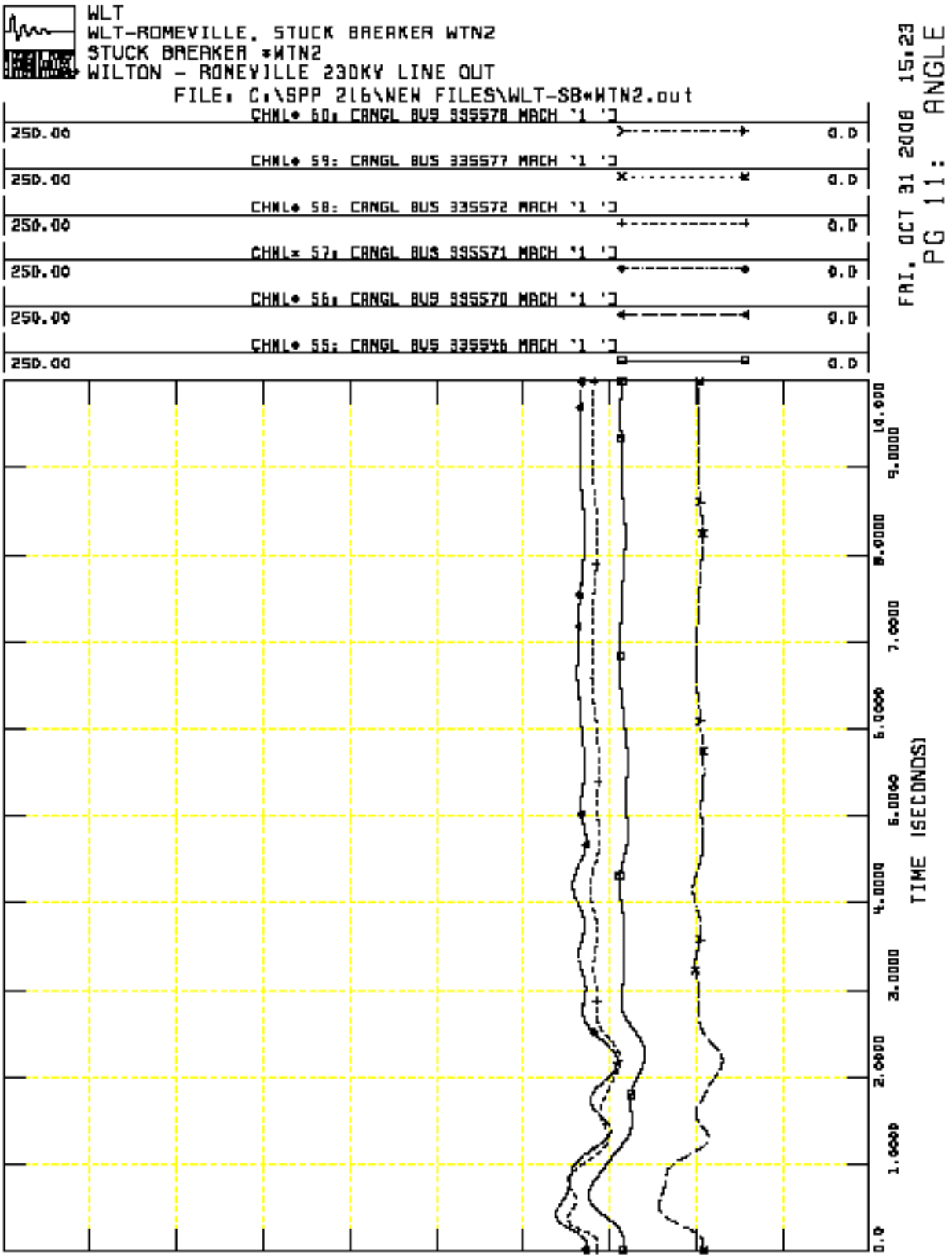

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 33: CFREQ 336061 C68GATEL 230.0000W60+60
61.000
59.000
CHNL* 32: CFREQ 336060 C65DMA 2 230.0000W60+60
61.000
59.000
CHNL* 31: CFREQ 335596 CYCOSMAA 138.0000W60+60
61.000
59.000
CHNL* 30: CFREQ 335595 CYALCHEM 138.0000W60+60
61.000
59.000
CHNL* 29: CFREQ 335594 CYMONDCM. 138.0000W60+60
61.000
59.000
CHNL* 28: CFREQ 335593 CYMONDCM1 138.0000W60+60
61.000
59.000
FRI, OCT 31 2008 15:23
PG 6: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

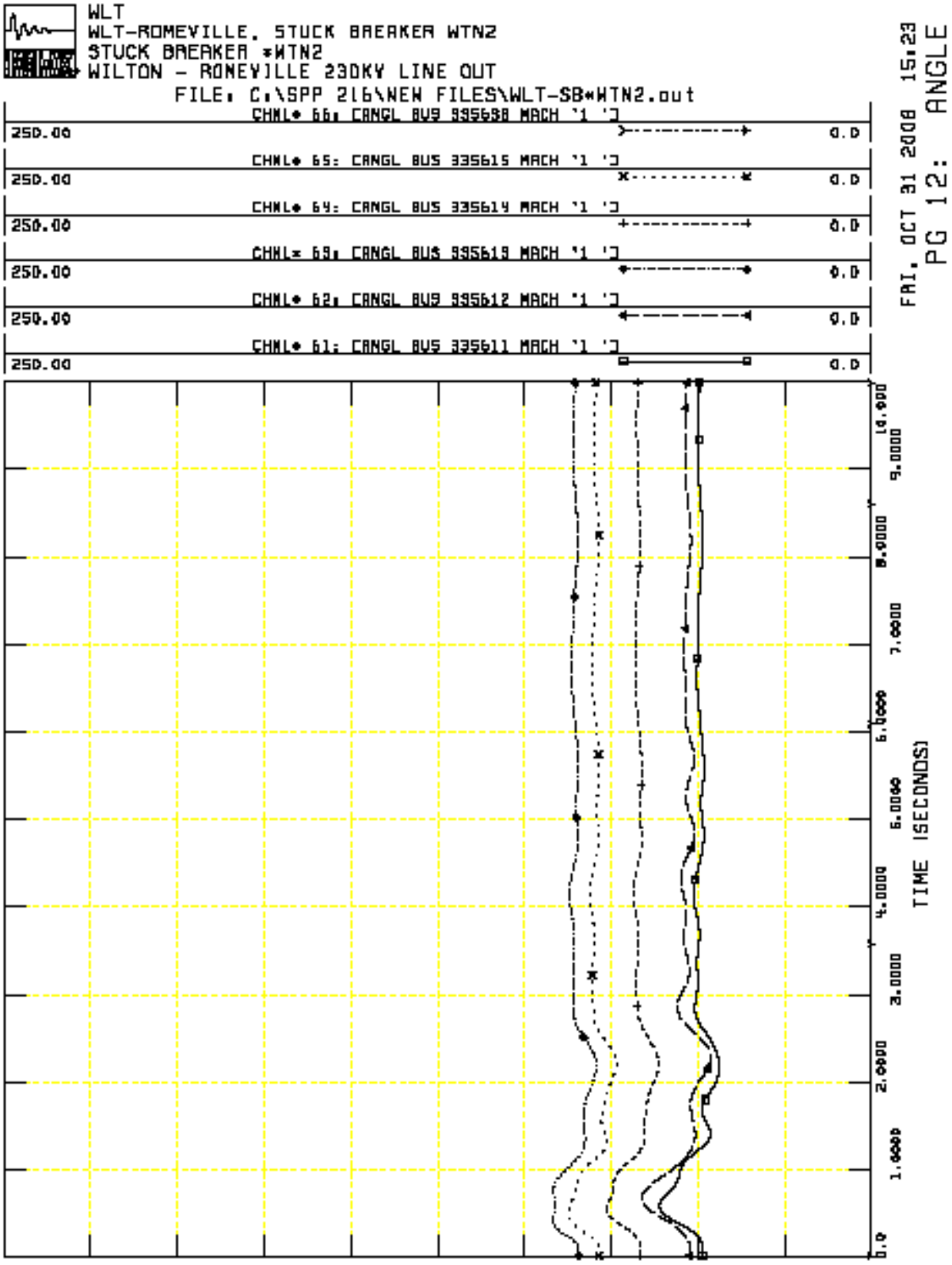

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 99: CFREQ 995601 C4MGLEN-2 138.00]]w60+60
61.000
59.000
CHNL* 38: CFREQ 336066 C6FAIRCO 230.00]]w60+60
61.000
59.000
CHNL* 37: CFREQ 336065 C6CONVNT 230.00]]w60+60
61.000
59.000
CHNL* 96: CFREQ 996064 C6ROMEVL 230.00]]w60+60
61.000
59.000
CHNL* 95: CFREQ 996069 C6PANAMA 230.00]]w60+60
61.000
59.000
CHNL* 34: CFREQ 336062 C6SUNSHN 230.00]]w60+60
61.000
59.000
FRI, OCT 31 2008 15:23
PG 7: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

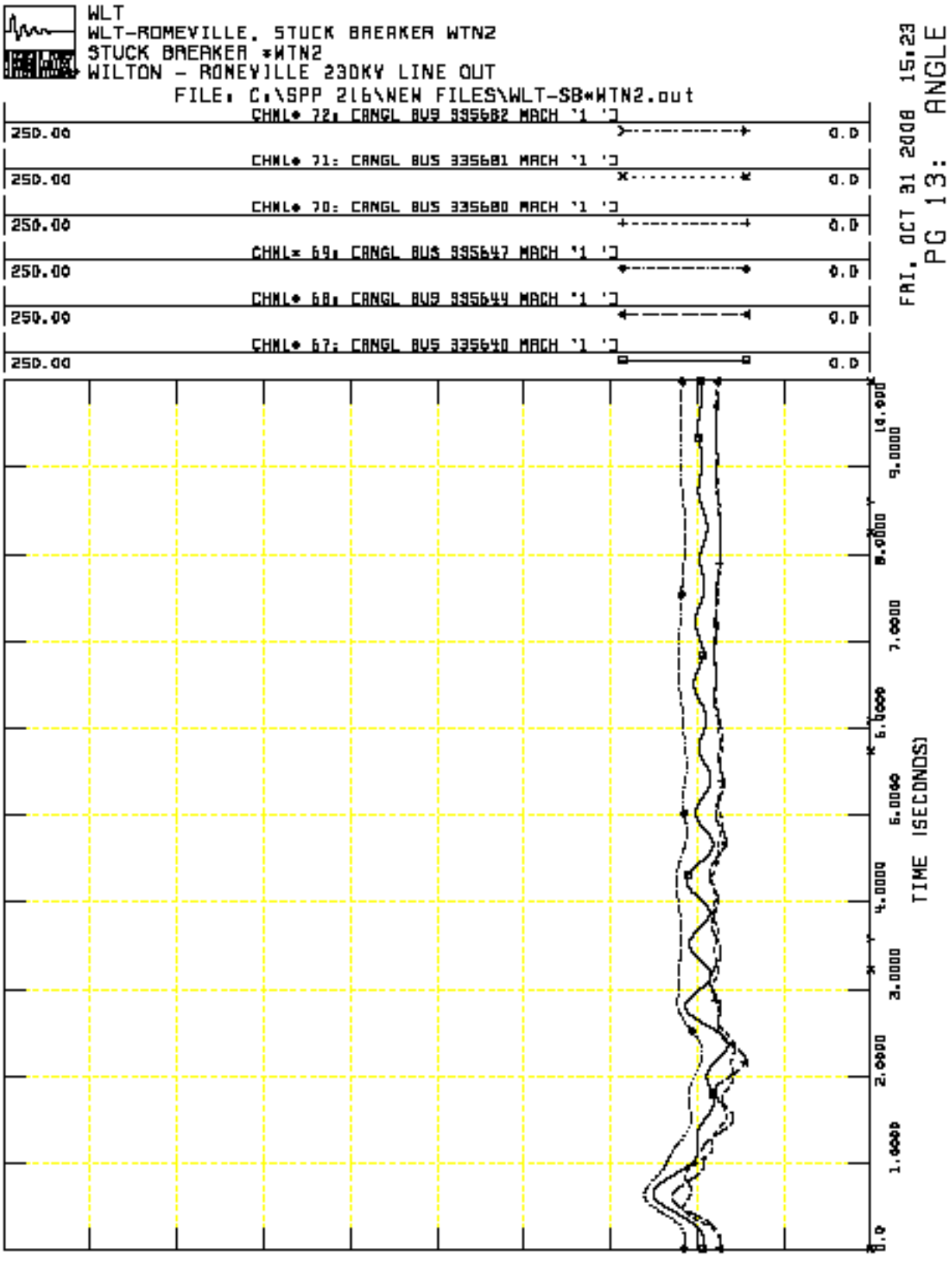

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
FRI, OCT 31 2008 15:23
PG 8: FREQUENCY
CHNL= 42: CFREQ 936154 C6WATFRD 230.0000=60+60
61.000
59.000
CHNL* 41: CFREQ 936070 C6WILTON 230.0000=60+60
61.000
59.000
CHNL* 40: CFREQ 335610 C4HGLEN 138.0000=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)

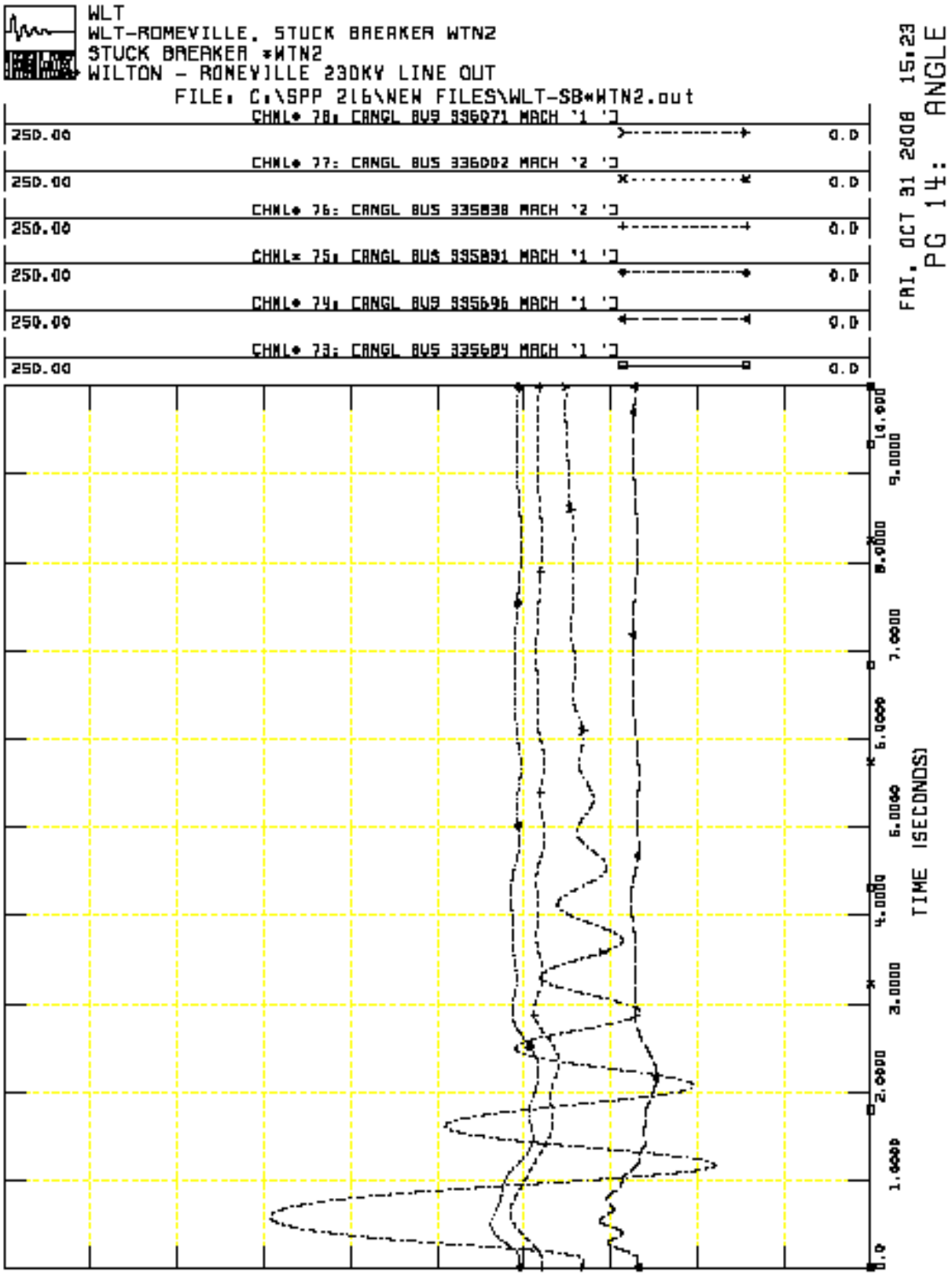

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 48: CANGL BUS 303007 MACH '1 '
250.00
0.0
CHNL* 47: CANGL BUS 303006 MACH '1 '
250.00
0.0
CHNL* 46: CANGL BUS 303004 MACH '1 '
250.00
0.0
CHNL* 45: CANGL BUS 303003 MACH '1 '
250.00
0.0
CHNL* 44: CANGL BUS 303002 MACH '1 '
250.00
0.0
CHNL* 43: CANGL BUS 303001 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 9: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

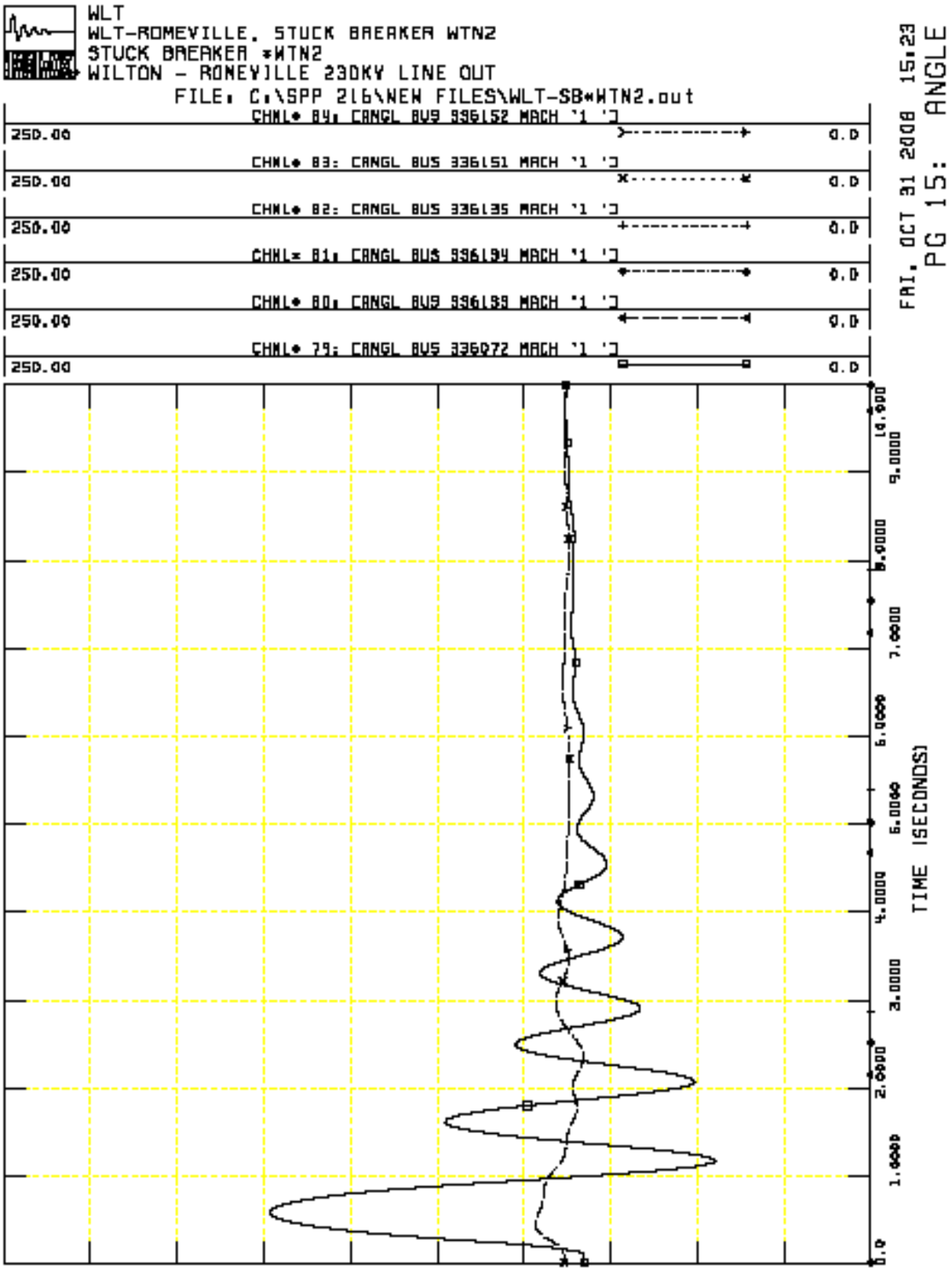

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 54: CANGL BUS 335545 MACH '1 '
250.00
0.0
CHNL* 53: CANGL BUS 335544 MACH '1 '
250.00
0.0
CHNL* 52: CANGL BUS 335543 MACH '1 '
250.00
0.0
CHNL* 51: CANGL BUS 335542 MACH '1 '
250.00
0.0
CHNL* 50: CANGL BUS 335541 MACH '1 '
250.00
0.0
CHNL* 49: CANGL BUS 303008 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 10: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

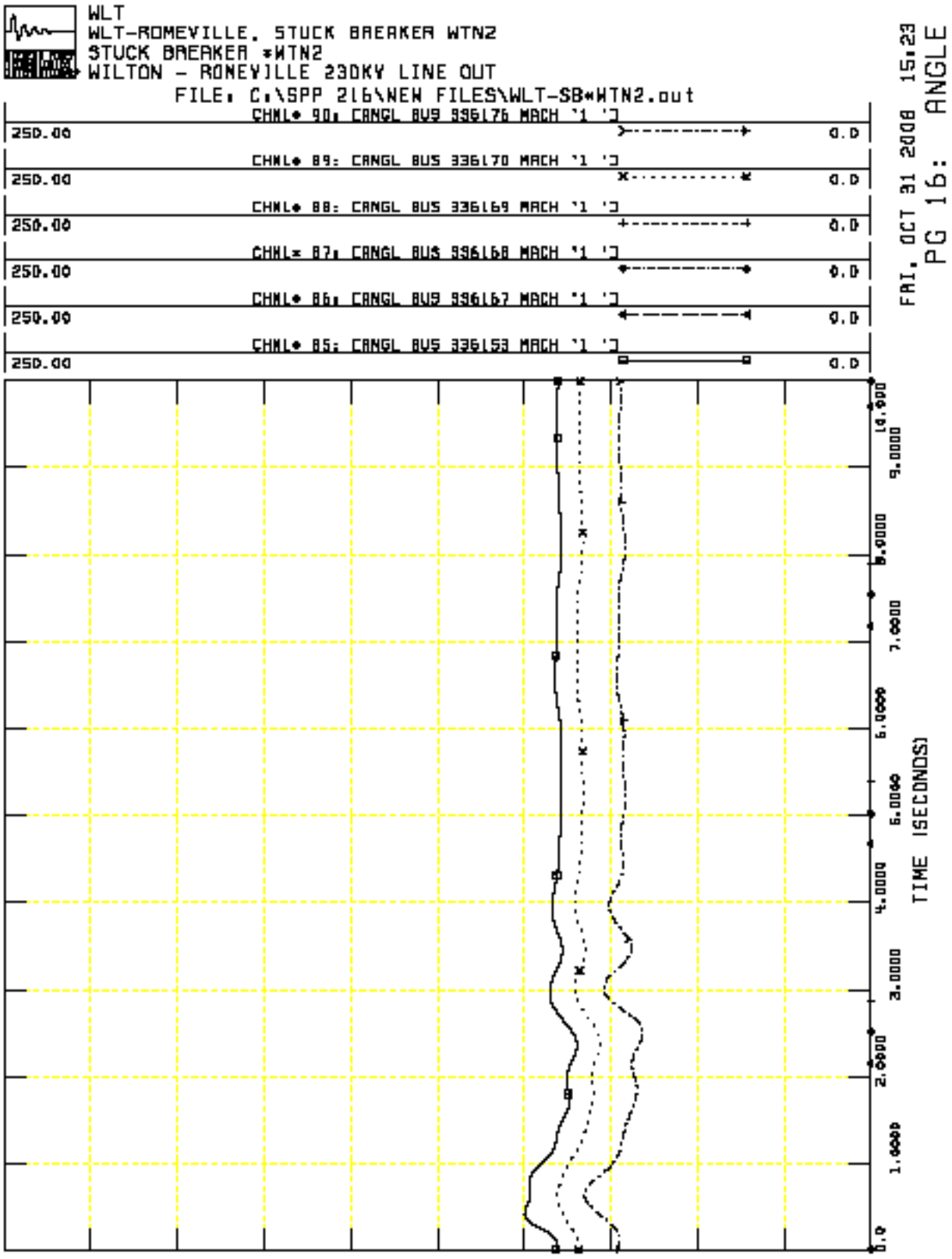

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 60: CANGL BUS 335578 MACH '1 '
250.00
0.0
CHNL* 59: CANGL BUS 335577 MACH '1 '
250.00
0.0
CHNL* 58: CANGL BUS 335572 MACH '1 '
250.00
0.0
CHNL* 57: CANGL BUS 335571 MACH '1 '
250.00
0.0
CHNL* 56: CANGL BUS 335570 MACH '1 '
250.00
0.0
CHNL* 55: CANGL BUS 335546 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 11: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

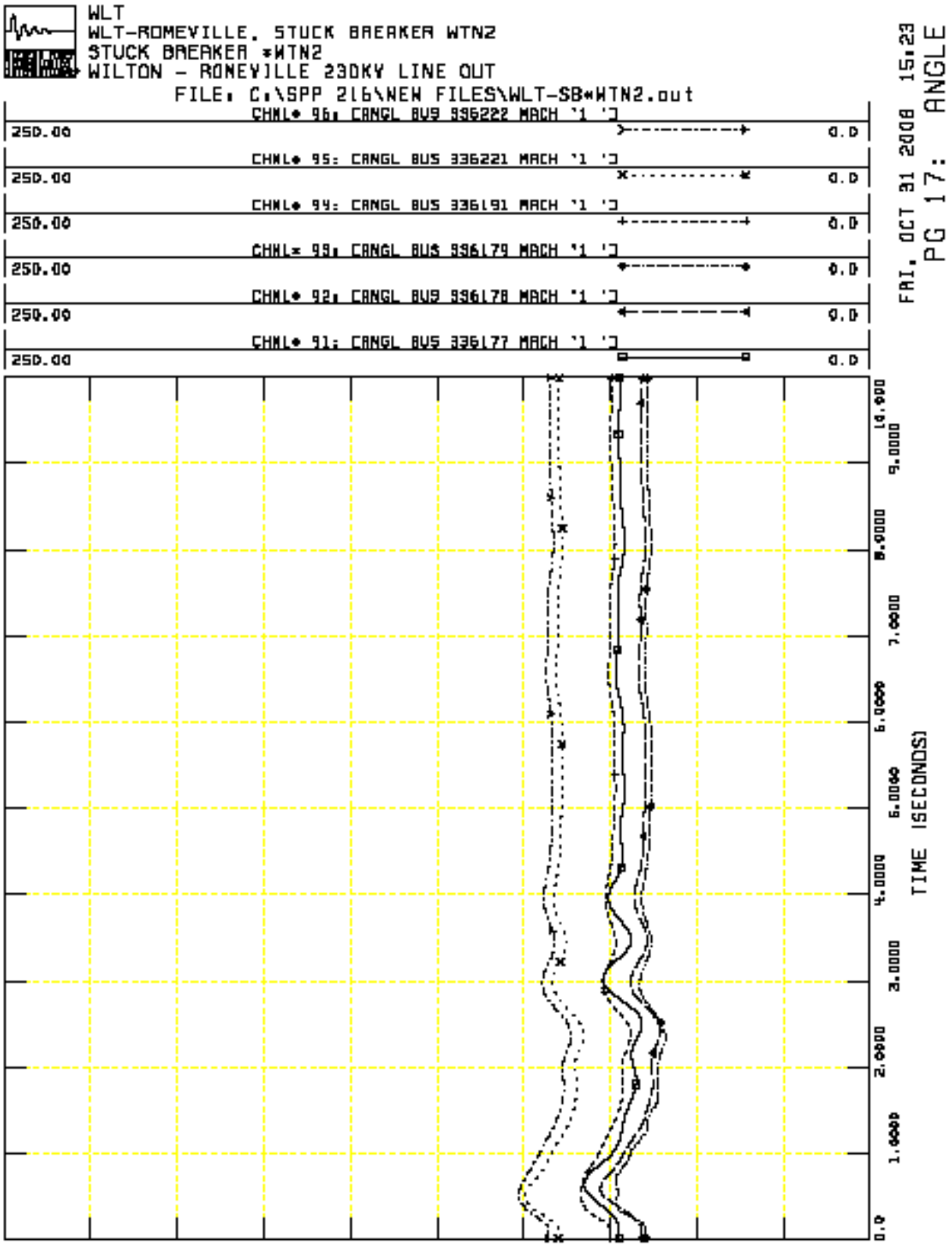

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 66: CANGL BUS 335638 MACH '1 '
CHNL* 65: CANGL BUS 335615 MACH '1 '
CHNL* 64: CANGL BUS 335614 MACH '1 '
CHNL* 63: CANGL BUS 335613 MACH '1 '
CHNL* 62: CANGL BUS 335612 MACH '1 '
CHNL* 61: CANGL BUS 335611 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
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

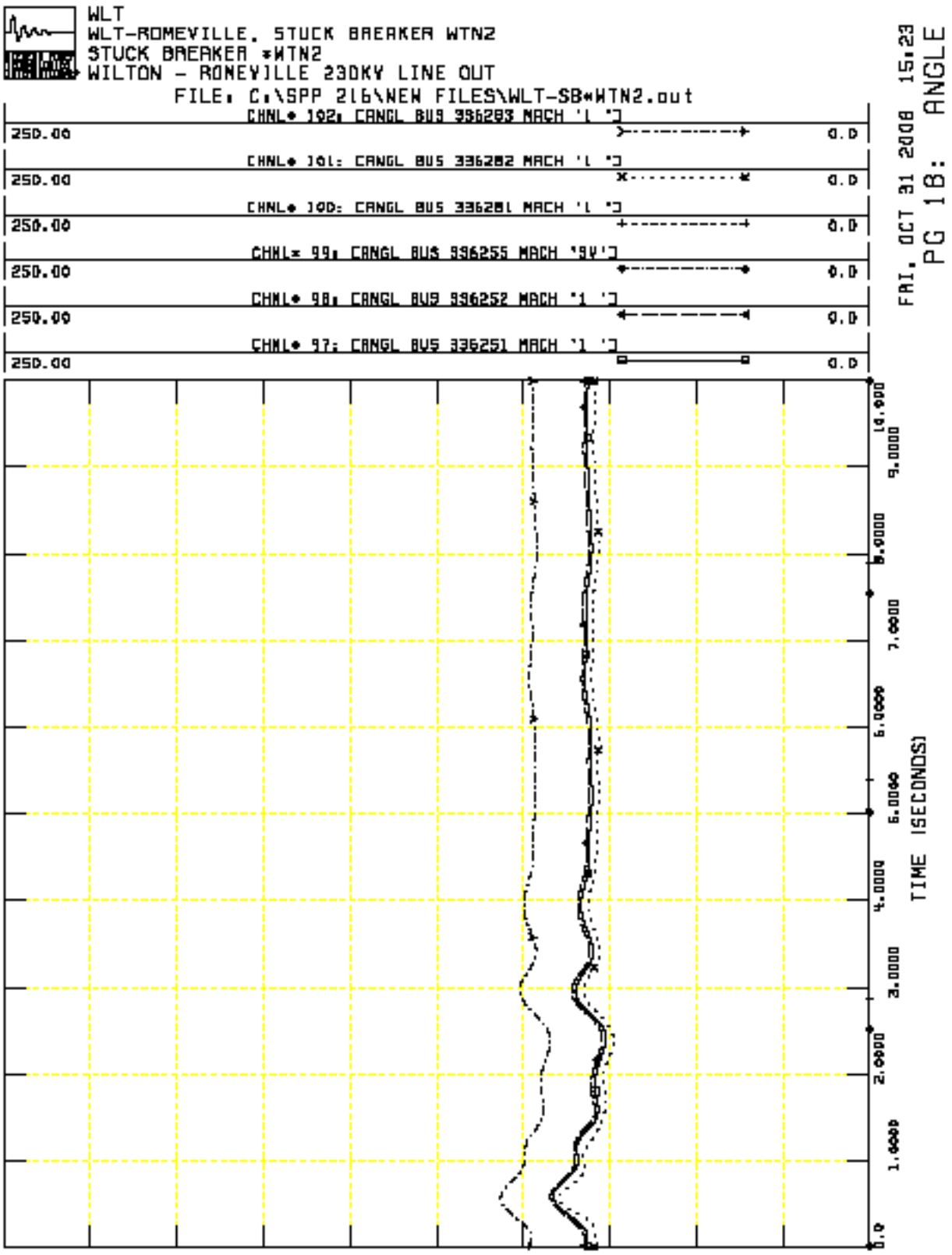

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 72: CANGL BUS 335682 MACH '1 '
250.00
0.0
CHNL* 71: CANGL BUS 335681 MACH '1 '
250.00
0.0
CHNL* 70: CANGL BUS 335680 MACH '1 '
250.00
0.0
CHNL* 69: CANGL BUS 335647 MACH '1 '
250.00
0.0
CHNL* 68: CANGL BUS 335644 MACH '1 '
250.00
0.0
CHNL* 67: CANGL BUS 335640 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 13: ANGLE
TIME (SECONDS)

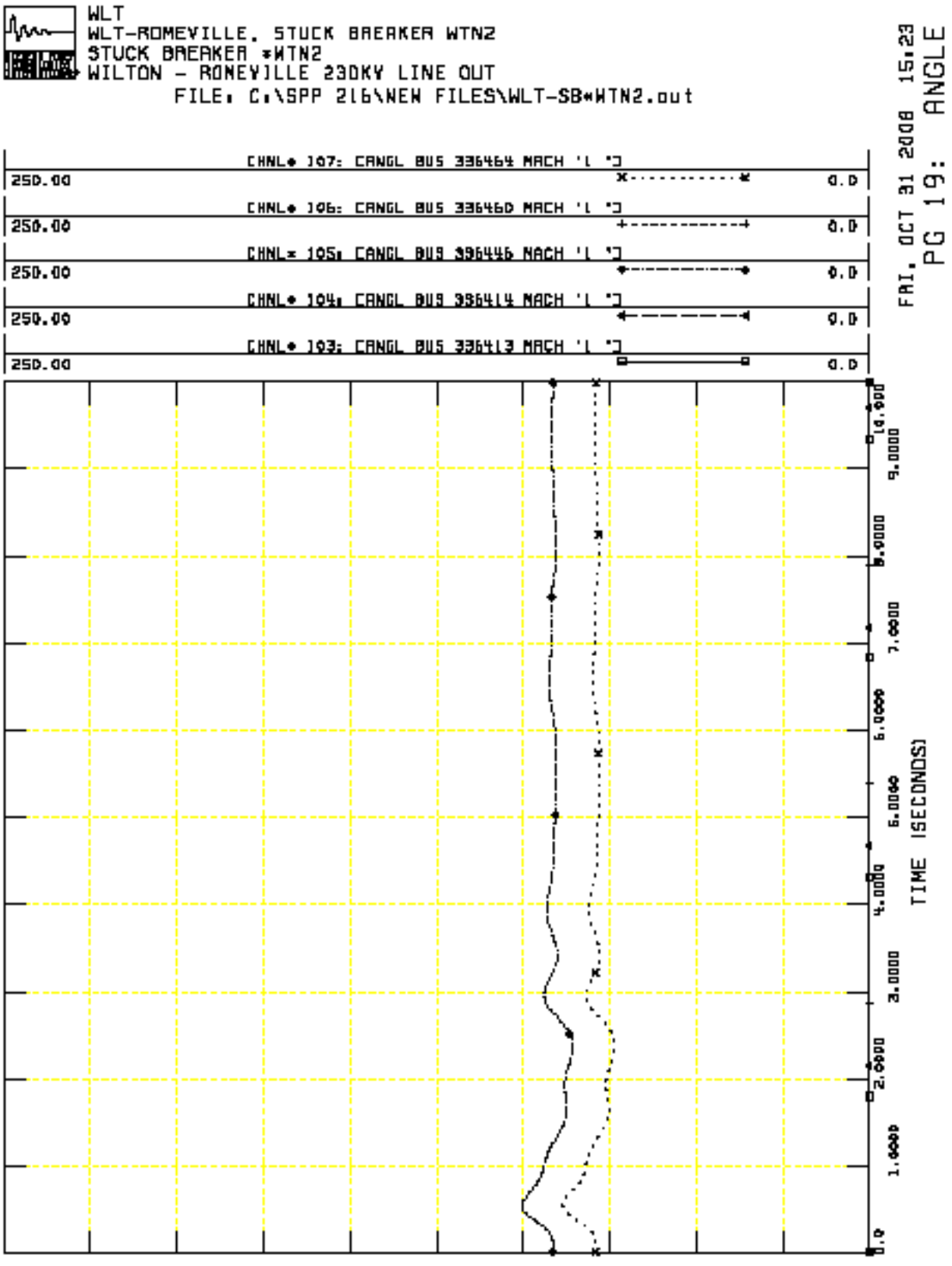

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 78: CANGL BUS 336071 MACH '1 '
250.00
0.0
CHNL* 77: CANGL BUS 336002 MACH '2 '
250.00
0.0
CHNL* 76: CANGL BUS 335838 MACH '2 '
250.00
0.0
CHNL* 75: CANGL BUS 335891 MACH '1 '
250.00
0.0
CHNL* 74: CANGL BUS 335696 MACH '1 '
250.00
0.0
CHNL* 73: CANGL BUS 335604 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 14: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)


WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 84: CANGL BUS 336152 MACH '1 '
250.00
0.0
CHNL* 83: CANGL BUS 336151 MACH '1 '
250.00
0.0
CHNL* 82: CANGL BUS 336135 MACH '1 '
250.00
0.0
CHNL* 81: CANGL BUS 336194 MACH '1 '
250.00
0.0
CHNL* 80: CANGL BUS 336139 MACH '1 '
250.00
0.0
CHNL* 79: CANGL BUS 336072 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 15: ANGLE
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

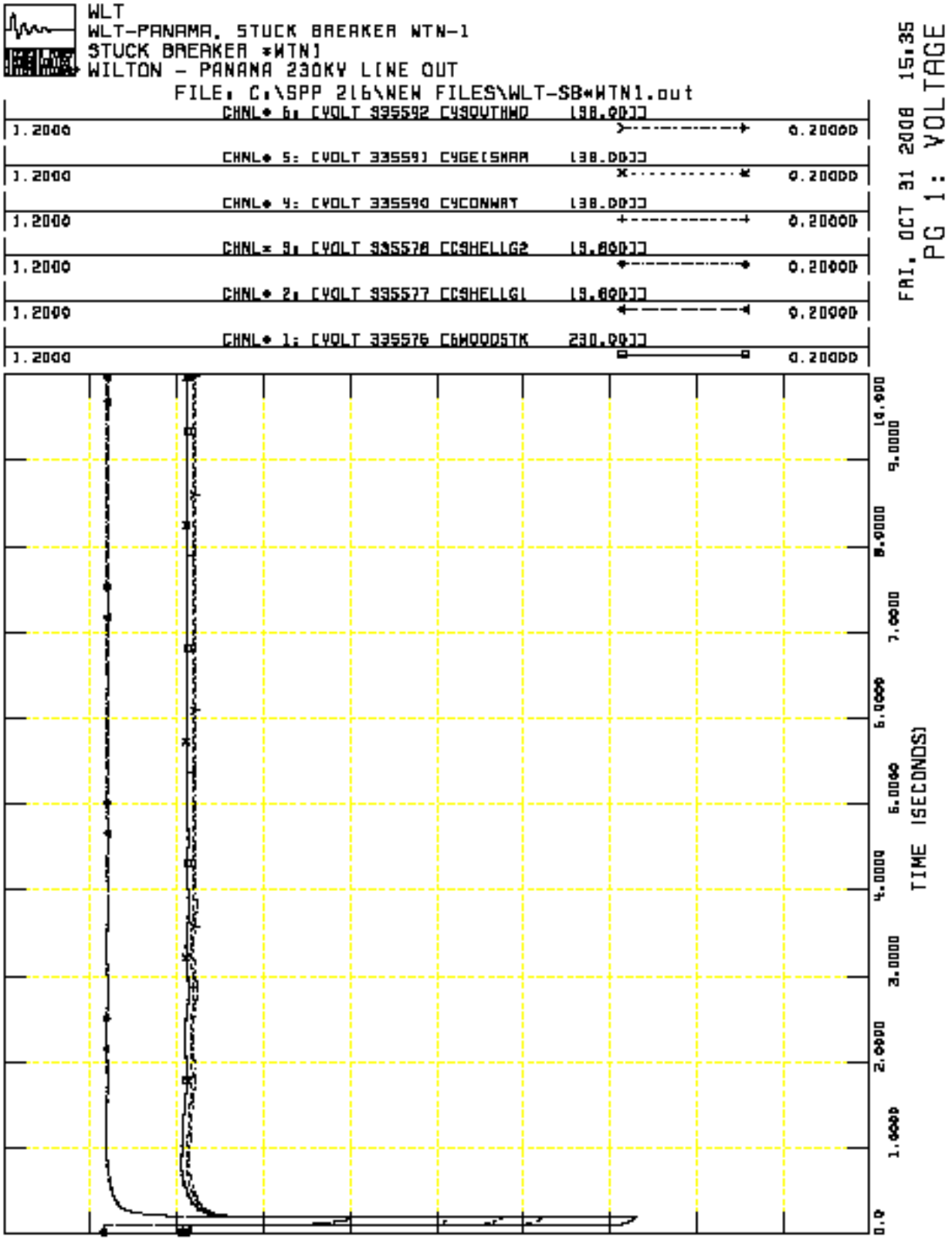

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 90: CANGL BUS 336176 MACH '1 '
250.00
0.0
CHNL* 89: CANGL BUS 336170 MACH '1 '
250.00
0.0
CHNL* 88: CANGL BUS 336169 MACH '1 '
250.00
0.0
CHNL* 87: CANGL BUS 336168 MACH '1 '
250.00
0.0
CHNL* 86: CANGL BUS 336167 MACH '1 '
250.00
0.0
CHNL* 85: CANGL BUS 336153 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 16: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

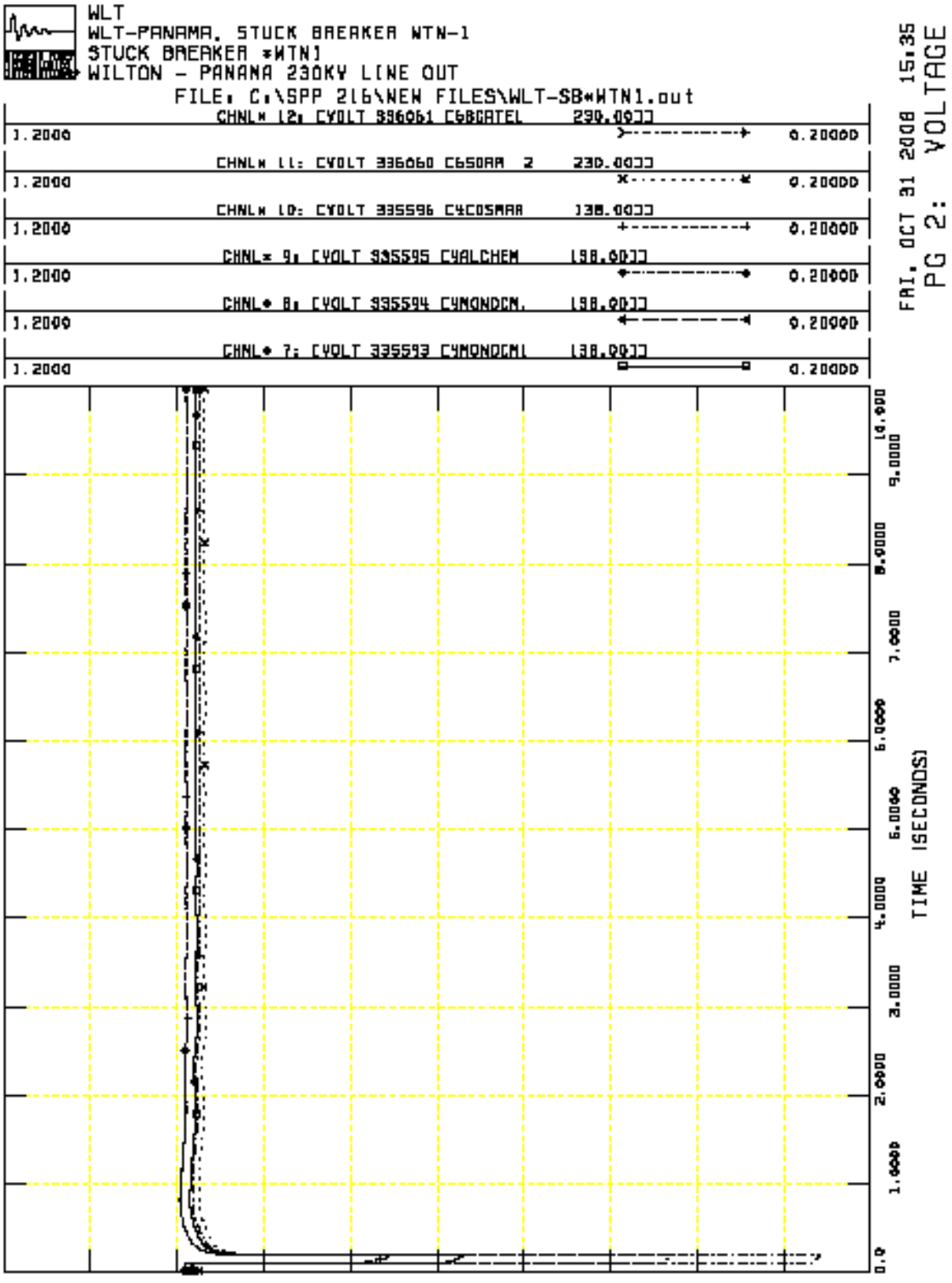

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 96: CANGL BUS 336222 MACH '1 '
CHNL* 95: CANGL BUS 336221 MACH '1 '
CHNL* 94: CANGL BUS 336191 MACH '1 '
CHNL* 93: CANGL BUS 336179 MACH '1 '
CHNL* 92: CANGL BUS 336178 MACH '1 '
CHNL* 91: CANGL BUS 336177 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 17: ANGLE
TIME (SECONDS)

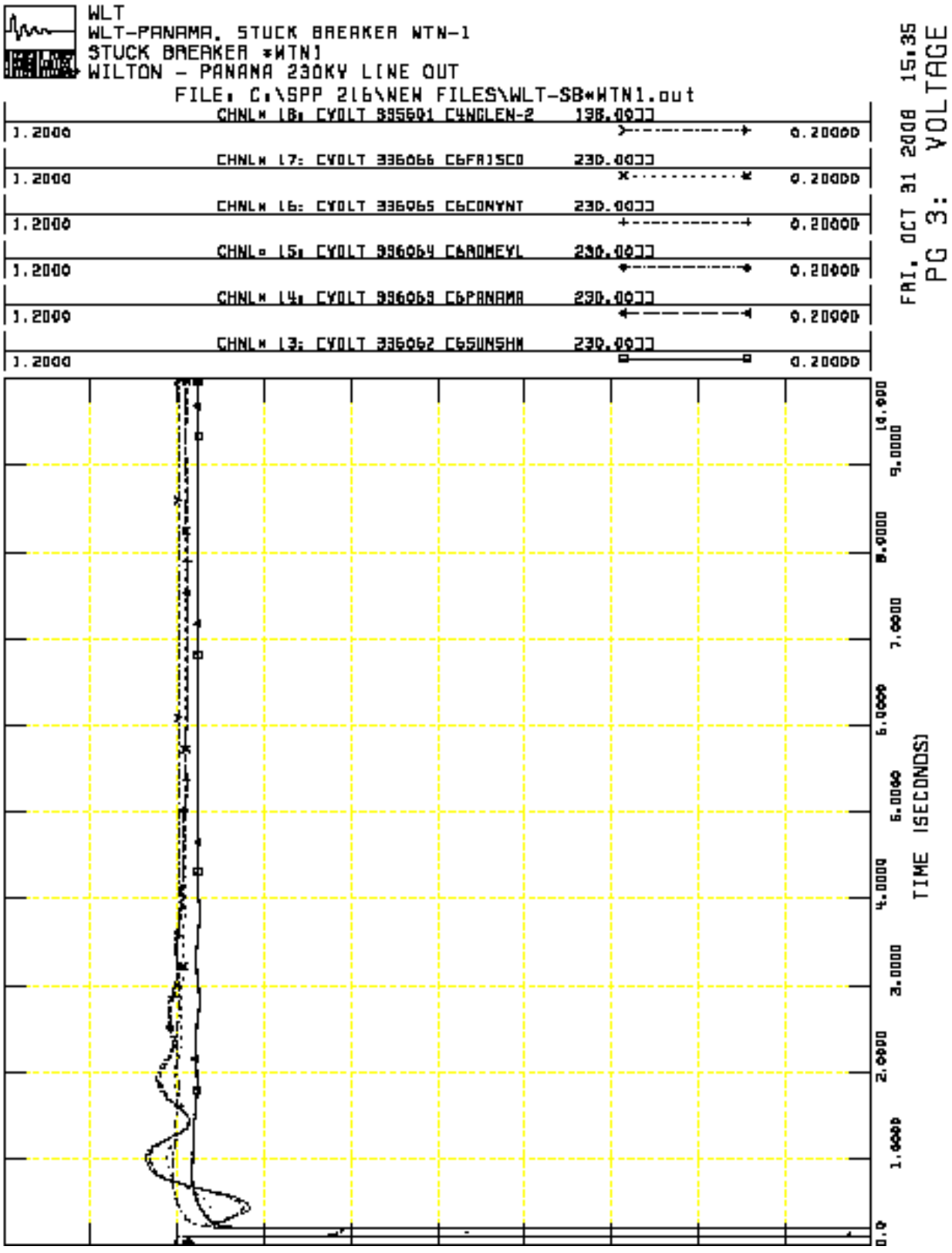

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
CHNL* 102: CANGL BUS 336283 MACH '1 '
250.00
0.0
CHNL* 101: CANGL BUS 336282 MACH '1 '
250.00
0.0
CHNL* 100: CANGL BUS 336281 MACH '1 '
250.00
0.0
CHNL* 99: CANGL BUS 336255 MACH '8V'
250.00
0.0
CHNL* 98: CANGL BUS 336252 MACH '1 '
250.00
0.0
CHNL* 97: CANGL BUS 336251 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:23
PG 18: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

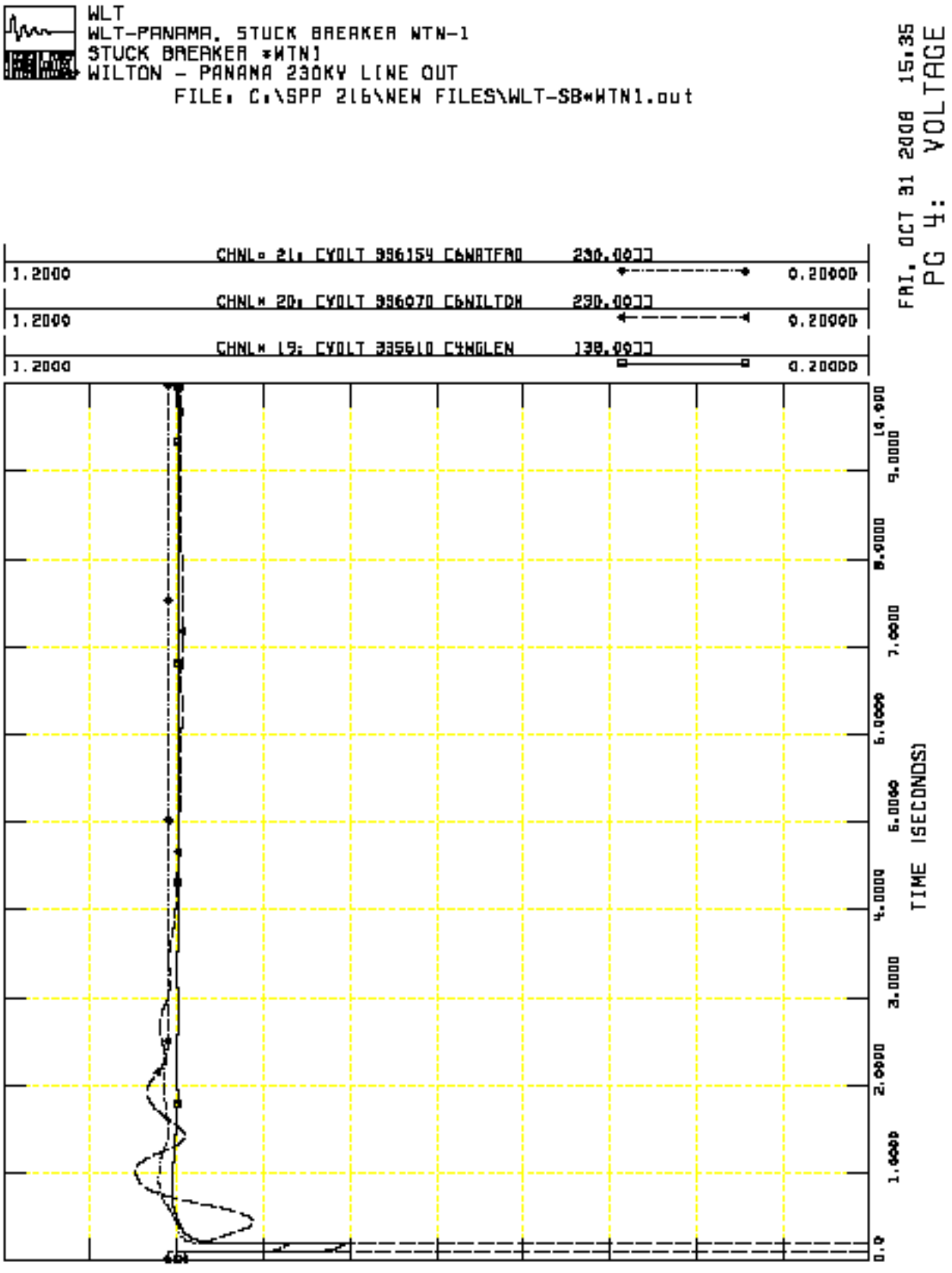

WLT
WLT-ROMEVILLE, STUCK BREAKER WTN2
STUCK BREAKER *WTN2
WILTON - ROMEVILLE 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN2.out
FRI, OCT 31 2008 15:23
PG 19: ANGLE
CHNL* 107: CANGL BUS 336464 MACH '1 '3
250.00
0.0
CHNL* 106: CANGL BUS 336460 MACH '1 '3
250.00
0.0
CHNL= 105: CANGL BUS 336446 MACH '1 '3
250.00
0.0
CHNL* 104: CANGL BUS 336414 MACH '1 '3
250.00
0.0
CHNL* 103: CANGL BUS 336413 MACH '1 '3
250.00
0.0
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

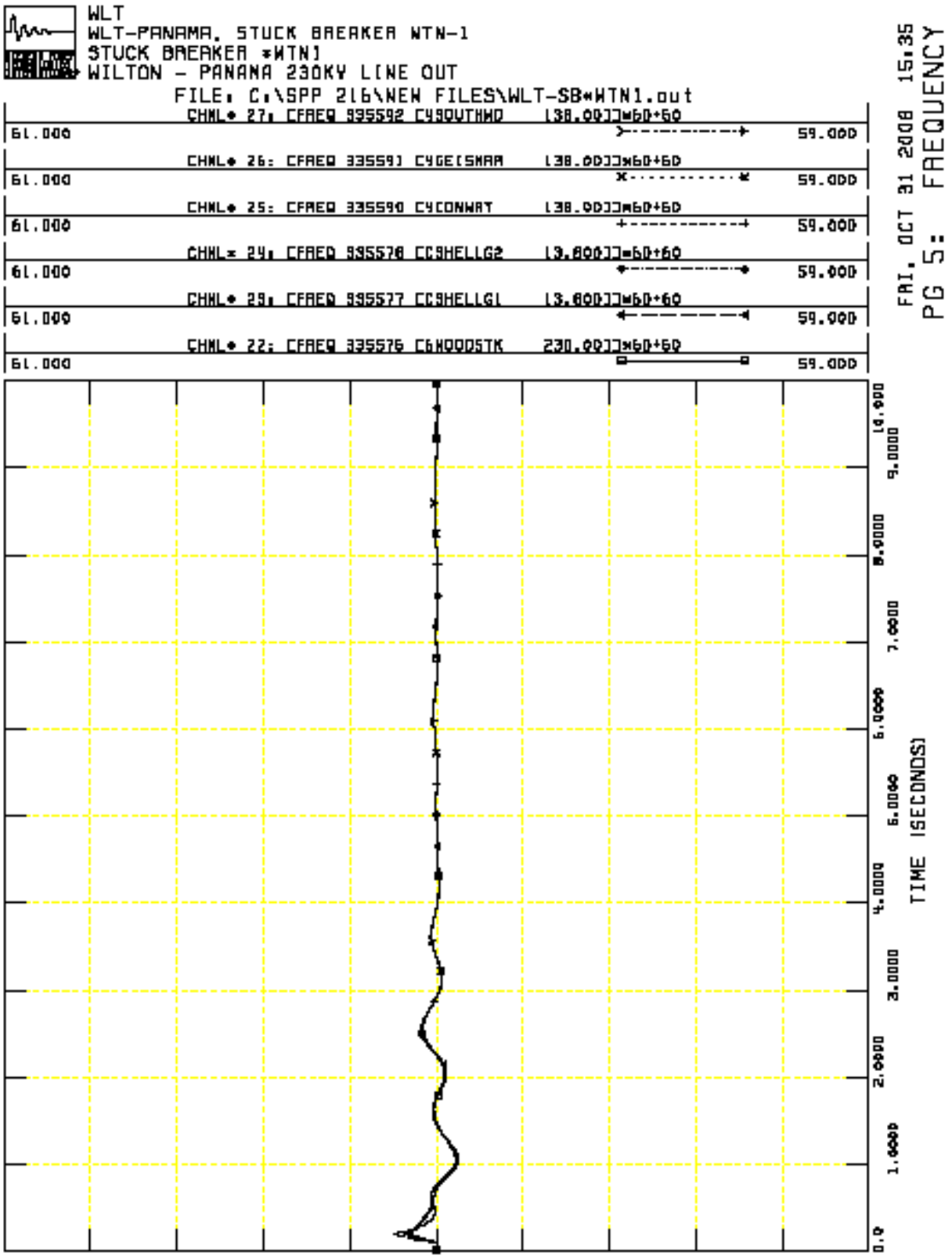
FAULT REFERENCE NO. 2A & 2B
FAULT-PANAMA-STUCK BKR –WTN1- LOCATION WILTON
FAULT-PANAMA-STUCK BKR –WTN4- LOCATION WILTON
(These simulations result in the same scenario)

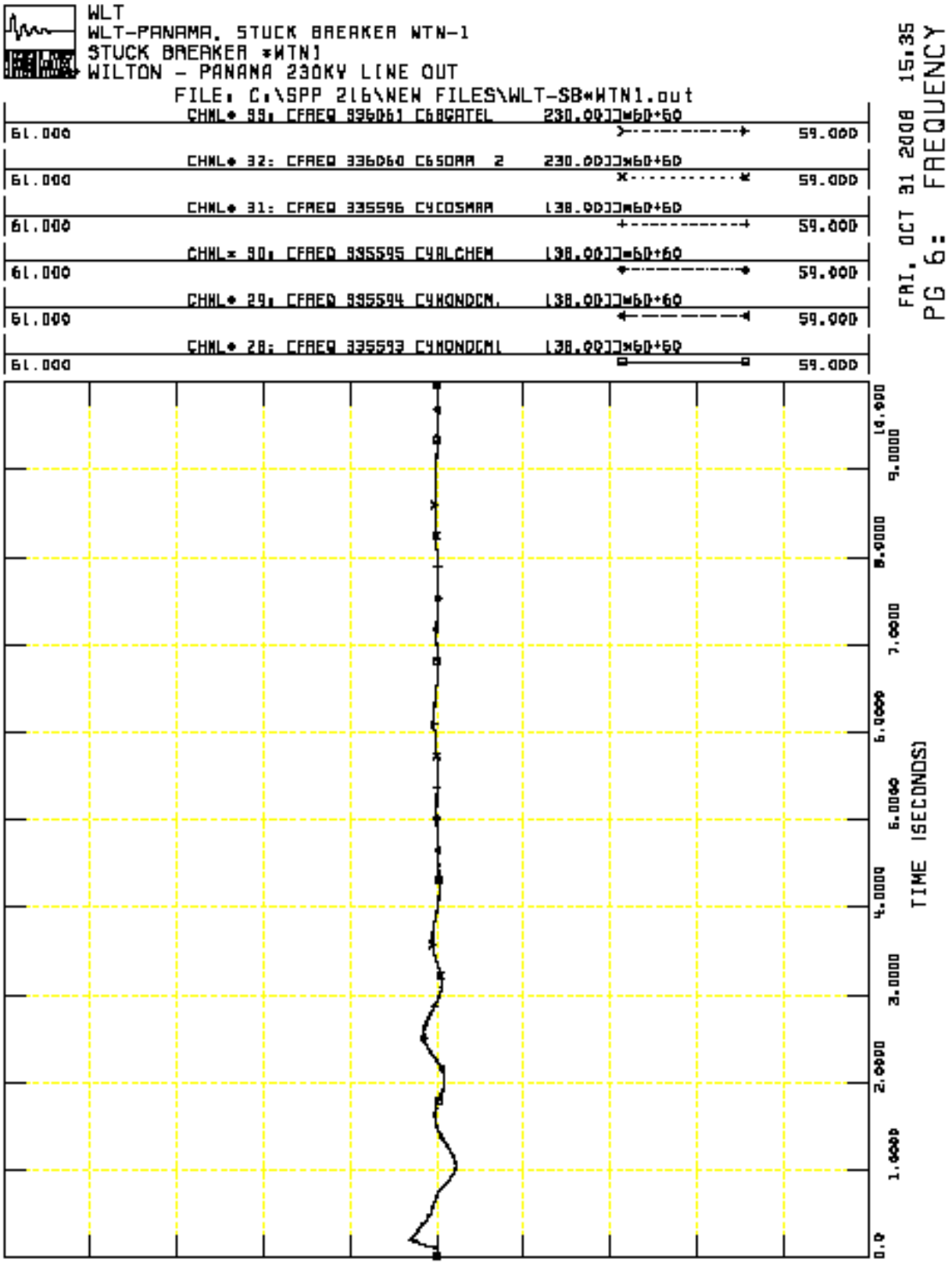

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 6: CVOLT 335592 CYSOUTHWD 138.000
1.2000
0.20000
CHNL* 5: CVOLT 335591 CYGE1SMAR 138.000
1.2000
0.20000
CHNL* 4: CVOLT 335590 CYCONWAT 138.000
1.2000
0.20000
CHNL* 3: CVOLT 335578 CCSHELLG2 13.8000
1.2000
0.20000
CHNL* 2: CVOLT 335577 CCSHELLG1 13.8000
1.2000
0.20000
CHNL* 1: CVOLT 335576 C6WOODSTK 230.000
1.2000
0.20000
FRI, OCT 31 2008 15:35
PG 1: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

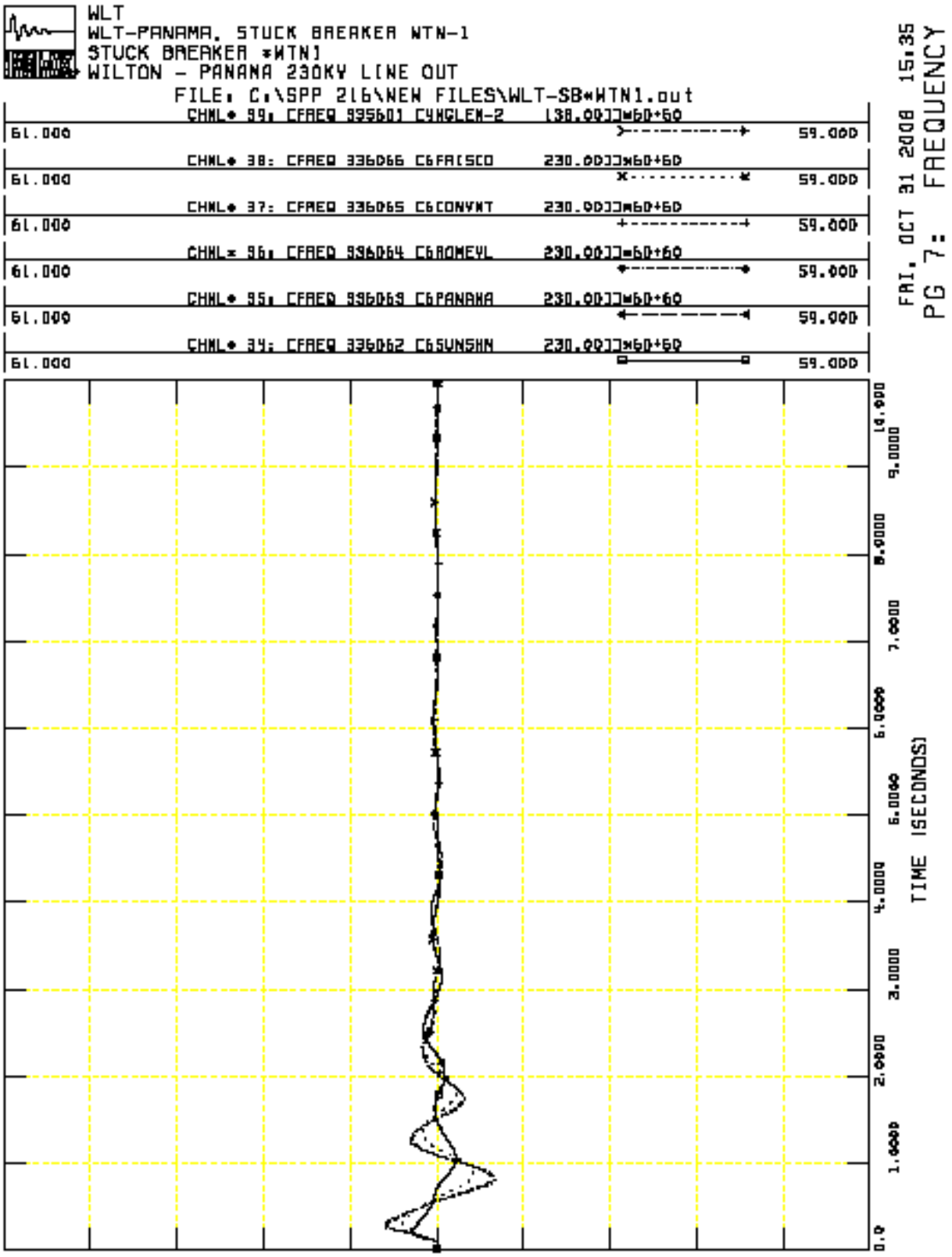

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 12: CVOLT 336061 C6BGATEL 230.0000
1.2000
0.20000
CHNL* 11: CVOLT 336060 C6SOAA 2 230.0000
1.2000
0.20000
CHNL* 10: CVOLT 335596 C4COSMAA 138.0000
1.2000
0.20000
CHNL* 9: CVOLT 335595 C4ALCHEM 138.0000
1.2000
0.20000
CHNL* 8: CVOLT 335594 C4MONDCM. 138.0000
1.2000
0.20000
CHNL* 7: CVOLT 335593 C4MONDCM1 138.0000
1.2000
0.20000
FRI, OCT 31 2008 15:35
PG 2: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

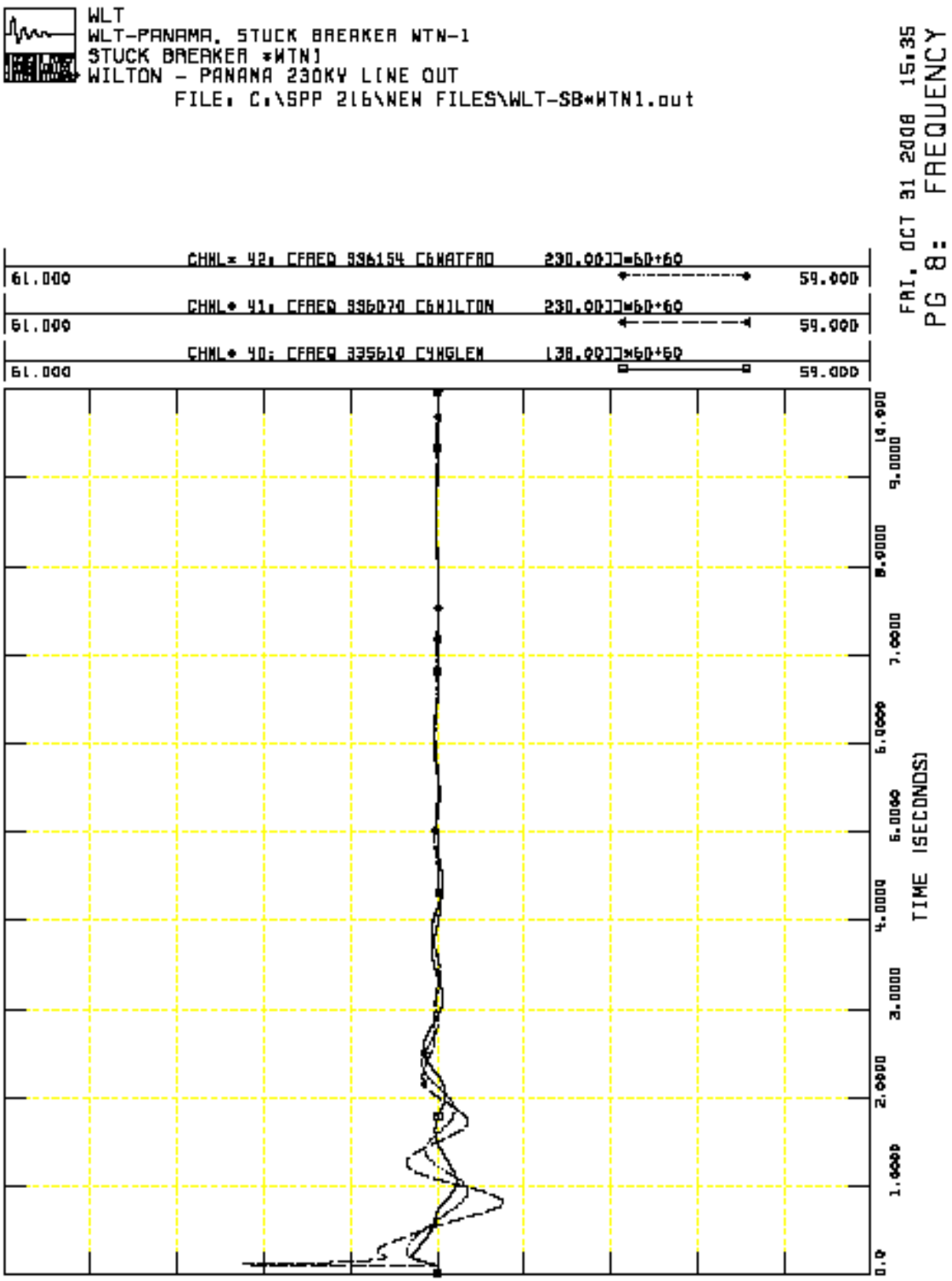

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 18: CVOLT 995601 C4WGLEN-2 198.0000
CHNL* 17: CVOLT 336066 C6FAIRCO 230.0000
CHNL* 16: CVOLT 336065 C6CONWNT 230.0000
CHNL* 15: CVOLT 996064 C6ROMEVL 230.0000
CHNL* 14: CVOLT 996063 C6PANAMA 230.0000
CHNL* 13: CVOLT 336062 C6SUNSHN 230.0000
1.2000
0.20000
FRI, OCT 31 2008 15:35
PG 3: 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

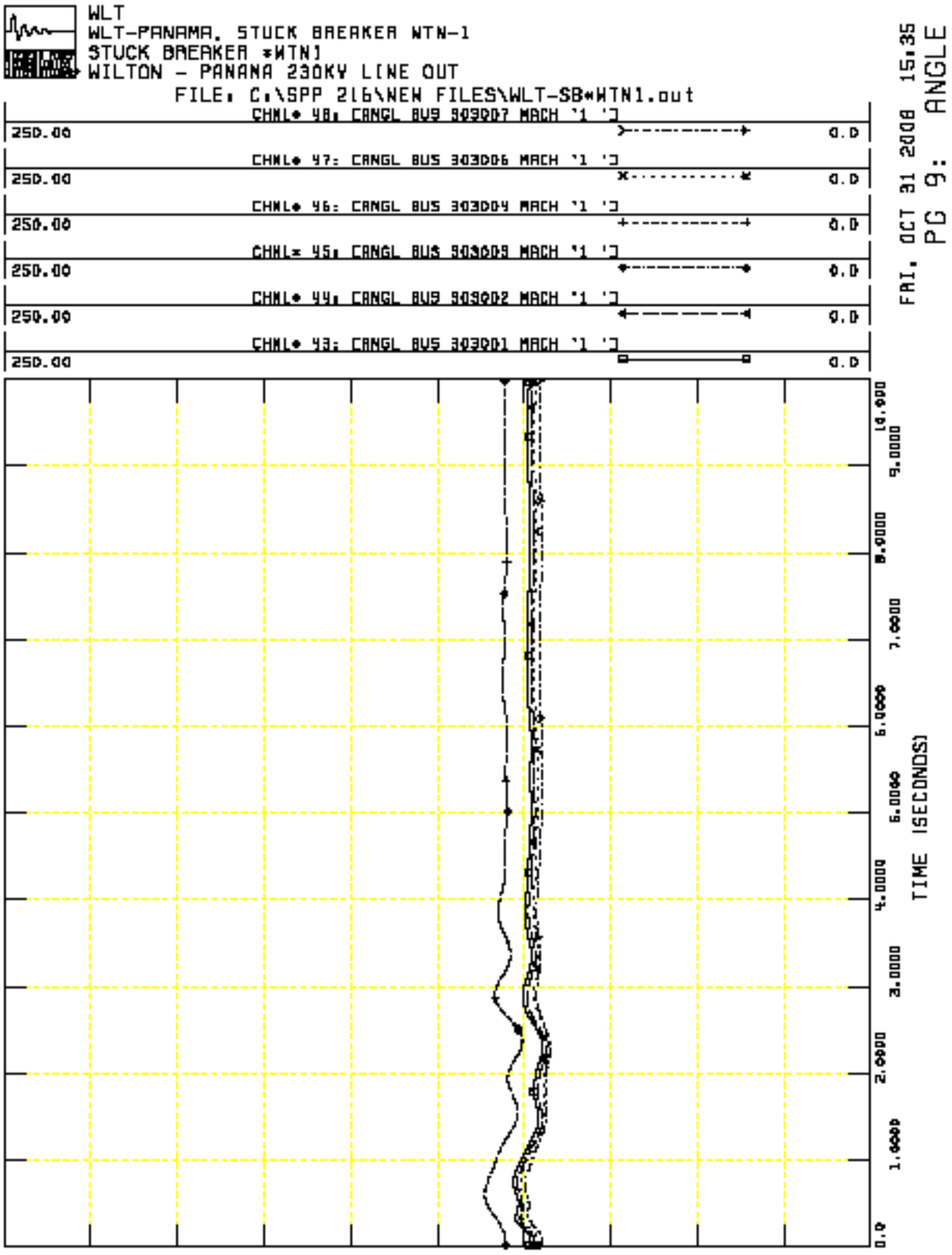

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
FRI, OCT 31 2008 15:35
PG 4: VOLTAGE
CHNL: 21: CVOLT 956154 C6WATFRD 230.0000
1.2000
0.20000
CHNL* 20: CVOLT 956070 C6WILTON 230.0000
1.2000
0.20000
CHNL* 19: CVOLT 935610 C4NGLEN 138.0000
1.2000
0.20000
14.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

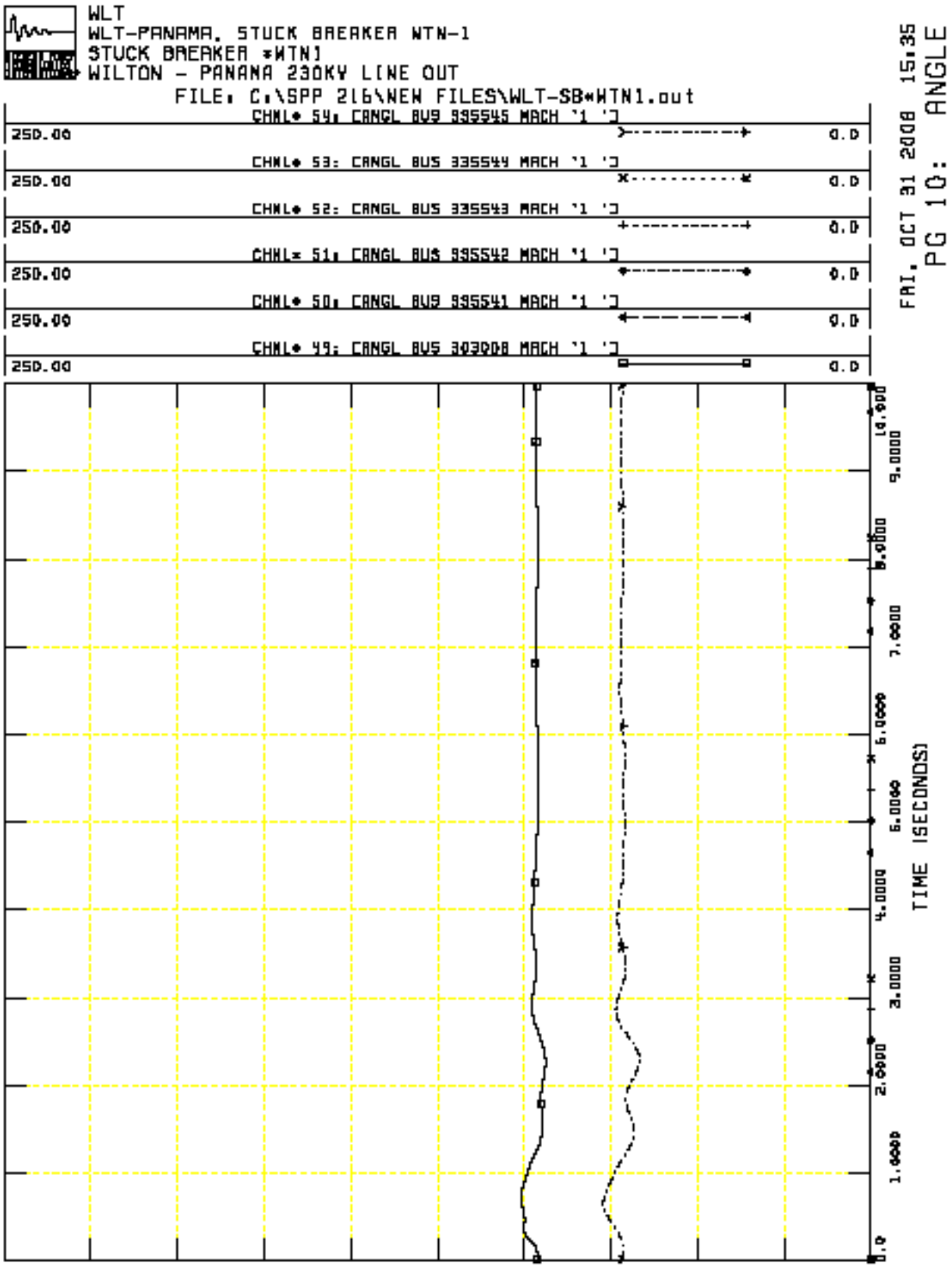

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 27: CFREQ 335592 CY3OUTHWD 138.00]]*60+60
61.000
59.000
CHNL* 26: CFREQ 335591 CY3GE[SMAR 138.00]]*60+60
61.000
59.000
CHNL* 25: CFREQ 335590 CY3CONWAT 138.00]]*60+60
61.000
59.000
CHNL* 24: CFREQ 335578 CC3HELLG2 13.800]]*60+60
61.000
59.000
CHNL* 23: CFREQ 335577 CC3HELLG1 13.800]]*60+60
61.000
59.000
CHNL* 22: CFREQ 335576 C6HOODSTK 230.00]]*60+60
61.000
59.000
FRI, OCT 31 2008 15:35
PG 5: FREQUENCY
14.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

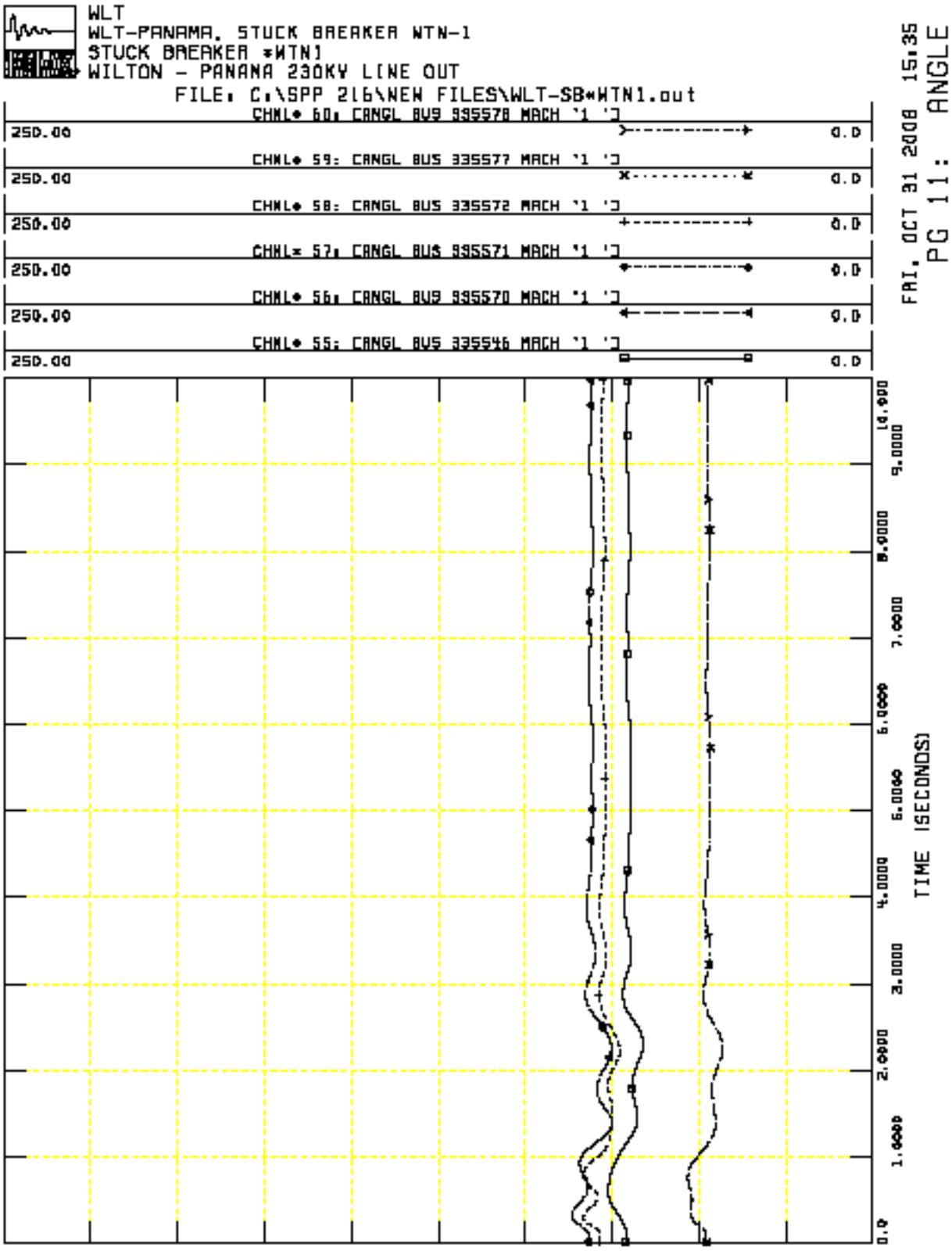

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 33: CFREQ 336061 C68GATEL 230.0000*60+60
61.000
59.000
CHNL* 32: CFREQ 336060 C65OMA 2 230.0000*60+60
61.000
59.000
CHNL* 31: CFREQ 335596 CYCOSMAR 138.0000*60+60
61.000
59.000
CHNL* 30: CFREQ 335595 CYALCHEM 138.0000*60+60
61.000
59.000
CHNL* 29: CFREQ 335594 CYMONDCM. 138.0000*60+60
61.000
59.000
CHNL* 28: CFREQ 335593 CYMONDCM1 138.0000*60+60
61.000
59.000
FRI, OCT 31 2008 15:35
PG 6: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

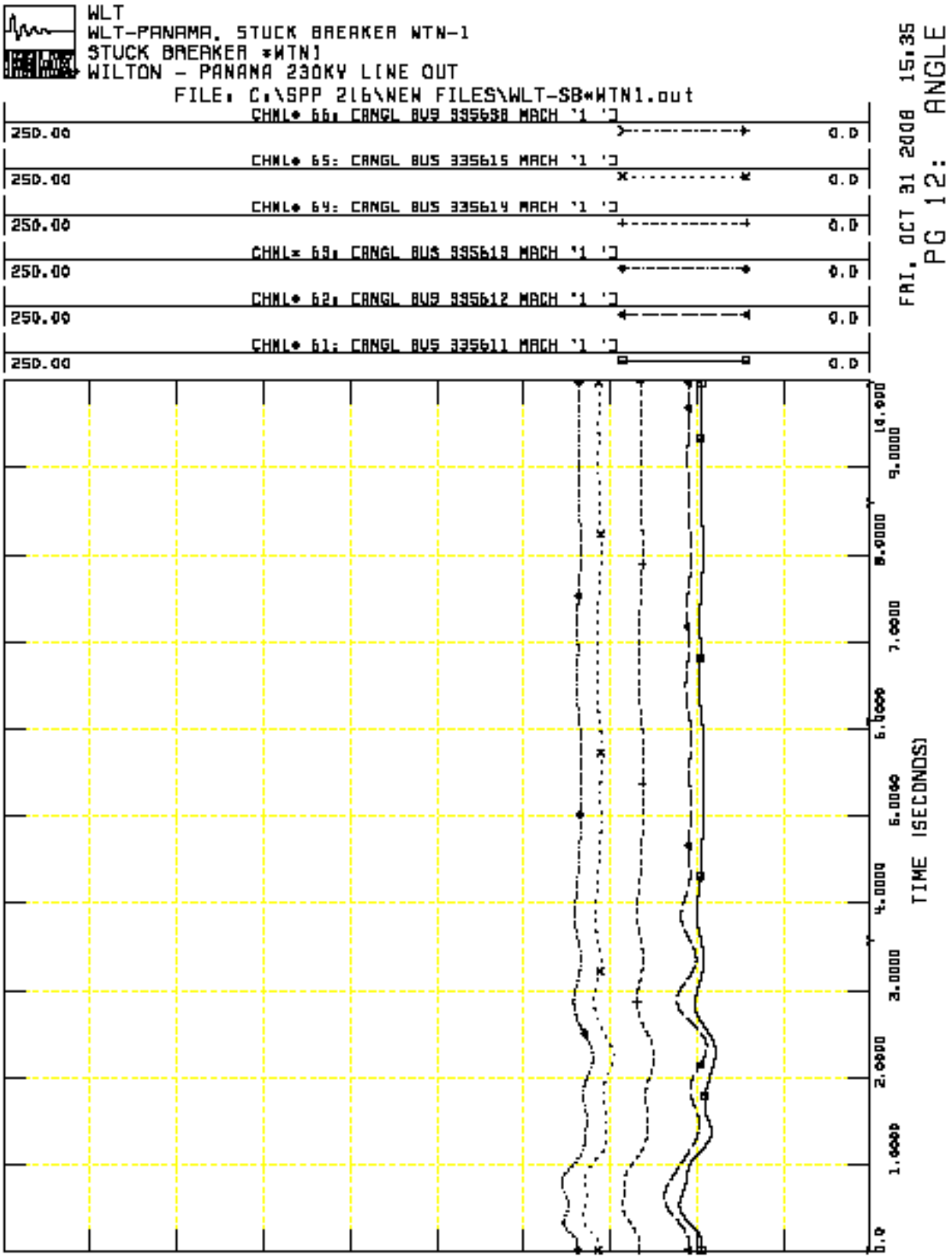

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER #WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB#WTN1.out
CHNL# 39: CFREQ 935601 C4MGLEN-2 138.000]#60+60
61.000
59.000
CHNL# 38: CFREQ 336066 C6FRISCO 230.000]#60+60
61.000
59.000
CHNL# 37: CFREQ 336065 C6CONVNT 230.000]#60+60
61.000
59.000
CHNL# 36: CFREQ 336064 C6ROMEVL 230.000]#60+60
61.000
59.000
CHNL# 35: CFREQ 336069 C6PANANA 230.000]#60+60
61.000
59.000
CHNL# 34: CFREQ 336062 C6SUNSHN 230.000]#60+60
61.000
59.000
FRI, OCT 31 2008 15:35
PG 7: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

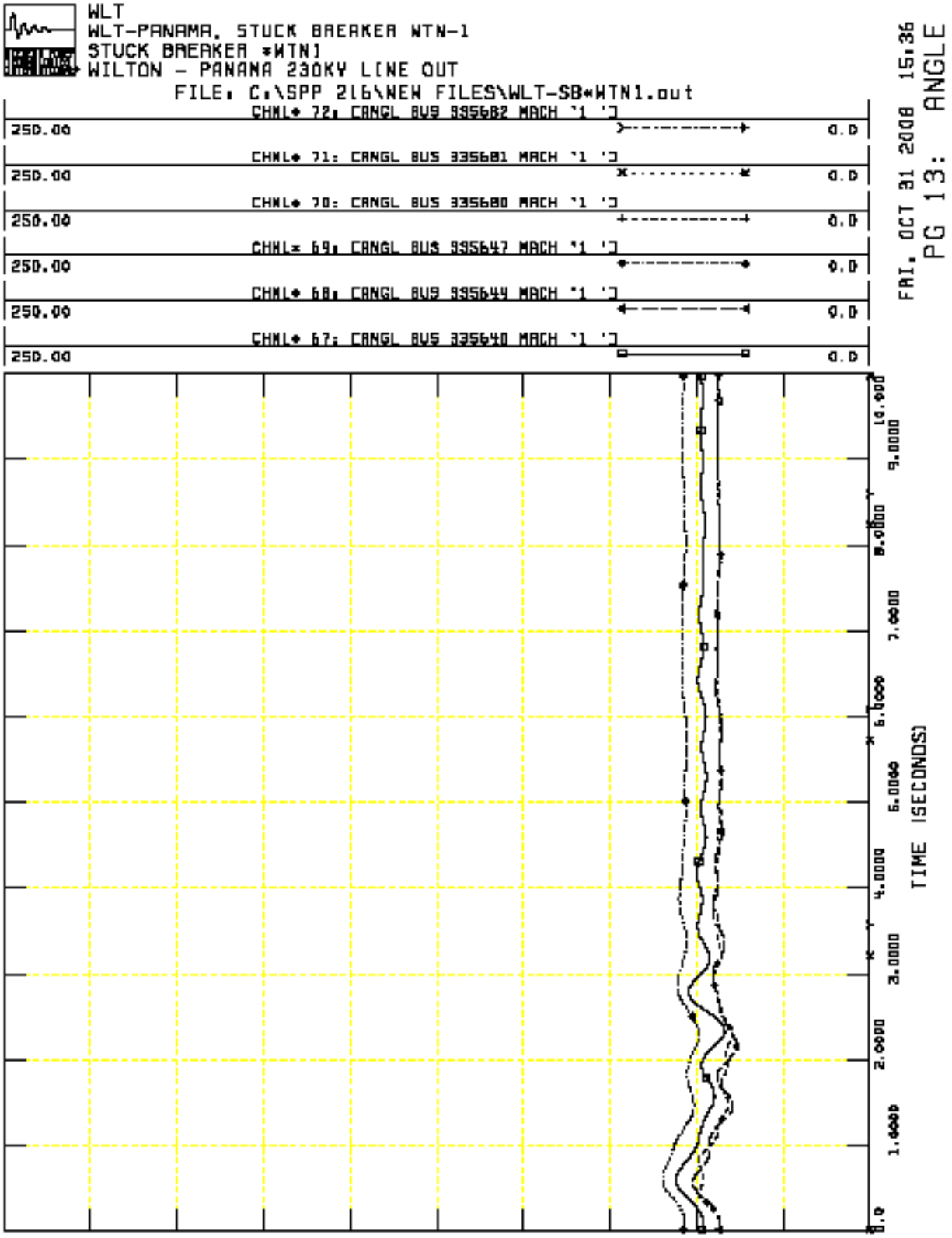

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
FRI, OCT 31 2008 15:35
PG 8: FREQUENCY
CHNL= 42: CFREQ 936154 C6WATFRD 230.00]]=60+60
61.000
59.000
CHNL* 41: CFREQ 936070 C6WILTON 230.00]]=60+60
61.000
59.000
CHNL* 40: CFREQ 335610 CYNGLEN 138.00]]=60+60
61.000
59.000
14.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

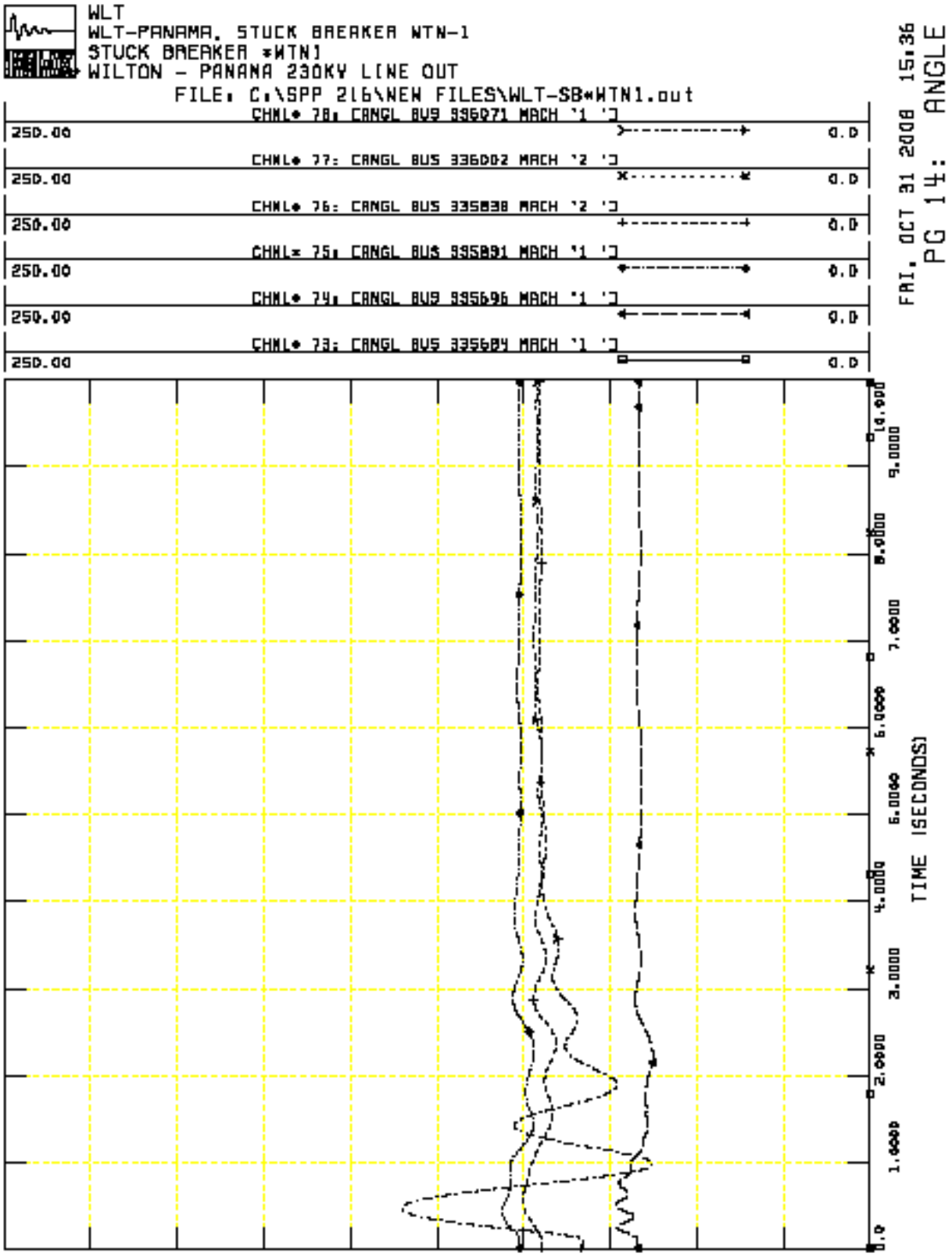

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 48: CANGL BUS 303007 MACH '1 '
250.00
0.0
CHNL* 47: CANGL BUS 303006 MACH '1 '
250.00
0.0
CHNL* 46: CANGL BUS 303004 MACH '1 '
250.00
0.0
CHNL* 45: CANGL BUS 303003 MACH '1 '
250.00
0.0
CHNL* 44: CANGL BUS 303002 MACH '1 '
250.00
0.0
CHNL* 43: CANGL BUS 303001 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:35
PG 9: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

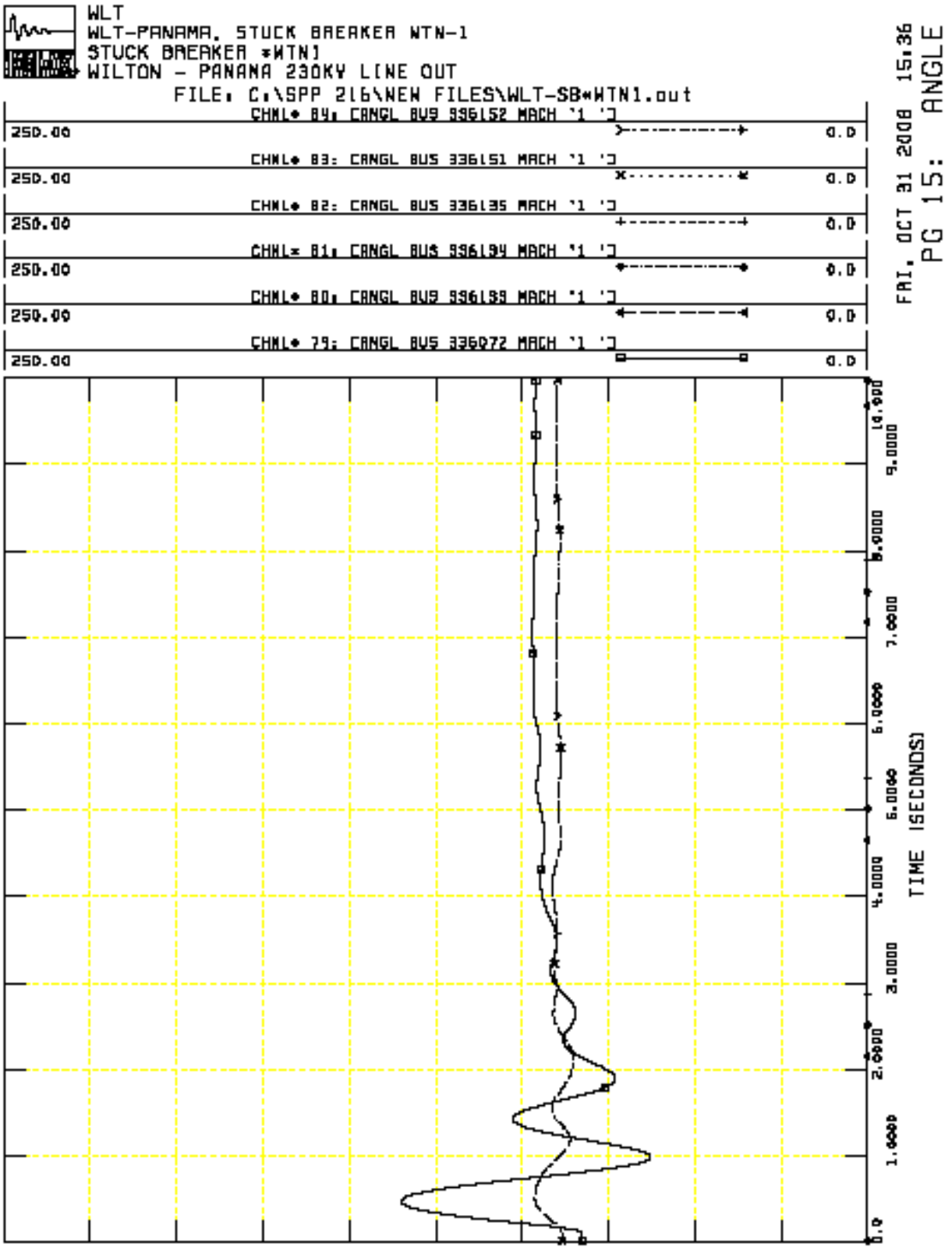

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 54: CANGL BUS 335545 MACH '1 '
CHNL* 53: CANGL BUS 335544 MACH '1 '
CHNL* 52: CANGL BUS 335543 MACH '1 '
CHNL* 51: CANGL BUS 335542 MACH '1 '
CHNL* 50: CANGL BUS 335541 MACH '1 '
CHNL* 49: CANGL BUS 303008 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:35
PG 10: ANGLE
TIME (SECONDS)

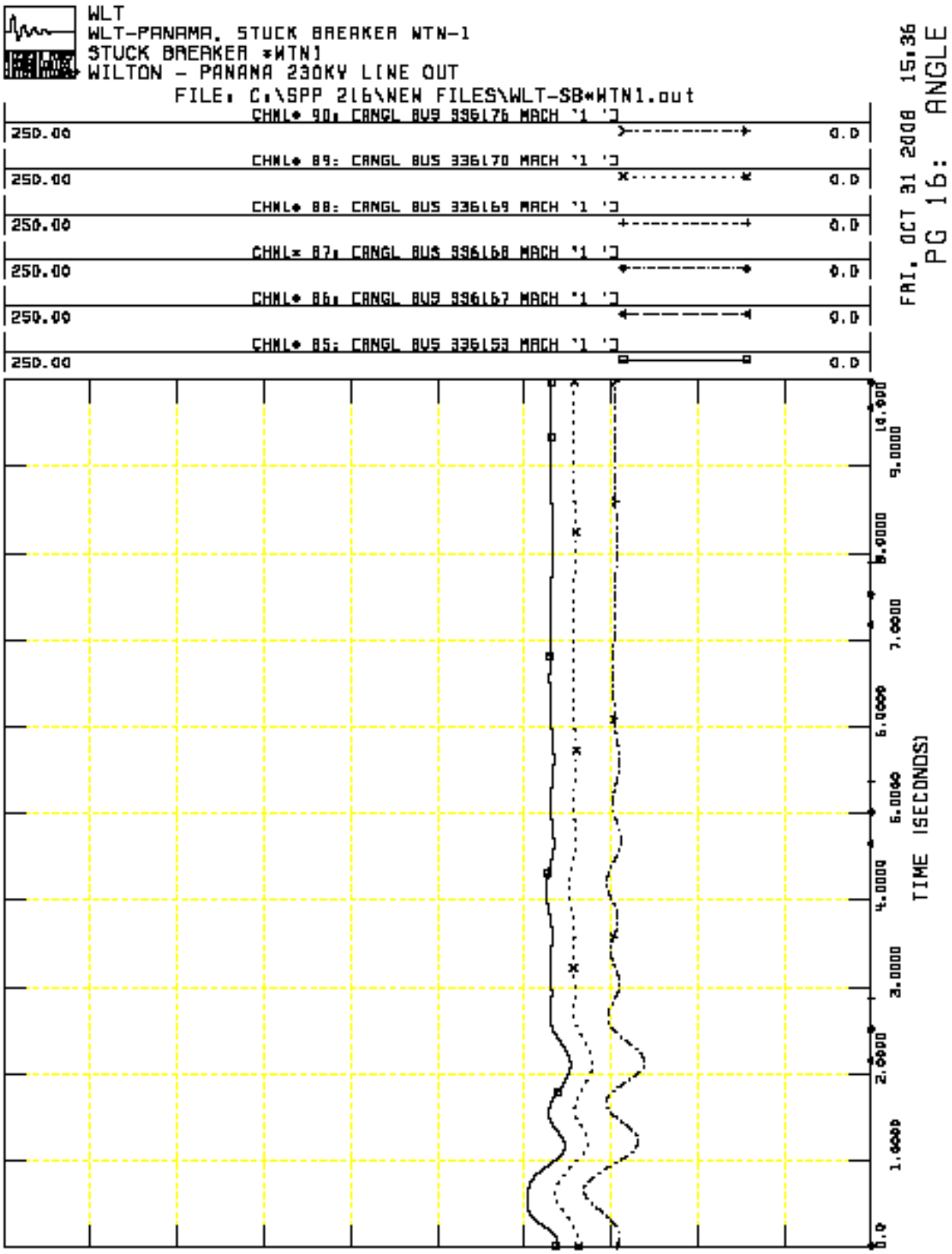

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 60: CANGL BUS 335578 MACH '1 '
CHNL* 59: CANGL BUS 335577 MACH '1 '
CHNL* 58: CANGL BUS 335572 MACH '1 '
CHNL* 57: CANGL BUS 335571 MACH '1 '
CHNL* 56: CANGL BUS 335570 MACH '1 '
CHNL* 55: CANGL BUS 335546 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:35
PG 11: 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

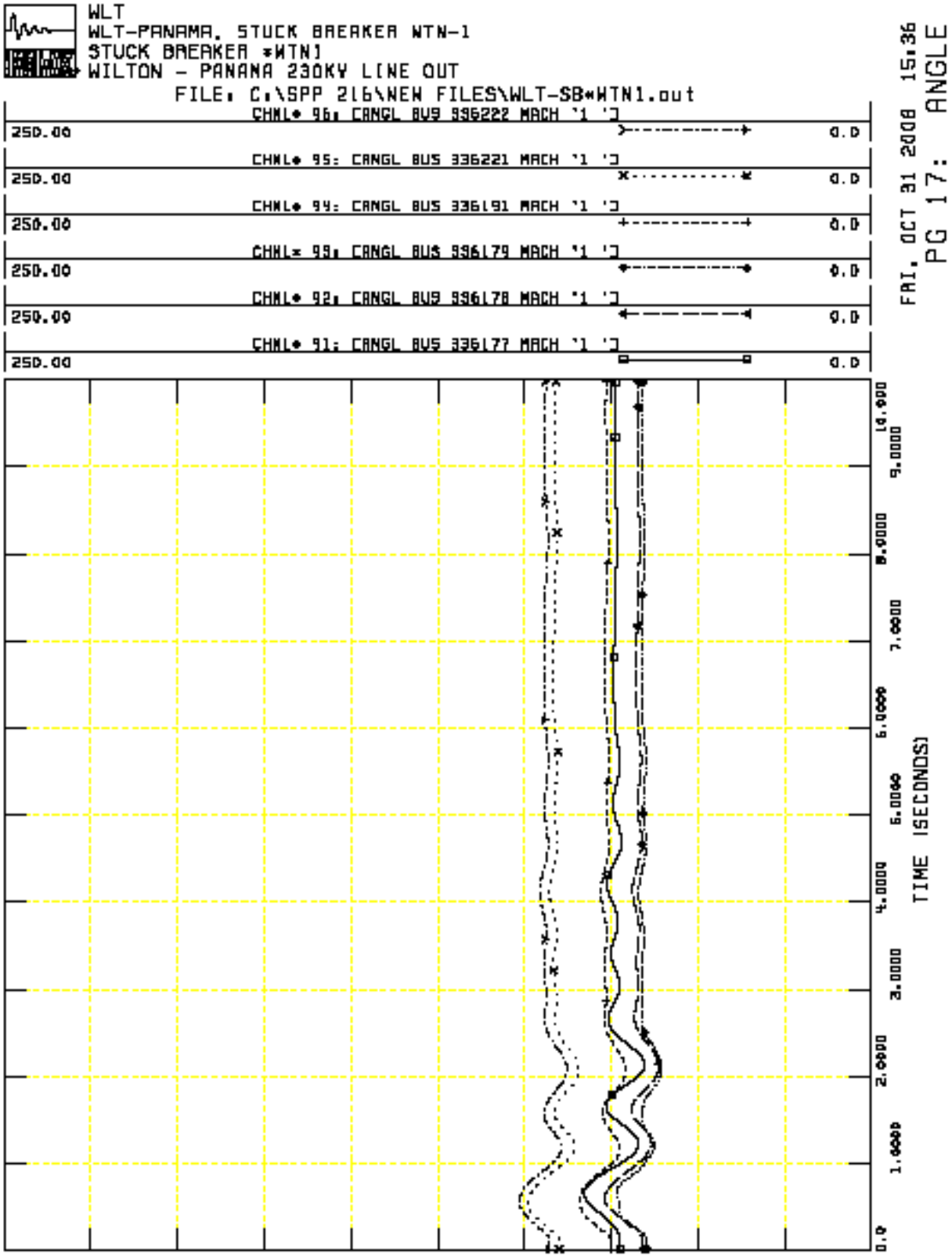

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 66: CANGL BUS 335638 MACH '1 'J
250.00
0.0
CHNL* 65: CANGL BUS 335615 MACH '1 'J
250.00
0.0
CHNL* 64: CANGL BUS 335614 MACH '1 'J
250.00
0.0
CHNL* 63: CANGL BUS 335613 MACH '1 'J
250.00
0.0
CHNL* 62: CANGL BUS 335612 MACH '1 'J
250.00
0.0
CHNL* 61: CANGL BUS 335611 MACH '1 'J
250.00
0.0
FRI, OCT 31 2008 15:35
PG 12: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

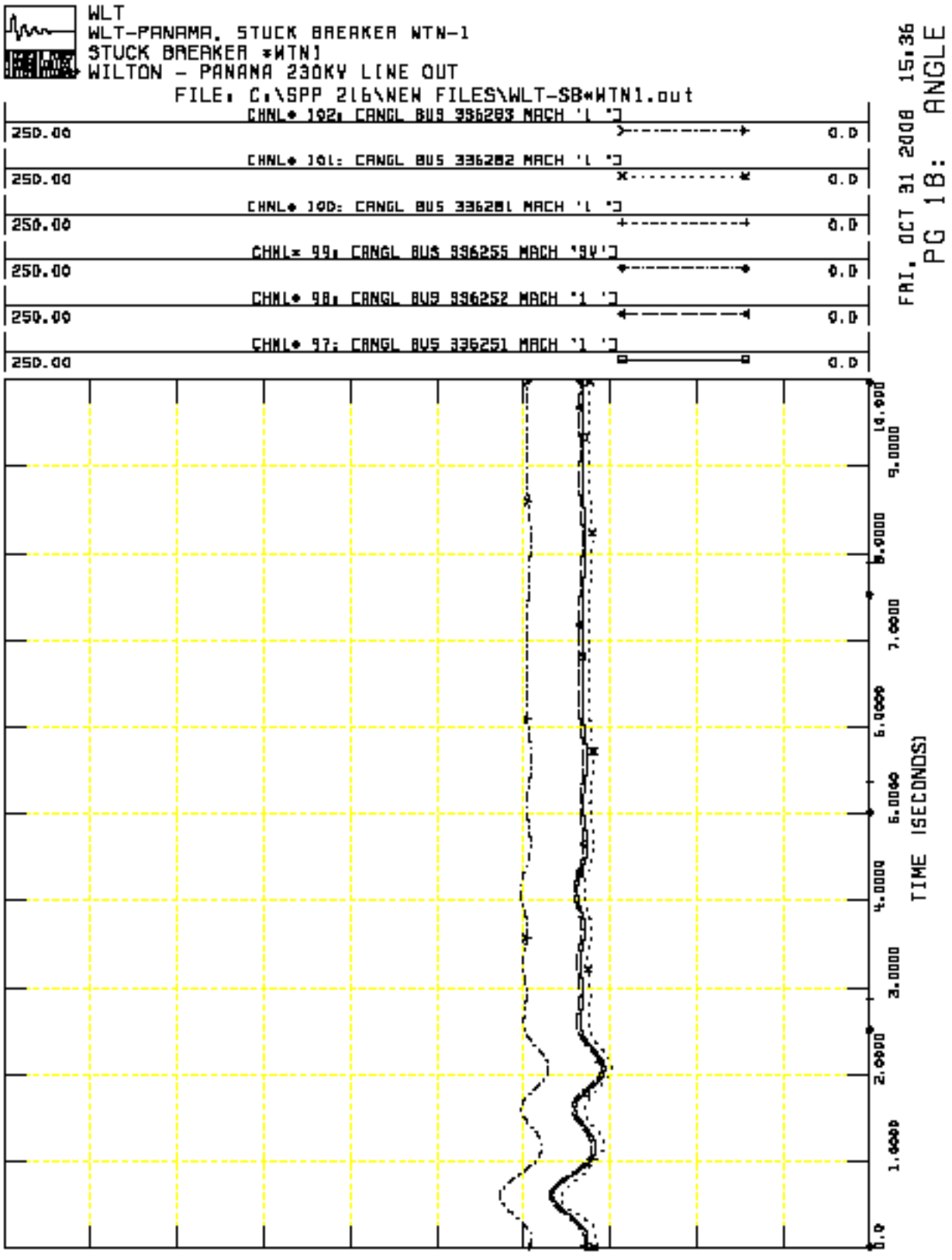

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 72: CANGL BUS 335682 MACH '1 '
CHNL* 71: CANGL BUS 335681 MACH '1 '
CHNL* 70: CANGL BUS 335680 MACH '1 '
CHNL* 69: CANGL BUS 335647 MACH '1 '
CHNL* 68: CANGL BUS 335644 MACH '1 '
CHNL* 67: CANGL BUS 335640 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:36
PG 13: ANGLE
TIME (SECONDS)

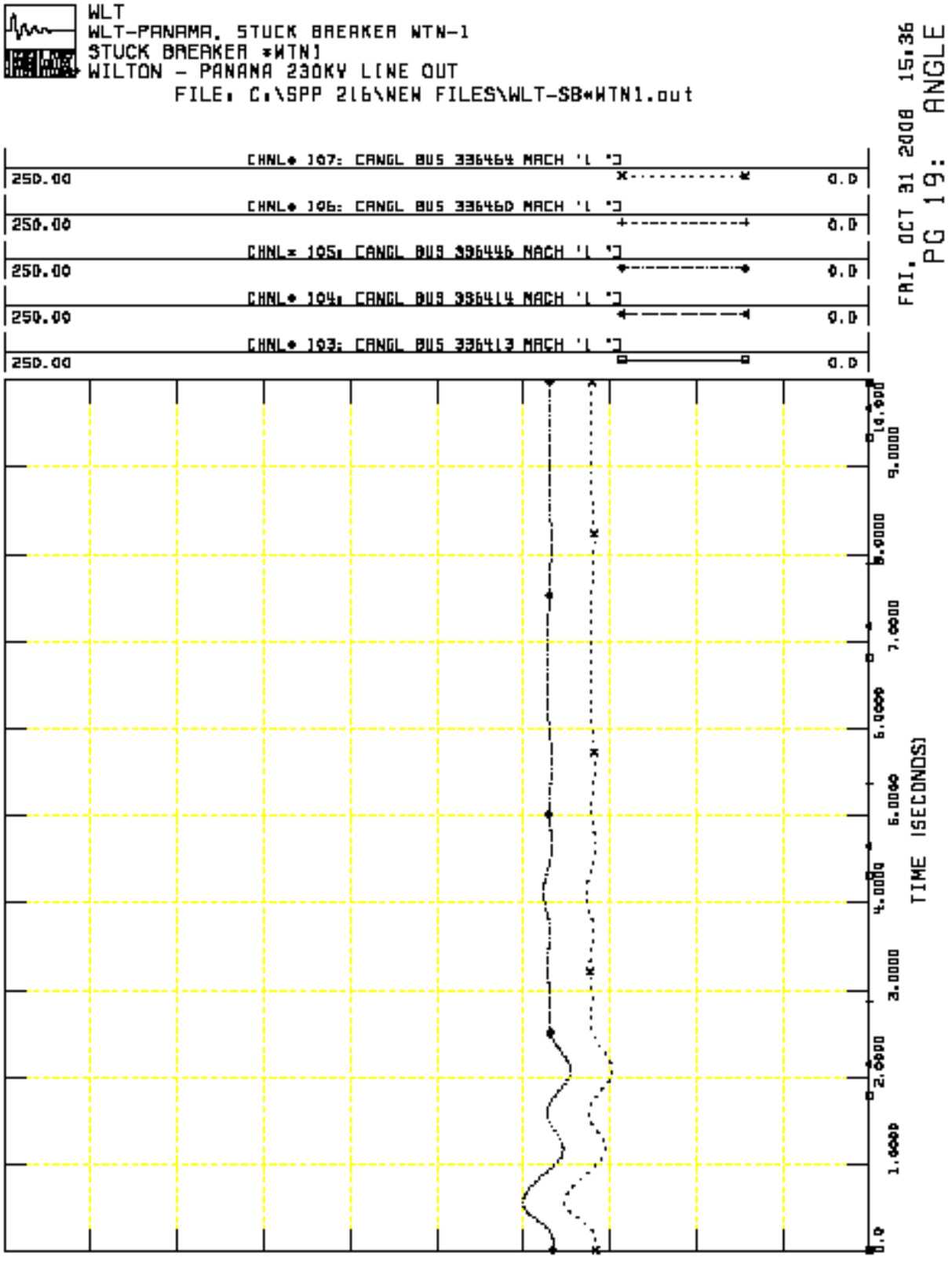

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 78: CANGL BUS 336071 MACH '1 '
250.00
0.0
CHNL* 77: CANGL BUS 336002 MACH '2 '
250.00
0.0
CHNL* 76: CANGL BUS 335838 MACH '2 '
250.00
0.0
CHNL* 75: CANGL BUS 335891 MACH '1 '
250.00
0.0
CHNL* 74: CANGL BUS 335696 MACH '1 '
250.00
0.0
CHNL* 73: CANGL BUS 335604 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:36
PG 14: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)


WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 84: CANGL BUS 336152 MACH '1 '
250.00
0.0
CHNL* 83: CANGL BUS 336151 MACH '1 '
250.00
0.0
CHNL* 82: CANGL BUS 336135 MACH '1 '
250.00
0.0
CHNL* 81: CANGL BUS 336194 MACH '1 '
250.00
0.0
CHNL* 80: CANGL BUS 336189 MACH '1 '
250.00
0.0
CHNL* 79: CANGL BUS 336072 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:36
PG 15: ANGLE
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

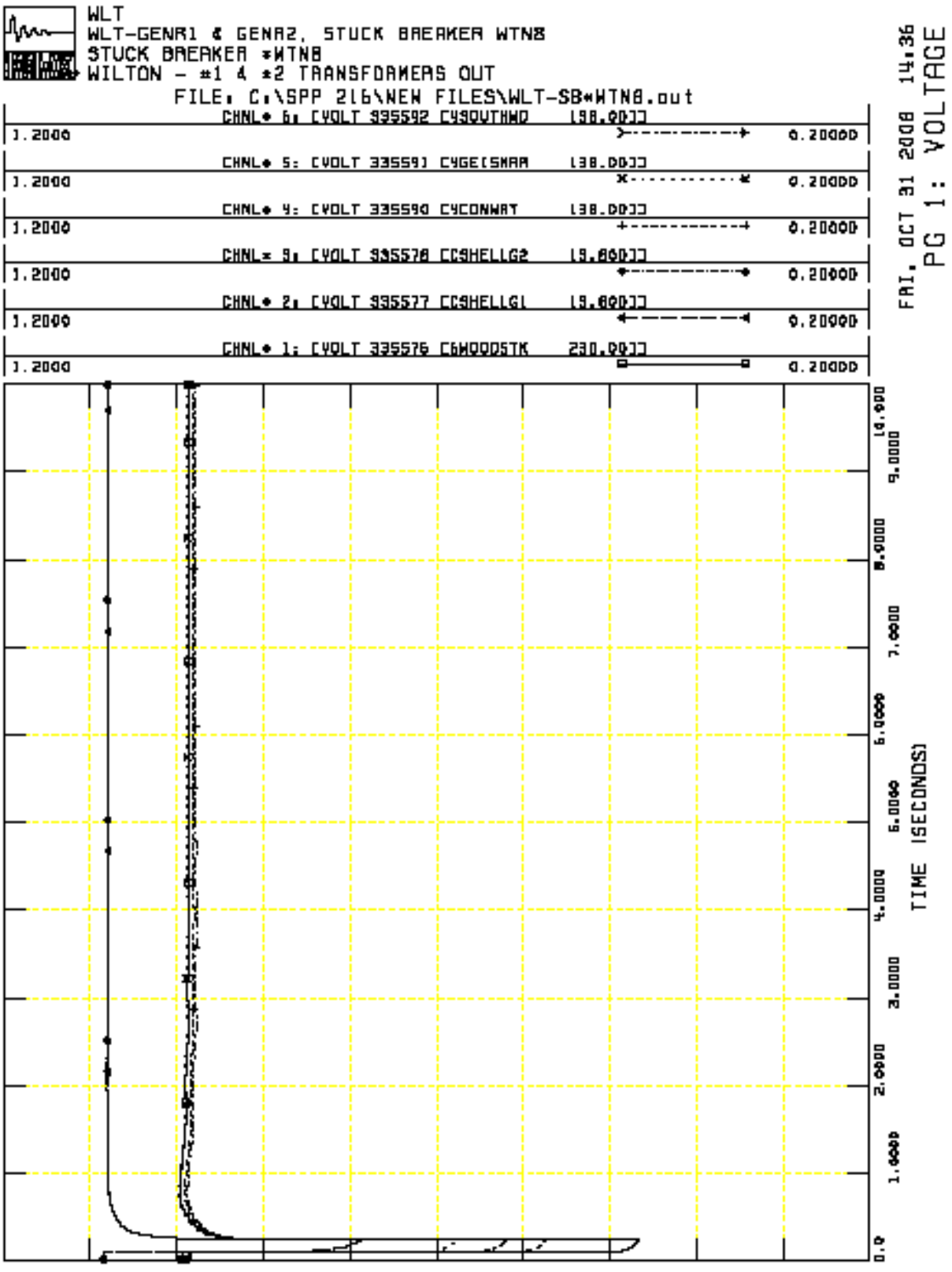

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
FRI, OCT 31 2008 15:36
PG 16: ANGLE
CHNL* 90: CANGL BUS 336176 MACH '1 '
CHNL* 89: CANGL BUS 336170 MACH '1 '
CHNL* 88: CANGL BUS 336169 MACH '1 '
CHNL* 87: CANGL BUS 336168 MACH '1 '
CHNL* 86: CANGL BUS 336167 MACH '1 '
CHNL* 85: CANGL BUS 336153 MACH '1 '
250.00
0.0
10.0000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

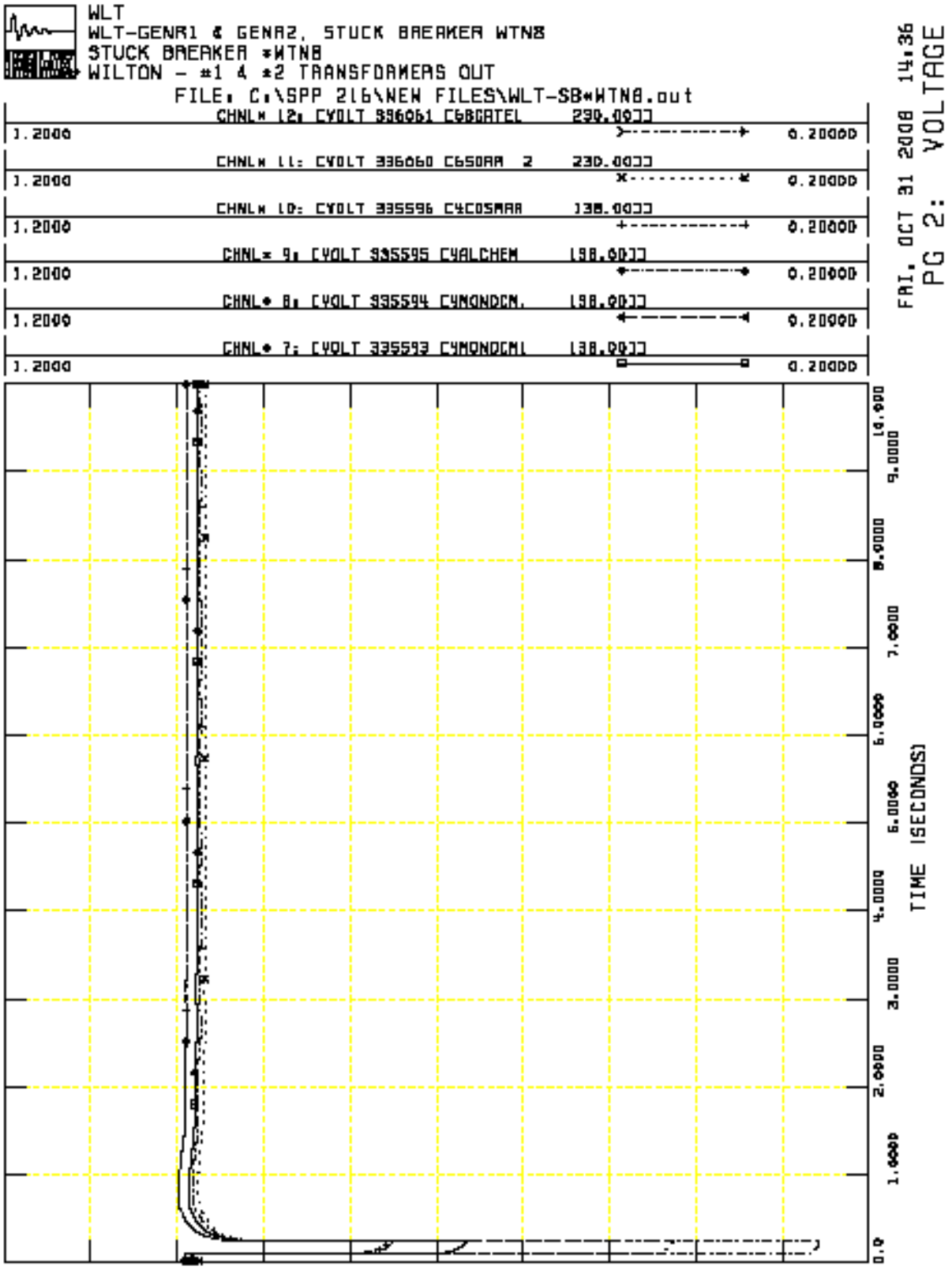

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 96: CANGL BUS 336222 MACH '1 '
CHNL* 95: CANGL BUS 336221 MACH '1 '
CHNL* 94: CANGL BUS 336191 MACH '1 '
CHNL* 93: CANGL BUS 336179 MACH '1 '
CHNL* 92: CANGL BUS 336178 MACH '1 '
CHNL* 91: CANGL BUS 336177 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:36
PG 17: ANGLE
TIME (SECONDS)

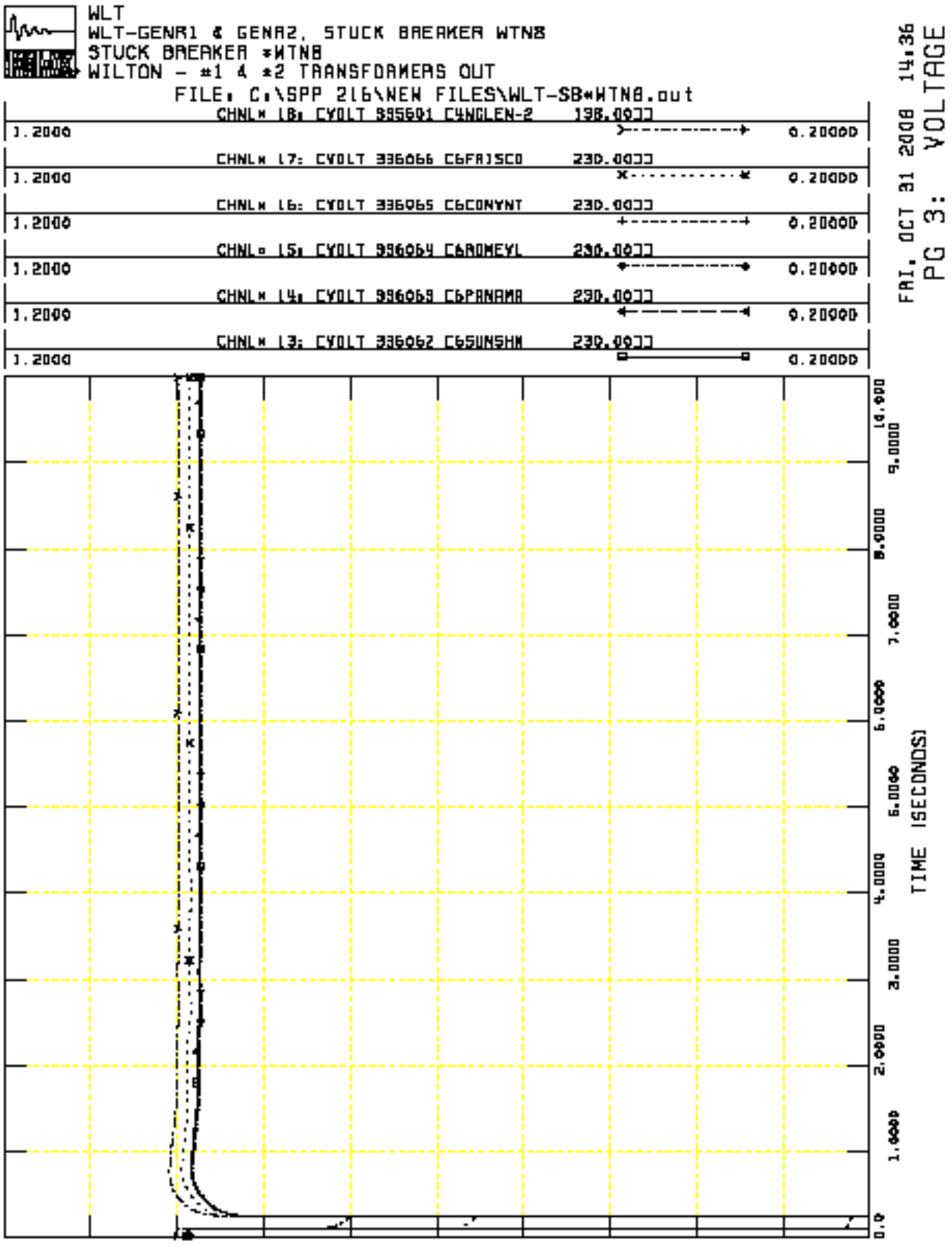

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANAMA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
CHNL* 102: CANGL BUS 336283 MACH '1 '
250.00
0.0
CHNL* 101: CANGL BUS 336282 MACH '1 '
250.00
0.0
CHNL* 100: CANGL BUS 336281 MACH '1 '
250.00
0.0
CHNL* 99: CANGL BUS 336255 MACH '9V'
250.00
0.0
CHNL* 98: CANGL BUS 336252 MACH '1 '
250.00
0.0
CHNL* 97: CANGL BUS 336251 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 15:36
PG 18: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

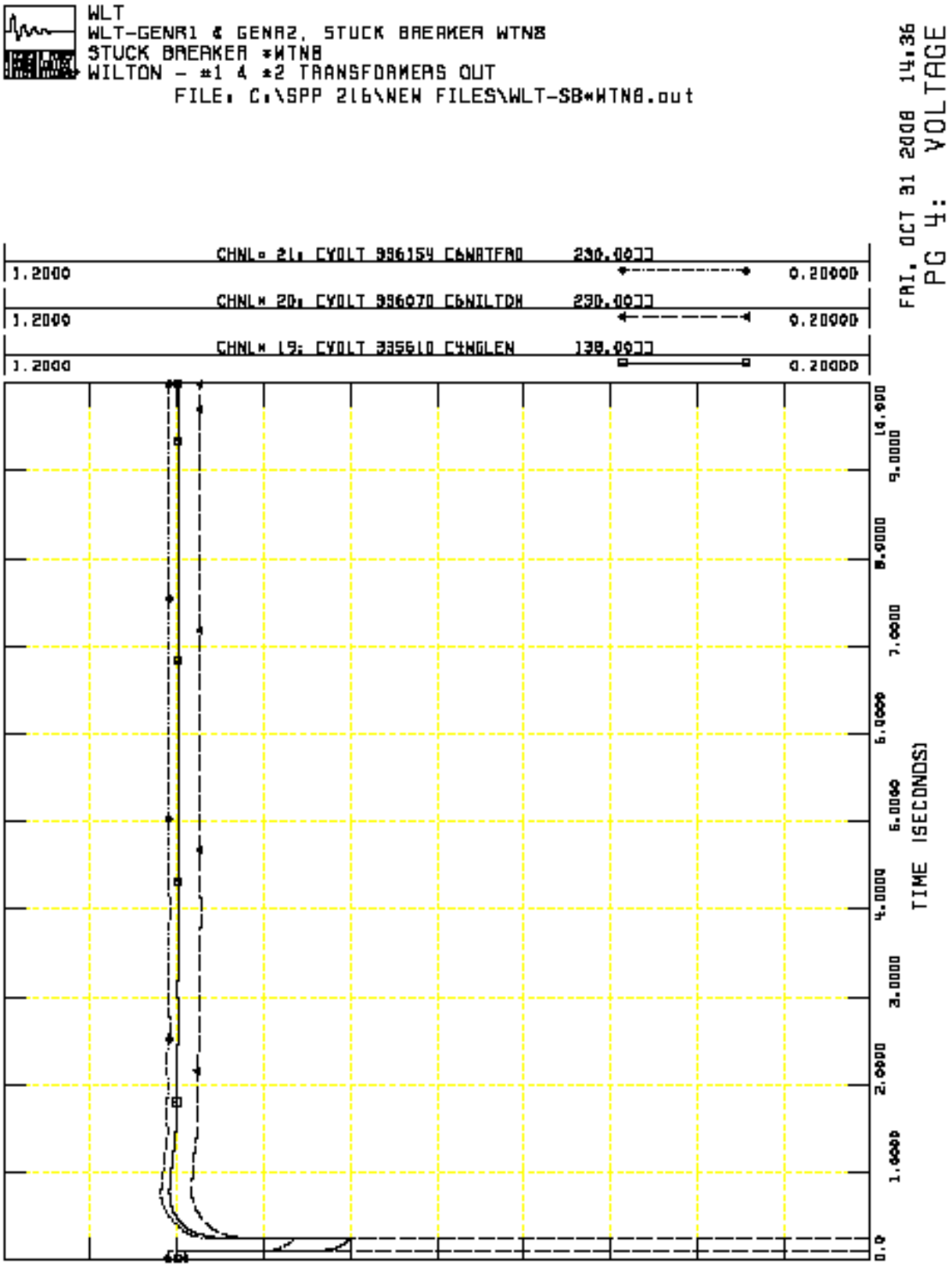

WLT
WLT-PANAMA, STUCK BREAKER WTN-1
STUCK BREAKER *WTN1
WILTON - PANANA 230KV LINE OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN1.out
FRI, OCT 31 2008 15:36
PG 19: ANGLE
CHNL* 107: CANGL BUS 336464 MACH 'L '1
CHNL* 106: CANGL BUS 336460 MACH 'L '1
CHNL* 105: CANGL BUS 336446 MACH 'L '1
CHNL* 104: CANGL BUS 336414 MACH 'L '1
CHNL* 103: CANGL BUS 336413 MACH 'L '1
250.00
0.0
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

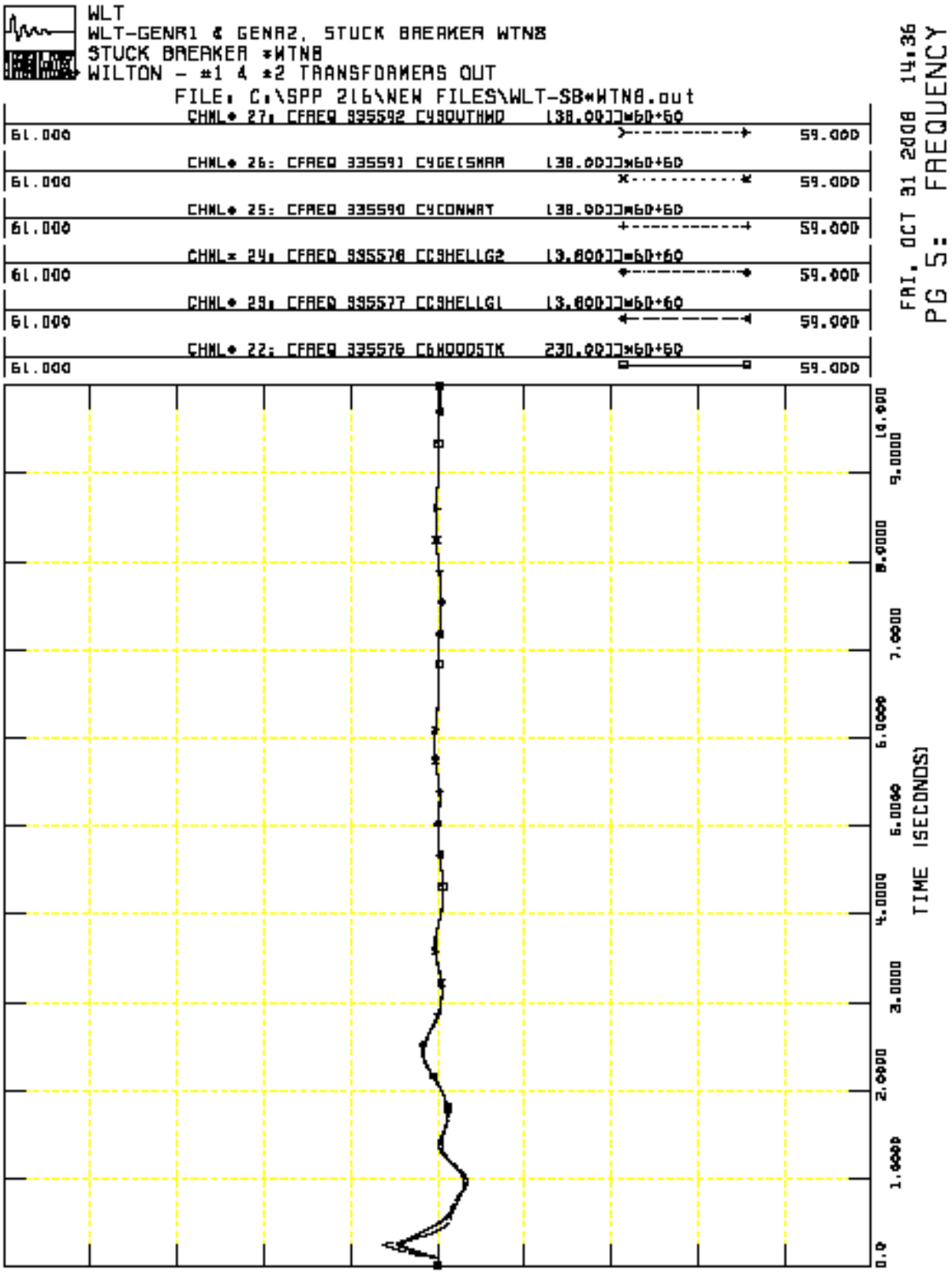
FAULT REFERENCE NO. 3 & 4
FAULT-GENR1-STUCK BKR –WTN8- LOCATION WILTON GENR1
FAULT-GENR2-STUCK BKR –WTN7- LOCATION WILTON GENR2
(These simulations result in the same scenario)

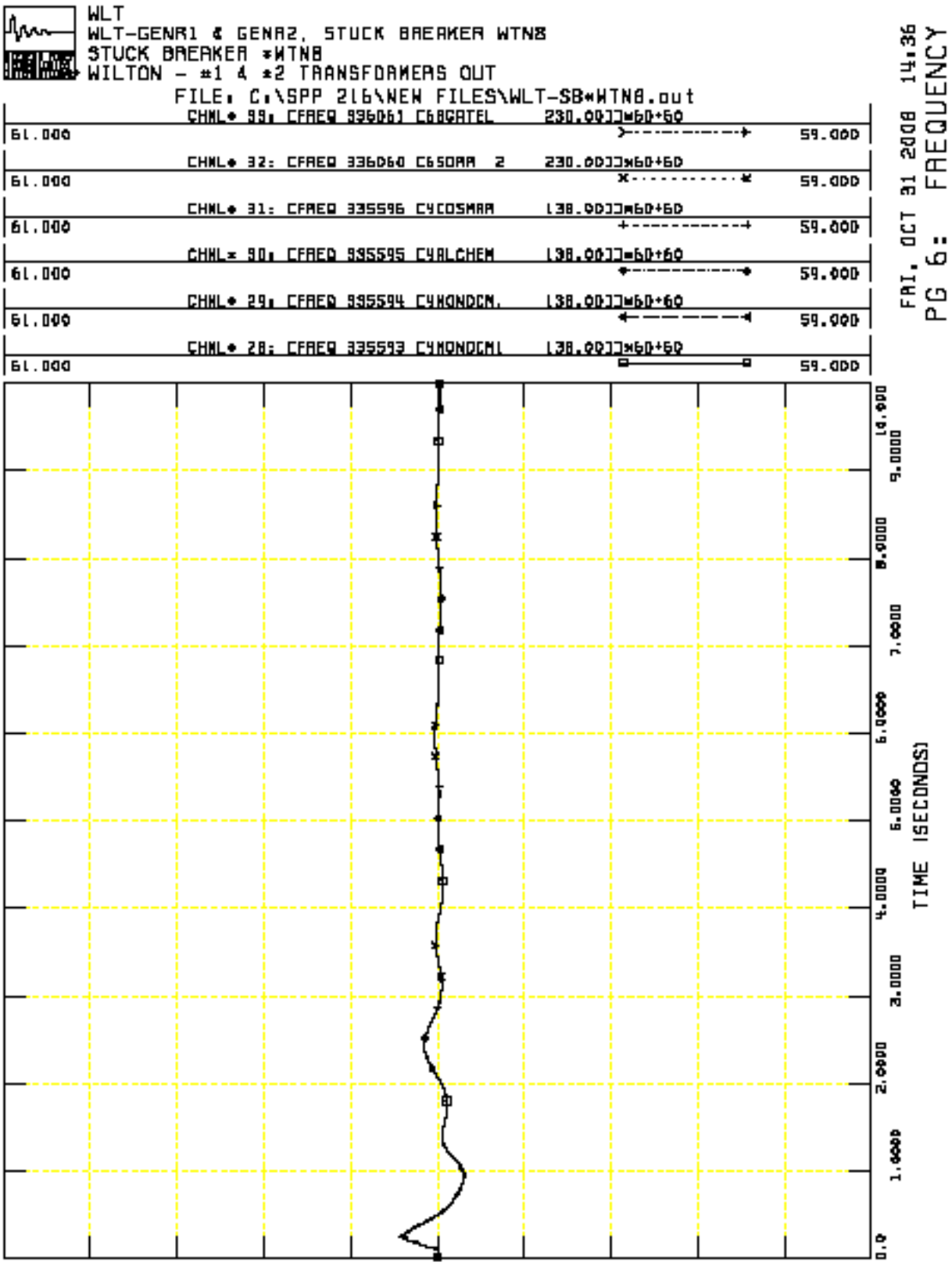

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
FRI, OCT 31 2008 14:36
PG 1: VOLTAGE
CHNL 6: CVOLT 335592 C4SOUTHWD 138.000
CHNL 5: CVOLT 335591 C4GE(SMAR 138.000
CHNL 4: CVOLT 335590 C4CONWAY 138.000
CHNL 3: CVOLT 335578 CCSHELLG2 18.000
CHNL 2: CVOLT 335577 CCSHELLG1 18.000
CHNL 1: CVOLT 335576 C6WOODSTK 230.000
1.2000
0.20000
TIME (SECONDS)
0.0
1.0000
2.0000
3.0000
4.0000
5.0000
6.0000
7.0000
8.0000
9.0000
10.000

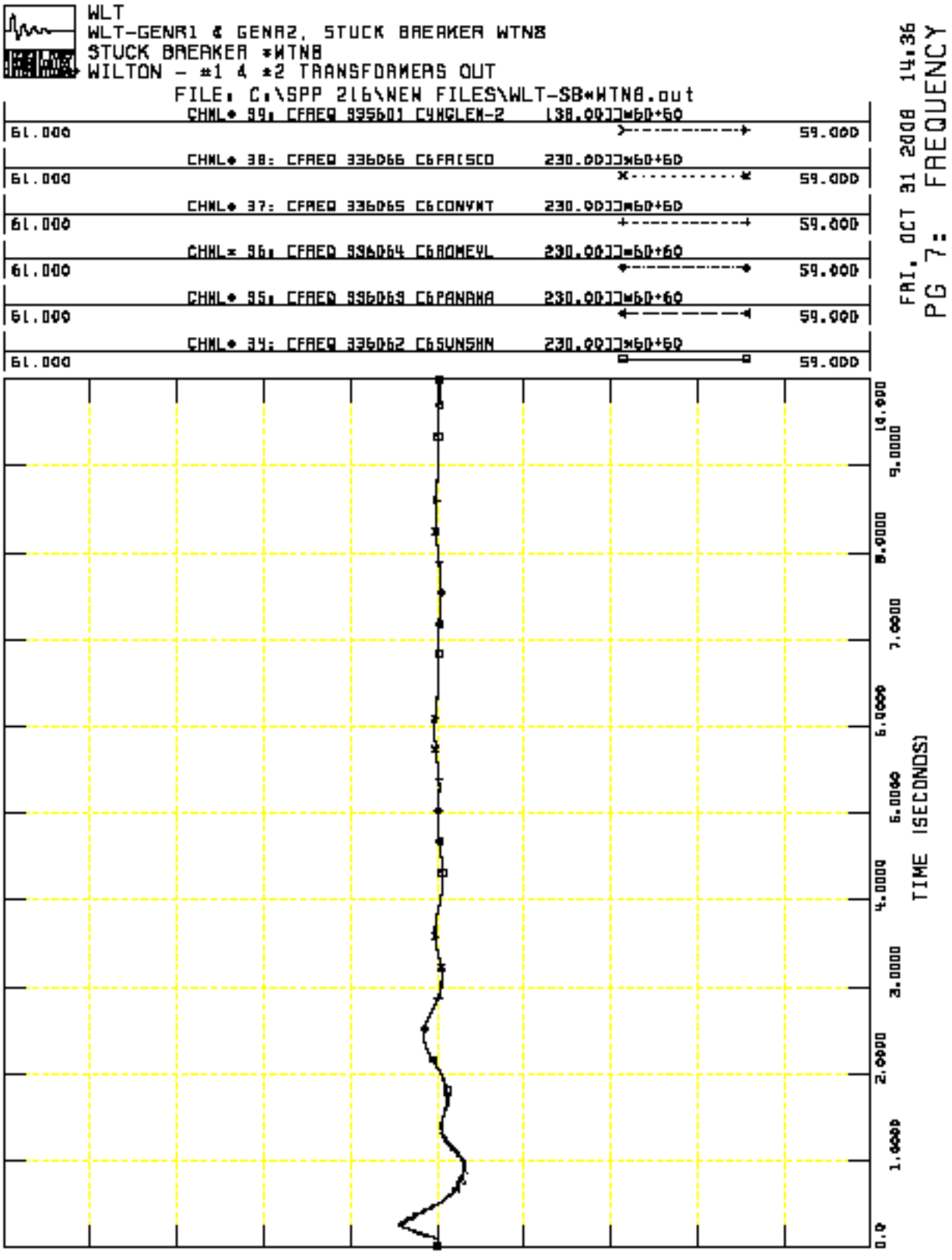

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 12: CVOLT 336061 C68CATEL 230.0000
1.2000
0.20000
CHNL* 11: CVOLT 336060 C65DAA 2 230.0000
1.2000
0.20000
CHNL* 10: CVOLT 335596 C4C05MAA 138.0000
1.2000
0.20000
CHNL* 9: CVOLT 335595 C4ALCHEM 138.0000
1.2000
0.20000
CHNL* 8: CVOLT 335594 C4MONDCM. 138.0000
1.2000
0.20000
CHNL* 7: CVOLT 335593 C4MONDCM1 138.0000
1.2000
0.20000
14.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)
FRI, OCT 31 2008 14:36
PG 2: VOLTAGE

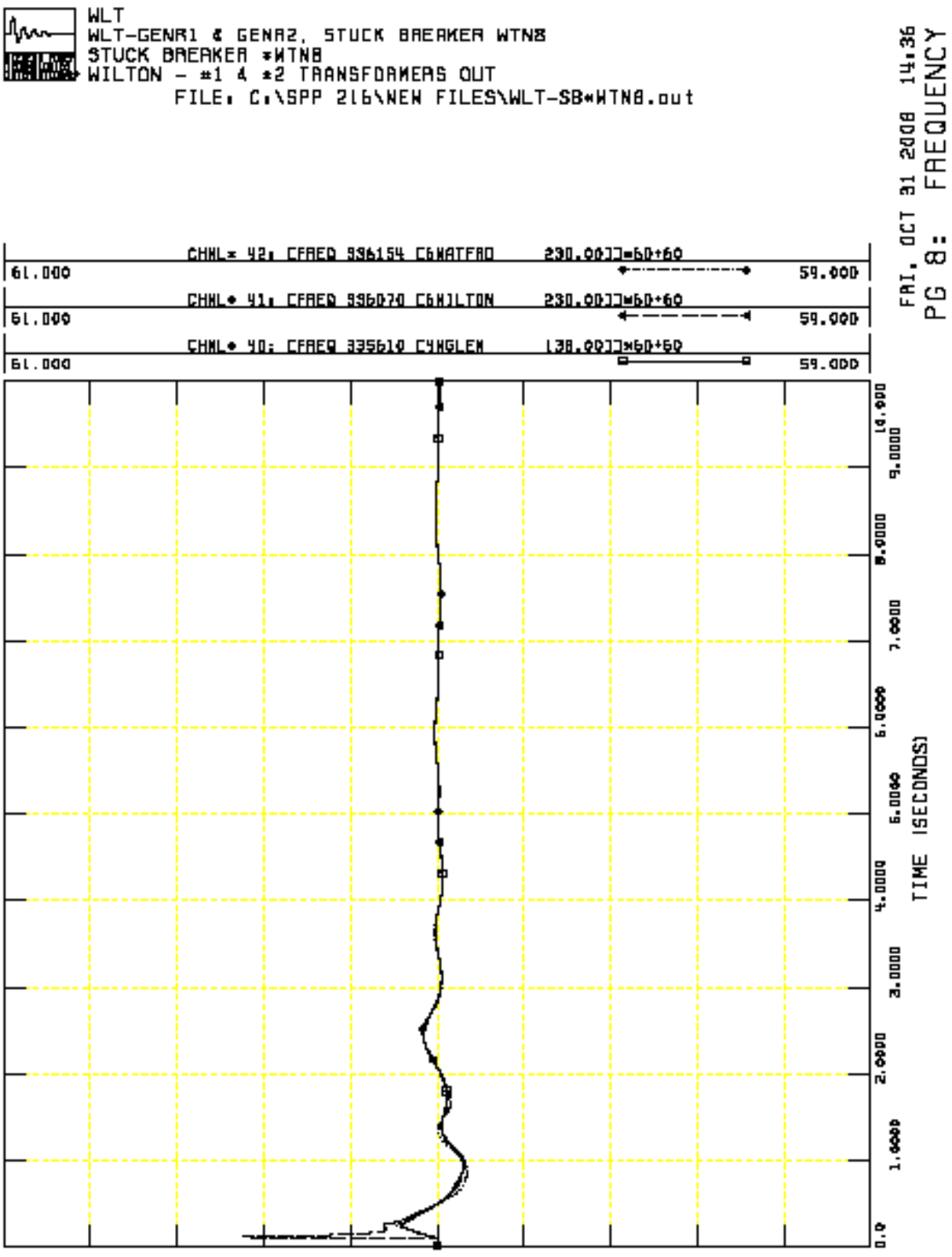

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL# 18: CVOLT 995601 C4NGLEN-2 138.0000
1.2000
0.20000
CHNL# 17: CVOLT 336066 C6FAISCO 230.0000
1.2000
0.20000
CHNL# 16: CVOLT 336065 C6CONYNT 230.0000
1.2000
0.20000
CHNL# 15: CVOLT 996064 C6ROMEYL 230.0000
1.2000
0.20000
CHNL# 14: CVOLT 996063 C6PANAMA 230.0000
1.2000
0.20000
CHNL# 13: CVOLT 336062 C6SUNSHN 230.0000
1.2000
0.20000
FRI, OCT 31 2008 14:36
PG 3: VOLTAGE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

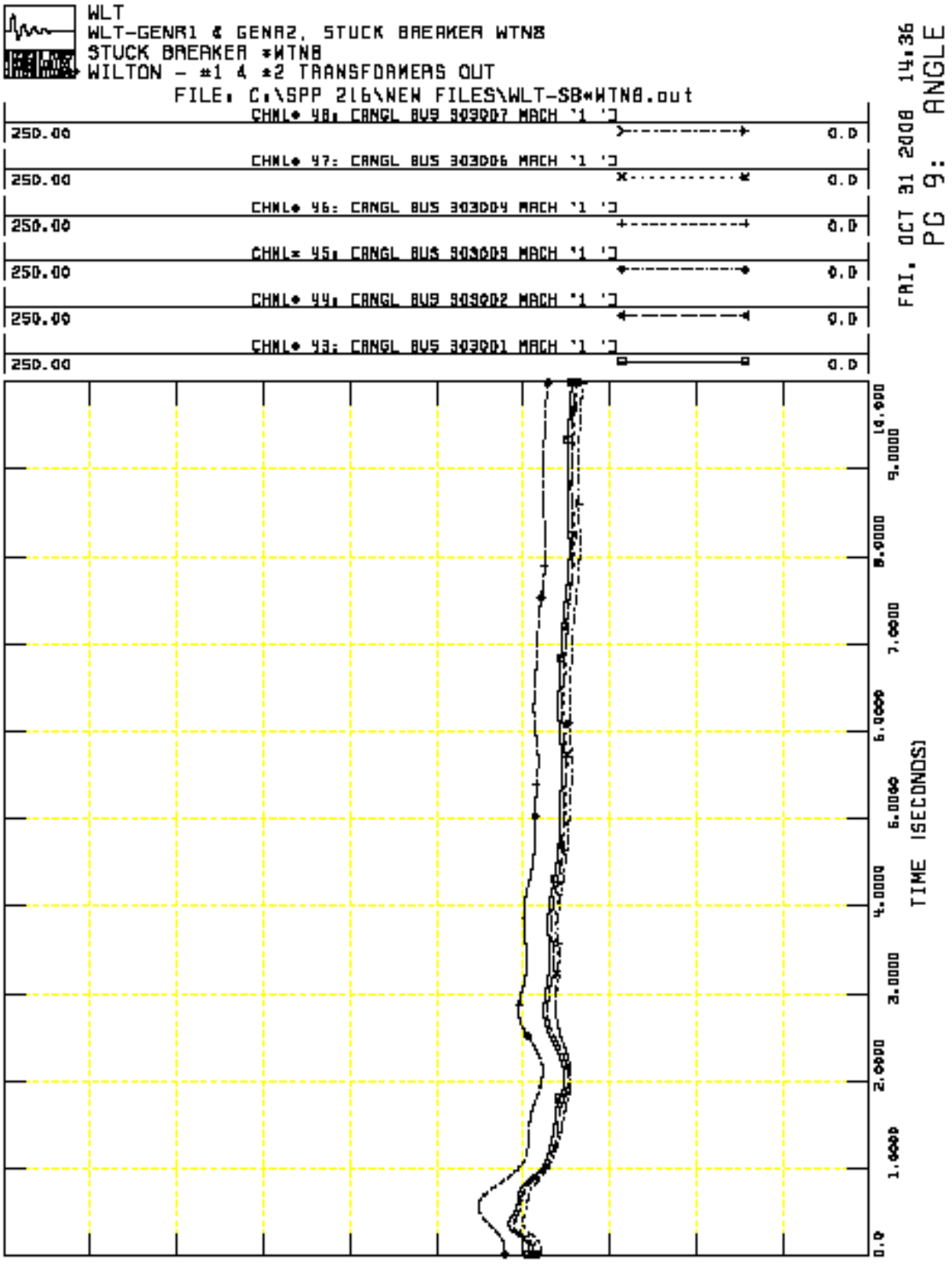

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
FRI, OCT 31 2008 14:36
PG 4: VOLTAGE
CHNL: 21: CYOLT 936154 C6WATFRD 230.0000
1.2000
0.20000
CHNL* 20: CYOLT 936070 C6WILTON 230.0000
1.2000
0.20000
CHNL* 19: CYOLT 935610 C4NGLEN 138.0000
1.2000
0.20000
14.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

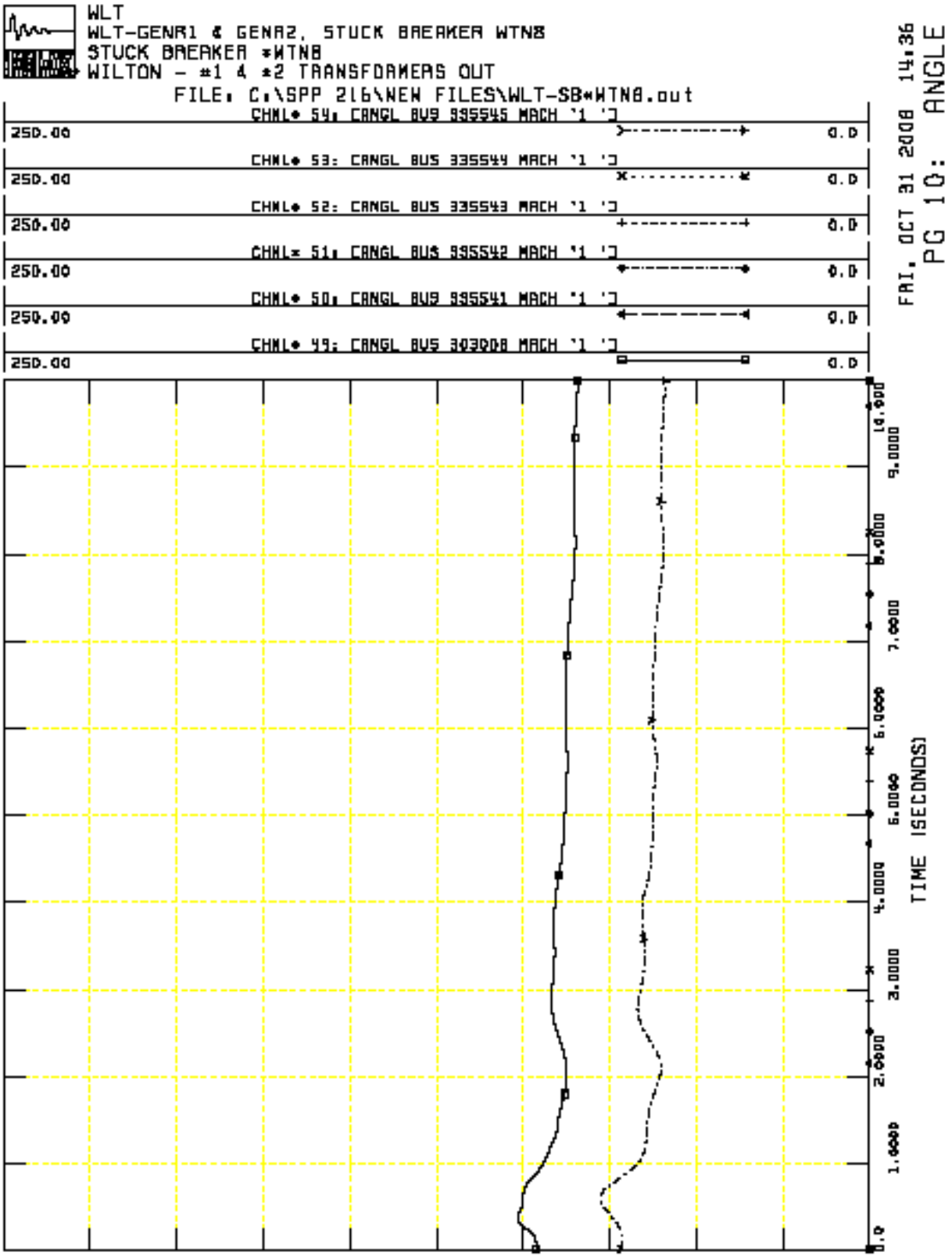

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 27: CFREQ 935592 CY80UTHWD [38.00]]*60+60
61.000
59.000
CHNL* 26: CFREQ 935591 CY6E[SMAR [38.00]]*60+60
61.000
59.000
CHNL* 25: CFREQ 935590 CYCONWAT [38.00]]*60+60
61.000
59.000
CHNL* 24: CFREQ 935578 CC8HELLG2 [3.800]]*60+60
61.000
59.000
CHNL* 23: CFREQ 935577 CC8HELLG1 [3.800]]*60+60
61.000
59.000
CHNL* 22: CFREQ 935576 C6HOODSTK 230.00]]*60+60
61.000
59.000
FRI, OCT 31 2008 14:36
PG 5: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

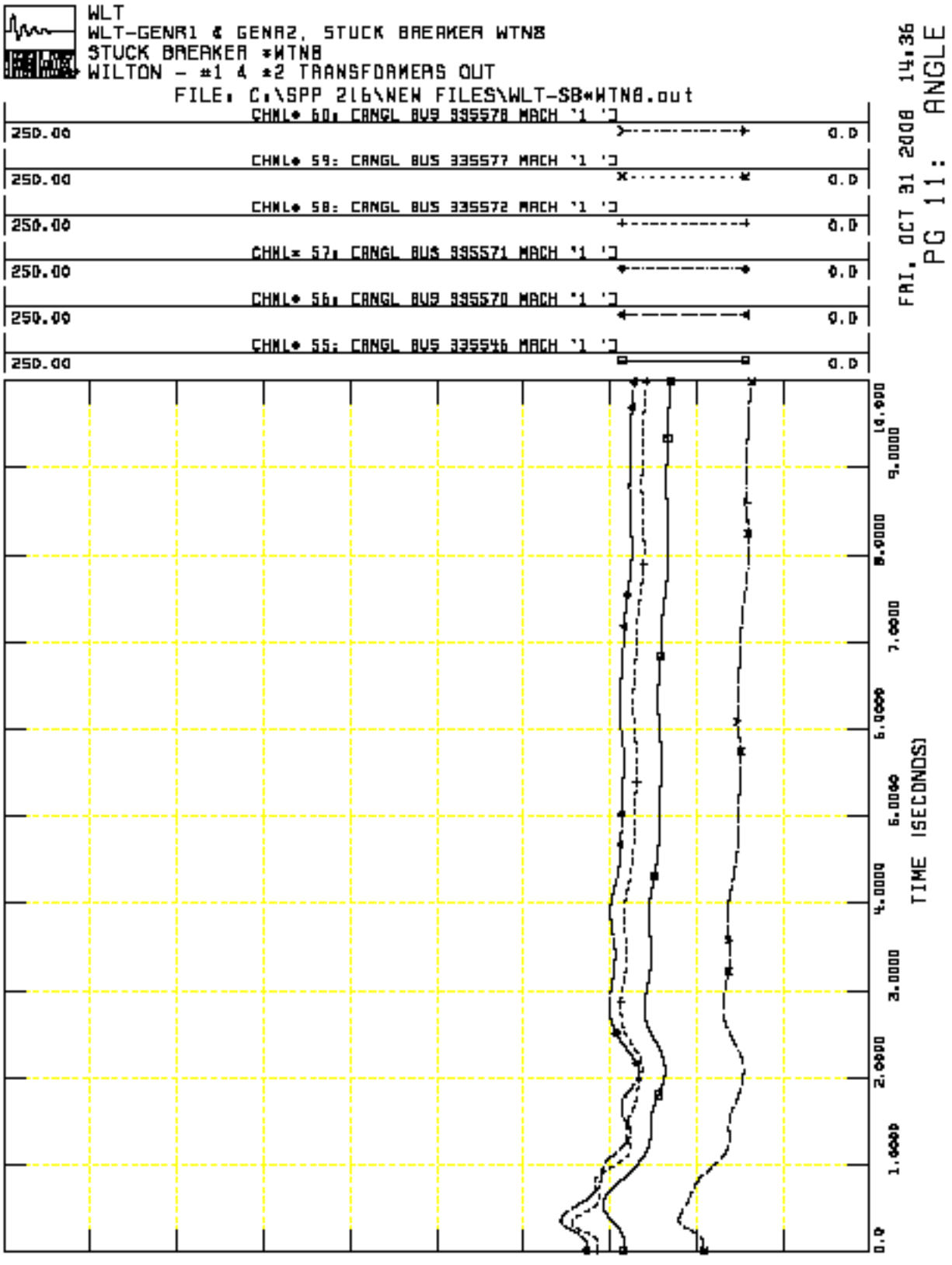

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 33: CFREQ 336061 C68CATEL 230.00]]*60+60
61.000
59.000
CHNL* 32: CFREQ 336060 C65DAA 2 230.00]]*60+60
61.000
59.000
CHNL* 31: CFREQ 335596 C4COSMAA 138.00]]*60+60
61.000
59.000
CHNL* 30: CFREQ 335595 C4ALCHEM 138.00]]*60+60
61.000
59.000
CHNL* 29: CFREQ 335594 C4MONDCN. 138.00]]*60+60
61.000
59.000
CHNL* 28: CFREQ 335593 C4MONDCM1 138.00]]*60+60
61.000
59.000
FRI, OCT 31 2008 14:36
PG 6: FREQUENCY
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

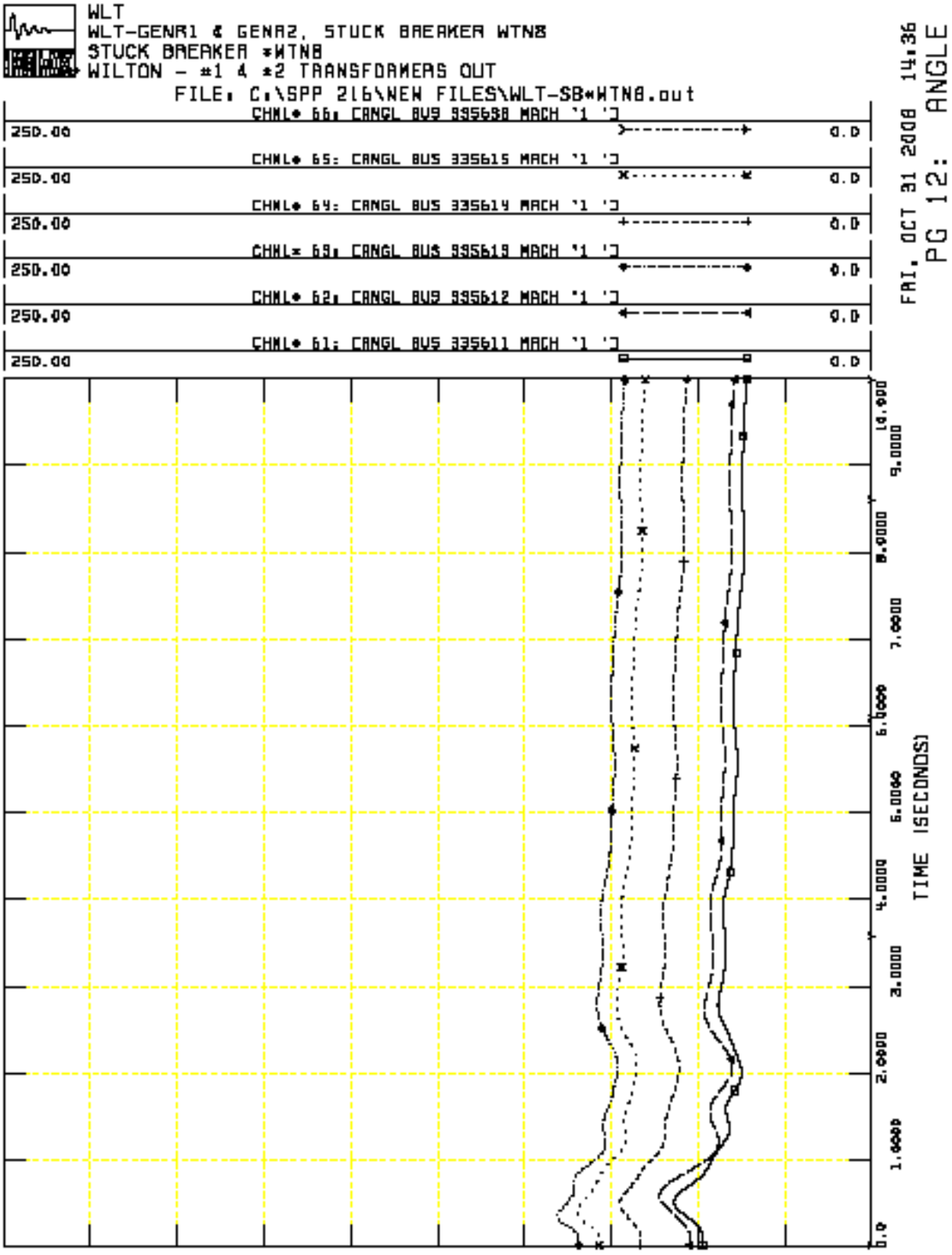

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 39: CFREQ 995601 C4NGLEN-2 138.000]*60+60
61.000
59.000
CHNL* 38: CFREQ 336066 C6FRISCO 230.000]*60+60
61.000
59.000
CHNL* 37: CFREQ 336065 C6CONVNT 230.000]*60+60
61.000
59.000
CHNL* 36: CFREQ 336064 C6ROMEVL 230.000]*60+60
61.000
59.000
CHNL* 35: CFREQ 336063 C6PANAMA 230.000]*60+60
61.000
59.000
CHNL* 34: CFREQ 336062 C6SUNSHN 230.000]*60+60
61.000
59.000
FRI, OCT 31 2008 14:36
PG 7: FREQUENCY
14.000
9.0000
8.0000
7.0000
6.0000
5.0040
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

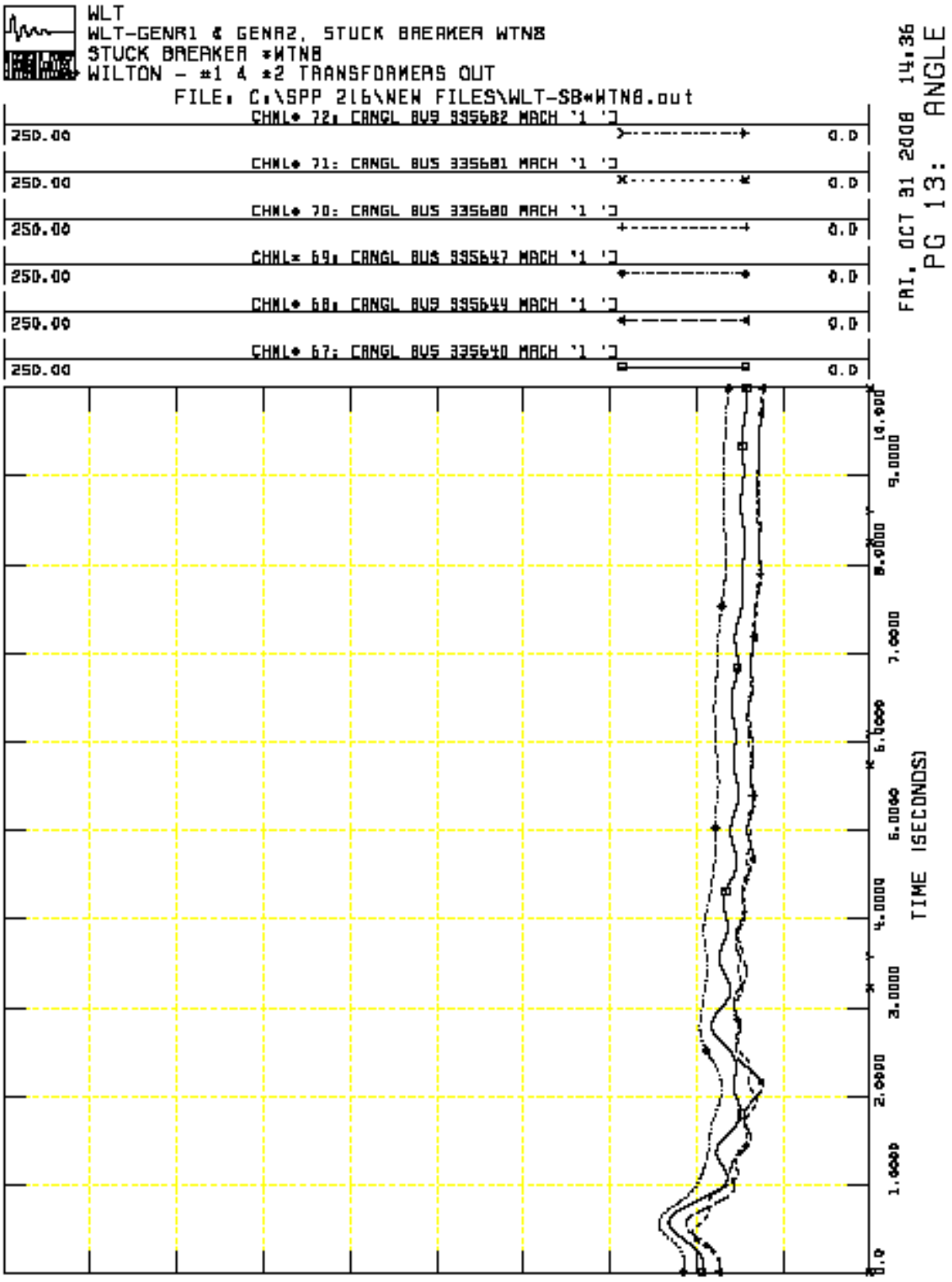

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
FRI, OCT 31 2008 14:36
PG 8: FREQUENCY
CHNL= 42: CFREQ 936154 C6WATFRD 230.0000=60+60
61.000
59.000
CHNL* 41: CFREQ 936070 C6WILTON 230.0000*60+60
61.000
59.000
CHNL* 40: CFREQ 335610 CYNGLEN 138.0000*60+60
61.000
59.000
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

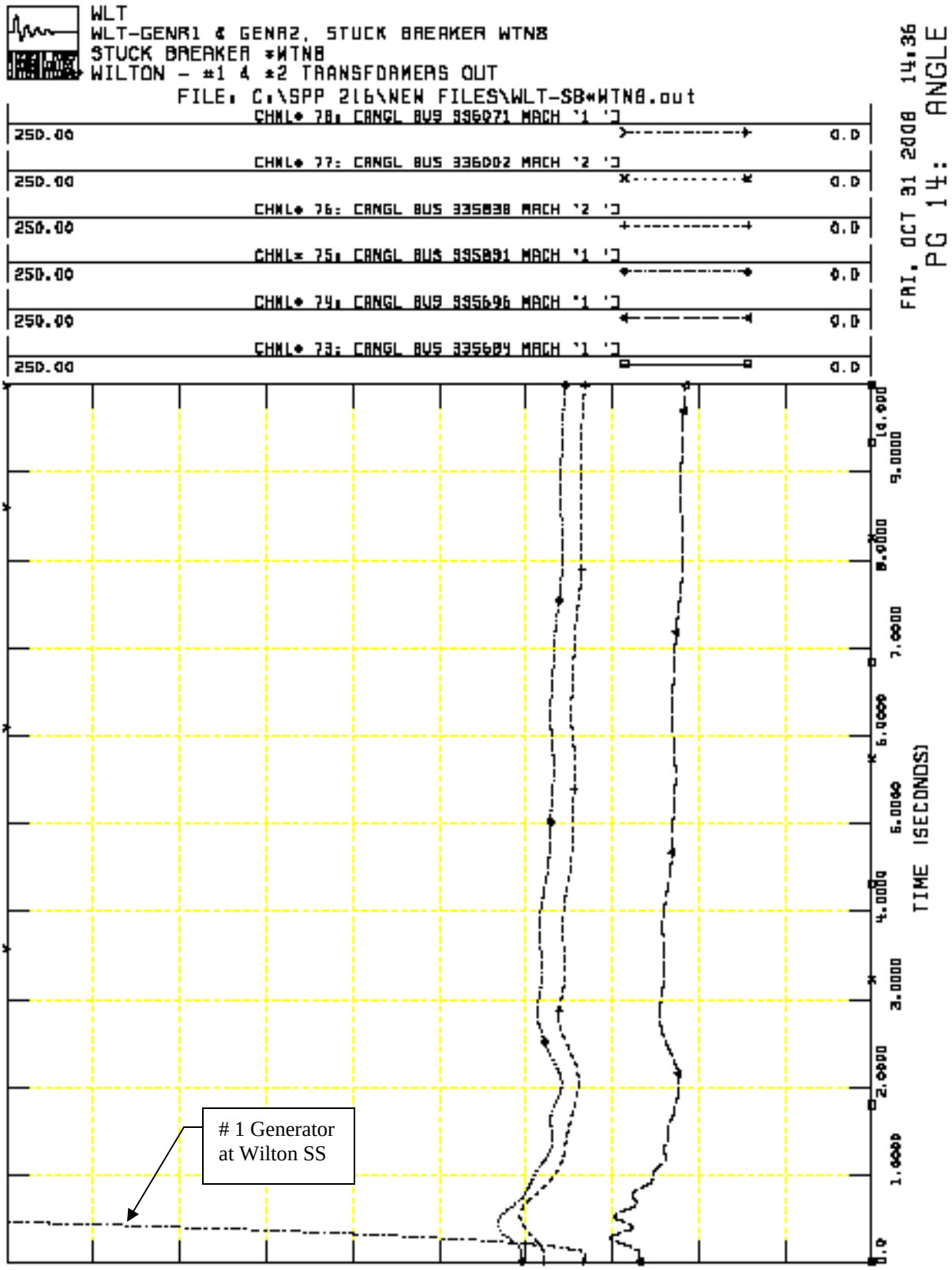

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 48: CANGL BUS 303007 MACH '1 '
CHNL* 47: CANGL BUS 303006 MACH '1 '
CHNL* 46: CANGL BUS 303004 MACH '1 '
CHNL* 45: CANGL BUS 303003 MACH '1 '
CHNL* 44: CANGL BUS 303002 MACH '1 '
CHNL* 43: CANGL BUS 303001 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
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)

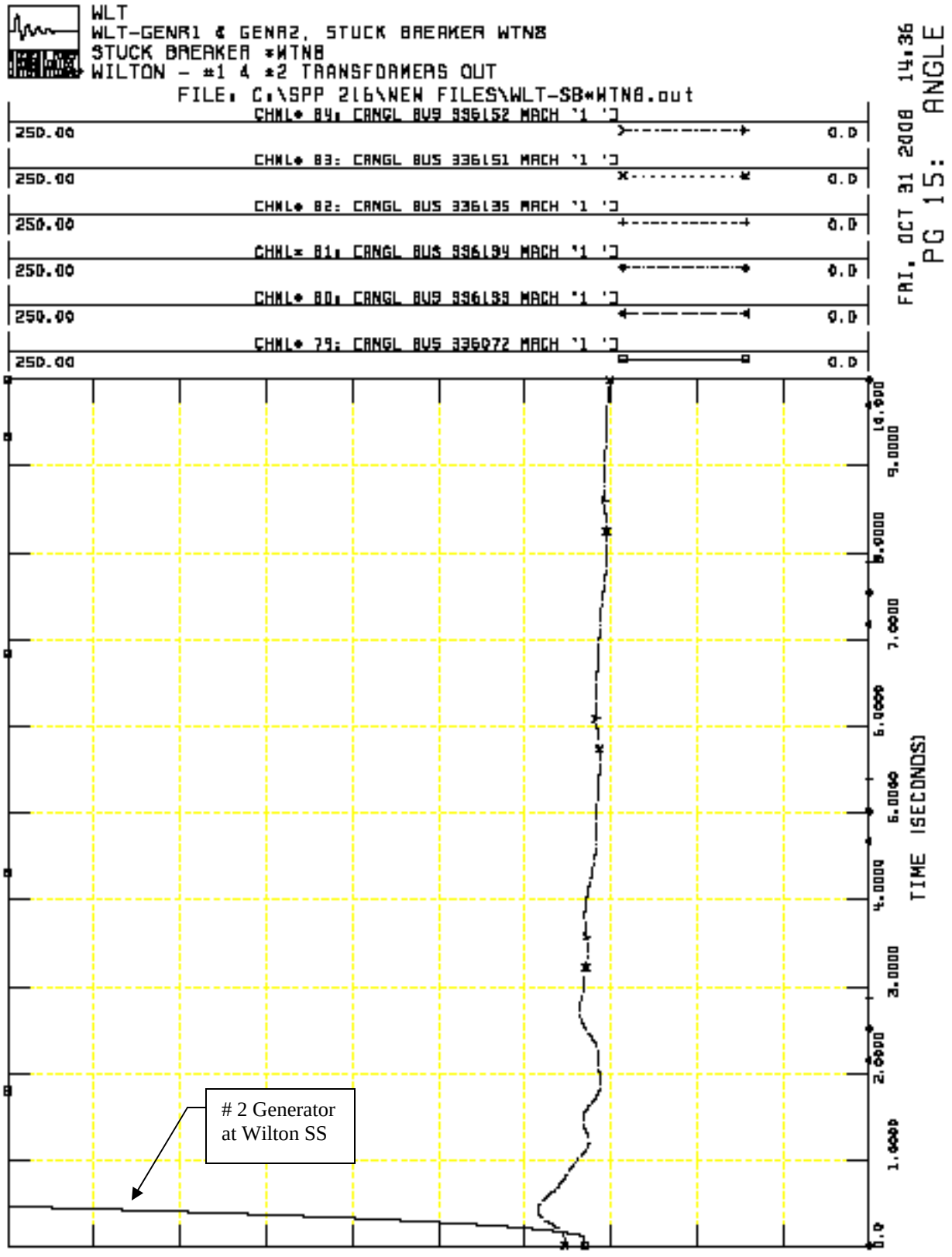

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 54: CANGL BUS 335545 MACH '1 '
250.00
0.0
CHNL* 53: CANGL BUS 335544 MACH '1 '
250.00
0.0
CHNL* 52: CANGL BUS 335543 MACH '1 '
250.00
0.0
CHNL* 51: CANGL BUS 335542 MACH '1 '
250.00
0.0
CHNL* 50: CANGL BUS 335541 MACH '1 '
250.00
0.0
CHNL* 49: CANGL BUS 303008 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
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

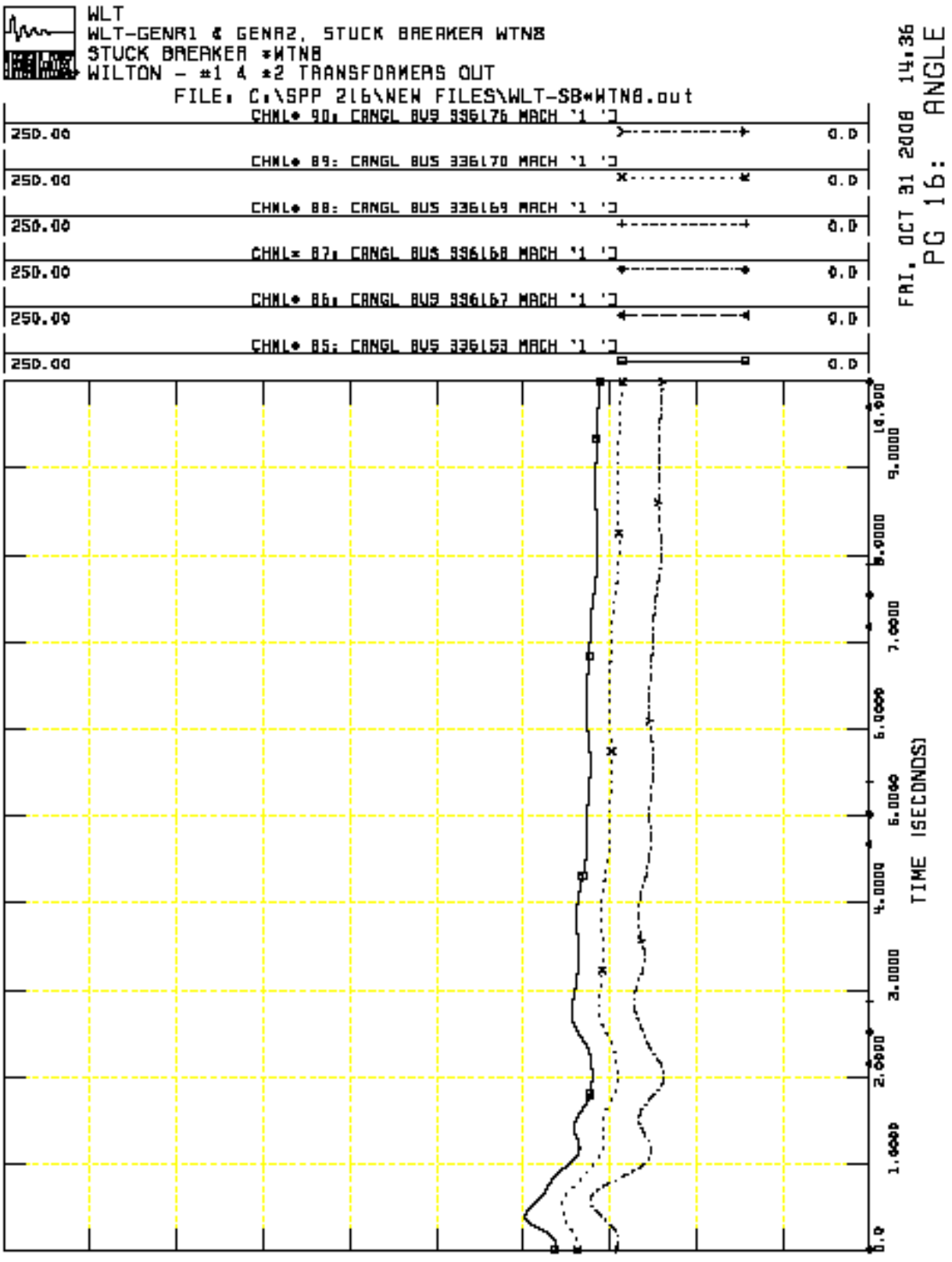

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
FRI, OCT 31 2008 14:36
PG 11: ANGLE
CHNL* 60: CANGL BUS 335578 MACH '1 '
CHNL* 59: CANGL BUS 335577 MACH '1 '
CHNL* 58: CANGL BUS 335572 MACH '1 '
CHNL* 57: CANGL BUS 335571 MACH '1 '
CHNL* 56: CANGL BUS 335570 MACH '1 '
CHNL* 55: CANGL BUS 335546 MACH '1 '
250.00
0.0
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

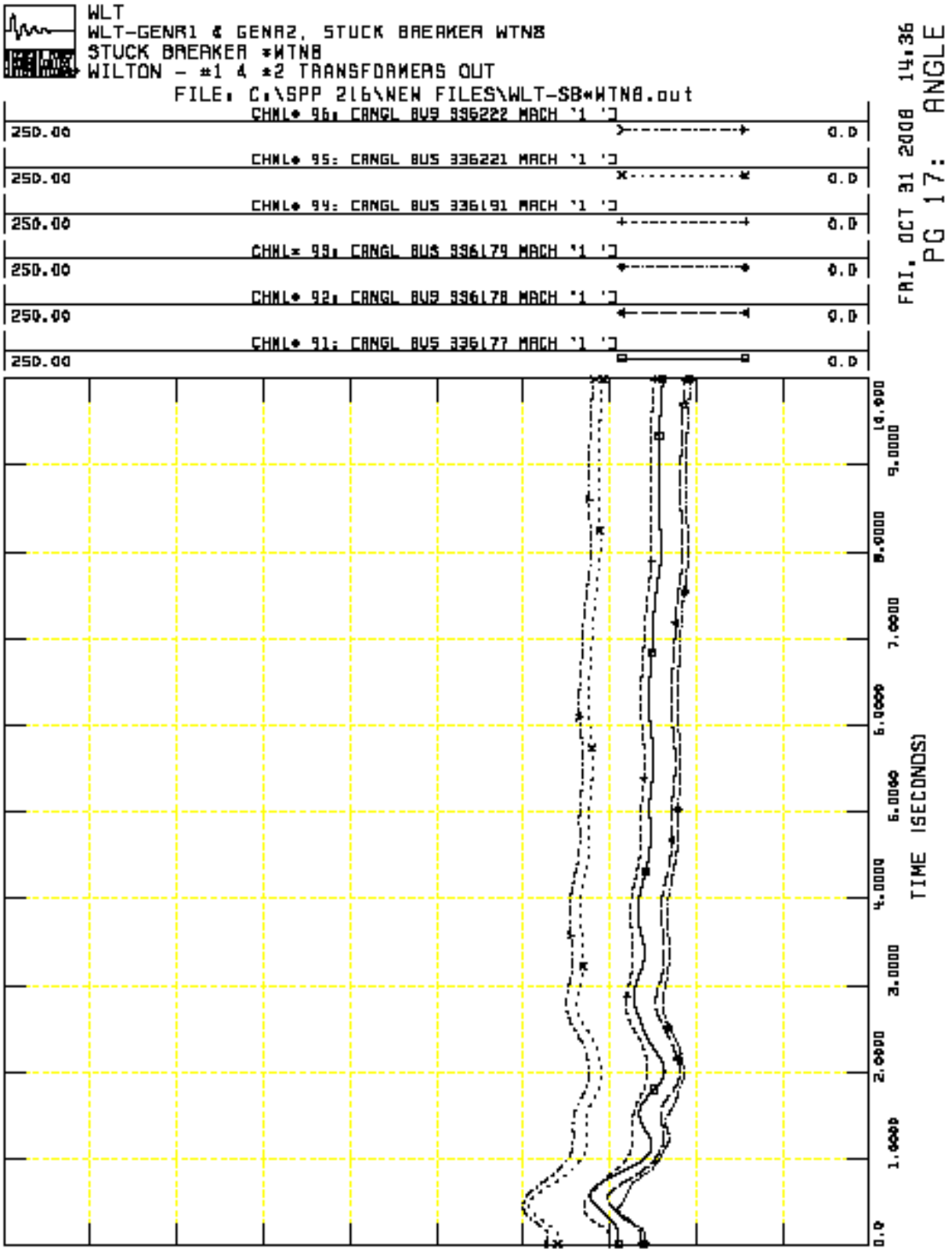

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 66: CANGL BUS 335638 MACH '1 '
CHNL* 65: CANGL BUS 335615 MACH '1 '
CHNL* 64: CANGL BUS 335614 MACH '1 '
CHNL* 63: CANGL BUS 335613 MACH '1 '
CHNL* 62: CANGL BUS 335612 MACH '1 '
CHNL* 61: CANGL BUS 335611 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
PG 12: ANGLE
TIME (SECONDS)

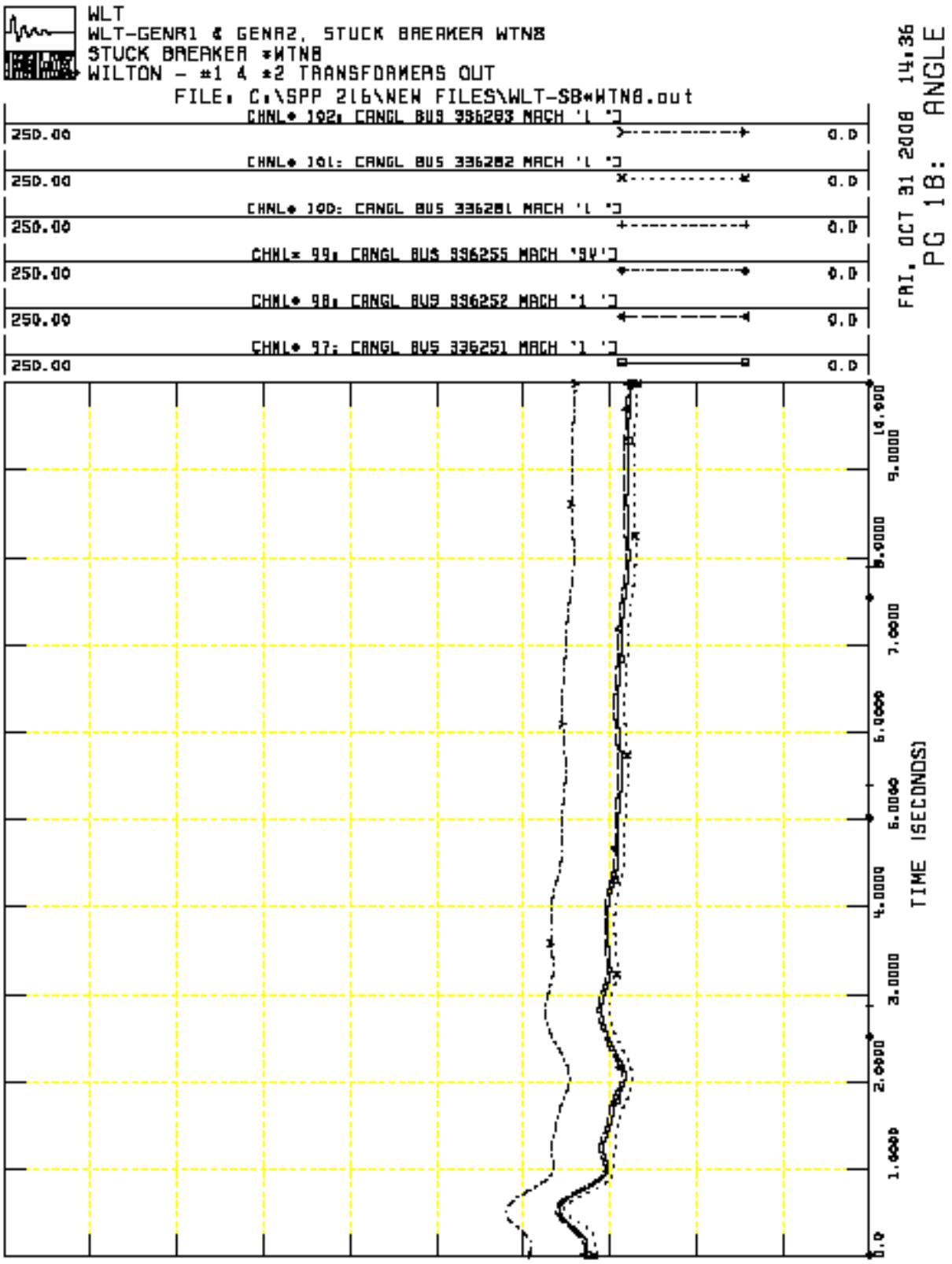

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 72: CANGL BUS 335682 MACH '1 '
250.00
0.0
CHNL* 71: CANGL BUS 335681 MACH '1 '
250.00
0.0
CHNL* 70: CANGL BUS 335680 MACH '1 '
250.00
0.0
CHNL* 69: CANGL BUS 335647 MACH '1 '
250.00
0.0
CHNL* 68: CANGL BUS 335644 MACH '1 '
250.00
0.0
CHNL* 67: CANGL BUS 335640 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
PG 13: ANGLE
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

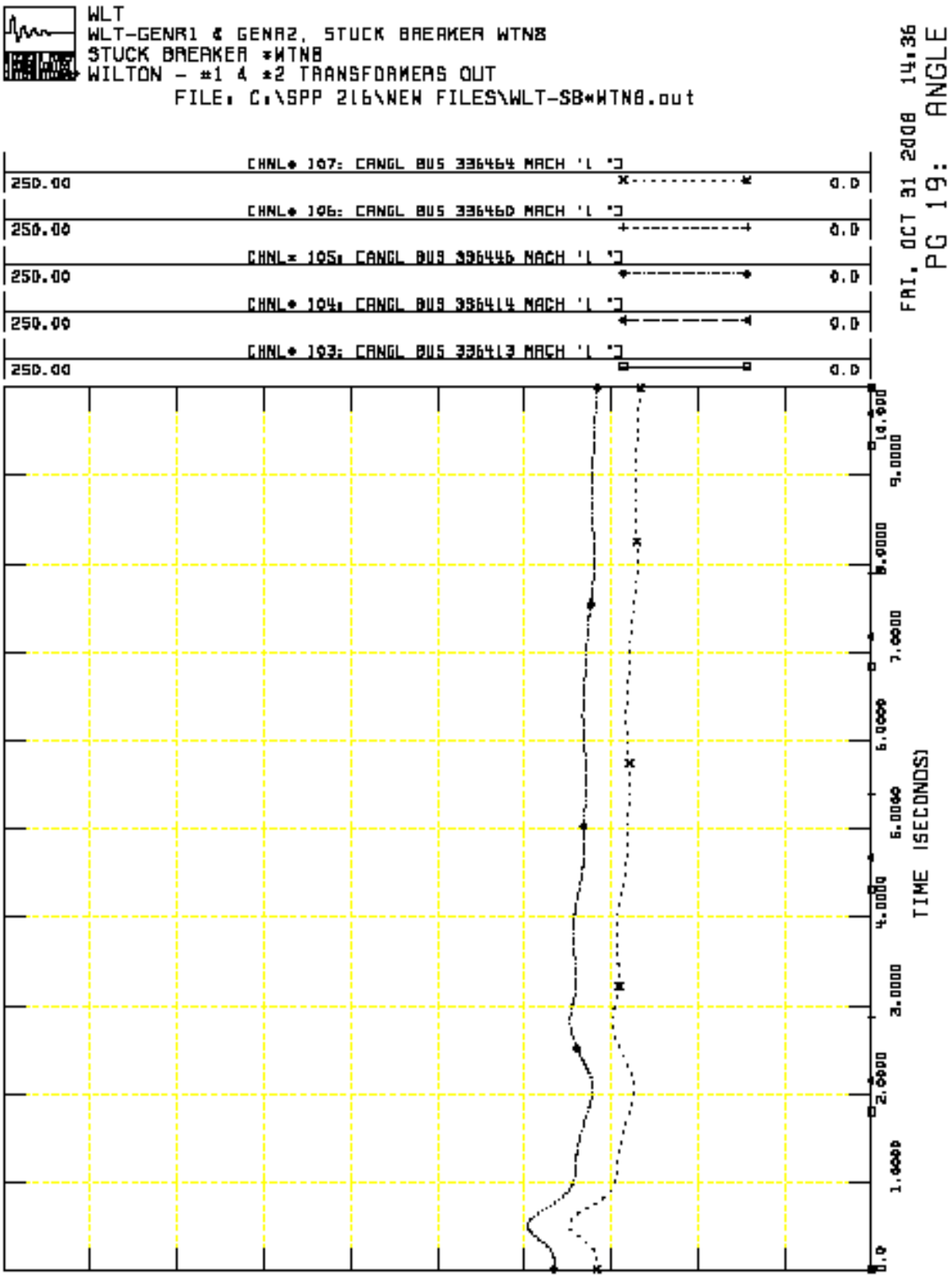

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 78: CANGL BUS 336071 MACH '1 '
CHNL* 77: CANGL BUS 336002 MACH '2 '
CHNL* 76: CANGL BUS 335838 MACH '2 '
CHNL* 75: CANGL BUS 335891 MACH '1 '
CHNL* 74: CANGL BUS 335696 MACH '1 '
CHNL* 73: CANGL BUS 335604 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
PG 14: ANGLE
TIME (SECONDS)
1 Generator
at Wilton SS


WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
FRI, OCT 31 2008 14:36
PG 15: ANGLE
CHNL* 84: CANGL BUS 336152 MACH '1 '
CHNL* 83: CANGL BUS 336151 MACH '1 '
CHNL* 82: CANGL BUS 336135 MACH '1 '
CHNL* 81: CANGL BUS 336194 MACH '1 '
CHNL* 80: CANGL BUS 336189 MACH '1 '
CHNL* 79: CANGL BUS 336072 MACH '1 '
250.00
0.0
TIME (SECONDS)
2 Generator at Wilton SS

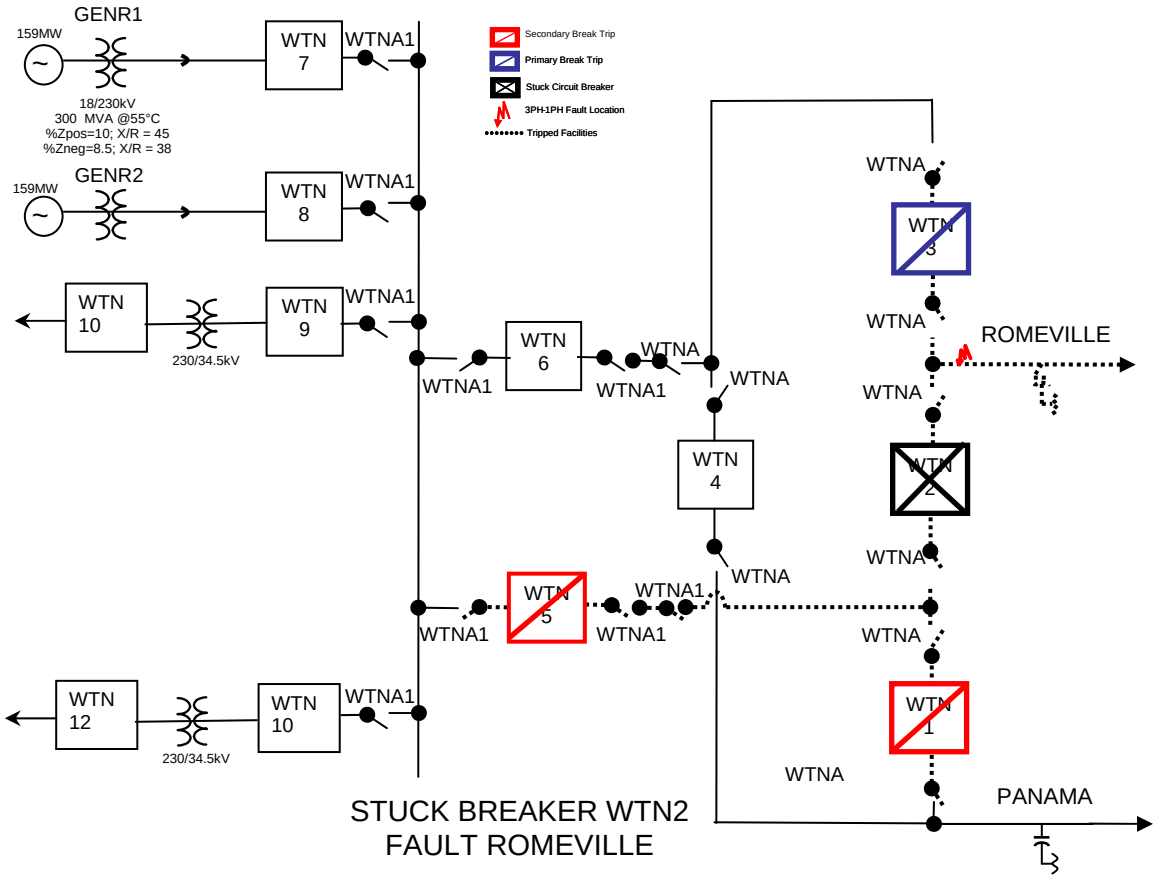

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 90: CANGL BUS 336176 MACH '1 '
250.00
0.0
CHNL* 89: CANGL BUS 336170 MACH '1 '
250.00
0.0
CHNL* 88: CANGL BUS 336169 MACH '1 '
250.00
0.0
CHNL* 87: CANGL BUS 336168 MACH '1 '
250.00
0.0
CHNL* 86: CANGL BUS 336167 MACH '1 '
250.00
0.0
CHNL* 85: CANGL BUS 336153 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
PG 16: 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


WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 96: CANGL BUS 336222 MACH '1 '
250.00
0.0
CHNL* 95: CANGL BUS 336221 MACH '1 '
250.00
0.0
CHNL* 94: CANGL BUS 336191 MACH '1 '
250.00
0.0
CHNL* 93: CANGL BUS 336179 MACH '1 '
250.00
0.0
CHNL* 92: CANGL BUS 336178 MACH '1 '
250.00
0.0
CHNL* 91: CANGL BUS 336177 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
PG 17: 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)

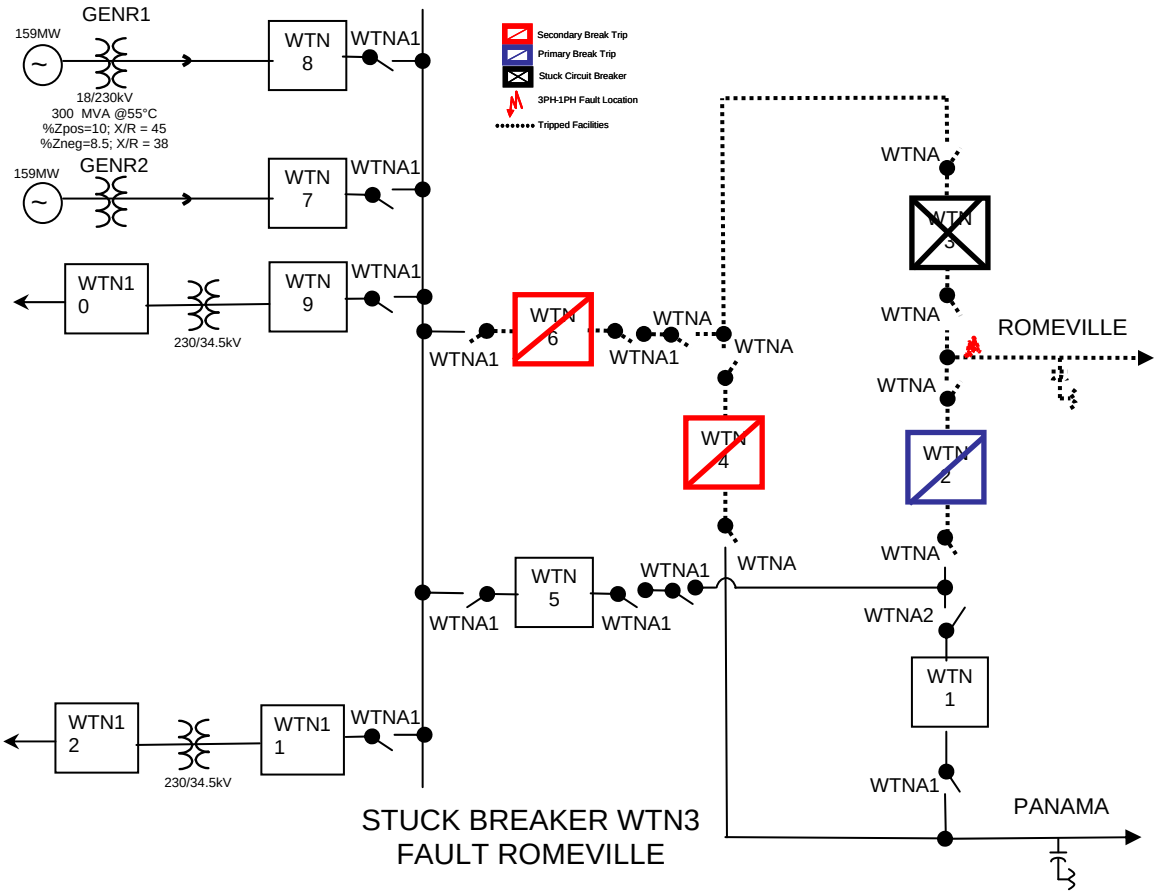

WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
CHNL* 102: CANGL BUS 336283 MACH '1 '
CHNL* 101: CANGL BUS 336282 MACH '1 '
CHNL* 100: CANGL BUS 336281 MACH '1 '
CHNL* 99: CANGL BUS 336255 MACH '8V'
CHNL* 98: CANGL BUS 336252 MACH '1 '
CHNL* 97: CANGL BUS 336251 MACH '1 '
250.00
0.0
FRI, OCT 31 2008 14:36
PG 18: 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


WLT
WLT-GENR1 & GENR2, STUCK BREAKER WTN8
STUCK BREAKER *WTN8
WILTON - #1 & #2 TRANSFORMERS OUT
FILE: C:\SPP 216\NEW FILES\WLT-SB*WTN8.out
FRI, OCT 31 2008 14:36
PG 19: ANGLE
CHNL* 107: CANGL BUS 336464 MACH 'L '
CHNL* 106: CANGL BUS 336460 MACH 'L '
CHNL* 105: CANGL BUS 336446 MACH 'L '
CHNL* 104: CANGL BUS 336414 MACH 'L '
CHNL* 103: CANGL BUS 336413 MACH 'L '
250.00
0.0
10.000
9.0000
8.0000
7.0000
6.0000
5.0000
4.0000
3.0000
2.0000
1.0000
0.0
TIME (SECONDS)

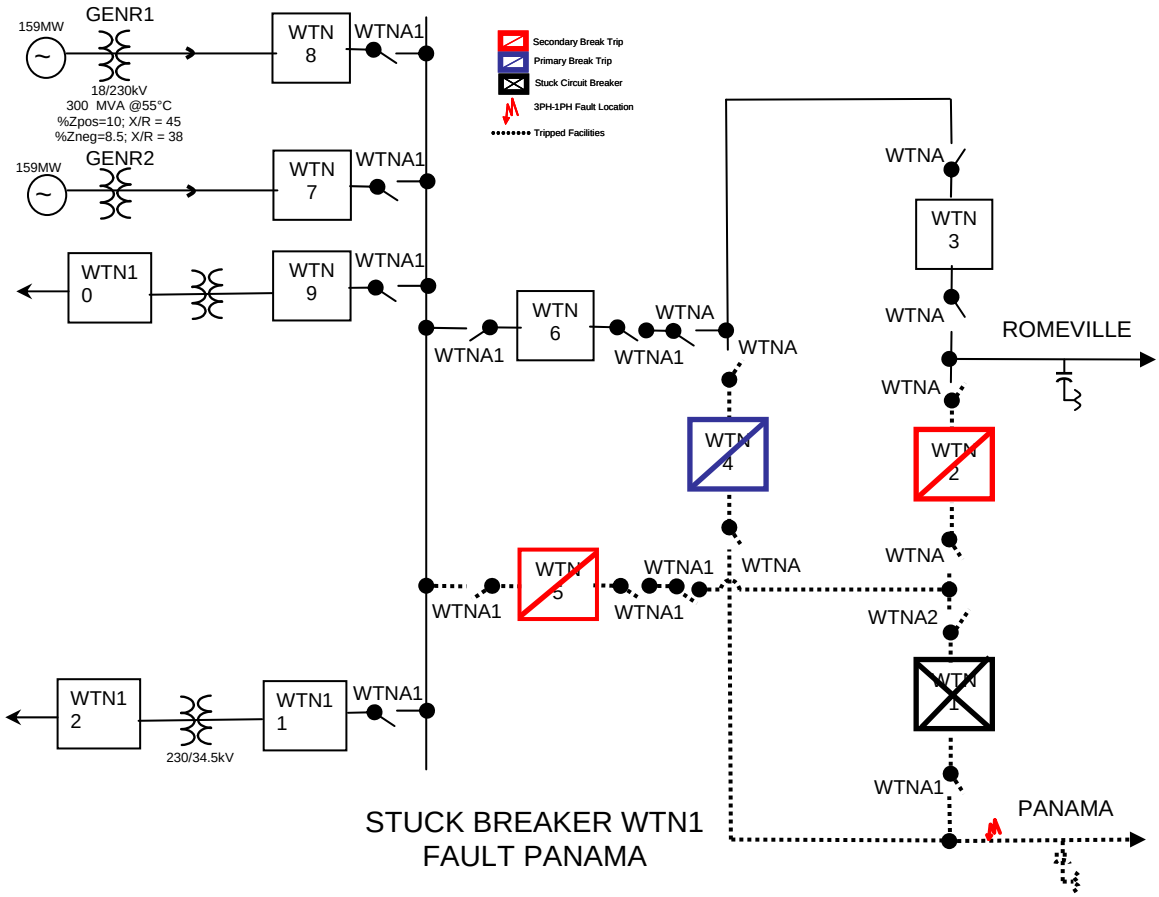
APPENDIX A.D
SUBSTATION CONFIGURATION FOR THE ADJACENT SUBSTATIONS UNDER STUCK BREAKER FAULT CONDITIONS



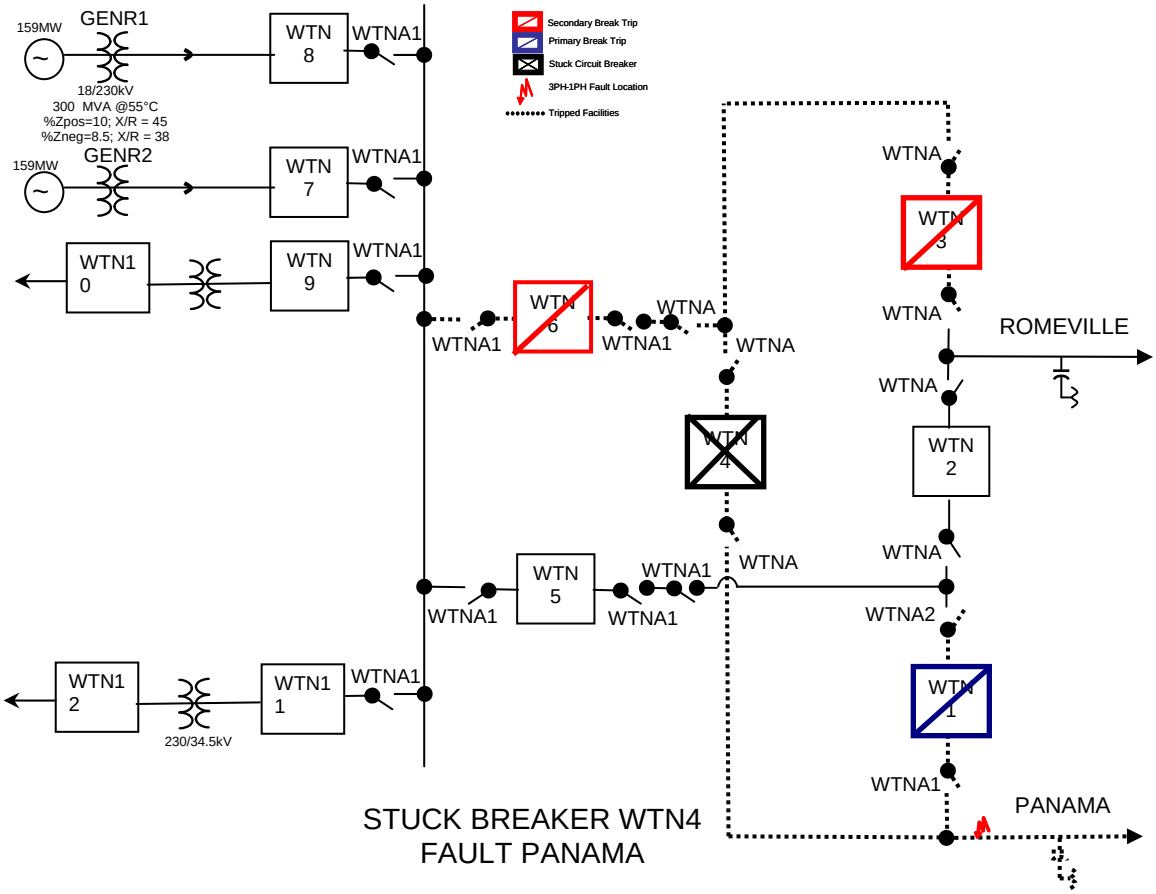
Fault 1A: Fault on the Wilton-Romeville 230kV Stuck Circuit Breaker (CB) WTN2 with WTN1/WTN5 Last to Open



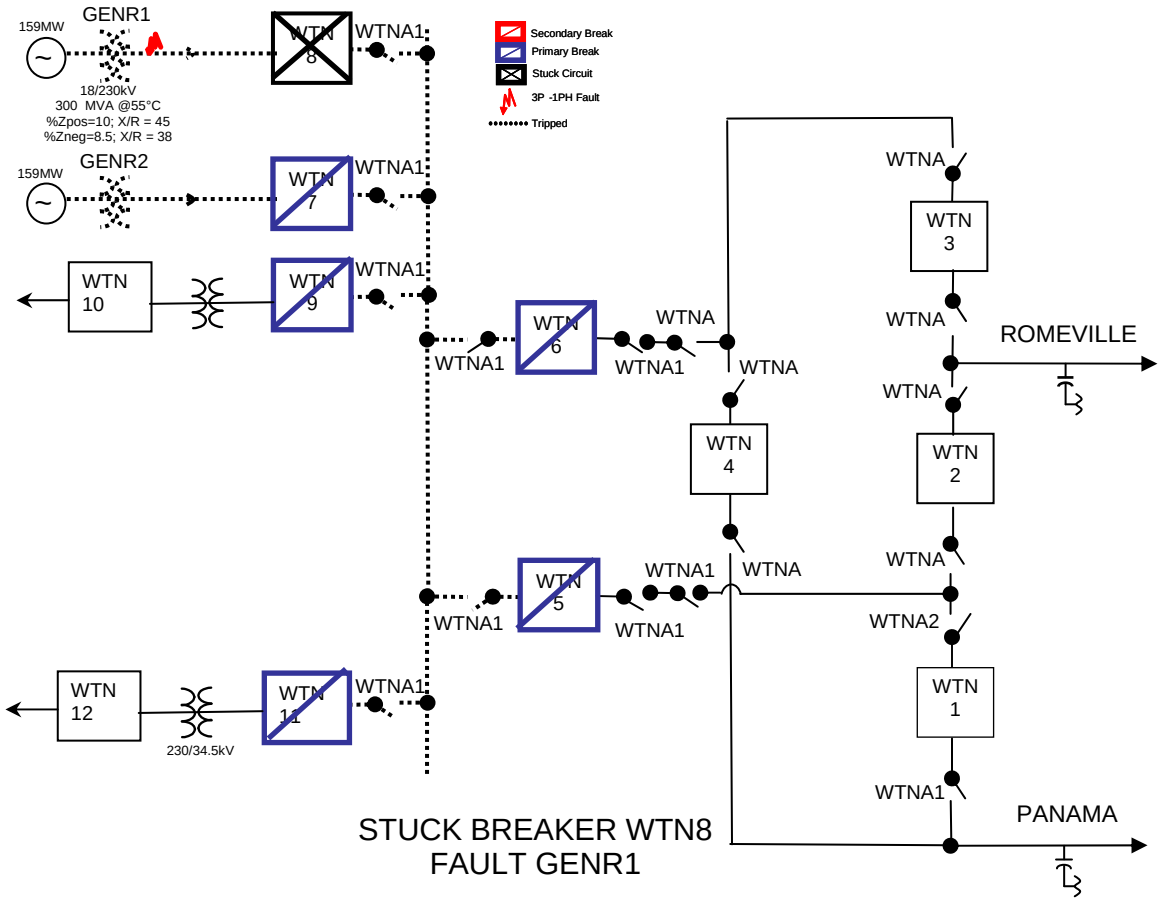
Fault 1B: Fault on the Wilton-Romeville 230kV
Stuck Circuit Breaker (CB) WTN3 with WTN6/WTN4 Last to Open



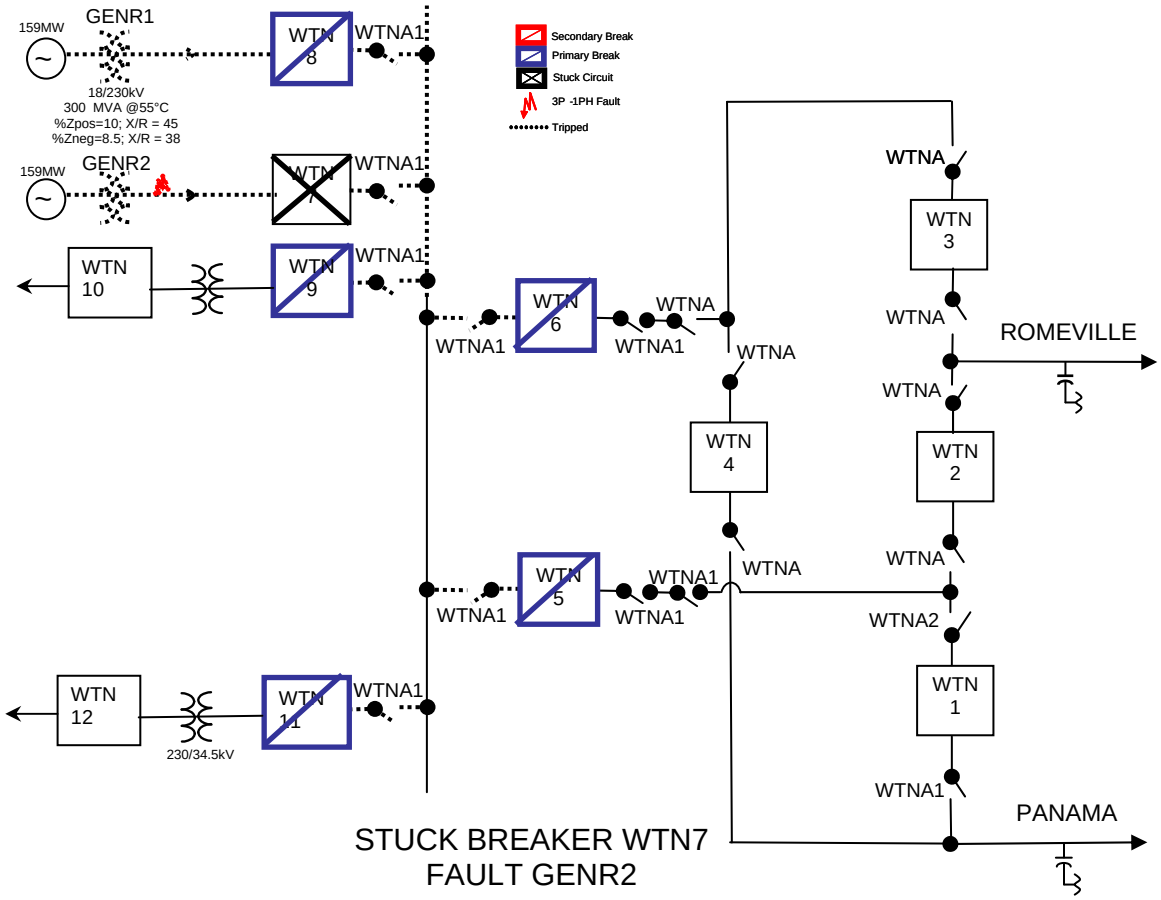
Fault 2A: Fault on the Wilton-Panama 230kV
Stuck Circuit Breaker (CB) WTN1 with WTN2/WTN5 Last to Open



Fault 2B: Fault on the Wilton-Panama 230kV
Stuck Circuit Breaker (CB) WTN4 with WTN3/WTN6 Last to Open



Fault 3: Fault on the Wilton-Genr1 230/18kV
Stuck Circuit Breaker (CB) WTN8



Fault 4: Fault on the Wilton-Genr2 230/18kV
Stuck Circuit Breaker (CB) WTN7

CHANNEL IDENTIFIER LIST

CHANEL X--------- IDENTIFIER ---------X	CHANEL X--------- IDENTIFIER ---------X
1 VOLT 335576 [6WOODSTK 230.00]	2 VOLT 335577 [CSHELLG1 13.800]
3 VOLT 335578 [CSHELLG2 13.800]	4 VOLT 335590 [4CONWAY 138.00]
5 VOLT 335591 [4GEISMAR 138.00]	6 VOLT 335592 [4SOUTHWD 138.00]
7 VOLT 335593 [4MONOCM1 138.00]	8 VOLT 335594 [4MONOCM. 138.00]
9 VOLT 335595 [4ALCHEM 138.00]	10 VOLT 335596 [4COSMAR 138.00]
11 VOLT 336060 [6SORR 2 230.00]	12 VOLT 336061 [6BGATEL 230.00]
13 VOLT 336062 [6SUNSHN 230.00]	14 VOLT 336063 [6PANAMA 230.00]
15 VOLT 336064 [6ROMEVL 230.00]	16 VOLT 336065 [6CONVNT 230.00]
17 VOLT 336066 [6FRISCO 230.00]	18 VOLT 335601 [4WGLEN-2 138.00]
19 VOLT 335610 [4WGLEN 138.00]	20 VOLT 336070 [6WILTON 230.00]
21 VOLT 336154 [6WATFRD 230.00]	22 FREQ 335576 [6WOODSTK 230.00]
23 FREQ 335577 [CSHELLG1 13.800]	24 FREQ 335578 [CSHELLG2 13.800]
25 FREQ 335590 [4CONWAY 138.00]	26 FREQ 335591 [4GEISMAR 138.00]
27 FREQ 335592 [4SOUTHWD 138.00]	28 FREQ 335593 [4MONOCM1 138.00]
29 FREQ 335594 [4MONOCM. 138.00]	30 FREQ 335595 [4ALCHEM 138.00]
31 FREQ 335596 [4COSMAR 138.00]	32 FREQ 336060 [6SORR 2 230.00]
33 FREQ 336061 [6BGATEL 230.00]	34 FREQ 336062 [6SUNSHN 230.00]
35 FREQ 336063 [6PANAMA 230.00]	36 FREQ 336064 [6ROMEVL 230.00]
37 FREQ 336065 [6CONVNT 230.00]	38 FREQ 336066 [6FRISCO 230.00]
39 FREQ 335601 [4WGLEN-2 138.00]	40 FREQ 335610 [4WGLEN 138.00]
41 FREQ 336070 [6WILTON 230.00]	42 FREQ 336154 [6WATFRD 230.00]
43 ANGL BUS 303001 MACH '1 '	44 ANGL BUS 303002 MACH '1 '
45 ANGL BUS 303003 MACH '1 '	46 ANGL BUS 303004 MACH '1 '
47 ANGL BUS 303006 MACH '1 '	48 ANGL BUS 303007 MACH '1 '
49 ANGL BUS 303008 MACH '1 '	50 ANGL BUS 335541 MACH '1 '
51 ANGL BUS 335542 MACH '1 '	52 ANGL BUS 335543 MACH '1 '
53 ANGL BUS 335544 MACH '1 '	54 ANGL BUS 335545 MACH '1 '
55 ANGL BUS 335546 MACH '1 '	56 ANGL BUS 335570 MACH '1 '
57 ANGL BUS 335571 MACH '1 '	58 ANGL BUS 335572 MACH '1 '
59 ANGL BUS 335577 MACH '1 '	60 ANGL BUS 335578 MACH '1 '
61 ANGL BUS 335611 MACH '1 '	62 ANGL BUS 335612 MACH '1 '
63 ANGL BUS 335613 MACH '1 '	64 ANGL BUS 335614 MACH '1 '
65 ANGL BUS 335615 MACH '1 '	66 ANGL BUS 335638 MACH '1 '
67 ANGL BUS 335640 MACH '1 '	68 ANGL BUS 335644 MACH '1 '
69 ANGL BUS 335647 MACH '1 '	70 ANGL BUS 335680 MACH '1 '
71 ANGL BUS 335681 MACH '1 '	72 ANGL BUS 335682 MACH '1 '
73 ANGL BUS 335684 MACH '1 '	74 ANGL BUS 335696 MACH '1 '
75 ANGL BUS 335831 MACH '1 '	76 ANGL BUS 335838 MACH '2 '
77 ANGL BUS 336002 MACH '2 '	78 ANGL BUS 336071 MACH '1 '
79 ANGL BUS 336072 MACH '1 '	80 ANGL BUS 336133 MACH '1 '
81 ANGL BUS 336134 MACH '1 '	82 ANGL BUS 336135 MACH '1 '
83 ANGL BUS 336151 MACH '1 '	84 ANGL BUS 336152 MACH '1 '
85 ANGL BUS 336153 MACH '1 '	86 ANGL BUS 336167 MACH '1 '
87 ANGL BUS 336168 MACH '1 '	88 ANGL BUS 336169 MACH '1 '
89 ANGL BUS 336170 MACH '1 '	90 ANGL BUS 336176 MACH '1 '
91 ANGL BUS 336177 MACH '1 '	92 ANGL BUS 336178 MACH '1 '
93 ANGL BUS 336179 MACH '1 '	94 ANGL BUS 336191 MACH '1 '
95 ANGL BUS 336221 MACH '1 '	96 ANGL BUS 336222 MACH '1 '
97 ANGL BUS 336251 MACH '1 '	98 ANGL BUS 336252 MACH '1 '
99 ANGL BUS 336255 MACH 'SV'	100 ANGL BUS 336281 MACH '1 '
101 ANGL BUS 336282 MACH '1 '	102 ANGL BUS 336283 MACH '1 '
103 ANGL BUS 336413 MACH '1 '	104 ANGL BUS 336414 MACH '1 '
105 ANGL BUS 336446 MACH '1 '	106 ANGL BUS 336460 MACH '1 '
107 ANGL BUS 336464 MACH '1 '	

Section – B

Network Resource Interconnection Service

TABLE OF CONTENTS FOR NRIS

Introduction

A Network Resource Interconnection Services (NRIS) study was requested to serve 251 MW of Entergy network load. The expected in service date for this NRIS generator is 1/1/2010. The tests were performed with only confirmed transmission reservations and existing network generators and with transmission service requests in study mode.

Two tests were performed, a deliverability to generation test and a deliverability to load test. The deliverability to generation (DFAX) test ensures that the addition of this generator will not impair the deliverability of existing network resources and units already designated as NRIS while serving network load. The deliverability to load test determines if the tested generator will reduce the import capability level to certain load pockets (Amite South, WOTAB and Western Region) on the Entergy system. A more detailed description for these two tests is described in Appendix B-A and Appendix B-B.

Also, it is understood that the NRIS status provides the Interconnection Customer with the capability to deliver the output of the Generating Facility into the Transmission System. NRIS in and of itself does not convey any right to deliver electricity to any specific customer or Point of Delivery

Analysis:

Models
The models used for this analysis is the 2011 and 2015 summer peak cases developed in July 2008.

The following modifications were made to the base cases to reflect the latest information available:

- Non-Firm IPPs within the local region of the study generator were turned off and other non-firm IPPs outside the local area were increased to make up the difference.
- Confirmed firm transmission reservations were modeled for the year 2011 - 2015.
- Approved transmission reliability upgrades for 2007 – 2010 were included in the base case. These upgrades can be found at Entergy's OASIS web page, http://www.entergy.com/etroasis/, under approved future projects.

Year	Approved Future Projects
2007 – 2010	2007CP_2009_Approved_ELL-S_Amite_South_Area_Improvements_PhaseII.idv
	2007CP_2009_Approved_ELL-S_EGSI-LA_Amite_South_Area_Improvements_PhaseIII.idv
	2008CP_EAI 2008 Maumelle Approved.idv
	2008CP_EAI 2010 SMEPA Approved.idv
	2011_Approved_ETI_Western_Region_Reliability_Improvement_Phase3_Interim

Year	Proposed Projects for prior generator interconnection requests
2015	Webre – Richard 500kV transmission line (56 miles triple bundled 954)
	Fancy Point – Hartburg/Mount Olive line tap 500kV transmission line
	Cypress – Jacinto 230kV transmission line
	Hartburg – Sabine 230kV transmission line
	Lewis Creek – Conroe 230kV transmission line

Prior Translations Included in the FCITC calculation for PID 216

Generator Interconnection				
PID	**Location**	**MW**	**kV**	**Year In Service**
208	Fancy Point	1594	500	2015
211	Lewis Creek	570	138	2011

Prior transmission service requests that were included in this study:

Transmission Service				
OASIS #	**POR**	**POD**	**MW**	**Begin**
1460876	EES	AEPW	75	3/1/2009
1460878	EES	AEPW	75	3/1/2009
1460879	EES	AEPW	75	3/1/2009
1460881	EES	AEPW	75	3/1/2009
1460900	AEPW	LEPA	116	1/1/2009

1478781	EES	EES	804	1/1/2008
1481059	LAGN	DENL	60	2/1/2011
1481111	LAGN	CNWY	50	2/1/2011
1481119	LAGN	BUBA	30	2/1/2011
1481235	LAGN	LEPA	50	2/1/2011
1481438	LAGN	EES	20	2/1/2011
1483241	LAGN	SOCO	103	1/1/2010
1483243	LAGN	SOCO	206	1/1/2010
1483244	LAGN	SOCO	309	1/1/2010
1520043	LAGN	EES	20	1/1/2011

Contingencies and Monitored Elements

Single contingency analyses on Entergy's transmission facilities (including tie lines) 115kV and above were considered. All transmission facilities on Entergy transmission system above 100 kV were monitored.

Generation used for the transfer

The NUCOR generators were used as the source for the deliverability to generation test.

Results

Deliverability to Generation (DFAX) Test:

The deliverability to generation (DFAX) test ensures that the addition of this generator will not impair the deliverability of existing network resources and units already designated as NRIS while serving network load. A more detailed description for these two tests is described in Appendix B-A and Appendix B-B.

Table III-1 Summary of Results of DFAX Test

Study Case	Study Case with Priors
Addis - Willow Glen 138kV	Baxter Wilson - Ray Braswell 500kV
Champagne - East Opelousas 138kV	Derbigny - Nine Mile 230kV
Champagne - Krotz Spring 138kV	Fairview - Gypsy 230kV
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV
French Settlement - Sorrento 230kV	French Settlement - Springfield 230kV
Gibson - Humphrey 115kV	Front Street - Michoud 230kV
Gibson - Ramos 138kV	
Gibson 138/115kV transformer	
Greenwood - Humphrey 115kV	
Greenwood - Terrebone 115kV	
Krotz Spring - Line 642 Tap 138kV	
Livonia - Line 642 Tap 138kV	
Livonia - Wilbert 138kV	
Sterlington 500/115kV transformer 2	

Table III-2 2011 DFAX Study Case Results without priors:

Limiting Element	Contingency Element	ATC(MW)
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Gibson - Ramos 138kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Greenwood - Humphrey 115kV	Richard - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Richard - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Gibson 138/115kV transformer	Webre - Wells 500kV	64
Champagne - East Opelousas 138kV	Webre - Wells 500kV	126
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	159
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	246

Table III-3 2015 DFAX Study Case Results without Priors:

Limiting Element	Contingency Element	ATC(MW)
Sterlington 500/115kV transformer 2	Sterlington 500/115kV transformer 1	0
Greenwood - Terrebone 115kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Webre - Wells 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Greenwood - Humphrey 115kV	Webre - Wells 500kV	0
Livonia - Line 642 Tap 138kV	Webre - Wells 500kV	0
Krotz Spring - Line 642 Tap 138kV	Webre - Wells 500kV	0
Gibson - Humphrey 115kV	Webre - Wells 500kV	0
Addis - Willow Glen 138kV	Webre - Wells 500kV	0
Greenwood - Terrebone 115kV	Richard - Wells 500kV	0
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	Front Street - Slidell 230kV	0
Champagne - East Opelousas 138kV	Webre - Wells 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Champagne - Krotz Spring 138kV	Webre - Wells 500kV	0
Livonia - Wilbert 138kV	Richard - Wells 500kV	109
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	147
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	147
Gibson - Ramos 138kV	Webre - Wells 500kV	153
Hartburg - Inland Orange 230kV	Cypress - Hartburg 500kV	160

Table III-4 2015 DFAX Study Case with Priors Results and Upgrades:

Limiting Element	Contingency Element	ATC(MW)
French Settlement - Sorrento 230kV	Franklin - McKnight 500kV	0
Fairview - Gypsy 230kV	French Settlement - Sorrento 230kV	0
Baxter Wilson - Ray Braswell 500kV	Franklin - Ray Braswell 500kV	0
Fairview - Gypsy 230kV	Franklin - McKnight 500kV	0
French Settlement - Sorrento 230kV	Bogalusa - Adams Creek 500/230kV transformer	0
French Settlement - Sorrento 230kV	Bogalusa - Franklin 500kV	0
French Settlement - Sorrento 230kV	Fairview - Gypsy 230kV	0
Fairview - Gypsy 230kV	French Settlement - Springfield 230kV	0
French Settlement - Sorrento 230kV	Front Street - Slidell 230kV	0
Front Street - Michoud 230kV	Franklin - McKnight 500kV	0
French Settlement - Springfield 230kV	Franklin - McKnight 500kV	89
Derbigny - Nine Mile 230kV	Napoleon - Nine Mile 230kV	90

Deliverability to Load Test:

The deliverability to load test determines if the tested generator will reduce the import capability level to certain load pockets (Amite South, WOTAB and Western Region) on the Entergy system. A more detailed description for these two tests is described in Appendix B-A and Appendix B-B.

Amite South: Passed

WOTAB: Passed

Western Region: Passed

Required Upgrades for NRIS

Preliminary Estimates of Direct Assignment of Facilities and Network Upgrades
Without prior transmission service requests and NRIS requests:

Limiting Element	Planning Estimate for Upgrade
Addis - Willow Glen 138kV Livonia - Line 642 Tap 138kV Livonia - Wilbert 138kV Krotz Spring - Line 642 Tap 138kV Champagne - East Opelousas 138kV Champagne - Krotz Spring 138kV Gibson - Humphrey 115kV Gibson - Ramos 138kV Greenwood - Humphrey 115kV Greenwood - Terrebone 115kV	Webre – Richard 500kV transmission line (56 miles triple bundled 954) $229,401,465
Fairview - Gypsy 230kV French Settlement - Sorrento 230kV	Build the Coly – Hammond 230kV line, ICT Base Plan (23.4 miles) Build Coly – Loblolly 69 kV, ICT Base Plan (2.9 miles)

With prior transmission service requests and NRIS requests:

Limiting Element	Planning Estimate for Upgrade
Fairview - Gypsy 230kV French Settlement - Sorrento 230kV French Settlement - Springfield 230kV Front Street - Michoud 230kV	Build the Coly – Hammond 230kV line, in the ICT Base Plan (needs to be rated at least 800MVA). BP08-038 - Loblolly-Hammond Build 230kv Line.idv

The costs of the upgrades are planning estimates only. Detailed cost estimates, accelerated costs and solutions for the limiting elements will be provided in the facilities study.

Appendix B-A:

Deliverability Test for Network Resource Interconnection Service Resources

1. Overview

Entergy will develop a two-part deliverability test for customers (Interconnection Customers or Network Customers) seeking to qualify a Generator as an NRIS resource: (1) a test of deliverability "from generation", that is out of the Generator to the aggregate load connected to the Entergy Transmission system; and (2) a test of deliverability "to load" associated with sub-zones. This test will identify upgrades that are required to make the resource deliverable and to maintain that deliverability for a five year period.

1.1 The "From Generation" Test for Deliverability

In order for a Generator to be considered deliverable, it must be able to run at its maximum rated output without impairing the capability of the aggregate of previously qualified generating resources (whether qualified at the NRIS or NITS level) in the local area to support load on the system, taking into account potentially constrained transmission elements common to the Generator under test and other adjacent qualified resources. For purposes of this test, the resources displaced in order to determine if the Generator under test can run at maximum rated output should be resources located outside of the local area and having insignificant impact on the results. Existing Long-term Firm PTP Service commitments will also be maintained in this study procedure.

1.2 The "To Load" Test for Deliverability

The Generator under test running at its rated output cannot introduce flows on the system that would adversely affect the ability of the transmission system to serve load reliably in import-constrained sub-zones. Existing Long-term Firm PTP Service commitments will also be maintained in this study procedure.

1.3 Required Upgrades.

Entergy will determine what upgrades, if any, will be required for an NRIS applicant to meet d eliverability requirements pursuant to Appendix B-B.

Appendix B-B – NRIS Deliverability Test

Description of Deliverability Test

Each NRIS resource will be tested for deliverability at peak load conditions, and in such a manner that the resources it displaces in the test are ones that could continue to contribute to the resource adequacy of the control area in addition to the studied resources. The study will also determine if a unit applying for NRIS service impairs the reliability of load on the system by reducing the capability of the transmission system to deliver energy to load located in import-constrained sub-zones on the grid. Through the study, any transmission upgrades necessary for the unit to meet these tests will be identified.

Deliverability Test Procedure:

The deliverability test for qualifying a generating unit as a NRIS resource is intended to ensure that 1) the generating resource being studied contributes to the reliability of the system as a whole by being able to, in conjunction with all other Network Resources on the system, deliver energy to the aggregate load on the transmission system, and 2) collectively all load on the system can still be reliably served with the inclusion of the generating resource being studied.
The tests are conducted for "peak" conditions (both a summer peak and a winter peak) for each year of the 5-year planning horizon commencing in the first year the new unit is scheduled to commence operations.

1) Deliverability of Generation

The intent of this test is to determine the deliverability of a NRIS resource to the aggregate load on the system. It is assumed in this test that all units previously qualified as NRIS and NITS resources are deliverable. In evaluating the incremental deliverability of a new resource, a test case is established. In the test case, all existing NRIS and NITS resources are dispatched at an expected level of generation (as modified by the DFAX list units as discussed below). Peak load withdrawals are also modeled as well as net imports and exports. The output from generating resources is then adjusted so as to "balance" overall load and generation. This sets the baseline for the test case in terms of total system injections and withdrawals.
Incremental to this test case, injections from the proposed new generation facility are then included, with reductions in other generation located outside of the local area made to maintain system balance.

Generator deliverability is then tested for each transmission facility. There are two steps to identify the transmission facilities to be studied and the pattern of generation on the system:

1) Identify the transmission facilities for which the generator being studied has a 3% or greater distribution factor.

2) For each such transmission facility, list all existing qualified NRIS and NITS resources having a 3% or greater distribution factor on that facility. This list of units is called the Distribution Factor or DFAX list.

For each transmission facility, the units on the DFAX list with the greatest impact are modeled as operating at 100% of their rated output in the DC load flow until, working down the DFAX list, a 20% probability of all units being available at full output is reached (e.g. for 15 generators with a Forced Outage Rate of 10%, the probability of all 15 being available at 100% of their rated output is 20.6%). Other NRIS and NITS resources on the system are modeled at a level sufficient to serve load and net interchange. From this new baseline, if the addition of the generator being considered (coupled with the matching generation reduction on the system) results in overloads on a particular transmission facility being examined, then it is not "deliverable" under the test.

2) Deliverability to Load

The Entergy transmission system is divided into a number of import constrained sub-zones for which the import capability and reliability criteria will be examined for the purposes of testing a new NRIS resource. These sub-zones can be characterized as being areas on the Entergy transmission system for which transmission limitations restrict the import of energy necessary to supply load located in the sub-zone. The transmission limitations will be defined by contingencies and transmission constraints on the system that are known to limit operations in each area, and the sub-zones will be defined by the generation and load busses that are impacted by the contingent transmission lines. These sub-zones may change over time as the topology of the transmission system changes or load grows in particular areas.
An acceptable level of import capability for each sub-zone will have been determined by Entergy Transmission based on their experience and modeling of joint transmission and generating unit contingencies. Typically the acceptable level of transmission import capacity into the sub-zones will be that which is limited by first-contingency conditions
on the transmission system when generating units within the sub-region are experiencing an abnormal level of outages and peak loads.
The "deliverability to load" test compares the available import capability to each sub-zone that is required for the maintaining of reliable service to load within the sub-zone both with and without the new NRIS resource operating at 100% of its rated output. If the new NRIS resource does not reduce the sub-zone import capability so as to reduce the reliability of load within the sub-zone to an unacceptable level, then the deliverability to load test for the unit is satisfied. This test is conducted for a 5-year planning cycle. When the new NRIS resource fails the test, then transmission upgrades will be identified that would allow the NRIS unit to operate without degrading the sub-zone reliability to below an acceptable level.

Other Modeling Assumptions:

1) Modeling of Other Resources
Generating units outside the control of Entergy (including the network resources of others, and generating units in adjacent control areas) shall be modeled assuming "worst case" operation of the units – that is, a pattern of dispatch that reduces the sub-zone import capability, or impact the common limiting flowgates on the system to the greatest extent for the "from generation" deliverability test.

2) Must-run Units
Must-run units in the control area will be modeled as committed and operating at a level consistent with the must-run operating guidelines for the unit.

3) Base-line Transmission Model
The base-line transmission system will include all transmission upgrades approved and committed to by Entergy Transmission over the 5-year planning horizon. Transmission line ratings will be net of TRM and current CBM assumptions will be maintained.